

Access to Resources and Markets for Sustainable and Inclusive Value Chains:

**Towards Locally Adapted Institutions for Strengthening the Chain
Position of Brazil nut Gatherers in the Brazilian Amazon**

Marcelo Inácio da Cunha



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front cover (only photograph): Cracking Brazil nut pod at a traditionally occupied land by the Trombetas River Biological Reserve, Brazil
back cover (photograph at the top left): Middleman showing Brazil nuts stored in his family's home
back cover (photograph at the top right): Brazil nut gatherer on his way to remote Brazil nut stand
back cover (photograph at the bottom): Local value addition? Brazil nut processing mill in Óbidos, Brazil

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Access to Resources and Markets for Sustainable and Inclusive Value Chains:

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Position of Brazil nut Gatherers in the Brazilian Amazon

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Marcelo Inácio da Cunha
Matrikelnummer: 4810999

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First Supervisor:

Prof. Dr. Dörte Segebart

Fachbereich Geowissenschaften
Institut für Geographische Wissenschaften
Freie Universität Berlin
Malteserstr. 74-100
D-12249 Berlin

Second Supervisor:

Univ.-Prof. Dr. Martin Coy

Institut für Geographie
Universität Innsbruck
Innrain 52
A-6020 Innsbruck

Abstract

Given the lack of access of forest dependent rural dwellers to resources and markets as well as the lack of an institutional environment that is conducive for reconciling biodiversity conservation and livelihood strategies in the Brazilian Amazon, the main and sub-research questions are respectively:

How do informal and formal institutions affect the access to Brazil nuts and markets by buyers and, especially, by gatherers within the Brazil nut value chain in the Lower Amazon basin?

How are institutions – that affect resource and market access – institutionalized and formalized?

By identifying self-declared informal and formal institutions filtering resource and market access of upstream value chain actors, it is scoped for leverage points towards locally adapted institutions to overcome such access limitations in the realm of strengthening Brazil nut gatherers' chain position.

The following institutions in use have been found to be crucial for determining the (lack of) access to livelihood relevant resources (Brazil nuts) and markets in the Lower Amazon basin. The informal institution analyzed is the debt-peonage system *aviamento* and the formal one is the 'Term of Compromise' (TdC, per acronyms in Portuguese) in Brazil. The TdC is a legally-based instrument for overcoming conflicts between the Chico Mendes Institute for Biodiversity Conservation (ICMBio, per acronyms in Portuguese) – as responsible branch of the Brazilian Ministry of Environment (MMA, per acronyms in Portuguese) for managing federal Protected Areas (PAs) – and traditional populations over natural resources in such areas.

The innovative analytical framework developed herein captures how both informal and formal institutions (determinants) as well as related formalization and institutionalization (processes) affect the resource and market access by upstream value chain actors. This framework helps capturing institution-based access restrictions affecting the chain position of Brazil nut gatherers (corresponding to the main research question). It builds the groundwork for constructing a model to help understand what is behind empirical phenomena pertaining to the institutionalization and formalization of access limiting institutions (corresponding to the sub-research question herein). The proposed 'model on analytical ingredients for self-sustained strengthening of upstream value chain nodes' is built for transforming locally reported institution-based access problems towards the outcome of adapted access enabling institutions for strengthened upstream nodes of food chains.

Quantitative and, particularly, qualitative data were collected from 'community' to national level (2012–2015). In order to quantify socioeconomic conditions and resource as well as market access, a survey was conducted with 185 households in four municipalities of the Lower Amazon region. Detailed qualitative data was gathered mainly through narrative, problem-centered and key-informant interviews with the already quantitatively assessed households accounting for a respective sample of 89 actors in two of these municipalities (Oriximiná and Óbidos): mainly the ones directly involved in upstream nodes of the Brazil nut value chain (Brazil nut gatherers and buyers) yet also indirectly involved actors at all administrative levels, including representatives of

the Brazilian government (e.g. from ICMBio, from MMA, from the Ministry of Agrarian Development (SEAD (formerly, MDA), per acronyms in Portuguese), the Ministry of Development, Industry and Trade (MDIC, per acronyms in Portuguese)); from the private sector (including all three Brazil nut processing mills in the subnational region at stake) as well as from NGOs (e.g. from the Amazon Institute of People and the Environment (IMAZON, per acronyms in Portuguese), from the Institute for the Management and Certification of Forests and Agriculture (IMAFLOA, per acronyms in Portuguese), and from the Pro-Indigenous People Commission of the state of São Paulo (CPI-SP, per acronyms in Portuguese).

Results including leverage points for strengthening the chain position of economically and geographically marginalized value chain actors on a sustainable basis show: (i) formalization of resource and market access restrictions per TdC has reinforced unbalanced patron-client relations among Brazil nut gatherers and buyers already institutionalized per debt-peonage; (ii) self-reliant sustainable Brazil nut value chain development depends on democratic participation in decision-making for locally adapted TdC by transforming the governance structures of councils for managing PAs from 'consultative' to 'deliberative' ones, while co-shaping a conducive context-sensitive institutional environment, policies and service provision; (iii) 'socioeconomic upgrading' of the position of upstream value chain actors builds on ability and self-organization of smallholders in 'well-managed' cooperatives (complying to widespread cooperative principles).

Further, suggestions for actions and policy recommendations based on analytical and empirical evidences are provided – for each one of the actors directly or indirectly involved in the Brazil nut value chain at stake – as are future research 'needs' in the realm of self-determined local environmentally sound development. All together, this thesis offers scientific input for an outcome pathway towards an enabling institutional environment in the realm of inclusive sustainable rural development.

Finally, this thesis' contribution lies mainly in an innovative problem-based and institution-sensitive approach to analyzing (the lack of) resource and market access towards strengthening the value chain position of marginalized upstream chain actors. The herewith developed model and, particularly, analytical framework can be applied for inclusive sustainable value chain development of agricultural and, especially, non-timber forest products (NTFPs) in different rural contexts.

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List of Abbreviations and Acronyms

ACORQUE	<i>Associação das Comunidades Remanescentes de Quilombos do Rio Erepecuru</i> (Association of the Remaining Communities of <i>Quilombos</i> from the Erepecuru River)
AGU	<i>Advocacia Geral da União</i> (Brazilian General Advocacy of the Union)
AMOCREQ	<i>Associação dos Moradores da Comunidade Remanescente de Quilombo de Cachoeira Porteira</i> (Association of the Remaining Communities of <i>Quilombos</i> of the Community of Cachoeira Porteira)
ANATER	<i>Agência Nacional de Assistência Técnica e Extensão</i> (National Agency for Technical and Rural Extension Services)
APL	<i>Arranjo Produtivo Local</i> (Local Production Arrangements)
ARPA	<i>Programa Áreas Protegidas da Amazônia</i> (Amazon Region Protected Areas Program)
ARQMO	<i>Associação das Comunidades Remanescentes de Quilombos do Município de Oriximiná</i> (Association of the Remaining Communities of <i>Quilombos</i> of the Municipality of Oriximiná)
ASCONB	<i>Associação Comunitária de Nova Betel</i> (Community Association of Nova Betel)
BASA	<i>Banco da Amazônia</i> (Regional Development Bank for the Brazilian Amazon)
BMZ	<i>Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung</i> (German Federal Ministry of Economic Cooperation and Development)
BRL	Brazilian Real
CAMTA	<i>Cooperativa Agrícola Mista de Tomé-Açú</i> (Mixed Cooperative of Rural Producers of Tomé-Açú)
CAPES	<i>Coordenação de Aperfeiçoamento de Pessoal de Nível Superior</i>
CBD	Convention on Biological Diversity
CCPT	<i>Comunidade de Cachoeira Porteira</i> (Community of Cachoeira Porteira)
CCT	Conditional Cash Transfer
CEB	<i>Comunidades Eclesiais de Base</i> (Grassroots Ecclesiastical Communities)
CEQMO	<i>Cooperativa Mista Extrativista dos Quilombolas do Município de Oriximiná</i> (<i>Quilombola</i> Extractivist Cooperative of the Municipality of Oriximiná)
CFS	Committee on World Food Security
CIAT	<i>Centro Internacional de Agricultura Tropical</i> (International Center for Tropical Agriculture)
CIFOR	Center for International Forestry Research
CIP	<i>Centro Internacional de la Papa</i> (International Potato Center)
CONAB	<i>Companhia Nacional de Abastecimento</i> (National Food Supply Company)
CNS	<i>Conselho Nacional das Populações Extrativistas</i> (National Council of Extractivist Populations)
Cooperacre	<i>Cooperativa Central de Comercialização Extrativista do Acre</i> (Central Cooperative of Extractivist Commercialization of Acre)
c.p.	<i>ceteris paribus</i>

CPI-SP	. <i>Comissão Pró-Índio de São Paulo</i> (Pro-Indigenous Peoples Commission of the state of São Paulo)
CPT	. <i>Comissão Pastoral da Terra</i> (Pastoral Commission of the Land)
CSO	.Civil Society Organization
DAAD	. <i>Deutscher Akademischer Austauschdienst</i> (German Academic Exchange Service)
DAP	. <i>Declaração de Aptidão ao Programa Nacional de Fortalecimento da Agricultura Familiar</i> (Declaration of Eligibility to the National Program for Strengthening Family Agriculture)
DFID	.United Kingdom Department for International Development
DOU	. <i>Diário Oficial da União</i> (Official Diary of the Union)
e.g.	. <i>exempli gratia</i>
Emater	. <i>Empresa de Assistência Técnica e Extensão Rural</i> (Enterprise of Technical and Rural Extension Services)
et al.	. <i>et alia</i>
EU	.European Union
EUR	.Euro
FAO	.Food and Agriculture Organization of the United Nations
FCP	. <i>Fundação Cultural Palmares</i> (Palmares Cultural Foundation)
FLONA	. <i>Floresta Nacional</i> (National Forest)
FNO	. <i>Fundo Constitucional de Financiamento do Norte</i> (Constitutional Fund for Financial Services in the Northern Region of Brazil)
FUG	.Forest User Group
FUNAI	. <i>Fundação Nacional do Índio</i> (National Foundation for Indigenous Peoples in Brazil)
GIZ	. <i>Gesellschaft für Internationale Zusammenarbeit</i> (German Corporation for International Cooperation)
GPN	.Global Production Network
GPS	.Global Positioning System
GVC	.Global Value Chain
ha	.hectare
HDI	.Human Development Index
IBAMA	. <i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis</i> (Brazilian Institute of Environment and Renewable Resources)
IBDF	. <i>Instituto Brasileiro de Desenvolvimento Florestal</i> (Brazilian Institute for Forest Development)
IBGE	. <i>Instituto Brasileiro de Geografia e Estatística</i> (Brazilian Institute of Geography and Statistics)
ibid.	. <i>Ibidem</i>
ICMBio	. <i>Instituto Chico Mendes de Conservação da Biodiversidade</i> (Chico Mendes Institute for Biodiversity Conservation)
ICRAF	.World Agroforestry Centre
IDESP	. <i>Instituto de Desenvolvimento Social, Econômico e Ambiental do Pará</i> (Research and Policy Institute of Socioeconomic Development of the state of Pará)
IDS	.Institute for Development Studies

i.e.	<i>id est</i>
IFAD	International Fund for Agricultural Development
IIED	International Institute for Environment and Development
ILO	International Labour Organization
IMAFLORA	<i>Instituto de Manejo e Certificação Florestal e Agrícola</i> (Institute for the Management and Certification of Forests and Agriculture)
IMAZON	<i>Instituto do Homem e Meio Ambiente da Amazônia</i> (Amazon Institute of People and the Environment)
IN	<i>Instrução Normativa</i> (Normative Instruction)
INCRA	<i>Instituto Nacional de Colonização e Reforma Agrária</i> (National Institute for Colonization and Agrarian Reform)
IoS	Institutions of Sustainability
IPAM	<i>Instituto de Pesquisa Ambiental da Amazônia</i> (Amazon Environmental Research Institute)
ISA	<i>Instituto Socioambiental</i> (Socio-Environmental Institute)
ITERPA	<i>Instituto de Terras do Pará</i> (Institute of Land of the state of Pará)
IUCN	International Union for Conservation of Nature
Malungo	<i>Coordenação das Associações das Comunidades Remanescentes de Quilombo do Pará</i> (Coordination of the Associations of Communities of Remaining <i>Quilombos</i> of the state of Pará)
MAPA	<i>Ministério da Agricultura, Pecuária e Abastecimento</i> (Ministry of Agriculture of Brazil)
MDA	<i>Ministério do Desenvolvimento Agrário</i> (Brazilian Ministry of Agrarian Development)
MDGs	Millenium Development Goals
MDIC	<i>Ministério da Indústria, Comércio Exterior e Serviços</i> (Brazilian Ministry of Development, Industry and Trade)
MDS	<i>Ministério do Desenvolvimento Social</i> (Brazilian Ministry of Social Development)
MEC	<i>Ministério da Educação</i> (Brazilian Ministry of Education)
MMA	<i>Ministério do Meio Ambiente</i> (Brazilian Ministry of Environment)
MNC	Multi-national Corporation
MPE	<i>Ministério Público do Estado do Pará</i> (Prosecution Ministry from the state of Pará)
MPF	<i>Ministério Público Federal</i> (Federal Prosecution Ministry)
MRN	<i>Mineração Rio do Norte</i>
MS	Microsoft
NEXT	<i>Núcleo de Extensão Tecnológica</i>
NGO	Non-governmental Organization
NIE	New Institutional Economics
NoPa.	<i>Programa Novas Parcerias</i> (GIZ Program – New Partnerships for Innovation in Sustainable Development)
NTFP	Non-Timber Forest Product
PA	Protected Area
PAA	<i>Programa de Aquisição de Alimentos</i> (Program of Food Acquisition)
PAC	<i>Programa de Aceleração do Crescimento</i> (Growth Acceleration Program)

PEN	Poverty Environment Network
PGPM	<i>Política Nacional de Garantia de Preços Mínimos</i> (Policy for Assuring Minimum Prices)
PGPM-Bio	<i>Política Nacional de Garantia de Preços Mínimos para os Produtos da Sociobiodiversidade</i> (Policy for Assuring Minimum Prices for Products of the Socio-biodiversity)
PLANAPO	<i>Plano Nacional de Agroecologia e Produção Orgânica</i> (National Plan of Agroecology and Organic Production)
PNAE	<i>Programa Nacional de Alimentação Escolar</i> (National School Feeding Program)
PNAPO	<i>Política Nacional de Agroecologia e Produção Orgânica</i> (National Policy for Agroecology and Organic Production)
PNPSB	<i>Plano Nacional de Promoção das Cadeias de Produtos da Sociobiodiversidade</i> (National Plan to Promote Value Chains of Socio-biodiversity Products)
PRONAF	<i>Programa Nacional de Fortalecimento da Agricultura Familiar</i> (Program for Strengthening Family Agriculture)
PRONATEC	<i>Programa Nacional de Acesso ao Ensino Técnico e Emprego</i> (The National Program for Access to the Technical Education and Employment)
ODA	Official Development Assistance
R&D	Research and Development
RAVA	<i>Red Amazônica de Meios de Vida y Ambiente</i> (Amazon Network on Livelihoods and Environment)
RDS	<i>Reserva de Desenvolvimento Sustentável</i> (Reserve for Sustainable Development)
RedeSist	<i>Rede de Pesquisa em Sistemas Produtivos e Inovativos Locais</i> (Network on Local Production Arrangements and Innovation Systems)
RESEX	<i>Reserva Extrativista</i> (Extractivist Reserve)
SDGs	Sustainable Development Goals
SEAD	<i>Secretaria Especial de Agricultura Familiar e do Desenvolvimento Agrário</i> (Brazilian Special Secretariat of Family Farming and Agrarian Development)
SEBRAE	<i>Serviço Brasileiro de Apoio às Micro e Pequenas Empresas</i> (Brazilian Micro and Small Business Support Service)
SECTI	<i>Secretaria de Estado de Ciência, Tecnologia e Inovação</i> (Secretariat for Science, Technology and Innovation of the state of Pará)
SEICOM	<i>Secretaria de Indústria, Comércio e Mineração do Pará</i> (Secretariat of Industry, Trade and Mining of the state of Pará)
SEMA	<i>Secretaria do Meio Ambiente</i> (Secretariat for the Environment at state level in Brazil)
SEMMA	<i>Secretaria Municipal do Meio Ambiente</i> (Secretariat for the Environment at municipality level in Brazil)
SENAI	<i>Serviço Nacional de Aprendizagem Industrial</i> (National Service of Industrial Training)
SEPPIR	<i>Secretaria de Políticas de Promoção da Igualdade Racial</i> (Special Secretariat of Policies for the Promotion of Racial Equality)
SES	Socio-ecological system

SISBio	<i>Sistema de Autorização e Informação em Biodiversidade</i> (System of Authorization and Information on Biodiversity)
SME	Small and Medium Enterprise
SNUC	<i>Sistema Nacional de Unidades de Conservação</i> (National System of Units of Conservation)
STTR	<i>Sindicato dos Trabalhadores e Trabalhadoras Rurais</i> (Rural workers' union)
SWOT	Strengths Weaknesses Opportunities and Threats
TdC	<i>Termo de Compromisso</i> (Term of Compromise)
TQ	<i>Território Quilombola</i> (Quilombola Territory)
TRBR	<i>Reserva Biológica do Rio Trombetas</i> (Trombetas River Biological Reserve)
UFOPA	<i>Universidade Federal do Oeste do Pará</i> (Federal University of Western Pará)
UFPA	<i>Universidade Federal do Pará</i> (Federal University of Pará)
USAID	United States Agency for International Development
USFS	United States Forest Service
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNIDO	United Nations Industrial Organization
USD	United States Dollar
VC	Value Chain
VCA	Value Chain Analysis
VCD	Value Chain Development
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security

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Thank you very much, Univ.-Prof. Dr. Martin Coy for being my second supervisor. Your research on the Brazilian Amazon over decades serves as a reference for me as well as for other geographers and researchers, particularly in German speaking countries and in Brazil.

Dedication

To you, Johanna – my wife and partner for life – who not only provided critical suggestions for chapters of this PhD thesis, but also love and patience during numerous week days/ evenings as well as weekends I worked on this thesis.

To you, Iolanda – my grandmother and role model – who is intrinsically motivated to always go further and encourages me to strive to do my bit for people in this planet.

To you, Arioaldo, Maria Luiza, Rejane and Flávia – my parents and sisters – who inspire and encourage me unconditionally in every step I take.

To you, Beatriz – my newborn niece – may your future always shine.

I. Introduction

1 This Thesis in a (Brazil) nutshell

Point of Departure

“[...] access becomes perhaps the most critical resource of all if people are to build sustainable, poverty alleviating rural livelihoods”. (Bebbington 1999: 2022)

The importance of environmentally sound access to resources by economically and geographically marginalized rural dwellers in the realm of sustainable development calls not only for investigating who accesses what and when. Yet also why, where and, particularly, how livelihood relevant¹ natural resources and markets are accessed along value chains² of agricultural goods and NTFPs³.

Sustainable natural resource management is broadly recognized as a strategy to reconcile biodiversity conservation and socioeconomic development – frequently desired by rural communities. However, long-term synergies among the maintenance of forests and respective livelihood strategies⁴ remain underutilized. For this purpose, the potential contribution of strengthening NTFP value chains for sustainable inclusive rural development has neither been effectively explored nor thoroughly analyzed yet. Similarly, not only studies but also policies and governmental incentives for sustain-

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- 1 The term ‘livelihood relevant’ is employed to refer to resources whose use is important for subsistence and/ or income of non-timber forest product (NTFP) extractivist households. The same term is employed when referring to livelihood relevant market access. It further relates to ‘livelihood strategies’ embedded in human-environment relations and ‘sustainable livelihoods’ pertaining to assets within human, social, physical, natural and financial capitals, see Chambers & Conway (1992), Ellis (1998), Scoones (1998), Agrawal & Gibson (1999), Bebbington (1999), DFID (1999), Ostrom (2009), Wunder *et al.* (2014).
 - 2 In value chains multiple actors negotiate with each other and create social networks for gathering/ producing a given product. These agents can be NTFP extractivists and/ or (small-scale) producers, processing mills and industries, providers of services, for instance rural extension and advisory services as well as technical assistance in addition to enabling access to policies (see e.g. Cunha 2014). For a detailed definition of value chains, see Chapter II.1.
 - 3 The concept of NTFPs was first coined by DeBeer & McDermott (1989), who defined them as “all biological materials other than timber, which are extracted from forests for human use.” (ibid.: 17). For further reading on NTFP and forest dependency, including implications on livelihood strategies and environmental conservation at the global level, see e.g. Cavendish (2000), Belcher (2003), Belcher *et al.* (2005), Belcher & Schreckenberg (2007), Angelsen *et al.* (2011), Wunder *et al.* (2014).
 - 4 For evidence-based literature on forest dependent livelihoods and poverty-environment relationships, see e.g. Cavendish (2000), Sunderlin *et al.* (2005), Angelsen *et al.* (2011), Wunder *et al.* (2014).

able value chain development⁵ of NTFPs remain underrepresented⁶ compared to other sectors⁷, such as large-scale agricultural production (of e.g. soy bean) and extensive cattle ranching in different countries. Whilst policies can play an important role for enhancing sector and actor-specific resource and market access, they are to be based on the local needs of extractivists⁸ – in this case of NTFP gatherers⁹ for them to be effective. This effectiveness further requires harmonized and simultaneous actions – among responsible ministries, including the Brazilian Ministry of Environment (MMA, per acronyms in Portuguese).

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- 5 The development of a (global) value chain commonly aims at stimulating economic growth (also called economic upgrading in the value chain research and development field) along up- and downstream nodes of the chain, while – in some cases – it is also strived to alleviate rural poverty (see e.g. Adler & Kwon 2002, Bernet *et al.* 2006). What is herein proposed is socioeconomic upgrading as a more inclusive approach to value chain analysis and development than mere economic upgrading (see Chapters II.1.3 and VI.1.1.2).
- 6 Although the NTFP sector is by far the less privately and publicly incentivized rural sector in Brazil, the government has initiated two federal plans to foster sustainable production of not only agricultural but also NTFPs through the National Plan of Agroecology and Organic Production (PLANAPO, per acronyms in Portuguese) in 2013. This Plan integrates *inter alia* the National Plan for the Promotion of the Value Chains of Socio-biodiversity Products (PNPSB, per acronyms in Portuguese), launched in 2009: in this context, ‘socio-biodiversity products’ can be understood as (traditionally gathered) NTFPs (detailed in Chapter II.1.5). In spite of these positive initiatives, little concrete progress has been made in terms of local sustainable rural development, particularly, in remote areas of the Brazilian Amazon where economically marginalized extractivist populations heavily rely on forest resources other than wood.
- 7 For an overview on socioeconomic and political challenges and opportunities of the NTFP sector in the Amazon (Peru and Bolivia, in addition to Brazil), see Escobal & Aldana (2003), LeTourneau & Greissing (2010), Shackleton & Pandey (2013), Shanley *et al.* (2015), Guariguata *et al.* (2017), Santana *et al.* (2017), Soriano *et al.* (2017).
- 8 Building on Almeida (2011), extractivists, as referred to herein, are NTFP gatherers who depend – for their subsistence and livelihood strategies – to a considerable extent on the collection and commercialization of such natural resources. While such extractivism is to be differentiated from large-scale extractivist activities such as mining, it is common for the small-scale NTFP gatherers – the extractivists at stake – to have at least one additional income source (e.g. cassava and/ or government transfers – detailed in Chapter V.1.6). Such rural dwellers – who live in and from forests – include traditional populations, rubber-tappers, riverines and Brazil nut gatherers (*seringueiros*, *ribeirinhos* and *castanheiros*, in Portuguese). The National Council of Extractivist Populations (CNS, per acronyms in Portuguese) is the Brazilian civil society organization – co-founded by Chico Mendes in 1985 – responsible for representing extractivists (including NTFP gatherers, fishermen and women as well as riverines – see Footnote 390) at the national level e.g. vis-à-vis ministries (e.g. Ministry of Environment) and other governmental entities.
- 9 Extractivists/ NTFP extractivists and gatherers are herein used interchangeably for the sake of simplifying and diversifying while maximizing respective understanding. All three names are used to refer to sustainable forest users as opposed to large-scale extractive industries (people and land degrading mining companies). An additional name is (agro)extractivists (*agroextrativistas*, in Portuguese), which is commonly used in Brazil, given most small-scale extractivist have at least one additional rural income source from agriculture – as is the case herein.

Further, debates around so-called local production arrangements have surged in Brazil in the late 1990s¹⁰, followed by policies for strengthening such clusters¹¹ a decade later. Attention paid to identifying and developing local production arrangements within value chains led to the consolidation of a National Cluster Policy as of 2004 (led by MDIC)¹², and the National Plan to Promote Value Chains of Socio-biodiversity Products (MDA, MMA & MDS 2009). The latter has lost political importance in the last five years while having been integrated into PLANAPO as of 2013, in the frame of the previously, in 2012, founded National Policy for Agroecology and Organic Production (PNAPO, per acronyms in Portuguese).

Further, reduced or zero deforestation can be effectively pursued through poverty mitigating sustainable NTFP management by extractivists, as forest dependent rural dwellers, who can make their living and feed their families by sustainably managing these natural resources. Overall, promoting inclusive sustainable NTFP use and marketing at local and other levels is crucial not only for “conservation-through-use” (Guariguata *et al.* 2017: 2008), but also towards achieving Sustainable Development Goals (SDGs)¹³ (see Chapter VII). The importance of environmentally sound access to livelihood relevant NTFPs is supported by the fact that 1,5 billion people use and/

10 The groundwork for such debates was laid in 1997 with the foundation of the Network on Local Production Arrangements and Innovation Systems (RedeSist, per abbreviation in Portuguese) – which started off as a network of researchers, while having been joined by policy-makers, including from the Brazilian Ministry of Development, Industry and Trade (MDIC, per acronyms in Portuguese) as of 1999 when this ministry was founded. Since its inception, RedeSist has been engaged in the science-policy interface mapping clusters and identifying leverage points for strengthening such local production arrangements.

11 *Arranjo Produtivo Local* (APL), in Portuguese.

12 Related policies with synergistic potential for co-benefiting clusters within given value chains are, for instance, the ones for so-called regional development since 2003, including ‘Territories of Citizenship’ (launched by the Ministry of Agrarian Development/ MDA, per acronyms in Portuguese), with participation of 22 ministries in 2008) and, more recently, the so-called ‘More Productive Brazil’ (launched by MDIC and the National Service of Industrial Training/ SENAI, per acronyms in Portuguese, in 2016). Specifically, the ‘Program for Strengthening Family Agriculture’ (PRONAF, per acronyms in Portuguese) for providing accessible credits – has not yet been adapted for extractivists in the realm of sustainable inclusive development of respective NTFP value chains, as opposed to the ‘Program of Food Acquisition’ (PAA, per acronyms in Portuguese) and the ‘National School Feeding Program’ (PNAE, per acronyms in Portuguese). The latter is supported by the ‘More Management Program’ (*Programa Mais Gestão*, in Portuguese) extension services for enhancing the ability of upstream chain actors to access markets through capacity building in collective marketing per cooperatives.

13 The 17 SDGs are the principal element of the 2030 Agenda for Sustainable Development. It is a universal agenda adopted by 193 Member States of the United Nations (UN) on 25th September, 2015, whose goals are to be pursued and implemented by all of these countries, from both the so-called ‘Global South’ and ‘Global North’ (United Nations 2015). Such global goals (as opposed to the Millennium Development Goals – MDGs, which were designed by the so-called ‘Global North’ for the so-called ‘Global South’ where they were implemented under the lead of the former), it comes with this larger pool of countries in which it is to be invested in sustainable development. More specifically, the so-called ‘global goals’ targeted through this research are SDGs 1, 2, 3, 4, 5, 8, 10, 12, 13, 15 and 17.

or trade NTFPs worldwide (Shanley *et al.* 2015: 2), whereby 2 million inhabitants of the Brazilian Amazon (see map in Annex VII) have NTFP gathering as their main rural income source (Toledo *et al.* 2016: 10). With over 37.000 tons, Brazil nut ranked third (after *açaí* and *babaçu*¹⁴) among the volumes of NTFPs gathered in Brazil in 2015 (IBGE 2015).

Without intending to promote polarizing debates on human-nature relations, respective constructive tensions constitute the background of this study when scoping for such balance through access to livelihood relevant natural resources and markets by upstream¹⁵ value chain actors¹⁶. Asymmetric trade relations between Brazil nut gatherers and local buyers are herein addressed within the respective value chain in the Brazilian Amazon. While rural *Amazônia* is characterized by abundance of natural resources, a considerable number of its inhabitants (mostly so-called *agroextrativistas*, in Portuguese) face vulnerability, particularly due to lack of access to markets¹⁷ for making a locally desired¹⁸ sustainable living out of NTFPs (e.g. *açaí*, *babaçu* besides Brazil nut). Still a few NTFP extractivists – who are organized in associations or cooperatives while endowed with respective ability to comply to bureaucratic requirements – manage to have government-induced market access (see Footnote 12).

Brazil nut sold to all continents is seasonally gathered by forest dependent rural dwellers in the Bolivian, Brazilian and Peruvian Amazon. These are areas of high biodiversity and a low Human Development Index (HDI), including the Lower Amazon basin¹⁹, which has one of the highest concentrations of Brazil nut trees (*Bertholletia excelsa* Bonpl. *Lecythidaceae*) in the Brazilian Amazon (see Scoles & Gribel 2012).

14 *Açaí* (*Euterpe oleracea*) and *babaçu* (*Attalea speciosa*), respectively, ranked higher than Brazil nut (*Bertholletia excelsa*).

15 Upstream value chain actors or nodes (also called lower tiers or segments) refer to the very beginning of a given value chain, i.e. to the first activities producers or extractivists conduct before further downstream chain actors process the respective natural resource/ product *in natura*.

16 For the definition of the notion of actor embedded in networks with contradicting interests yet committed to a cause, see Latour (2005), whereas for social actors acting in reciprocal actions, see e.g. Simmel (1908). Both fit well into the understanding of value chain actors used herein.

17 “[...] constraints range from restrictions to the access to land, property rights and credits – due to the lack of the so-called Declaration of Eligibility to the National Program for Strengthening Family Agriculture (*Declaração de Aptidão ao Programa Nacional de Fortalecimento da Agricultura Familiar* – DAP, per acronyms in Portuguese) [...] – to markets, information and education at the local level.” (Segebart *et al.* 2015: 52). Thereby, details on DAP and other conditions for accessing the Policy for Assuring Minimum Prices (PGPM, per acronyms in Portuguese) and the related Policy for Assuring Minimum Prices for Products of the Socio-biodiversity (PGPM-Bio, per acronyms in Portuguese) as well as PNAE and PAA are further referred to in Chapter II.1.5 as well as in Chapter VII.

18 ‘Locally desired’ meaning in line with self-declared interest including of Brazil nut gatherers.

19 Lower Amazon basin and Lower Amazon region are used interchangeably, as they refer to the same territory in the state of Pará, Brazil.

Brazil nut is the most important NTFP – in social, cultural and economic terms – of the Lower Amazon region²⁰ (see Nascimento Júnior *et al.* 2000, Scoles & Gribel 2012, Cunha 2014, Segebart *et al.* 2015). There the gross value of production of NTFPs was BRL 9,5 million in 2011 (IBGE 2011), while NTFP extractivists of this basin rely on Brazil nut gathering and marketing – having accounted for 91% of the gross value of production out of over 25 NTFPs used in this subnational region in 2009 (IDESP 2010: 233). This economic activity accounts for the largest share of income source (13,07%²¹) by product after government transfers (50,60%²²) in 2012, which include public pension funds for ‘rural workers’ (*trabalhadoras e trabalhadores rurais*, in Portuguese) and, particularly, conditional cash-transfers²³, e.g. *Bolsa Família*²⁴ (Fieldwork data 2012). The Lower Amazon basin is composed by one of the world’s largest mosaics of protected areas (PAs), accounting for over half of its total area (see Santos *et al.* 2012).

Overall, Brazil nut extraction can help reconcile livelihood needs and forest conservation through its sustainable management²⁵ (based on Peres *et al.* 2003, Filocreão 2007, Scoles & Gribel 2012, Guariguata *et al.* 2017, Santana *et al.* 2017, Soriano *et al.* 2017). However, a lack of connection between ‘locally desired socioeconomic development’ and biodiversity conservation per sustainable NTFP use prevails, including in the Lower Amazon basin. Against this background, the problem of lack of resource and market access – self-declared by upstream Brazil nut value chain actors (particularly, by gatherers) – is addressed herein (see Chapter I.4).

Whilst zooming in from the national level to the subnational region at stake – the Lower Amazon basin in the state of Pará –, the main study area is depicted in the following figure:

20 Within the Lower Amazon basin, Oriximiná is the municipality with the highest concentration of naturally occurring *Bertholletia excelsa* Bonpl. *Lecythidaceae*.

21 This percentage is not higher, including due to harvest season of five to six months followed by another month for selling the rest of Brazil nuts.

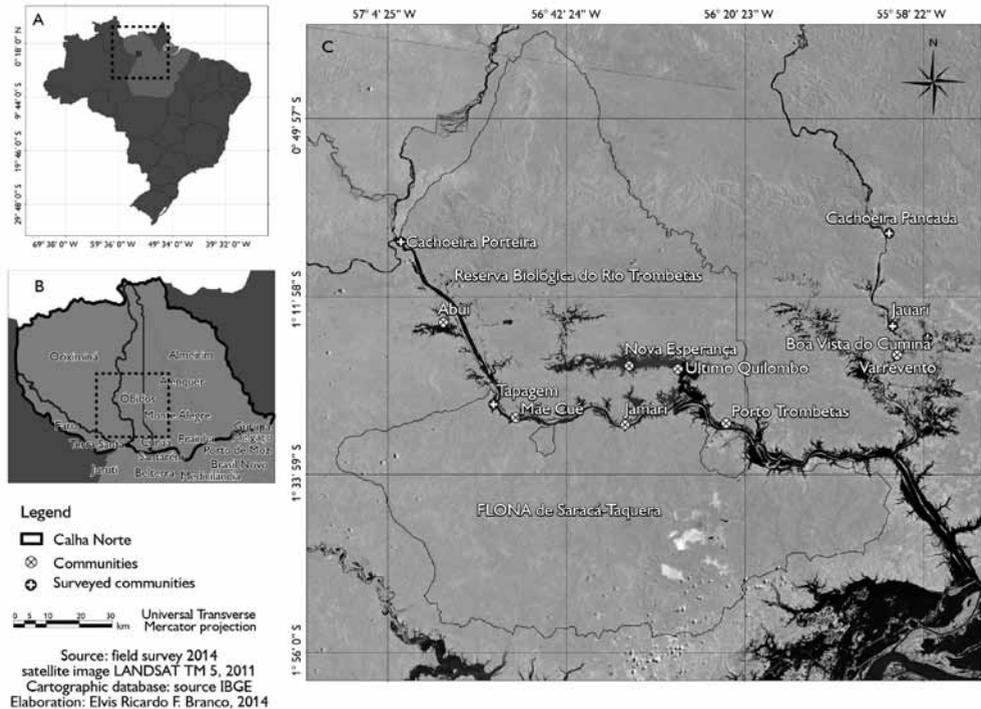
22 This percentage is high, given restriction on gathering forest products and cleaning areas for production of agricultural goods, as compared to non-protected areas.

23 “Conditional Cash Transfer (CCT) programs aim to reduce poverty by making welfare programs conditional upon the receivers’ actions. [...] the government only transfers the money to persons who meet certain criteria. These criteria may include [...] investing in the human capital of their children.” (Fiszbein & Schady 2009: 1).

24 *Bolsa família* is the most prominent poverty alleviating CCT program in Brazil and has gained international recognition, while being applied similarly in other countries of the so-called ‘Global South’ (based on Miccolis *et al.* 2011: 4). This transfer has been created in 2003 by the Brazilian government and is coordinated by the Ministry of Social Development (MDS, per acronyms in Portuguese), under the condition that children of the so-called ‘registered beneficiary’ attend school and receive regular visits from community health agents (*ibid.*: 4).

25 For further reading on sustainable forest management, see e.g. Ros-Tonen *et al.* (2008).

Figure 1: Map – Calha Norte²⁶ region, Pará, Brazil (A); Oriximiná and Óbidos (B); *Quilom-bola* communities by the TRBR²⁷ (C)



Source: Map based on Global Positioning System (GPS) coordinates collected by the author during fieldwork in 2014

Building on the geographic focus as well as the background that makes up the point of departure of this research, its core lies in analyzing the access to livelihood relevant natural resources and markets by forest dependent (traditional) populations involved in gathering and trading NTFPs. It is conceived in the realm of understanding not only factors enabling but, particularly, the ones hampering this access by actors of a given value chain – in this case, the Brazil nut chain in the Lower Amazon region. In this frame, leverage points are identified for upstream value chain actors to co-shape

26 As part of the Lower Amazon basin, the Calha Norte region (see detailed map in Annex VIII) is referred to in this map, since it is commonly verbally stated and, thus, easily understood by respective readers. Zooming in – for two detailed maps of specific Brazil nut stands by surveyed communities along the Trombetas and Erepecuru rivers, see Annexes X and XI, respectively. Zooming out – for a map with the natural occurrence of Brazil nut trees in the Amazon region, including in Brazil, Bolivia and Peru, see Annex XII.

27 The Trombetas River Biological Reserve (TRBR) (*Reserva Biológica do Rio Trombetas*, in Portuguese) is located opposite to the Saracá-Taquera National Forest (FLONA Saracá-Taquera, in Portuguese). Both these PAs of full environmental protection are contained in Figure 1 (map C).

a conducive institutional environment as well as sustainable access to livelihood relevant resources and markets, including in and around PAs.

2 Research and Development Gaps, and Rationale

Before zooming in geographically and in the core of the analysis proposed herein – for obtaining concrete scientific insights aimed at sustainable rural development – it is fruitful to take one step back and reflect upon a key gap that is yet to be explored in research and development (R&D) terrains regarding environmentally sound access to livelihood relevant natural resources and markets. This access is particularly challenging for upstream value chain actors involved in the supply and procurement of agricultural products and NTFPs – the latter represent a sector with predominantly geographically and economically marginalized chain agents.

When scoping for key research and development gaps, which hold true for the rural context of the (Brazilian) Amazon, it was identified that: (i) overall value chain analysis as well as value chain development of agricultural products have been extensively dealt with in academia (see e.g. Kaplan & Kaplinsky 1999, Kaplinsky & Morris 2002) and practice (see e.g. Springer-Heinze 2008, USAID 2008) compared to the analysis and sustainable development of NTFP chains; as has been (ii) the access to natural resources, considering property rights²⁸ and land tenure (e.g. Alston *et al.* 1996, Sikor & Lund 2009); whereas the access ability²⁹ of value chain actors for sustainably accessing NTFPs and markets has mostly been neglected, which calls for prioritizing the analysis of (formal and informal) institutions affecting this access to fill the respective ‘research for development’ gap.

Academic and practice-oriented initiatives on value chain analysis and value chain development of NTFPs as well as agricultural products are all about agents from different chain nodes having access to respective resources. Yet, ‘how livelihood relevant natural resources and markets are accessed’ – based on concrete problems faced by upstream value chain actors due to lack of such access and the constraining institutional environment they are embedded in – in the case of NTFP chains has not yet been thoroughly analyzed.

The abovementioned gaps – captured through extensive literature review (e.g. Donovan *et al.* 2013, 2015, 2016), and experience in (inter)national development agencies while participating in respective debates (e.g. Segebart *et al.* 2015, FAO 2016/unpublished) as well as in the field (Cunha & Scoles 2013/unpublished) – show what is yet to be thoroughly analyzed. Thereby, the combination of (i) value chain analysis for strengthening upstream nodes of food chains and (ii) the access to natural resources and markets in an in-depth context-sensitive institutional analysis – having livelihood relevant access to a given NTFP as well as to markets by chain actors as the focus of the analysis – has not yet been effectively explored. Such analysis is useful for

28 The definition of ‘property rights’ in relation to resource and market access is provided in Chapter II.1.2.

29 The definition of ‘ability’ and related access is provided in Chapter III, which builds up on the one provided by Ribot & Peluso (2003). For literature on related concepts such as ‘capabilities’, see Sen (1981, 1984, 1985), Leach *et al.* (1999).

understanding how access to livelihood relevant natural resources and markets are influenced by certain formal and informal institutions along specific value chains of NTFPs and agricultural products.

The aforementioned sets the rationale for this theoretical and empirical analysis. Such analysis further builds up on exploring the institutional environment upstream chain actors (NTFP gatherers) are embedded in, and on gatherers' ability to participate in inclusive sustainable value chain development – beyond property rights and transaction costs issues. One of the missing parts of the puzzle for understanding respective leverage points – particularly, limitations (to be jointly overcome) to context-sensitive rural development – is to thoroughly analyze the determinants and processes that impinge poverty alleviating sustainable access to natural resources and markets.

What is mainly addressed herein is the research gap concerning the lack of assessments on the role of formal and informal institutions as well as institutionalization and formalization of given norms and rules for understanding livelihood relevant natural resources and market access. This is an innovative approach for the context-specific yet replicable analysis and, subsequent sustainable development by actors of given production networks or value chains.

3 Research Questions and Building Blocks

Building up on identified research and development gaps as well as on a bottom-up problem oriented research approach³⁰ towards providing policy 'suggestions'³¹, the main research question sets the stage of this investigation:

How do informal and formal institutions affect the access to Brazil nuts and markets by buyers and, especially, by gatherers within the Brazil nut value chain in the Lower Amazon basin?

Investigated are therewith the following institutions as determinants of the livelihood relevant natural resource and market access in question. The informal institution is a debt-peonage system '*aviamento*' present in the entire Amazon region and other remote rural contexts (see Chapters II.2.2.1 and V.1). The formal institution analyzed herein is a legal instrument intended to protect the environment in Brazil called 'Term of Compromise' (TdC, per acronyms in Portuguese) enacted per governmental decree³² by the Chico Mendes Institute for Biodiversity Conservation (ICMBio, per acro-

30 For the research approach and background questions asked for identifying problems see Chapter I.4.

31 Instead of employing the widespread term 'policy recommendations', 'policy suggestions' is purposefully used to ensure a respectful approach to give constructive input for policy-making, building up on the author's experience with this wording and approach being more effective in terms of respective uptake, as policy-makers are more prone to consider such suggested input. For such 'suggestions', see Chapter VII.

32 The 'Federal Decree 4340/2002' (Brasil 2002) followed by ICMBio's 'Normative Instruction Number 26' (Brasil 2012a), provides a concrete legal basis for establishing Terms of Compromise (TdCs, per acronyms in Portuguese). The TdC is an 'agreement' written by ICMBio to formally regulate the access/ use of natural resources under dispute with traditional populations who live in PAs of full environmental protection (*Unidade de Conservação de Proteção Integral*, in Portuguese) (detailed in Chapter V.2.2.2).

nyms in Portuguese) – as responsible branch of the MMA for managing federal PAs (see Chapters II.2.2.2 and V.2).

For further guiding this research and potentially other studies on livelihood relevant resource and market access along and beyond value chains in different rural contexts, the sub-research question is also raised upfront:

How are institutions – that affect resource and market access – institutionalized and formalized?

In this search, not only for the aforementioned key determinants shaping such access, but also restricting processes – institutionalization of unbalanced patron-client relations and formalization of local informal institutional arrangements in use, i.e. the ‘Brazil nut Agreement’ and the ‘Brazil nut Project’ (see Chapter V.2.2.1) – affecting the environment as well as the livelihood strategies of geographically and economically marginalized rural households are analyzed.

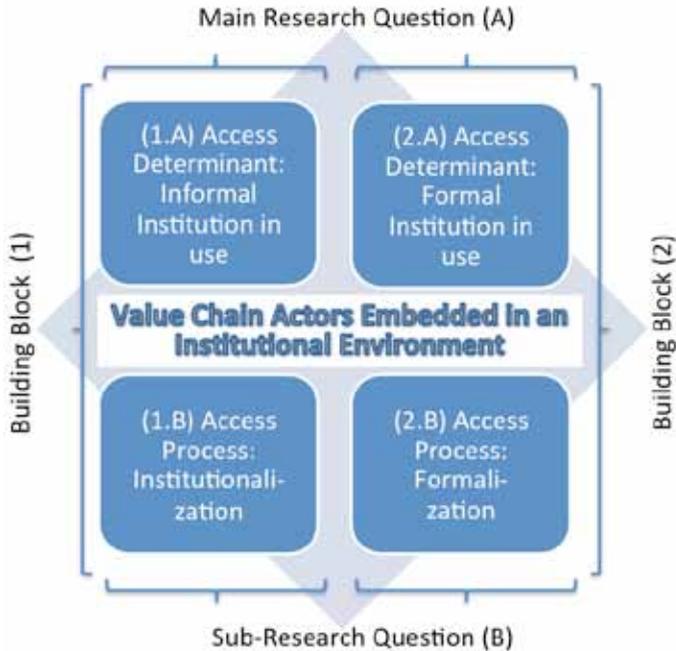
Thereby, for thoroughly answering the main research question, the processes of institutionalization and formalization – of norms and rules, respectively, as well as their implications in the sustainable access to Brazil nut (as a livelihood relevant natural resource) and markets by gatherers and local buyers – are taken under the loop. This is done whilst scoping for leverage points towards fostering environmentally sound access to Brazil nut stands by gatherers and self-reliant inclusion of upstream value chain actors in markets, which is a self-declared aspiration by respective NTFP extractivists.

Further, for answering the main and sub-research questions theoretical and conceptual foundations are combined with empirical evidences. Thereby, this thesis strives to thoroughly understand determinants and processes affecting livelihood relevant resource and market access within the Brazil nut value chain in the Lower Amazon basin³³. In so being, Figure 2 depicts the two building blocks of this thesis, which are constructed towards providing comprehensive and structured responses to both research questions throughout this study. Each one of the building blocks captures respective relations between informal institutions (in this case, *aviamento*) and access as well as to formal institutions (in this case, TdC) and the access in question.

As illustrated in Figure 2, both building blocks comprise the assessments of determinants and processes of this access: (i) the determinant *aviamento* as informal institution and the institutionalization process of its patron-client relations; as well as (ii) the determinant TdC as formal institution and the respective formalization process. The unit of analysis focused upon is the Brazil nut chain in this basin where *Bertholletia excelsa* occurs naturally, in particular around *quilombola*³⁴ communities (see map C

33 All thesis components are captured in the analytical framework (see Chapters I.7, III and Figure 6), whilst its left and right side correspond to the two building blocks of this thesis (see Figure 2).

34 *Quilombolas* are Afro-Brazilians (traditional populations) – who fall under International Labour Organization/ ILO Convention 169 on Indigenous and Tribal Peoples (ILO 1989). *Quilombolas* resisted against and fled from slavery while collectively settling in remote areas, establishing *quilombola* communities *inter alia* in the Brazilian Amazon, including in the study area focused upon herein (see e.g. Acevedo & Castro 1998).

Figure 2: Research Questions and Blocks – Access Determinants and Processes

Source: Own elaboration

in Figure 1), including in the Trombetas River Biological Reserve (TRBR) area, Oriximiná, Pará. At next, a stylized matrix depicting the research questions and building blocks addressed by this thesis.

The elements of this stylized matrix are highlighted as follows, in the realm of understanding key determinants and processes of resource and market access by upstream value chain actors.

Based on the research questions and the building blocks depicted in Figure 2³⁵, the building block (1) is designed to highlight the informal institution-based access limitations addressed by the component of the main research question (1.A): how the informal institution *aviamento* (as a determinant) affects the natural resource and market access of upstream value chain actors; and the component of the sub-research question (1.B): how access limitations occur per institutionalization of the patron-client relations of this debt-peonage system (as a process).

As per both research questions and building blocks depicted in Figure 2, the building block (2) is designed to highlight the formal institution-based access limitations addressed by the component of the main research question (2.A): how the formal

35 Figure 2 allows for a comprehensive and thorough understanding of the (lack of) resource and market access by given geographically and economically marginalized value chain actors for the 'Outcome Pathway Towards an Enabling Institutional Environment in the Realm of Inclusive Sustainable Rural Development' (see Figure 11).

institution TdC (as a determinant) affects the natural resource and market access of upstream value chain actors; and the component of the sub-research question (2.B): how respective access limitations occur per respective formalization (as a process).

The two building blocks of this stylized matrix cutting across both components (respective determinants and processes) of both main and sub-research questions allow for dissecting insights into the relations between them (e.g. showing how the formal institution and the formalization process reinforces the informal institution). Both such building blocks make up the core of the results and discussion of this thesis: Chapters V.1 – informal institution as access determinant (component 1.A) and institutionalization as process (component 1.B) – and Chapter V.2 – formal institution as access determinant (component 2.A) and formalization as process (component 2.B.)³⁶. Thereby this structure helps building up the responses to the main and sub research questions – on respective determinants and processes –, while distilling the respective results pertaining to the resource and market access of upstream value chain actors.

Both research questions are not only designed to identifying and striving to fill research and development gaps against the background of reconciling forest conservation and livelihood strategies but also in addressing local yet worldwide recurrent problems in rural landscapes. The ‘inductive’ character of the research approach herein is known to be more demand-oriented and relevant for actors directly involved in lower tiers³⁷ of given value chains – while providing more detailed insights for global issues³⁸ –, such as the lack of access to livelihood relevant resources and markets.

4 Research Approach and Identification of Problems

“[...] it is at this local social-ecological scale that [problem-based] mechanisms and solutions [...] can be increasingly seen emerging from across the world”. (Mistry *et al.* 2016: 1)

Research Approach

In the frame of the bottom-up research approach herein, this statement highlights the importance of community-level investigation and, particularly, identification of local problems as well as of demand-oriented research approaches for dealing with globally relevant issues. In this case, taking into account demands from actors involved in a given value chain: Brazil nut gatherers as well as buyers, and ICMBio – which re-

36 Additionally, Chapter V.3 captures the role of *quilombola* leaders – given challenges and leverage points they pose upon *quilombola* extractivists’ resource and market access based on informal and formal institutions and respective access processes (detailed in Chapters V.1 and V.2). Chapter V.3 complements the evidences for responding to both research questions mainly provided in the two chapters (corresponding to building blocks 1 and 2) preceding it, while exploring leaders’ individual versus collective benefits in order to further objectively understand resource and market access – along the Brazil nut value chain in this case.

37 ‘Lower tiers’ as well as ‘upstream nodes’ refer to segments comprising the production/ gathering of a good within a given value chain.

38 For community owned management of global challenges affecting socio-ecological systems in Latin America and beyond, see e.g. Delgado-Serrano *et al.* (2017).

spectively strive for socioeconomic development through sustainable NTFP use and full environmental protection³⁹. In so being, the research approach herein is bottom-up, being considerate of feedback loops from country's ministerial as well as state level (e.g. the Environment Secretariat and the Institute for Economic, Social and Environmental Development of the state of Pará – SEMMA and IDESP, respectively, per acronyms in Portuguese), while permeating and feeding into different governance levels, including of civil society and international organizations.

Besides, the 'inductive' character of the research approach herein lies in the fact that both the research questions further emerged from the identification of local problems faced by actors directly involved in the Brazil nut value chain in the Lower Amazon basin.

Identification of Problems

Overall, problems were identified mainly through participant observation and narrative interviews with the abovementioned agents, at household and community levels, yet also key-informant interviews at municipality, state and national levels. Thereby trust was built before key sensitive questions were asked and respect towards local voices who are directly affected by respective problems was ensured throughout qualitative and quantitative data collection phases, while fieldwork at different levels was considerate of interviewees as key societal subjects away from 'investigation objects' (detailed in Chapter IV).

More specifically, for identifying key (self-declared) problems at the local level the following questions (i.e. guiding questions for problem identification) – which can be asked for the same purpose in other rural settings as well – were asked at the very beginning of the research:

- If/ how livelihood relevant natural resources and markets are accessed by upstream Brazil nut value chain actors?
- If not; what are reasons for the lack of such access?
- What limits and fosters such access by Brazil nut gatherers and buyers involved in lower tiers of the respective value chain?

In so being, a key problem identified was that given informal and formal institutions in use limit the access of gatherers to Brazil nut stands and markets, which is also restricted by the lack of organizational structures, accessibility of remote *Bertholletia excelsa* stands as well as the difficult transport conditions for collecting and marketing Brazil nuts, including in the study area of the Lower Amazon basin.

These challenges are particularly faced by upstream Brazil nut chain actors, while there is a lack of understanding of the processes and determinants of the respective limitation on their livelihood relevant natural resource and market access.

39 Full environmental protection is one of the categories – the other being PAs of sustainable use – enacted per SNUC (Brasil 2000). It builds up on the United Nations Convention on Biological Diversity (UNCBD) and IUCN's categorization of conservation approaches as being the classic control-based environmental protection approach to state-owned PAs (e.g. Lausche 2011: 1).

The fact that the identified problems have not yet been thoroughly analyzed, triggered the elaboration of the research questions, whose answers are pursued throughout the thesis. Thereby, concrete insights on determinants and processes concerning the (lack of) access to livelihood relevant natural resources and markets by upstream value chain actors are provided through digging into key restrictions of such access for feeding into subsequent potential counter-action by respective affected civil society agents and (collective rural) enterprises, in addition to government services and policies.

5 Objective and Scope of Research

The objective of this study is to provide research input for strengthening the position of economically and geographically marginalized NTFP extractivists (Brazil nut gatherers) within a given value chain, without undermining the natural resource base. This is at the same time the author's motivation, given frequent economic marginalization of NTFP gatherers, in this case of Brazil nut gatherers with a focus on remote *quilombola* communities of Oriximiná in the Lower Amazon basin, Pará, Brazil. Background questions motivating this research are (that can serve as research questions for so-called pro-poor research for sustainable development based on practice-oriented studies elsewhere): What are key factors limiting the value chain position of NTFP extractivists; and how can they further participate in shaping a conducive institutional environment and promoting sustainable access to livelihood relevant resources and markets? How can institution-based access limitations be transformed into leverage mechanisms towards strengthening the chains position of marginalized value chain actors?

Scope of Research

It is beyond the scope of this research to actively design 'interventions' for enhancing the Brazil nut value chain position of economically and geographically marginalized actors at stake, albeit their respective self-declared desire. This study rather strives to understand what weakens their chain position, whilst providing scientific input for upstream chain agents, policy-makers and 'development practitioners' to leverage the respective position of NTFP extractivists.

Recurrent in value chain analysis and value chain development literature are macro-level approaches for superficially mapping (international trade, investment flows and value addition along downstream nodes of) global value chains and merely scratching the surface when identifying general opportunities for value chain development (e.g. per economic upgrading). They are often not compatible with local realities and even less so with self-declared community needs. Respective federal public policies, if existent, are often not locally adapted, yet have effects on all value chain nodes within national boundaries (see Chapter VII). Instead, the (lack of) access to livelihood relevant natural resources and, particularly, to markets along the value chain of one of the most important NTFPs in the Amazon, the Brazil nut, is taken under the loop. In Brazil, within the Lower Amazon basin, Brazil, focus is laid on the TRBR – a

PA established in 1979⁴⁰ in territories that have been traditionally occupied for over a century by *quilombolas* (Afro-Brazilians, who are often geographically and economically marginalized⁴¹). Attention is paid to this area, given its relatively low HDI (0,66 compared to 0,76, the means for the state of Pará in 2012 – IBGE 2012) and, especially, its contested access to natural resources and markets between these traditional populations and ICMBio (part of MMA), responsible for managing the TRBR.

An in-depth analysis of respective leverage points – beyond shortsighted and often context-blind economic upgrading, yet rather scoping for sustainable access to livelihood relevant natural resources and markets – is mainly conducted at the municipality and community levels in the Lower Amazon region. Such an approach is not only more constructive for dissecting challenges concerning inclusive sustainable value chain development faced by upstream value chain agents but can be applied in other rural contexts. Further, in order to inform the design of related strategies for strengthening the position of such chain actors (NTFP extractivists) in the frame of sustainable rural development, key processes and determinants of their access to livelihood relevant natural resources and markets are analyzed.

“Markets and improved market access are critical for improving rural incomes [...]. Despite this, participation of smallholder farmers in domestic and regional markets in most developing countries remains low due to a range of constraints.” (Ouma *et al.* 2010: 111)

Constraints are hereby framed as obstacles to an effective and self-determined inclusion of NTFP extractivists in respective value chains. This inclusion is hindered by: (i) the institutionalization of dependency-based patron-client relations among buyers and NTFP extractivists that make up *aviamento* as a persisting debt-peonage system; this informal institution has been perpetuated over generations yet incipiently dealt with through the organization of upstream chain actors into cooperatives in the Amazon region – still, such persisting unbalanced trade and dependency is one of the manifestations of the *aviamento* system trapping gatherers into a vulnerable position within the Brazil nut value chain in the Lower Amazon basin; and by the (ii) formalization of norms through legally based limitations to the access to livelihood relevant resources and markets, given the establishment of the TdC – based on Federal Decree 4340/2002 (Brasil 2002) –, a formal institution written by ICMBio without a broad consultation process with affected traditional populations. Designed by ICMBio to mediate conflicts over specific natural resource use in PAs of full environmental protection throughout the country, the TdC entails the formalization of informal institutional arrangements in use for managing natural resources – such as evidenced through the analysis of implications of the TdC of the TRBR (detailed in Chapter V.2.2.3).

Besides intended consequences (i.e. formal institutions restricting the access of inhabitants from such areas to natural resources) there are also unintended consequences (Boudon 1982): in this case Clause 10 of the TdC of the TRBR (detailed in

40 The TRBR was established by the Brazilian Institute for Forest Development (IBDF, per acronyms in Portuguese) under the auspices of the MMA on 21st September, 1979, per Federal Decree 84018 (Brasil 1979).

41 Although Afro-Brazilians make up 50% of Brazil’s population, they represent 70% of poor (IBGE 2010).

Chapter V.2.2.2), limiting the access by upstream Brazil nut chain actors, primarily to markets. This calls for assessing the implications of such formal institution. Before embarking in the search of alternatives to overcoming such constraints, the following is put forward, which very much relates to this research:

“While regulations have not limited or reduced impacts of natural forest production, they do serve to tax the market, exclude rural populations from commerce, centralize control over production and marketing, provide handles on resource allocation (via licenses, quotas, permits, etc.), and support oligopsony⁴² conditions for those merchants with access to state officials and agents, and hence, state-controlled resources.” (Ribot 1995: 1592)

How it can come to implications of not only *aviamento* yet also the TdC and how the institutional environment can be positively transformed for sustainable access to livelihood relevant natural resources and markets, while increasing negotiation possibilities of NTFP (Brazil nut) extractivists is to be discussed throughout this thesis.

6 Research Frontier on Value Chains

The state of the art regarding the analysis and development of (global) production networks⁴³ and (global) value chains⁴⁴ consists primarily in capturing and promoting the performance as well as efficiency that accounts for transaction costs (e.g. Coase 1937) and value addition along the chain, including competitiveness measures of enterprises⁴⁵. Some scholars have regarded value chain governance (e.g. Gereffi *et al.* 2005) and economic upgrading⁴⁶ (e.g. Humphrey & Schmitz 2000, Kaplinsky 2000) as key components of value chain development. Beyond economic upgrading, the assessment of social upgrading⁴⁷ (see e.g. Barrientos *et al.* 2011) and livelihood assets⁴⁸ (e.g. Donovan 2011) mostly in qualitative terms adds to literature on value chain upgrading (see Chapters II.1.3 and V.1.7).

Still, in the realm of sustainable rural development, the analysis of the institutional environment for understanding implications on and feedback loops from specific contexts has not yet been thoroughly explored – with the exception of the practice ori-

42 “Oligopsony – a market form in which the number of buyers is small while the number of sellers in theory could be large.” (Coles & Mitchell 2011: xxii)

43 Global Production Networks (GPNs) were coined in scholarship by Henderson *et al.* (2002).

44 Beyond only regarding production tiers of supply chains, herein it is predominantly referred to ‘value chains’ and not supply chains or production networks, given the analyzed relations among value chain actors when selling and buying given products.

45 For a strictly quantitative assessment of local factors affecting the performance of the Brazil nut cluster in the Calha Norte region, see e.g. Krag *et al.* (2016).

46 Economic upgrading is defined as the process of “firms moving to higher value activities in GVCs [Global Value Chains] with improved technology, knowledge, and skills.” (Gereffi 2005: 161)

47 “Social upgrading is defined as the process of improving the rights and entitlements of workers as social actors and enhancing of the quality of their employment”. (Gereffi & Lee 2016: 26)

48 Livelihood assets relate to the sustainable livelihoods framework and approach first promoted by DFID (1999).

ented work of USAID (no date) that first referred to an ‘enabling institutional environment’ in the frame of the design of value chain development ‘interventions’. The term ‘inclusiveness’ in the context of value chain analysis and value chain development has recently been articulated in research (see e.g. Horton *et al.* 2016: 3) and development fora (see e.g. FAO 2016/unpublished), while the approach towards ‘inclusivity’ still represents an R&D gap⁴⁹.

Given this research frontier, a novel context-sensitive institutional approach for analyzing value chains is proposed herein. It captures the role of institutions (formal and informal) as well as of related processes filtering livelihood relevant natural resource and market access (see Chapters III, VI.1.1.2 and VII.2-4) in order to provide innovative scientific input for socioeconomic upgrading as well as sustainable inclusive governance⁵⁰ (see Chapters V.1.7 and V.2.4, respectively), without undermining local livelihoods and biodiversity.

7 Own Analytical Framework and Model

A novel analytical framework is hereby proposed for guiding the answer to the research questions, while helping to identify and assess the factors affecting the sustainable access to resources and markets of upstream value chain actors in a given institutional environment (see Chapter III – containing the Analytical Framework, thoroughly explained and depicted in Figure 6). These factors are informal and formal institutions that affect the natural resource and market access that is relevant for local livelihood strategies and biodiversity conservation, in the study at stake.

Whilst analyzing institutions in use against the background of rights based and relational access mechanisms (based on Ribot & Peluso 2003), the core of the analytical framework lies in capturing how both formal and informal institutions as well as the respective processes of institutionalization and formalization shape the (lack of) access to natural resources and markets (as well as related benefits) by given chain actors.

Ribot & Peluso (2003) criticized Blaikie’s (1985) conceptualization of ‘access qualifications’ as means for accessing resources to be too vague (see Chapter III.1), yet concretized such means merely to a certain extent. Still, they were the first ones to broaden the respective theoretical understanding and referred to studies particularly in Asia and Africa. Ribot & Peluso’s (2003) categorization into rights⁵¹ based and relational ‘access mechanisms’ is fruitful as it takes complexity into account by

49 The author of this thesis held presentations (see Annex XIII) related to this R&D gap in the frame of this thesis at the following conference sessions: “Markets and Value Chains” at the two last Tropentag Conferences (2016, 2017).

50 Beyond synergistic governance combining private, public and social governance structures (Gereffi & Lee 2016: 25), what is hereby meant with inclusive governance is not only the confluence of vertical and, especially, horizontal governance but also the promotion of spaces for democratic participation (e.g. deliberative councils for the management of PAs), particularly in decision making processes of actors involved in a social sphere, e.g. in a value chain.

51 Here ‘rights’, albeit indirectly related to, are not the same as human rights. They refer to property rights – including laws enacted by governments – in relation to the access right to benefit from certain livelihood relevant resources.

conceptualizing access beyond property rights towards access conditioned by the ability of actors. While this ability is captured by the authors through relational access mechanisms – upon which the conceptual means for grasping the livelihood relevant natural resource and market access hereby analyzed is built –, the latter are disentangled in vein by Ribot & Peluso (2003) into e.g. technology/ capital and social identities/ social relations (Ribot & Peluso 2003: 165), as they are overlapping and partly redundant. Grounded on the need to frame complexity while prioritizing the main channels through which access is filtered, the analysis herein goes further by focusing on formal and informal institutions as well as on their institutionalization and formalization as key processes (see Chapter III.3) affecting livelihood relevant natural resource and market access.

The analysis of the main research question of how formal and informal institutions affect the access to resources (Brazil nuts) and markets is conducted in the case of the Brazil nut value chain in the Lower Amazon basin – as the unit of analysis –, in order to thoroughly understand the implications *inter alia* of given institutions as well as the formalization process of (environmental) norms in PAs in Brazil. Thereby, the key formal institution analyzed is the ‘TdC’ limiting the access to livelihood relevant natural resources – in this case, Brazil nut – as well as to market outlets by upstream chain actors (detailed in Chapter V.2). Whereas the main informal institution investigated is *aviamento* as a debt-peonage system limiting in particular the access of NTFP (in this case, Brazil nut) extractivists to markets (detailed in Chapter V.1). These are specific factors limiting their livelihood relevant natural resources and market access grasped by the analytical framework. Part of its added value is that it can be applied in other rural contexts to understand relations between such (lack of) access and the institutional environment actors of a given value chain are embedded in as well as to capture access disabling factors as leverage points. More specifically on the latter while it focuses on capturing the abovementioned processes for particularly addressing processes pertaining to the access limiting institutions, a model building upon the analytical framework is developed (depicted in Figure 12).

The ‘model on analytical ingredients for self-sustained strengthening of upstream value chain nodes’ is grounded in the analytical framework and serves to understand what is behind problem-based empirical phenomena concerning institutionalization and formalization of access limiting institutions (corresponding to the sub-research question herein). The proposed model adds value to the analytical framework by transforming locally reported institution-based access problems towards the outcome of adapted access enabling institutions for strengthened upstream nodes of food chains.

Both the analytical framework and model proposed herein can be applied in other rural contexts than the one focused herewith, particularly where institutions play a role in resource and market access. This serves as transition to the value added – whilst the contributions of this thesis are focused on in Chapter VII.3 – to which the rest of the introduction is devoted.

8 Value Added of this Interdisciplinary Analysis

Value added of this Interdisciplinary Take

A key value added of this thesis is an interdisciplinary analytical approach towards the understanding of problems – self-declared by local value chain actors, particularly NTFP extractivists – relevant beyond the study area. For grasping the complexity of trade relations of upstream chain actors embedded in an institutional environment of contested resource and market access along the Brazil nut value chain in the Lower Amazon basin (Pará, Brazil), an integrated people-centered and planet-sensitive research approach was employed. Whilst the background of this research is human-nature relations, theoretical foundations explored herein relate to political ecology. Yet, it is opted not to explicitly use political ecology (see Footnote 102), as it would not add value to responding to the main and sub-research questions. It is rather opted to avoid the risk of falling into the respective often shallowly employed label and being trapped in the respective limiting conceptual frame as well as analytical silo that political ecology can represent. Instead mixed-methods and theories are purposefully drawn from sociology (e.g. institution(alization) and access theory), economics (e.g. scholarship on value chains) as well as human geography itself (e.g. (global) production networks), which proved to be fertile for addressing the local self-declared problems while answering the research questions. Human geography allowed for this constructive combination including of empirical tools such as participant observation from anthropology and ethnology (more specifically, from ethnography), which contributed to better understanding non-verbalized nuances of complex problems of lack of livelihood relevant resource and market access. As opposed to other disciplines, it particularly enables a fruitful employment of complementary conceptual framings – ranging in this case from value chain analysis to institutions and access theory – for better capturing factors limiting local self-reliant sustainable rural development.

Geography is well-positioned for overcoming polarizing dichotomies among environmental conservation and local livelihood strategies, while enabling both context-sensitive and generalizable socioeconomic analyses. Its value added further lies in leaving room for problem and ‘solution’ oriented approaches in order to thoroughly understand key complex processes and determinants of livelihood relevant natural resource and market access, when striving to provide research input for inclusive sustainable development of a value chain in a given territory and institutional environment.

Overall Value Added of this Thesis

This thesis innovates and adds value to scholarship with a context-sensitive and problem-based research approach, which has an inductive character and draws upon a fruitful combination of different research fields: value chain analysis building on institutions and access theory for responding to the research questions. Thereby, the answers to both research questions can provide conceptual and empirical insights for addressing global issues (e.g. the need for strengthening the position of upstream value chain actors in remote areas – by overcoming limiting factors – towards inclusive sustainable value chain development) and self-declared problems elsewhere. Albeit the context ‘specificities’ of the unit of analysis focused upon, methodological and

analytical ingredients can be useful for other contexts of interdependent value chain actors and territories characterized by access limitations to livelihood relevant natural resources and markets in the so-called 'Global South'. The 2030 Agenda for Sustainable Development (United Nations 2015) is designed to address such limitations and trade-offs, while considering that every UN member state as a 'developing country' based on the universality of this Agenda. However exciting it would be to conduct research in such new terrains of new categories for so-called developing and developed countries, it is not the focus of this thesis while it does not answer the respective research questions and raises a new one: no categories instead? It is rather opted to avoid confusion by sticking to a clear already established terminology, referring to respective countries as 'so-called Global North' and 'so-called Global South'⁵² hereafter.

Moving forward, the analysis of NTFP value chains in and around PAs has been neglected throughout the last three decades (see Smith *et al.* 1995), yet it has recently started to gain attention in natural resource management debates⁵³. This is so, *inter alia* due to recent initiatives, as it corresponds e.g. to the topic of a project on 'Value Chains of Brazil's Biodiversity with Origins in PAs led by the United States Agency for International Development (USAID) and the United States Forest Service (USFS) in collaboration with ICMBio and the National Foundation for Indigenous Peoples in Brazil (FUNAI, per acronyms in Portuguese). Their project included a major event on scoping for sustainable value chain development approaches for the Brazil nut chain in PAs, including in the Lower Amazon basin, 18 and 19 August, 2015. However, it is still underrepresented in national and regional policy agendas compared to other sectors, such as large-scale soybean plantations in Brazil and increasingly extensive oil palm production, including in the Amazon. There still is a considerable underutilized potential for exploring the contribution of the sustainable use and marketing of NTFPs to achieve the dual goal of self-sustaining local livelihoods and forests.

In and around PAs of the Lower Amazon region, it is found to be important to conserve Brazil nut stands and value the work of upstream value chain actors upon which not only related ecosystem services provision but the entire chain depend, respectively. In this realm, a novel scientific input is hereby offered for striving to overcome formal (in this case, TdC) and informal restrictions (in this case, *aviamento* as debt-peonage system) for extractivists to further make a sustainable living out of NTFPs. Such input includes the conceptual groundwork and empirical evidences for shaping an institutional environment that is conducive for gathering as well as marketing of Brazil nut in PAs (of full environmental protection), without undermining the natural resource base. This thesis further encompasses evidence-based 'policy suggestions' for mu-

52 While it is acknowledged that 'Global South' is a new terminology often pertaining to countries formerly referred to the so-called 'South', both terms are not synonyms. 'Global South' not only exists in the South but also in the North, as does 'Global North' not only refer to countries or localities located above the Equator, as is the case for Australia. Based on Glokai (2012: 4), Global North and Global South can be seen as privileged and disadvantaged localities independent of geographic coordinates. However, this could be explored in depth in a research of its own dedicated to detailing such categorization in relation to the notion of development.

53 For literature on community-based natural resource management and devolution, see e.g. Agrawal & Gibson (1999), Blaikie (2006), Shackleton *et al.* (2010).

nicipality (Santarém and Oriximiná), state (Pará), national (government entities) and international (UN) administrative levels. Such suggestions are offered, for instance, to ICMBio (MMA) for it to assess how it deals with conflicts over natural resources with (traditional) populations living in such areas – not only in the TRBR but also in other PAs, while avoiding to weaken the position of NTFP extractivists in a given value chain, in this case the Brazil nut chain in the Lower Amazon basin.

A key component of the value added of this thesis is a novel analytical framework for analyzing the (lack of) access to given natural resources and markets as an innovative approach for value chain analysis and value chain development of agricultural products and NTFPs. The analytical framework helps capturing elements limiting such access in order to provide concrete research input for actors involved in respective production networks to design counter-action measures against these restrictions in given rural landscapes. These, together with the fact that it can be applied in different contexts worldwide, are key reasons for the relevance of the proposed framework (detailed in Chapters III and VII.2).

In so being, this thesis' added value to so-called 'research for development' lies in thoroughly analyzing existing factors limiting livelihood relevant natural resource as well as market access and does not rely on creating elements originally thought to be conducive for local sustainable development (e.g. cooperatives for collective marketing that often turn out to only promote individual benefits of its leaders to the detriment of collective socioeconomic benefits). All in all, it adds value to the science-policy-practice interface by analyzing leverage points for overcoming specific determinants and processes limiting the sustainable access to livelihood relevant natural resources and markets by upstream value chain actors who can further co-shape the institutional environment for inclusive self-sustaining value chain development.

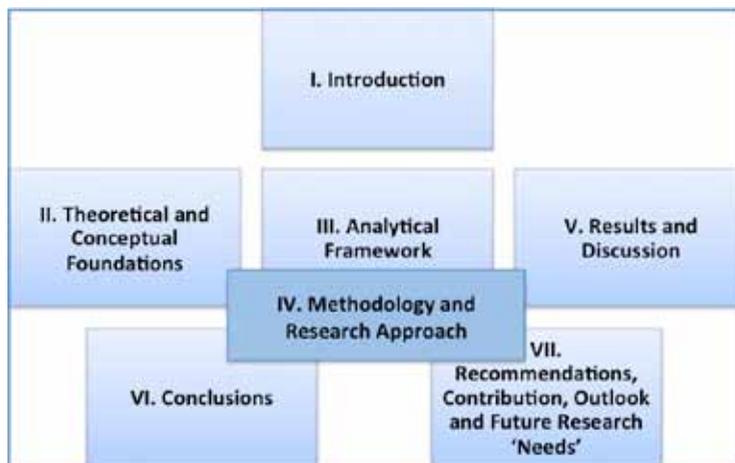
Finally, it is key to use the positive momentum of the launch of the 2030 Agenda for Sustainable Development (United Nations 2015) for further filling the debates with conceptual and empirical evidence for institutional, organizational and structural changes as well as locally adapted policies as concrete steps towards the people and planet-sensitive future⁵⁴. Whilst feeding into SDGs 1, 2, 3, 4, 5, 8, 10, 12, 13, 15 and 17, a solid research base is provided for not only promoting biodiversity conservation but also self-reliant inclusive sustainable rural development in a long-term.

54 These terms relate to the 'future we want' – the title of the Outcome Document of the United Nations Conference on Sustainable Development, which was formally published as a Resolution of the General Assembly of the United Nations on 11th September, 2012 (United Nations 2012). The term hereby referred is not stated above, as it is not clear who is 'we', while it might not be inclusive and considerate of what certain minorities such as traditional populations want for their future.

9 Reasoning About this Thesis' Structure

This thesis is structured as depicted in the following picture⁵⁵:

Figure 3: Structure of this Thesis



Source: Own Elaboration

The introduction (Chapter I) sets the stage of this thesis by synthetically elaborating on research (and development) gaps, problems, questions, objective and scope as well as this thesis' value added to respective debates and literature.

Thereafter, theoretical foundations pertaining to value chains, informal and formal Institutions as the basis drawn from literature are presented and discussed (Chapter II). At first, an overview on the literature on value chains and its components as well as value chain development approaches are presented since the unit of analysis is the Brazil nut value chain (Chapter II.1). Given value chain (development) is all about resource and market access by chain actors, its determinants are, subsequently, explored theoretically. These are institutions, which are disentangled into informal and formal institutions given their role determining the access to (natural) resources and markets of upstream actors of the chain at stake (Chapter II.2).

Equipped with this basis and definition of these important concepts to understand empirical phenomena in question – including the notion of access affected by a given institutional environment –, a novel analytical framework as problem-based and institutions-oriented value chain analysis approach is developed (Chapter III). To comprehensively address both research questions, this analytical framework (Figure 6) consists of two parts (its left side – corresponding to the building block (1), and the right side to the building block (2), detailed in Figure 2). As key analytical pillars of this framework, conceptual underpinnings (Chapter III.1) and relations (Chapter III.2) as

⁵⁵ For a comprehensive overview on the chapters and analytical framework of this thesis, see Figure 6.

well as processes (Chapter III.3) influencing resource and market access by upstream chain actors are delineated.

The thesis' methodology and research approach is subsequently shown (Chapter IV). This chapter includes sampling methods (Chapter IV.1), data collection methodology (Chapter IV.2), data management and analysis (Chapter IV.3), the research ethics herewith complied to (Chapter IV.4) as well as challenges of the methodology (Chapter IV.5).

Such research design elements and steps build the foundations for understanding the empirical evidences that follow (Chapter V). This chapter is divided according to the theoretical and analytical chapters: it begins with empirical findings and discussion on the informal institution (*aviamento*) as access determinant as well as the institutionalization process of patron-client relations (Chapter V.1), followed by the formal institution (TdC) as well as the formalization process of informal institutional arrangements (Chapter V.2). Additionally, this results and discussion chapter is complemented with an overview on the multifaceted role of local leaders (of the analyzed communities) in shaping resource and market access is provided (Chapter V.3). This is done while intending to provide an unbiased holistic perspective upon access limitations as the locally self-declared problem for which strategies, leverage points and alternatives are identified within the chain at stake.

Concluding remarks are put forward (Chapter VI), whereby highlights of the responses to both the main and sub-research questions are elaborated on (Chapter VI.1), following the structure of both building blocks. The conclusion is finalized with a concise wrap up combined with lessons learned, while findings are put into perspective on the pathway to sustainable inclusive rural development beyond the subnational region of the Lower Amazon, Pará, Brazil (Chapter VI.2). Finally, recommendations are synthetically put forward – according to both building blocks, scale and directly/ indirectly involved chain actors –, as is the thesis' contribution, research frontiers and 'needs' for environmentally sound resource and market access, whilst strengthening upstream NTFP (Brazil nut) chain actors' position (Chapter VII).

II. Theoretical and Conceptual Foundations: Value Chains, Informal and Formal Institutions

1 Value Chains

This chapter focuses on the conceptualization of value chains and not global value chains (GVCs), given the latter has extensively been dealt with in literature and business practice. As opposed to other similar terms e.g. world systems and commodity chains (see Wallerstein 1974) and supply chain, which are concepts developed and applied in business administration and logistics particularly in reference to supply chain management. Whereas cluster – as ‘local production arrangements’ (*arranjos produtivos locais* – APLs, per acronyms in Portuguese) as applied in Brazil by scholars (see e.g. Lastres & Cassiolato 2004) and policy-makers (e.g. officers from MDIC) – as well as production networks are both regarded as part of value chains herein. Besides, provided this thesis is written for different audiences beyond national boundaries, it is herein referred to value chains, while the term cluster – in the sense of supply/ value chain or “value web” (Virchow *et al.* 2016: 233) – is only applied in Brazil. Yet, in other countries and regions, clusters are understood as production-marketing-processing hub of strongly interdependent input and market actors involved in generating one overall output: a given product with components delivered by each one of these agents – without them, this product would not exist (e.g. a car with its parts produced or supplied by each firm to the automobile industry, which are all part of the same cluster).

Based on the abovementioned, after the theory chapter, only the concept of value chains is employed for avoiding misunderstandings and fitting in better in overall debates anywhere. Similarly to fair trade and organic labels, since the inception of the concept of value chains in the 1980s, it has been labeled differently, which might be confusing for everyone else but the actor who created a new term that does not significantly differ from the ‘old ones’ to create a new ‘label’. For instance, an additional term to refer to the same unit of analysis “value chain stream” (*in lieu* of ‘value chain within a given territory’), while referring to the old narrowly framed leverage point of economic performance for addressing chain upgrading as regional development intervention and claiming their contribution to be “beyond upgrading typologies” (see Figueiredo Júnior *et al.* 2017: 1-2). Contrary to creating such new labels, it is hereby attempted to provide conceptual, analytical and empirical ‘evidences’ as scientific input for addressing the research questions. This is done in the realm of scoping for key leverage points (institutions in use, herein) to strengthen the chain position of economically and geographically marginalized NTFP extractivists (in the case of the Brazil nut value in the Lower Amazon basin).

In so being, as follows, attention is rather paid to the conceptualization of value chain for understanding the access to livelihood relevant resources and markets along upstream nodes of the NTFP chain at stake. In this realm as well as for analyzing a given chain, the definition of the concept value chain as well as the scope and approach for chain analysis and development are offered as follows.

1.1 Concept, Scope and Approach for Value Chain Analysis and Development

The state of the art of literature on value chain analysis and development serves as a theoretical basis, while it enables disentangling both these concepts and deepening the analysis of their key components herein. Research and development problems addressed herein are the lack of access of forest dependent rural dwellers to natural resources and markets as well as the lack of an enabling institutional environment (see its relation to value chains in Chapters II.1.3 and its definition in II.2.4) for reconciling biodiversity conservation and livelihood strategies in the Amazon. These problems call for developing an analytical approach as a research for development approach for tackling this problem. Thereby, it is fruitful to analyze the relationships of (overcoming) this lack of access and lack of enabling environment with informal and formal institutions (see Chapters V.1 and V.2, respectively) affecting the collection and marketing of Brazil nut, particularly in and around PAs.

Provided with a novel analytical framework (see Chapter III) value chain analysis as it is conducted herein, moves beyond mapping chain actors and activities. Whereas value chain development itself – i.e. the design of ‘interventions’ for economic upgrading¹ and vertical governance (see Chapters II.1.2.1 and 1.2.2, respectively) – is beyond the scope of research and hence not part of this thesis itself, yet still to be informed by inputs of the analysis herein. Thereby, analytical findings are to feed into socioeconomic upgrading² based on co-enhancing the ability³ of Brazil nut gatherers as well as to inclusive governance building up on (vertical and) horizontal coordination⁴. Evidences are further understood with theory, while scoping for leverage points aimed at strengthening the value chain position of Brazil nut gatherers in upstream nodes of this chain in the Lower Amazon basin.

This lays the groundwork for the empirical analysis of local extraction and marketing among Brazil nut value chain actors who are embedded in an (organizational and) institutional environment within the Lower Amazon region, Pará, Brazil.

Provided this introductory rationale for the scope of this chapter (II.1.1), the theoretical foundations for value chain analysis follow.

As indicated in Chapter I.8, the disciplines used for value chain analyses herein are not only economy but also social sciences including sociology as well as geography or rather an interdisciplinary mix of them (based on Terpend 1997). Employing only economic models (e.g. neoliberal development and growth models⁵) with fixed assumptions and axioms has proven to fall short in capturing the complexity of market functioning (e.g. at the global financial crisis in 2008 and 2009). This calls for ‘explana-

1 It refers to the broadly used concept economic value chain upgrading, which relies on the ability of producers or NTFP extractivists to first participate in the respective chain (Donovan *et al.* 2013), and, secondly on their ability to raise their competitiveness and performance while acquiring new functions along the chain (based on Humphrey & Schmitz 2000).

2 For a conceptualization of socioeconomic upgrading, see Chapter II.1.3.

3 For a conceptualization of ability based on Ribot & Peluso (2003), see Chapter III.1.

4 For a definition of inclusive governance, see Chapter II.1.3.

5 One of most referenced growth models is the Solow growth model (Solow 1956).

tory multi-disciplinary research' in order to understand value chain dynamics and 'development' potential.

The Brazil nut value chain represents the unit of analysis herein and serves to understand the problems at stake – particularly the lack of access to markets by gatherers in the Lower Amazon basin –, while answering both research questions (see Chapter 1.3). The understanding of the relationships among these variables provides research input for chain agents and service providers to co-shape an enabling institutional environment for inclusive sustainable 'rural development pathways' adapted to local needs.

Approaches for so-called 'local development' based on value chain analysis may differ according to the lenses it is looked at. It depends on whether the viewpoint stems from a so-called 'external agent' (e.g. governmental entity as service provider) or internal actor (supplier/ buyer) to a given chain. This points to the importance of taking the perspective of those value chain agents into account who are mainly affected by the 'problems' (identified by chain actors themselves), which are to be tackled through the joint design of a value chain 'intervention'.

Werner *et al.* (2014) add that in cluster analysis and development programming, non-market institutions have been gaining importance, indicating a recent trend in broadening narrow economic global value chain perspectives. In so being, compared to cluster analyses:

“Value chain analyses thus enable more targeted interventions, directed at firms in a particular sector or along a specific supply chain [...]. While specifying the market as a set of context-specific inter-organizational relationships, value chain projects [...] reinforce the priority of market signals (i.e. prices) as the ultimate arbiters of market participation and the principal mechanism whereby returns are distributed.” (Werner *et al.* 2014: 1239)

The authors refer to what makes up value chain analyses, including their purpose of identifying entry points for specific chain development 'interventions' based on price-setting and benefit distribution mechanisms. Whilst the relevance of such aspects is acknowledged, in this research, asymmetric trade relations within a given value chain are analyzed with a focus on its agents who are embedded in an institutional environment in a territory with a high biodiversity and low HDI. Terpend (1997) refers to agents that engage directly in the value chain, including producers (in this case Brazil nut gatherers in a PA in the Lower Amazon basin), buyers, processors, and indirectly (e.g. NGOs, government, banks).

Temporal and spatial components of value chain analysis can vary based on the research question and problems addressed by scholars. Such approaches for chain analysis can go as far as feeding into the work of development practitioners through methodological guidelines for the design and implementation of 'development interventions' (see Donovan *et al.* 2013 for a review of 11 manuals commissioned by development agencies). Terpend (1997), for instance, regards a supply chain strictly as a concept that can be used for static analysis. Whereas Koulytchizky (1985) refers to its dynamic character, considering value chains comprise time (first input of goods, services as well as consumer demand that will be, subsequently, processed and transformed) and space (markets where production and consumption take place).

A value chain implies an evident vertical path – yet also implicit social ties (based on Wasserman & Faust 1994) – involving various actors over time and space from production or extraction to local marketing and processing. Further downstream nodes until the end consumer are beyond the scope of this research, whereby chain activities are analyzed at the subnational regional level with a focus on NTFP extraction and local trade. However, what is relevant herein – while explicitly denoted by local production networks and clusters within given value chains – is the importance of horizontal linkage analysis (based on Terpend 1997). The latter plays an important role in capturing the (organizational and) institutional environment – in which the upstream value chain segments are embedded in – together with the respective space for local supply and marketing interaction among chain actors.

Hereby suggested innovative conceptual underpinnings on inclusive governance, socioeconomic upgrading along a given value chain allow for better understanding factors hindering and propelling endogenous development of upstream chain nodes, whilst scoping for inclusive sustainable value chain development. Thereby, the analysis and potential for jointly strengthening a socio-biodiversity⁶ value chain – in this case by Brazil nut chain actors of the Lower Amazon basin –, comes with particular conditions and specificities of NTFPs gathered by (*quilombola*) extractivists from remote (protected) areas. Such particularities will be explained in Chapter II.1.5 and grounded with empirical evidences, providing research input for institutional change while jointly strengthening the (bargaining) position of extractivists within the Brazil nut value chain in the aforementioned territory. Yet at next, an outline of alternatives to the global value chain concept is provided.

Alternatives to the (Global) Value Chain Concept and its Origins

In what follows, related concepts to the term ‘global value chain’ are outlined as alternatives to its ‘business as usual’ conceptualization towards a context and actor-sensitive notion of value chains as proposed herein.

Henderson *et al.* (2002) pioneered the concept of global production networks, while his definition when it comes to production networks “– the nexus of interconnected functions and operations through which goods and services are produced, distributed and consumed –” (ibid.: 445) comes close to the understanding of value chains herein.

Whilst the value chain analysis approach herein is not firm-centered but rather focused on involved actors and their socio-ecological⁷ environment, Henderson *et al.* (2002) emphasize the relevance of the context in which production network firms are embedded in:

6 Socio-biodiversity refers to the interrelation among biological and sociocultural diversity (MDA, MMA & MDS 2009: 6). In Brazil’s development policy and practice spheres, socio-biodiversity products are used interchangeably with the concept of extractivist products and NTFPs. However, provided this thesis is written for different audiences beyond national boundaries, it is hereafter referred to NTFP.

7 For a detailed conceptualization of socio-ecological systems (SESs), see e.g. Ostrom (2009), and based on her SES framework, for an institutional approach per institutions of sustainability (IoS) framework, see e.g. Hagedorn (2015).

“[...] the precise nature and articulation of firm-centred production networks are deeply influenced by the concrete socio-political contexts within which they are embedded”. (ibid.: 446)

This relates to the herewith proposed analysis of the institutional environment – in which upstream chain actors are embedded in – as a frame for understanding the access to livelihood relevant resources and markets within given value chains.

Building upon Hudson (2002, 2004) and Coe *et al.* (2004, 2008), Rainnie *et al.* (2013) argue that:

“[...] GPN [Global Production Networks] analysis takes more seriously the ways in which workers’ embeddedness in place shapes the possibilities for their action. [...] places must be seen [...] as actively and continuously remade locations where local and non-local systems of rules, norms, customs, legal structures and regulatory mechanisms intersect to shape and institutionalise the behaviour of workers and employers.” (ibid.: 180-181)

Rainnie *et al.* (2013) criticize the narrow perspective of global value chain and global commodity chain approaches focused on transnational corporations (TNCs) and international trade. They indicate the importance of localities in which workers are embedded for shaping their room for action within a given global production network and (re)shaping of the respective space. However, such embeddedness is not specified nor it is explained how norms and rules institutionalize workers’ behavior. Whereas this thesis’ research input for how marginalized workers – in this case Brazil nut gatherers who are not yet regarded as employees of e.g. processing mills – can co-adapt the institutional environment they are embedded in for strengthening their position in a given NTFP value chain.

Still prior to thinking of production in networks, Marchesnay & Morvan (1979) coined the francophone supply chain concept *filière* (in French) for industrial and agricultural analysis, whereas the anglophone value chain conceptualization lies in the supply chain management literature (based on Porter 1980). The latter, encompassing a substantial portion of the respective body of publications in the 1980s, emphasized the relevance of building mutually beneficial trade partnerships. Porter’s (1980) contribution to this literature was the first conceptualization of a value chain within a firm as well as between the firm and its suppliers (Donovan 2011).

Porter (1980) defined the value chain as a representation of a firm’s value-adding activities, based on its pricing strategy and cost structure and highlighting the interdependencies of other actors in the creation of value for a single firm.

Since the late 1980s – besides cluster, also called local production arrangement in Brazil (APL, per acronyms in Portuguese) –, the concepts of supply chain and value chain have both been used in the framework of development programming and evaluation (e.g. Griffon 1989, Terpend 1997). Griffon (1989) proposed the classification of supply chains into short and long. The latter typology applies to value chains of socio-biodiversity products, which usually have numerous (intermediaries) buyers at different levels and various production and marketing phases from distant NTFP stands in forests to processing mills in urban centers – not counting the retail and further downstream commercialization.

Whereas the commodity chain concept complemented its focus, so far, on a global and macro level with a regional and micro level approach in the 1990s, including the analysis of relationships amongst firms for coordinating production and commercialization at an international scale (Bair 2005).

Further, attention was paid to the role of lead firms in upgrading and contributing to ‘development’ in the so-called ‘South’ (Gereffi 1999).

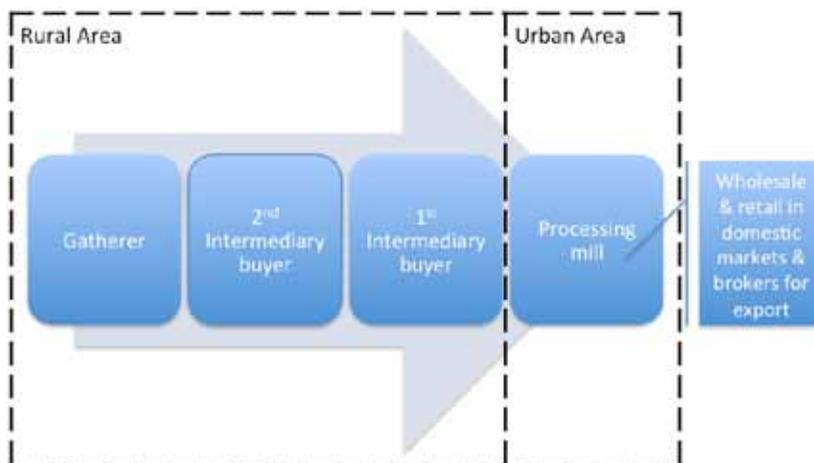
In the development research setting, the value chain concept surged in the 2000s, building up on the analysis of commodity chains and Porter’s (1980) value chain concept (see e.g. Kaplan & Kaplinsky 1999, Kaplinsky & Morris 2002, Donovan 2011).

Provided with the above overview of the origins and emergence of the value chain notion and related concepts, it is fruitful to turn to the characterization of the value chain concept and practice.

Value Chain Concept and Use

All the aforementioned concepts relate to or are part of value chains as understood herein, whereas the local rather than the global level is scoped by this research given respective literature gap. Processes and, particularly, determinants of unbalanced trade relations between gatherers and buyers along upstream nodes of Brazil nut chain in the Lower Amazon basin are analyzed. The value chain concept serves this purpose as unit of analysis, which allows to understand how such actors’ natural resource and market access are affected by institutions, while exploring leverage points for strengthening the position of NTFP gatherers. In order to visualize how the value chain at stake is structured as per actors directly involved in gathering, marketing and processing Brazil nuts in upstream chain nodes, the following figure is offered:

Figure 4: Stylized Brazil nut Value Chain in the Lower Amazon basin⁸



Source: Own elaboration

8 This value chain applies, particularly, for the municipalities of Oriximiná and Óbidos, Pará, Brazil. For the respective Brazil nut value chain in pictures, see Annex V. For the mapped Brazil nut value chain in Alenquer, Pará, Brazil, see Annex VI.

From remote Brazil nut stands in the forests of Oriximiná, this natural resource changes hands from gatherers to *regatões* (in Portuguese) – i.e. 1st and 2nd (level) intermediary buyers – purchasing Brazil nuts at community level. With a few exceptions (rare cases of gathering and purchasing controlled by families as well as cooperative marketing by CEQMO until 2012), 1st level intermediary buyers sell Brazil nuts to one of the three processing mills in the urban centers of both Oriximiná and Óbidos (see respective Brazil nut value chain map in Annex V and the one of Alenquer in Annex VI). The callout represented by the last rectangle on the right (outside the referred urban centers), shows how the Brazil value chain continues beyond the study area (focused on respective upstream chain nodes within the boundaries of Figure 4).

Further, there are different types of value chain definitions coined by researchers and used by development agencies, including supply chain, which is defined as an “organized system of relationships” (De Bandt 1991: 232) for producing a given good. Definitions of the term ‘value chain’ itself assume three distinct *focci* (based on Donovan *et al.* 2013):

(i) Activity-focused definition provided by e.g. the World Bank, *International Institute for Environment and Development* (IIED), USAID, FAO and the *Gesellschaft für Internationale Zusammenarbeit* (GIZ, per acronyms in German) does not refer to producers themselves but to the functional process of activities. Value chain is thereby defined as follows:

“A sequence of related business activities (functions) from the provision of specific inputs for a particular product to primary production, transformation, marketing, and up to the final sale of the particular product to consumers [...]”. (Springer-Heinze 2008: 242)

Whilst frequently used, it is an activity-based definition that marginally includes upstream actors as ‘sourcing partners’ (e.g. of raw materials) and service providers. Attention to this gap is paid by Figueiredo & Prescott (2004: 16) who refer to a production chain (literally translated from Portuguese for differentiating from the supply chain concept), rather than a value chain. The production chain is seen as an arrangement of interactive components, ranging from service providers and NTFP gatherers, over (agroforestry) systems for agricultural production, sourcing, transformation, distribution and marketing to consumers of products and byproducts as well as disposal.

(ii) Actor-focused definition provided by the *Centro Internacional de la Papa* (CIP, per acronyms in Spanish) and the United Nations Industrial Organization (UNIDO), which is less common than the activity-based one (Donovan *et al.* 2013). Commissioned by CIP, the following authors conceptualize value chain as:

“[A]ll the actors, and the entirety of their productive activities, involved in the process of adding value to a specific crop or product” Bernet *et al.* (2006: 159).

The International Labour Organization’s (ILO) methodological guideline for value chain development includes a rather activity-based definition (Herr & Muzira 2009). Whereas, more recently, the conceptualization of (global) value chains shows a shift towards an actor-based one, “[it] has to do with how people interact in markets” (Development practitioner Erick Zeballos interviewed by ‘The Global Value Chain Initia-

tive’ at Duke University in the United States of America in the frame of the “Duke Global Summit from 29th–31st October 2014”⁹).

(iii) Network-focused definition, which implies that value chains need to be ‘constructed’, at first, for responding to consumers’ demand (Donovan *et al.* 2013). This network-based definition stems from Hobbs *et al.* (2000), from which the International Center for Tropical Agriculture (CIAT, per acronyms in Spanish) derives its definition of a value chain:

“[A] strategic network among a number of independent business organizations.” (Lundy *et al.* 2007: 25)

Whilst the authors mention collaboration among such firms within a given value chain, they assume that network members are independent yet willing to collaborate. In practice, (mutually beneficial) collaboration can turn out to be a challenge. This is the case of the Brazil nut value chain in the Lower Amazon region, albeit actors are (inter) dependent given provision on advanced payments for gatherers by buyers while committing respective supply year by year (see Chapter V.1).

Overall, when it comes to smallholders’ linkages at production level, a complementary (to the conventional economic frame) definition is provided: Supply chains are social networks maintained through negotiations based on coercion and partly on structures (based on Busch 1989). Amongst these structures are non-material aspects, such as informal institutions in use (norms) and expected behavioral patterns. Thereby, supply chain management as broadly used in business administration literature and practice. This is to be distinguished from the notion of value chains as unit of analysis herein, while trade relations between economically and geographically marginalized NTFP gatherers and buyers are focused upon.

In this thesis, the actor-focused is combined with the network-focused approach for building a novel ‘actor-focused based on network’ definition in the realm of providing a conceptual groundwork for value chain analysis/ development targeted at a specific group of value chain actors in a given territory. In this perspective, a value chain is defined as: an arrangement of multiple interconnected actors (private sector, government and civil society organizations) that includes different functions (extractive/ productive, commercial, regulating institutions and supporting services), which manifest themselves in activities and processes to access and transform an unprocessed (natural) good into a commercialized product (based on Kaplinsky & Morris 2002, DFID 2008, Springer-Heinze 2008, Riisgaard & Ponte 2011).

9 Interview available at: <<https://globalvaluechains.org/video/duke-global-summit-practitioner-interview-zeballos-erick>>; accessed on: 03.08.2017.

This understanding of a given value chain as actors within networks can serve as ‘unit of intervention’ for actor and context-sensitive value chain development towards a locally desired inclusive¹⁰ sustainable¹¹ value chain development.

At next, an outline (yet by no means exhaustive overview) of the ‘development’ notion is offered, as part of overall foundations for and key conceptual pillars of value chain development.

‘Development’ as Foundation for the Value Chain Development Concept

Prior to going into the concept of value chain development, an overview of the ‘development’ notion is provided as follows. In short, current ‘development theories and interventions’ applied in debates and practice relate to the concepts of:

- Sustainable development (as of the 1980s): sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs (based on Brundtland 1987). The focus has increasingly been laid on environmental issues (see e.g. United Nations 1992, 2015).
- Human development (as of the 1960s and, more prominently, as of the 1990s): Multidimensional view of development beyond economic growth, while rooted in human rights – social, cultural, political rights (see e.g. United Nations 1966, Haq 1995, Ravallion 1997).
- Post-development (as of 1980s and, more prominently, as of the 1990s): Local communities are capable of solving their own problems with their own ideas, while being more independent from external development interventions often unsuitable and/ or detached from local contexts and institutional environments (see e.g. Esteva 1987, Escobar 1995, Radcliffe 2005)¹².

Overall, the perspective upon ‘sustainable inclusive development’ offered herein is well captured in what follows:

10 Inclusive hereby refers mainly to traditional populations, in particular *quilombolas* according to the ILO Convention 169 (detailed in Footnote 34) – in addition to other marginalized groups in vulnerable situations. While youth and gender aspects are captured in V.3.7, inclusive as it is used herein, is not intended to have an exhaustive reference to all different vulnerable groups (social categories such as gender, age, disability). To be comprehensive of the overall notion of inclusion would fall beyond the scope of this thesis. Thereby, for a specific value chain analysis considering the diversity of issues (e.g. gender equity) within households and also at broader levels, see e.g. Barrientos (2001), Mayoux & Mackie (2008), Riisgaard *et al.* (2010), Schumacher (2014).

11 For a conceptual and methodological approach on sustainable food value chain development, see e.g. Neven (2014).

12 According to Neuburger & Schmitt (2012: 121), the debates on post-development in the 1990s began with the respective seminal piece of Rahnema & Bawtree (1997). While the *deutschsprachige geographische Entwicklungsforschung* (in German) already featured in the making of the development discourse – and later in productive studies by e.g. Kreuzmann (2003), Bohle (2011) –, it had not yet engaged in the post development debates. It was only as of 2000 through e.g. Korf (2004), Mueller-Mahn & Verne (2010) that the *deutschsprachige geographische Entwicklungsforschung* began to engage in the debates of post-development and post-colonial theories (*Post-Koloniale Theorien*, in German).

“Development can only occur when the people it affects participate in the design of the proposed policies, and the model which is implemented thereby corresponds to the local people’s aspirations [...] The indigenous people [traditional populations] of the Amazon have always lived there; the Amazon is our home. We know its secrets, both what it can offer us, and what its limits are [...]” (Statement by the Coordinating Body for the Indigenous Organizations of the Amazon Basin 1989 cited in Peet & Watts 1996: 28)

This statement refers to locally desired and required changes to address local problems in the frame of an affected people centered and planet-sensitive (value chain) ‘development’ approach.

Having the stage set with the notion of ‘development’ outlined above, the groundwork for value chain development is complemented with respective conceptual pillars and guidelines.

Conceptual Pillars of and Guidelines for Value Chain Development

First, ‘pillars for value chain development’ laid through the lenses of this research are presented. Although this research goes beyond value chain analysis, it does not strive to construct a value chain development ‘intervention’ by itself, which is a widespread output of the entities behind respective ‘methodological guidelines’. Instead, the value chain analysis approach taken herein focuses on actors embedded in social and commercial networks and institutional frameworks in a given territory. It is a context-sensitive institutional approach to analyzing the access to livelihood relevant natural resources and markets by upstream chain actors. Thereby, the Brazil nut value chain in the Lower Amazon basin serves as the unit of analysis for understanding access implications of informal and formal institutions as well as institutionalization and formalization processes while identifying leverage points for strengthening gatherers’ value chain position.

The point of departure of this analysis are self-declared problems and/ or jointly identified needs pertaining to what local value chain actors – particularly NTFP extractivists – want to address and are to be tackled through the participatory design of a value chain development initiative. In the frame of a bottom-up analytical approach, attention is paid to the local context towards the analysis of a socio-biodiversity cluster within a given value chain (see Chapter II.1.5). This approach serves for scoping for locally owned solutions (based on Mistry *et al.* 2016), while informing inclusive sustainable development approaches aligned to respective national policies for long term self-reliant endogenous development.

Second, relevant ‘guidelines for value chain development’ are outlined. According to e.g. Humphrey & Navas-Alemán (2010), Staritz (2012) and Stoian *et al.* (2012), value chain development has been gaining importance in rural ‘development interventions’ that aim at economic growth and increasing the performance of agricultural value chains.

With the beginning of ‘development programming’, several governmental agencies started to elaborate ‘methodological guidelines’ for practitioners to conduct value chain analysis, commonly employed to inform the design of ‘development interventions’. These guidelines are mostly used by development practitioners as a ‘step-by-

step how to guide' to achieve distinct developmental goals – e.g. poverty reduction and economic growth – through access to resources as well as to markets or improved business environment (based on Donovan *et al.* 2013).

“The guides facilitate the identification of options to enhance opportunities for small-holder chain participation by influencing the political, legal, and business environment and by establishing new linkages between smallholders and promising markets”. (ibid.: 16)

The methodological guidelines from the GIZ, IIED, CIP, UNIDO and CIAT inform their ‘development programming’, which is set to be targeted at addressing commercial relations of certain value chain actors. This scope facilitates the elaboration of tactics for jointly working on meeting the needs of a selected group of value chain agents¹³ that already have or can have commercial relations (Donovan *et al.* 2013). Such approach, e.g. targeted at upstream chain agents – as is the case for the analysis herein – is more prone to consider local environmental conditions and given socioeconomic contexts than global value chain approaches involving all its participants. Finally, context-focused chain approaches are more likely to provide locally relevant and self-reliant pathways to strengthening the position of upstream chain value actors than the latter.

Value Chain Development Concept and Use

There are two major types of value chain development process definitions: (1) an actor-value chain process that strives for strengthening the position of certain (upstream) chain actors and enhancing their relationships, including with downstream value chain agents, and (2) a ‘business-institutional environment’ process, which aims at improving the framework in which production, processing and marketing are embedded (based on Donovan *et al.* 2013). Enhanced self-determined social organization and an enabling institutional environment for production and commercialization is key for value chain upgrading and governance (see Chapters II.1.2.1 and 1.2.2, respectively) – as important drivers of (actor-centered and network based) value chain development.

Webber & Labaste (2010) define VCD as actions that “upgrade the whole system to the benefit of all value chain participants.” (ibid.: 12)

Overall, value chain development can be seen as:

“[...] the effort to strengthen mutually beneficial linkages among firms so that they work together to take advantage of market opportunities, that is, to create and build trust among value chain participants”. (Webber & Labaste 2010: 16)

This definition captures the concept of value chain development, whereas it is hereby referred not only to firms but also to directly and indirectly involved non-firm¹⁴ value chain actors. On trust it is further noteworthy that it can come with asymmetric depen-

13 So-called ‘development interventions’ along a value chain can be targeted at e.g. economically marginalized value chain actors who are often trapped in lower tiers of a given chain.

14 ‘Non-firm actors’ (e.g. small-scale producers and NTFP extractivists from traditional communities) is frequently referred to chain agents other than firms (in terms of registered businesses that have a company registration number). It is broadly used in value chain debates and literature, see e.g. Altenburg (2007: 6), Werner *et al.* (2014: 1219).

dence relations between buyers and producers or NTFP gatherers so that positive yet also negative aspects are grasped, which are both considered as leverage points throughout this thesis.

Moreover, Vermeulen *et al.* (2008) consider value chain development to be made up of the analysis of the institutional framework in which value chain actors produce and/or market their goods for identifying options aimed at promoting institutional change while leading to smallholder benefits.

Building up on the aforementioned, value chain development can be achieved through changes in institutional, legal as well as political frameworks, in which value chain actors interact (Donovan *et al.* 2013). A so-called ‘pro-poor’ value chain development ‘intervention’ is one that is targeted at smallholders and other economically marginalized (groups of) individuals. There have been substantial discussions among development practitioners about ‘making markets work for the poor’ (see e.g. Ferrand *et al.* 2004). While value chain development allows for multi-scalar scopes, Purcell *et al.* (2008) emphasize the importance of understanding the (local socioeconomic) context in which value chain actors operate.

As one of the first steps suggested by value chain development guidelines, a chain within territorial boundaries is to be selected – by using as criteria e.g. relatively low HDIs and importance of the product for ‘socio-biodiversity reproduction’¹⁵. Subsequently, a bottom-up value chain analysis approach can be applied, starting from the contextual analysis for self-declaration and/ or joint identification of problems that locally affected value chain actors want to and can collectively address – e.g. lack of market access or other challenges inherent to certain chain nodes. Such problems are then to be tackled through the participatory design of a spatially explicit value chain development initiative.

Overall, value chain development can be characterized by five drivers of change: a business enabling environment¹⁶, efficient processes, environmental as well as social ‘standards’, product differentiation and its quality (Herr & Muzira 2009).

Beyond such performance focused take on value chain development:

“[T]he potential for achieving [...] improved coordination and collaboration will depend on various factors, including [local] infrastructure, attitudes and capabilities among chain actors, the distances between businesses, and access to different types of services (such as technical and business advisory services and financial services)”. (Donovan *et al.* 2013: 18)

Thereby, the authors refer to drivers other than efficiency and competition along given chains, while challenging prevailing value chain debates and research for develop-

15 This term is literally translated from Portuguese to grasp its meaning in Brazil, while referring to reproduction of social and environmental traits of chain actors living in and from a given (forest) landscape.

16 A business enabling environment is referred to by e.g. USAID (no date), whereby it focuses on enabling factors for the economic performance and competitiveness of firms. As opposed to this narrow perspective, an enabling institutional environment refers to not only firm but also to non-firm actors while it concentrates on informal and formal institutions shaping access to livelihood relevant resources and markets.

ment. Whilst the respective status-quo has already been expanded – by e.g. Stoian (2005), Barrientos *et al.* (2011) and Hunsberger *et al.* (2014) referring to livelihoods of marginalized actors, social upgrading and chain governance for enhancing equity based on livelihoods, respectively – there is still room for contribution. At next, value chain development approaches will be disentangled for expanding the respective state of the art.

Per prior provision of an overview of developments and key approaches for value chain analysis and development, built on a thorough scientific literature and manual review, it is fruitful to subsequently explore the building blocks of value chain development – value chain governance and upgrading. The focus will be set on selected underexplored concepts (related to resource and market access, informal and formal institutions) that provide insights for the analysis in question, by distilling aspects that support the understanding of empirical phenomena (*aviamento* – see Chapter V.1) and (TdC – see Chapter V.2).

One of the key debates of value chain analysis and development was the analysis of the relationships between value chain governance and upgrading. Such relations have already been identified in the first generation of global value chain applied research, building on the identification of different sub-categories of both concepts (based on Werner *et al.* 2014). However, underemphasized is still the intersection of the conceptualization and practical domains within each of these sub-categories.

Based on the identified gap in research (for development), the focus is subsequently laid in bridging the dichotomy between economic and social upgrading, by paving the way for socioeconomic upgrading of smallholders within socio-biodiversity value chains.

1.2 Disentangling Value Chain Development

“As governance has come to mean horizontal or vertical coordination, upgrading has increasingly been associated with general notions such as market participation, firm-level competitiveness and, increasingly, poverty reduction”. (Werner *et al.* 2014: 1241)

Value chain development can be divided into value chain governance and upgrading, their components are conceptually explored in what follows, whilst being empirically related to the formal (TdC) and informal institution (*aviamento*), respectively. In so being, value chain upgrading will be explored first for it serves as a leverage point in relation to the limitations of the *aviamento* on the livelihood relevant resource and market access by upstream actors of a given (NTFP) chain; followed by value chain governance for it serves as a leverage point with regard to the limitations of the TdC on the access at stake. Yet, beforehand at next, the concept of value chain development is dissected into value chain governance and upgrading, as sequenced below.

When striving to lay the groundwork for establishing the connection between chain governance and upgrading, most authors followed the categorization, presented at next.

Humphrey & Schmitz (2004) identified four categories of governance (market, balanced network, captive network and hierarchy), which was extended to five (market, modular, relational, captive network and hierarchy) by Gereffi *et al.* (2005) and is

hereby combined to six (market, balanced network, modular, relational, captive network and hierarchy), in Chapter II.1.2.2. This categorization helps identifying different possibilities for local producers to upgrade according to each governance category. Yet, this matching requires distinguishing between different types of upgrading. Gereffi (2001) and Humphrey & Schmitz (2001, 2004) identified four value chain upgrading categories (process, product, functional and inter-sectoral).

“[H]ow can an upgrading strategy be defined in cases where no [...] uniform governance pattern is discernible?” (Donovan *et al.* 2013: 18)

This is an open background question that leads to the following chapter on value chain upgrading, which key issues related to this research is to be explored next.

1.2.1 Value Chain Upgrading

Value chain upgrading is the ability of certain value chain actors, often upstream agents, such as smallholders and small and medium enterprises, to raise their benefits from chain participation by gaining new functions in the value chain and/ or acquiring better working conditions while increasing efficiency and/ or expanding into more sophisticated lines of products (own definition based on Humphrey & Schmitz 2000, Barrientos *et al.* 2011, Donovan *et al.* 2013).

Value chain upgrading is broadly understood as economic upgrading of e.g. new functions and positions assumed by certain actors further downstream within a given chain through a lead firm. However, this is seen as only one type of upgrading herein, in addition to social upgrading and – what is hereby innovatively put forward – socioeconomic value chain upgrading (detailed in Chapter II.1.3). Social value chain upgrading as coined by Barrientos *et al.* (2011) refers to complying to decent work as promoted in international debates by ILO as of 1999. Socioeconomic upgrading is captured by the definition above and further implies in enhancing producers or extractivists bargaining power and negotiation possibilities as well as in firms (in this case, Brazil nut processing mills) treating their suppliers of raw materials or natural resources (in this case, gatherers supplying Brazil nuts) as employees.

Patterns of Value Chain Upgrading

Gereffi (2001), Humphrey & Schmitz (2001) and Schmitz (2004), amongst other scholars, worked on establishing the connection between value chain upgrading and governance while distinguishing among the following upgrading typologies:

- Functional upgrading: attaining new functions in a given value chain based on an enhanced skill set for related chain activities (e.g. NTFP gatherers assume the function of local buyers)
- Inter-sectoral upgrading: making use of the knowledge/ know-how obtained in certain value chain functions in other sectors or chains
- Product upgrading: producing more elaborated goods, characterized by a higher unit value
- Process upgrading: increased efficiency in processing inputs to outputs through restructuring the production scheme or using more efficient technology. (Schmitz 2004: 3)

The relevance of this classification herein, does not primarily lie in the fact that it has been gaining importance in international debates (Humphrey & Schmitz 2004), but more so in its applicability for the analysis of how markets are or can be accessed within a (NTFP) value chain. In so being, this categorization of chain upgrading provides key pillars for further dissecting upgrading into economic and social upgrading, while linking it to livelihood relevant market access within value chains.

Economic and Social Value Chain Upgrading

Building up on interests and needs of value chain actors, both access to market outlets and the acquisition of abilities by (local) actors for effective participation in the chain are key drivers of value chain upgrading (based on Donovan *et al.* 2013, Werner *et al.* 2014).

These drivers can enable value chain actors to capture (more) value from the value added along the chain (economic upgrading) and reduce power asymmetries among chain agents while improving production conditions for smallholders (social upgrading).

As follows, key conceptual underpinnings of economic value chain upgrading.

Economic value chain upgrading can be seen as the process through which firms and other agents improve their chain position with regard to value added and production capacities within value chains (based on Humphrey & Schmitz 2000, Gereffi 2005, Barrientos *et al.* 2011).

Participation in a given value chain does not necessarily lead to economic upgrading of participants (based on Kaplinsky 2000), and vice-versa. However, it may enable e.g. upstream value chain agents to gain skills and access resources (natural yet also those that stem from policies) for diminishing their costs and improving extracting and producing/ processing conditions (based on Gereffi 1999). Chain participation is mostly understood as a necessary precondition for value chain upgrading for it “puts firms and economies on potentially dynamic learning curves”. (Gereffi 1999: 39)

The aforementioned four-fold categorization of economic chain upgrading is complemented by Dunn *et al.* (2006) with the category ‘channel upgrading’ for it is more related to market access:

“Higher prices, higher sales volumes and more effective risk management through diversification all provide incentives [...] to enter into new market channels”. (ibid.: 5)

Besides, new local and ‘regional’ market opportunities with low quality standards can be attractive, particularly for small firms with regard to alternative outlets of easier access (Dunn *et al.* 2006: 5). Albeit the awareness of upstream chain actors regarding the importance of access to local markets – representing a key leverage point for the position of NTFP extractivists herein – given institutions (*aviamento* as well as TdC) persist in limiting such access while hampering all five upgrading types.

Such limitations pertaining to economic chain upgrading and an underrepresented body of research, call for taking social upgrading as groundwork for scoping for research input for related inclusive value chain development. Social upgrading includes

not only competitiveness but also decent work¹⁷, mainly promoted by ILO (based on Barrientos *et al.* 2011, Donovan *et al.* 2013, Werner *et al.* 2014).

Thereby, social upgrading is defined as:

“[an] improvement in the terms, conditions and remuneration of employment and respect for workers’ rights, as embodied in the concept of decent work”. (Barrientos *et al.* 2011: 301)

Yet, how social upgrading can serve as a mechanism to contribute to reducing power asymmetries among chain agents while improving production and bargaining conditions for smallholders (NTFP extractivists), based on access to resources (natural and those that stem from policies) and markets has been practically neglected. This contribution is best made when analyzing the (lack of) synergies between economic and social value chain upgrading research and evidences.

(Lack of) Convergence of Economic and Social Value Chain Upgrading

Improving the competitiveness and performance of producers through chain upgrading, has already been addressed by e.g. Humphrey & Schmitz (2000), who analyzed the role of both public and private governance in shaping upgrading strategies.

Value chain upgrading, having been coined and narrowly consolidated as economic upgrading by academic debates and publications, challenged Barrientos *et al.* (2011) to explicitly complement such upgrading thinking with social upgrading while not losing sight of either one.

“The empirical evidence suggests that economic upgrading can, but does not automatically or inevitably, lead to social upgrading. The conceptual and policy-oriented research questions that arise thus concern the identification of the ways in which economic and social upgrading are attained and under what conditions they can be achieved.” (Barrientos *et al.* 2011: 301)

Yet, there still is a prevailing lack of convergence evidenced by the independent presentation of results of studies on value chain upgrading into social and economic upgrading – the latter featuring more prominently. This fact has reinforced the existing segregation between these two silos pertaining to upgrading in value chain analysis (for development) approaches (based on Barrientos *et al.* 2011).

This urges for research on identifying potential linkages between social and economic upgrading and/ or ‘downgrading’¹⁸ (Barrientos *et al.* 2011: 300), based on a multidisciplinary approach towards analyzing socioeconomic problems faced by upstream chain actors, to be jointly addressed by comprehensive value chain analysis and inclusive sustainable development approaches.

17 The term decent work was first mentioned in the Report of the Director-General of ILO in 1999 in the frame of the 87th Session of the “International Labour Conference”, while it is composed by the following building blocks: employment creation, social protection, rights at work and social dialogue (Ghai 2003).

18 The authors specifically refer to ‘social downgrading’ as “decent work deficits” (Barrientos *et al.* 2011: 300).

Trade-offs, Challenges and Critics in Value Chain Upgrading

Trade-offs, including when designing so-called value chain ‘interventions’, between value chain upgrading by a certain group of chain actors and downgrading of others are susceptible of occurring. For instance, larger mark-ups of lead firms obtained through cutting down their (input or sourcing) costs might follow from smallholders’ downgrading e.g. by shifting (production or transaction) costs to producers.

“Chain co-ordination and upgrading usually occurs when it benefits the chain ‘driver’, but this doesn’t necessarily mean it’s a zero-sum game”. (Keane 2008: 11)

Noteworthy is, thereby, that value chains are usually controlled by buyers, including so-called lead firms. How to assess the impacts of economic and, particularly, social upgrading in the frame of value chain development ‘interventions’ on asset endowments or even ‘poverty’ of value chain actors is key but very difficult to grasp and not yet thoroughly done (based on Donovan & Stoian 2012, Donovan *et al.* 2013); addressing this would imply in a thesis for itself.

Challenging is the fact that, neither economic nor social upgrading is an automatic outcome of participation in a given chain (see Kaplinsky 2000, Kaplinsky & Readman 2001), while value chain upgrading of either type, does not assure effective participation of the respective chain agents. In this realm, ability-based socioeconomic upgrading is synthetically put forward in Chapters VI and VII.

Further, it can be difficult to apply the concept of value chain economic upgrading on the ground. In agricultural value chains, for instance, separating product from processing upgrading can be tricky, such as in the case of organic production, which is both a product type and a production system (Donovan 2011). Value chain upgrading possibilities depend on the governance pattern, whereby the latter can be unclear or even differ between distinct nodes of a value chain. Given this difficulty, there are cases where the joint analysis and action for upgrading the positions of economically and geographically marginalized chain actors turns out to be challenging (based on Donovan *et al.* 2013).

Building on Suzigan *et al.* (2007), a further challenge is that value chain economic upgrading per its conventional conceptualization and application, can undermine differences in asset endowments of value chain actors and, thus, in upgrading possibilities. The lack of access to assets inhibits producers to try to assume (if desired) more strategic functions – instead they remain with operational ones. This limits their capability of capturing a larger share of the value generated along upstream nodes of the value chain. At the same time the ability to control the chain as a whole stays limited to major international buyers (Suzigan *et al.* 2007).

“Attention to the differences in capabilities and interests of smallholders and other chain actors offers users the opportunity to design more tailored, and potentially more impactful and efficient strategies for VCD [value chain development]”. (Donovan *et al.* 2013: 40)

For development practitioners as value chain guidelines users referred to above, to design so-called value chain development ‘interventions’, it is useful to gather differentiated information on socioeconomic conditions and participation ability of each chain actor who is (willing) to effectively engage in a respective project or program.

Still, most benefits generated by small-scale producers and NTFP extractivists – resulting from their participation in value chains – are not appropriated by them. The ability of large international enterprises to not only govern and lead a network of firms and upstream chain actors allow such ‘big players’ to capture most of the value generated through improved production and distribution processes of goods for their own benefits (Suzigan *et al.* 2007).

Under certain conditions, however, locally adapted informal and formal institutions might contribute to overcoming these challenges inherent to economic value chain upgrading, including by local producers and NTFP gatherers (detailed in Chapters V.1.6 and V.1.7). Still, Barrientos *et al.* (2011) put forward research on extending economic upgrading towards social value chain upgrading. Their approach is further developed herein, while it is put forward that if taken up separately, they do not – neither conceptually nor in practice – effectively scope for strengthening the position of upstream value chain actors.

Before going into own additions to the upgrading and governance concepts in Chapter II.1.3, theoretical elements of the ‘value chain governance’ notion is to be explored at next. The latter is a term that has its origins in the 1990s and is still (re)shaped by value chain scholars nowadays (see e.g. Almeida *et al.* 2012, Cunha *et al.* 2013/ unpublished), e.g. in the frame of the debates conducted at the “Duke Global Summit from 29th–31st October 2014” at Duke University in the United States of America.

1.2.2 Value Chain Governance

At first a general governance definition is provided after FAO (2011): Governance¹⁹ is both, the contextual setting and the outcome of the interaction of a range of stakeholders with diverse interests. Pillars of governance include political, legal and regulatory structures, planning and decision-making processes as well as guarantee mechanisms of implementation and enforcement of agreements and laws (*ibid.*: 12).

Whereas, overall, value chain governance refers to the following:

“[Value] chain governance often refers to the vertical coordination by firms in one node of the chain with firms in other chain nodes. Coordination can assume various modalities that include strategic alliances and contractual partnerships. [...] Governance structures are considered to have important consequences for the access of chain actors in developing countries to markets and the range of activities that developing-country actors can undertake.” (Donovan *et al.* 2013: 18)

This understanding of chain governance comprehensively refers to governance structure (corresponding to patterns of value chain governance herein) and coordination. However, it does neither explicitly mention horizontal coordination nor decision-making, which are important components for this research. Similarly, as indicated by Gereffi (1994), value chain governance refers to institutions and policies for decision-making processes among chain actors within the respective value chain.

19 A decade before, FAO had defined forest governance, which also fits to the governance of NTFPs herein: “Forest governance encompasses all aspects of the exercise of authority of formal and informal institutions in the management of a nation’s forest resources.” (FAO 2001: viii)

More specifically, value chain governance is conceptualized by Cunha *et al.* (2013/unpublished) as the coordination of chain agents' actions, roles, interests and resources; a process that encourages a group of actors from different organizations to pursue jointly prioritized objectives for designing a certain desired 'intervention' in a value chain. This definition is particularly useful for what follows.

Yet, neither an exhaustive explanation of the concept of governance²⁰ overall nor an overview of the respective debate is aspired herein, which has already been done. Still in the interface between governance and value chain governance, Segebart (2007: 21) refers to the shift of the provision of given services originally under government's responsibility partly taken over by the private sector – this relates to the role of *regatões* (middlemen) and processing mills herein, which reinforces dependency from NTFP gatherers on such buyers. While this refers to captive governance herein (see patterns of value chain governance, as follows), she further criticizes the lack of reference to governance risks, such as the cooptation and manipulation of the government through individual interests and clientelism (*ibid.*: 21). As a transition from overall governance to value chain governance, it is fruitful to refer to Humphrey & Schmitz (2000) who provide an overall division of governance into public and private that can play a relevant role in improving the competitiveness of producers or, in this case, NTFP extractivists.

Whilst these are relevant aspects of governance for this research, specificities of governance²¹ of and within value chains are provided in what follows. Storper & Harrison (1991) have already analyzed how governance structures are informed by the degree of leadership, command and hierarchy, collaboration and cooperation amongst value chain actors. The authors sought to understand to what extent the relationships within upstream chain nodes are governed by price mechanisms or result from a hierarchical control of downstream value chain actors, who are endowed with greater bargaining power than small-scale producers. They found that governance structure is shaped by power relations among agents involved in production and marketing of a given good (Storper & Harrison 1991).

The existence of a specific governance structure and the pattern it may take will depend on a complex set of factors, based on Suzigan *et al.* (2007):

20 This has already been done by the United Nations Development Programme (UNDP), for which governance is "[...] [a] set of values, policies and institutions by which a society manages its economic, political and social affairs through interactions among the government, civil society and private sector. It is the way a society makes and implements decisions – achieving mutual understanding, agreement and action. It comprises the mechanisms and processes for citizens and groups to articulate their interests, mediate their differences and exercise their legal rights and obligations. Its rules, institutions and practices set limits and provide incentives for individuals, organizations and firms." (UNDP & BMZ 2000: 26). This notion of governance, beyond the governing by governments, serves as overall understanding which comprises the more specific term value chain governance, as conceptualized and used herein.

21 Whilst beyond the scope of this thesis, for a conceptualization of environmental governance comprising formal institutions and, to some extent, informal institutions, see e.g. Najam (2005), Biermann & Pattberg (2008), O'Neill *et al.* (2013).

- The legal, political, social, cultural context. These components of the context together with locally relevant formal as well as informal institutions they bring along can influence natural resource and market access and thus value chain development, considering upgrading and governance possibilities. The overall context is specific to each site as is the existence of factors promoting (or precluding) governance: solidarity, the tendency to social cohesion, trust gained through frequent interactions and fulfillment of expectations, as well as the emergence of local leaders. These features are strongly rooted in history and culture of each locality. Hence, overall, they can hardly be displaced or considered to be generic treats of local clusters within value chains.
- How local production is organized can also be an important determinant of the governance pattern. When vertical integration prevails, vertical control is exerted by a large firm so that governance is centralized by this enterprise. Forms of organization in which some firms coordinate networks of subcontracted producers, as well as those in which a lead firm runs a production flow with specialized suppliers, leave little room for governance other than that exerted by a coordinating lead firm. On the other hand, forms of organization focusing on small and medium-sized independent enterprises without large asymmetries are more prone to result in mutual benefits.
- The presence of local institutions with political, economic and social representation, interacting with the production sector, is also important to determine the existence and the pattern of governance. In general, a dense institutional environment, aligned with the activities of a local cluster within a value chain, is a key element in local governance structures with predominantly small and medium enterprises (Suzigan *et al.* 2007).

Value chain governance – not referring to global value chains – can be internal (when controlled by directly involved value chain actors, e.g. by a local/ ‘regional’ processing mill) or external (when controlled by indirectly involved value chain actors e.g. standards and certification criteria set by organizations of the so-called ‘Global North’, to which producers in the so-called ‘Global South’ are compelled to comply for them to be able to access respective niche markets) (see Keane 2008).

Overall, conditions for product flows, including quantity, quality and prices, which are set by contracts based on value chain governance structures (Humphrey & Schmitz 2004). Whilst in this research local trade contracts are mostly verbal agreements, respective conditions are clearly determined by buyers and not driven by producers or NTFP gatherers – yet, specific ‘drivers’ of value chain governance are explained at next.

Value Chain Governance Driven by Directly Involved Agents

Value chain governance can be affected by two main ‘drivers’ according to Gereffi (1994): buyers and producers (in this case, NTFP gatherers). Buyer-driven governance of value chains apply to the case of lead firms, such as processing mills, who are, usually, not involved in production activities but the final buyers within a given territory while exerting market power by e.g. controlling distribution channels. As opposed to producer-driven governance of value chains, in which assets for production play a vital role and coordination is, commonly, horizontal (Suzigan *et al.* 2007).

Limitations of the producer-buyer dichotomy, led Schmitz (2004), Gereffi (2001) and Gereffi *et al.* (2005) to map five patterns of governance, which were hereby extended to six, explained in detail in what follows.

Patterns of Value Chain Governance

Five patterns of value chain governance are promoted by Schmitz (2004) and Gereffi *et al.* (2005):

- Market governance: market-type linkages²² characterized by (required) high supplier capabilities while being easy to transmit (market) information among chain actors
- Modular governance: linkages characterized by involving specialized suppliers who cover part of (production) costs that would otherwise be financed by buyers
- Relational governance: linkages characterized by (required) high supplier capabilities, interdependencies while being easy to transmit trade relevant information among chain actors
- Captive governance: linkages characterized by (required) low supplier capabilities, involving one-way dependency of suppliers, high degree of supplier monitoring, high costs for changing of buyer-suppliers links and high degree of complexity concerning information access as well as use
- Hierarchy governance: characterized by (required) vertical integration by a single firm, (required) low supplier capabilities, complexity in production while being difficult to account for and transmit trade relevant information.

Gereffi & Sturgeon (2004) explain that the level of coordination among chain actors increases as does the power asymmetry among value chain agents from the market to the hierarchy pattern of value chain governance. Thereby, Schmitz (2004) adds a governance pattern (to the five listed above):

- Balanced network governance, in which enterprises collaborate while having complementary competences yet not any control over each other. Whilst not common this governance pattern represents an ideal yet not realistic 'scenario' for equitable benefit sharing. As it falls short in considering power imbalances and assumes a leveled playing field among value chain actors, it is generally not adapted to rural contexts including of the Brazilian Amazon.

Schmitz (2004) pays particular attention to intermediate patterns of value chain governance (i.e. modular, relational and captive governance), given their growing relevance. He does not focus on market-based and hierarchical types, which have the lowest and highest degree of coordination, respectively, and can be easily identified as well as characterized (based Schmitz 2004). These arguments – together with the fact that an intermediate type of governance can be identified in the study area, namely captive governance – are key reasons for analyzing the relationships among social and economic upgrading and captive value chain governance (see Chapter II.1.3).

22 In this five-fold categorization, linkages refer to ties among actors of a given value chain.

The focus herein lies in the captive governance pattern²³ – whereby the lead firm sets the conditions under which other value chain actors operate – as it was identified in the study area. Evidences are further provided for debt-based dependence between Brazil nut gatherers and buyers, whereby access not only to information but also financial services (in the form of advanced payments) is controlled by respective purchasers (see Chapter V.1). The above-described high level of monitoring – characteristic for the captive governance pattern – is hereby set by ICMBio in the TRBR area for it monitors not only the quantity of Brazil nut gathered from this PA, but also the volumes transported in boats authorized by ICMBio for being marketed in neighboring urban centers of Oriximiná and Óbidos (see Chapter V.2.2).

Challenges and Critics Concerning Value Chain Governance

Value chain governance does not exist by itself, while it requires social organization and coordination among chain actors who often have different functions when exerting distinct activities (e.g. producing or gathering, marketing, processing). It only comes into play when local actors seek to go beyond the use of local competitive advantages and try to take collective initiatives or develop joint actions, narrowing their interdependencies to achieve collective efficiency (Schmitz & Nadvi 1999). Such joint initiatives can have common goals, e.g. developing distribution networks and creating – amongst other certification schemes – a label for geographical indication while adding value to products (for instance, NTFPs). Provided there are common goals, it is essential for involved chain actors to have a local governance structure (based on Suzigan *et al.* 2007), building on social organization. In the frame of value chain governance, such cooperation between producers or NTFP gatherers and local buyers for collective marketing – e.g. through a cooperative – can lead to benefits for both upstream actors of a given chain.

Evident value chain governance patterns – i.e. explicit, easy to categorize patterns – are rather unusual than to be taken as given. There are cases where value chain governance patterns do not exist or differ within a given node in the value chain as well as between different nodes in a chain. In cases of unclear chain governance patterns and weak vertical relationships, the production networks or supply/ production chain concept can be a more fruitful framework for understanding production and commercialization dynamics (based on Donovan *et al.* 2013). However, given this is not the case herein, the notions of value chains, value chain analysis and value chain development are most suitable for capturing the trade relations between Brazil nut gatherers and buyers in the Lower Amazon basin.

Moving forward, for that the explanatory value of the combination of and synergies between social and economic upgrading is still underutilized; complementary analytical approaches towards socioeconomic upgrading and inclusive governance follow.

23 Similar to this quasi-hierarchical governance pattern, are the ‘hub-and-spoke systems’ after Markusen (1995), where the producers network within a local production system is governed by a large coordinating firm.

1.3 Socioeconomic Value Chain Upgrading and Inclusive Governance

Socioeconomic Value Chain Upgrading

Instead of reinforcing the dichotomy of economic and social chain upgrading, a new approach is hereby proposed: ‘socioeconomic value chain upgrading’, which is to result in the endowment of value chain actors with an improved socioeconomic position within a certain chain, considering the institutional environment affecting their resource and market access.

Socioeconomic upgrading takes place when not only the working conditions yet also the bargaining power and negotiation possibilities of value chain actors are strengthened. Herein the focus lies in enhancing the participation and position of smallholders, if they desire, which can lead to effective market access and self-determined outcomes, such as more equitable benefit sharing and poverty reduction stemming from higher income. The conditions under which these outcomes are achieved are explained in the empirical findings (Chapters V.1, VI and VII).

The herewith proposed conceptualization of socioeconomic upgrading feeds into so-called ‘pro-poor’ sustainable value chain development. Pro-poor value chain development is understood as an approach to reach the following:

“A positive or desirable change in a value chain to extend or improve productive operations and generate social benefits: poverty reduction, income and employment generation, economic growth, environmental performance, gender equity and other development goals”. (Riisgaard & Ponte 2011: 1)

This conceptualization focuses on income generation, it goes further in touching upon environmental, social and gender issues. Whilst indicating the ‘do no harm principle’²⁴ often applied in the development discourse, “a positive or desirable change” can be questioned as to by whom and building on whose interests. Herein, value chain development is understood as ‘desired by local actors’, particularly by economically and geographically marginalized NTFP gatherers. In this context, scientific input is hereby provided for strengthening their chain position while pursuing the above-cited ‘development goals’, derived from access to livelihood relevant resources and markets on a sustainable basis.

However, confronted with price squeezes by buyers, NTFP gatherers face severe challenges for benefiting from such access within a given value chain:

“[F]or some smallholders, the potential benefit from upgrading (for example, improved prices) may be less than the costs (such as increased labour allocation, collective action), especially in the absence of support from development organizations and/or downstream chain actors”. (Donovan *et al.* 2013: 19)

Still, the scope for socioeconomic value chain upgrading of local actors – in this case NTFP extractivists – for effectively accessing markets can be shaped by an inclusive chain governance pattern, which implies in a quasi-hierarchical coordination structure (based on Schmitz 2004, Gereffi *et al.* 2005).

24 ‘Do no harm’ pertains to development interventions and is a principle featured in the ‘Paris Declaration on Aid Effectiveness, 2005’. It is often used in ‘development discourses’ by actors involved in (international) development cooperation.

From Captive to Inclusive Governance

Captive is the governance pattern focused upon, as it can be identified in the study area and whose analysis combined with the local potential of process and product upgrading can be insightful in the context of value chain development. As chains are governed by particular firms or other actors and influenced by the institutional environment they are embedded in; addressing their role in regulating access to markets as well as in reducing harmful entry barriers as part of governance, are of key importance (based on Gibbon 2001, Werner *et al.* 2014). Such market entry barriers herein are unintended and at the same time unfavorable formal institutions (TdC enacted by ICMBio – see Chapter V.2.2) for economically and geographically marginalized actors (Brazil nut gatherers and small-scale buyers in the Lower Amazon basin). There, captive governance indicates that the Brazil nut chain is governed by lead firms (in particular by the Brazil nut processing mill in Óbidos within this subnational region), which does not leave much room for horizontal coordination or socioeconomic upgrading opportunities.

The captive governance pattern prevails in the case of the Brazil nut value chain in the Lower Amazon basin. It is a region where Brazil nut stands are located very far away from communities of (*quilombola*) extractivists and even further away from the closest market of Oriximiná (detailed in Chapter V.1.5). This difficult accessibility for gathering and marketing (only by boat, usually owned solely by buyers), not only reinforces the dependence from gatherers on buyers, yet also vice-versa. Buyers also depend on gatherers to supply them, albeit to a weaker degree than the other way around. While such dependencies are based on institutionalized asymmetric patron-client relations (see Chapter V.1), mutual dependence and also interdependence exists among given trade partners.

Such trade asymmetries can be overcome, for instance, with locally adapted (informal and, particularly, formal) institutions (see Chapter VII), so as to move from primarily captive governance towards inclusive governance along a given chain. Thereby the definition for inclusive governance herein is borrowed from (UNDP 2007):

“[...] the extent to which governance institutions provide space to overcome the systematic exclusion of disadvantaged groups seeking to participate in decisions affecting them”. (ibid.: iii)

In the case herein, it refers to a governance type that allows for the effective participation of economically and geographically marginalized actors, including *quilombolas* (as a group categorized after the ILO Convention 169 on Indigenous and Tribal Peoples – see definition in Footnote 34). The above-cited ‘space’ concerns – in the case herein – the room for effective participation of Brazil nut gatherers in decision-making when being formally allowed to co-manage PAs they have inhabited long before their establishment (TRBR established in 1979). Such effective participation can be achieved through inclusive governance structures, i.e. changing consultative councils for managing respective PAs of full environmental protection to deliberative councils by ICMBio (see Chapters II.2.4.2, VI and VII). In this case, both local Brazil nut gatherers and buyers could benefit from the latter (re)inclusion as market outlet by allowing the former to co-decide on the clauses of the formal institution TdC of the

TRBR (including its Clause 10 limiting the entrance of buyers in the TRBR area for respective locally desired market access – detailed in Chapter V.2.5).

At next the scope for synergies between socioeconomic upgrading and inclusive governance is explored.

Scoping for Synergies between Socioeconomic Upgrading and Inclusive Governance

Even though, upgrading can also occur without coordination among lead firms and producers (Donovan 2011), it is fruitful to identify synergies between governance structures and socioeconomic chain upgrading when aiming at locally desired inclusive sustainable value chain development.

Overall, Humphrey & Schmitz (2000) already established clear matches between upgrading perspectives and governance typologies of firms within a value chain. More specifically, based on a case dealing with impacts of biofuel value chains in Brazil, Hunsberger *et al.* (2014) recommend governance instruments and policy frameworks to integrate livelihood and equity queries from the beginning (at policy design stage). This can also be conducive for self-reliant socioeconomic upgrading as well as inclusive governance in the case herewith analyzed.

Beside upgrading and governance – the mechanisms through which value chain development operates presented so far – there are further factors for strengthening the value chain position of upstream chain actors. These include access to and exchange of information, transparency and learning between firms along the chain, as well as power and benefit distributions shaped by (informal and, particularly, formal) institutions as well as by (inter)dependencies among value chain agents (Dunn *et al.* 2006). These mechanisms, also called, ‘dynamic elements of value chain’ (*ibid.*: 5) are useful to comprehend the socio-institutional trajectories of local value chain actors, including the business (dis/enabling environment (based on Barrientos *et al.* 2011). Thereby, conceptually and empirically complementing value chain analysis (for ‘development’) with an institutional approach based on identifying potential and struggles for ability based socioeconomic upgrading (detailed theoretically in Chapter II.1.3 and empirically in V.1.7). This is hereby done through understanding – both theoretically and empirically – how the (lack of) access to livelihood relevant resources and markets by marginalized NTFP extractivists is shaped. For answering both research questions, relevant insights from informal and formal institutions as well as respective institutionalization and formalization processes shaping such access are gained from the (unit of) analysis of the Brazil nut value chain in the Lower Amazon basin.

Enhancing the ability of upstream actors of a given value chain (based on Ribot & Peluso 2003) – so as to improve their position and participation in decision making on production and marketing of respective products – corroborates with synergies between socioeconomic upgrading and inclusive governance (see Chapters V.1.7 and V.2.4). Related potential and limitations are best understood through an in-depth analysis of directly (and indirectly) involved agents’ production and marketing relationships, considering environmental rules and coordination structures of a local cluster (APL, per acronyms in Portuguese) within a given value chain.

1.4 Production Networks and Clusters within Value Chain Analysis and Development

Global value chains feature prominently in value chain (analysis and ‘development’) literature, given the macro assessments of activities needed from production (in the so-called ‘Global South’) to marketing and consumption (including in the so-called ‘Global North’) of respective goods and more recently services (e.g. tourism based on Gibbon *et al.* 2008).

Further, according to Donovan *et al.* (2013), in depth context-sensitive studies in the frame of value chain analyses for asset-based development in the agricultural sector are still scarce; and rather exceptions in the case of NTFPs (see e.g. Stoian 2005, Duchelle *et al.* 2011, Soriano *et al.* 2017). Reviews of manuals for value chain development of agricultural and forest products – yet not specifically NTFP – have recently been conducted (Nang’ole *et al.* 2011, Donovan *et al.* 2013), indicating gaps and advances in the value chain research for development, building on or informing (the design of) value chain interventions that “assist a particular group of producers to upgrade their operations” (Werner *et al.* 2014: 1230).

These so-called micro analyses have only gone as far as inter-firm governance whereby top-down control is exerted by a given lead firm or TNC (in the so-called ‘Global North’) and economic upgrading of firms along (global) value chains. However, in general terms, the analysis of respective social upgrading (based on Barrientos *et al.* 2011), as well as local and horizontal coordination possibilities among chain actors has been left aside and feature marginally in debates. Potential and problems of non-firm value chain actors and the interdependencies of firm and other (upstream) actors along analyzed chains have been undermined by (global) value chain analysis and development.

This shortfall urges for identifying and understanding the functioning of local production, processing and commercialization dynamics within networks in a given territory by analyzing organizational ‘structures’ of interdependent actors at the local and ‘regional’ level. Embedded in a territorial frame, clusters or so-called ‘local production arrangements’ (APL, per acronyms in Portuguese) within value chains as analysis units help address this gap. This is so, given such arrangements or production networks are an important local and regional component of value chains²⁵ where frequent interaction and eventually collective action – e.g. collective supply and marketing through a cooperative – takes place (based on Santana *et al.* 2010).

It can be argued on which approach complements the other – Humphrey & Schmitz (2000) claimed that the (global) value chain complemented cluster framework – or if they both mean the same in practice and the only divergent characteristic is the scale as their use by several scholars and development practitioners imply (global) value chain and (local) cluster.

Kaplinsky & Readman (2001) published “Integrating SMEs in Global Value Chains”, a piece which adds to the debates of value chain analysis (for development) being

25 For case studies from different states in Brazil on the governance along socio-biodiversity value chains and the respective coordination process among chain actors, see Almeida *et al.* (2012).

largely designed to address regional development and having small and medium enterprises (SMEs) as main object of research (Werner *et al.* 2014). Still, this is the case in Latin America, where the scope for SME upgrading lies primarily on the dynamics of clusters (Humphrey & Schmitz 2000).

Whilst cluster analysis for inclusive sustainable rural development, are still underemphasized in literature (based on Costa & Andrade 2007, Santana *et al.* 2010), this is herein approached through the analysis of local trade relations among upstream value chain actors. Such trade relations are often embedded in a 'local production arrangement' (APL, per acronyms in Portuguese) or production network within a given value chain. This applies for the Brazil nut value chain in the Lower Amazon basin, which is the unit of analysis for relations between respective gatherers and buyers in their strive to access Brazil nuts and markets on a sustainable basis.

To put it into context, one of the purposes of value chain analysis is to provide input for the design of 'development interventions' – implemented with local actors and 'development' practitioners on the ground. Thereby, the understanding of the production and marketing relationships among firms (and other actors involved in a given cluster) plays an indisputable role. This relevance lies primarily in the fact that so long international trade considered by global value chain debates can be complemented by thorough analyses of local production and trade relations at the so-called community level. The conceptual groundwork for understanding the complementarity of the cluster in relation to the value chain approach for the bottom-up research scope herein, will be addressed in what follows.

The Cluster Concept and Use in the Frame of Value Chains

Clusters as 'local production arrangements' (APL, per acronyms in Portuguese) can be regarded as part of value chains (based on Humphrey & Schmitz 2000). The latter are hereby taken as the most suitable unit of analysis to understand how informal as well as formal institutions affect the access of upstream chain actors to livelihood relevant resources and (local/ regional) markets. Respective insights based on the herein posed research questions can provide scientific input for actors involved in the Brazil nut value chain at stake to scope for locally owned and desired inclusive 'development' pathways, in a long run.

Still, what is and makes up a cluster? Cluster is a geographic concentration of interconnected firms from a given sector, including the ones specialized in service provision and 'technology development', associations, government and research entities (based on Scott 1988, Santana *et al.* 2010). Thereby, the production of a good builds up on interdependencies – beyond sole vertical control – among value chain actors within a socioeconomic, political and cultural space (based on Scott 1988, Desrochers 1998, Lastres *et al.* 1998, Schmitz & Nadvi 1999, Santana *et al.* 2010). Within clusters, potential for increased performance derives from collective efficiency and action, which can be facilitated through sector-specific institutions as well as collaborative action and networking (Werner *et al.* 2014).

This territorial and horizontal perspective was already addressed by Henderson *et al.* (2002) and Hudson (2002) with the production network concept (detailed in Chapter II.1.2), while taken up in the term 'value web' involving multiple chains (e.g. Virchow *et*

al. 2016). Albeit not explicitly referred to such terms in the analysis of trade relations between upstream NTFP gatherers and buyers hereafter (i.e. after Chapter II.1), such perspectives on production/ gathering and marketing relations are encompassed by the notion of value chain as understood herein.

The origin of the cluster approach dates back to the 1980s with industrial district development in Germany and Italy based on agglomerations of SMEs. Subsequently, industrial clusters of the so-called 'Global North' featured more prominently in economic development research, whereas analysis of clusters in the so-called 'Global South' was conducted during the 1990s, mostly by scholars from the Institute for Development Studies (IDS) or commissioned by UNIDO (based on Werner *et al.* 2014). Still in the same decade, cluster analysis and development initiatives on agglomerations of SMEs stemming from the so-called 'Global South' surged. One such initiative is the research and development network RedeSist, focused on generating knowledge on clusters, founded in Rio de Janeiro in 1997.

Scholars in Brazil – mainly through the network RedeSist – have promoted the concept of local production arrangements (APLs, per acronyms in Portuguese). As co-founders of RedeSist, Lastres & Cassiolato (2004) conducted numerous studies on these arrangements, including respective characterization schemes according to e.g. the territorial dimension, diversity of economic, political and social actors, their activities, tacit knowledge, innovation, interactive learning and governance. Applied in rural *Amazônia* (see e.g. Diniz 2008), such clusters are characterized by having a relatively high degree of interdependency particularly between producers and buyers within a specific territory (based on Filocreão 2002). This is characteristic to the unit of analysis focused upon herein, in which dependence from Brazil nut gatherers on local buyers prevails (feature related to captive governance), yet does not represent the whole picture implied by the referred interdependence within upstream nodes of the chain at stake. For this thesis, it is important to consider both ways of dependency between both trade partners at stake – not only empirically (see Chapter V.1) but also conceptually herein – to properly understand the complexity of *aviamento* as a debt-peonage system persisting throughout the Amazon.

In order to avoid segregating conceptual and analytical perspectives on global value chains from 'local production arrangements', it is still fruitful to state that researchers from the aforementioned network have worked on issues pertaining to both. For instance, on capturing problems and potential for endogenous development, building on methodologies for identifying such clusters and assessing the respective role of local/ 'regional' lead firms (see e.g. Santana *et al.* 2010). Still, there is room for further exploring conditions influencing endogenous development by analyzing how the institutional environment affect the livelihood relevant resource and market access of upstream value chain actors within a given territory. This is done, in particular empirically (see Chapter V), while focusing on respective factors limiting the livelihood relevant resource and market access by local Brazil nut buyers and, particularly, gatherers as leverage points for chain agents to co-shape an access enabling institutional environment (see Chapters V, VI and VII).

According to Suzigan *et al.* (2007), private and public initiatives designed for governance purposes are to characterize forces that affect the local governance of a given

cluster beforehand. This includes organizational and, particularly, institutional environment as well as local interaction for production and development degree, social, political and cultural characteristics for ‘associativism’ (literally translated from Portuguese), solidarity, social cohesion, trust and capacity for promoting local leadership (ibid.: 435), amongst other factors.

Beyond demand-driven vertical control from ‘abroad’²⁶, effective participation of and internal coordination among subnational value chain actors²⁷ can increase the chances of ensuring a locally self-desired and sustaining cluster and overall value chain development (see e.g. Cunha 2014).

Yet, exogenous development impulses, building on e.g. linkages from local leaders of cooperatives to external downstream value chain agents, can be useful and effective to initialize cluster development processes in a given value chain (Werner *et al.* 2014). For instance, upstream chain actors can therewith potentially access new market outlets, which eventually enables them to move beyond debt-based dependence on local buyers. Schmitz (1995) and Altenburg & Meyer-Stamer (1999) pointed to shortfalls in internal governance structures (including in horizontal linkages amongst local firms), as opportunities for fostering so-called cluster performance. The former claims such performance to be dependent on external drivers, e.g. the willingness to pay and priorities of buyers from abroad sourcing from producers in a local cluster within a value chain.

“[I]t was precisely the focus on extra-territorial networks and governance dynamics in global industries – dimensions that were underemphasized in the clusters approach – that made the GVC [global value chain] framework appealing to development scholars”. (Werner *et al.* 2014: 1228)

The above-cited and numerous other authors’ focus on global value chains has long been on the so-called ‘research for development agenda’ (see e.g. Kaplinsky & Morris 2002). However, value chain analysis and development debates on trade dynamics at subnational regions as well as scholarship related to the work of RedeSist on clusters (APL, per acronyms in Portuguese) are not to be neglected. An argument for clusters or local production arrangements/ networks not to be undermined is their evident contribution to debates on trade as they explicitly add the spatial component to value chains. All in all, compared to the latter, they are underrepresented in literature, one reason being they can be considered superfluous provided value chains already refer to a given territory, context or landscape. Still, in this frame, the following is put forward:

“In the case of APL [per acronyms in Portuguese] characterized by a predominance of micro/ small and medium enterprises or production structures [...], having a product that favors the division of labor and structuring a given supply chain, less subordinated in terms of trade integration, with dense institutional environment and a social, cultural

26 This is often addressed by global value chain analysis and practice when dealing with export markets (see e.g. Webber & Labaste 2010).

27 In other words, coordination established in a given territory among directly and indirectly involved chain agents, including input suppliers and service providers.

and political context that values ‘associativism’, solidarity and trust, and ‘generates’²⁸ local leaders, are more likely to successful types of local governance. It can take the form of an associative-cooperative model, or private and public local governance model with a coordinating agent.” (Suzigan *et al.* 2007: 435)

What is herein pursued is not to reinvigorate dichotomies such as internal horizontal governance – including firm-non-firm cooperation, being more prone to occur within (local) clusters (based on Werner *et al.* 2014) – as opposed to (global) value chains approaches addressing extra-territorial drivers of (external) vertical governance stemming from foreign lead firms. It is about extracting the essence of related debates for understanding leverage points pertaining to the bargaining position of upstream nodes corresponding to clusters or local production arrangements/ networks within value chains at subnational ‘regional’ level.

The specificities of the Brazil nut cluster within the respective value chain in the Lower Amazon basin are further provided with a conceptual background by Storper & Harrison (1991). They incorporate the territorial dimension in the analysis of production processes and the emergence of firms and other actors of a given cluster. The concentrated presence of firms from the same sector, which in turn attracts suppliers and service providers, leads to the development of intense interactions among local firms and respective agents. These interactions can be controlled by a large lead firm or there can be several small coordinating firms (based on Storper & Harrison 1991). Herein it is a relatively large ‘regional’ processing mill – that is in direct competition with the only two other mills in the Lower Amazon region – as an ‘intermediary buyer’ of a multinational Brazil nut enterprise.

Although not framed in a combined cluster and value chain approach, a similar understanding has been pursued by several value chain (development) scholars, particularly in the last decade – yet, still underrepresented.

Humphrey & Schmitz (2000) were the first in anglophone literature to identify synergies between the analytical approach on clusters and value chains. They addressed relationships between the upgrading potential of firms – geographically concentrated SMEs as chain actors – and governance of the (global) value chains in which such enterprises participate (Humphrey & Schmitz 2000).

However, Meyer-Stamer (2005) explored limitations of establishing cluster and global value chain relationships, particularly when lead firms take over the control of upgrading and governance, including along upstream chain nodes.

Still, innovative discussions on linkages between the value chain and cluster approaches – while analyzing increase in collective efficiency through horizontal coordination and public-private collaboration in the frame of cluster governance and upgrading within value chains – have been undertaken by Giuliani *et al.* (2005) and Pietrobelli & Rabellotti (2006). Whilst these linkages are not at the center of the analysis herein, the relations among policies and socio-biodiversity clusters with livelihood relevant and environmentally sound market access within NTFP value chains come closer to what is at stake.

28 The single quotation marks are added by the author.

1.5 Review on Policies, Socio-biodiversity Product Clusters and Market Access

Public Policies for Sustainably Accessing Markets

“[Public] policies may have a role to play in rebalancing [...] power relations and inequalities”. (Pietrobelli & Staritz 2013: 13)

Such reshuffling can be achieved by incentivizing knowledge sharing and transparency of lead firms and motivating them to comply with adequate working conditions. According to Gibbon (2001) lowering and eliminating market entry barriers can also be framed by public policy. As opposed to a free market economy as to leave it to the ‘invisible hand’ for an (un)intended unfair market equilibrium (see Smith [1776] 1976), so-called ‘pro-poor’ policies can be supportive in avoiding harmful market concentration (e.g. oligopsonies) as well as cartel formation – both present in the study area. After Porter (1980), even though the formation of clusters occur naturally – based on (inter)dependency, as is the case of the local production arrangement within the Brazil nut value chain at stake –, it is the government’s task to provide measures and incentives for their ‘development’ through public policies. Such policies can enable economically and geographically marginalized actors of a given (NTFP) chain to access livelihood relevant resources and markets, and potentially strengthening their value chain position.

Overall, in order to achieve sustainable development in a long term, value chain development ‘interventions’ are most likely to be efficient and effective if they are designed in line with related policies²⁹. In the case of value chain development of socio-biodiversity products, the PNPSB launched by the Brazilian Ministry of Agrarian Development (SEAD (formerly, MDA)³⁰, per acronyms in Portuguese) in cooperation with MMA and MDS in 2009 and currently in the process of being integrated into an umbrella National Plan, the PLANAPO coordinated by SEAD (formerly, MDA). Both these ‘Federal Plans’ are key components of the National Policy on Agroecology and Organic Agriculture (PNAPO, per acronyms in Portuguese) launched and led by SEAD (formerly, MDA) as of 2012, which is a formalized long-lasting governmental structure with budget allocation. Such policies function as government-led platforms to which value chain development initiatives can be aligned. Also called ‘Socio-bio Plan’, the PNPSB was characterized by a bottom-up approach based on a countrywide consulting process, including of grassroots organizations from traditional peoples and communities, whose needs were also taken into consideration to the extent possible. The PNPSB is structured along six lines of action, with the goal of designing and carrying out integrated actions for strengthening the role of socio-biodiversity product chains for market access and sustainable rural development with a focus on the inclusion of local communities (MDA, MMA & MDS 2009).

29 As of 2004, MDIC has not only been working on the consolidation of a National Cluster Policy through the creation of working groups on clusters but also within the respective science-policy interface in cooperation with RedeSist.

30 MDA has been substituted by the Brazilian Special Secretariat of Family Farming and Agrarian Development (SEAD, per acronyms in Portuguese) on 27th May, 2016 through the Federal Decree 8780 (Brasil 2016).

Particularly in the context of socio-biodiversity value chains, clusters (APL, per acronyms in Portuguese) were identified as the territorial unit upon which value chain development strategies of the PNPSB are to be implemented by governmental and non-governmental organizations at different levels led by SEAD (formerly, MDA). Strengthening these clusters was set to be one of the key goals of this National Plan (MDA, MMA & MDS 2009).

The PNPSB chose 16 clusters (APL, per acronyms in Portuguese) – whereby Brazil nut features among the prioritized ones – as production networks and commercialization structures to be strengthened (based on MDA, MMA & MDS 2009). In this realm, so-called value chain development ‘interventions’ can be built upon the territorial framing of such local production arrangements as a component of a given value chain. Thereby, main program lines of action were the promotion and support for sustainable ‘extractivism’³¹ and production, structuring industrial processes and markets [in rural areas], and strengthening social and economic organization (MDA, MMA & MDS 2009). These three pillars lay the groundwork for cooperation initiatives to achieve sustainable development by strengthening local clusters within given value chains. Preconditions for (self-)sustaining efficient and effective (sustainable) ‘development’ actions are synergies with governmental programs, as is the need for them to build up on self-declared problems and own will of (forest dependent) smallholders to strive to overcome them for their benefit through joint actions.

Overall, strengthening a local cluster in the frame of value chain development requires negotiating and sharing information and risks, and cooperating with other actors, yet not everyone is interested in participating (Gottret 2011). It further requires coordination among not only directly (e.g. producers or gatherers and buyers) and indirectly (e.g. service providers) engaged value chain actors but also the institutional environment and legal framework (Springer-Heinze 2008).

Potential for the selected PNPSB clusters to profit from national programs, such as the PNAE, which builds up on the PAA, as well as the PGPM is not yet exhausted, as access, particularly in remote communities, is still relatively scarce. These public policies not only contribute to food security and higher school attendance (in the case of PNAE), but they also create so-called ‘institutional markets’, whereby the government establishes thresholds for partially overcoming the lack of access to conventional commercialization channels and market failures, e.g. 30% of products acquired per public procurement by government entities at all administrative levels to be sourced from ‘family farmers’ (and NTFP extractivists) via PAA. Regarding the PGPM(Bio³²), if the prices of local producers and/ or extractivists is lower than the PGPM for certain products, this program can hinder misuse of price determining industries and

31 It refers to *extrativismo* (in Portuguese – see related Footnotes 208, 186 and 390), while referring to gathering of NTFPs – also called socio-biodiversity products initially in the context of the PNPSB and overall in Brazil since the late 2000s (based on MDA, MMA & MDS 2009). For a comprehensive evidence-based conceptualization of extractivism, see e.g. Almeida (2004).

32 PGPM is a policy for guaranteeing a minimum price for that can be accessed by ‘smallholders’ organized in associations or cooperatives. PGPM-Bio is an NTFP specific PGPM, created in 2009 through the PNPSB and managed by CONAB.

middlemen by providing minimum prices established by the National Food Supply Company (CONAB, per acronyms in Portuguese). A precondition for producer or forest user groups to access all three programs for state-led market access is that they are endowed with DAP (per acronyms in Portuguese) and formally apply to access it, undergoing extensive bureaucratic procedures.

These are examples of policies designed for ‘family farmers’ to sustainably access markets and potentially contributing to strengthening the value chain position including of economically and geographically marginalized NTFP gatherers.

Socio-biodiversity Cluster and Market Access within Value Chains

Socio-biodiversity is a concept applied in Brazil for addressing the biological diversity and the one of sociocultural traits (MDA, MMA & MDS 2009: 6). It is particularly used to refer to the interrelations between both these diversities when it comes to NTFPs and their local production arrangements/ networks of extractivists, including traditional populations. Brazil nut is an NTFP, also called a socio-biodiversity product in Brazil.

Socio-biodiversity products are goods and services generated from natural resources (from biodiversity), with a potential for leading to structured supply chains of livelihood relevant products of traditional populations and communities as well as ‘family farmers’ (MDA, MMA & MDS 2009). Forest dependent traditional communities have a close relation to land and natural resources, upon which they build and reproduce ‘their tradition’ and livelihood strategies in the frame of a close relationship with the socio-ecological space they live in and from (based on Almeida 2011). Building upon a widespread interest of traditional populations in enhancing their livelihoods, maintaining family subsistence and accessing markets for generating income, locally desired sustainable development initiatives of a local cluster within a given value chain can be designed with the participation of involved chain actors.

A particularity of value chains of socio-biodiversity products is that they account for non-monetary value addition along their ‘production’ process (Cunha *et al.* 2013/unpublished). Sustainable development initiatives based on a local cluster within a given value chain, thus implies in not only optimizing logistics and maximizing efficiency throughout the transformation of a given product from the provision of inputs for it; and adding monetary value to it while leading to substantial firm mark-ups until reaching end markets that require the standardized (just-in-time) supply of large volumes for export. Yet, the (sustainable) ‘development’ of the chains of socio-biodiversity products are also meant to contribute to maintaining traditional knowledge and practices that assure respective rights while generating income and enhancing their ‘quality of life’ and the environment they live in (MDA, MMA & MDS 2009). NTFP extractivists including traditional populations are rural dwellers who have mostly been contributing to maintaining forest through sustainably marketing and consuming products of ‘their’ socio-biodiversity.

The mutually desired inclusion of socio-biodiversity products (e.g. Brazil nut) – from traditional populations, among other forest dependent rural dwellers – into markets, brings up the opportunity of taking the sociocultural added value and benefit sharing into account (Cunha *et al.* 2013/unpublished). However it is difficult, while being neither desired by local value chain actors nor ‘recommended’ for external chain agents

to try to even out unbalanced power relations among value chain actors; in particular if governance and upgrading patterns are designed to be changed over a short period of time (e.g. a 'development' project duration). The process of strengthening the aforementioned chains requires a thorough appreciation of the local context when striving to understand tenure, social organization and the one of the supply, collection and marketing challenges faced by forest dependent rural dwellers.

Moving forward, a reason to be highlighted for exploring value chains – rather than clusters or production networks³³ themselves – not only conceptually and analytically, yet also empirically, is that they are all about access to resources and markets. Thereby, the following background questions motivating this research will be further conceptually and empirically addressed throughout this thesis: How economically and geographically value chain actors (local NTFP extractivists and buyers) can access livelihood relevant resources (a given NTFP) and markets on a sustainable basis? How is such access filtered? What are factors affecting it and what role do informal and formal institutions play? Against this background while focusing on both research questions (detailed in Chapter I.3), institutions are analyzed as factors shaping the access of upstream value chain actors; whereby the relations between given informal (*aviamento*) and formal institutions (TdC) as well as institutionalization and formalization pertaining to such access are addressed as part of the analytical framework.

Understanding the abovementioned queries, provides research ingredients as leverage points towards inclusive sustainable rural development. However, before going into the conceptualization of informal and formal institutions, a synthesis of Chapter II.1 is offered, as follows.

Wrapping up, as presented in this chapter (II.1), chain upgrading and governance are the mechanisms through which value chain development operates. Yet, strengthening the value chain position of upstream chain actors is not automatically achieved through such mechanisms or a cooperative. Additionally required is access to information, capacity development and locally adapted credit schemes while building up social and human capital of upstream value chain actors (i.e. small-scale farmers or NTFP gatherers). Thereby, further elements for their effective participation in decision-making towards inclusive resource and market access is to be scoped for, while distilling leverage points for strengthening the position of NTFP (Brazil nut) gatherers in this case. All in all, the conceptual ingredients and respective R&D debates for value chain analysis and development alone do not suffice to thoroughly understand the determinants and processes of such (lack of) access along lower tiers of the Brazil nut value chains at stake. This calls for exploring complementary conceptual foundations to further dissect respective access limitations emerging from institutions – which are to be conceptualized at next.

33 Hereafter it will only be referred to value chains, given they are most suitable as unit of analysis for addressing the research questions while clusters as well as production networks are part of value chains. Besides, reference to both such terms in addition to value chains would be confusing rather than constructive.

2 Informal and Formal Institutions

Having value chains – that are all about resource and market access – as point of departure (Brazil nut chain as unit of analysis), respective livelihood relevant access limitations per informal and formal institutions are focused upon. The context-sensitive institutional approach for analyzing such access within upstream nodes of given value chains represents a research gap. As an own approach (based on Donovan *et al.* 2013) it stems from evidenced self-declared (access) problems by local Brazil nut chain buyers and, particularly, gatherers whose livelihood relevant resource and market access are limited. Herein such limiting factors are best understood by analyzing institutions as leverage points of respective access by economically and geographically marginalized Brazil nut value chain actors on a sustainable basis (see research questions in Chapter I). Related theoretical foundations together with the implications of such institutions – as determinants (see Chapter III.2.3); as well as respective processes (see Chapters III.3.1 and 3.2) – on the access to livelihood relevant natural resources and markets by upstream chain actors (see Chapter III.3.3) build up the skeleton of the analytical framework (see Figure 6).

Whilst the analytical framework (see Chapter III) details relations among key variables – formal (in this case, TdC) and informal institutions (in this case, *aviamento*) related to natural resource and market access by actors of a given chain (Brazil nut value chain) –, the conceptual groundwork on such institutions are provided at next.

2.1 Concept, Scope and Approach for Analyzing Institutions

Given institutional theory is underrepresented in Geography (Etzold *et al.* 2012: 185), theoretical foundations for filling the gap in question are provided by the abovementioned conceptual and analytical approach based on literature dealing with both informal and formal institutions – to be explored as follows.

Considering that the institutions hereby contemplated are solely the ones in use (see Moran & Ostrom 2005, Ostrom 2005), Turner (1999) provides a broad definition of the concept at stake:

“[it is] the way that members of a population are organized in order to face fundamental problems of coordinating their activities to survive within a given environment”.
(*ibid.*: 97)

Institutions are mostly referred to as “the rules of the game in society” (North 1990: 3), while often understood as regularized patterns of behavior among individuals and groups in society (based on Berger & Luckmann 1980, Leach *et al.* 1999). Here institutions are defined as the rules and norms that influence the (inter)actions of social agents (herein focused on chain actors) and give structure to relationships among them and between them and the environment (based on Bates 1989, North 1990, Knight 1992, Agrawal & Gibson 1999, Moran & Ostrom 2005, Hodgson 2006).

When it comes to the scope and approach, the term institutions is mostly used interchangeably with organizations in policy-making, international development cooperation and academia. This calls for a clear-cut distinction between both concepts for the purpose of this study. In short, if institutions are “the rules of the game”, organizations are players i.e. “groups of individuals bound together by some common purpose

to achieve objectives” (North 1990: 5). Institutions serve to a jointly valued purpose through norms (informal institutions) and rules (formal institutions) that persist in society for numerous decades (based on Hodgson 2006, Plummer & Armitage 2006). As opposed to organizations – e.g. FUGs, associations and cooperatives of smallholders –, which are structures where individuals have certain roles attached to their positions and are bound by respective functions to meet collective goals (based on Uphoff 1992).

2.2 Disentangling Institutions

Distinctions in key categories of institutions are hereby put forward to avoid mixing up concepts and related empirical results. These are informal and formal institutions, which manifest in their subcategories norms and rules, respectively.

2.2.1 Informal institutions

Informal institutions are unwritten norms, in the form of unwritten or verbal agreements and institutionalized patterns of (trade) dependency that shape mutual expectations in interpersonal or intergroup interaction (own definition based on OECD 2007, USAID no date).

In the sociology literature informal institutions are referred to ‘social norms’ (see Nee & Ingram 1998: 19)³⁴. However it can be argued over whether norms are socially constructed or social, after all³⁵. They can also be constructed by specific ‘influential individuals’ within a social system (in reference to collective action based on Olson 1965, as well as to social system based on Luhmann 1979, 1995, 2004).

In the geography literature, norms can also be regarded as ‘not social’ for private instead of collective benefits (in reference to *unsoziales Kapital*, in German, based on Bohle 2005). Following this argumentation, it could be referred to ‘norms’ when elaborating on given informal institutional arrangements (e.g. the unbalanced ‘Brazil nut Agreement’ detailed in Chapter V.2.2.1). However for the sake of simplifying and diversifying the use of complex terms ‘social norms’ and ‘norms’ are used interchangeably throughout this thesis.

Still, norms can generate mutual trust and are grounded e.g. in social values and reciprocity (see Chapter III.3.4), while serving to govern livelihood relevant resource access and use, amongst other purposes.

“Informal or socially embedded institutions are upheld by socially shared, usually unwritten, conventions, created by, and enforced among, the actors involved”. (Schure *et al.* 2015: 54)

Building up on Eggertsson (2013), informal institutions are maintained by ‘self-enforcement’ through mechanisms within a social unit, including incentives and/ or informal punishment (negative internal public exposure, e.g. shaming, boycotting, threats due to violation of a verbal agreement) for not complying to endogenously established norms (see e.g. OECD 2007).

34 For a sociological approach to relations between social norms and networks and how both determine organizational performance, see e.g. Nee & Ingram (1998).

35 For deligitimization of social norms and what is behind such process, see Friedrichs (1999).

2.2.2 Formal institutions

Whereas, formal institutions consist of written rules, such as government decrees, laws and constitution that are formally documented and enforced (based on North 1990, Ostrom 2005). They are authoritatively enacted – by a given government and its responsible entities – for specific situations and actions (based on North 1990, Ostrom 1998), *inter alia* to govern (livelihood relevant natural) resource access and use. This is the case herein, whereby ICMBio enacted the TdC as a formal institution to regulate the access to natural resources in the TRBR in 2012 (Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b).

Conceptualizations of formal institutions from North (1993) and Cleaver (2002) are drawn upon by Schure *et al.* (2015):

“Formal or bureaucratic institutions can be considered as the rules enforced by an outside third party (often government agency [...]), such as the rule of law [...]”. (ibid.: 54)

Whilst exogenously enforced, specific formal institutions, e.g. decrees, can emerge from given social norms in use (see Chapter III.2.1). Beforehand, not to complicate, but to elaborate on what both of them consist of, the next chapter (II.2.3) is devoted to their components, subdivided respectively.

2.3 Norms and Rules

Norms (informal institutions) and rules (formal institutions) are defined, in what follows.

Norms as Informal Institutions

Norms are unwritten (immanent) long-standing prescriptions of customs shared over generations (see e.g. Hodgson 2006). They are endogenously established prescriptions that are self-enforced through sanctions and incentives (based on Ostrom 2005, Eggertsson 2013). Norms are not generated by the decree of so-called authorities (from governments) but under particular contextual circumstances. They specify what should be a cooperative and trustworthy behavior (based on Kandori 1992, Keefer & Knack 2005, Moran & Ostrom 2005). In addition, norms create patterns for interaction that help distinguish among different social units (here these units include communities of NTFP extractivists in the Lower Amazon basin with most of its territory under environmental protection). Such distinction is suggested by Blake & Davis (1964), who add that norms can help craft and maintain borders, which differentiate between insiders and outsiders, given that norm-conformity allows for a sense of belonging³⁶ and identity³⁷. Yet, deviation can imply in exclusion of a social unit. Norms in the form of verbal agreements are commonly internal and based on trust relationships as well as interdependence among involved social actors, which are also both constituting

36 For a conceptualization of belonging in relation not only to group(s) or social unit(s) but also to a place or space, see e.g. Leach (2002).

37 For a critical understanding of identity, see e.g. Brubaker & Cooper (2000).

pillars of social capital³⁸ (based on North 1990, Wasserman & Faust 1994, Knowles 2005).

“Internalized norms [...] among members of communities can guide resource management outcomes in desired directions”. (Agrawal & Gibson 1999: 635)

This corroborates with the conceptual approach followed herein, as it is up to local actors – particularly, the ones directly involved in or affected by a given value chain – to co-decide on the institutions they use or adapt for livelihood relevant resource and market access, without undermining biodiversity conservation in a given territory.

Rules as Formal Institutions

Rules are explicitly known written prescriptions (do’s and don’ts) decreed by government entities that are exogenously enforced by agents responsible for controlling actions and recognized by social agents as well as for applying sanctions (based on Knight & Sened 1995, Ostrom 1998, 2005).

Both informal and formal institutions (norms and rules) give structure to social action and are analyzed in the frame of determinants as well as processes of livelihood relevant resource and market access by upstream actors of a given chain (Brazil nut value chain at stake). In so being, the institutional structure at stake – from immanent to explicit components of social structure – is presented in the following chapter, before going into the analytical framework in Chapter III.

2.4 Institutional Environment: Between Embeddedness and Arrangement

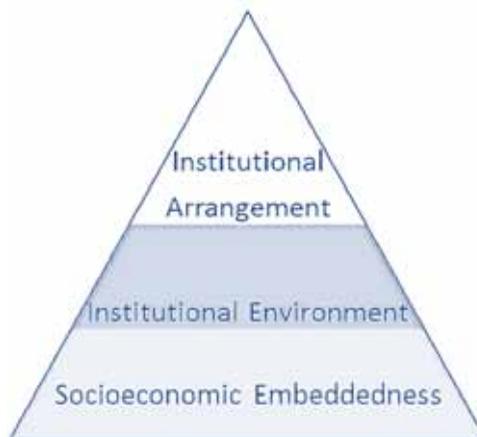
The institutions addressed herein are the ones in use in given socioeconomic and environmental contexts of forest dependent rural dwellers, i.e. the institutional environment shaping their access to livelihood relevant natural resources and markets in a value chain. This is in line with Lawrence & Shadnam (2008):

“Institutions are not everywhere and for everyone; rather, they are situated within specific social contexts and condition action within those contexts”. (ibid.: 2289)

38 Bourdieu (1986) refers to social capital as the aggregate of the actual or potential resources which are linked to having a long term network of institutionalized relationships of mutual acquaintance and recognition – or to membership in a group – which provides each of its members collectively owned capital. This definition directly or indirectly encompasses the key elements of social capital. Social capital are (interpersonal) resources created through social ties, which can be accessed or used (in the case of market information and policies) by social actors for actions (including collective action), taking power relations, norms and trust into consideration (based on Bourdieu 1986, Coleman 1988, 1990, Wasserman & Faust 1994, Long 1999, Putnam 2000, Woolcock & Narayan 2000, Grotaert & Bastelaer 2001, Lin 2002, Woolcock & Sweetser 2002, Huber 2009).

The conceptualization herein builds up on Williamson's (2000) framework on the Economics of Institutions related to the so-called New Institutional Economics (NIE)³⁹ theory. His framework is composed by four levels of social analysis 'social embeddedness', 'institutional environment', 'governance' and 'resource allocation and employment'. The latter is not contemplated in this study, as it implies a neoclassic economics approach whose rationality does not fit into the logics of the local economy of the (*quilombola*) extractivist communities at stake⁴⁰. The other three levels are adapted into three layers (see Figure 5), which relate to formal and informal institutions and access to livelihood relevant natural resources and markets: socioeconomic embeddedness, institutional environment and institutional arrangement.

Figure 5: Pyramid of Institutional Structure



Source: Own elaboration, based on Granovetter (1985), Williamson (2000)

This pyramid depicts the structure of institutions in question and serves to ground them in different layers of social structure – from its 'difficult to see broad root basis' to the 'concretely shaped tip of the iceberg'. Such basis of the pyramid is represented by socioeconomic embeddedness extended from Granovetter's (1985) and Williamson's (2000) social embeddedness makes up the first layer pertaining to the structure of institutions herein. Socioeconomic embeddedness is characterized by societal values

39 For pioneering research on the so-called New Institutionalism, see Powell & DiMaggio (1991); and – building on them as well as on, *inter alia*, Williamson (2001) – for a comprehensive compendium on scientific pieces on NIE, see e.g. Ménard & Shirley (2005). However, in order to maintain constructive flexibility to combine not only different disciplines such as economics and sociology yet also to build up on distinct theories and schools, it is not hereby intended to frame the institutional analysis under the NIE.

40 For a comprehensive conceptualization and empirical evidences on peasants' socio-economic strategies (towards livelihood strategies beyond profit maximization), see e.g. Shanin (1971), Chayanov (1986), Wolf (2001). Such foundations set by these scholars can be similarly applied to family farmers/ small-scale producers and also for NTFP extractivists – yet, for a more specifically elaboration on extractivists in Brazil, see e.g. Almeida (2004).

and codes of conduct including reciprocity (referred to in Chapter III.3.4), in which informal and formal institutions inherent to actor-based networks are embedded in. Embedded within reciprocity principles, patron-client relations are institutionalized within given value chains so as to consolidate (inter)dependence among respective chain actors – in this case, local Brazil nut gatherers and buyers.

Building on such foundation, the second layer refers to what e.g. Lawrence & Shadnam (2008) call institutional context (informal and formal institutions, and their relations as well as implications that are important in a situation) and is hereby adapted to 'institutional environment'. Institutional environment refers to the 'rules' of the game (North 1990), made up of:

“[...] political, social and legal ground rules that establish the basis for production, exchange and distribution”. (Davis & North 1971: 71)

As understood herein, institutional environment is primarily the space, in which informal and formal institutions – norms and rules in use, respectively – are located and that serves as a basis for extraction/ production by social actors, in this case value chain agents. It frames the access (and control) of resources through written rules (for environmental conservation) and unwritten norms⁴¹ as well as power relations (based on Davis & North 1971, Bourdieu 1986, Long 1999).

Informal and formal institutions can be 'game' enabling or disabling (e.g. setting a prohibition or limitation through conditions for conceding permits to given chain actors). The latter, for instance, can manifest in rules that facilitate or constrain either trade of livelihood relevant natural resources (including NTFPs) or environmental conservation or both. Besides they can enhance reciprocal trust through mutual control (see e.g. Yamagishi *et al.* 1998).

Formal and informal institutions can influence each other (see Chapter III.2.1) while at the same time serving as the basis for the third layer, institutional arrangements (based on Ménard 1995). The latter constitute the pillars for governance structures (detailed in Chapter II.1.2.2). Institutional arrangements are combinations of formal and/ or informal institutions that may favor collective action and coordination among actors from distinct societal sectors grounded in contracting schemes and networks including for sustainably accessing livelihood relevant natural resources (based on Klein 1999, Geels 2004). Besides, institutional arrangements can also manifest in either formal or informal institutional arrangements. Both these arrangements are the modes for organizing transactions (including their costs), which are important to take into account when analyzing them and the context where trade takes place (based on Williamson 2000). They refer to how the game among value chain actors is played; herein, particularly among NTFP extractivists as well as between upstream buyers and gatherers. After Kherallah & Kirsten (2001) such arrangements further establish a framework for cooperation and competition amongst them, building up on their interaction with informal and formal institutions.

Here, institutional arrangements, including informal ones are key for value chain coordination (see e.g. Chapter V.2.2.1), which depend not only on market but also other

41 For relations between formal institutions (TdC) and informal institutions (*aviamento*) framed along a respective continuum, see Chapter III 2.1.

types of coordination, including horizontal. Such arrangements are in accordance to the so-called 'hierarchy governance' (see Chapter II.1.2.2), and/ or to one that is a combination of vertical and other structures (Williamson 1985).

Institutional arrangements may function as:

“[...] specific guidelines designed by trading partners to facilitate particular exchanges.” (Klein 1999: 456)

The focus of the analysis of institutional arrangements in this research, are factors that can facilitate or hinder resource and market access of Brazil nut gatherers and local buyers, as well as the position of the former vis-à-vis the latter within the respective value chain.

Building on the presented theoretical and conceptual foundations of this thesis (Chapter II), it is to go one step further in order to provide additional answer elements to the main and sub-research questions:

How do informal and formal institutions affect the access to Brazil nuts and markets by buyers and, especially, by gatherers within the Brazil nut value chain in the Lower Amazon basin?

How are institutions – that affect resource and market access – institutionalized and formalized?

At next, this thesis turns to the analytical framework, as a key pillar for understanding how access by upstream value chain actors to livelihood relevant resource and market is filtered by informal and formal institutions.

III. Analytical Framework

Access has been mainly conceptualized and empirically analyzed in relation to land and property rights (see e.g. MacPherson 1978, De Soto 2000). The importance of land as a natural resource for producing land-based resources is indisputable as well as of land property (title) as formal institution.

“The access – by individuals or groups – to land enables the production of food and therewith safeguards social reproduction”. (Coy 2001: 28)

This citation indicates the relevance of access to land for rural dwellers’ livelihood strategies, which has already been broadly researched, yet builds the background of any further natural resource access and use. In this frame, scholarly underexplored access to livelihood relevant resources (Brazil nut as an NTFP) as well as to markets filtered by institutions are primarily dealt with empirically (see Chapter V).

From the 1970s until the mid 1980s, a narrowly conceptualized and applied understanding of access with a focus on governmental structures and discussions on social classes and inequalities by Karl Marx supporters prevailed. Blaikie (1985) contested this framing of access by introducing ‘access qualifications’ to refer to his observations in Zambia that having a piece of land does not automatically enable one to use it. Ribot & Peluso (2003) draw upon this first reference to the importance of certain means to benefit from the access to natural resources (including land), by referring to ‘mechanisms of access’¹, required in addition to forest or farm land availability.

With their article “A Theory of Access”, Ribot & Peluso (2003) ‘put property in its place’ corresponding to one of many factors that play a role in the access to livelihood relevant resources and also markets. Whilst the focus of the property rights school has been on formalization of rights to and titling of land tenure², they put forward a more comprehensive notion of access – beyond property – that includes: power, authority and labor as well as institutions shaping the dispute over natural resource access and use.

Before explaining the analytical framework (including its boxes and arrows) on resource and market access affected by institutions as determinants and their processes along value chains (depicted in Figure 6), it is important to state that its left and right sides correspond to the two building blocks of this thesis (see Chapter 1.3). This thesis primarily provides analytical and empirical input (herein and in Chapter V, respectively) to bridging the respective literature gap as well as the ‘research for development gap’. Thereby, it addresses the main problem of the lack of access to livelihood relevant natural resources and markets by upstream actors of the chain at stake.

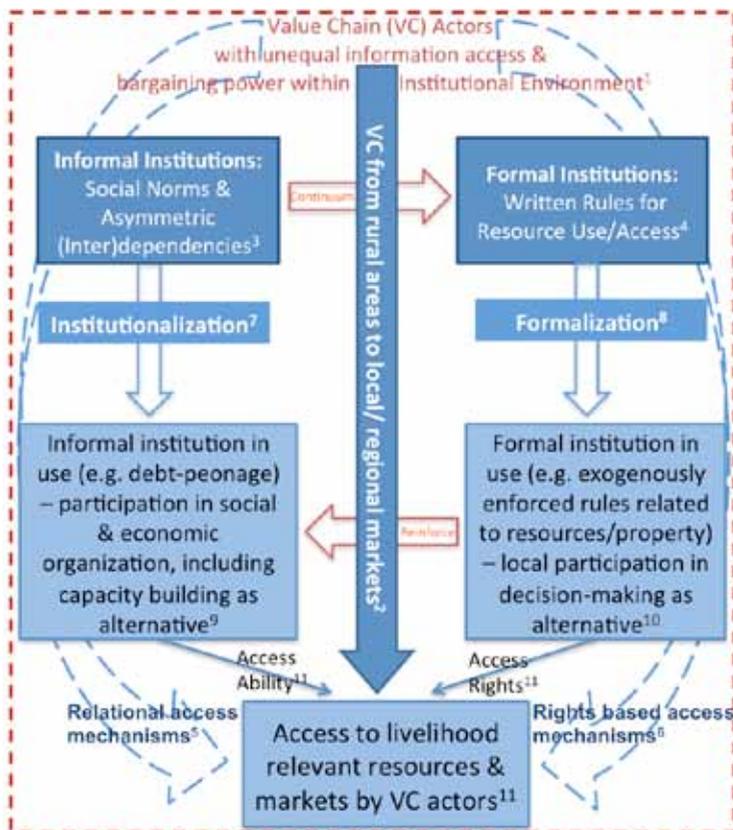
The theory of access by Ribot & Peluso (2003) serves as conceptual underpinning for the self-developed analytical framework – represented by Figure 6 as follows, in which the arrows and boxes correspond to chapters of the thesis. The proposed framework concentrates on value chain actors – affected by determinants and processes of ac-

1 Mechanisms of access are the “means of access that make up the strands in our bundles and webs [of power]”. (Ribot & Peluso 2003: 55)

2 See Bromley (1989: 872) on four “property regimes” of land: “state property”, “private property”, “common property” and “nonproperty”.

cess to livelihood relevant natural resources as well as markets – embedded in an institutional environment (encompassing a continuum of institutions – see Chapter III.2.1). Such processes are based on underlying ‘mechanisms of access’ (see Ribot & Peluso 2003: 155). These mechanisms manifest in institutionalization and formalization – towards the informal institution *aviamento* and the formal institution TdC, respectively – affecting the natural resource and market access by upstream chain actors (Brazil nut gatherers and buyers) in the case analyzed herein.

Figure 6: Analytical Framework



1 Chapter I

2 Chapters II.1 and V.1

3 Chapter II.2.2.1

4 Chapter II.2.2.2

5 Chapter III.1.2.1

6 Chapter III.1.2.2

7 Chapters III.3.1 and V.1.3

8 Chapters III.3.2 and V.2.2

9 Chapters V.1 and V.3

10 Chapters V.2 and V.3

11 Chapters V, VI and VII

Source: Own elaboration

This chapter (III) is composed by three blocks, which characterize the analytical framework herein: The conceptual underpinnings (III.1) mainly based on Ribot & Peluso (2003); conceptual relations concerning institutions (III.2 – whereby III.2.3 relates specifically to the main research question) referring to the institutional environment including continuum from informal to formal institutions (top red horizontal arrow) and how the latter reinforces the former (bottom red horizontal arrow); followed by not only the processes of institutionalization and formalization affecting the access to livelihood relevant resources and markets (III.3 – whereby III.3.3 relates specifically to the sub-research question), but also by leverage points to overcome access limitations (III.3.4 pertaining to both research questions).

1 Conceptual Underpinnings from Theory of Access: Resource and Market Access

This Chapter lays the conceptual groundwork for the analytical framework herein.

Ribot & Peluso (2003) mainly elaborate on their theoretical framing of access to livelihood relevant resources as well as markets (Chapter III.1.1), referring mainly to mechanisms of access (Chapter III.1.2); whereas market access is the focus herein, including of the empirical analysis, specifically elaborated on (Chapter III.1.3).

1.1 Conceptualization of Access Beyond Property Rights

Defining Access

Access is the right and ability³ to benefit from resources (Ribot & Peluso 2003: 153). Ability refers to:

“[...] a wider range of social relationships that can constrain or enable people to benefit from resources without focusing on property relations alone [...] people’s ability to benefit from resources [depends on] [...] powers constitute[d by] the material, cultural and political-economic strands [...]. People [...] are positioned differently in relation to resources.” (Ribot & Peluso 2003: 154)

Whilst access relates to “bundles of powers” (Ghani 1995: 2), rather than arrangements of rights, value chain actors have distinct positions and access conditions within these webs of powers⁴ (based on Ribot & Peluso 2003).

“Different people [...] can draw on different ‘bundles of powers’ located and constituted within ‘webs of powers’ [...]. Ability is akin to power [...]. Power is inherent in certain kinds of relationships and can emerge from or flow through the intended and unintended consequences [...] of social relationships.” (Ribot & Peluso 2003: 155-156)

By focusing on ability, rather than property relations, it is possible to comprise a wider range of social relations that can enable, yet in some cases hamper people to benefit from resources (see Ribot & Peluso 2003, Ostrom 2009).

3 For a further conceptualization of ability in relation to market access, see Chapter III.1.3.

4 For power relations, see e.g. Foucault (1982), Bourdieu (1986); and for power in relation to structure and agency, see e.g. Giddens (1979).

“Benefits are important because people [...] live on and for them and clash and cooperate over them. [...]. Access is about all possible means by which a person is able to benefit from resources.” (Ribot & Peluso 2003: 155-156)

According to Ribot & Peluso (2003), the actors who have access are the ones who benefit, indicating parallels between access and benefits. Bebbington (1999: 2022) goes as far as to refrain from distinguishing access from resources, when putting forward that access is the most relevant resource determining the capacity of people to build sustainable livelihood strategies that reduce rural poverty.

However, it is important to keep them apart for the understanding of how the access to livelihood relevant resources and markets by economically and geographically marginalized rural dwellers⁵ is filtered herein. While such understanding of the relation among access, resources and also benefits serves as an analytical foundation for this thesis, access is herein differentiated from resource itself. This is in contrast to what was proposed by Bebbington (1999), yet allows for evidencing the process of accessing resources and benefiting from natural resources and markets. Still, the importance of access to resources (ibid.: 2022) – herein, Brazil nut marketed at the subnational regional level – is indisputable for ensuring livelihood strategies of upstream actors (extractivists and local buyers) of a given value chain.

Further, Ribot & Peluso (2003) refer to similarities among property and access, stating that both contemplate relations among people with regard to processes of acquiring benefits from resources. However, they highlight that not only property rights⁶ relations but more so the ability to access natural resources and markets affect the distribution of benefits (based on Ribot & Peluso 2003).

The authors put forward the distinction between property rights and ability related to access while emphasizing market access (see Chapter III.1.3) as a crucial precondition to effectively benefiting from a resource in economic terms (based on Ribot & Peluso 2003).

“The ability to commercially benefit from a resource can depend more on whether its owner has access to markets than whether someone has rights to it”. (Ribot & Peluso 2003: 166)

5 Analyzing how the actors at stake benefit from access is not the focus herein, as it has already been explored by e.g. Leach *et al.* (1999).

6 Property rights scholarship is broadened by ‘common pool resources’ (in the case of collectively managed land and overall natural resources), see e.g. Agrawal (2003), Ostrom (2005). It is also framed under Political Ecology addressing human-environment relations by ‘place-based’ and ‘non-place-based actors’ (Krings 2000) from the perspective of geography, see e.g. Bryant (1992), Peet & Watts (1996), Walker (2005). Both theoretical strains broaden the scope of property rights in relation to natural resource access and use and have parallels with the understanding of access proposed herein (based on Ribot & Peluso 2003). However, it is not intended hereby to rigidly frame the access at stake under respective debates, so as to maintain flexibility for drawing from different theories and strains as well as (sub)disciplines (e.g. NIE, beyond what is put forward by Williamson (2000), as well as on (Sociological) Institutionalism, beyond DiMaggio & Powell (1983) towards Nee & Ingram (1998), which are all useful for understanding empirical phenomena while answering the research questions herein.

Moreover, Ribot & Peluso (2003) conceptualize access beyond property rights theory applied to (community-based forest and overall) natural resource management (see e.g. Agrawal & Gibson 1999, Ostrom 2009, Shackleton *et al.* 2010), towards ability to access resources and markets.

Differentiating Access from Property by Distilling Ability from Rights

“A key distinction between access and property lies in the difference between ability and right”. (Ribot & Peluso 2003: 155)

Building on MacPherson (1978), property can be conceptualized as:

“[...] a right in the sense of an enforceable claim to some use or benefit of something”. (Ribot & Peluso 2003: 155)

For instance, rights to land relate to an enforceable claim⁷, whereas access is ‘less enforceable’ according to Giovarelli (2009).

Ribot & Peluso (2003) further argue for differentiating between property rights and ability for acquiring access and benefits, as having property rights on natural resources does not guarantee benefits from them.

“Someone might have rights to benefit from land but may be unable to do so without access to labor or capital. This would be an instance of having property (the right to benefit) without access (the ability to benefit).” (Ribot & Peluso 2003: 160)

Despite the attention paid to ability as part of the definition of access to natural resources and markets herein, the research approach on the (lack of) access at stake still comprises the rights sanctioned by formal institutions that can enable or inhibit value chain actors to benefit from resources.

Approach for Analyzing Access to Natural Resources and Markets

Moving beyond property rights literature when borrowing from Blaikie (1985) who pioneered the notion of ‘access qualifications’, Ribot & Peluso (2003) go one step further by referring to relations among resource access and membership in social groups as well as ‘capital’. In their approach to analyzing access, they explain that access is not only determined by rights based access mechanisms (see Chapter III.1.2.1) but also by relational access mechanisms (see Chapter III.1.2.2). Both types of mechanisms can be understood as means and processes regarding access to livelihood relevant natural resources and markets.

“Relational mechanisms of access include or reinforce access gained directly through [...] rights-based [...] access. [...] mechanisms of access may operate sequentially [...]”. (Ribot & Peluso 2003: 160)

While such sequence may vary according to each context, in the case herein it is the other way around: existing relational access mechanisms consolidating the informal institution *aviamento* were then reinforced and formalized per TdC of the TRBR in 2012 (see Chapters V.1.3 and V.2.2.2, respectively) and underlying rights based ac-

⁷ In the frame of the property rights theory: “[a]n ‘enforceable claim’ is one that is acknowledged and supported by society through law”. (Ribot & Peluso: 155)

cess mechanisms. Overall, both access mechanisms influence if/ how benefits can be derived from resources.

By extending access analysis beyond ‘rights based access’ strictly conditioned by property rights towards ‘ability based access’ and relational access mechanisms to access natural resources and markets, reference is made to the negotiation capacity and overall human capital of value chain actors (based on Ribot & Peluso 2003). Building on Berry (1993: 14), access to livelihood relevant resources and market possibilities depend on, for instance, upstream value chain agents’ ability in terms of capacity to negotiate with downstream actors and service providers. Besides market asymmetries, this capacity – which also includes productive resources, individual skills and propensity for collective action – makes up the bargaining power of actors along a given value chain. Differing negotiation capacity and bargaining power among value chain agents shape their ability to access livelihood relevant resources and markets, beyond property sanctioned by formal institutions.

“[...] since access to resources depended, in part, on the ability to negotiate successfully, people tended to invest in the means of negotiation as well as the means of production per se”. (Berry 1993: 15)

Despite unforeseeable outcomes of negotiations on access (e.g. on natural resources and markets per TdC), upstream value chain actors are better off when ‘investing in’ strengthening their ability to influence negotiations (e.g. over NTFPs); rather than in having exclusive property over resources and keeping social ties that are not of direct benefit.

Sikor & Lund (2009) already argued for the analysis of property and resource access to consider ‘vulnerable’ groups. Yet, what is hereby further put forward is not only respective livelihood relevant access to be based on environmental and socioeconomic claims of such actors involved in a given value chain (including ICMBio) – but also how particularly upstream chain agents (including Brazil nut gatherers) can benefit from sustainably accessing resources and markets.

1.2 Disentangling Access Mechanisms

Whilst the so-called property rights school⁸ concentrates on land tenure rights and titles, this thesis goes beyond that by analyzing how informal and formal institutions affect the access to livelihood relevant natural resources and markets. Thereby, access mechanisms play a pivotal role in understanding how upstream chain actors’ access to natural resource and markets is filtered by informal and formal(ized) institutions and related processes (corresponding to the main and sub-research questions, respectively).

After having delimited access from other concepts often used interchangeably in literature (e.g. property rights) and outlined both types of access mechanisms in line with Ribot & Peluso (2003); as follows, access is further dissected in order to understand the processes of access to natural resources and markets affecting upstream value chain actors. Thereby, the mechanisms of access in question are disentangled

8 For property rights school, see e.g. Platteau (1992), De Soto (2000); and for property rights theory in relation to social cost problems, see e.g. Coase (1960).

towards comprehending how benefits are potentially gained. This lays the groundwork for understanding relations among value chain actors in respective streams of access to livelihood relevant natural resources and markets as part of the analytical framework proposed herein.

1.2.1 Rights based Access Mechanisms

Rights based access mechanisms⁹ are characterized and their components are described to understand rights in relation to access. Building on Ribot & Peluso (2003), access encompasses rights sanctioned by formal institutions that can allow or hinder social actors to benefit from livelihood relevant natural resources and markets.

Aligned to Ribot & Peluso's (2003) understanding of processes of rights based access to resources and markets, they can be hereby referred to as mechanisms that manifest specifically in the process of formalization herein (see Chapter V.2.2). Such mechanisms are comprised by formal institutions, including property rights and, particularly by legally binding rules, federal decrees and laws.

Notwithstanding the importance of protecting forests, the access to and use of natural resources can be filtered by e.g. the creation of PAs and related conservation decrees enacted by a country's Ministry of Environment. Such legally based access filters can affect the functioning of supply and demand within markets where products of these areas could be traded without undermining biodiversity conservation. In forest areas where e.g. NTFP are freely yet sustainably used by forest dependent rural dwellers (based on Smith *et al.* 1995, Kusters *et al.* 2006), certain formal institutions such as exogenously enacted rules can (unnecessarily) restrict livelihood relevant natural resource and market access in PAs (based on Galvin & Haller 2008). As opposed to direct resource users (e.g. cooperatives that depend on sustainable NTFP sourcing for collective marketing), government has the authority to formalize property rights and regulations governing resource access by issuing official land titles or writing laws and decrees. All in all, successful formal institutions are rules that are adapted to local contexts (see Ostrom 1990).

On the pathway to responding to the research questions herein, the following background question is put forward: Why can't local populations – living in and from forests – also participate in decision-making in the frame of governance structures for (co-) managing PAs and on formal institutions for sustainably accessing livelihood relevant resources and markets? Building on Borrini-Feyerabend *et al.* (2004), Galvin & Haller (2008) indicate this possibility in terms of natural resource management while contributing to international debates with the book they edited with cases from different regions, yet not from the Brazilian Amazon.

“The notion that local people are indeed able to define rules, ‘share power’ and be key agents in achieving conservation or sustainable use within protected areas as a basic system of governance [...] has recently been manifested in official discourses on the management of PAs, while local and indigenous organisations in turn continue to claim their right to be active agents in these issues.” (Haller & Galvin 2008: 19)

9 Rights based access mechanisms correspond to the dashed blue vertical arrow on the right side of the analytical framework (see Figure 6).

So far respective management including of PAs of full environmental protection is at the most ‘consultative’ vis-à-vis their long-established inhabitants. The Brazilian government (ICMbio) has not yet considered co-management based on ‘democratic’ decision-making pertaining to livelihood relevant natural resource (and market) access in such areas as an alternative for overcoming respective resource conflicts. When putting it into context, access and benefit from given resources can still depend on establishing and maintaining social ties to state agents who implement these formal institutions (based on Weber [1921] 1976, Ribot 1995, Ribot & Peluso 2003).

Whilst recognizing the role rights based access mechanisms beyond property rights¹⁰ play when filtering access, relational access mechanisms and ability to access and benefit from it, demand more attention and explanation.

1.2.2 Relational Access Mechanisms

Relational access mechanisms¹¹ are disentangled to characterize the ability of value chain actors to livelihood relevant access to natural resources and markets (based on Ribot & Peluso 2003). This type of mechanisms includes access to social relations (i) and ‘authorities’ (including extractivist leaders) (ii), access through participation in groups and in decision-making (social and economic organization in FUGs – see Chapters III.3.4 and V.1.7) (iii), access through informal institutions in use (iv), and per negotiation to gain labor opportunities (see Chapters V.1.6-1.8) (v), as well as access to knowledge and information (see Chapter V.3) (vi), and especially, market access. Given the importance of market access and as it corresponds to the core node of the value chain analyzed herein, it is specifically explored in Chapter III.1.3, whereas ‘social capital as per actor-based social networks’ is put into relation with access from (i) to (iv).

Social relations (i) build the ‘power web’ – based on ‘bundles of powers’ (Ghani 1995) constituted by power relations negotiated among respective agents (Gore 1993: 452) – that makes up social relations within networks. Such relations entail (inter)dependency among value chain actors, which on the one hand lead up to the institutionalization of patron-client relations (see Chapter V.1.3), and on the other hand constitute one of the pillars of the ability of upstream chain agents within the access process (see Chapter V.1.7).

Berry (1993) had already pointed out how crucial investing in social relations is for accessing resources, followed by Bebbington (1999) who stressed the relevance of social relations as a precondition for structural and material resource access.

“Indeed access to other actors is conceptually prior to access to material resources in the determination of livelihood strategies, for such relationships become *sine qua non* mechanisms through which resources are distributed and claimed, and through which

10 Here it is referred not only to the TRBR as a PA yet also to the TdC at stake as legally based governance frames that shape the access to given natural resources and markets (see Chapter V.1.2).

11 Relational based access mechanisms correspond to the dashed vertical arrow on the left side of the analytical framework (see Figure 6).

the broader social, political and market logics governing the control, use and transformation of resources are either reproduced or changed.” (Bebbington 1999: 2023)

Ribot & Peluso (2003) go one step further by analyzing social relations as part of relational access mechanisms constituting the ability to access natural resources and markets. The authors refer to ‘four key types of social relations’ influencing access within social networks, which relate to informal institutions; in this case to patron-client relations per *aviamento* as *patronage* or debt-peonage system in use in the Amazon.

“Access via the negotiation of other social relations of [...] trust, reciprocity, patronage, dependence [...] form critical strands in access webs. [...] social relations are central to virtually all other elements of access.” (Ribot & Peluso 2003: 172)

Access to ‘authorities’ (ii) is represented by actors who bundle power, e.g. state agents who can enact laws and local leaders who can also filter access to natural resources and markets (see Chapter V.3). Through their studies, Schure *et al.* (2015) found evidences that small-scale producers mainly access resources via access to traditional (or local) authorities.

Considering access processes that can be regarded within value chains, Ribot & Peluso (2003) mention production factors and market interaction among chain actors, when referring to access to authorities:

“People and groups gain and maintain access to other factors of production and exchange through them”. (ibid.: 170)

Access to livelihood relevant natural resources and markets can depend on access to authorities. This access can in turn shape the ability of value chain actors to benefit from such resources (based on Ribot & Peluso 2003).

Participation¹² in groups and related decision-making processes (iii) not only affects other access forms but also condition the ability of accessing and benefiting from given resources and markets. Specific conditions shaping ability are e.g. active membership in FUGs – associations for accessing livelihood relevant resources and co-operatives for accessing markets – and, especially, (co-)deciding on resource access and related benefit allocation¹³.

“Capturing benefits requires a role in both decision-making institutions [...] and institutions guaranteeing or facilitating resource access [...]”. (McDermott 2009: 251)

She puts forward institutions that are overall conducive for participating in making decisions as well institutions enabling the access at stake and forging benefits from it. In practice, however – beyond the case on which this research concentrates –, local value chain actors (e.g. NTFP gatherers) who are most affected by limited access to livelihood relevant natural resources and markets are not the ones who decide on or control processes that lead to access.

12 Participation (e.g. in the management of PAs) can be regarded (as involvement – from being informed or consulted to complete control by local groups/ individuals (based on Borrini-Feyerabend 1996, Haller & Galvin 2008: 17).

13 For relations between resource (and market) access and benefit sharing, see e.g. Ten Kate & Laird (1999), Landell-Mills & Porras (2002).

“[...] local power relations and the institutions regulating access to productive resources may constrain the ability of the ‘poorest of the poor’ [...]”. Sikor & Nguyen (2007: 2010)

Access through informal institutions in use (iv) are hereby added to the relational access mechanisms proposed by Ribot & Peluso (2003), since they play a pivotal role in this case and whose analysis can be useful for other contexts as well. Thereby, access can be filtered by informal institutions in use (see e.g. Moran & Ostrom 2005), particularly when functioning as a limiting or enabling factor for accessing given livelihood relevant natural resources and markets. For instance, ‘points of Brazil nut collection’¹⁴ are claimed and only used by given families over generations, while Brazil nut pods piled up next to trees already belong to someone (see Chapter V.1). These are both examples of verbal agreements institutionalized throughout a long time span, after being internalized and continuously respected by community members.

Further, consolidated (inter)dependence between given Brazil nut gatherers and buyers (who provide advanced payments for their suppliers to finance their gathering season), result in gatherers selling to the same buyers over years (based on Ensminger 1992). Such debt-based dependence from Brazil gatherers (clients) on local buyers (patrons) is institutionalized over generations resulting in *aviamento* as an informal institution (see Chapters V.1.3 and V.1.4). This limits NTFP gatherers in accessing other market opportunities; whereas, such buyers have their local bargaining and price-setting power strengthened as well as their access to respective natural resources facilitated by these dependent suppliers (see Chapters V.1.2-1.6). Such debt-implied ease for buyers to access given natural resources, has however been restricted by the TdC as a formal institution in use limiting the number of buyers endowed with a formalized permission by ICMBio to enter the TRBR area (see Chapter V.2.2).

Still, on top of implications of *aviamento* (informal institution) on the abovementioned sourcing, local buyers and successively larger buyers along Brazil nut the value chain – e.g. owners of regional processing mills in the case illustrated herein – have facilitated access to labor opportunities (v). Access to and control over labor opportunities can be used to benefit from resources. Downstream value chain actors, who have access to and control over labor opportunities, i.e. jobs (based on Peluso 1992, Ribot & Peluso 2003), can use them for favors in the frame of institutionalized patron-client relations, as referred to herein. These actors can make use of their privileged access as well as control to lower so-called per diem payments (*diárias*, in Portuguese) when these opportunities are limited (e.g. Shiva *et al.* 1982).

“[...] access to land continued to be mediated through membership in various social networks, while access to labor has become increasingly individualized”. (Berry 1993: 17)

14 At community level in Oriximiná, Pará (Brazil), such ‘points of Brazil nut collection’ are referred to as *pontos de coleta de castanha* (in Portuguese).

In the case analyzed herein, active membership of a few *quilombolas* leaders in respective associations¹⁵ – making use of social networks and their political influence claiming collective land tenure rights of traditionally occupied lands through governmental entities (see Chapter V.3) – was decisive in granting ‘their communities’ six land titles (i.e. *Quilombola Territories/ TQs*¹⁶, per acronyms in Portuguese).

“Access to labor opportunities includes the ability to labor for oneself and to maintain access to employment with others. Even though someone may have no access to a resource through property rights and may not have the capital to [...] engage in commercial transactions giving her or him rights to a resource, she or he may gain resource access by entering into a working relationship with the resource access controller, the holder of a permit, or other market-based access mechanism. Workers may subsequently have to invest in social relations with resource owners or managers in order to maintain access to both labor opportunities and the resources themselves [...].” (Ribot & Peluso 2003: 167)

Beyond herewith cited “market-based access mechanism[s]”, as a transition to market access (Chapter III.1.3) – whilst still being related to *aviamento* and implied ‘institutionalized dependence’ between upstream trade partners (iv) as well as labor access (v) –, access to knowledge and information (vi) represents a key relational access mechanism (based on Ribot & Peluso 2003). The latter refers to the means for downstream and, particularly, upstream value chain actors informing themselves (about e.g. prices and other market information); while extending their ability to access certain resources and markets (e.g. through access to specific courses and credit lines for NTFP gatherers – see Chapters V.1.7 and VII). The access mechanism (vi) also affects their capacity to benefit from other forms of access – e.g. participation in decision-making and even in property rights (rights based access mechanism) – as geographically marginalized rural dwellers may not have access to information on public policies and how to acquire land titles. The degree of value chain actors’ endowment with knowledge and information plays a key role in the distribution of benefits from resources and markets depending on if and to what extent these agents can access them.

Buyers may refrain from informing or even lie to producers or NTFP extractivists about the market prices of given products in order to lower prices paid to at the so-called farm-gate level.

“Information about technologies may be withheld to prevent dependent producers from becoming independent of their patrons”. (Ribot & Peluso 2003: 169)

15 Key *quilombola* associations involved in land tenure claims in Oriximiná are the Association of the Remaining Communities of *Quilombos* of the Municipality of Oriximiná (ARQMO, per acronyms in Portuguese) and Association of the Remaining Communities of *Quilombos* of the Community of Cachoeira Porteira (AMOCREQ, per acronyms in Portuguese).

16 There were in total six titled TQs as at 2015 (based on Grupioni & Andrade 2015: 12). In addition, CCPT received the land title of a TQ encompassing 220.000 ha around the TRBR on 03.03.2018 after 23 years of fighting for this traditionally occupied land in Oriximiná, Pará (available at: <<https://www.theguardian.com/world/2018/mar/05/descendants-of-slaves-celebrate-brazil-land-rights-victory>>; accessed on: 05.03.2018).

Whilst (production) technologies are not the focus herein, lack of access to knowledge and information as well as misleading information can considerably affect clients' (small-scale producers' or NTFP gatherers') access to resources and, particularly, to alternative market outlets.

Not only access to livelihood relevant natural resources can be therewith affected yet also the ability of actors to participate and benefit from commercialization (based on Ribot & Peluso 2003).

Albeit the importance of analyzing access to natural resources, the focus laid herein is on livelihood relevant market access and the related mechanisms of access.

1.3 Conceptual Foundations of Market Access and Related Mechanisms

Market access is to be characterized building to a significant extent on Ribot & Peluso's (2003) conceptualization while exploring its determinants and related processes – both addressing the research questions. This is done when scoping for inhibiting and enabling factors for value chain actors (e.g. NTFP gatherers or smallholders) to access respective markets and effectively (benefiting from) participating in given value chains.

Market access – hereby analyzed is the access to local and regional Brazil nut markets as it is important for gatherers' livelihood strategies – can be seen as part of relational access mechanisms according to Ribot & Peluso (2003). Further, it is crucial to avoid hampering sustainable livelihood strategies of rural dwellers living in communities who are not self-sufficient, which is the case herein. Beyond that, it can be regarded as the segment of a given value chain that serves to transform a resource or service into financial benefits or economic returns, which is desired by upstream chain actors, *inter alia* by NTFP extractivists, themselves. Market access is filtered by given institutions as determinants and mediated by related processes, in this case of institutionalization and formalization (conceptually and analytically detailed in Chapter III.3.3). Here, market entry barriers can consist of such access limiting processes as well as determinants (informal and formal institutions) access established e.g. by the government or leaders of FUGs, which can lead to an oligopsony or even a monopsony¹⁷. Additional restrictions to market access are cartels as well as lack of access to credit limiting negotiation possibilities, e.g. of NTFP gatherers (based on Polanyi 1944, Ribot & Peluso 2003).

Similarly to what is put forward by Ribot & Peluso (2003), the ability of value chain actors to access markets is of particular interest. Market access stems from:

“[...] the ability of individuals or groups to gain [...] entry into exchange relations”.
(Ribot & Peluso 2003: 160)

Yet, in the case of market entry barriers via e.g. certain environmental conservation laws (formal institutions), specifically in inhabited PAs can lead to further socioeconomic isolation and potential impoverishment of affected small-scale producers or NTFP extractivists.

17 Similarly to oligopsony, a monopsony is a market structure characterized by having one buyer endowed with price-setting market power vis-à-vis numerous suppliers (producers or NTFP gatherers) in a given territory.

The ability to access markets – that can stem from ‘enhanced human capital’ together with credit provision and, under certain conditions, also per network-based relations with ‘market actors’ that help secure this access – is a resource that people can use to support their livelihoods (based on Bebbington 1999, Leach *et al.* 1999, Scoones 2009).

In order to understand why and under which conditions markets are accessed or why they are not accessed, four important aspects determining market access based on IFAD (2004) are presented as follows:

- Market structure (e.g. power relations among value chain actors, number of suppliers and buyers)
- Accessibility (e.g. distances including from rural communities to local urban markets, transport costs)
- Skills, herein overall referred to as ability of given actors, as well as market information and negotiation processes (e.g. commercialization outlets, supply and demand as well as bargaining processes and prices)
- Capacity to deliver products to buyers (e.g. timely delivery of quantity and quality of produced goods or gathered natural resources).

Moving forward, these determinants can function as hampering or fostering factors with regard to market access – depending on agents’ chain positions. Building on relational access mechanisms, a key limiting factor is distinct bargaining power that shape trade and negotiation processes. Thereby, upstream value chain actors (in this case Brazil nut gatherers) are endowed with a weak negotiation standing as price-takers, while being in an underprivileged position for accessing markets and derived benefits. When marketing their ‘produce’ individually instead of collectively (e.g. through a cooperative), NTFP gatherers or small-scale producers often sell small quantities while having to accept low farm-gate prices imposed by buyers. As opposed to the former, purchasers have market and price information of urban centers, which makes up their privileged position when trading with such small-scale producers or NTFP extractivists from remote communities (based on Gyau *et al.* 2014).

“Producers experience a weak bargaining position vis-à-vis traders because often they do not have timely access to [...] information on prices, locations of effective demand, preferred quality characteristics [...], nor on alternative marketing channels”.
(van Tilburg *et al.* 2012: 222)

Despite the increased potential of accessing information and markets given membership in well-functioning ‘smallholder’ groups (e.g. FUGs such as associations and cooperatives), transaction costs can account to prohibitive costs for market participation. Thereby, small-scale producers or gatherers faced with high transaction costs have their incentives for market participation significantly reduced (based on Barrett 2008).

In oligopsonic or monopsonic market structures, not only market access but also access to labor opportunities – described above under relational access mechanisms (see Chapter III.1.2.2) – are controlled by a sole or a few buyers, respectively. Distribution of benefits is demand driven and upstream value chain actors are compelled to work for and supply one (monopsony) or few price-makers (oligopsony). These unbalanced market conditions enable the monopsonist or oligopsonist to profit from

the use of labor force and the respective product trade, whereas ‘smallholders’ are not only dependent on ‘dictated’ prices but often also have to accept transport and credit conditions established by buyer(s) (based on Schmink & Wood 1987, Ribot 1998, Ribot & Peluso 2003, Sunderlin *et al.* 2005).

However, there still are enabling conditions under which market access can be acquired or improved for geographically and economically marginalized NTFP gatherers and small-scale producers to effectively benefit from participating in given value chains.

Building on van Tilburg & van Schalkwyk (2012) – who referred to enabling environment: acquiring or improving market access in a given territory can be entailed by creating an enabling institutional environment (including for accessing livelihood relevant natural resources), eliminating or adapting market entry barriers (e.g. certain limiting informal, and, particularly, formal institutions), and increasing access to information (including market outlets and prices). In so being, (enhanced) market access can be further achieved through more balanced bargaining power and mutually beneficial network-based trust relations among value chain actors (based on Cunha 2014). Further, based on IFAD (2004) and van Tilburg & van Schalkwyk (2012), engaging in collective action, ‘enhancing respective ability’ (human capital of producers or NTFP gatherers) as well as coordination among government, smallholder organizations (member-driven cooperatives and FUGs overall), NGOs and the private sector can also be conducive for accessing markets.

Finally, in the realm of indicating potential leverage points related to ability-based socioeconomic upgrading¹⁸ for sustainably accessing markets and effectively participating in value chains the following is conducive: enhancing not only smallholders’ social and economic organization yet also competences in acquiring and expanding their livelihood assets based on enhanced human, financial and social capital (as per actor-based social networks) as well as ‘capital’ overall, including labor and land. Formal education programs for improving NTFP extractivists’ and/ or smallholders’ general skills and tailored capacity building to foster their know-how for conducting specific tasks, such as accounting and administrative, as well as advisory services can play a key role in empowering¹⁹ smallholders (based on van Tilburg *et al.* 2012). Additionally, collective action through joint marketing of larger quantities – while reducing the risk of breaking supply agreements per institutional arrangements, e.g. on quality with a given buyer – can also lead to the access of further market opportunities.

Beyond conceptual underpinnings towards relations among key variables for the analytical framework proposed herewith, at next, the interplay between informal and formal institutions with regard to the access by upstream value chain actors at stake is illustrated.

18 Ability-based socioeconomic upgrading is a new arrangement of concepts combined herein in the realm of inclusive value chain development – for details, see Chapters V.1.6-1.8, VI, VII – hereby presented per analytical framework (Chapter III) as linkages between theoretical (Chapter II) and empirical parts (Chapter V) of this thesis.

19 “Empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives”. (Narayan 2002: vi)

2 Conceptual Relations: Informal and Formal Institutions with Regard to Resource and Market Access

“Whether we are dealing with formal or informal rules, we need to consider the ways in which rules are enacted [...] the mere codification, legislation, or proclamation of a rule is insufficient to make that rule affect social behavior”. (Hodgson 2006: 12)

The way ‘rules’²⁰ are enacted, as cited above, refers to: whether it is conducted unilaterally by leaders of given social systems (e.g. rural communities/ FUGs in case of informal norms or a ministry/ MMA in case of formal rules) or in a participatory process of rule design and respective decision-making. Building on Hodgson (2006), the ‘how’ plays an important role in perceptions of and behavioral implications for involved or even excluded yet, in one way or the other, affected actors (including in the one analyzed herein – see Chapter V.2.3).

The informal and formal institutions hereby analyzed are the ones that play a role in whether or how livelihood relevant resources and markets are accessed and potentially benefited from; i.e. *aviamento* and the TdC, respectively, as well as their consolidation²¹ and reinforcement of the former by the latter.

This chapter is structured in: continuum of institutions referring to the institutional environment at stake (III.2.1), relations between informal and formal institutions (III.2.2), and relations among (informal and formal) institutions and access to natural resources and markets (III.2.3).

2.1 A Continuum from Informal to Formal Institutions

Whilst the continuum hereby proposed refers to theoretical foundations of ‘institutional environment’ (detailed in Chapter II.2.4 and complemented with its conceptualization in relation to market access in Chapter III.1.3), the focus herein is laid on institutions in a continuum. Such gradient paves the way for exploring the related process of formalization (see Chapter III.3.2).

In literature, institutions are referred to either informal or formal ones, while usually being classified into (informal) norms and (formal) rules; whereby some scholars go as far as referring in particular to informal institutions as consolidated schemes of human interaction (see Knight 1992, Ostrom 2005). In practice, it is distinguished between formal institutions registered in written ‘official’ documents (often promulgated by governments) and unwritten or verbal norms (see Leftwich & Sen 2011: 321). Besides, North (1990) recognizes that it is not always easy to classify institutions into formal and informal, yet suggests the two to be seen as extremes of a continuum, with customs and traditions at one side, and written constitutions at the other.

In addition, arguments for differentiating (informal) institutions from ‘social capital’ are provided by Chopra (2002), Lin (2008) and Huber (2009: 164). Institutions including

20 The term rule is used by Hodgson (2006) so as to refer to both formal and informal institutions, as opposed to here where a clear distinction is made between rules and norms, which make up each one of the institutions, respectively.

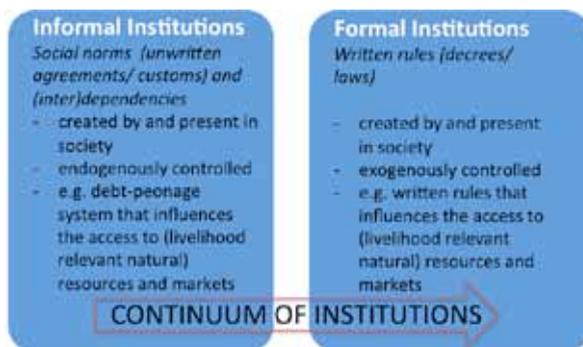
21 The consolidation of informal and formal institutions refer to the processes of institutionalization and formalization, respectively. In reference to Ribot & Peluso’s (2003) access mechanisms, such processes are specifically elaborated on in Chapter III.3.

rules or values are not part of the definition of social capital (see Footnote 93). According to Chopra (2002), institutions are rather external factors that can influence or might be an effect of social capital²². This is in line with the argumentation of the scholars referenced, while it illustrates at the same time the differentiation and relation between institutions and social capital as per actor-based social networks²³.

In so being, informal institutions are not considered equivalent to ‘social capital’ neither in conceptual nor in empirical terms, whereas the idea of a gradient of institutions as proposed by North (1990) and Knowles (2005) adds value to the analysis herein. Thereby, the continuum of informal and formal institutions presented in this chapter (III.2.1) feeds into the analytical framework (see Figure 6), represented by the top red arrow in the middle pointing from the left to the right side of the framework.

The continuum of institutions illustrated as follows (see Figure 7) lays the groundwork for understanding the interrelations between informal and formal institutions and, beyond that, among each one of them and resource as well as market access. Beyond a gradient of institutions, Figure 7 helps distinguishing between: on the one hand, informal institutions (norms, verbal agreements, endogenously controlled by internal actors), and on the other hand, formal (written rules, exogenously controlled by actors outside (*quilombola*) extractivist communities) (based on North 1990, Leach *et al.* 1999). The following figure offers a visualization of the two components of the continuum of – informal and formal institutions – and the relationships between them:

Figure 7: Continuum of Informal and Formal Institutions



Source: Own elaboration, based on North (1990), Leach *et al.* (1999), Knowles (2005)

²² While taking into account the contribution of social capital to resource and markets access as well as to information and public policies, Granovetter (1973) provides the basis of the understanding of the relations herein as he states “[...] the analysis of processes in interpersonal networks provides the most fruitful micro-macro bridge. In one way or another, it is through these networks that small-scale interaction becomes translated into large-scale patterns, and that these, in turn, feed back into small groups”. (ibid.: 1360)

²³ Considering the actual focus of this research on relations between the access and institutions at stake, what can be stated in this regard is that: “[...] social capital is the networking that helps create linkages which in turn forge rules, conventions and norms governing the development process”. (Chopra 2002: 2911)

Figure 7 provides an overview of the relationship between the two concepts at stake with respective empirical examples for ease of understanding. Informal institutions are located at the left side of the continuum. They are created (over time) by and manifest in society as social norms, which are maintained and controlled endogenously by actors in society. Formal institutions – at the right side of the continuum – are exogenously controlled (by the government). Both these concepts are interdependent and build up on human interaction (based on Knowles 2005), yet cannot be used interchangeably. Whilst there is a relation between informal and formal institutions (see e.g. Stiglitz 2000), the former may hamper or facilitate the creation and even the legitimization of existing rules (formal institutions).

Moreover, the interaction between informal and formal institutions is here-in considered along upstream Brazil nut value chain nodes with a focus on *quilombola* communities in Oriximiná. The continuum and influence of certain formal institutions on informal institutions (based on Stiglitz 2000, Knowles 2005, Pacheco *et al.* 2008), and vice-versa, is captured per qualitative evidences in Chapter V. Yet, beforehand a respective conceptual analysis follows.

2.2 Overall and Specific Relations between Formal and Informal Institutions

Overall relations between formal and informal institutions addressed through the patterns ‘complementary’ and ‘substitutive’ of interaction between both institutions have already been extensively explored in theoretical and empirical terms. These two have been expanded to four patterns, so as to consider accommodating and competing schemes of interrelation between both types of institutions (see e.g. Voigt & Kiwit 1998, Helmke & Levitsky 2004, Vu *et al.* 2014).

“Complementarities exist when informal institutions are created to facilitate the functioning of some formal institutions and aid in the effective enforcement of the latter. Substitutive informal institutions are created to help a certain ineffective formal institution achieve its goal. When a certain formal institution is not functionally desirable to a group of actors, they seek to create a set of informal counterparts to solve their own problems more effectively without violating formal rules (corresponding to the category accommodating). However, informal institutions can dominate weak formal institutions and drive actors to ignore and violate the latter (corresponding to the pattern competing while being dysfunctional).” (Vu *et al.* 2014: 2)

However useful the aforementioned classification may be, it has not only already been explored but also does not apply categorically to this thesis. The distinction between informal and formal institutions is not clear-cut at the first place while it depends on the socioeconomic and legal context (based on Hodgson 2006), in addition to environmental issues in question.

Specific relations between both institutions refer to the red arrow at the bottom of the analytical framework (see Figure 6): formal institutions in the form of specific rules (per TdC) can strengthen already existing limitations per informal institutions (*aviamento*), such as asymmetric patron-client relations within a given value chain (see Chapter V.2.2). In so being, specific formal institutions – which can come with formal

sanctions – reinforce specific informal institutions in use in certain contexts (e.g. in the one at stake).

Informal institutions happen to fill up gaps in legislation and in certain cases they can surge as a reaction to formal institutions that do not benefit the majority or a powerful group. In other cases, norms can play an important role in the effectiveness of formal rules: for instance, when the seller (producer or gatherer) informs the buyer the exact amount of produce he is handing over, most extractivists comply to respective written rules although the quantity is not always checked in detail (see Chapter V.1). This significantly reduces enforcement costs (USAID no date). A norm-deviant action can be sanctioned through boycotting or even via exclusion of a social unit, which can be as harmful as formal sanctioning related to formal institutions, given both reactions can lead to discomfort for the deviator (Hodgson 2006).

At next, relations among each one of the informal and formal institutions at stake and livelihood relevant resource and market access are delineated.

2.3 Relations between Institutions and Access to Resources and Markets

Most scholars have devoted their contributions to argue for either formal or informal institutions while dealing with property rights and land tenure access (see e.g. Feder & Feeny 1991) or customary rights and social norms in relation to natural resource access (see e.g. Knight 1992). Thereby, the so-called ‘property rights school’ gained prominence with De Soto (2000), who claimed formal titles to shape the ability of actors to access credit in the so-called ‘Global North’ compared to the ‘Global South’. The reason being, the latter to lack such formal institutions (e.g. land titles) and thus the access to respective financial services, while the relationship between such variables applies particularly to remote rural areas including in the Amazon region (see e.g. De Soto 2000).

However, only a few scholars have analyzed interrelations between formal and informal institutions (see Chapters III.2.1 and 2.2); whereas relations between institutions and access to livelihood relevant resources and markets remain underexplored in literature. Since unbalanced trade relations in and around a PA in the Brazilian Amazon are at the core of the analysis herein, it is important to regard the respective influence of institutions vis-à-vis environmentally sound natural resource and market access. Agrawal & Gibson (1999) build up on Bates (1989) and North (1990) to state:

“[Institutions] constrain some activities and facilitate others; without them, social interactions would be impossible”. (ibid.: 637)

They further base their following argument on Ensminger (1992), Agrawal (1995) and Alston *et al.* (1996):

“[...] institutions remain the primary mechanisms available to mediate, soften, attenuate, structure, mold, accentuate, and facilitate particular outcomes and actions”. (Agrawal & Gibson 1999: 637)

Institutions play a pivotal role in framing the scope for human (inter)action (based on North 1990), as social actors try to access and market their product – in this case geographically and economically marginalized value chain agents (NTFP gatherers and local buyers within the chain at stake).

In contexts of rural poverty, informal institutions have a major influence on the functioning of agricultural (and NTFP) value chains and can contribute to local sustainable development (USAID no date). Whilst most scholars and development practitioners would agree on this point, it is to be further specified which informal institutions can under which (socioeconomic and environmental) conditions forge, in fact, the so-called ‘pro-poor development’ in question²⁴.

Informal institutions denote socially embedded dependence mechanisms, including of *patronage* that influence access to resources (based on Ribot & Peluso 2003, Lewins 2007, USAID no date). Norms of reciprocity exist and persist in markets without necessarily having been consciously established (Granovetter 1985). (Inter)dependence can be consolidated in an informal institution (as depicted in Figures 6 and 7) per long-standing trade relations among the same buyers and sellers of produce, and, especially, NTFPs. Most remote rural settings in the Amazon basin, such as the one studied here, asymmetric patron-client relations among generations of extractivists and buyers have been institutionalized. Through advanced payments to small-scale providers of *in natura* products, (comparatively powerful) buyers establish dependency structures over decades, compelling respective upstream chain actors to sell to the same (local) buyer(s) at a price that favors mostly the latter (based on Filocreão 2007). However, NTFP extractivists rarely have access to credit for them to finance the harvest themselves, particularly in remote extractivist communities with insecure land tenure, while often depending on daily cash and industrialized products brought by these buyers (*regatões*/ middlemen) from markets they access (see Chapter V.1). With reference to the bottom red horizontal arrow pointing from the right to the left side of the analytical framework (see Figure 6): Particularly analyzed hereby is how the formal institution TdC can affect the informal institution *aviamento* (empirical evidences are provided in Chapter V.2.2).

Specifically, the informal institutional arrangement per verbal agreement (‘Brazil nut agreement’ as predecessor of the TdC of the TRBR – see Chapter V.2.1) is formalized through a written rule (TdC – see Figure 6). The latter allows for exclusion of middlemen, formalized in Clause 10 of the TdC (Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b). Its implications for upstream Brazil nut chain actors, particularly gatherers from *quilombola* communities along the Trombetas river, and the roles²⁵ as well as intentions and interests of the actors involved or only affected by (Clause 10 of) the TdC of the TRBR are disentangled. The definition of role is borrowed from Berger & Luckmann (1980):

“We can only talk about roles, when [...] ‘Typisierung’ occurs within the interrelations of an objectivized knowledge set, with which the majority of actors is jointly endowed with. In such a context, types of actors are ‘carriers of roles’. The formation of a role typology is the necessary complement to the institutionalization of the behavior, which

24 For a detailed conceptualization of such conditions as leverage points towards ability-based socioeconomic upgrading, see Chapter III.3.4.

25 For a detailed conceptualization of (social) role and expectations attached to each role, see e.g. Merton (1957), Weber [1921] (1976), Meyer & Rowan (1977), Berger & Luckmann (1980), Boudon (1982).

gets clear now. The roles are the ones through which institutions of individual experience are internalized.”²⁶ (ibid.: 78)

It is hereby referred to role as a bundle of prescriptions of functions attached to given types of actors, while the consolidation of roles is based on institutionalized and internalized scripts of (inter)action.

“Institutions promote stability of expectations *ex ante*, and consistency in actions, *ex post*”. (Agrawal & Gibson 1999: 637)

A social role further relates to expectations (im)posed to the actor endowed with the respective role. It is detached from a single person, while it comes with do’s and don’ts, i.e. ‘rights’ and ‘duties’ faced by a type of actor who is endowed with the respective role (based on Knight & Sened 1995), which persists over time.

Based on Ribot (1995, 1998) and Ribot & Peluso (2003), a literature gap is hereby bridged, by exploring the relationship of given formal institutions with informal ones (including the former reinforcing the latter and formalizing it), as well as with the ability and rights to access livelihood relevant resources and markets²⁷ (see left and right sides of Figure 6, respectively). The influence of such institutions on the access to Brazil nuts and markets along the respective chain is analyzed, so as to result in scientific inputs for the ‘locally desired’ inclusion of extractivists, potentially leading to mutually beneficial value chain development. This people-centered and planet-sensitive analytical approach can contribute to filling such a research for development gap. The analysis builds up on the expansion of the concept of access (based on Ribot & Peluso 2003) including not only the right but also the ability of respective actors to access livelihood relevant resources and markets – providing analytical foundations for responding to both research questions.

Not only both above analyzed institutions determine the access to natural resources (Brazil nut) and, particularly, markets – corresponding to the main research question –, yet also respective processes as means to address the sub-research question at stake. How the processes of institutionalization and formalization of access limiting institutions while shaping such livelihood relevant access can be addressed, when analyzing the Brazil nut chain in the aforementioned subnational region.

3 Processes of Institutionalization and Formalization Affecting Resource and Market Access

Before going into the core processes pertaining to the access of geographically and economically marginalized actors of a given chain, an outline of (inter)dependence

26 “Von Rollen können wir erst dann sprechen, wenn [...] Typisierung sich innerhalb der Zusammenhänge eines objektivierten Wissensbestandes ereignet, der einer Mehrheit von Handelden gemeinsam zu eigen ist. In solchem Kontext sind Typen von Handelnden Rollenträger. Dass die Bildung einer Rollentypologie die notwendige Ergänzung zur Institutionalisierung des Verhaltens ist, wird jetzt deutlich. Es sind die Rollen mittels derer Institutionen der individuellen Erfahrung einverleibt werden.”

27 For inherent control of resources as precondition of entitlements, see e.g. Sen (1981), Leach *et al.* (1999).

and related conceptualization is offered upfront for it features in the analytical framework (see first box on the left side of Figure 6).

Interdependence and reciprocity are based on social ties and interactions (social and commercial) as well as social norms and trust among social actors (based on La Due Lake & Huckfeldt 1998). They further refer to:

“[...] interactions and patterns of interdependence that occur within a population [...] specific to the relationships that exist among the members of a group or population”.
(ibid.: 581)

Even in cases of existing initial ties, effective cooperation requires involved agents to be able to influence each other. When actors have an incipient history of cooperation or a history of conflict, mutual influence can be pivotal, including for mediating conflicting interests (Brown & Ashman 1996). Additionally, geographic proximity²⁸ can play a role in reinforcing (inter)dependence and reciprocity, while potentially contributing to the coordination on the means to access resources and markets as well as to specific cooperation among value chain actors, e.g. when aiming to achieve common goals. Social norms and shared values that allow for cooperation among members of a group include:

“[...] truth-telling, the meeting of obligations, and reciprocity”. (Fukuyama 1995: 99)

Herein, conceptual foundations are provided for addressing the sub-research question on how access limiting institutions are institutionalized and formalized. Attention is paid to limiting factors upon the resource and market access of given upstream value chain actors emerging from two processes: institutionalization (corresponding to the blue vertical arrow and box in the middle of the left side of Figure 6) and the formalization (corresponding to the blue vertical arrow and box in the middle of the right side of Figure 6). Therewith, the former process refers to institutionalization of patron-client relations (as asymmetric interaction patterns) resulting in the informal institution *aviamento* (see Chapter V.1). The latter process refers to the formalization per TdC (see Chapter V.2) of already existent norms within informal institutional arrangements at the local level. Both imply in limitations of the access to livelihood relevant natural resources (Basil nut) and local as regional markets.

3.1 Institutionalization Towards Debt-Peonage (*Aviamento*) as Informal Institution

Conceptual foundations are hereby provided for analyzing the institutionalization process pertaining to the access to natural resources and markets by upstream actors of the value chain at stake. Towards responding to the sub-research question on how access limiting informal institutions are institutionalized. Attention is paid to institutionalization of the *aviamento* as a debt-peonage system characterized by dependency relations among extractivists and buyers who provide advanced payments for the former to be able to gather NTFPs (Brazil nut) and supply the same buyers.

28 For a detailed elaboration of (value chain) actor-centered notions of geographic proximity, ‘regional planning’ and local endogenous development, see e.g. Torre & Rallet (2005), Ehlinger *et al.* (2007), Costa (2014).

Before conceptualizing ‘institutionalization’, it is important to elaborate on what is institutionalized, i.e. on ‘patron-client relations’. In the frame of human interaction, particularly trade relationships, respective patron-client relations are established over generations so as to consolidate *aviamento* as an informal institution that has been prevailing in the Amazon for over two centuries.

Patron-client relations are also referred to in literature as *patronage* and *clientage* or “patron-clientage” (Hall 1974: 506). These are different labels for relationships among (politically and, especially, financially) capitalized patrons, often ‘landlords’, and a client endowed with considerably less economic power (see Wolf 2001: 17). Patron-client relations are vertical, asymmetric, and at the same time reciprocal, given (inter)dependence among patrons (buyers) and respective clients (producers or gatherers).

“[Patron-client relations] tie people [...] of significantly different socioeconomic status (or order of power). The ties are established [...] over many generations and [...] reinforced by accumulated debts that make the client fundamentally unfree.” (Foster 1963: 1281)

This description by both authors cited above fundament the conceptualization in this chapter and paves the way for the empirical analysis of the institutionalization process (Chapter V.1.3).

“The patron grants favours in return for goods, loyalty, [...] and other services from his dependent clients”. (Hall 1974: 506)

Whereas the client:

“[...] promises – in effect – to entertain no other patron than the one from whom he received goods and credit. [...] Here the element of power emerges, which is otherwise masked by reciprocities. [...] The client is duty-bound [and] has a strong sense of loyalty to his patron and voices this [...].” (Wolf 2001: 16)

Building upon what is put forward by these three scholars, patron-client relationships emerge and are further maintained, given related ‘necessity’, particularly in remote areas where the provision of services and exchange of goods would otherwise not or hardly occur.

This conceptualization of patron-client relations as the ‘object’ that is institutionalized feeds into the notion of institutionalization put forward by Berger & Luckmann (1980). While they refer to the ‘objectification of reality’ (ibid.: 58), they first elaborate on how institutionalization turns an individual phenomenon into a collective one.

“Institutionalization occurs as soon as habitualized actions are reciprocally *typisiert* by types of actors. Each *Typisierung*, which occurs in this manner is an institution. [...] When habitualized actions lead to institutions, then the *Typisierungen* are a common good. They are accessible for all members of a societal group. The institution itself turns individual actors and individual actions into types. [...] preconditions for institutions are historicity and control. Mutual *Typisierungen* of actions emerge throughout a common history. [...] Through the mere fact of its existence institutions keep human

behavior under control. They prescribe behavior scripts [...].”²⁹ (Berger & Luckmann 1980: 58)

Overall, Berger & Luckmann (1980) further put forward that institutions turn into an ‘objective reality’ (contained in the title of their publication) that can be accessed by any type of actors, while controlling human behavior over time. This objectification and externalization process is accompanied by an internalization process of this ‘objectivized societal world’ into consciousness throughout socialization.³⁰ (Berger & Luckmann 1980: 65)

Preconditions for the institutionalization process to be one of internalized ‘objective reality’ are that the actors have common aims as well as steps of the respective process, and that not only particular individual actions but also types of action as well as its phases are “*typisiert*” (in German).³¹ (Berger & Luckmann 1980: 76)

“Institutionalised rules are classifications built into society as reciprocated typifications or interpretations”. (Berger & Luckmann 1967: 54)

In this research it is referred to norms, in order to differentiate from rules as formal institutions. Whilst the authors explain reciprocity – manifested in (inter)dependency herein – as being characteristic for the institutionalization process to consolidate a norm, a key condition for the long-term existence and persistence of a given institution is the need for it.

“The continuity of an institution is grounded on societal recognition of it as a ‘permanent’ solution of a ‘permanent’ problem”³². (Berger & Luckmann 1980: 74)

In Chapter V.1.7, viable alternatives for the problem of limited access to livelihood relevant natural resources and markets by upstream chain actors are scoped for, when seeking alternatives to *aviamento* – for it is a suboptimal ‘solution’ given its unbalanced trade relations.

The persistence of an institution over time further depends on its transfer among actors.

29 “*Institutionalisierung findet statt, sobald habitualisierte Handlungen durch Typen von Handelnden reziprok typisiert werden. Jede Typisierung, die auf diese Weise vorgenommen wird, ist eine Institution. [...] Wenn habitualisierte Handlungen Institutionen begründen, so sind die entsprechenden Typisierungen Allgemeingut. Sie sind für alle Mitglieder der jeweiligen gesellschaftlichen Gruppe erreichbar. Die Institution ihrerseits macht aus individuellen Akteuren und individuellen Akten Typen. [...] Institutionen setzen weiter Historizität und Kontrolle voraus. Wechselseitige Typisierungen von Handlungen kommen im Lauf einer gemeinsamen Geschichte zustande. [...] Durch die bloße Tatsache ihres Vorhandenseins halten Institutionen menschliches Verhalten unter Kontrolle. Sie stellen Verhaltensmuster auf [...].*”

30 “[...] *Internalisierung, das heisst buchstäblich einer Einverleibung, durch welche die vergegenständlichte gesellschaftlicher Welt im Verlauf der Sozialisation ins Bewusstsein zurückgeholt wird [...].*”

31 “[...] *Voraussetzung dafür ist, dass man mit anderen bestimmte Ziele und Phasen der Verrichtung gemeinsam hat, und weiter, dass nicht nur Einzelhandlungen, sondern auch Handlungsverläufe und –weisen typisiert werden.*”

32 “*Das Fortwirken einer Institution gründet sich auf ihre gesellschaftlicher Anerkennung als ‘permanente’ Lösung eines ‘permanenten’ Problems.*”

“Each transmission of institutional sense needs control and legitimization. Both belong to institutions themselves and [the transmission of institutional sense] is managed by the transmitting persons.”³³ (Berger & Luckmann 1980: 75)

These two conditions (legitimization and, especially, control) as well as the aforementioned precondition (the need for an institution) are evidenced empirically in Chapter V.1.3.

Further, Parsons (1937) conceptualized institutionalization as being:

“[...] an articulation or integration of the actions of a plurality of actors in a specific type of situation, in which the various actors accept [...] rules regarding goals and procedures”. (ibid.: 117-118)

Even though institutions can be (induced to be) agreed upon by respective parties and might at first have a tendency to be ‘everlasting’, institutions and institutionalization are not irreversible given they can be changed (see Simmel 1958: 86).

Still, given (inter)dependency among upstream value chain actors in trade and personal interaction (see Chapter V.1.3), institutionalization of asymmetric patron-client relations – beyond unbalanced trade among the same suppliers and buyers – is entailed by the *aviamento* system as an informal institution persisting throughout the Amazon.

3.2 Formalization per Formal Institution (Term of Compromise) in Protected Areas

In academia, formalization³⁴ has been broadly debated as well as promoted by the ‘property rights school’ in terms of land tenure titling as a means to overcome uncertainty of respective ‘individual’ endowments and entitlements (see e.g. Leach *et al.* 1999, De Soto 2000). However, far less attention has been paid to the formalization process – beyond property rights and land titling – in relation to implications on given natural resource and market access, whereby this thesis strives to contribute to filling this gap in literature. Herein this process relates directly to specific livelihood relevant resource and market access.

Formalization is defined as:

“[...] the process of increased state engagement in terms of legal regulation”. (Ikdahl *et al.* 2005: 5)

Therewith, existent locally established informal institutions – e.g. norms for ‘informally’ regulating the natural resource and market access – are turned into exogenously determined rules. Such informal instructional arrangements are formalized per written registration in official documents (see Ikdahl *et al.* 2005: 4, Mitchell 2009: 334).

33 “Jede Weitergabe von institutionalem Sinn braucht Kontrolle und Legitimation. Beides gehört zu den Institutionen selbst und wird von den vermittelnden Personen verwaltet.”

34 As opposed to formalization, informalization is not addressed herein as it is neither identified as a local problem in the study area, nor does it help in answering the research questions. For a concise explanation of informalization, see e.g. Cronkleton & Larson (2015: 509).

Formalization is characterized by a considerable degree of complexity while often exogenously determined and controlled by a given government (see Ikdahl *et al.* 2005: 5), while it has:

“[...] far-reaching distributional consequences [that] often [...] differ significantly from the policy intentions.” (Ikdahl *et al.* 2005: 5)

These ‘distributional effects’ or “elite capture” as referred to by Putzel *et al.* (2015: 453) relate to the socioeconomic implications of the restrictions to accessing natural resources and markets formalized per TdC by ICMBio based on the Federal Decree 4340/2002 (Brazil 2002), whose decision it was at the end to establish the TdC of the TRBR in 2012 (see Chapter V.2). While environmental conservation is ICMBio’s principal goal, it might not have been intended by this governmental entity to provoke respective negative socioeconomic collateral effect on upstream Brazil nut value chain actors (see Chapters V.2.2.3 and 2.3). Such implications – per (Clause 10 of the) TdC of the TRBR – affecting local populations can thereby be categorized as “unintended consequences of social action” (Boudon 1982: 1) or “unanticipated consequences of purposive social action” (Merton 1936: 1). Both of them mean intentional actions whose effects were not foreseen, while Boudon (1982) refers to:

“The perverse mechanisms that are most significant socially are those that end up producing undesirable effects [...] by creating unwanted and often unexpected social imbalances”. (Boudon 1982: 5)

What is herewith referred to are unpredictable impacts of action within human interaction. Thereby, the conditions – under which livelihood relevant natural resource and market access is (not) allowed – are formalized through the TdC and its Clause 10, which further reinforces unbalanced trade relations per *aviamento* among upstream chain agents in the case focused upon herein.

Whilst the theory hereby provided helps understanding the case at stake as well as the implications of formalization through the TdC, it is a legally based instrument (formal institution in use at given PAs) that can be applied in any PA of full environmental protection throughout Brazil. Lessons drawn and insights only gained from analyzing the respective formalization process at local level in the Brazilian Amazon are as important as to embed it into the larger picture of current evidence-based debates on formalization shaping policy-making:

“As development policy, formalization frequently materializes as top-down restructuring based on current social and environmental norms. However, its adoption is often unsuccessful and entails risks including leakage, barriers to small or poor actors, elite capture, and negative effects on women or marginalized groups.” (Putzel *et al.* 2015: 453)

This corroborates, overall, with the practice of formalization by the Brazilian government – MMA, including the Brazilian Institute of Environment and Renewable Resources (IBAMA, per acronyms in Portuguese) and more recently, ICMBio – evidenced in this thesis. Thereby the process captured herein relates more to the access to livelihood relevant natural resources – Brazil nut and not only to land tenure – and also to markets (see Chapter V.2). Further, Cronkleton & Larson (2015) provide evidences from the Peruvian and Ecuadoran Amazon:

“[...] where rules are inflexible and do not respond to local needs, the formalized right can slip back into informal states”. (ibid.: 509)

They argue that the formalization of land tenure through titling is not to be seen as the successful conclusion of land reform processes, having access to land and titles of (private) properties permanently secured and irreversibly formalized in the Amazon areas they have analyzed. There can also be contradicting land claims among governmental entities (e.g. ICMBio) and traditional populations (in the Brazilian Amazon), as well as risks of land grabbing (e.g. by mining or logging corporations). Such contested land tenure status can cause insecurity not only for small-scale producers and NTFP gatherers to (maintain the) access to land but also to respective natural resources as part of their livelihood strategies.

Most PAs of full environmental protection – according to the definition from IUCN (1994) and Brasil (2000) – in Brazil overlap with traditionally occupied lands defined by Almeida (2011). Whilst the importance of environmental conservation in these areas of generally high biodiversity is indisputable, rules are overall established through ‘Management Plans’ not only for this type of PA but also for the ones where sustainable use is allowed (Brasil 2000). In addition, six PAs of full environmental protection have implemented TdCs, which include further rules in the process of formalization claimed by ICMBio to be a formal instrument to overcome conflicts with local residents of these areas over the access to natural resources. However, empirical evidences rather indicate exacerbation of related tensions the TRBR area (see Chapter V.2.3). There *quilombolas* who have long been living from and in the respective (protected) area, have since the establishment of the TdC of the TRBR in 2012 been submitted to its stiff clauses formalizing the limitation of the access to Brazil nut and markets.

Further, in line with Cronkleton & Larson (2015: 509) such formal rules “do not respond to local needs” to live from such natural resource as part of their traditional livelihood strategy. Such strategies of forest dependent rural dwellers already encompassed norms for managing natural resources in collectively used lands, which are partly formalized to ‘inflexible’ rules attached to control and sanction systems (see Chapter V.2.2). While there is not an ‘informalization’ process in place (see e.g. Benjaminsen & Lund 2003, Cronkleton & Larson 2015: 509), frequent infractions of these formal rules indicate: resistance by the affected *quilombola* communities as well as a tendency of such rules and deviation punishing systems promoted to conserve biodiversity to be context-blind (see Chapters V.2.2.3 and V.2.3). The relation between the process of formalization³⁵ as well as institutionalization and their implications on livelihood relevant resource and market access are analyzed at next.

3.3 Institutionalization and Formalization Limiting the Access to Resources and Markets

In light of both the main and sub-research questions, determinants (informal and formal institutions) as well as processes (institutionalization and formalization) pertaining to the natural resource (Brazil nut) and market access are easier responded to

35 For a thorough analysis of formalization and commodification, see e.g. Kelly & Peluso (2015).

through the analytical framework (Figure 6). As follows, relations between such processes and the access in question are explored by providing a comprehensive synthesis of what determines (informal and formal institutions) the access to livelihood relevant resources and markets.

The overall underlying means of access are represented by relational access mechanisms and rights based mechanisms (corresponding to the large dashed blue vertical arrows cutting across the right and left side of Figure 6, respectively).

Such mechanisms:

“[...] shap[e] how benefits are gained, controlled, and maintained”. (Ribot & Peluso 2003: 162)

Against the background, the two mechanisms referred to hereby manifest specifically in the institutionalization (see Chapter V.1.3) and formalization processes (see Chapter V.2.2), respectively. They both limit the access to livelihood relevant natural resources and markets by upstream value chain agents (in this case, Brazil nut gatherers). The actors of a given chain are the starting point of the analytical framework (corresponding to the text box centered at the top of Figure 6). The processes of institutionalization and formalization are at the center of the evidence-based analysis for understanding the access to natural resources (Brazil nut) and markets (corresponding to the blue vertical arrows in the middle of the left and right side of Figure 6, respectively). The chain actors are embedded in an institutional environment, which is characterized by a continuum (see Chapter III.2.1) from informal to formal institutions and serves as a frame to capture the interrelationship between the respective informal and formal institutions (corresponding to the top red horizontal arrow in the middle pointing from the left to the right side of Figure 6).

The processes of institutionalization and formalization are thoroughly analyzed in terms of how they limit the access ability and access rights (corresponding to the small blue diagonal arrows at the left and right side towards the central box at the bottom of Figure 6, respectively). Both these processes limit the livelihood relevant resource and market access by upstream chain actors (in this case, of Brazil nut in the Lower Amazon basin).

The analysis of relations between the respective informal and formal institutions is evidenced by the reinforcement of unequal bargaining power and dependency from gatherers upon buyers characterizing *aviamento* through the establishment of the TdC of the TRBR in 2012 (corresponding to the red horizontal arrow pointing from the right to the left side at the bottom of Figure 6). Thereby, Clause 10 of the TdC leads to the ‘solidification’ of inequitable trade relations by exogenously formalizing and exogenously enforcing the limitation of external buyers to enter the TRBR area already endogenously promoted by local buyers through the informal institutional arrangement ‘Brazil nut Project’ (see Chapter V.2.2.1).

By capturing the ‘why’ and ‘how’ of the ‘informal’ and ‘formal(ized)’ restrictions on the natural resource and market access, viable alternatives are scoped for overcoming such limitations – towards an enabling institutional environment in which upstream chain actors are embedded in. At next, such alternatives as leverage points are conceptually explored as a research input particularly for strengthening the chain position

of geographically and economically marginalized NTFP (Brazil nut) gatherers in the Lower Amazon basin.

3.4 Towards Overcoming Access Limitations of Upstream Value Chain Actors

Guided by the research questions herein, access limitations are addressed as leverage points grasped through access determinants and processes. Such opportunities to overcome the access limitations in question are to be conceptualized in what follows.

Leverage Points for Overcoming Access Limitations per Institutionalization of Patron-Client Relations

With regard to institutionalization and underlying relational access mechanisms (corresponding to the left side of Figure 6), well-managed cooperatives with a critical mass of active members can be a viable strategy/ alternative/ leverage point to sustainably accessing resources and markets (see Chapters V.1.6 and V.1.7).

In general, to overcome access restrictions implied by institutionalization of patron-client relations (detailed in Chapter V.1.3): participation of NTFP gatherers in organizations such as cooperatives for gaining bargaining power through collective marketing, enhancement of their ability to effectively participate in given chain per capacity building of upstream value chain actors for increasing access to information and ability for maintaining as well as benefiting from livelihood relevant resource and market access (corresponding to the box in the middle of the left side of Figure 6).

However in the frame of the leverage point at stake, why participate (in FUGs)?

According to MacQueen *et al.* (2005) reasons for (the surge of) participation in associations and cooperatives in the Amazon – that apply to other rural contexts – are threefold:

- In order to access (economic) resources, markets and/ or credit lines to finance collective rural initiatives, which is mostly available to groups and not to individual rural dwellers.
- “[To] reduce costs or [...] to adapt to new opportunities”. (ibid.: 31)
- “Community SMFEs [small and medium forest enterprises] have been unable to compete without uniting to increase their scale and market power”. (ibid.: 31)

Whilst this is not an exhaustive list – according to Fischer & Qaim (2012), active participation in economic activities, e.g. selling their product collectively through a cooperative can potentially lead to an increase of smallholders’ or NTFP gatherers’ income (see Chapter V.1.5).

Beyond these predominantly market-driven motives for participation in FUGs, it is hereby added that subsistence needs and access to services, including market and other types of information and its flow can be facilitated through active membership in FUGs. Yet, there are different degrees of group participation (see Segebart 2007). Membership per se may not have concrete effects, as opposed to when members participate in group activities (Fischer & Qaim 2012), such as taking part in collective harvesting of cassava (and other *mutirões*, locally called *puxiruns*).

Moving forward, what can be reasons for respective 'non-participation' (in FUGs)?

- Smallholders face high transaction costs that significantly reduce their incentives for market participation, overall (Barrett 2008).
- Geographical isolation: potential cooperative or association members often live in remote areas with poor infrastructure.
- Lack of trust in cooperatives, due to mismatched expectations in the past- Relatively high quality standards of cooperatives imply significant additional work in the post-harvesting process.
- Management problems, due to insufficiently qualified/ trained administrative personnel of cooperatives or even related to corruption.
- Management problems, due to insufficiently qualified/ trained administrative personnel of cooperatives or even related to corruption.
- Lack of cash-flow and financial capital available for cooperatives to buy produce.

These are reasons for that – despite the main common objective of earning sufficiently so as to fulfill the family needs from smallholders'/ gatherers' main agricultural or NTFP while knowing that collective marketing can strengthen their position in the respective value chains –, most do not participate in cooperatives.

Besides, what is the role of leaders in forging/ limiting collective action for access to resources (see Chapter V.3)?

After Olson (1965) collective action can surge through engagement of a few influential members of a group, amongst other means that make use of coercion. Participation in the form of effective engagement in a given group implies in investing time and effort to strive to fulfill its goal. Leaders of a group play a pivotal role in ensuring others' membership and active participation while aiming to achieve a collective goal.

Overall, building up on MacQueen *et al.* (2006), key motives for collective action through a FUG (association, cooperative) or small and medium forest enterprises are: limited access to capital (e.g. credit lines), lack of market information (e.g. prices of produce), lack of bargaining power (*extractivists* as price-takers), as well as geographical isolation (e.g. large distances to closest urban centers and markets) and miserable infrastructure (e.g. impassable road bridges). All such motives apply in the case herein.

“Collective action is often the only accessible way of responding to such bottlenecks”.
(MacQueen *et al.* 2006: 4)

In line with Roy & Thorat (2008), collective marketing through cooperatives can improve the access to credit, market information and bargaining power of smallholders. Yet, in some cases including in the Brazilian Amazon, leaders of such groups also strive for private benefits to the detriment of collective ones while getting involved in mismanagement of given collective enterprises. Still, often the founders of cooperatives or associations are the ones who agree on or share a common goal for the group and even have common motives to have formed such an organization. This commonly leads to a stronger sense of belonging compared to members who join afterwards.

“[...] association is about banding together around a common purpose – usually strongly felt by those who initially participate in that association”. (MacQueen *et al.* 2005: 31)

The processes for fulfilling a common purpose are based on accessing livelihood relevant resources and markets (as well as services and policies), which depend upon the ability of individuals (of a group) to do so. The ability of economically and geographically marginalized actors of a given NTFP chain can be enhanced through capacity building (corresponding to the box in the middle of the left side of Figure 6). Thereby it is noteworthy, that enhanced ability is conducive for overcoming both limitations per institutionalization and formalization referring to the informal and formal institutions in question (detailed in Chapter V).

In so being, empowered Brazil nut gatherers can claim their right to participate in decision-making as an alternative to being submitted to formal(ized) limitations per TdC – yet what does it take for them to sustainably access resources and, particularly, markets?

Leverage Points for Overcoming Formal(ized) Limitations per TdC

Overall, participation in FUGs can empower NTFP extractivists as a respective alternative (corresponding to a leverage point), from the side of the formalization and underlying rights based mechanisms.

Yet, effectively overcoming such access restrictions can be entailed by a change in governance structure and related institutional change co-shaped by local actors' extended participation in decision-making (corresponding to the box in the middle of the right side of Figure 6). Such self-reliant decisions concerning livelihood relevant natural resource and market access can be realized through the transformation of consultative to deliberative councils for managing given PAs of full environmental protection (detailed in Chapter V.2.4.2). Besides, in order to overcome 'formal restriction' on (natural resources and) market access the following is to be considered: participation in decision-making through a shift from captive to inclusive governance, including for co-promoting locally adapted TdC while evening out the 'field of negotiation' (see Chapters V.2.4 and 2.5) on access to natural resources and markets (corresponding to the box in the middle of the right side of Figure 6).

Further, Blaikie (1985) argues:

“Only political, collective action can change the rules of [the] game”. (ibid.: 112)

He hereby refers to the need for upstream actors disadvantaged per formal and informal restrictions to call for institutional change including through more inclusive governance structures and locally adapted policies for them to (effectively) access livelihood relevant natural resources and markets.

Finally, inclusive governance relates to access rights that combined with socio-economic upgrading pertaining to access ability (corresponding to the small blue diagonal arrows at the left and right side towards the central box at the bottom of Figure 6) could contribute to strengthening the chain position of NTFP (Brazil nut) gatherers.

Yet in sum, both the aforementioned viable alternatives require democratic participation in organizations (e.g. cooperatives) and in decision-making on the management

of PAs (e.g. consultative to deliberative councils) as means to overcome informal (per *aviamento*) and formal restrictions (per TdC). Participation can be extended by both sides – by gatherers' (pro)active claim of rights and through exogenously established enabling conditions by processing mills treating them as employees (socioeconomic upgrading) as well as by government entities e.g. more inclusive governance structures.

To wrap up while striking a transition from the conceptual foundations provided in Chapters II and III (containing the analytical framework – depicted in Figure 6) to the one on the empirical analysis (Chapter V):

“Access retains an empirical focus on the issues of who does (and who does not) get to use what, in what ways, and when (that is, in what circumstances)”. (Neale 1998: 48)

Moving forward the methodology and research approach is elaborated on at next, for showing the pathway to the empirical evidences of this thesis.

IV. Methodology and Research Approach

1 Sampling

Focus is laid at the local level for capturing detailed evidences, while dissecting key determinants and processes of livelihood relevant natural resource and market access by economically and geographically marginalized actors in the Lower Amazon region¹. This was combined with an in-depth analysis of the ‘whys’ and ‘hows’ of respective limited access by these actors for addressing the research questions, while moving beyond scratching the surface of a ‘generalizable’ description of socioeconomic and environmental conditions. Such combination together with the use of mixed data collection and analyses methods facilitated to thoroughly understanding determinants – informal (in this case, *aviamento*) and formal (in this case, TdC) institutions – as well as respective processes – institutionalization and formalization – affecting upstream (Brazil nut) value chain agents. The Brazil nut value chain in the Lower Amazon region (Pará, Brazil) was taken as the core unit for data collection and analysis. Thereby, agents indirectly involved in this chain (non-governmental and governmental representatives at municipality, state and national levels) and, specially, directly involved actors (Brazil nut gatherers and buyers as well ICMBio) were interviewed over the course of 2,5 years until 2015 (see Figure 8).

To put it into context, the subnational region in question was characterized by a mean HDI=0,66 compared to the mean HDI=0,76 for Pará in 2011 (IBGE 2012). Specificities of the Lower Amazon region in the state of Pará are that it has over 75% of its territory titled as PAs (see Santos *et al.* 2012) and is one of the natural occurrence hotspots of *Bertholletia excelsa* Bonpl. Lecythidaceae, mostly in these areas, as well as in traditionally occupied lands. Considering given context as well as actor-specific aspects, key findings on access limitations can still be generalized to a certain degree (based on Deming 1990); particularly in areas in and around PAs of the Amazon where *aviamento* as debt-peonage system dominates the NTFP sector, including in Brazil where the TdC formally regulating natural resource (and also market access as evidenced herein) applies (detailed in Chapter IV.5). Yet, as follows the sampling methods² applied are presented.

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- 1 Before starting with data collection in the frame of this thesis, the author had already done fieldwork in the Lower Amazon basin when participating in two projects funded by the ‘Federal Ministry for Economic Cooperation and Development’ of Germany (BMZ, per acronyms in German) over several weeks from 2010 to 2012. The quantitative survey referred to herein was coordinated as well as co-implemented by the author and funded by ICRAF in the frame of the Puxirum-Sociobio.net Project led by the *Freie Universität Berlin* in the frame of the GIZ Program ‘New Partnerships for Innovation in Sustainable Development – NoPa (per acronyms in Portuguese)’. This was the first fieldwork phase (July – September 2012), whereby the author was at the study sites prior to the Brazil nut harvest season, during the harvest and in off-season periods, so as to comprehensively capture local living conditions of gatherers and buyers, including (trade) relations amongst them and between them and ICMBio (see Table 1).
 - 2 For social sciences related research methods – both qualitative and quantitative –, see Neuman (2003).

1.1 Sampling Methods

Sampling methods used were twofold: (1) for choosing municipalities and communities³ of NTFP gatherers and buyers in the Lower Amazon basin, selective sampling was applied based on two criteria, 'prominent Brazil nut occurrence' and 'relative importance of Brazil nut as a family income source' (see Nascimento Júnior *et al.* 2000); and (2) for selecting households that sell and/ or buy Brazil nuts to be interviewed, following the identification of their total number – from registers *inter alia* of local associations cross-checked with community leaders –, snowball sampling⁴ was implemented so as to account for at least 20% of Brazil nut gatherers and 75% of buyers. One of the main reasons for employing this respondent-driven sampling method was that such population was difficult to be found at their residences (O'Leary 2004: 101), particularly in the harvest season during first half of the year when they were busy gathering and/ or buying Brazil nuts. Since community leaders had to be asked at the first place for authorization to conduct fieldwork in respective locations, the author often took to the opportunity to elaborate a list – informed by such leaders as the first persons consulted from the 'target group', also called as 'seeds' after Salganik (2006)⁵ – of the population of Brazil nut gatherers and buyers. The sequence of interviewed persons depended upon availability of respondents, i.e. who were at their homes and had 1-3 hours' time – when this was not the case, the author moved on to interview the next person on the list.

To overcome a potential limitation of 'representativity' (limited variety of profiles present in the respective population overall), while only interviewing persons indicated by respective leaders, health agents and, if existent, community representatives from the catholic and evangelical churches were also asked. Further, such lists were complemented with further Brazil nut gatherers and buyers mentioned by already interviewed community members (see Baldin & Munhoz 2011). The author ensured neutrality and confidentiality by avoiding to conduct interviews with the presence of leaders of associations or any other 'party' and, whenever possible, it was refrained from being introduced by such representatives.

1.2 Sample Size

Upfront, given its importance, qualitative data collection, from community to national level, 89 interviews (at seven communities of extractivists in Oriximiná – all by the Erepecuru and Trombetas rivers, except for one, located by the BEC road) and four

3 Communities and villages are used interchangeably.

4 "[...] snowball sampling procedure is defined as follows: A random sample of individuals is drawn from a given finite population. [...]. Each individual in the sample is asked to name k different individuals in the population, where k is a specified integer [...]." (Goodman 1961: 178)

5 In this context, Salganik (2006) claims snowball sampling to be a particularly well-suited sampling method to assess social networks. In this regard, see Diekmann (2007: 400) – who further elaborates on specific preconditions for snowball method to be applied, including population to be a specific social group, whose members are directly or indirectly acquainted to each other and can further anonymously 'nominate' an additional potential interviewee.

group interviews (with four communities of extractivists in Oriximiná – all by the Erepecuru and Trombetas rivers, except for one, located by the Bec road) were conducted in total by the author and coded with MAXQDA: 11 at national level (ICMBio, MMA, SEAD (formerly, MDA) – including SEPPIR⁶, FCP⁷, CONAB and MDIC in Brasília, CPI-SP⁸ and IMAFLORA⁹ in São Paulo), 6 at state level/ Pará (IDESP, SECTI¹⁰, SEICOM¹¹, Malungo¹², IMAZON¹³ and UFPA¹⁴ in Belém), 9 at municipality level (ICMBio in Santarém and Porto Trombetas; UFOPA¹⁵ in Santarém/ Oriximiná (both in the state of Pará), SEMMA, Emater¹⁶, STTR¹⁷; CPT¹⁸ in Oriximiná; and 3 processing mill owners who count as buyers) and 63 at community level (44 gatherers; 16 buyers including coordinators of the cooperative CEQMO¹⁹ and the *quilombola* associations ARQMO, AMOCREQ²⁰ and Mãe Domingas²¹; and 3 leaders who were not directly involved in the ‘Brazil nut business’). The most relevant actors (organizations and individuals) were hereby purposefully selected for answering the research questions, while including those as interviewees who were most involved (directly or indirectly) in the Brazil nut value chain in the analyzed region, representing their ‘group’.

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- 6 Special Secretariat of Policies for the Promotion of Racial Equality (SEPPIR, per acronyms in Portuguese) at the national level, under MDA.
 - 7 Palmares Cultural Foundation (FCP, per acronyms in Portuguese), responsible for representing *quilombolas* – including in land tenure issues relates to the process of titling TQs – at the national level, under the Brazilian Ministry of Culture.
 - 8 Pro-Indigenous People Commission of the state of São Paulo (CPI-SP, per acronyms in Portuguese), a NGO acting in Brazil.
 - 9 Institute for the Management and Certification of Forests and Agriculture (IMAFLORA, per acronyms in Portuguese), a NGO acting in Brazil and beyond.
 - 10 Secretariat for Science, Technology and Innovation (SECTI, per acronyms in Portuguese) of the state of Pará.
 - 11 Secretariat of Industry, Trade and Mining (SEICOM, per acronyms in Portuguese) of the state of Pará, Brazil.
 - 12 Coordination of the Associations of Communities of Remaining *Quilombos* of the state of Pará (Malungo), a civil society organization stemming from the social movement of *quilombola* (Afro-Brazilian) populations in Brazil.
 - 13 Amazon Institute of People and the Environment (Imazon, per acronyms in Portuguese).
 - 14 The Federal University of Pará (UFPA, per acronyms in Portuguese).
 - 15 The Federal University of Western Pará (UFOPA, per acronyms in Portuguese).
 - 16 Enterprise of Technical and Rural Extension Services (Emater, per acronyms in Portuguese), whose agents are allocated to one of over 20 Emater state units throughout Brazil, while functioning as extension and advisory service providers for farmers. After decades of decentralized activities, all ‘Ematers’ have been organized under the umbrella of the respective national agency (ANATER, per acronyms in Portuguese), while functioning as coordinating body at the national level since 2013.
 - 17 Rural workers’ union (STTR, per acronyms in Portuguese) with units throughout Brazil.
 - 18 Pastoral Land Commission (CPT, per acronyms in Portuguese).
 - 19 The *Quilombola* Extractivist Cooperative of the Municipality of Oriximiná (CEQMO, per acronyms in Portuguese).
 - 20 The *Quilombola* Association of the Community of Cachoeira Porteira (AMOCREQ, per acronyms in Portuguese).
 - 21 The *Quilombola Association of Mãe Domingas* is a area association under the umbrella of ARQMO.

Beforehand, from July to September 2012, a quantitative socioeconomic and natural resource survey²² at the household level – 185 households in total and 100 after data cleaning – was conducted in four municipalities: Oriximiná (11 communities – including the ones at which qualitative data was collected and analyzed), Óbidos (10 communities), Curuá (4 communities), Alenquer (3 communities) – in the Lower Amazon basin, Pará. Municipalities were selected due to significant natural occurrence of Brazil nut trees, whereby communities were chosen per importance attributed to Brazil nut as a valued NTFP in socioeconomic terms. Heterogeneity of communities was already detected through this survey and accompanying participant observation by the author, while playing a significant role in qualitative data collection and analyses.

Focus was laid in Oriximiná as municipality characterized by high biodiversity especially in PAs and TQs as well as a relatively low HDI=0,62²³ in 2011 (IBGE 2012). There, fieldwork was conducted with upstream Brazil nut value chain actors in communities along the BEC road as well as in *quilombola* communities along the Trombetas (all four located in and around the TRBR, including one with the highest Brazil nut occurrence as well as percentage of gatherers and buyers of Oriximiná) and Erepecuru rivers (the two communities with the highest Brazil nut occurrence as well as percentage of gatherers and buyers along this river).

Qualitative data collection was conducted in these six *quilombola* communities of Oriximiná (see map C in Figure 1), for they are endowed with most prominent so-

22 This survey was led by the author and co-implemented together with student teams of two researchers (male and female), after intense trainings – one with an UFOPA professor who also helped with a thorough selection process for recruiting the students – and pretests for a week in Oriximiná and Óbidos in July 2012. In the same period, a fieldwork day was conducted with senior Embrapa researchers who together with the author provided feedback to these teams in preparation for the survey. The fact that all students were from the region facilitated mutual trust among interviewees and interviewers, besides them being knowledgeable of the overall socioeconomic and environmental conditions of the Lower Amazon basin.

23 The HDI from Oriximiná has the particularity of being prominently determined – in its economic indicators – by the activity of the ‘Mineração Rio do Norte’ (MRN, per acronyms in Portuguese) in Porto Trombetas – as Brazil’s number one extracting location of bauxite. As the largest company in Brazil, MRN has been expanding its extraction area in the municipality of Oriximiná, while their socioeconomic costs (e.g. per cleared forest areas) are higher than benefits, which have not yet reached overall rural population in and around this district of Oriximiná (see Scaramuzzi 2015: 255). Despite so-called ‘royalties’ paid to the administration of this municipality, Oriximiná still features amongst the municipalities with the lowest HDI of the state of Pará.

cioeconomic ties – in terms of cultural and economic importance²⁴ – to the Brazil nut gathering and marketing activity. Not only are the abovementioned *quilombola* communities located in areas with high Brazil nut tree occurrence and biodiversity yet they are also economically and geographically marginalized, given their difficult accessibility (only by boat) to markets in urban centers. The nearest urban center (Oriximiná) is a one-day boat trip away from the closest of the analyzed *quilombola* communities, whereby structured interviews were conducted with all three Brazil nut processing mills²⁵ in the Lower Amazon region (two in Óbidos and one in Oriximiná).

Quilombolas living in villages at the margins of both abovementioned rivers of Oriximiná, including their trade relationships with buyers from its urban center as well as Óbidos comprise the key target groups with the access limitations in question to be understood in the frame of the present study. As opposed to the Erepecuru river – with one TQ and no federal PA (see Grupioni & Andrade 2015: 12) – the Trombetas river is characterized by having two federal PAs: the ‘National Forest of Saracá-Taquera’ and the TRBR, whereby the latter area encompassing four thoroughly analyzed *quilombola* communities is taken under the loop.

2 Data Collection

2.1 Data Collection Approach

It was very fruitful to have started – at the local level – with problem identification, instead of ‘bringing a pre-established theoretical framework’ and/ or biased information on determinants and processes concerning natural resource and market access (of Brazil nut gatherers and buyers living in and around PAs) from the state and national levels from the very beginning. In this sense, it was an inductive bottom-up research approach. Yet, this approach does not correspond to an inductive method of inference for generalizing to a whole from a representative sample (Danermark *et al.* 2002: 80-81). This is not pursued herein, including due to the following:

“[...] overemphasis in current sociology on the verification of theory, and a resultant de-emphasis on the prior step of discovering what concepts and hypotheses are relevant for the area that one wishes to research”. (Glaser & Strauss 1967: 1-2)

24 *Quilombola* extractivists have been gathering and selling Brazil nuts in Oriximiná over several generations, while it has been their main rural income source with a share of Brazil nut income of 13,07% (see Chapter V.1.5). As an NTFP, Brazil nut is collected without clearing forests in (protected) areas they live in and from. In reference not only to this economic importance but also the social and cultural one, *quilombolas* are traditional populations (see Footnote 34) who in this case have identified themselves as Brazil nut gatherers (*castanheiros*, in Portuguese). Whereas (agro)extractivists living in communities along the BEC road in the same municipality have attributed less socioeconomic importance to the Brazil nut activity given their more prominent diversification of income sources (e.g. locally produced cassava sold at the urban market of Oriximiná 1-3 hours bus drive away).

25 *Quilombola* extractivists mostly sell their Brazil nuts to local (intermediary) buyers who purchase such products *in natura* for to supply them to practically only one of the mills – ‘Mundial Exportadora e Comercial Ltda.’ located in Óbidos, Pará.

In line with what is proposed by these authors towards considering what is relevant at the local level, the research questions build on self-reported problems by upstream actors (Brazil nut gatherers) of the chain at stake. Thereby, focus is laid on this sub-utilized research approach herewith referred to. This approach is rather oriented upon such problems as locally indicated leverage points and then draws on theoretical concepts for further understanding ‘whys’ and ‘hows’ concerning the (lack of) access to natural resources and markets by respective actors in the Lower Amazon basin. Theories are a pivotal input to the elaboration of tentative explanations for analyzed phenomena (Danermark *et al.* 2002: 90). What is further pursued herein can be described as research that intends to provide input for policy or institutional change, which is more fruitful if it is “[research] question led” rather than “method led” (Grix 2002: 180). Reference is hereby made to scholarship that develops certain methods (e.g. in the so-called ‘Global North’) and ‘uses’ local actors as well as landscapes as ‘research objects’ as well as ‘playgrounds’ (e.g. in the so-called ‘Global South’) with the narrow ‘selfish’ dual goal of testing such methods and publishing.

For answering both research questions at stake, qualitative data collection methods were predominantly applied – except for the first fieldwork phase (July-September 2012) when a quantitative household survey was conducted. Qualitative methods for gathering primary data allow for gaining a better understanding of social realities and processes (Flick *et al.* 2000: 14), starting more open for embracing complexity while not losing sight of the research questions to be answered. In the pursuit of replying to such questions, suitable qualitative methods enable openness for exploring the unknown, including unforeseen determinants and processes emerging from interviews – beyond aspects covered by literature and questionnaires²⁶. Qualitative data gathering tools further allow for the researcher to access internal views from the analyzed social phenomena by describing respective realities from the perspective of the interviewees.

At the core of the data collection approach applied by the author was to treat such actors – particularly the ones directly involved in the Brazil nut value chain – as ‘not only subjects but protagonists of the investigation at stake. This was achieved by giving ‘them’ voice²⁷ (see Annex IV) and letting them talk, respecting their conversation flow, while effectively taking their verbal input into account by respecting their ‘information’ as directly involved knowledgeable actors, placing such evidences often above ‘(own) external knowledge’. Whilst not completely detached from such external perspective and position, the author was respectful – as opposed to numerous researchers who conduct interviews as if ‘they’ were the ‘resource persons’ in a superior social position. Instead, effort was made in establishing a leveled interview situation with interviewees, while it was strived to avoid potentially biased pre-constructed framing of theoretical and formal knowledge, particularly, at community and household level. Since

26 Questionnaires (amongst other data collection tools) can serve to ensure objectivity, validity and reliability (see Diekmann 2007: 438).

27 It was also given voice to otherwise unheard actors, e.g. when capturing the perceptions on the TdC of the TRBR and its Clause 10 by local Brazil nut gatherers (whose voice are rarely heard) and buyers including local male and also female leaders – who live in the area of the TRBR and mainly from the extraction and commercialization *inter alia* of Brazil nut.

the very beginning the author tried to establish a leveled field while building trust and indeed listening to interviewees, as the resource persons whom the researcher is to learn from.

In most interview situations, particularly with Brazil nut gatherers from remote *quilom-bola* communities, it proved to be fruitful to have an authentically humble interviewer approach for providing room for the interviewees to feel confident and comfortable to share their realities. Thereby, it was more likely that they openly shared their own perspectives or perceptions while deepening respective replies to sensitive issues. What helped in this sense was that the author tried to start and end every interview with personal informal conversations, which not only functioned as icebreakers but also to further understand and capture unbiased evidences.

A purposeful sequencing of the questions asked – from less sensitive to information on conflicts – was applied while stimulating interviewees' own choice of related topics, which contributed to their openness and honesty in transparently sharing information and perspectives. Thereby, the author absorbed additional information raised by interviewees and, when appropriate, politely interrupted and carefully deepened issues through follow-up questions in the realm of gaining insights for thoroughly answering the research questions. Building on guiding interview questions, flexibility and respect regarding interviewees' answers, including their own prioritization and sequencing of subjects (see Hopf 2000: 358) was valued throughout all interviews and interpreted when analyzing collected data (see Chapter IV.3).

The data collection approach strives to maximize the understanding at stake while acquiring evidences to answer how informal and formal institutions as well as institutionalization and formalization influence the resource and market access in question.

2.2 Methodological Steps and Data Collection Tools

Methodological Steps

The following '5-step methodology' for data collection²⁸ was conducted to address the research questions in the unit of analysis of the Brazil nut value chain (BN VC²⁹) in the Lower Amazon basin and the institutional environment its actors are embedded in:

(1) 'Methodological step 1' for data collection: consisted of identifying key problems by asking questions on and observing conditions for resource and market access at the local level in order to elaborate both research questions. Two pre-steps were:

28 The purpose herewith is to have each fieldwork phase as well as the first two boxes of Figure 7 (quantitative questionnaire development and pretest, and elaboration of the research questions) captured in the easy to replicate '5-step methodology' for data collection proposed. Thereby, each one of these data collection steps encompasses one or more fieldwork phases (in total seven, yet can also be less if each phase is longer), which can be flexibly allocated to each one of the five steps if replicated by other researchers.

29 These – as well as TRBR for Trombetas River Biological Reserve – are acronyms used to fit into Figure 8.

firstly, the design of a questionnaire³⁰ (see Annex I.1) – elaborated based on CIFOR’s Poverty Environment Network (PEN) and ICRAF’s Amazon Network on Livelihoods and Environment (RAVA, per acronyms in Spanish) methodology³¹; and, secondly, the implementation of a respective pretest, in preparation of a quantitative socioeconomic and natural resource survey at the household level – corresponding to the 1st fieldwork phase (see Figure 8).

(2) ‘Methodological step 2’: elaborating the research questions³², followed by a thorough literature review (internationally accessible articles as well as monographies and (unpublished) reports from IBGE³³, IDESP, ICMBio, IMAFLORA and Brazil nut mills available at municipality level) and, additionally, published charges from the Federal Prosecution Ministry (MPF, per acronyms in Portuguese) – corresponding to a key step to build up the conceptual and analytical framework.

(3) ‘Methodological step 3’: group interviews were conducted at four *quilombola* communities with high Brazil nut occurrence along both the Trombetas and Erepecuru rivers in Oriximiná for capturing leverage points and struggles faced by upstream actors along the Brazil nut value chain as an input for a ‘SWOT’³⁴ analysis, and value chain ‘actor mapping’ in Oriximiná and Óbidos – corresponding to the 2nd and 3rd fieldwork phases (see Figure 8).

(4) ‘Methodological step 4’: as depicted in Figure 8, the 4th, 5th and 6th fieldwork phases, which served to grasp determinants, processes and perceptions particularly from representatives of ICMBio Porto Trombetas, Brazil nut gatherers and buyers on institutions – formal institution (TdC) and its effects (see Annex I.2) as well as informal (*aviamento*) institutions – and access to natural resources and markets. Specifically in the 6th fieldwork phase a context-specific cost-benefit questionnaire was applied with leading buyers and gatherers of the same four abovementioned communities (see Annexes I.3 and I.4, respectively). Overall, semi-structured household interviews were applied with value chain actors at community and municipality levels combined with participant observation, including participation in meetings at communities, firms and the town hall of Oriximiná, yet also structured key-informant interviews at state level (Belém and Santarém, both in the state Pará).

30 This quantitative data collection tool builds up on the ‘PEN codes version 7.1, April 2009’, whereby the author created an additional set of codes concerning products and services specific to the Lower Amazon region. See also CIFOR (2007a, 2007b), Angelsen & Lund (2011) on the design of the PEN guidelines and questionnaire applied at global level by the Center for International Forestry Research (CIFOR) as well as Angelsen *et al.* (2011) on assessing livelihoods and forest dependence building up on PEN.

31 The fact that it is a methodology applied in different rural contexts worldwide ensures the possibility of comparison, e.g. with a site from the 24 so-called ‘developing countries’ covered by PEN surveys (Wunder *et al.* 2014: 4).

32 The ‘methodological step 2’ is not depicted in Figure 7, given it does not correspond to a fieldwork phase, while it is based on the ‘methodological step 1’ (as per problem-based elaboration of research questions through inductive research approach) and serves as a basis for the following steps.

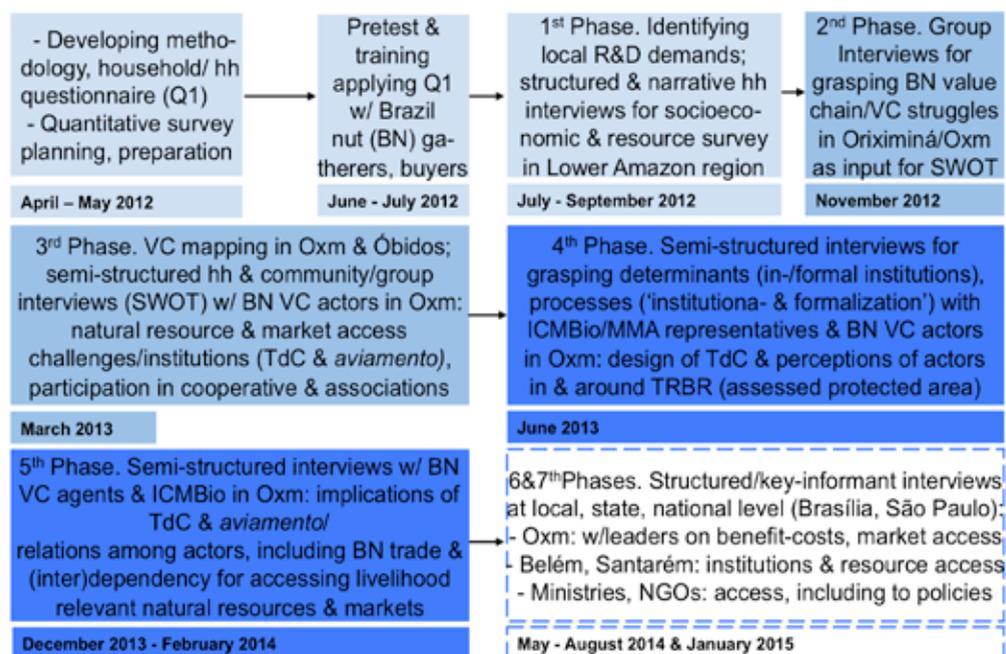
33 Brazilian Institute of Geography and Statistics (IBGE, per acronyms in Portuguese).

34 Strengths Weaknesses Opportunities and Threats.

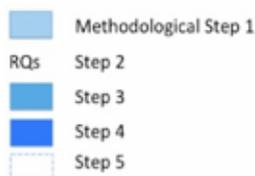
(5) ‘Methodological step 5’: corresponding to the 7th phase of fieldwork (whereby the 6th fieldwork phase from May-August 2014 belongs to the ‘methodological step 4’; therefore box with dashed *contour* in the same color). This final step consisted of structured key-informant interviews conducted at state and national levels on processes and determinants of the access to markets and resources – including to policies for strengthening sustainable extractivism from the ministries of environment (MMA), agrarian development (SEAD (formerly, MDA)) and of social development (MDS).

As follows, Figure 8 depicts the above elucidated ‘5-step methodology’, whereby step 2 corresponding to the elaboration of the research questions (RQs – acronyms used to fit legend below Figure 8) is not shown in the figure itself – as it is not a fieldwork phase – yet featured in the legend given its importance.

Figure 8: Fieldwork Phases within 5-step Methodology for Data Collection



Legend:



Source: Own elaboration

Overall, for thoroughly answering the research questions, a purposeful focus was laid at the local level of the Lower Amazon region, i.e. data collection was dominated by household interviews conducted in communities with a prominent presence of Brazil nut gatherers and buyers: from July 2012 to February 2014, five fieldwork phases (see Figure 8) occurred at the local and municipality level. These included not only the aforementioned survey to gather quantitative data, but particularly, qualitative data collection on resource and market access, as well as its limitation by formal and informal institutions. The latter was conducted in seven villages of extractivists in Oriximiná – including one at the BEC road for putting NTFP extractivism into context; yet primarily in six *quilombola* communities, while the four of them located in and around the TRBR were investigated in more detail, specifically on access implications of the TdC (see map C in Figure 1). Finally, in particular in the frame of the ‘methodological step 5’ for data collection, interviews at the state (Pará) and national level (Brasília and São Paulo) served to complement and validate already gathered qualitative data.

Data Collection Tools

In the frame of quantitative data collection tools, a survey for quantitative data collection applying a questionnaire³⁵ for socioeconomic and natural resource survey (see Annex I.1) was conducted in 28 communities in four municipalities of the Lower Amazon basin during the 1st fieldwork phase.

At next, an overview of the relevant sections of the respective questionnaire is provided through Table 1 to facilitate the understanding of the topics covered by the questions asked in the survey at stake.

This structured questionnaire consisted of specific questions for quantitatively assessing variables (detailed in Annex I.1), such as: access to natural resources and markets (distance from community to urban centers as well as from households to Brazil nut stands), costs for gathering activity (transport and required food as well as equipment), quantity and price of Brazil nut gathered and marketed, total income and income sources as well as participation in FUGs (e.g. membership in cooperatives and associations of *quilombolas* as well as of other Brazil nut gatherers, including data on frequency of participation).

With regard to qualitative data collection tools, the author employed (i) narrative, (ii) episodic, (iii) problem-centered and (iv) focused interviews:

(i) Narrative interviews were applied particularly at the local (*inter alia* household) level at the 1st and 2nd fieldwork phases. It showed to be a fruitful technique to capture processes as well as relations among different actors, including some of their actions and conflicts. The author acted unobtrusively throughout such interviews so as to leave room for the respondents to talk freely with polite interruptions by the interviewer for stimulating further elaboration in order to reveal interviewees’ impressions about given situations and interactions, following a guiding question posed at the beginning. As applied by the author, narrative interviews are characterized by:

35 Thereby, the same questions were asked in each interview, while enabling replicability and comparability of collected quantitative data.

Table 1: Sections of Questionnaire for Socioeconomic and Natural Resource Survey used for Quantitative Analyses

Identification of Section in Questionnaire	Section of Questionnaire	Section of Questionnaire (in Portuguese)
A	Identification	<i>Identificação</i>
B	Household features	<i>Composição do domicílio</i>
C	Categories of forest and land use/cover	<i>Categorias florestais e de uso/cobertura da terra</i>
E	Brazil nut and other non-timber forest products (NTFPs)	<i>Base de recursos florestais</i>
F	Forest User Groups (FUGs)	<i>Grupos de usuários florestais (GUFs)</i>
J	Forest Income*	<i>Renda da floresta</i>
L	Income from Fisheries	<i>Renda à partir da Pesca</i>
M	Agricultural Income	<i>Renda à partir da agricultura</i>
N	Livestock Income	<i>Renda à partir de criação</i>
O	Income from off-farm labor **	<i>Salário/ diária</i>
P	Income from own business***	<i>Renda à partir de negócio próprio</i>
Q	Other income source****	<i>Outras fontes de renda</i>

* all income sources (J, L, M, N, O, P, Q) captured in this questionnaire include quantities of a given good destined to marketing and household consumption/subsistence purposes

** per diems (*diárias*, in Portuguese) paid mostly for working for neighboring farmers

*** local grocery stores for selling industrialized goods at community level

**** includes governmental transfers, mostly pension and conditional cash-transfers, e.g. *Bolsa Família* (in Portuguese)

Source: Based on questionnaire elaborated by the author using PEN-RAVA methodology (see Annex I.1)

“[...] a permissive, non-authoritative, [...] friendly trustworthy atmosphere as a [...] precondition for the ‘story-telling’ process”. (Lamnek 2005: 361)

Specifically, narrative interviews conducted by the author, started with a central topic – related to livelihood relevant resource (Brazil nut) and market access by respective chain actors –, while room was provided for responses based on interviewees’ own relevance scheme. In most cases, the processes of formalization and institutionalization of restrictions (per TdC and *aviamento*, respectively) to resource and market access was mentioned. When respective issues and variables were not verbally stated, as when potential to deepen and detail such access limitations in the frame of answering the research questions, specific follow-up questions were asked (some prepared beforehand and others posed *ad hoc* based on responses, including for ensuring understanding of both interview partners).

(ii) In addition, to narrative interviews, the author conducted episodic interviews in all fieldwork phases and cases where it proved for both interview partners to be more

fitting to have guiding questions. This data collection tool allows for coming close to a 'normal' routine conversation, while creating a comfortable atmosphere and guiding the responses without imposing a desired reply yet towards answering the research questions. Starting with an open-question, it also gave enough space for the interviewees to raise unexpected and new relevant issues, which would not have been captured through a questionnaire or a structured interview with a pre-established set of questions and stiff sequencing. More in detail, the intention thereby was to collect such emerging evidences on respective access implications of the TdC as a formal institution restricting the market outlets of Brazil nut gatherers, given the formation of local oligopsonies in the TRBR area.

Building on an unbiased³⁶ procedure of first primarily employing semi-structured interview techniques and mostly listening to Brazil nut gatherers and buyers, structured key-informant interviews with further local actors and leaders, *inter alia* with representatives of ICMBio Porto Trombetas followed. The intention thereby was to understand the process of elaboration – including decision-making – of the TdC led by ICMBio based on some meetings with *quilombola* leaders at communities near Porto Trombetas in the TRBR area in 2011 and to grasp the TdC discussion process in 2014.

(iii) Problem-centered interviews were applied at local level in the 1st, 2nd and 3rd fieldwork phases. This technique allows for both qualitative and quantitative data collection as well as for “deduction (theoretically) and induction (empirically)” (Lamnek 2005: 368). Given the Brazil nut value chain in the Lower Amazon basin as the unit of analysis, the author employed this data collection tool to understand problems stated by local chain actors. Thereby, theoretical concepts were adapted and the exploration of further concepts related to the problems called for additional literature review on value chains; followed by another phase of fieldwork devoted to further understanding these problems concerning resource and market access, while answering the research questions.

More specifically, this type of interviewing technique was applied in four group interviews³⁷ at community level within the 2nd and 3rd fieldwork phases as depicted above. They were mainly conducted in the frame of the SWOT analysis (3rd fieldwork phase) to capture challenges along the Brazil nut value chain in Oriximiná and Óbidos – complemented with Brazil nut value chain actor mapping. 4th, 5th, 6th and 7th

(iv) In the 4th, 5th, 6th and 7th fieldwork phases, focused interviews were applied with Brazil nut gatherers and buyers to capture detailed evidences, including perceptions on the TdC's implications of the access to natural resources and, particularly, to markets. This was facilitated, as the author had acquired knowledge of the socioeconomic

36 Unbiased thereby means not influenced by ICMBio and other organizations.

37 Additional group interviews included a meeting with a coordinator and her colleague from the Prosecution Ministry from the state of Pará (MPE, per acronyms in Portuguese) in Santarém as well as a meeting with three *quilombola* leaders and another one with teachers from the village with the largest school that is in the process of establishing high-school classes (the latter two conducted in Oriximiná).

context through first analyses of quantitative data collected in the Lower Amazon basin³⁸.

What accompanied all these phases were informal conversations as well as the employment of the ethnographic technique of participant observation, which proved to be useful for respectively triangulating and validating data while ensuring reliability. On the way to *quilombola* communities by boat as well as to one of other extractivists along the BEC road (12 kilometers away from the center of Oriximiná) by bus, distinct Brazil nut value chain actors were interviewed informally. A fruitful strategy was to take ‘truck rides’ back from the latter community with intermediary buyers from all three Brazil nut processing mills (two from Óbidos and one from Oriximiná). They revealed problems of e.g. lending money to gatherers and having just known their Brazil nut suppliers had ‘betrayed’ them as they sold committed loads to other buyers.

Participant observation requires not only being allowed by the observed actors to participate in a given situation *in loco* yet also to fully concentrate on what/ whom it is to be observed and sharpen all five senses (see Spradley 1980: 54), while striking a balance between respective proximity and distance.³⁹ It implies in not only listening to interviewees and seeing specific phenomena, yet also being sensitive and empathetic for feeling what others do not directly express in words or actions (see Spittler 2001: 19). Participant observation depends on the observer as well as on the observed actors’ interaction and on existing conditions *in loco* at a given moment (see Hauser-Schaeublin 2003: 34). The author made use of both simultaneous writing as well as notes taken immediately after the situation captured through participant observation. Further, in calm moments, when not conducting interviews, the author took notes upon reflections of the day’s research input. All such notes captured in fieldwork diaries are subject to selection of certain impressions prioritized by the author of this thesis by considering their relevance to answer (one or both of) the research questions.

The technique of participant observation was applied in meetings on key conflicts over access to natural resources, e.g. one at the town hall in Oriximiná on collectively versus individually managed *quilombola* areas (with *quilombola* associations), the MPF, MPE, the National Institute for Colonization and Agrarian Reform (INCRA, per acronyms in Portuguese) and the Institute of Land of the state of Pará (ITERPA, per acronyms in Portuguese), as well as multiple meetings at community level (*inter alia* one on MRN’s expansion of the bauxite exploitation area towards a TQ with FCP and ICMBio at two villages). At one of them, the farthest away surveyed community from the urban center of Oriximiná, the ‘Brazil nut business’ featured as third (after

38 In addition, previous research experience in the mesoregion at stake, endowed the author not only with an overall understanding of the context but also with local vocabulary – e.g. *fábrico* used *in lieu* of *saфра* (harvest) – which facilitated mutual understanding and trust with Brazil nut gatherers and buyers interviewed in the following fieldwork phases.

39 Participant observation means both having the proximity for participating, i.e. being as close as someone internal to the group whom it is to observe without ‘going native’ (see Tedlock: 70), and maintaining enough distance to observe and reflect from ‘outside’ without being a guest (see Hauser-Schaeublin 2003: 38). For further queries with regard to ‘what’, ‘when’, ‘how’ and ‘why’ concerning participant observation, see e.g. Malinowski (1961), Jorgensen (1989), Emerson *et al.* (1995), DeWalt & DeWalt (2002).

health and education) in the community leader's dominated prioritization of potential project proposals.

Yet to highlight is a meeting led by the acting coordinator of ICMBio Porto Trombetas in the frame of the TdC discussion process conducted by the respective ICMBio representation with a handful leaders of *quilombola* communities in the TRBR area in 2014. Overall, participation of external actors in this process was restricted by ICMBio Porto Trombetas, except for this one TdC meeting among both parties to the TdC of the TRBR (ICMBio and ARQMO/ AMOCREQ) with participation of the author of this thesis and the environmental Brazilian NGOs Kirwane and IMAFLORA in Porto Trombetas. Extensive and detailed notes were taken from this meeting, particularly simultaneous notes of verbal and non-verbal communication from the few participants of *quilombola* communities and ICMBio Porto Trombetas⁴⁰ who authoritatively conducted these debates.

Based on mutual trust gained over time, the author was allowed to access communities and to participate/ observe in most situations other than TdC discussion meetings, from which ICMBio excluded 'external actors' (with one abovementioned exception); as well as Brazil nut processing mills that repeatedly refused to allow non-employees to observe/ take pictures of processing machinery and working conditions⁴¹. All interviews were conducted at the places the interviewees felt most comfortable, i.e. at their homes, in offices of representatives of ministries and NGOs (in Brasília and São Paulo), and in community centers (in the case of group interviews or observed meetings).

An overview of the data collection – as to the topics it covered and how respective evidences were captured, including the data collection instruments and when as well as to interview whom they were applied – is provided by Table 2, as follows.

40 Some ICMBio representatives were skeptical, including with regard to other meetings and interviews, of the author's participation – for not being a biologist or ecologist and having a socioeconomic research approach within human geography, despite his professional background in research for environmental conservation and sustainable rural development. Albeit noticeable reluctance of given representatives of this entity in replying to e-mails or phone calls, the author managed to participate in relevant meetings as well as to conduct interviews with its key representatives based on relationships built over time with ICMBio.

41 Still, the author used two opportunities of events during which this was allowed given the presence of municipality and state level representatives of MMA, among other governmental entities.

Table 2: Overview of Thematic Blocks of Data Collection

Themes/ Issues/ Variables	Methodology/ Data collection tool	Data collection level – Actors/ Location	Fieldwork phases
Overall socioeconomic and environmental conditions along the Brazil nut (gatherers and buyers)	Survey based on a structured questionnaire for collecting quantitative data from Brazil nut gatherers and buyers	- Local/ household level: household interviews with Brazil nut gatherers and buyers in 28 communities* of four municipalities (Oriximiná, Óbidos, Curuá and Alenquer) in the Lower Amazon region	1 st fieldwork phase conducted in the period from July to September 2012 (see Figure 8)
Specific socioeconomic and environmental conditions, e.g. challenges of upstream Brazil nut value chain actors	Group interviews inviting each community (total: 4) for assessing collective perceptions in the realm of a detailed SWOT analysis complemented with Brazil nut value chain and actor mapping	- Local/ community level community/ group interviews in four communities of extractivists in the TRBR area (Oriximiná) as well as value chain and actor mapping in both Oriximiná and Óbidos	2 nd and 3 rd fieldwork phases conducted in the period from November 2012 to March 2013
Problem of limited access to natural resources and markets, capturing related access possibilities and trade relations	Narrative and problem-centered interview for collecting qualitative data	- Local/ household level: household interviews with Brazil nut gatherers and buyers in seven communities of extractivists in Oriximiná	1 st , 2 nd and 3 rd fieldwork phases conducted in the period from July 2012 to March 2013
Formal Institution (TdC of the TRBR), capturing related design, perceptions and possibilities to access natural resources and, particularly markets (oligopsonies)	Focused interviews were applied with Brazil nut gatherers and buyers	- Local/ municipality level (Oriximiná and its district Porto Trombetas): interviews at the homes of Brazil nut gatherers and buyers in four of extractivists communities in the TRBR area** (Oriximiná) as well as interviews with ICMBio representatives in Porto Trombetas - Subnational regional level (Santarém as central administrative unit for the Lower Amazon region): interviews with representatives from the <i>quilombola</i> movement (Representation of Malungo in Santarém) as well as from ICMBio, MPF and MPE - State level (Belém): interviews with representatives from Malungo, SECTI, SEICOM, IDESP as well as AMAZON researchers and UFPA professors	3 rd , 4 th , 5 th , 6 th and 7 th fieldwork phases conducted in the period from March 2013 to January 2015
Informal Institutions, particularly, <i>aviamento</i> as debt-peonage system, capturing hows and whys of unbalanced trade relations	Narrative, episodic and problem-centered interviews with Brazil nut gatherers and buyers	- <u>Local level</u> household interviews with upstream chain actors in seven communities ⁹ of extractivists Oriximiná, and interviews with processing mills as well as with their intermediary buyers there and in Óbidos	3 rd , 4 th , 5 th , 6 th and 7 th fieldwork phases conducted in the period from March 2013 to January 2015

Cost-benefits of Brazil nut gatherers and buyers; validation and triangulation of limitation per TdC of buyers entering TRBR	3 questionnaires for collecting quantitative data from: (i) Brazil nut gatherers, (ii) Brazil nut buyers, (iii) ICMBio	- <u>Local level</u> household interviews with Brazil nut gatherers and local buyers at their homes in four communities of extractivists in Oriximiná, as well as interviews with ICMBio representatives in Porto Trombetas	6 th fieldwork phase conducted from May to August 2014
Access to resources and markets, and here, particularly, to policy related	Focused/ key-informant interviews	- <u>National level</u> structured interviews with representatives from ministries (MMA, ICMBio, SEAD (formerly, MDA), SEPPPIR, CONAB, MDIC and FCP)	7 th fieldwork phase conducted in January 2015
Relations among value chain actors as well as among them and ICMBio, including unbalanced relations particularly within <i>aviamento</i> and trade relations, and, additionally, social norms (intra- and inter-communitarian verbal agreements)	Participant observation	- <u>Local/ municipality level</u> while living for numerous periods (see Figure 8) in communities at homes of different extractivists and buyers: before and after household and community/ group interviews, meetings in Oriximiná and also Óbidos	Conducted throughout all fieldwork phases in the period from July 2012 to February 2014

* These communities are inhabited by rural dwellers who are to some degree dependent on NTFPs (with Brazil nut as the most important NTFP), while self-identified as quilombolas or regarded as (agro)extractivists given other income sources. All of such communities are populated by NTFP extractivists, being the common denominator used as a sampling criterion, as referred to herein.

** The formal institution – TdC of the TRBR – analyzed in detail herein solely applies to the four communities in the TRBR area at stake. Sample representativity is not herewith pursued concerning the collection and analysis of qualitative data (analytical depth being more important). Still the TdC as a legally based instrument under the auspices of ICMBio applies to PAs of full environmental protection throughout Brazil.

*** As opposed to the formal institution (TdC of the TRBR) analyzed herein, the informal institution at stake (*aviamento*) applies not only to the four communities in the TRBR area yet to the Amazon region, overall. Here, empirical analysis is undertaken in these villages along the Trombetas river, yet also at two other quilombola communities by the Erepecuru river and one along the BEC road – totalling seven villages of extractivists. This sampling approach allows for capturing context-specific (PA communities by one river, non-PA communities by another river as well as a community of extractivists with an easier (market) accessibility at a road connected to the urban center – all in Oriximiná).

Source: Own elaboration

Provided with this thorough synthesis of data collection of Table 2, it might also be useful for future studies to know how it was hereby dealt with data.

3 Data Management and Analysis

Beyond data collection towards its management and analysis – primary data builds a key pillar of this research, yet it is validated by and complemented with secondary data acquired through continuous literature reviews. This was done not only at early stages of research design (e.g. for formulating research questions or hypotheses in the case of quantitative data collection as well as analysis) but also in between fieldwork phases. Both qualitative and quantitative research methods were applied when striving to obtain a comprehensive understanding determinants as well as processes of natural resource and market access in order to provide evidence-based answers to the policy relevant research questions at stake.

3.1 Data Cleaning and Coding

Quantitative data were digitalized and cleaned using Microsoft (MS) Excel and Access. In addition, the open-access software Qualtrics was used for designing a questionnaire for gathering both quantitative and qualitative data as well as for processing this information. Thereby, quantitative data from 185 household interviews was entered from 10-page filled paper questionnaires into a corresponding MS Access database. After detailed data cleaning – programming plausible ranges for key variables of MS Access rows/ columns and dealing with missing values as well as outliers – data from 100 households were used for the quantitative analyses herein.

For systematizing and managing qualitative data from 89 households, (sub)topics and categories were established *ex-ante* (i.e. prior to fieldwork) – based on literature review and research gaps – and *ex-post* – per problem identification in the field followed by the use of MAXQDA for further coding key variables. After each fieldwork phase, an overview of collected data was gained by listening to recorded interviews and extracting relevant information, while conducting a primary assessment of qualitative responses to questionnaires. MAXQDA facilitated the crystallization of (sub) categories, which complemented already established topics with specific (sub)codes as substantive steps in processing transcribed⁴² interview contents for data analysis (see Annexes III.1 and III.2) – according to their relevance for answering the research questions (see Kuckartz 2005).

3.2 Data Analyses

Analyses of quantitative data consisted in descriptive and inferential statistics, as well as in a cost-benefit analysis of gatherers and buyers for collecting and selling Brazil nuts (including transport costs).

Analyses of qualitative data – prioritized herein, given importance for answering research questions: SWOT, value chain analysis (value chain actor mapping) as well as (computer-based) content analyses based on systematization and processing of data with MAXQDA and Qualtrics.

42 The author had financial support from the Puxirum-Sociobio.net Project (funded by the BMZ) for transcribing several audio files from recorded qualitative interviews.

3.2.1 Quantitative Data Analysis

For analyzing quantitative data from the household survey conducted at regional level the 'data analysis and statistical software STATA' was used (for descriptive and inferential statistics), while MS Excel was employed (for descriptive statistics only) in order to conduct calculations of cost-benefit ratios for Brazil nut gatherers and buyers based on three questionnaires ((i), (ii), (iii) listed in Table 2).

At the beginning of the analysis, new variables were generated based on available data set of 100 surveyed households. These variables included 'number of income sources', 'income percentage from Brazil nut' and 'total income', which were used for both the descriptive and inferential statistics.

Descriptive Statistics

The arithmetic mean⁴³, variance as well standard deviation (how data is distributed around the means – Diekmann 2007: 245) were calculated from sociodemographic data as well as survey data on income as well as accessibility/ distances to Brazil nut stands and to markets in 28 communities in the Lower Amazon region. The mean was also calculated for costs and benefits stemming from Brazil nut gatherers and buyers in four communities in Oriximiná (among the 28 abovementioned communities) and cross-checked with data from the register system of ICMBio Porto Trombetas.

Inferential Statistics

Before conducting statistical analysis with STATA, the fulfillment of the following preconditions of parametric test procedures for inferential statistics (t-tests, linear regressions and correlations – Diekmann 2007: 695-696) were tested. For applying t-tests, the data ought to have a normal distribution (which was verified per graphic simulation) and to be interval scaled, while they are not to show variance heterogeneity. The residuals must be independent from one another. In the case of the regressions conducted herein, homoscedasticity and linearity of data within dependent/ independent variables were verified. It was further checked that data did not have autocorrelation. These preconditions proved to be fulfilled by quantitative survey data.

T-tests were conducted for verifying the following hypotheses. 1st hypothesis: The higher the percentage of forest income, the lower total household income; 2nd hypothesis: The greater the diversification of income sources, the higher total household income; 3rd hypothesis: Members of FUGs have a higher total household income than those who do not participate in such groups. Statistical significance was considered at $p < 0,05$ (see Diekmann 2007: 403-410). A linear regression model was used for assessing the effect of different socioeconomic factors (independent variables) on household total income (dependent variable). This model was also utilized for quantifying the relation among these factors (independent variables) and 'the percentage of Brazil nut income from total income' (dependent variable). The correlation coefficient

43 The arithmetic mean also called mean or average, is in this case more informative than the median (Diekmann 2007: 677). It is so, including due to the fact that standard deviation was respectively calculated by using STATA, which combined with the mean provides more information than the median.

was calculated for the variables ‘access to Brazil nut stands (measured in distance)’ and the ‘diversification of income sources (measured in number of income sources)’. Building on the application of a structured questionnaire (see 1st row of Table 2) – in order to gain an overview on the socioeconomic and environmental conditions for upstream Brazil nut value chain actors to access natural resources and markets in the Lower Amazon region – the following was conducted: statistical analyses of quantitative survey data on livelihood strategies and natural resource base employing descriptive and inferential statistics using, *inter alia*, the variables income sources, participation in FUGs, distances to Brazil nut stands and markets. Further, a cost-benefit analysis of gatherers and buyers was conducted based on the digitalization of three questionnaires in MS Access (quantitative data acquired from both these chain actors in seven communities in Oriximiná and validated by ICMBio Porto Trombetas) and on further calculation of cost-benefit ratios. These analyses in the frame of descriptive and inferential statistics applied to collected quantitative data are compiled in Table 3, which further contains respective variables and (cor)relations among them.

Table 3: Quantitative Evidence-based Analyses

Themes/ Issues/ Variables	Conceptual Analyses	Key Literature Reviewed	Empirical Evidences/ Analyses	Analytical Approach/ tools
- Income from locally selling and consuming NTFP (and on-/ off-farm income sources) - Participation in Brazil nut value chain - Accessibility to Brazil nut stands and markets by gatherers and buyers - Cost-benefit of both these actors	Forest dependency and livelihood strategies of rural dwellers in PAs, small-holdings and collectively used traditional lands	Ostrom (1990, 1994), Hall (1997), Cavendish (2000), Belcher <i>et al.</i> (2005), Sunderlin <i>et al.</i> (2005), Kusters <i>et al.</i> (2006), Angelsen <i>et al.</i> (2011), Wunder <i>et al.</i> (2014), Santana <i>et al.</i> (2017)	<u>Evidences per Analysis of:</u> - Survey data on income from marketing and consumption (income diversification), participation of gatherers in FUGs, distances Brazil nut stands/ communities to markets/ urban centers - Cost-benefit of Brazil nut gatherers and buyers including production/ extraction and transport costs	<u>Descriptive and inferential statistics using Stata, following relations among variables:</u> - percentage of forest income à income; - diversification of income sources à income; - participation à income); - Calculation of cost-benefit ratios for Brazil nut gatherers and buyers using MS Excel

Source: Own elaboration

In the case of quantitative data analysis, conceptual analysis helped elaborating the hypotheses for the inferential statistics herewith conducted and determining the (cor) relations among the variables to be analyzed. Thereby, it is noteworthy that the evi-

dences depicted in Table 3 (see its 4th column) feature in detail in Chapter V.1.5 – yet, beforehand it is turned to the qualitative data analysis given its relative greater importance for answering the research questions.

3.2.2 Qualitative Data Analysis

In the case of qualitative data analysis, conceptual analyses helped understanding empirical phenomena, while providing input for answering the research questions. Table 4 shows the variables at stake, whose analyses are rooted in the combination of theoretical concepts and empirical evidences for maximizing the understanding of the livelihood relevant resource and market access at stake.

Having areas of high Brazil nut tree occurrence and prominent forest dependency as key criteria for more detailed qualitative data collection and respective analyses – which proved to be so in PAs and TQs:

At first, a SWOT analysis was conducted building on group interviews with four communities. Thereby, an overall diagnosis of problems and potentialities faced by upstream value chain actors was conducted based on value chain analysis, including value chain actor mapping – corresponding to the first row of Table 4 (see (1)).

Secondly, the determinants and processes affecting the natural resource and market access of upstream chain actors were analyzed per computer-based content analysis using MAXQDA and Qualtrics – corresponding to the 2nd row of Table 4 (see (2)).

Thirdly, a content analysis of qualitative interviews (using MAXQDA and Qualtrics) for capturing the process of institutionalization of unbalanced trade relations among Brazil nut gatherers and buyers was applied. Interviews were conducted with both these actors and ICMBio as well as with other relevant actors indirectly involved in the respective chain. This method was also used for assessing dependency regarding service as well as product provision among Brazil nut gatherers and buyers, including from extractivists with processing mills and governmental as well as non-governmental organizations corresponding to the 3rd row of Table 4 (see (3)).

Fourthly, an analysis method – equivalent to the one applied in (3) yet using only MAXQDA – was employed: a content analysis of qualitative interviews with Brazil nut gatherers and buyers as well as with ICMBio and with actors indirectly involved in the chain at stake concerning the process of formalization of the TdC was conducted. The same analysis method using MAXQDA was applied for assessing the implications of the TdC on the access to natural resource and, particularly, to markets by Brazil nut gatherers and buyers as well as their perceptions concerning the TdC (and its Clause 10) as a formal institution – corresponding to the 4th row of Table 4 (see (4)).

Table 4: Qualitative Evidence-based Analyses

Themes/ Issues/ Variables	Conceptual Analyses	Key Literature Reviewed	Empirical Evidences/ Analyses	Analytical Approach/ tools
(1) Opportunities and struggles of Value Chain (VC) actors, organization of production/ extraction in FUGs (e.g. cooperative) for potential income generation and environmental conservation	Value Chain Analysis (VCA) and Development (VCD) Approaches, including value chain upgrading and governance	<p>- <u>VC, VCA & VCD:</u></p> <p>Porter (1980), Gereffi (1994), Kaplan & Kaplinsky (1999), Humphrey & Schmitz (2001), DFID (2008), Springer-Heinze (2008), Santana <i>et al.</i> (2010), UNIDO (2011), Donovan <i>et al.</i> (2013)</p> <p>- <u>(Global) Production Networks:</u></p> <p>Henderson <i>et al.</i> (2002), Hudson (2002), Rainnie <i>et al.</i> (2013)</p> <p>- <u>(Local) Production Arrangements/ Clusters:</u></p> <p>Lastres & Cassiolato (2004), Santana <i>et al.</i> (2010), Werner <i>et al.</i> (2014)</p>	Diagnosis of challenges of upstream value chain actors for sustainable natural resources and market access, including scope for socio-economic upgrading and governance	SWOT, value chain actor mapping
(2) Determinants and Processes of natural resource and market access: informal institutions (norms) and institutionalization, formal institutions (rules) and formalization	Theory of access based on Ribot & Peluso (2003), beyond property rights scholarship and collective action	Hardin (1968), Sen (1981), Olson (1965), Ostrom (1990, 1994), Ribot (1995, 1998), Agrawal & Gibson (1999), Long (1999), Leach <i>et al.</i> (1999), Ribot & Peluso (2003), Sikor & Nguyen (2007), Lawrence & Shadnam (2008), Pacheco & Benatti (2015)	Directly involved Brazil nut value chain actors embedded in institutional environment: institutionalized unbalanced trade relations per informal institution (<i>aviamento</i>) as well as formal(ized) institution per TdC for dealing with conflicts over resource use in PAs managed by ICMBio	Computer based content analysis for dissecting determinants and processes affecting the natural resource and market access using MAXQDA and Qualtrics

(3) <i>Aviamento</i> as institutionalized debt-peonage system affecting natural resource and market access	Informal institutions and institutionalization, primarily from a sociological perspective	<p>- <u>Informal Institutions:</u> Blake & Davis (1964), Knight (1992), Ostrom (1998, 2005), Keefer & Knack (2005), Knowles (2005), Filocreão (2007)</p> <p>- <u>Institutionalization:</u> Weber [1921] (1976), Berger & Luckmann (1980)</p>	Analysis of dependency from Brazil nut gatherers upon buyers, including bargaining power and negotiation possibilities as well as related social norms, verbal agreements (intra- and inter-communitarian)	Content analysis of the process of institutionalization of unbalanced trade relations per debt-peonage system and, specifically, of dependency among trade partners per <i>aviamento</i> affecting their natural resource and market access using MAXQDA and Qualtrics
(4) TdC as legally based instrument affecting natural resource and, particularly, market access through formal rule (Clause 10 of TdC – enacted by ICMBio) excluding external buyers from purchasing Brazil nut in TRBR	Formal institutions and formalization in scholarship about access to natural resources	<p>- <u>New Institutional Economics:</u> DiMaggio & Powell (1983), North (1991), Williamson (2000), Eggertsson (2003)</p> <p>- <u>Formal Institutions:</u> Knight & Sened (1995), Hodgson (2006)</p> <p>- <u>Formalization:</u> Cronkleton & Larson (2015), Kelly & Peluso (2015), Putzel <i>et al.</i> (2015)</p>	Analysis of formalization of as well as implications of TdC (Clause 10), including perceptions of actors directly involved in the Brazil nut value chain (gatherers, buyers and ICMBio)	Content analysis of the process of formalization of the TdC and, specifically, of its Clause 10 affecting the natural resource and, particularly, market access of upstream value chain actors using MAXQDA

Source: Own elaboration

In line with the structure of the Theory of this thesis contained in Chapter II, this table offers a fourfold synthesis of the qualitative data collection and analytical approach based on concepts rooted in a thorough literature review.

In sum, the use of both qualitative and quantitative data collection and analysis methods proved to be complementary and useful for thoroughly and comprehensively understanding the socioeconomic and environmental context of the Lower Amazon basin, having the Brazil nut value chain as a complex unit of analysis. The use of such multiple research methods helped in the strive to embrace complexity, including due to conflicts over natural resources involving ICMBio and the lack of access to natural resources and markets by geographically and economically marginalized extractivists. At next, the approaches towards research ethics and overcoming methodological limitations are presented.

4 Research Ethics

After briefing potential interviewees about the research, the author asked for prior consent on the possibility for them to be interviewed – in some cases this consultation was done a day in advance. Due to trust gained in advance (*inter alia*, given the author's extensive fieldwork experience in the region) as well as strategies developed throughout the multiple fieldwork phases at local level, e.g. interviewing as far as possible in the evenings, there was no related case of non-response that would have caused non-response bias⁴⁴.

Yet, with regard to qualitative data collection, including due to the fulfillment of all prior authorizations – both from ICMBio through the 'System of Authorization and Information on Biodiversity' (SISBio⁴⁵, per acronyms in Portuguese) and from respective community coordinators⁴⁶ – all planned interviews were conducted throughout one of the fieldwork phases. Several cases of mismanagement of project resources were reported by interview partners, as were 'illegal' practices (wild animals killed for subsistence in the TRBR and small-scale logging for family needs). In fact the latter were also observed as part of livelihood strategies of forest dependent rural dwellers, while it is well-known that such small-scale practices of low capitalized forest users hardly cause any negative environmental impact (see e.g. Babigumira *et al.* 2014, Bauch *et al.* 2014). Due to ethical reasons, such confidential information is neither specified nor published.

Moreover anonymization was implemented with interviews conducted at all levels (from local to national), which was also communicated to interviewees, while expanding openness and willingness to share sensitive data as well as confidential information in one-to-one interviews. However, in particular, data collection – beyond the difficult accessibility, specially, of the *quilombola* communities of Oriximiná focused upon (a one-day boat trip from its urban center) – imposed the obstacles explained in the following chapter.

44 Even though there were seven cases of non-response due to absence at the moment of the interview in the quantitative household survey, it did not make any difference given similarity in profiles of actual interviewees with non-respondents (e.g. Brazil nut gatherers of the same collecting group in given communities). In so being non-response bias was avoided, which would have further caused challenges for generalizing research findings. Another reason for having tried to conduct interviews in the evening is that most interviewees worked during the day, so that it was avoided to disturb them. Yet, this was not always possible given limited hours of day light.

45 SISBio is anchored in the normative instruction (IN, per acronyms in Portuguese) IN 154/2007 (Brasil 2007). It is an online system containing a form that has to be completed with detailed information on the respective research project, including its objective and duration as well as the academic background of the researcher(s). This form is submitted to ICMBio's evaluation and potential authorization, for it is mandatory for research in PAs under its management responsibility.

46 It was not asked for individual written consent at household level, given most interviewees were illiterate and oral consent is perceived to be more in line with local practices of analyzed communities.

5 Challenges of the Methodology

The quantitative survey was conducted during the off-harvest season from July to September 2012, which has the following trade-off: at times interviewees could not remember precise numbers on quantity and prices of produce/ Brazil nut and needed to look up such information to respond the exact figures, however mobility was easier in the so-called dry season for conducting interviews and both interview partners had more time to apply the extensive questionnaire (survey period covered to a large extent a time in between harvests).

Even though it would have been fruitful to conduct research during at least all seasons of one year, all seasons and their respective patterns (e.g. lower prices at beginning of harvest and high prices at the end, due to supply and demand variations over time) were captured over the entire time span of fieldwork at local level from July 2012 to August 2014. Pre-harvest season negotiations among Brazil nut gatherers and buyers were captured in fieldwork in the periods of November 2012 as well as February 2013 to January 2014. Harvest practices were particularly grasped in June 2013 as well as in the transition to off-harvest season. Entailed indebtedness of gatherers from buyers was captured, especially, from May to August 2014. Particularly, trade relations and indebtedness – as key variables for answering the research questions – could thereby be understood even better, over these two years, than if research had only been conducted in one full year.

Resistance of Brazil nut processing mills to provide quantitative data – even non-confidential information or data other than their mark-ups –, especially the one from Oriximiná, whose owner avoided to concede interviews (only one after several attempts) represented a further challenge in the frame of fieldwork. This was addressed by interviewing a senior IBGE representative from Óbidos who was keen in sharing unpublished data on gathered and sold Brazil nut quantities as well as prices in the four surveyed municipalities in 2012.

The quantitative survey was conducted in 28 communities of 4 municipalities⁴⁷ in the Lower Amazon basin, while enabling generalization (for this subnational region) and comparison with other contexts regarding results from relations among analyzed socioeconomic variables. Whereas to ensure analytical depth combined with insights that can be useful beyond the qualitatively analyzed communities in Oriximiná, the qualitative analysis shows challenges in its scope for generalization. Given the household and community level focus of the qualitative assessment of livelihood relevant resource and market access of upstream Brazil nut value chain actors, not all results on the determinants and processes affecting such access can be generalized ‘one-to-one’ at national level (see Deming 1990). Still, qualitative evidences and findings were validated as well as complemented by the respective ministry as well as state representatives (whom the author asked for feedback on his understanding from pre-

47 Whilst a purposeful focus was laid at the local level of the municipality of Oriximiná to maximize the understanding of the access at stake, challenging was also to figure out how to best deal with different levels of data collection and analyses at the write-up phase of findings. This was not only eased by the fact that they implied in the use of specific data collection as well as analysis methods (qualitative and quantitative, respectively) but also addressed by referring to the respective level data was gathered.

vious interviews) in the frame of the multi-level data collection and analyses conducted herein. Further, particularly, detailed deep insights gained at the household and community level on access implications of the formal (TdC) and informal (*aviamento*) institutions as well as on institutionalization and formalization at stake – enabled the design of the analytical framework, which can be applied in different rural contexts.

Having shown the methodology and research approach of this thesis, the results and discussion on access limitations and leverage points are presented under the next chapter (Chapter V). Thereby, empirical evidences on the informal institution in use *aviamento* as access determinant as well as the institutionalization process of patron-client relations are elaborated at first (Chapter V.1). The formal institution (TdC) as well as the formalization process of informal institutional arrangements are presented thereafter (Chapter V.2). In addition, the role of leaders in shaping resource and market access by upstream chain actors – in this case of the Brazil nut value chain in the Lower Amazon basin is also evidenced (Chapter V.3). Given the structure of the core of the empirical chapter (Chapters V.1 and V.2), it is to turn on the empirical evidences of the building block on the informal institution-based access limitations (1 – depicted in Figure 2), as follows.

V. Results and Discussion: Resource and Market Access Limited by Institutions

1 *Aviamento* as Access Limiting Informal Institution

Asymmetric (inter)dependence relations between gatherers and buyers are one of the manifestations of the *aviamento* system trapping the former into a vulnerable position within the Brazil nut value chain in the Lower Amazon basin (detailed in Chapters V.1.1-1.4). However, isn't there a trade-off between combating these dependence relations per 'debt-peonage' system¹ and refrain from services – not covered by the State – provided through these value chain actors (*regatões*)? Is the context-blind elimination of intermediary buyers the solution for increasing bargaining power and fostering direct access to local and regional markets of NTFP gatherers?

Having these questions in the background, while striving to answer the research question in the realm of understanding the determinants and processes that influenced the access to livelihood relevant natural resources and markets, this chapter will present the following chapters: Defining *Aviamento* and the Role of *Regatões* (V.1.1); Heritage and Persistence of Unbalanced 'Patron-Client' Relations (V.1.2); Institutionalization of 'Patron-Client' Relations per *Aviamento* (V.1.3); Characterization of *Aviamento* as Informal Institution (V.1.4); Quantitative Evidence on Brazil nut and Market Access(ibility), Benefits and Costs of Brazil nut Gathering and Marketing Beyond Oriximiná (V.1.5); Strategies of Brazil nut Buyers and Gatherers to deal with (Inter)dependencies and Access to Resources (V.1.6); and Alternatives to *Aviamento* for Strengthening the Position of Extractivists? (V.1.7).

In this regard, it is undeniable that cooperatives are a well-known means in the strive for small-scale producers to enhance their cost-benefit ratios through collective marketing of a given produce (detailed in Chapter V.1.7). However, one cannot put forward a 'cooperative model' as a one size fits all solution for strengthening the position of the upstream chain actors in question. While respective economic organization of extractivists is underrepresented in the Amazon, patron-client relations are particularly asymmetric in remote areas of natural occurrence of NTFPs (e.g. Brazil nut in Oriximiná) characterized by limited market access. Thereby, key conditions under which a well-managed cooperative can be collectively beneficial are delineated through based on the Amazonian context in question.

In this context, given limitations per debt-peonage, a brief contextualization of the process of institutionalization of patron-client relations – making up *aviamento* – towards the characterization of *aviamento* as an informal institution is provided at next.

The establishment of the Trombetas River Biological Reserve (TRBR) in 1979 changed the land tenure structure from privately owned properties of 'landlords' (*donos de colocação de castanha*, in Portuguese) to collectively managed forest landscapes while only partially changing "the typical case of debt-peonage [...] [where] both capital and assets requiring labor are monopolized by one party" (Cano *et al.* 2014: 542). While indebtedness could not yet be overcome and still compels practically all Brazil

1 Debt-peonage and traditional barter systems are used interchangeably herein.

nut gatherers to selling to the buyer who provided them with an advanced payment, submission has been improved considerably compared to earlier slave-like working conditions². Thereby, control over labor and workforce as well as local price setting and overall bargaining power is still determined by Brazil nut buyers (*regatões*, in Portuguese) in the TRBR area.

Socioeconomic inequalities stemming from unbalanced trade relations among Brazil nut value chain actors in the Lower Amazon region persisted not only between gatherers and buyers in different upstream chain nodes but also within communities. Similar relations characterized the traditional barter system at the end of the first rubber cycle in the late 19th century and, subsequently, during the second rubber cycle in the Brazilian Amazon.³ Thereby, the “*Seringueiros*⁴ Project” led up to the establishment of the “National Council of Extractivist Populations” (originally called *Conselho Nacional dos Seringueiros* – CNS, per acronyms in Portuguese) in 1985⁵ (CNS 1985). Amongst the reasons for its foundation was the strive for overcoming harmful dependency relationships between (intermediary) buyers and suppliers of NTFP (based on Allegretti 2002), while strengthening the position of the latter.

As follows, a further contextualization within the Amazon region is provided while putting the aforementioned unbalanced trade and tenure relations into a regional perspective before zooming into the historical process and institutionalization of patron-client relations consolidating the *aviamento* system in the Lower Amazon basin. In Bolivia and Peru⁶ changes in national forest and land laws as of the 1970s⁷ – imply-

2 Among the reasons for that the working conditions of Brazil nut gatherers have improved to some degree, in general, are e.g. governmental transfers such as *Bolsa Família* (see Footnote 24), more gatherers have motorboats than before.

3 The first rubber cycle occurred in the second half of the 19th century and the second cycle occurred in the first half of the 20th century in the Brazilian Amazon (Almeida 2004).

4 *Seringueiros* (in Portuguese) are rubber tappers and *seringalistas* their former so-called patrons, whereby *seringueira* is the rubber tree (*Hevea brasiliensis*).

5 The CNS – initially called National Council of the Rubber Tappers and nowadays National Council of Extractivists Populations – was founded during the First National Meeting of Rubber Tappers of the Brazilian Amazon from 11th–17th October, 1985 in Brasília. Chico Mendes was one of the founders and main leaders who initiated the creation of Extractivist Reserves (RESEX, per acronyms in Portuguese) for sustainable management of forests (see e.g. Allegretti 2002, Ehringhaus 2005). He fought against ‘grilagem’ (land grabbing) and was killed by cattle ranchers in Xapuri, Acre on 22.12.1988 (Almeida 2004: 45). The generated international repercussion not only of Chico Mendes’ death yet also prior engagement for protecting forests and NTFP extractivists resulted in the creation of the first RESEX in Acre in 1989 (see Lira & Chaves 2016: 71). The rubber tappers movement expanded in the 1990s towards involving all extractivists groups in the frame of the CNS (Based on Interview with the vice-president of CNS, Belém, 26.05.2014).

6 Bolivia and Peru are the only two other countries, besides Brazil, whose Amazon biome harbors naturally occurring Brazil nut trees – yet it have reached considerable importance at the global level (e.g. when used as ingredient for cereal bars or chocolate products) compared to other non-domesticated ‘wild species’ (see Clement *et al.* 2008: 111).

7 For a historical synthesis on land tenure changes affecting traditionally forest-dependent populations (including *castañeros*, in Spanish, and rubber tappers), see Stoian (2005: 1475), Cronkleton & Larson (2015: 498).

ing in property rights changes and the creation of Brazil nut concessions – favored upstream Brazil nut actors⁸ to some extent. Specifically in Northern Bolivia as well as Peru – albeit submitted to debt-peonage systems over a century (Stoian 2005: 1475), institutional changes per federal legislation fostered access to land including through the abovementioned concessions⁹. Whereas the TRBR was established in the same decade (in 1979) without prior consent of traditionally forest-dependent rural dwellers living in the respective area, while participation in terms of co-managing such PA has not yet been effectively enhanced: There is only a ‘Consultative’ Council for the Management of the TRBR as governance structure established by a federal decree¹⁰ (Brasil 2006) and not a ‘deliberative’ one. For the latter to be established for effectively co-managing such PAs of full environmental protection, ‘amendments’ to the formal institution SNUC (Brasil 2000) would be required (see Chapter V.2). While in both other countries the aforementioned changes contributed to strengthening to some extent the position of Brazil nut gatherers within respective value chains, such institutional changes have not yet taken place in the TRBR area along the Trombetas river. In the frame of ‘patron-client’ relations entailed by *aviamento*, dependency from gatherers on buyers was mainly caused by ‘institutionalized supply of advanced payments’ and related long-term debts as well as workforce control by these buyers vis-à-vis gatherers. The reproduction of these unbalanced relations occurred over generations, despite tenure changes with the establishment of the TRBR in 1979. Thereby, the so-called ‘landlords’ lost their ‘self-declared land titles’ and some *quilombolas* were

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- 8 In Brazil, property rights and related land tenure changes occurred in part at the Trombetas (outside PAs) and Erepecuru rivers with the emergence of TQs and the cooperative CE-QMO, while strengthening the position of gatherers at least for the first couple of years of its creation with the support of CPI-SP.
- 9 Specific enabling factors stemming from such property rights shifts, including the so-called “usufruct right” (Cronkleton & Larson 2015: 498) per abovementioned concessions. However, a detailed contextualization of the specific changes in benefits of affected rural dwellers – including Brazil nut gatherers – would go too far off in relation to the research questions at stake, yet would provide lessons learned with regard to respective access and land tenure for the Amazon region. This could be addressed by a complementary historical research for considering such transformations per enabling as well as unfavorable laws pertaining to the access to land by “traditionally forest dependent people” (ibid.: 498) as well as to natural resources overall.
- 10 This federal decree is referred to, in Portuguese, as *Portaria* Number 27: Article 1 Create the Consultative Council of the Trombetas River Biological Reserve with the goal of contributing to the implementation of actions designed to achieve the objectives of the Protected Area referred to” (Brasil 2006: 78). This formal institution (based on Ik Dahl *et al.* 2005: 4) was enacted on 9th March, 2006 and is ‘better than not having a legally based governance structure’ for managing the TRBR as well as other PAs of full environmental protection. This is so as it enables discussions on issues such, in particular on resource access and use, among different ‘stakeholders’ of a given PA. Yet, all in all, a consultative council does not allow for ‘democratic’ decision-making – as opposed to a deliberative one (see Chapter V.2.4.2).

‘removed’ from areas of high biodiversity with symbolic indemnifications¹¹. Overall, direct ‘patrons’ of NTFP gatherers are since then no longer ‘landlords’ but *regatões*¹²:

“[...] middlemen who in fact are buyers of raw materials located strategically in regions of [high] production [natural occurrence of Brazil nut in this case]. And these middlemen [...] buy from smaller buyers who are closer to [remote] rural areas. And then, these smaller ones have direct contact to the gatherers who collect one to two hectoliters of [Brazil nut] on a daily basis [during the harvest season], depending on the production.”¹³ (Interview with the coordinator of the Brazil nut processing mill ‘CAIBA Indústria e Comércio S/A’ based in Óbidos, Óbidos, 19.03.2013)¹⁴

This quotation provides a perspective from processing mills on *regatões* as ‘their intermediary buyers and suppliers’ of Brazil nut *in natura*. While these value chain actors were mapped (see Figure 4) for better grasping access to natural resources and markets, the unbalanced relations focused upon herein are the ones between gatherers and buyers at the local inter-village¹⁵ level in Oriximiná, including *quilombola* communities in and around the TRBR. Trade and personal dependence relations of gatherers on *regatões* – the latter’s social role is composed by three functions (as buyer of product *in natura*, provider of services and industrialized goods) – to be further elaborated on in Chapters V.1.2 and V.1.3. Yet, before doing so – when dissecting the informal institution at stake into its three layers (see Figure 9) and considering key economic data (see Chapter V.1.5) while aiming at scoping for an alternative way

11 The Brazilian government takes the monetary value of each removed ‘house’ and, in rare cases, the species cultivated by the respective household and issues a symbolic indemnification, which disregards value beyond the financial capital of cheap construction materials used for housing in such rural areas.

12 A value chain map is presented in Figure 3 (see Chapter II.2).

13 “[...] atravessadores que são, na verdade, compradores da matéria prima localizados estrategicamente em regiões produtoras. E esses atravessadores [...], compram de outros menores compradores que já estão mais perto do interior e aí esses menores tem contato direto com o coletor que diariamente vai e colhe um, dois hectolitros, dependendo de produção pra produção.”

14 CAIBA’s manager finally conceded an interview while providing this data in 19.03.2013, following the personal invitation of the author of this thesis to a workshop of the ‘Puxirum-Sociobio.net Project’ in the frame of the GIZ Program ‘NoPa’ in cooperation with the Brazilian and German academic exchange services – CAPES (per acronyms in Portuguese) and DAAD (per acronyms in he participated in. Prior attempts of conducting interviews for collecting data e.g. on quantities of Brazil nut processed and sold were not conceded, showing lack of transparency also induced by competition with the two other mills in the sub-national region in question, particularly with Mundial, the only other located in the same municipality, Óbidos. Such resistance in allowing for access to firms’ data applies to all three processing mills at the Lower Amazon basin as partly induced by competition. Yet, it is also driven by the ‘fear’ of losing bargaining power vis-à-vis value chain actors further upstream to whom the mill owners knew the author was in contact with for research reasons. Particularly the only mill based in Oriximiná was more skeptical and conceded only one interview compared to the other two mills located in Óbidos.

15 Village and community are used interchangeably when referring to the analyzed settlements of extractivists, including *quilombolas*.

forward (see Chapters V.1.6 and V.1.7) – it is important to characterize what makes up *aviamento* as a debt-peonage system in *Amazônia*.

1.1 Defining *Aviamento* and the Role of *Regatões*

“The notion that the traditional barter system in rural Amazonia (*aviamento*) is a principal stumbling block to making extractivism more profitable [...] is simplistic”. (Smith *et al.* 1995: 79)

The authors criticize the categorical and normative judgement of *aviamento* to be *per se* harmful to extractivists. As follows, what would fall under such criticism: Allegretti (2002) and Vaz dos Santos & Filocreão (2012) who point out the exploitation of NTFP gatherers by *regatões* when referring to relations between such chain actors in the states of Acre and Amapá in the Brazilian Amazon.

While considering elements of both sides of the respective debate, what is hereby proposed is a differentiated characterization as well as an analysis of what makes up *aviamento*, its components and, particularly, implications to actors. Such empirical analysis helps to respond to both research questions on how *aviamento* limits the resource and market access of upstream chain actors at stake, and also on how *aviamento* functions as an access limiting informal institution; which is presented in the three following subsections.

Defining *Aviamento*

At next, definitions related to the *aviamento* system in the Amazon are offered.

Based on Bauer (1979) and Knight (1988), the debt-peonage system – the form of traditional barter system that gets closest to the phenomenon of *aviamento* present in the Amazon – is one where a debt is paid back to the lender with the workforce of the borrower. *Aviamento* is further described as follows:

“[...] *aviamento* is a system of supply of products as a credit, whereby the buyer, patron or ‘aviador’ provides work instruments or goods, under the condition of the payment to be realized with extractive products, in this case, the Brazil nut.” (Vaz dos Santos & Filocreão 2012: 1)

According to Sampaio (2002), the *aviamento* system is not a production model as it does not entail relationships for production but instead for commercialization, credit and control of labor. The latter is done by so-called ‘patrons’ who use the control they have over gatherers’ workforce, while benefiting from their debt-based dependency.

Herein, one of the key features of *aviamento* as an unbalanced trade system between buyers and extractivists is that it is not about monetary payment for a service provided or products delivered but an exchange of industrialized goods with products (NTFPs such as Brazil nut) *in natura*.

Defining *Regatões*

A pivotal actor within the *aviamento* system is the middlemen or intermediary buyer – in Portuguese, called *intermediário*, *marreteiro*, *aviador*, *atravessador* or *regatão*¹⁶ in Brazil. Since their proliferation, after the ‘formal abolishment’ of slavery in 1888, *regatões* have been regarded as itinerary community external buyers who were not entitled with rural properties but used to be a key actor in trade and ‘credit relations’ with regional up- and downstream NTFP value chain actors (Allegretti 2002: 135, Witkoski 2007: 89-90)¹⁷. *Regatões* are referred to as being merchants on boats, who assumed the role of supplying industrialized products, e.g. coffee, sugar, cooking oil when buying natural resources, such as fish, wood and NTFP (Witkoski 2007: 89).

A detailed elaboration on *aviamento*, *regatões* and asymmetric dependence relations among respective upstream Brazil nut value chain actors all together is provided in Chapter V.1.4. The role of *regatões* is explored as follows.

The Role of *Regatões* Established over Generations and its Recent Development

In order to thoroughly characterize the role of *regatões* (building on the definition of role provided in Chapter III.2.3), one can disentangle it into three functions: (i) one as buyer of product *in natura* (in this case Brazil nut), (ii) the other as provider of services (e.g. advanced payments, transport and health¹⁸ related), and (iii) yet another one as provider of industrialized goods. The first is the most important for the *aviamento* system, while the second is a function assumed by *regatões* who are overall more capitalized than extractivists and (other) community members – including with financial, human and social capital – and generally have a boat upon its use gatherers also depend. Concerning the third function, there are local Brazil nut buyers, community leaders and some other relatively capitalized extractivists who, particularly since the TdC in 2012, have little grocery stores in the communities they live in, while assuming the function of provider of industrialized goods formerly exerted only by *regatões* (based on Fieldwork diary, note taken at the community of CCPT¹⁹, 10.02.2014). Therewith the dependence of community members on ‘external’ *regatões* regarding

16 As it does not make a difference with regard to the analysis of the access to natural resources and markets in the realm of the main research question herein, the following five terms are used interchangeably: middlemen or intermediary buyer, *intermediário*, *marreteiro*, *aviador*, *atravessador* and *regatão* (in Portuguese). For further details on the origin and specific application of the latter two in the context of the Brazilian Amazon, see e.g. Allegretti (2002), Sampaio (2002), Vaz dos Santos & Filocreão (2012).

17 For an extensive elaboration on the *aviamento* system and *regatões*, see Emmi (1999), Sampaio (2002), Silva (2007).

18 Services pertaining to the health of Brazil nut (and other NTFP) gatherers – particularly the economically deprived ones living in remote areas with difficult accessibility (e.g. only per long boat trips) – are often provided by *regatões*. For instance, taking Brazil nut gatherers (members of *quilombola* communities with only one health agent for dealing with basic injuries) with acute health problems to the hospitals either in Porto Trombetas or in the urban center of Oriximiná.

19 CCPT stands for Community of Cachoeira Porteira (*Comunidade de Cachoeira Porteira*, in Portuguese).

the provision of industrialized goods the latter have long purchased in supermarkets of Oriximiná and sold in these remote villages has been diminished with the access to resources, including *Bolsa Família*. Extractivists who receive this conditional cash transfer try to save BRL²⁰ 20-25,00 for the boat trip to go to the urban center at the end of the month of this municipality to withdraw their *Bolsa Família*, while avoiding to purchase goods in their communities with inflated prices (based on Fieldwork diary, note taken at the community of CCPT, 11.02.2014).

Disentangling the role of (new) *regatões* into the three functions at stake helps illustrating its different components, while striving to grasp the complexity of reality in the subnational region at stake. Beyond the concept of ‘carrier of roles’ (*Rollenträger*, in German) – as put forward by Merton (1957) –, it is hereby referred to the role of *regatões* as a complex social role, which encompasses all of these strongly interconnected functions exerted by *regatões*.

Further, dependency from Brazil nut gatherers on *regatões* induced by *aviamento* is evidenced by the fact that without the latter chain actors, respective service provision in remote forest communities, would have fallen short.

“For all its faults, the *aviamento* system has long provided credit and goods to people who would otherwise be cut off from such assistance.” (Smith *et al.* 1995: 80)

This support is further indicated by the respective perception of one of the main *quilombola* leaders within the municipality of Oriximiná:

“Middlemen have always given us [members of communities along the Trombetas river] support. Everywhere the middlemen is taken as a threat, for us in the Trombetas [river], he is our friend, since the beginning [when *quilombolas* first settled there].”²¹ (Interview with the former coordinator of the Area Association ‘Mãe Domingas’ and former board member of ARQMO from the community of Tapagem, Oriximiná, 10.02.2014)²²

In line with this statement of this leader from the *quilombola* community of Tapagem, Sampaio (2002) claims that *aviamento* refers to a system characterized by credit relationships. Thereby, the aforementioned three functions of the middlemen’s role facilitate the access to financing and paying for goods and services ‘in rates’ in places where acquiring loans from banks is not possible.

However, it is the government’s task to assume such role given its responsibility as ‘policy-maker’ and ‘service provider’ (e.g. specific programs and credit lines or micro-finance for extractivists – see Chapter VII), which cannot be replaced by *regatões*.

Still, the related role of *regatões* in providing ‘financial services’ (ii) and goods (iii) needed by gatherers and their families has been ‘undermined by interventions’ of

20 BRL are the acronyms (in English) used internationally for Brazilian Reais, whereby R\$ is used in Brazil.

21 “O apoio, sempre quem nos deu, foi o atravessador. Todo o canto o atravessador é tido como uma ameaça, pra nós no Trombetas, é nosso amigo, desde o começo.”

22 What is to be considered is the possibility of the interviewee as a former Brazil nut gatherer to not want to criticize his former ‘patrons’ (*atravessador*, as he refers to in Portuguese), despite trust gained to the interviewer and author of this thesis over multiple fieldwork phases. This indicates how strong not only trade dependency of gatherers (clients) and *regatões* (patrons) are, yet also personal relations.

NGOs and government entities. Some of such initiatives have been undertaken to counteract the abovementioned imbalances along the Brazil nut value chain by intending – amongst other intentions – to ‘exclude’ middlemen and *regatões* from respective upstream nodes while co-supporting the establishment of cooperatives – e.g. the ‘Central Cooperative of Extractivist Commercialization of Acre’ (Cooperacre, per acronyms in Portuguese) as well as CEQMO²³, in the study area. This strategy of shortening value chains, including by direct marketing channels from producers or extractivists to processing mills has a higher chance to work in areas of easier market access. Whereas in remote areas that fall off the governments’ radar, far away from urban centers and markets – as is the case analyzed herein – middlemen still play a pivotal role in the provision of goods and services. This dependence on such local NTFP buyers is aggravated by rare possibilities of most members of surveyed *quilombola* communities (including Brazil nut gatherers) to afford paying BRL 20-25,00 per person for the boat transport in 2014, depending on how far their settlements are from Oriximiná.

“He [*regatão*] is very important in the supply chain. He gives conditions for the Brazil nut gatherer to be able to gather [...] by providing goods in advance [...]”.²⁴ (Interview with the coordinator of the Secretariat for the Environment (SEMMA) of Oriximiná, Oriximiná, 17.12.2013)

Relations of local Brazil nut gatherers and buyers are characterized by unbalanced (inter)dependence beyond what is quoted above – the former depend on the provision of advanced payments by the latter while the latter depend on the respective supply of Brazil nuts. Besides, middlemen themselves also receive advanced payments in the frame of financial services from processing mills, which shows how one value chain actor depends on the other to a certain extent.

Still, most rural areas of the Brazilian Amazon – e.g. in such distant localities only accessible by boat and partly characterized by subsistence-based livelihoods – remain cut off from access to livelihood relevant resource and market access. This is so, albeit such economically and geographically marginalized communities of extractivists – like the ones analyzed herein – increasingly desire equitable market inclusion. For accessing local markets, NTFP gatherers in the Lower Amazon basin still rely on goods and service provision – including food and equipment provided as advanced payment for gatherers’ collection activity – by the so-called ‘patrons’. The following quotation referring to the situation of remote rural areas in *Amazônia* overall, helps to

23 Overall in the Brazilian Amazon, the proliferation of cooperatives occurred as of the 1980s and was supported by project funding from different national and international agencies, e.g. the Constitutional Fund for Financial Services in the Northern Region of Brazil (FNO, per acronyms in Portuguese) and the German Agency for International Cooperation (GIZ, per acronyms in German), respectively. In the study area, the Brazil nut Project – that lead to the creation of the cooperative CEQMO in 2006 – was funded by the European Union (EU) and managed by the CPI-SP in cooperation with ARQMO (see Chapter V.1.7). Subsequently, CEQMO received little support by IMAFLORA early this decade and more recently from CPI-SP.

24 “Ele é muito importante na cadeia produtiva. Ele dá condições para que o castanheiro vá coletar [...], adiantando mercadorias para o castanheiro [...]”.

characterize such dependence on respective purchasers beyond trade towards trust-based relationships:

“[...] at times, it [community] is very far from the city, the middlemen [*regatão*] takes the [electronic cash] cards, gets the passwords, withdraws money and charges a fee, a [boat] ticket to take the money [to the extractivists]. [...] Without him [*regatão*] there is no transport, no supply of food [industrialized goods], of medicine, of *bolsa família*, of *bolsa verde*²⁵, of money.”²⁶ (Interview with the coordinator of the socio-environmental action department at the headquarters of ICMBio, Brasília, 05.02.2015)

Herewith the interviewee – who conducted field visits throughout *Amazônia* in the early 2000s – illustrates a general dependence of geographically marginalized community members on *regatões*. While this dependence has diminished in the last decade, it still applies to a considerable extent to the case of the analyzed communities along the Trombetas and Erepecuru rivers. Yet overall, factors enabling such reduction are motorized boats in the case of community internal buyers who have partly assumed the provision of industrialized goods. Further, this statement already indicates what Acevedo & Castro (1998) referred to as the transition from coercion to trust-based patron-client relationships, in some cases – as elaborated on in Chapter V.1.2. Since this is not the focus herein, but rather how institutions and the processes of institutionalization and formalization affect the access to natural resources and markets, this chapter is further devoted to grasping the role of *regatões* with regard to this access.

At the subnational region in question, the establishment of the TRBR in 1979 not only had effects on land distribution and property rights but also on the role of *regatões*. The TRBR brought about a disruptive change in terms of land tenure structure as well as a strengthened role of *regatões* in the access to Brazil nut and markets, including their provision of industrialized goods – given they assumed such role of ‘landlords’ who were thereby compelled to move away from this region (see Chapter V.2).

In addition to the establishment of the TRBR, a further change occurred – in terms of who assumed the role of *regatões* –, which was entailed by the formal institution TdC and its Clause 10. The role of *regatões* was assumed in part by local buyers, including the ones who upgraded to such position within the respective value chain (see Chapter V.2.2.3). Given the limitation of the entrance of external buyers in the TRBR per respective formal institution effective of 2012, processing mills stopped sending their direct buyers from Óbidos and Oriximiná – how it was before Clause 10 of the TdC. Instead, new local buyers have emerged through this formal restriction to external buyers to the TRBR: mostly, middlemen who used to supply processing mills’ direct buyers and have thereby upgraded replacing them through the respective formalization process (see Chapter V.2.2); yet also new trustworthy direct buyers

25 *Bolsa verde* is a federal conditional cash transfer program from MMA for ‘poor’ rural families living in areas with high biodiversity who are paid BRL 300,00 every three months to conserve forests – enacted by ‘Law 12.512’ (Brasil 2011).

26 “[...] como às vezes é muito distante da cidade, o regatão pega os cartões, pega senha, tira o dinheiro e cobra uma taxa, uma passagem para levar o dinheiro. [...] sem ele não tem transporte, não tem fornecimento de comida, de remédio, do bolsa família, do bolsa verde, do dinheiro.”

from respective *quilombola* communities with whom mill owners had already been well-acquainted.

Both such new direct buyers from the villages in the TRBR area at stake have assumed their ‘upgraded’ position and role within the Brazil nut value chain. Since the TdC they have been ‘commissioned’ by processing mills to purchase from gatherers at their communities and ship the Brazil nuts to both abovementioned neighboring urban centers where the only three regional processing mills are located. Thereby, ICMBio’s main purpose of environmental protection with (Clause 10 of) the TdC is defeated in terms of conserving Brazil nut trees as a key natural resource, given aforementioned emerging new local buyers and thus unchanged levels of Brazil nut use (detailed in Chapters V.2.1 and V.2.2.3). Whereas, the interest of already established local buyers (from *quilombola* communities in the TRBR area) was supported by the TdC given reduced competition. This implication of the TdC was particularly welcomed by already capitalized local buyers, who managed to upgrade and also assume the role of *regatões*, including in supplying Brazil nut gatherers and other community members with industrialized goods (see Figure 4).

Finally, Clause 10 of the TdC has compelled the lead firm Mundial Exportadora e Comercial Ltda. to work directly with local Brazil nut buyers from *quilombola* communities, hereby referred to as ‘newly established *regatões*’. Therewith, the market structure has changed to local oligopsonies at community level (see Footnote 42), in addition to the regional oligopsony pertaining to the three Brazil nut processing mills at the municipalities of Oriximiná and Óbidos (detailed in Chapter V.2). The former asymmetric market structure at community level has been formalized by Clause 10 of the TdC, provided its restriction on external buyers as *regatões* in directly engaging local procurement and also on the access to market outlets by Brazil nut gatherers (see Chapter V.2.2.3). This formal institution further fostered dependency on advanced payments given limited number of buyers allowed per TdC to procure Brazil nut in the TRBR area and contributed to creating an ‘institutionalized indebtedness’ of chain agents at the local level. Thereby, all upstream chain actors including the ‘newly established *regatões*’ depend on the mills’ capital provision.

Against this background, key pillars of the history of *aviamento* in the Lower Amazon region and beyond will be explored at next.

1.2 Heritage and Persistence of Unbalanced ‘Patron-Client’ Relations

Patron-client relations characterize imbalances in trade of the *aviamento* system as an informal institution that has persisted over centuries in the Amazon – a vast region with difficult accessibility characterized by an uneven distribution of land tenure.

“Patron-clientage usually persists when rural communities are isolated by poor communications and avenues of upward social mobility for peasants are non-existent within the rigid class structure based on land ownership”. (Hall 1977: 506)

Hereby it is referred to that patron-client relations perpetuate, particularly in rural landscapes, while being overall characterized by strong inequalities between patrons and clients, which still leads to exploitation of the latter by the former.

While social class according to Marx (1971: 886) is crucial for understanding the determinants and outcomes of socioeconomic inequalities, its detailed analysis as such would be beyond the scope of this thesis. Still, extractivists in the Amazon overall face severe challenges in ‘moving upward in terms of social class’, whereby in Brazil they are condemned by the lack of policies for extractivism²⁷ and unfavorable land tenure structures. This holds true for NTFP extractivists and other forest dependent traditional populations, they have been claiming their rights – e.g. through the ILO 169 Convention (ILO 1989), ratified in Brazil in 2002, as a facilitating framework for respective self-determination – and profiting at an incipient level from access to public policies for ethnic minorities, e.g. in rural areas by collectively accessing *Quilombola* Territories or Indigenous Lands (TQs or TIs, per acronyms in Portuguese, respectively).

However, public policies for the inclusion of such forest dependent dwellers as most marginalized people in rural areas of Brazil still insufficient. UNDP (2013) synthesizes what is lacking at different levels of governance:

“Institutions also need to be responsive to the needs and aspirations of those who are lagging behind”. (ibid: 13)

Historically, the management of most NTFPs – prior to debt-peonage – *inter alia* Brazil nut gathering in the Brazilian Amazon used to be done by families in stands of collective use at first. Then land – including with Brazil nut stands – was arbitrarily and unilaterally declared private properties of the so-called ‘landlords’ claiming to be ‘owners of properties with Brazil nut stands’ (*donos de colocação de castanha*, in Portuguese) in the midst of the 20th century (see Chapter V.2.1). They maintained their so-called ‘superior social status’ as ‘patrons’ (*patrões*, in Portuguese) vis-à-vis Brazil nut gatherers (clients) and created long-term debt-based dependency (see Acevedo & Castro 1998, Vaz dos Santos & Filocreão 2012). Such ‘landlords’ used to select extractivists

27 The sustainable small-scale NTFP use falls under extractivism (*extrativismo*, in Portuguese), while it is embedded in the political discourse of respective social movements, including for respective access to livelihood relevant resources and markets in Brazil. It is to be differentiated from neo-extractivism, which is based on unsustainable exploitation of natural resources *in natura* especially for export markets, e.g. minerals as is widespread in the Amazon (see Brand 2016: 21). The former encompasses extraction of NTFPs, game, seafood and fisheries from diverse ecosystems for family subsistence and commercializing in different markets (see Almeida 2004, Mota *et al.* 2007: 1, Shanley *et al.* 2011). NTFP extractivism is a neglected sector by the Brazilian government, particularly, when comparing investments in other rural sectors, e.g. agribusiness (large-scale soy production and cattle ranching).

to collect Brazil nut for them under slave-like conditions²⁸ and gatherers were only allowed to exclusively supply them. These were key restrictions upon the natural resources and markets access of Brazil nut gatherers imposed by the *aviamento* system in Oriximiná at that time (see Acevedo & Castro 1998). It further illustrates the dynamics of what Ribot & Peluso (2003) referred to as ‘rights based access’, including property rights as a mechanism affecting livelihood relevant resource and market access of upstream Brazil nut chain actors in the Lower Amazon basin (see Chapter III.1.2.1). The limitations and conditions, under which the access to natural resources and markets by upstream Brazil nut chain actors occurred, changed over the years – one of the eldest members of the community of Tapagem provides an overview of this process drawing from collective memory:

“The Brazil nut stand used to have an owner [‘owners of properties with Brazil nut stands’, so-called landlords]. You [gatherer] had to talk to him for him to allow you to work there. Each Brazil nut stand belonged to a property. It was not allowed [for the gatherers who worked to a given landlord] to gather Brazil nut and sell to someone else; only to him. This changed [with time].”²⁹ (Interview with one of the eldest members of the community of Tapagem and former Brazil nut gatherer, Tapagem, 10.06.2014)

The establishment of the TRBR in 1979 also played a pivotal role in this process of change, including by changing tenure status with implications on the access to natural resources³⁰ as well as markets and the distribution of the benefits stemming from it.

“Then it changed from individual property [of the so-called landlord], to collective [through the establishment of the TRBR] when ICMBio arrived [...]. The ‘owners’ were indemnified and then lots of Brazil nut gatherers entered [to collect at Brazil nut stands]

28 In Brazil, the formal abolishment of slavery occurred in 1888. With a short disruption from formal repression exerted by slave-owners, former slaves fled and settled in so-called *quilombola* communities, including in the Lower Amazon basin where they were ‘free’ in such hidden villages such as the CCPT at first (based on Interview with one of the eldest *quilombola* leaders and former Brazil nut gatherers the community of CCPT, 31.01.2014). ‘Free’, in single quotation marks, as another *quilombola* leader and Brazil nut buyer referred to his parents who still hide from external actors and are very skeptical vis-à-vis their intentions (based on Interview with *quilombola* leader as well as former coordinator of AMOCREQ from the community of CCPT, CCPT, 01.02.2014). While this does not apply to such an extent to most *quilombolas* in Oriximiná (particularly the youth/ new generations who happen to have closer ties to urban settings), persisting patron-client relations per *aviamento* still submit Brazil nut gatherers to related asymmetric relations and dependencies. For further reading on slave(-like) labor conditions in Brazil as well as Latin America, see e.g. Zeuske (2012).

29 “O castanha tinha dono. Tinha que ir falar com o dono para ele te deixar trabalhar. Cada ponta de castanha era de uma colocação, uma propriedade. Não podia tirar castanha para vender para outro; era só para ele. Foi se mudando.”

30 For further reading on the process of settlement of *quilombolas* along the Trombetas river and the change in land tenure and (power) relationships among local actors in Oriximiná see Acevedo & Castro (1998).

and the number of buyers increased.”³¹ (Interview with one of the eldest members of the community of Tapagem and former Brazil nut gatherer, Tapagem, 10.06.2014)

Despite the aforementioned shifts in land tenure as well as respective property rights and related changes in patrons, particularly in the *quilombola* communities analyzed in Oriximiná – from ‘slave-owners’ and ‘landlords’ to overall ‘Brazil nut buyers’ –, patron-client relations persisted over generations of Brazil nut gatherers.

Prior to the establishment of the TdC of the TRBR and its Clause 10 in 2012, there were other restrictions for upstream Brazil nut chain actors to access natural resources and markets, as elaborated on above.

Restricting Imbalances yet Changing Relations between Brazil nut Buyers and Gatherers

Changing property rights and land title – not only by establishing the TRBR in 1979 but also TQs as collective properties of *quilombolas* in the following decades –, induced changes in social positions as well as roles of so-called ‘patrons’ and extractivists, as is evidenced by one of the eldest Brazil nut gatherers from the Erepecuru river.

“We were born and raised here, but they [the so-called landlords who claimed to be the only ones to be entitled of managing the Brazil nut stands in ‘their’ properties] did not consider that we [extractivists] were the owners of the property, so there were semi-slavery working conditions. [...] Now, we are happy, because we are the property owners [of ‘Territórios Quilombolas’/ TQs, per acronyms in Portuguese], on paper. [...] back then it wasn’t so, we had to sell Brazil nut to him [landlord as patron] [...] he even ‘arrested’ people there [in ‘his’ property] for them to supply him with ‘his Brazil nut’ and not sell to other [buyers]; he arrested them because he said that they were ‘stealing’ [‘his’ Brazil nut].”³² (Interview with one of the eldest members of the community Cachoeira Pancada and former Brazil nut gatherer from Cachoeira Pancada, Cachoeira Pancada, 20.01.2014)

This statement expresses how the role of *regatões* assumed by former ‘landlords’ changed from respective suppressive patrons having their Brazil nut suppliers under slave-like conditions to ‘lenders’ as well as providers of services and goods, while still being called ‘patrons’ given persistent asymmetric (bargaining) power relations. Thereby, most landlords (*donos de colocação de castanha*, in Portuguese) lost the lands they claimed to be theirs in the end of the 1970s with the TRBR, while some continued to purchase Brazil nut at community level in Oriximiná (see Chapter V.2.1). Acevedo & Castro (1998) go even further in saying that the patron-client relationships got closer, while constant control turned into trust-based relationships in some cases. They also refer to a ‘patronage’ system grounded in a coercion-based network

31 “Aí mudou de propriedade individual, colocação, para ‘coletivo’, quando o ICMBio chegou. Os ‘proprietários’ foram indenizados e aí entraram muitos castanheiros e o número de atravessadores aumentou.”

32 “A gente nasceu e se criou aqui, mas eles não consideravam que a gente era o dono da propriedade, então era um trabalho como semiescravo. [...] Agora, a gente se sente feliz, porque nós somos donos da propriedade, no papel. [...] na época não era assim, tinha que ser vendida pra ele [...] até chegou a prender as pessoas aqui, pra trazer a castanha dele, não podia vender para outro; prendeu porque dizia que as pessoas estavam roubando.”

of social relationships, which has changed to paternalistic relations between patrons (Brazil nut buyers) and clients (Brazil nut gatherers), including in the case of indebted *quilombola* extractivists in Oriximiná. These patronage relations of buyers who determine the gatherers to whom they lend financial resources is also termed as an exchange of favors (based on Hart 1986).

However, the coordinator of ICMBio who has long worked at its unit in Porto Trombetas, while having been responsible for managing different PAs, including the TRBR since 2012, reaffirms the slave-like trade relations along the Trombetas river in Oriximiná.

“You know, a lot of these guys [*regatões*] who already take [industrialized] goods in the boat and exchange [these goods with Brazil nut in natura]. [...] It is somehow like slavery, I see it that way [...]. There are these people [Brazil nut gatherers] who rarely go to the city [urban center of Oriximiná]. It is complicated.”³³ (Interview with the coordinator of ICMBio at Porto Trombetas, Porto Trombetas, 18.06.2013)

This unbalanced exchange of goods often without any monetary payment – as per institutionalized patron-client relations entailed by *aviamento* – makes it more difficult for Brazil nut gatherers of the respective remote *quilombola* communities to make their living out of sustainably accessing such forest resources.

Contextualizing Imbalances in Trade Relations

When further contextualizing the relationships between gatherers and buyers along Brazil nut value chains in the Lower Amazon basin – unlike Brazil nut trade conditions in Oriximiná and Óbidos – it is evident that slave-like working conditions still persist as if time had stopped in the 19th century in the ‘Alto do Rio Parú’ area of the neighboring municipality Curuá, according to IMAFLORA³⁴:

“The process of exploitation of labor that occurs [...] in the ‘Alto do Rio Parú’ where there still is a semi-slavery system [...], where people [...] are attracted by ‘patrons’, [...], who claim to be owners of the Brazil nut stands [‘landlords-like patrons’] and promise that they [...] will receive this much, [...] when they get there [where they will gather Brazil nut for the ‘patrons’] [...] after two days by boat, [...] from where you cannot leave without the guy [‘patron’] who is the owner of the boat, the guy tells you: you owe me this much for the trip, so many BRL [Brazilian currency, reais, in Portuguese] for the food, so many BRL for the *cachaça* [Brazilian high-percentage alcoholic beverage], so many BRL for all that, so you have to supply me with this much Brazil nut to

33 “Sabe, tem muitos desses caras que eles já levam a mercadoria no barco, e trocam lá na hora [...]. Fica um pouco meio que escravidão, eu vejo assim [...]. Tem pessoas dessas que vão raramente na cidade. É complicado.”

34 IMAFLORA is an NGO established in 1995 for conserving rainforests, which functions as a representation of Rainforest Alliance in Brazil and focuses on environmental standards for forest and agricultural products (see <<http://www.imaflora.org>>, accessed on 18.04.2016). It has had projects in the Lower Amazon basin since 2007, which have been coordinated by a project manager who has been given the task to strive to strengthen value chains of NTFPs, including Brazil nut on sustainable bases.

pay off your debts [...]. This still happens in the Brazil nut value chain.”³⁵ (Interview with a project coordinator³⁶ at IMAFLORA, Piracicaba, 11.02.2015)

Despite not being representative of overall of traditional barter systems, this is a recurrent case of ‘extreme exploitation’ of labor under slave-like working conditions to which gatherers – who are neither acquainted to local actors nor know the territory – are submitted to by respective Brazil nut buyers. *Quilombola* extractivists of Oriximiná face difficult working conditions as a heritage from slavery – albeit such communities having been originated from resistance by fleeing from slave-owners – and related unbalanced trade relations along the Brazil nut value chain at stake. Yet, they know the territory they have long lived in very well and working conditions are slightly better than the modern slavery³⁷ ones that are still present at *Alto do Rio Parú*. However, a commonality between this case and the one analyzed herein is the dependency on buyers who have boats to transport Brazil nuts to distant markets and processing mills, while in both cases most transport costs are paid by gatherers including through respective abatements in the Brazil nut prices set by buyers at farm-gate level.

Reproduction of *Aviamento* with ‘New Patrons’ in Protected Areas

An overview is hereby provided regarding the change in tenure structure from illegitimate private properties (*colocações de castanha*, in Portuguese) to the TRBR managed by ICMBio and used collectively by *quilombolas*. The related emergence of new patrons and reproduction of *aviamento* including by the State is outlined, as follows.

In the Amazon overall, the rubber value chain has undergone a similar process to the one described above of upstream Brazil nut chain actors in Oriximiná regarding the establishment of the *aviamento* system as a heritage of the debt-peonage system. The vice-president of the National Council of Extractivist Populations (CNS) commented upon the attempt of overcoming the dependence of extractivists on the so-called ‘patrons’:

35 “O processo de exploração do trabalho que ocorre [...] no alto rio Parú, que rola sistema de semiescravidão [...], que as pessoas vão [...] atraídas por patrões [...], que são pessoas que se dizem donas dos castanhais e prometem que vão [...] vai ganhar tanto [...], quando chegam lá [...], depois de dois dias de barco, [...] que você não tem como ir embora se não for com o cara que é dono do barco, o cara fala pra você: você deve tanto da viagem, tantos reais da comida, tantos reais da cachaça, tantos reais pra tudo disso, então você tem que me entregar tanto de castanha pra saldar a sua dívida [...]. Isso ainda acontece na cadeia da castanha.”

36 This interview was conducted with the project coordinator of IMAFLORA who has the largest experience (over 10 years) of working on the ground with upstream actors of value chains of NTFPs, in particular with Brazil nut gatherers and buyers of the Lower Amazon basin, especially *quilombola* extractivists of Oriximiná. In so being, in addition to the environmental priorities of the given territories managed by ICMBio (partner of IMAFLORA in project in the Lower Amazon basin), this project manager is well aware of the importance of allowing for the reproduction of livelihoods of the actors living in and from forests, including in PAs, such as the TRBR.

37 For an uptodate thought provoking view on modern slavery, see e.g. Zeuske (2012), Bales (2016).

“Generally, the creation of the RESEX [acronyms in Portuguese, referring to Extractivist Reserves] was done for taking the ‘patrons’ out [of these areas], who commanded the people, who dominated, who managed [these areas]. So we [extractivists] do not want another ‘patron’, who we often perceive to be ICMBio.”³⁸ (Interview with the vice-president of CNS, Belém, 26.05.2014)

The vice-president of CNS goes even further in referring to that, starting in the 1970s, with the change in tenure structure through the emergence of PAs³⁹ – based on the United Nations Convention on Biological Diversity (CBD) and SNUC, including RESEX – the autonomy of Brazil nut gatherers was no longer taken away by the landlords but by ICMBio as the new manager of the respective areas, now federal PAs. While there is a sense of ‘unlevelled playing ground’ among populations living in such PAs and the ‘monitoring authority of ICMBio’, given the focus on trade relations within the *aviamento*, this viewpoint is complemented with a more objective understanding of emerging of new local buyers substituting the former ‘patrons’.

Per ‘dual goal’, PAs were established primarily for environmental conservation and secondarily (see Chapter V.2.1) – for “taking the former patrons out of these areas”⁴⁰, then why allowing for the emergence of a new type of patron, the local buyers? It was a process that occurred in many value chains of commercially valuable NTFPs in the Brazilian Amazon, including through the aforementioned upgrading of some capitalized gatherers to local buyers e.g. in the *quilombolas* communities at stake – based on state-led ‘crowding-out’ of landlords through the change in land tenure structure. It changed from illegitimate private properties (*colocações de castanha*, in Portuguese) to a PA of full environmental protection in an attempt of achieving the aforementioned ‘dual goal’, whereby only the primary one was thereby promoted, while it came along with restrictions on the access and use of natural resources in these areas⁴¹. The secondary intention remained practically unchanged with the ‘recycling of patrons’: through the creation of PAs conducted and managed by the government (ICMBio), the *aviamento* system was reproduced and came along with the establishment of ‘new patrons’⁴², including buyers at community level. This has even aggravated intra-communitarian socioeconomic stratification while the social position of patrons – as chain actors who were formerly positioned further downstream – was mostly taken over by upstream actors, including community members and *regatões*.

38 “Geralmente, a criação das RESEX foi pra tirar os patroes lá de dentro, que mandavam nas pessoas, que tomavam conta, que geria. Então nós não queremos um outro patrão, que muitas das vezes nós percebemos como sendo o ICMBio.”

39 Hall *et al.* (2011: 60) would categorize this, overall, as “ambient exclusion”. They also refer to “protecting parks from people” (ibid. 64).

40 While having local Brazil nut buyers – including members of the same community as gatherers upgrading to buyers – as new patrons is not as hierarchical and oppressive as before with so-called landlords, unbalanced patron-client relations persist.

41 Nevertheless, Brazil nut gathering and marketing in the TRBR is still allowed.

42 Buyers at community level are the new local patrons, who are also financed by downstream more capitalized buyers, who themselves are provided with credits for purchasing products *in natura* from upstream actors of a given value chain. Nevertheless, the latter are not endowed with hardly any autonomy in their trade decision making while having severely restricted marketing possibilities.

Notwithstanding these changes in the socioeconomic positions of chain actors that occurred over the last three decades, the institutionalization process of the persistent *aviamento* system – with its three layers (see Figure 9) – to the extent of patron-client relations turning into *aviamento* as an informal institution is to be explored in the Chapters V.1.3 and V.1.4.

Pedro Ramos (co-founder and former president of CNS) builds the bridge to what follows by referring to an everlasting ‘physical’ and ‘mental oppression’ of NTFP gatherers by buyers thereby accepted as being their patrons:

“I think that the persistence of *aviamento* is a cultural heritage of such people [...] the people who practiced it, controlled the mind [of extractivists], the labor, everything, and it was a very long process”⁴³. (Pedro Ramos interviewed by and cited in Vaz dos Santos & Filocreão 2012: 11)

This perspective from the social movement of extractivists in relation to *regatões* who exert their power vis-à-vis extractivists is broadly shared while referred to by Pedro Ramos who is one of the pioneers – after Chico Mendes – exerting pressure upon the Brazilian government for pushing forward the political agenda of extractivists. Beyond victimizing NTFP gatherers in the frame of cultural treats of oppression by *regatões*, the reproduction of *aviamento* is also entailed by both trade parties’ predominant acceptance of asymmetries in patron-client relations.

Beyond reproduction of *aviamento* towards its legitimization occurs particularly when such relations are replicated even between former peers (gatherers and former gatherers as ‘new’ local buyers), so as to reproduce asymmetries in trade as an objectivized reality. Such reality manifests as if trade relations between Brazil nut gatherers and buyers were *per se* consistent by submission of clients to patrons.

More specifically – before going into the institutionalization of patron-client relations making up *aviamento* – this acceptance of asymmetric power relations is internalized by respective trade parties to the extent that they become an objectivized reality for itself.

1.3 Institutionalization of ‘Patron-Client’ Relations per *Aviamento*

The process of institutionalization builds on the theoretical and analytical foundations provided in Chapters II.2.2.1 and III.3.1. Institutionalization can thereby be understood as the consolidation of interaction schemes and patterns of two or more actors – in institutionalized patron-client relations – characterizing the *aviamento* as an informal institution (see V.1.4).

Overall, patron-client relations making up *aviamento* – as a specific form of traditional barter systems – have been institutionalized in NTFP value chains, including rubber and Brazil nut in the Amazon. Herein determinants of power asymmetries and dependencies that characterize relationships between Brazil nut gatherers as ‘clients’ and buyers as ‘patrons’ are taken under the loop.

43 “Eu penso que a permanência do *aviamento* é uma herança cultural dessas pessoas [...] as pessoas que o praticavam, controlavam a mente, o trabalho, tudo, e foi um processo muito longo”.

Before getting to institutional change or scoping for viable alternatives that meet the needs of upstream Brazil nut chain actors in the Lower Amazon basin, it is important to contextualize this general understanding of institutionalization by dissecting how patron-client relations that come with *aviamento* are institutionalized. For further addressing elements of the sub-research question while scoping for response elements on the institutionalization of such access limiting institutions, an overview of social norms pertaining to *aviamento* is provided. As follows, evidence at subnational regional and local levels is provided for grounding the process at stake.

The institutionalization of unbalanced (inter)dependency relationships between gatherers and buyers of NTFP lies at the core of the establishment and persistence of the *aviamento* system as an informal institution governing the access to natural resources and markets throughout the Amazon and beyond. It limits the access to markets by NTFP gatherers – including Brazil nut gatherers – compelling them to supply the same buyers, the so-called ‘patrons’, over generations.

Overall, *regatões* (external buyers from neighboring urban centers) and also local buyers as ‘patrons’ do not have their own private properties. Brazil nut gatherers have been receiving advanced payments from the former through the latter and continue to have their workforce and supply autonomy immobilized by long-term debts. In this regard, the vice-president of AMOCREQ stated that:

“There are debts from gatherers with the buyer. [...] This *aviamento* relationship will always exist.”⁴⁴ (Interview with the vice-president of AMOCREQ, CCPT, 09.02.2014)

This statement from one of the most formally educated leaders from the communities along the Trombetas and Erepecuru rivers, confirms dependencies and indicates respective everlasting unbalanced trade relations. To put it into context, further institutionalization of patron-client relations entailed by the persistent *aviamento* system was forged whereas dependency from submissive gatherers on buyers was attenuated after the formal abolishment of slavery, yet maintained in the Amazon.

Dependency correlates with the degree of socioeconomic vulnerability of Brazil nut gatherers, while the more economically and geographically marginalized they are, the greater the level of dependency on ‘their patrons’. This is so for different reasons beyond the lack of competition – in the case of the TRBR area with the respective TdC limiting the number of buyers allowed to purchase there. One being the fact that gatherers lack financial resources to get to urban centers with the frequency needed to supply their families with industrialized food, without having to increase respective debts due to inflated prices paid for such products brought from the supermarket by *regatões*.

Further, extractivists from remote communities are particularly locked into an ‘asymmetrical dependency space’ marked by lack of access to information, which relates to the second determinant of lack of direct access to markets: related ability of gatherers, beyond market information. In general, gatherers are compelled to accept the price set by their ‘lenders’ and – in extreme cases of low local market prices of Brazil nut – to not receive any monetary return upon their supply of these buyers with Brazil nut:

44 “Têm dívidas dos coletores com o atravessador. [...] A relação de *aviamento* sempre vai existir.”

“We [Brazil nut extractivists] have been cheated upon very much, we have worked here selling Brazil nut ‘at the price of banana’, *caboclo* [in reference to local gatherers] would exchange a bottle of ‘cachaça’ [Brazilian high-percentage alcoholic beverage] for a box [‘caixa’, in Portuguese] of Brazil nuts; yes, one bottle of ‘cachaça’ for a box of Brazil nuts.”⁴⁵ (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current local buyer of the community of Tapagem, Tapagem, 07.02.2014)

He refers to the ‘creation of unbalanced trade relations’ by so-called ‘patrons’ who exert price squeezes, while he expressed it in an extreme yet at times realistic manner not only by comparing the price of Brazil nuts with bananas but also by stressing the dependence generating exchange with the 40% alcohol beverage ‘cachaça’. This is in line with what the coordinator of the National Enterprise for Technical Assistance and Rural Extension Services (EMATER, per acronyms in Portuguese) in Oriximiná mentioned:

“The *aviamento* here is the exchange of Brazil nut for goods, which generates dependency.”⁴⁶ (Interview with the coordinator of National Enterprise for Technical Assistance and Rural Extension Services in Oriximiná, Oriximiná, 10.12.2013)

He indicates that trade per *aviamento* system does not refer to the common understanding of what a ‘purchase agreement’ represents, where the producer sells a product or service and the buyer pays with money. Instead, gatherers exchange their workforce for collecting Brazil nut with industrialized goods provided in advance by local buyers and *regatões* who often do not even have to pay for the supplied unprocessed natural resource whose price is very low. This implies in long-term debts of the former – which is referred to as follows:

“[...] when he [extractivist] gets back with the product [Brazil nut from respective stands] the price is not sufficient for him to pay for the [industrialized] products that he got from the *aviamento*. This happens in the chain of any product: Brazil nut, fishery, shrimp, crab... it is all like that.”⁴⁷ (Interview with coordinator of socio-environmental action department the headquarters of ICMBio, Brasília, 05.02.2015)

Both these citations fundament the perpetuation of asymmetric non-monetized trade, which has been institutionalized and is widespread in NTFP extractivism in the Amazon. The respective unbalanced exchange of products still occurs frequently in the Brazilian Amazon and in other remote rural contexts, whereby respective extractivists

45 “A gente já foi muito enganado, a gente já trabalhou aqui vendendo castanha em preço de banana, caboclo trocava por uma garrafa de cachaça, uma caixa de castanha; é, uma garrafa de cachaça, uma caixa de castanha.”

46 “[...] *aviamento* aqui é a troca da castanha por mercadoria, que gera dependência.”

47 “[...] quando ele volta com o produto o preço não é suficiente para ele pagar os produtos que ele pegou do *aviamento*. Isso acontece na cadeia de qualquer produto: a castanha, a pesca, o camarão, carangueijo... tudo é assim também.”

do not receive any money⁴⁸, stay indebted and sometimes do not therewith manage to cover their own costs (e.g. labor of Brazil nut gatherers and transport costs).

Building on the aforementioned, with the lack of monetary payment by NTFP buyers and thus implied exchange of favors between both trade parties more dependency emerges and is institutionalized in the frame of asymmetric patron-client relations over time.

Further, respective dependence is also reinforced by the fact that most local buyers are relatives of gatherers and at the same time community leaders (see Chapter V.3), and/ or owners of community stores who expect the respective extractivists to pay them back with Brazil nut as a product *in natura*. Respective kinship relations – present especially between gatherers and former gatherers who upgraded to local buyers – can even increase dependency of gatherers upon a given buyer who is their relative – as is the case of the buyer who purchases most Brazil nuts from the community of CCPT (Fieldwork diary, note taken at the community of CCPT, 21.06.2013).

However, there are also rare cases of gatherers who manage to pay off debts and be paid small sums in cash.

“When we receive advanced payments, then the buyer just pays the price for which he provided it for – until we pay off our debts. Afterwards, [he] considers the [local] market price.”⁴⁹ (Interview with a Brazil nut gatherer from the community of Tapagem, Tapagem, 05.02.2014)

This interviewee is one of the few exceptions of Brazil nut gatherers who has managed to collect enough Brazil nuts to pay off his debts to the same buyer. Other exceptions are gatherers who are able to store Brazil nuts – which apply to rare cases of overall more capitalized households –, while being paid a higher price towards the end of the harvest season.

However, there are some cases where gatherers who despite having been provided an advanced payment opt to supply other buyers who pay a better price and/ or provide cash payments without any delays. Yet, there are exceptions of not only buyers who do not provide advanced payments while avoiding the risk of not being paid back (for a long time) but also gatherers who manage to finance their own gathering activity in order to not depend on such ‘payments’ and paying off debts (see Chapter V.1.6). Besides, in very rare cases, Brazil nut gatherers also ‘make a surplus’: overall relatively capitalized gatherers who e.g. manage to store Brazil nuts and sell them at the end of the harvest season when demand surpasses supply and prices are higher. In the context of more autonomous and capitalized extractivists:

48 “In the *aviamento* system no money changes hands; rather ‘manufactured’ goods and foodstuffs are [provided in] advanced against the future delivery of natural products. Under this arrangement, many individuals remain permanently indebted to their traders.” (Smith *et al.* 1995: 79)

49 “Quando a gente compra fiado, aí o comprador só compra pelo preço que a gente tirou o rancho até pagar a conta. Depois acompanha o preço do mercado.”

“I do not take any type of credit [advanced payments from buyers] anymore, I work for myself and not for the patron.”⁵⁰ (Interview with a Brazil nut gatherer from the community of CCPT, CCPT, 02.06.2014)

All in all, practically every gatherer is still compelled to rely on advanced payments, while further depending on the provision of price information by intermediary buyers of processing mill owners.

Access to Price Information and Market Asymmetries

Price information is filtered particularly by mills who do not inform any of their suppliers of the exact price paid in markets beyond the Lower Amazon basin, so as to facilitate their price squeeze strategy and reinforce dependency relations, especially of gatherers upon buyers in this region. Neither are they keen in providing updates on price information throughout the harvest there, which weakens the bargaining power of the gatherers as the most geographically marginalized upstream chain actors who rarely go to the neighboring urban center where they could get this information (see Chapter V.1.6).

Without timely access to information on Brazil nut prices throughout the respective harvest season, gatherers get trapped into a vulnerable position of price-takers, having to accept the price set by the market and, particularly, by buyers in the Lower Amazon region. The lack of access to price and further information leads to market asymmetries, while limiting the negotiation possibilities of Brazil nut gatherers. There-with price and overall market information plays a considerable role in the institutionalization of unbalanced trade relations between both the parties at stake. It seems price information is only provided to gatherers⁵¹ shortly before the beginning of the Brazil nut harvest season⁵² by local buyers and/ or *regatões* (Fieldwork diary, note taken in Oriximiná, 18.03.2013). Then, a general assumption is made by upstream Brazil nut chain actors as to follow a trend harvest by harvest of relatively high prices, starting with BRL 20-25,00/box in January to BRL 30-35,00/box by May paid in *quilombola* communities of Oriximiná, in line with market dynamics of supply and demand (see Chapter V.1.5). This assumption is slightly adjusted based on whether it is a year of abundant ‘production’ of Brazil nuts in Oriximiná or if it is one of remarkably low production rates⁵³ (Fieldwork diary, note taken in Oriximiná, 18.03.2013). What is taken into account by Brazil nut gatherers, particularly experienced ones, is solid traditional knowledge derived from their own thorough observations of Brazil nut trees including

50 “Eu já não pego fiado, trabalho para mim e não para o patrão.”

51 There are rare exceptions of Brazil nut gatherers who happen to learn about prices paid by buyers in neighboring markets from Oriximiná and Óbidos when they afford to commute at the end of the month to withdraw cash-transfers from *Bolsa Família* or pension in the case of elder rural dwellers.

52 The harvest season in Oriximiná starts in December or January – depending on biophysical conditions of the area where Brazil nut trees naturally occur.

53 The production cycle depends on biological features of the Brazil nut tree (*Bertholletia excelsa* Bonpl. Lecythidaceae), which has a biennial rhythm of boom and bust in producing Brazil nut pods.

when and how they flourish⁵⁴. These forest dependent dwellers also know where the most dense and productive Brazil nut stands⁵⁵ are located.

Still, local Brazil nut gatherers continue to lack up-to-date information on prices for enhancing their ability to effectively negotiate with buyers, including due to advanced payments and respective debt-based dependency.

Social Norms Reinforcing Asymmetric (Inter)dependency in Trade

Before going into unbalanced (inter)dependency reinforced by certain social norms, a locally disputed self-determined norm – regulating the access to Brazil nut stands in these areas – is to mentioned: extractivists who happen to have ‘found’ a stand are then allowed to gather Brazil nut there but not in one ‘owned’ by other families. Even though most extractivist communities surveyed herein live in traditionally occupied collective lands of Oriximiná, all *quilombolas* living along the Trombetas and Erepeuru rivers have this norm they created themselves for managing access to natural resources.

Yet, the core of the *aviamento* system – unbalanced patron-client relations and (inter)dependency among upstream chain actors – is institutionalized through long-term indebtedness of gatherers that restricts their bargaining power and position within the value chain.

Social norms underpinning *aviamento* as an informal institution play a key role in this institutionalization process of patron-client relations in the frame of the debt-peonage system at stake. As indicated before, one such norm – at the community level – is that a gatherer is compelled to sell its product (*in natura*) to a given buyer who provided him/ her with an advanced payment(s), which has been imposed by ‘patrons’ upon their suppliers, respectively, over generations throughout the Amazon. This points to ‘forced loyalty’, considering, in particular, the way it is constructed building on asymmetric power relations, plays a considerable role in perpetuating patron-client relations.

“The client has a strong sense of loyalty to his patron and voices this [...] he constantly stimulated the channels of loyalty, [...] adds to the name and fame of his patron and ensures him a species of immortality”. (Wolf 2001: 16)

In referring to the functions of *regatões* elaborated above, the provision of service and industrialized goods as well as advanced payments not only reinforce asymmetric interdependencies yet also power imbalances among respective ‘patrons’ and ‘clients’.

“Here the element of power emerges which is otherwise masked by reciprocities. For the client [...] promises – in effect – to entertain no other patron than the one from whom he has received goods and credit.” (ibid.: 16)

54 The more flowers Brazil nut trees have, the more productive the harvest of such trees.

55 Most *quilombola* extractivists live in traditionally occupied collective lands/ remote TQs of Oriximiná and have their own social norm – local informal institution – regulating the access to Brazil nut stands in these areas: extractivists who happen to have ‘found’ a stand are then allowed to gather Brazil nut there but not in one ‘owned’ by other families.

In so being, such dependence relations weaken the autonomy of intermediary buyers and thereby of Brazil nut gatherers as well, given respective limitation of possibilities for the latter to access new market outlets at the respective subnational regional level.

The chance to potentially being paid higher prices is restricted not only by gatherers having to supply the same buyers but also per instrumentalization by buyers of the discourse of ‘giving the word’ and having to honor respective supply commitments. This is a means of oppression employed by buyers and processing mills in the analyzed basin (Fieldwork diary, note taken in Oriximiná, 14.12.2013), while it also occurs in other rural areas, including remote rural areas where agricultural and NTFPs are produced or used by smallholders.

This is evidenced through an additional norm established at the urban market level of Oriximiná, pertaining to a sense to honor mutual commitment internalized by both gatherers and (intermediary) buyers that reinforces respective dependency over generations – which is implicit to Brazil nut trade:

“In the Brazil nut business there is a lot of ‘giving the word’: if you say something, you have to keep it. This is how it has been ever since they started to work with Brazil nut. [...] If you agree on a price and borrow money [advanced payment], the deal is sealed and if the Brazil nut price rises, you still have to respect the agreement. [...] I get advanced payment from him [Casemiro, owner of the processing mill Exportadora Florenzano Ltda. in Oriximiná] and if someone [another buyer] wants it for double price, I do not sell to someone else... it is a question of honor; only if I am not already committed to supply him [he would sell to other buyers].”⁵⁶ (Interview with one of the main intermediary buyers from the processing mill Exportadora Florenzano Ltda. in Oriximiná, Oriximiná, 14.12.2013)

This statement indicates interdependence derived from mutual commitment related to honor, trust and loyalty among different trade partners.

A further norm – per agreements prevailing in the chain at stake – is described by a direct buyer from the Brazil nut processing mill in Oriximiná:

“In case the [market] price of Brazil nut rises, the [initial] agreement still has to be respected.”⁵⁷ (Interview with one of the largest intermediary buyers of the Brazil nut processing mill Exportadora Florenzano Ltda., Oriximiná, 14.12.2013)

This represents a norm implied by the unbalanced relationships between extractivists and ‘patrons’ (community-based and town-based buyers as well as processing mills from Oriximiná and Óbidos), which is still present in NTFP trade in some areas of the Brazilian Amazon (Allegretti 2002). Thereby, Brazil nut supply commitments are based on respective ‘agreements’ often at a low price in the beginning of each year whereby price tends to rise significantly throughout the harvest season. What aggravates trade asymmetries per norms constituting the *aviamento* system is the

56 “No negócio da castanha tem muita coisa de dar a palavra: falou está falado. E assim desde quando começaram a trabalhar com a castanha. Se combinar um preço e pegar dinheiro emprestado, o negócio está fechado e se aumentar o preço da castanha tem que respeitar o acordo. [...] Eu pego fiado com ele e se alguém quiser pelo dobro do preço, eu não vendo para outro... é negócio de honra mesmo; só se eu não tiver negócio com ele.”

57 “Se aumentar o preço da castanha, tem que respeitar o acordo”.

unilaterally determined accounting by respective buyers of the quantities of Brazil nuts delivered by gatherers as well as of their debts throughout harvest seasons (Field-work diary, note taken at the community of CCPT, 07.06.2014).

All three social norms highlighted above – the commitment to supply whom gatherers are already indebted per advanced payments by given buyers, the sense of honor to supply committed Brazil nuts to a given buyer by intermediary buyers or gatherers as well as informal agreements on prices among trade partners – underlying the *aviamento* system described in this chapter have been internalized including by gatherers who have to comply to them. They are further accepted by the latter and promoted by respective patrons as their only buyers of Brazil nut *in natura* as well as providers of industrialized goods and services. Such dependence-based acceptance is therewith reinforced by both social norms underlying trade relations, indicating a process of institutionalization of respective unbalanced patron-client relations (see Chapter III.3). However, the representative of SEMMA of the ministry of environment in Oriximiná inverts respective ‘victimization’ of extractivists, while referring to key chain actors as being interdependent. He states that the intermediary buyer who lends money is the one who depends on given gatherers to pay him back with Brazil nuts while facing the risk of losing what he has lent:

“The *regatão* always has the commitment because he advances [e.g. money, industrialized goods, services]. The Brazil nut gatherer can be in debt [with one or more specific buyers] but he still sells [Brazil nut] to other middlemen.”⁵⁸ (Interview with the coordinator of SEMMA⁵⁹ in Oriximiná, Oriximiná, 17.12.2013).

Noteworthy, however, is that this representative of the MMA at the administrative level of Oriximiná is closer to the buyers who partially live in the same municipality, whereby some are good friends or have the same surname. For instance, his colleague at SEMMA at that time was a member of the “Guerreiros” family, one of the most traditional intermediary buyers of Brazil nuts and influential families in the region.

By making the link back to both abovementioned trade related norms, one can derive that they tie extractivists to given buyers and these buyers to larger buyers, in this case the Exportadora Florenzano Ltda., involving three interdependent nodes of the value chain in Oriximiná. The mill in this municipality is an exception in the Lower Amazon region, in the sense that it has its own financial capital complemented by bank credits. Thus, it does not depend on advanced payments from further downstream buyers nor traders, while even exporting Brazil nuts directly (e.g. to Bolivia) without any national export trader. As most upstream value chain actors do not have access to bank credits (see Chapter V.1.7), they are negatively affected by both norms that lead to an immobilization of the workforce and action arena of gatherers who are forced to supply their patrons trapped in a constant struggle for paying off their debts in the long run. The following chapter goes further in characterizing *aviamento* as an informal institution.

58 “O *regatão* sempre tem comprometimento porque adianta. Castanheiro pode estar te devendo, mas ele vende pra outros atravessadores.”

59 The Secretariat for the Environment (SEMMA, per acronyms in Portuguese) is the governmental entity at the municipality level (under MMA), in this case of Oriximiná.

1.4 Characterization of *Aviamento* as Informal Institution

On top of trade related dependency, local community-based buyers as ‘new patrons’ provide the aforementioned services in the form of ‘personal assistance’ (e.g. boat rides to the nearest hospital) to gatherers while creating respective loyalty and strengthening dependency from the latter on the patron who was regarded as their ‘savior’. Their perception is so because without local buyers, extractivists practically would not have access to goods their families ‘need’ yet face additional shortcomings in meeting households’ daily necessities – including not having someone to take them to urban centers in emergency cases. Both the subtypes of the already described dependence relations – trade and personal dependence relations – reinforce each other. This twofold categorization of respective relations helps to understand the dependence at stake yet they are strongly intertwined and institutionalized in an inseparable overall dependency of gatherers upon buyers (similarly to the three functions of the role of *regatões* described in Chapter V.1.1). This dependency has been reproduced over several generations and still perpetuates in institutionalized patron-client relations.

In so being, the characterization of *aviamento* as an informal institution is composed by three layers (see Figure 9) – from the tip of the iceberg (which can be noticed with more ease) down to its basis:

(i) The inequitable exchange of industrialized goods with products *in natura*⁶⁰ (e.g. NTFP), whose production or gathering costs (see Chapter V.1.5) are so high that when gatherers come back from distant NTFP stands after weeks they receive ‘debts’ instead of ‘additional payments’ from their patrons. This immobilizes the remuneration of workforce of entire families involved in constant gathering when striving to reduce such debts while instead they increase over time according to ‘their’ patrons’ calculations (Fieldwork diary, note taken at the community of CCPT, 07.06.2014).

(ii) Such ‘inequitable trade relation’ is perpetuated through the acceptance of an unbalanced action arena with unequal (bargaining) power relations resulting from the institutionalized patron-client relations that – include service provision of the former to the latter, including in off-harvest-season periods (e.g. transport, health assistance) – are worsened by discrepancies in the ability to access resources between both parties. Thereby, buyers – including community-based ones – are often endowed with numeric literacy, which enables them to cheat in the accounting process of the ‘credits’ and ‘debts’ of ‘their suppliers’.

60 Even though direct exchange of *cachaça* (in Portuguese) with a box of Brazil nut does not occur as often nowadays, indebtedness due to alcohol excessive consumption is not an exception at community level, in Oriximiná. Besides, at the beginning of the harvest season of Brazil nut, supply is higher than the demand, which results in relatively lower prices. There are rare exceptions of local buyers who ‘accompany’ price developments when claiming what they had lent as advanced payments to gatherers who supply them with products *in natura*.

(iii) Additionally, the history of widespread submission of smallholders/ NTFP extractivists in upstream nodes of given value chains to ‘their patrons’⁶¹ (buyers) has further established enabling conditions for perpetuating unbalanced trade relations in which the *aviamento* system as overarching informal institution is grounded in.

Figure 9: Three Layers Characterizing *Aviamento* as an Informal Institution



Source: Own elaboration

Further, this deeply rooted asymmetric dependence from gatherers on buyers and institutionalized patron-client relations within the *aviamento* system at the local level is confirmed by a gatherer who supplies his cousin (local buyer) with Brazil nut:

“As the Brazil nut gatherer is tied to his patron, we really get trapped and have to accept this low price [set by the buyer]”⁶². (Interview with an experienced Brazil nut gatherer from the community of CCPT, CCPT, 06.06.2014)

Moreover, this persisting lack of autonomy of Brazil nut gatherers (clients) vis-à-vis buyers (patrons) characterizes *aviamento* as an informal institution, as is referred to by a representative from ICMBio at national level:

“[...] he [the Brazil nut gatherer] is hostages by only one patron [buyer]”⁶³. (Interview with the coordinator of the socio-environmental action department at the headquarters of ICMBio, Brasília, 05.02.2015)

This statement further evidences *aviamento* as an informal institution based on the institutionalization of unbalanced patron-client relations (see Chapter V.1.3). The patron therewith referred to is the one who gets to set the prices at the farm-gate level, while trapping a given number of gatherers who are compelled to supply this buyer in

61 Concerning the bottom and third layer: in the case of *quilombolas*, a heritage of their ancestors who have experienced slavery until they fled from their ‘owners’ shortly before its abolishment in Brazil in 1888.

62 “Como o castanheiro está amarrado no patrão, a gente fica preso e tem que aceitar esse preço baixo mesmo”.

63 “[...] ele fica refém de um comprador só”.

order to pay off respective debts. All three layers of Figure 9 are consolidated through (in)voluntary acceptance of involved trade parties. In such institutionalization process of towards the consolidation of *aviamento* as informal institution (see Chapter II.2.1.1) – an ‘objectivized reality’ (see Chapter III.3.1), Brazil nut buyers and gatherers established different strategies to deal with (inter)dependencies among them as well as with the access to resources and markets (see Chapter V.1.6).

Before going into such strategies it is fruitful to provide an overview of relevant economic data on Brazil nut production at national level, including an overview of gathered/ marketed Brazil nuts from Óbidos and, especially, Oriximiná. In both municipalities overall findings on benefit sharing along the chain are complemented by specific results for Oriximiná. The latter include figures on economic returns and costs of Brazil nut buyers and gatherers as well as the impacting price variation, which are variables that play a considerable role in shaping unbalanced trade relations.

1.5 Quantitative Evidence⁶⁴ on Brazil nut and Market Access(ibility), Benefits and Costs

National and Sub-regional Panorama on Exports and Domestic Markets

In order to provide a national panorama of Brazil nut production and marketing, IMAFLORA (2016: 21) shows that exports (26% in 2014 compared to 50% of export share by Bolivia) diminished significantly (with over 40% in 2011 it represented slightly less of global exports vis-à-vis Bolivia’s share, followed by Peru with a constant share of less than 10% from 2011-2014). A key reason for this decline of Brazil’s export share was the establishment of phytosanitary barriers particularly by the European Union at that time⁶⁵ (see data following Table 5) and decreasing exchange rates between the USD and BRL. This fact combined with cross-sectoral policies to stimulate domestic markets and expanded niches for nutrition-sensitive and overall sustainable consumption have led to increased domestic market of Brazil nuts (74% – IMAFLORA 2016: 15).

Zooming into the sub-regional level within the Lower Amazon basin, data on Brazil nuts stemming from Oriximiná and marketed in the country as well as abroad is depicted at next in Table 5.

64 Additional economic evidence beyond Oriximiná is provided in the subsection on diversification of income sources within Chapter V.1.6 as well as in the subsection on the scope for alternatives within Chapter V.1.7.

65 For further detailed data on Brazil nut exports trends and its determinants, see Coslovsky (2014), who provides a global overview, particularly of Bolivia and Brazil. Further related economic data, including a comparison among both these countries and Peru as well as on price trends can be found in CONAB (2015 – based on FAO (2015), IBGE (2015), MDIC (2015) data).

Table 5: Brazil nut Exported from Oriximiná in 2011

Brazil nut export in tons (t) from Oriximiná in 2011		%
Australia	500	39,91
Italy	475	37,90
Russia	278	22,19
<i>Subtotal</i>	<i>1253</i>	<i>100,00</i>
Brazil nut sold in tons (t) from Oriximiná to other states (domestic market) in 2011		%
Rio de Janeiro	140	35,00
Rio Grande do Sul	130	32,50
São Paulo	130	32,50
<i>Subtotal</i>	<i>400</i>	<i>100,00</i>
Total	1653	

Source: Own elaboration – based on data provided by Exportadora Florenzano Ltda.⁶⁶ in 2012

Drawing from this table, the total volume of Brazil nut marketed via Exportadora Florenzano Ltda. was 1653 t in 2011. Given the subnational regional monopsony market structure, being the only Brazil nut processing mill in Oriximiná, the values in Table 5 correspond to the values for this municipality. IBGE data on gathered Brazil nut: 1680 t in Oriximiná in 2011 and in Óbidos it was 1225 t in the same year and twice as much (2600 t) in 2013 (IBGE 2014). Regarding total values for Oriximiná in 2011, it results that 27 t (= 1680 t - 1653 t⁶⁷) was marketed within this municipality, whereby 427 t (= 400 t⁶⁸ + 27 t) were destined to the domestic market that represents 25,83% of total marketed Brazil nuts – since 2012 domestic markets have gained in relative importance including given growing national demand. The lead firm as monopsony in Oriximiná sets the Brazil nut prices for its intermediary buyers and upstream suppliers, whereas it faces competition with the two processing mills from Óbidos. Indication is hereby provided that after the TdC entered into force in 2012, Oriximiná's mill lost ground to Óbidos, particularly to the Exportadora Mundial Ltda., which is featured by the abovementioned numbers.

As follows, benefits and costs of Brazil nut buyers and gatherers in Óbidos and, particularly, Oriximiná are taken under the loop, followed by a rapid appraisal of price variability as key determinant of both economic returns (net income) and respective expenditures at local and national levels.

66 All figures refer to export by Exportadora Florenzano Ltda., as the only Brazil nut processing mill of Oriximiná.

67 See total in Table 5.

68 See respective subtotal in Table 5.

Benefits and Costs: Distribution of Economic Returns and Costs Along the Brazil nut Value Chain

Benefits hereby taken into consideration are economic returns (net income) from the Brazil nut activity in Oriximiná and Óbidos, so as to fundament presented arguments on unbalanced trade with an overview of costs and the distribution of economic returns (benefit shares) of buyers and gatherers in Oriximiná.

Economic Returns of Brazil nut Buyers

With regard to adding value and benefit sharing along the Brazil nut value chain in Oriximiná and Óbidos, prices in 2012 point to an unequal distribution of economic returns, whereby downstream actors, who are overall more powerful especially in financial terms, benefit most: In the middle of the harvest season of 2012 the Mundial Exportadora Comercial Ltda. bought its Brazil nut *in natura* for 26,00 BRL/box⁶⁹ (predominantly used unit in the region) (1,30 BRL/kg), compared to Exportadora Florenzano Ltda., 23,00 BRL/box (1,20 BRL/kg). It sold the processed Brazil nut (the so-called 'dry Brazil nut') to the supermarket *Passatempo Preferido* located in Oriximiná for 30,00 BRL/kg, which sold it for 57,00 BRL/kg to the consumer in 2012. Firms' operational, personnel and production costs (including relatively high production losses, *inter alia* due to rotten Brazil nuts) were not revealed in the interviews with these three processing mills, which can lead to overestimating discrepancies concerning economic returns of chain actors. This intransparency was also shown by intermediary buyers of such firms, which overall precluded calculations on mark-ups achieved by buyers in Oriximiná and Óbidos.

Still, costs and economic returns of the Brazil nut activity involving intermediary buyers (including community and urban center-based) and gatherers were captured through the socioeconomic and natural resource survey conducted *inter alia* in Oriximiná and Óbidos and further structured household interviews in Oriximiná. These results are presented at next.

Costs of Brazil nut Buyers and Accessibility to Markets

The mean (n=9)⁷⁰ of the total costs (transport and material costs including losses of Brazil nuts) of an intermediary buyer was BRL 17138,93 in 2012 and the mean of a buyer's net income from purchasing and reselling Brazil nuts was BRL 2334,96 in the same year. A significant portion of the costs is entailed by the distances from *quilombola* communities to markets. Brazil nut buyers have considerable transaction costs⁷¹ as well transport costs (*inter alia* gasoline for own motor boats or BRL 1/box

69 On the unit BRL/box: Per Exchange rate from 11.03.2017 (see <<https://www.oanda.com>>, accessed on 11.03.2017): 1 EUR (per acronyms for Euro) = 3,3 BRL, whereby 1 box corresponds to 20kg (see Homma & Menezes 2008).

70 After rigorous cleaning of quantitative data (see Chapter IV.3.1), n=9 is the number of buyers taken into account for the specific quantitative analysis at stake here.

71 What is hereby meant with transaction costs of Brazil nut buyers are e.g. information/search costs for finding respective gatherers while investing time in establishing supply agreements per advanced payments to them and not being delivered with 'committed Brazil nuts'.

of Brazil nuts transported by diesel ship), including in order to fulfill bureaucratic requirements from ICMBio and be authorized on an annual basis to transport Brazil nuts from respective communities at the TRBR area to markets: going down up the Trombetas river from CCPT to Oriximiná 7:40 hours with a motor boat with horse power 15, which most *quilombola* leaders have, or 11:30 hours with a diesel ship owned by CCPT's evangelic church. These costs are transmitted to the farm-gate prices, which are overall low.

Economic Returns of Brazil nut Gatherers

The gatherer's income from Brazil nut was assessed, including quantity of Brazil nut gathered and the price (per unit sold/ consumed, as in this case families avoid having to buy this item). Table 6 shows these results for the *quilombola* communities along both Trombetas and Erepecuru rivers in Oriximiná.

Table 6: Economic Data on the Brazil nut Value Chain in Four *Quilombola* Communities⁷² of Oriximiná in 2012

Economic activity: Brazil nut harvest season*	Mean	Minimum	Maximum
Quantity gathered (box)**	62,53	20	170
Price per unit (BRL/box)	27,68	10	50
Income per gatherer*** from Brazil nut (BRL)****	1.573,72	100	6.540

* 1st half of every year – here 2012

** one box corresponds to 20kg

*** most Brazil nut gatherers are men⁷³

**** considering subsistence/ consumption and marketing purposes

Source: Own elaboration, based on quantitative socioeconomic survey

The quantity gathered in the herewith analyzed *quilombolas* communities was approximately 63 boxes, which corresponds to 1250,59 kg per family and the price paid by purchasers to gatherers at the community level was 1,38 BRL/kg (both mean values for 2012). The amount gathered is possibly higher than the overall mean for Oriximiná, as the communities analyzed are part of the ones where Brazil nut extraction is most intense, whereas the mean of the net income of interviewed gatherers is most probably considerably lower, including due to high transport costs.

Costs of Gatherers, Brazil nut Income Share and Accessibility

Before going into the quantification of costs, it is important to further specify relations between Brazil nut income share and the difficult accessibility implied by large distances in order to better understand the low net income of Brazil nut gatherers.

72 The communities considered for this analysis were Tapagem, CCPT, Cachoeira Pancada and Jaurí (first two along the Trombetas river and latter two along the Erepecuru river).

73 Still, households can have more than one gatherer.

For supplementing the importance of Brazil nut gathering (13,07% – see Table 7) in the overall income of extractivists for the year 2012 in the Lower Amazon basin with further quantified (cor)relations between the independent variable ‘access to Brazil nuts’ and the dependent variable ‘income’. In the frame of inferential statistics, the linear regression model herein shows a significant correlation between the access to Brazil nut and the proportion of Brazil nut income in the overall income of extractivists in Oriximiná, but also in the analyzed communities of Óbidos, Curuá and Alenquer. The access to Brazil nut stands explains 22,4% of the variance of the overall income ($R^2=0,224$). The F-statistics shows a good model ($F(1,58=16,70)$; $p<0,001$).

Distances from gatherers’ houses to the respective Brazil nut stands (they get their shelled Brazil nuts) from informed per regional socioeconomic household survey by extractivists ($n=75$)⁷⁴ range from less than 1 kilometer to 250 kilometers in the assessed four municipalities of the Lower Amazon basin in 2012. More specifically, 9 gatherers had to cover a path ranging from 100-250 kilometers from their homes to the Brazil nut stands accessed by them, another 9 from 13-50 kilometers, 5 from 6-9 kilometers, 14 from 3-5 kilometers, 17 from 1-2 kilometers and 21 less than 1 kilometer.

Moreover, costs are high for both Brazil nut buyers and gatherers, in particular due to transport costs given substantive distances that are characteristic to the Lower Amazon region, especially in the *quilombola* communities – that can only be reached by boat from Oriximiná) and remote Brazil nut stands. Some of the most productive Brazil nut stands are at least a one-day boat trip away from the communities of Cachoeira Pancada and CCPT.

Thereby, net economic returns (considering costs for calculating net income) fall short, especially for gatherers.

Further, the mean ($n=17$)⁷⁵ production and material costs⁷⁶ of Brazil nut gatherers in the study area of Oriximiná are: BRL 838,65 in 2012 (without labor costs/ opportunity costs).

74 After rigorous cleaning of quantitative data (see Chapter IV.3.1), $n=75$ is the number of Brazil nut gatherers taken into account for the specific quantitative analysis at stake here.

75 After rigorous cleaning of quantitative data (see Chapter IV.3.1), $n=17$ is the number of Brazil nut gatherers taken into account for the specific quantitative analysis at stake here.

76 Costs of input (food and equipment/material) for gathering: truck/ tractor; canoe, engine (of small motorboat); paddle; boat; shirt; pants; flip flops; collecting basket; machete; boots; plastic cover/roof; rifle; bullet/ fuse; gunpowder; fishhook; fishing weight; line; fishing net; flash light; batteries; oil lamp; diesel; oil for (boat) engine; gasoline; manioc flour; cooking oil; coffee; sugar; salt; spices/rice; soap; toilet paper; tooth brush and paste; candle; lighter; box; mosquito net and hammock. Costs for services such as cleaning area for building tent for Brazil nut gatherers to stay during the harvest season is not taken into account, provided that time spent doing so are already considered in opportunity costs/ labor costs taken into account as mentioned above. Further costs were not specifically taken into account due to the difficulty to quantify them with the necessary level of precision (considering insufficient local documentation of expenses), related to the distinct logic of production and marketing which cannot be derived from rational output maximization based on perfectly informed and rational market actors – beyond the *homo economicus* perspective.

Labor costs are considered as opportunity costs⁷⁷ in per diems (*diárias*, in Portuguese), paid for cleaning areas for agriculture and cattle ranching twice per month on average in the study area in 2012 that could be earned would the Brazil nut gatherers work for such capitalized farmers instead. Opportunity costs are calculated as follows: Considering the mean of per diems of 25,00 BRL/day * 2 days/month * 5 months (of harvest) = BRL 250,00 labor costs as opportunity costs per gatherer in the 2012 harvest season.

BRL 838,65 + BRL 250,00 = BRL 1088,65 (includes labor costs as opportunity costs).

This value for labor costs as well as the gross value of production (per Brazil nut gatherer) are used, respectively, as follows:

BRL 1573,72 – BRL 1088,65 = BRL 485,07 net income of gatherer from Brazil nuts in 2012. While this figure supports the argument of price squeezes faced by Brazil nut gatherers vis-à-vis buyers, such exploitation of actors within lower value chain tiers is aggravated by the fact that most gatherers are indebted and compelled to pay-off debts from previous harvest seasons to their so-called patrons. Such price squeezes are facilitated by unbalanced bargaining power related *inter alia* to the lack of possibility for most Brazil nut gatherers to benefit from rising prices at the end of each harvest season, which is explained at next.

Brazil nut Price Variability Throughout the Year from 2011 to 2014

Brazil nut price variation is considerable not only over the years but also throughout harvest seasons. Price variability was assessed for the beginning, middle and end of each harvest period by using the same questionnaire applied for key-informant interviews with three of the main (intermediary) buyers from respective *quilombola* communities in Oriximiná. The range of informed prices was 10,00 to 50,00 BRL/box at the beginning and end of the harvest of 2012, respectively, which corresponds to prices informed through the household survey conducted in the same year (see Table 6). Even though it is well-known by Brazil nut gatherers that the price increases at the end of harvest season (given demand surpasses supply), most gatherers do not have sufficient financial capital and storage facilities to wait until then. Instead, they are not only compelled to sell to the buyer who provided advanced payments, but also to fulfill daily needs of their families while buying industrialized products (e.g. cooking oil, salt, sugar and coffee) from the same purchaser.

The mean of Brazil nut prices for the same four *quilombola* communities of Oriximiná referred to in Table 6 is 27,68 BRL/box in 2012 (see Table 6). The mean throughout harvest seasons varied from 1,29 BRL/kg in 2011 to 1,69 BRL/kg in 2014, which follows price increase trends at national level in the same period, reaching a mean of 1,81 BRL/kg in Brazil in 2014 – CONAB (2015) based on IBGE (2015). In so being, prices paid at farm-gate level in the studied *quilombola* communities are below Brazil's average, *inter alia* due to institutionalized dependency relations per *aviamento* as

⁷⁷ Opportunity costs hereby referred to do neither include days and respective workforce invested in collective activities (*mutirão*, in Portuguese – locally called *puxirum* – for cassava harvest or prior cleaning of areas cultivated by neighbors), nor non-monetary exchange of workforce with relatives in a given (*quilombola*) community.

well as prevailing market structures that both limit negotiation possibilities of upstream Brazil nut chain actors at the Lower Amazon region as well as at community level. Related price squeezes are facilitated by respective strangling of regional and local markets through respective oligopsonic structures in the study area.

Still, Brazil nut prices paid at the hereby analyzed communities from 2011 to 2014 were above the minimum price established by CONAB 'PGPM-Bio'⁷⁸: 1,18 BRL/kg throughout the referred period (CONAB 2015). On top of this public policy not fulfilling its intended market function – of subsidizing with the difference of actual prices and the abovementioned minimum price – given the PGPM-Bio for Brazil nut lies significantly below prices payed in this period, it was not accessed from 2011 to 2014 in the entire state of Pará (CONAB 2015 – see Chapters VI and VII for further elaboration as well as recommendations on this and other policies).

Beyond relations among prices, costs and economic returns (net income), the next chapter is devoted to strategies of Brazil nut gatherers and buyers to handle (inter)dependencies amongst them within their strive to access natural resources and markets.

1.6 Strategies of Brazil nut Buyers and Gatherers to Deal with (Inter)Dependencies and Access

At first the seven strategies of Brazil nut buyers to increase their (economic) benefits within the respective value chain are presented. Such strategies are followed by diversification of income sources applied by buyers as well as gatherers, and seven strategies of Brazil nut gatherers for dealing with dependency on the former while striving to access resources and markets.

Seven Strategies Applied by Brazil nut Buyers⁷⁹ to Increase their Benefits within the Value Chain and Dependency from Gatherers upon them

Brazil nut buyers have different strategies to generate and increase dependency from gatherers on them with the overall aim to strengthen their position and maximize their benefits (economic return) within the value chain. These encompass measures beyond the aforementioned provision of advanced payments in the form of the supply of industrialized goods and services as well personal assistance (e.g. medicine provision and boat transport in emergency cases), leading not only to debts but also to asymmetric bargaining power and lack of alternative market outlets faced by gatherers.

Before zooming into specific strategies of Brazil nut buyers to increase the dependency from gatherers upon them in the Lower Amazon region, the manager of one of

78 *Política de Garantia de Preços Mínimos para a Sociobiodiversidade* (PGPM-Bio) was established in the frame of the already referred to PNPSB as a national plan led by MDA in 2009. It is a federal policy which sets minimum prices for certain sociobiodiversity products, including for Brazil nut as an NTFP, similarly to the *Política de Garantia de Preços Mínimos* (PGPM) pertaining to agricultural products.

79 The buyers hereby referred to are the ones who purchase Brazil nut at community level either indirectly (1st intermediary buyers including external buyers who deliver Brazil nuts to processing mills) or directly (2nd intermediary buyers including community internal purchasers) (see Figure 3).

the two Brazil nut processing mills of Óbidos, CAIBA Indústria e Comércio S/A, offers a broader perspective – from where he stands – on the overall role such ‘lead firms’ play in respective value chains of the Brazilian Amazon.

“The [Brazilian] Amazon is very big and there are thousands of gatherers spread throughout the Amazon. You cannot have access to them. So, the industries have found an overall solution and, in this case of CAIBA Indústria e Comércio S/A. We try to maintain middlemen [...].”⁸⁰ (Interview with the coordinator of the Brazil nut processing mill ‘CAIBA Indústria e Comércio S/A’ based in Óbidos, Óbidos, 19.03.2013)

By taking his processing mill as an example, he stresses the role of Brazil nut mills in shaping the respective value chains in the Brazilian Amazon, while claiming such subnational regional lead firms to have created ‘their supply chain’ as ‘their solution’ for the local Brazil nut economy. He argues that they create the trade links among upstream actors to function as their intermediary buyers and at the same time suppliers of Brazil nut *in natura*. Such links generate (inter)dependency between the procurement and supply segments of the value chain at stake, which represents the *first* overall strategy applied by buyers to increase the quantities they are supplied with and their benefits within the Brazil nut chain.

Secondly, in the Lower Amazon basin, another strategy employed by buyers is to filter the information on market prices of Brazil nut, while avoiding to share real price information with gatherers at community level, especially in case current prices are above the price gatherers are aware of (Fieldwork diary, note taken in the community of Jaurí, 26.01.2014). While this attitude applies to trade of any good or service anywhere, the Brazil nut value chain in question is particularly intransparent⁸¹, including due to notorious imbalances in (bargaining) power between buyers and gatherers as well as the difficult accessibility of urban centers and markets, which also inhibits access to information by less capitalized gatherers.

“The Brazil nut from CCPT goes to Óbidos. [...] The buyer only informs the [Brazil nut] price from Oriximiná to the Brazil nut gatherer. But the price that he should inform is the price from Óbidos, which is higher.”⁸² (Interview with an experienced Brazil nut gatherer from the community of CCPT, CCPT, 06.06.2014)

Local Brazil nut buyers (who are often community leaders) only inform the price Brazil nut is traded at the market in Oriximiná – and not in Óbidos, where a higher price results from two processing mills competing with each other, compared to the price set by the only mill in Oriximiná (Fieldwork diary, note taken in the community of Tapa-

80 “A Amazônia é muito grande e existem alguns milhares de coletores espalhados pela Amazônia. Você não tem como ter acesso a eles. Então, as indústrias elas têm uma solução de uma forma geral e, no caso, da CAIBA Indústria e Comércio S/A. A gente procura manter atravessadores [...]”

81 It is yet practically not possible to be provided with access to data on quantities and prices by Brazil nut buyers, including processing mills (e.g. the three focused upon in Oriximiná and Óbidos), wholesale and retail in Brazil (based on Interview with two project coordinators from IMAFLORA, Piracicaba, 11.02.2015).

82 “A castanha de CCPT vai para Óbidos. O comprador informa só o preço de Oriximiná para o castanheiro. Mas o preço que ele deveria informar era o preço de Óbidos, que é mais alto.”

gem, 13.03.2013). This fact is a further indicator of selective provision of information by buyers.

Thirdly, an additional strategy of some buyers at community level is that they tell gatherers they have to fulfill urgent deadlines to supply larger buyers in the neighboring urban centers – to which most gatherers hardly afford to go to –, so that they have an even stronger bargaining position vis-à-vis gatherers. This is also a reason why Brazil nut gatherers do not wait for the price to rise and sell right away, even in the beginning of the harvest season when prices are lowest (based on Interview with an experienced Brazil nut gatherer from the community of CCPT, CCPT, 06.06.2014).

Fourthly, besides well-known benefits of loyalty and, particularly, trust relations, they can also be strategically built and used by local buyers, so as to further compel gatherers to supply the same buyer with Brazil nuts, despite of higher prices offered by others. Similar (inter)dependencies manifest in trade relations between processing mills and local buyers: the latter receive advanced payments from mill owners they are acquainted with (based on Interview with *quilombola* leader as well as former coordinator of AMOCREQ and with his wife – a manager of their grocery store at the community of CCPT –, CCPT, 25.06.2013), while often having built mutual trust or at least loyalty over time.

Fifthly, another strategy applied by some larger Brazil nut buyers at the region at stake is the provision of advanced payments, starting in December, to intermediary buyers prior to the harvest season, so that they can be first movers and buy more Brazil nuts than others (based on Interview with one of the eldest leaders of the BEC road as well as founder of the association ASCONB⁸³, community of ‘Nova Betel – Km 12 of the BEC road’, Oriximiná, 10.12.2013).

Sixthly, a further strategy expressed by a former (community internal) buyer at CCPT – who stopped procuring Brazil nut due to overwhelming debts of gatherers – is that there could also be a verbal agreement amongst local buyers to only buy from ‘their’ suppliers and not from other gatherers who have committed themselves to other providers of advanced payments in order to minimize the risk of ‘unloyalty of gatherers’⁸⁴ (based on Interview with a Brazil nut buyer from the community of CCPT, CCPT, 23.06.2013). While impeding competition, this potential strategy is overall perceived by both parties to be a sub-optimal alternative – overall restricting the natural resource access by buyers and the access to market outlets by gatherers – to the ‘debt-peonage’ system in question (see Cano *et al.* 2014).

Seventhly, some local Brazil nut buyers have little grocery stores in ‘their communities’, not only as a strategy to have an additional income source but also to supply the necessity of local extractivists to acquire goods needed by their families on a daily basis otherwise provided by external buyers (*regatões*). With a reduced number of the latter in communities along the Trombetas river – brought about by the establishment

83 The Community Association of Nova Betel (ASCONB, per acronyms in Portuguese) has not been active since the early 2000s, including due to corruption by one of its coordinators.

84 The single quotation marks here are used to express how some interviewed buyers referred to Brazil nut gatherers.

of the TRBR in 1979 as well as by the TdC (and its Clause 10) –, capitalized community members have been profiting from having established such village grocery stores. There, they even sell beer and wine, including in the seven months of off-harvest season, which exacerbates debts Brazil nut gatherers often already have with the same local Brazil nut buyers. This reinforces dependency of Brazil nut gatherers on such community internal buyers, while contributing to institutionalizing asymmetric patron-client relations.

More specifically, strategies applied by Brazil nut gatherers to directly target trade dependency upon buyers are explored at next.

Seven Strategies Applied by Brazil nut Gatherers to Reduce Dependency and build up Access to Resources and Markets, while Pursuing an Enhanced Value Chain Position

Upfront is to be stated that Brazil nut gatherers do so in an attempt to enhance their position within the respective value chain in the Lower Amazon basin.

Firstly, at times gatherers sell to more than one buyer as a strategy for striving to be paid the highest prices (at the farm-gate level), even if they had committed themselves to supply a specific buyer, e.g. a long-term ‘patron’. Whilst it is a strategy of certain gatherers intended to enhance their marketing autonomy and revenue from trade in the short-term, in this case, they increase their ‘debts’ with given Brazil nut buyers, raising their dependency in a mid to long run.

Secondly, gatherers also try to overcome dependence caused by debts they have with a given buyer, by selling their Brazil nut through another gatherer who does not yet have debts:

“They [Brazil nut gatherers] have already sold [Brazil nut] under the name of other [Brazil nut gatherers] to avoid having to pay off a debt with my father. There are some who owe my father more than BRL 1000,00.”⁸⁵ (Interview with a Brazil nut gatherer whose father had been a buyer at the community of CCPT for over five years, CCPT, 02.06.2014)

Some Brazil nut gatherers apply this strategy including due to their need for cash to fulfill household needs instead of having to pay off or accumulate debts with the buyer who provided them with a respective advanced payment.

Thirdly, a further strategy, reported by the former coordinator of the Area Association ‘Mãe Domingas’ is that a considerable number of Brazil nut gatherers used to risk being sanctioned by the landlords for ‘illegally’ (in the perspective of the landlords) gathering Brazil nut in their properties. They would collect and sell Brazil nut to *regatões* after the harvest season and even at night when less people could observe to potentially punish them, which shows long-term collaboration between local gatherers and buyers from the urban centers of Oriximiná and Óbidos (based on Interview with the former coordinator of the Area Association ‘Mãe Domingas’ and former board member of ARQMO from the community of Tapagem, Oriximiná, 10.02.2014).

85 “Já venderam no nome de outros para não ter que pagar a dívida com meu pai. Tem uns que devem até de R\$ 1000,00 para o meu pai.”

“He [the landlord as owner of property with Brazil nut stand] had his ‘forest people’, who were allowed to get Brazil nut for him. But there were the *furões* [in Portuguese – slang for those] who weren’t authorized [to gather Brazil nut there] and went at night with an ‘oil lamp’ to these properties.”⁸⁶ (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current local buyer of the community of Tapagem, Tapagem, 07.02.2014)

Starting in the midst of the 20th century, this additional trade channel between ‘unauthorized’ Brazil nut gatherers and *regatões* was one of the strategies the former co-established to deal with respective dependency on such ‘landlords’ who limited their suppliers to extractivists they ‘allowed’ to work on ‘their property’ (*colocação*, in Portuguese). This strategy facilitated access to given natural resources and local market outlets, as gatherers prohibited by ‘landlords’ to collect in ‘their properties’ in rural Oriximiná began selling Brazil nut to the *regatões* in the form of an ‘unauthorized’ market channel. The aforementioned transition (change in land tenure structure per establishment of the TRBR) is also characterized by such trade relations that shifted from coercion-based towards trust-based paternalistic and even based on gratefulness in some cases. Overcoming this internalized sentiment – based on submission of extractivists to their ‘patrons’ – of having to give something back (in this case, Brazil nut) to respective buyers represents a persisting challenge the former face.

Fourthly, however, according to the coordinator of CEQMO, with partial enhancement of the accessibility through more frequent commuting to the neighboring urban centers due to the proliferation of small motorized boats (so-called *rabetas*, in Portuguese) along both the Erepecuru and Trombetas rivers, some extractivists have learned about the prices of Brazil nut at these local markets (based on Interview with the coordinator of CEQMO, community of Jauará, 14.01.2014). An increasing number of gatherers could not only update their first-hand information on the Brazil nut price paid by the three processing mills in Oriximiná and Óbidos, but also capture its development over time, particularly the ones who have been going to Oriximiná to withdraw their monthly transfer per *Bolsa Família* and/ or pension fund over the past years. Thereby, they started perceiving that at the beginning of the Brazil nut harvest season, prices were low and at the end when demand surpassed the supply they were high. This information empowered them and stimulated a few to ask for local buyers to accompany this trend while enabling incipient negotiation about the farm-gate price, which had not been done until the late 20th century (based on Interview with the coordinator of CEQMO, community of Jauará, 14.01.2014).

Nowadays, while some buyers who, nevertheless, stick to the farm-gate price they set at the beginning of the harvest season when they provide ‘their’ gatherers with advanced payments, there are also a few buyers who accompany the overall rising prices when being supplied by gatherers who sell their Brazil nuts towards the end of the harvest period (based on Interview with the former coordinator of the Area Association ‘Mãe Dominga’ and board member of ARQMO, Tapagem, 10.02.2014).

Fifthly, a strategy applied by very few capitalized Brazil nut gatherers, as follows. While the large majority of Brazil nut gatherers depends on advanced payment, there

86 “Ele tinha o pessoal do mato, que podia tirar castanha para ele. Mas, tinha os furões, castanheiros que não eram ‘autorizados’ e iam de noite com luminária nas colocações.”

are exceptions of gatherers who can afford initial expenses (food and equipment) themselves for the collecting period at Brazil nut stands. Thereby, they refrain from receiving advanced payment from buyers in order to minimize debts and dependency on the latter.

Sixthly, as indicated above, a reduced number of buyers entering the TRBR (due to the TdC and its Clause 10, effective as of 2012) has enabled economic upgrading of a few Brazil nut gatherers – so as to become local buyers themselves.

Seventhly, the cases of capitalized Brazil nut extractivists (out of the small pool of gatherers who managed to upgrade within the chain at stake) who managed to establish little grocery stores in ‘their’ communities are very rare.

However, the vast majority of Brazil nut gatherers have not been able to apply the latter two strategies, as opposed to some local buyers who have taken advantage from establishing selling industrialized goods either from little stores e.g. at CCPT or from their houses in other communities.

Moving forward, given the intention is not to polarize between strategies of the parties at stake, income diversification is synthesized at next as an overall strategy applied by both gatherers and buyers, beyond being employed by the former for overcoming dependency in Brazil nut trade.

Diversification of Income Sources: A Strategy in Common of Brazil nut Buyers and Gatherers

While buyers can continue procuring Brazil nuts after May when the harvest ends, they still diversify their income including to decrease dependency on only one income source that is susceptible to Brazil nut price busts (see subsection on price variability within Chapter V.1.5). Yet, gatherers face more severe income challenges – *inter alia* for not falling under the international poverty line of USD 1,90/day (see Cruz *et al.* 2015) and being trapped in chronic poverty –, and are compelled to diversify their income sources, particularly in the off-season period.

In fact, income diversification can serve as an overall strategy of Brazil nut gatherers to mitigate their dependency on buyers, while enhancing subsistence sources and overall income. Despite being bound to TRBR and TdC restrictions in their land-use and livelihood strategies, particularly, extractivists from outside this PA tend to diversify instead of specialize in only rural income source.

The range pertaining to the number of income sources found in four municipalities of the Lower Amazon basin is 1 to 7, whereby 41,18% of the extractivists (n=85) surveyed had three income sources (Brazil nut as part of forest income, cassava as part of agriculture and an additional income source from the ones listed in Table 7). This indicates a noteworthy diversification of income sources – not as diversified as small-scale farmers e.g. in Tomé-Açú, Pará, as a pioneer area for agroforestry systems as tree-based inter-cropping land use strategy –, which still plays a role in milder dependency from extractivists upon Brazil nut buyers. Thereby, it is to be highlighted that, most products are used for subsistence purposes, including consumption by (agro)extractivists households. This contributes to reducing not only dependence

from market (price fluctuations) but also from Brazil nut buyers at both local and (sub) national regional level.

As follows, an overview of the income from households in the frame of the quantitative survey is composed as follows:

To be highlighted from this table is the income from forests (15,52%), out of which almost all of it (13,07%⁸⁷) comes from the Brazil nut activity in the year of 2012, which shows the relative importance of this economic activity, including given the harvest season takes place only during the first half of every year⁸⁸. The pivotal economic role of Brazil nut in terms of forest income shows a respective specialization within NTFPs; in addition – collected non-food NTFPs include *copaíba* (*Copaifera spp.*) and *breu* (*Protium pallidum*). Even though a global study found 22,1% as the natural forest income share from areas populated by forest dependent people (Wunder *et al.* 2014: 4), in the Lower Amazon Brazil nut as one single NTFP accounts for a remarkable 13,07% of total household income in 2012. This figure indicates the economic importance of this NTFP when taking into account that over half of the households' income (50,60%) stems from governmental transfers.

Table 7: Income Sources of Households in Four Municipalities⁸⁹ of the Lower Amazon Basin in 2012

Income source	% of total income/ household
Forest	15,52 (including Brazil nut income 13,07)
Agriculture	8,68
Livestock	1,63
Fisheries	0,11
Off-farm labor*	21,75
Own business**	1,72
Other (governmental transfers)***	50,60
<i>Total</i>	<i>100,00</i>

* per diems (diárias, in Portuguese) paid mostly for working for neighboring farmers (see questionnaire in Annex I.1)

** local grocery stores for selling industrialized goods at community level

87 Communities along relatively deforested areas of all four municipalities were also taken into account, while striving to provide representative figures for both the income share from the Brazil nut activity as well as the one from natural forests. If focused on dense forest areas, such as the ones in and around the TRBR such value would be higher, including due to the relative (socio)economic importance attributed to the Brazil nut activity in such areas of Oriximiná.

88 Noteworthy is a key difference of the Brazil nut harvest period at communities in and around the TRBR, where ICMBio has established a four-period gathering 'allowance', which further limits this economic activity of such NTFP extractivists in this area (see Footnote 339).

89 Households (n=85) considered for this analysis were surveyed in Oriximiná, Óbidos, Curuá and Alenquer in the state of Pará, Brazil.

*** includes governmental transfers, mostly pension and conditional cash-transfers, e.g. Bolsa Família (in Portuguese)

Source: Own elaboration, based on quantitative socioeconomic survey and questionnaire applied by the author

Noteworthy is that the above income sources captured through the respective questionnaire – sections J, L, M, N, O, P, Q (see Annexes I.1 and 2) – account for quantities and prices of a given good destined to marketing and household consumption/subsistence purposes (see e.g. Cavendish 2000). The reason for counting quantities of a given good used for consumption/subsistence as a key component of a household's income is that such family avoids having to buy such goods – this is considerate of local socioeconomic logic of (agro)extractivists (see Footnote 96). This is often the case of cassava, while households avoid spending a considerable portion of their cash income in purchasing this and other goods, including the ones produced mostly by women in home-gardens. Thereby, when comparing the gross value of production (gross return) of Brazil nut gathering and marketing to cassava in the Brazilian Amazon, the latter is 6,99 times higher than the former (see map in Annex VII).

Further, results from linear regression indicate the importance of income diversification in explaining variation in the total income of surveyed households ($R^2 = 0,111$): 11% of the variation in the total income as dependent variable is explained by the independent variable of diversification income sources. F-statistics⁹⁰ shows a good model performance of $F(1,98) = 12,19$; $p = 0,001$. The standardized regression coefficient is $\beta = 0,333$, which means that if diversification of income sources is increased by one standard deviation, total income rises by 0,333 standard deviations. This relationship is significant at $p = 0,001$.

Moving forward, given asymmetric (inter)dependencies between Brazil nut buyers and gatherers within the *aviamento*, local strategies to deal with it applied by each one of both these parties have not brought about effective mutual beneficial collaboration in the upstream chain nodes in the Lower Amazon basin. This is a research for (sustainable rural) development gap there and overall in the Amazon, which calls for scoping for alternatives to *aviamento* aimed at capturing leverage points for natural resources and market access on a sustainable basis.

1.7 Alternatives to *Aviamento* for Strengthening the Position of Gatherers?

This chapter scopes for addressing open queries and gaps to be filled with equitable alternatives for a more levelled playing field in NTFP trade – beyond aforementioned strategies of Brazil nut buyers as well as gatherers and their economic returns as well as costs. Building on the above described institutionalized patron-client relations making up *aviamento*; according to a Sociology Professor⁹¹ from UFPA, dependency from gatherers on *regatões* (buyers) is so strong as to lead to the 'suffocation' of the latter, if

90 See F-statistics table: <<http://www.stat.purdue.edu/~jtroiis/STAT350Spring2015/tables/FTable.pdf>>, accessed on 08.03.2017.

91 The Professor's PhD research dealt with Brazil nut use in a RESEX in the state of Amapá, Brazil.

no alternative to such debt-peonage system is provided. Given the role *regatões* play for geographically marginalized NTFP gatherers, the simplistic development measure promoted by numerous agencies of ‘eliminating’ the former chain actors would also cut off gatherers’ access *inter alia* to markets, industrialized goods and services.

However, is there a feasible alternative to *aviamento* that comes with socioeconomic benefits⁹² and related strengthened position of a considerable portion of upstream actors of NTFP value chains in the Brazilian Amazon? Alternatives promoting more balanced trade of NTFPs with equitable bargaining power between buyers and gatherers are scoped for in this chapter (V.1.7), based on collective marketing through co-operatives, which was promoted by CNS, amongst other organizations country-wide. Cooperatives (detailed in subsequent subsections) were originally and are still idealized as a ‘solution’ *per se* for overcoming the unbalanced dependency relations of *aviamento* in the Amazon. However, the desired outcome of promoting collective benefits by establishing cooperatives has often not been achieved including not only due to high transport costs as well as low participation and supply by extractivists but also mismanagement in the Brazilian Amazon. Instead some cooperatives are even regarded as the new ‘patrons’ (based on Interview with a Sociology Professor of UFPA, Belém, 23.05.2014) reinforcing dependency relations, even though some (such as CEQMO) cannot provide advanced payments to their few suppliers. This and other cooperatives in the Amazon have not yet managed to be operating efficiently and effectively as collective enterprise – including due to lack of financial liquidity and accounting ability and capacities – compared to *regatões*, so as to be attributed similar valuing by its (potential) members or even to generate an equivalent degree of interdependency. Despite advances in given contexts of basic infrastructure⁹³ and further government investments⁹⁴, there overall is a long way to go for respective collective rural enterprises, as opposed to *regatões* who have succeeded in doing so over generations, while, turning *aviamento* into an informal institution.

Moving towards strengthening the ability of gatherers to access information while co-enhancing their human (and social) capital and allowing for informed autonomous decision-making by these agents can potentially replace the stigmatization of middlemen or the imposition of participation in, so far, partly individually misused and mismanaged cooperatives in the Amazon.

At next, different viewpoints of upstream NTFP chain actors in the Brazilian Amazon, particularly on the role of *regatões*, are discussed in search of a viable alternative to the dependency structures – limiting the former’s access to resources and markets – imposed by the debt-peonage system at stake.

92 Socioeconomic benefits overall entail enhanced positions of extractivists within the Brazil nut value chain, in this case. If it is to disentangle socioeconomic benefits into its ‘literal’ components – social benefits hereby means more autonomy and bargaining power, whereas economic benefits correspond to income generation.

93 For basic infrastructural needs in the realm of value chain development of agricultural product chains, see e.g. Da Silva & De Souza Filho (2007), Stoian *et al.* (2012).

94 For government incentives and policies for rural enterprises to become more sustainable, see e.g. Cramer (1999), Miccolis *et al.* (2011).

With or Without *Regatões*?

Allegretti (2002: 205) refers to a widespread stereotyped viewpoint of *regatões* as “enemies” who are to be extinguished from given value chains per recommendations of representatives of development agencies who are not directly involved in a given chain or production network. Whereas one of the main representatives of extractivists from Oriximiná – strongly involved in their social movement over the past two decades – stated that respective gatherers refer to them as ‘friends’ with whom they as extractivists have established personal on top of trade relations (based on Interview with the former coordinator of the Area Association ‘Mãe Domingas’ and former board member of ARQMO from the community of Tapagem, Oriximiná, 10.02.2014).

Others, as indicated above, such as coordinators of SEAD (formerly, MDA) and CPI-SP have come to realize – building on their vast experience of working through projects engaging with communities despite being based in Brasília and São Paulo, respectively – that “*regatões* are a necessary evil” (Interview with a project coordinator of SEAD (formerly, MDA), Brasília, 04.02.2015).

The intention hereby is not to polarize but to come to terms with such antagonistic perspectives and fruitfully use them to explore respective viable alternatives. However, it is important to highlight the point of view from the organizations referred to in the two paragraphs above, given they represent forest user groups (FUGs) as well as academic, governmental and non-governmental organizations. The latter three are very supportive of the potential of cooperatives to overcome trade imbalances ‘institutionalized’ in the *aviamento* system while having co-established some. Thereby, Mary Allegretti together with others from CNS have tried to eliminate the value chain actor *regatão* from respective NTFP chains in the state of Acre, Brazil. Yet, based on extensive interviews and participant observation, the viewpoint of extractivists – who live from selling NTFPs on a daily basis – about *regatões* is overall rather positive in the *quilombola* communities along the Trombetas and Erepecuru rivers in Oriximiná⁹⁵.

Still, if the debt-peonage system with *regatões* as it is in the Brazilian Amazon is to be eliminated – including the trade relations among middlemen as service providers with members of remote communities – and alternatives are not provided, then you ‘suffocate’ the latter (based on Interview with a Sociology Professor of UFPA, Belém, 23.05.2014). Building on this statement, you suffocate geographically marginalized extractivists, given their lack of economic means to (frequently) pay for boat transport to get to urban grocery stores and supermarkets with more accessible prices, which is a key determinant of the ‘institutionalized’ dependency on *regatões*. In the absence of accessible State services and policies, the latter have long been the ones to provide

95 Still, there are significant commonalities (e.g. the asymmetric (inter)dependencies between the trade partners at stake) between Acre and (the herein analyzed northwestern region of) Pará. However, it is neither the purpose nor is there any aspiration to be representative of the perception of extractivists in the Brazilian Amazon as a whole, which has different socioeconomic and environmental contexts.

such not only geographically but also economically marginalized NTFP gatherers with industrialized goods⁹⁶.

“The Brazil nut gatherer cannot live without his daily coffee, his cigarettes, his *cachaça*⁹⁷ [...] [...] and if you completely break this economic relationship with the *regatão* and do not put anything to replace it, then you suffocate the extractivist.”⁹⁸ (Interview with a Sociology Professor of UFPA, Belém, 23.05.2014).

Further challenges were expressed by extractivists who complained about the high costs for transporting Brazil nut if they were to sell their raw material directly to one of the three processing mills, including due to the fact that it is difficult to wait for at least five gatherers to share shipping costs at the same time for it to be economically viable. Thereby, an influential young leader of Tapagem⁹⁹ puts forward what he thinks of how to tackle this challenge, which is in line with the perception of numerous other extractivists (detailed in Chapter V.2.3):

“[...] if more *regatões* could come back, it would be easier to have a means to get to the city, as [...] we used to make business with them, they would take us [to the urban center of Oriximiná] and bring us back [to their communities]”¹⁰⁰. (Interview with one of the main young leaders of the community of Tapagem, Tapagem, 07.02.2014)

Hereby, he refers to problems for gatherers emerging from such reduced numbers of external middlemen (*regatões*) going to communities in and around the TRBR to buy Brazil nut – mainly caused by the TdC and its Clause 10 –, who used to take them to urban centers (see Chapter V.2.2.3). While these costs were ‘deducted’ by *regatões* from the Brazil nut price they paid to gatherers, it seems the latter still miss this service provided by the former who framed it as a ‘favor’. Not only were there numerous external middlemen before (Clause 10 of) the TdC who would ‘offer opportunities’ – practically on a daily basis throughout harvest season – to go to the urban center of Oriximiná, instead of the fixed schedule of two trips per week of larger boats, starting from CCPT that has been operational for over a decade, independently from the TdC. While this service is provided by boat owners, even transport in community boats has to be literally be disbursed by extractivists, making them directly perceive to have been ‘taken away’ the little cash sums they have (often only from *Bolsa Família* – in

96 Whilst subsistence farming can function as a means for reducing to some extent dependency on *regatões* delivering such products with inflated prices, the analyzed extractivist (*quilombola*) communities do not plant all they need for respective food sovereignty for different reasons (e.g. extractivists usually plant less than ‘farmers’ as well as PA related restrictions on resource access and use).

97 Dependency from extractivists – particularly the ones living in remote villages with difficult accessibility – on cigarettes and *cachaça* can also stem from dependency on *regatões*, who have often been the ones to introduce such products in respective extractivist (*quilombola*) communities as ‘exchange currency’ for Brazil nuts.

98 “O castanheiro não sobrevive sem o cafézinho dele que ele toma todos os dias, o cigarro dele, a cachacinha [...]. [...] E se você quebra completamente essa relação econômica com os atravessadores, e não coloca nada no lugar, você sufoca o extrativista.”

99 This and a few other extractivist (*quilombola*) communities in and around the TRBR have been approached by less *regatões* in their Brazil nut purchasing activity.

100 “[...] se pudesse voltar mais regatões, era mais fácil de ter como ir pra cidade, porque [...] a gente fazia negócio com eles, eles levavam a gente e traziam de volta”.

Portuguese). Whereas, they have not associated ‘free boat rides’ directly with external buyers returning to neighboring urban centers with low farm-gate prices they got paid. In addition, challenges for local buyers that could emerge from what is proposed by the young extractivist leader – quoted above (“if more *regatões* could come”) – include their ‘crowding-out’ from the Brazil nut business. Such ‘crowding-out’ refers to potentially reduced purchasing possibilities as well as goods and service provision by local buyers at community level, due to increased competition among plenty of *regatões* that would result from eliminating or modifying Clause 10 of the TdC. This would bring back similar trade conditions to the ones prevailing before the TdC, when competition was higher as was the bargaining power of Brazil nut gatherers. Instead of simply deconstructing this formal institution, locally self-sustaining adaptation of (Clause 10 of) the TdC (detailed in Chapter V.2.4.2) could be a more feasible alternative given conservation interests of ICMBio.

While there is scope for related viable alternatives, these are key challenges that together with positive perceptions on the role of the *regatão*, corroborate with the inexistence of a single ‘one fits all alternative’ to *aviamento* as well as specifically to middlemen and dependency of gatherers on them, putting the extractivists in a vulnerable position within trade relations in remote areas of the Brazilian Amazon. Simply replacing the middlemen by cooperatives does not solve all trade related problems of upstream actors of NTFP value chains, particularly of those extractivists living in remote areas.

In order to put it into a larger perspective, it is important to state that prior to the establishment of CNS, external actors – like Mary Allegretti together with local ones, such as Chico Mendes – applied strategies themselves for trying to support extractivists and to create a more equitable upstream segment of rubber value chains in Acre. They have managed to incentivize *regatões* to pay higher Brazil nut prices as well as to lower the prices of the goods they sold to rubber tappers (*seringueiros*, in Portuguese) at the farm-gate level. This weakened the position of the *seringalistas* as the *seringueiros*’ patrons and led, in a short run, to more autonomous decision-making of *seringueiros* given the option to sell rubber at a reasonable price to these *regatões* (based on Allegretti 2002).

“Yet, we fought to counter them [*regatões*]; they were useful in the past, now they are our enemy. But we managed to eliminate the discount rate of 10% of the weight of the [extracted] rubber the patron used to take advantage of until 1970, as well as the 30% of rent they [*seringueiros* working for the *seringalistas*] were obliged to pay.”¹⁰¹ (ibid. 2002: 205)

Still, it seems supporting *seringueiros* has not worked out the way it was planned in this case in Acre. Additionally, although not explicitly referred to, the above cited author further indirectly indicated the importance of social organization as well as the structuring of the supply chain (see Allegretti 2002: 206). She only directly referred to collective marketing through a cooperative, effective as of the establishment of the

101 “Agora, lutamos para combatê-lo; nos foi útil no passado, hoje é nosso inimigo. Mas conseguimos eliminar o desconto que o patrão fazia, até 1970, de 10% do peso da borracha do seringueiro, além de 30% de aluguel que era obrigado a pagar.”

“Seringueiro Project” in 1981 and, subsequently, of CNS – both intended to raise economic autonomy of extractivists vis-à-vis ‘intermediary buyers’ of rubber and Brazil nut. A further objective of both these initiatives was to promote the former’s access to information while enhancing their ‘human capital’ (based on Allegretti 2002).

However, do cooperatives effectively facilitate the access to natural resources as well as to markets on a sustainable basis and also provide benefits for most upstream Brazil nut value chain actors? For coming closer to answering the main research question herein – without losing sight of an alternative that ‘actively listens’ to the ‘voice’ of a considerable portion of (Brazil nut) extractivists –, their related collective marketing as an alternative to *aviamento* for strengthening the position of gatherers is to be analyzed at next. The former president of ARQMO and one of the main *quilombola* leaders of Oriximiná, expresses the challenge of changing the way of marketing Brazil nut – from individual per *aviamento* to collective through a cooperative:

“It is a costume that has been there for over a hundred years. [...] So, it is difficult for us to change this from one moment to the other; but there were some who were more open, whom we got to turn ‘conscientious’ for collective marketing.”¹⁰² (Interview with the former president of ARQMO and one of the main *quilombola* leaders of Oriximiná, Oriximiná, 07.12.2013)

With costume this *quilombola* leader refers to individual marketing of Brazil nuts by gatherers to given ‘patrons’, whereas conscientious refers to a term local *quilombola* leaders use to refer to persons who support their cooperative CEQMO. Further, engagement of Brazil nut gatherers in collective marketing through a cooperative can function as an alternative to institutionalized dependency from ‘clients’ on ‘patrons’; however is it a one-size fits all solution for such asymmetric relations per *aviamento*?

Organization in Cooperatives as a ‘solution’ for Overcoming the Unbalanced Dependency Relations of *Aviamento*?

Overall, organization in cooperatives has contributed to increasing the bargaining power and autonomy of gatherers in the Brazil nut trade, whereas the downside has been cases of corruption and the individual strive for private benefits, deteriorating collective goods and benefits. While there are cases of successful cooperatives (usually provided with external capital from the beginning), there have been different cases of collective rural enterprises that have fallen short of expectations throughout the Brazilian Amazon in the last three decades. This calls for putting rural cooperatives into context, while considering potential challenges for NTFP related social organization into well-functioning FUGs and mutually beneficial collective marketing initiatives.

Both titles for this and the previous subsection elaborated as questions remain to be definitively answered in the pursuit of finding a feasible alternative to *aviamento* and its already described negative implications, especially for the most ‘vulnerable’ value chain actors. In national and global debates on value chains, not enough attention has been paid to NTFP gatherers’ socioeconomic ‘vulnerability’ vis-à-vis upstream buyers

102 “É um costume que tem há mais de um século. [...] Aí fica difícil de a gente mudar isso de uma hora para outra; mas aí já tinham alguns mais abertos, que deu para a gente conscientizar para a venda coletiva.”

within respective value chains, particularly the Brazil nut one in the Amazon. One of the indicators for this lack of attention in the Lower Amazon basin is the absence of respective representation of extractivists, including due to evidences that the CNS is not known to the extractivists in the subnational region at stake (based on interviews with extractivists conducted in four municipalities of the Lower Amazon region in 2012: Oriximiná, Óbidos, Alenquer and Curuá).

Reasons for this include that the CNS took up a broader political agenda at the national level as an approach intended to strengthen the overall position of extractivists particularly through cooperatives (of forest products, sea food and fisheries throughout Brazil). Still, the role of – a social movement based organization such as – CNS in pressuring the Brazilian government in the realm of creating or adapting policies for the benefit of extractivists is well-known; a respective indicator is that all interview partners at MMA and SEAD (formerly, MDA) knew CNS in this context. Additionally, in interviews with CNS representatives (e.g. with its vice-president), the discourse “we, extractivists” is very much internalized by its leaders. However, information on services and policies stemming from claims for extractivists’ rights get lost at the meta-level between respective ministries and local unions (STTRs). Whilst it is well-acknowledged that CNS’s role reaches beyond a broker’s one between local and national levels intermediating the fulfillment of interests of the social group of NTFP gatherers, such broker function for bridging the gap is still underutilized by CNS. Given its personnel limitation in terms of number of its staff, it could further invest in capacity building for enhancing the ability of key actors they represent, e.g. cooperative members who can further function as multipliers while fighting for their own rights.

In the states of Amapá, Pará and Acre – where the influence of CNS has been very prominent within the Brazilian Amazon, particularly in its first years – cooperatives were originally considered to be a ‘disruptive’ alternative to overcoming respective unbalanced trade and debt relationships of *aviamento*. Thereby, a related process of social mobilization of extractivists for collective action, including joint marketing of produce and raising their (bargaining) power started intensively in the 1980s, whereby the first cooperative was established in 1989 that came along with the abovementioned ‘Seringueiro Project’, pioneered by CNS (Vaz dos Santos & Filocreão 2012).

In the Lower Amazon basin in the state of Pará, this mobilization started through AR-QMO, established in 1989 – based on prior social structures co-built by ‘Grassroots Ecclesiastical Communities’ (CEBs, per acronyms in Portuguese) and the Pastoral Commission for Land (CPT¹⁰³, per acronyms in Portuguese), which supported *quilombolas*’ social organization and ‘human capital’ in Oriximiná. Beyond the fight for land tenure (for collectively owned lands, i.e. *TQs*), the CPI-SP later started to promote collective marketing in the frame of the “Brazil nut Project” in the early 2000s, leading to the establishment of the cooperative CEQMO in 2006.

103 Both CEBs and the CPT are catholic groups that played a strong role in building-up social movements at the level of rural communities, including for the access to resources (policies and natural resources, particularly land) in Oriximiná and overall in Brazil (see <<http://www.cptnacional.org.br/index.php/publicacoes/noticias/cpt/1942-uma-espiritualidade-que-nao-assume-as-lutas-sociais-nao-e-libertadora>>, accessed on: 02.10.2016).

All these initiatives had the common goal of strengthening the position of extractivists, while decreasing their dependency on *regatões* as an alternative path to the inequitable *aviamento* system in the Brazilian Amazon. In this context, SEAD (formerly, MDA) indicates its support for reaching this goal by promoting local social organization of smallholders in cooperatives as an effective means to get there:

“[...] it is what we [entities in Brazil working for rural development] always wanted to do, we wanted that they [extractivists], that the communities organized themselves, had [rural] enterprises organized for them to be able to access the market without it [marketing] having to be through a middlemen”¹⁰⁴. (Interview with a Project Coordinator from SEAD (formerly, MDA), Brasília, 04.02.2015)

However, Smith *et al.* (1995) offer food for critical thought on the assumption – put forward by respective actors other than extractivists themselves – that existing trade relations, particularly in remote areas, are to be disrupted in favor of idealized mutually beneficial collective marketing per cooperatives, which are often difficult to realize. Hereby reference is made to the aforementioned process of creating cooperatives for products of extractivism, including in and around PAs, which not only happened in *quilombola* communities of Oriximiná but in numerous sites within the Brazilian Amazon, as described above. Yet, one cannot generalize that existing trade relations between NTFP gatherers and buyers in rural *Amazônia* are *per se* a problem to be “bypassed” (Smith *et al.* 1995: 79), and cooperatives are *per se* a solution for asymmetries along respective upstream chain nodes.

Further, according to Pedro Ramos (co-founder and former president of the CNS), only Cooperacre in Acre, was indeed successful, whereas in Amapá and Pará, the incipient process of extractivists gaining autonomy and their lack of managerial ability were key factors for the lack of success of cooperatives in both the latter states (based on Pedro Ramos interviewed by and cited in Vaz dos Santos & Filocreão 2012: 11-12).

Whilst taken this statement into consideration and reflecting about a viable mutually beneficial alternative for strengthening the position of NTFP gatherers in given contexts of the Brazilian Amazon, it is to consider the following. Several cooperatives that at a first glance benefited from external support for the structuring of their activities have faced considerable challenges for fulfilling the original purpose of their creation ‘overall collective benefits’¹⁰⁵ and a larger share of the market benefits’ for NTFP extractivists, in this case. Often the design of respective external interventions for creating cooperatives has taken into account the voice of local leaders, yet not of many others in vulnerable positions of upstream nodes of respective value chains (based on Interview with the former coordinator of the Area Association ‘Mãe Domingas’ and former board member of ARQMO from the community of Tapagem, Oriximiná, 10.02.2014). There are cases – such as the one of CEQMO with the support channeled through CPI-SP –, in which respective project resources have been misused by their leaders

104 “[...] é o que a gente sempre quis fazer, a gente queria que eles, que as comunidades se organizassem, tivessem empreendimentos organizados pra que eles conseguissem acessar o mercado sem ser por meio de um atravessador”.

105 Yet, in some cases as is elaborated on herein, cooperatives do not function in the realm of achieving collective benefits, due to the fact that they are partly individually misused.

to the detriment of all other members of the cooperative at stake (see Chapter V.3). In sum, the challenge lies in the gap of externally idealized cooperatives for a so-called ‘rural group of beneficiaries’ without co-investing in the ability of members of a given cooperative to successfully manage such rural enterprise in the realm of respective collective benefits.

Based on Zerche *et al.* (1998), the following cooperative principles (all of them are detailed in 283) are to be paid more attention for such collective enterprises to be sustainable: (i) social control mechanisms for avoiding corruption; (ii) democratic or traditionally established voting principles (one member, one vote); (iii) and identity principle (extractivist as seller = buyer of respective NTFPs as a member of a given cooperative).

When zooming into the study area, according to the former coordinator of the community of Nova Betel and one of the eldest leaders of the BEC road as well as founder of the association ASCONB in Oriximiná, a cooperative would be the only way to overcoming such harmful dependency on *regatões* and achieving any economic return from the Brazil nut gathering activity at the local level (based on Interview with one of the eldest leaders of the BEC road as well as founder of the association ASCONB, community of ‘Nova Betel – Km 12 of the BEC road’, Oriximiná, 10.12.2013). A project coordinator of SEAD (formerly, MDA) went further in emphasizing the importance of gatherers to have such social organization not only to overcome dependency on middlemen, but also to raise their income and enhance their position along the respective value chain, while enabling the access to policies that facilitate market linkages, e.g. PGPM-Bio, PAA and PNAE (based on Interview with project coordinator of SEAD (formerly, MDA), Brasília, 04.02.2015).

However, Smith *et al.* (1995), indicate their viewpoint on cooperatives as an alternative to *aviamento* that does not inevitably benefit NTFP gatherers:

“Although such efforts [related to cooperatives] are a worthy experiment, they will not necessarily ensure prosperity for extractivists, particularly if market prices for their products are low, and significant management problems arise”. (Smith *et al.* 1995: 79-80)

Thereby, small-scale rural enterprises – building on social organization for collective marketing – can lead to reducing institutionalized asymmetric (inter)dependencies between gatherers and *regatões* per *aviamento* while reaping potential collective benefits, overall collective benefits are not guaranteed *per se* including due to frequent individually misuses in their management.

Finally, as indicated above, a sociology professor with vast field experience in the Brazilian Amazon contradicts the aforementioned viewpoint on cooperatives to be an ideal solution for problems within upstream chain nodes in referring to cooperatives as ‘new *regatões*’ and ‘patrons’ (based on Interview with a sociology professor of UFPA, Belém, 23.05.2014). As follows, related arguments are presented and reflected upon.

Cooperative Leaders as ‘New *Regatões*’ in Local Trade Relations?

To be questioned upfront, is whether cooperatives themselves or rather cooperative leaders in charge of (mis)managing such ‘supposedly collective’ enterprises are ‘new

regatões’, based on what was put forward by the interviewed sociology professor of UFPA. He argues that they also provide advanced payments through equipment and food to gatherers at the beginning of the harvest season so that, in certain contexts, the latter are ‘compelled by debt’ to supply the cooperative (based on Interview with a sociology professor of UFPA, Belém, 23.05.2014). Thereby, he puts forward that:

“The current cooperatives are the middlemen of the past. [...] instead of initiating a new economic, social and power relationship, they [cooperatives in the Brazilian Amazon] ended up reproducing this economic process in a transfigured manner, with this idea of ‘cooperativism’ turned inside out.”¹⁰⁶ (Interview with sociology professor of UFPA, Belém, 23.05.2014)

The herewith quoted professor also compares the relationship between some cooperatives and gatherers to the exchange of industrialized goods (also in the form of advanced payments) and NTFP *in natura* between middlemen and gatherers, causing the abovementioned dependency. A difference being that the role of the former is practically played by the respective cooperative now, in certain contexts. He also refers to coordinators of cooperatives perpetuating the role of *regatões* and operating for their own benefits while applying discourses of ‘cooperative principles’¹⁰⁷. This supports the viewpoint complemented herein of cooperative leaders rather than cooperatives (with all the members of such a collective rural enterprise) to assume given functions of the respective role of the *regatão*.

Thereby, with “cooperativism turned inside out”, he means that cooperative coordinators’ ‘hidden intention’¹⁰⁸ was, and often still is, to seek for own private benefits and not only collective ones, breaking with the principle of ‘concern of community’ a cooperative is to ensure. This relates to what he further mentioned as ‘the creation of new local elites’ (Interview with sociology professor of UFPA, Belém, 23.05.2014). All of this applies to the context of the Lower Amazon basin: when CEQMO was not op-

106 “As cooperativas atuais são os atravessadores do passado. [...] ao invés de inaugurar uma nova relação econômica, social e de poder; elas acabaram reproduzindo esse processo econômico de uma outra forma, transfigurada com essa ideia de cooperativismo no meio as avessas.”

107 The co-operative principles are guidelines by which co-operatives put their values into practice.

1. Voluntary and Open Membership
2. Democratic Member Control
3. Member Economic Participation
4. Autonomy and Independence
5. Education, Training and Information
6. Co-operation among Co-operatives
7. Concern for Community

(see <<https://ica.coop/en/whats-co-op/co-operative-identity-values-principles>>, accessed on 31.10.2016).

108 What this sociology professor also observed in his research concerning the *aviamento* system and cooperatives in the Brazilian Amazon, is that some of their coordinators “silently desired” to raise their own private benefits and only communicated ‘collectivism’ as a principle of “cooperativismo” (Based on Interview with sociology professor of UFPA, Belém, 23.05.2014).

erating due to lack of financial and insufficient people to manage towards a successful collective enterprise, local influential buyers turned into its coordinators. Thereby, several interviewees claimed that such coordinators have enhanced their economic conditions in a short-term (e.g. by acquiring motorcycles and a boat). They are also making use of assets as common goods owned by the cooperative for private purposes (e.g. CEQMO's boat and vehicle being used to commute to community festivities) (based on Fieldwork diary, note taken in Jaurí, 12.01.2014). The use of such cooperative owned assets is only accepted if done by respective coordinators, which indicates exclusive use based on power asymmetries among cooperative members in the realm of individual instead of collective benefits.

The above quoted sociology professor from UFPA further refers to the underlying 'patron-client' relations among upstream chain actors, by stating that it has turned into a 'tradition' in terms of the *regatão* being the provider of something needed by extractivists:

"There still is this traditional manner of treating the Brazil nut gatherer [...] a history of ties of the extractivist with the processes of the *aviamento*."¹⁰⁹ (Interview with sociology professor of UFPA, Belém, 23.05.2014)

Given, respective leaders (on behalf of cooperatives) often provide gatherers with the equipment and food needed for the collecting period at Brazil nut stands, cooperative coordinators are also seen by the latter as their 'patrons' in the frame of *aviamento* (Fieldwork diary, note taken in the community of Tapagem, 02.02.2014). The professor quoted above further elaborates on examples of Amapá, where a cooperative has assumed the role of *regatões* and provides goods to geographically marginalized extractivists beyond the ones needed for the gathering activity, while calculating for its threefold mark-up compared to the actual price in the neighboring urban center (based on Interview with sociology professor of UFPA, Belém, 23.05.2014). Despite high transport costs inflating respective prices at community level in remote areas of the Brazilian Amazon, this interviewee might have overestimated price differences, whose point however was made clear.

Unbalanced 'patron-client' relations have been institutionalized to such an extent that – despite some organization of the gathering and marketing activity of upstream Brazil nut value chain actors reached by CEQMO, combined with respective leaders' discourse to solely strive for collective benefits –, asymmetric (trade) relations still persist. Some gatherers see cooperatives as an additional patron who – beyond collective marketing for them as 'shareholders' – is to fulfill their individual needs, including of providing medicine when a family member is sick. The coordinator of CPI-SP confirms this by referring to a conversation she had conducted with Brazil nut (*quilombola*) extractivists in Oriximiná:

"[...] if we [she reproduced the question extractivists asked her] get sick, will the cooperative provide us medicine? No [she reproduced her answer], no but the patron did that, so this model of cooperative that we offered was not [the model of relationship] that they [extractivists] had, it did not correspond to the ideal of what they expected

109 "Ainda tem essa maneira tradicional de tratar o castanheiro [...] uma história de ligação do extrativista com os processos do *aviamento*."

from a buyer. In fact, the cooperative [CEQMO] was seen like a ‘patron’.¹¹⁰ (Interview with the coordinator of CPI-SP, São Paulo, 28.01.2015)

She recognizes that the “model of cooperative” CPI-SP and other organizations have promoted is not exactly what extractivists wanted. At the same time, she claimed that cooperatives cannot assume this function of providing credits in the form of advanced payments and still be profitable. This lies beyond their capacities and is not in line with their mission (based on Interview with coordinator of CPI-SP, São Paulo, 28.01.2015) – which is to serve as collectively owned entity for marketing the ‘produce’ of its members. The interviewed sociology professor goes one step further in his analysis that several extractivists in the Brazilian Amazon internalized *regatões* who came to their communities to bring either a good or a service on a regular basis. In so being it is often expected from extractivists that community-external agents – including more capitalized cooperative members – bring them something when they render a visit for any reason (based on Interview with sociology professor from UFPA, Belém, 23.05.2014). However, a difference is that the persistence of *aviamento* heavily relies not only on asymmetric (inter)dependency based on unbalanced trade and debt relations but also on the lack of infrastructure and limited possibility for extractivists to transport produce and/ or NTFP to urban centers themselves. Yet, as indicated above, *regatões* are still regarded as ‘saviors’ of gatherers who depend on them not only to provide daily household supplies but also to buy their products *in natura* on a regular basis – which endow them with a social status that is not compatible with the one of cooperatives, overall, in terms of long-term importance in their livelihoods. In the case of CEQMO, their coordinators claim gatherers to tend to opt to sell Brazil nuts to *regatões inter alia* due to the following fact: that only a small portion of extractivists are ‘aware’ of the long-term relevance of a well-functioning cooperative (based on Interview with the coordinator and vice-coordinator of CEQMO, Oriximiná, 11.12.2013).

Such *quilombola* leaders go one step further in referring to most Brazil nut gatherers not being “conscious” of what they call “the path to the best business practice” entailed by joint engagement for profitable collective marketing by CEQMO. Besides, in the perception of both of CEQMO’s coordinators, the planned own local *quilombola* Brazil nut processing-mill (with financial support from Christian Aid through a project in cooperation with CPI-SP – detailed in Chapter V.2.2.1) would have to be valued more by such not yet “conscious” extractivists (Interview with the coordinator and vice-coordinator of CEQMO, Oriximiná, 11.12.2013). While *regatões* have succeeded in having their functions valued by extractivists over generations, in the case of cooperatives, a comparable value attribution by their (potential) members or even interdependency among actors of upstream segments of the respective value chain is far from being reached there. Reasons for this such undervaluing of CEQMO include the fact that it was founded not that long ago in 2006 with interrupted phases of external financial support and related operations, whereas *regatões* and *aviamento* have long existed in Oriximiná and, overall, in the Lower Amazon basin.

110 “[...] se a gente ficar doente, a cooperativa vai arrumar o remédio? Não, não mas o patrão fazia isso, então esse modelo que a gente ofereceu de cooperativa, não é o que eles tinham, não correspondia ao ideal do que eles esperavam de um comprador. Na verdade, a cooperativa era vista meio que nem um patrão.”

Yet, there is also a success story of cooperatives for collective marketing of Brazil nut (NTFPs) in the Brazilian Amazon – Cooperacre, which has been overall well-managed having approximately 2200 members nowadays (IMAFLOA 2016). The best-practice determinants were not only the support by NGOs and international development agencies (e.g. GIZ), but mainly the long tradition of promoting collective action since Chico Mendes (CNS) and the structuring governmental policies by the government of the state of Acre (e.g. forest concessions for sustainable natural resources management/ RESEX) that shaped a conducive institutional environment aiming at sustainable value chain development of NTFPs, including Brazil nut.

All in all, cooperatives, in particular ‘mismanaged’ collective rural enterprises with low membership can assume similar functions to the ones comprised in the role of *regatões* (see Chapter V.1.1). Thereby, cooperatives – particularly their leaders – can be regarded as ‘new *regatões*’ themselves or overall as ‘patrons’, while perpetuating unbalanced trade relations in upstream nodes of NTFP value chains in remote areas such as in the Lower Amazon basin.

Scope for Viable Alternatives to Strengthen Extractivists’ Value Chain Position

While asymmetric (inter)dependency structures are also present further downstream, as “credits” in the form of advanced payments are generally provided by the actors of each value chain node for the one further upstream – gatherers (particularly, of remote communities) are hit worse by dependency structures. They depend more on forest resources and have less alternatives, including due to limited diversification of income sources and, hence, relatively lower levels of related resilience compared to actors further downstream. The latter depend on the NTFP extractivists’ supply, yet, overall, have more financial capital and access to formal education (as well as related overall ‘employability’ in urban centers).

As follows, results of inferential statistics (t-tests and correlations with aforementioned data from 2012) related to natural resource as well as to market access and participation in FUGs, including in cooperatives and associations of extractivists in Óbidos and Oriximiná are presented.

Whilst participation in FUGs does not, per se, come with increased household income, conducted t-Tests show a positive relation between participation and the overall income of extractivists ($t(25) = 2,135$; $p = 0,043$ and $t(19) = 2,692$; $p = 0,014$). These results express considerable significance and confidence levels, yet the positive relation in question can also lie in the participation of already capitalized extractivists in the case of the only operating cooperative CEQMO in Oriximiná and Óbidos until 2012.

In the Lower Amazon basin, quantitative evidences pertaining to specific positive effects of participation in FUGs have often fallen short with regard to Brazil nut income and other income sources based on related natural resource and market access in the assessed municipalities. It does not make a significant difference in the access to natural resources (relation between variables participation and access to Brazil nut stands: $t(46) = 1,875$, not significant; Brazil nut income and participation: $t(58) = 0,144$; not significant) nor in the diversification of income sources (relation between participation and diversification of income sources: $t(54,910) = 0,461$, not significant; whereby there is no significant correlation: correlation coefficient $r = 0,333$). Amongst

the reasons for which no respective specific positive effects of participation in FUGs to have been detected, can be the evidence – despite qualitatively identifiable social organization e.g. in the case of CEQMO in Oriximiná – of individually misuse to the detriment of collective action of extractivists for common benefits of members of respective groups. Still, it is well-known that social and economic organization in collective rural enterprises (based on MacQueen *et al.* 2005) is conducted in compliance to cooperative principles (based on Zerche *et al.* 1998) can potentially lead to collective benefits of respective members.

Realistic and viable alternatives – including their potential and limitations – to reaching access to resources and, particularly, to markets on a sustainable basis, while strengthening the position of upstream value chain actors are explored at next.

‘Well-managed’ Cooperatives

When scoping for such above described feasible alternatives to *aviamento*, aimed at promoting socioeconomic benefits for extractivists, there is no single ideal solution. Neither can cooperatives be considered a so-called ‘silver bullet’ for inhibiting dependency from extractivists on *regatões* institutionalized in the frame of *aviamento*.

However, an alternative that can work under certain conditions is self-sustaining promotion of overall social organization and engagement for a mutually beneficial collective marketing system through the establishment of well-managed cooperatives. Thereby, such collective action requires – among other conditions beyond members’ engagement – the following: management capacities for running a cooperative under ‘cooperative principles’ including the ones of ‘identity’ (i.e. ‘producers are buyers’) and economic feasibility for common benefits of its members and not individual.

Further, in the realm of strengthening the position of gatherers within NTFP value chains what needs to be in place to have well-managed cooperatives as a viable and locally desired alternative to *aviamento* in the Brazilian Amazon? Conditions for cooperatives to ‘effectively work for collective benefits’ include the provision of incentives for participation and membership¹¹¹ in addition to a conducive institutional environment – per changes in informal and formal institutions enabling sustainable resource and market access of marginalized NTFP gatherers (see Chapters V.1.7 and V.2.4). Such incentive provision has been showcased by Cooperacre in Acre; whereas in the case of the Brazil nut chain in the Lower Amazon basin, the cooperative CEQMO has been inoperational for the last three years¹¹². In the frame of the aforementioned project CEQMO – in cooperation with CPI-SP – plans capacity development measures for enhancing the management skills of *quilombola* extractivists (Interview with the coordinator and vice-coordinator of CEQMO, Oriximiná, 11.12.2013). Enhancing the ability of extractivists to manage cooperatives is key for such successful local rural

111 Participation is key for a well-functioning cooperative. Yet, given the topic of participation and the reasons and motivation for it has been broadly explored in literature it will not be further elaborated on in detail herein (see e.g. Zerche *et al.* 1998, MacQueen 2005). Further, for collective action and market access, see e.g. Markelova *et al.* (2009). More specifically, for typologies of participation, see Agarwal (2001: 1624).

112 CEQMO has not been able to capitalize itself nor received any credits from external organizations to buy Brazil nuts from gatherers since 2013.

enterprises, which is in line with CEQMO coordination's strategy of having a well-functioning cooperative (complying to cooperative principles – see Footnote 289) on the pathway to running an own Brazil nut processing-mill. Such a small rural enterprise can further contribute to strengthening gatherers' position along the Brazil nut value chain in a long run, provided it is well-managed.

In spite the management risks and competition with larger established mills – if the ability of extractivists is enhanced in the realm of establishing a well-managed collective enterprise – this could represent a further means to reach added value in terms of local socioeconomic benefits.

Social Organization and Participation of Upstream Value Chain Actors

For reaching self-reliant sustainable Brazil nut and market access by developing a well-functioning collective rural enterprise (cooperative, and, especially, an own processing mill), a step-by-step approach is needed in the context at stake. Given an 'insufficient' process of social organization and democratic participation, *regatões* still play a prominent role in the provision of goods and services as well as of personal assistance, particularly in remote communities of the Brazilian Amazon. This still applies to the study area despite decreased numbers of *regatões* entering the TRBR area in Oriximiná. CEQMO's current lack of preparedness for running a well-managed cooperative manifests in relatively low participation in the Brazil nut supply it gets for its collective marketing and in its current practically on 'stand-by' status, given its lack of liquidity since 2012 that came along with interrupted external support from NGOs. This situation is to be reverted for more members to be part of CEQMO's decisions-making – following the cooperative principle of 'one member, one vote' –, while shaping its management and strengthening its role within the Brazil nut chain in the Lower Amazon basin.

Yet, is there an alternative besides collective enterprises that effectively contributes to inclusive NTFP value chains in the Brazilian Amazon?

Building on what has been mentioned on social organization as key component of such alternatives, it is also up to extractivists to further effectively organize themselves in officially registered groups – e.g. FUGs with a formalized land-tenure status per required documents from the Brazilian government (e.g. the Declaration of Eligibility to the National Program for Strengthening Family Agriculture (*Documento de Aptidão ao Programa Nacional de Fortalecimento da Agricultura Familiar*¹¹³ – DAP, per acronyms in Portuguese)). So as to be able to effectively demand specific information and service provision, while enhancing their ability to fulfill their rights to access policies – e.g. PGPM-Bio, PAA and PNAE (based on interview with a project coordinator from SEAD (formerly, MDA), Brasília, 04.02.2015).

113 The National Program for Strengthening Family Agriculture (Pronaf, per acronyms in Portuguese) is a credit line for so-called family farmers.

Participation: Engagement by Gender and Youth in a Nutshell

Women e.g. through their participation in the *Marcha das Margaridas*¹¹⁴, as the largest yearly mobilization for claiming rural women's rights, including access to public policies and services of women living in vulnerable conditions in rural areas throughout the country. Rural female workers, member of the union STTR of Oriximiná have already taken part of this March in Brasília several times (Interview with the president of the STTR of Oriximiná, Oriximiná, 05.12.2013).

Further, young women and men can play a more prominent role. The potential of stimulating youth's long-term engagement for sustainable rural development – based on incipient initiatives from AMAZON together with respective state-partners for education (e.g. high-school at CCPT, enhancing 'human capital' of this and other neighboring communities) and CPI-SP with the support of Christian Aid for valuing 'culture' (e.g. traditional music band with members from different communities) – is underutilized up to now. The latter project on traditional music, as of 2012, has raised the interest of youth to promote their '*quilombola* culture', while participation, engagement and pride of traditions they sing about has been high (Fieldwork diary, note taken in Oriximiná, 27.06.2014). This sense of pride and enhanced self-esteem for promoting their tradition of extracting and marketing Brazil nut, building up on innovation and entrepreneurship potential of young women and men (see Chapter V.3). What can also raise the autonomy of young as well as more experienced extractivists in the study area and elsewhere in the Brazilian Amazon is the provision of financial services and the promotion of the access to respective credit lines, which is to be presented at next.

Credits for NTFP Extractivists

To overcome limitations in the access to market outlets, credit provision and facilitated access to them are key enabling conditions for strengthening the value chain position of Brazil nut gatherers. Specific credit lines, e.g. 'Pronaf *Extratativismo Vegetal*' (in Portuguese), for extractivists could be created so as to come to terms with indebtedness and dependency from gatherers on *regatões* entailed by the *aviamento* system (see Chapter VII). The access to such credit lines would facilitate respective autonomous decision-making on the buyer paying the highest prices at the moment gatherers want to sell their Brazil nuts.

However, credit is overall not accessed by Brazil nut gatherers nor local buyers who also depend on advanced payments by one of the three regional processing mills. Still, there is one exception of a buyer from CCPT – now an intermediary buyer for a larger processing mill from the state of Mato Grosso – who has once managed to borrow money from a subnational bank ('Regional Development Bank for the Brazilian Amazon' – BASA, per acronyms in Portuguese) to purchase Brazil nut there. Yet, this was only possible given he has a stable monthly income being employed as 'house manager' at the local school by the 'town hall' of Oriximiná (based on Interview

114 The *Marcha das Margaridas* makes reference to the human and labor rights activist Margarida Maria Alves (president of the union of Alagoa Norte in the state of Paraíba, Brazil) who fought for the rights of rural workers and was killed by owners of large rural landholdings of the '*Várzea Group*' in 1983 (see Below 2013).

with the son of one of the main Brazil nut buyers of the community of CCPT, CCPT, 24.06.2013).

If it was possible for some Brazil nut gatherers and local buyers to avoid borrowing money from larger buyers and taking credits instead, then dependence on them could be reduced, their market outlets increased in numbers, while their bargaining power and income could potentially rise:

“It would be good to borrow a bit of money from the bank, you know, in the Bank of Amazonas, for us to collect Brazil nut, so that we avoid selling to the middlemen and buying his [industrialized] goods.”¹¹⁵ (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current local buyer of the community of Tapagem, Tapagem, 07.02.2014)

Yet, there have been negative experiences with credit systems such as with the National Fund for the Development of the Northern Region (FNO, per acronyms in Portuguese), particularly in rural *Amazônia* in the end of the last century. Further indebtedness of forest dependent populations has thereby been caused, including of given Brazil nut gatherers and buyers as well as their associations and cooperatives in the Lower Amazon region. This precluded them from being operational, which is also related to individual coordinators of such FUGs who involved themselves in corruption or mismanagement. The respective organizations were prohibited from taking further credits or any related financial service from public credit entities. This is the case of ASCONB, ARQMO and CEQMO as well as several Brazil nut buyers and gatherers, which speaks for credits to be an alternative to being indebted vis-à-vis (larger) buyers that is bound to ‘pay-back capacities’ as well as related ‘financial management ability’ of borrowers. Especially in the case of forest dependent dwellers with limited access to respective capacity building measures, risks of bankruptcy can surpass benefits of respective collective enterprises if no specific locally accessible credit option is provided – like it happened to ASCONB.

In the case of CEQMO this general credit line only sufficed to cover the items extractivists needed for their gathering activity in Brazil nut stands, whereas they did not supply enough Brazil nuts to compensate for such advanced payment in 2011 (otherwise provided by *regatões*). Yet, in the harvest seasons following 2012, CEQMO was worse off without credit and thus cash flow for purchasing Brazil nuts, which has put collective marketing on stand-by in Oriximiná ever since. CEQMO’s coordinator has meanwhile focused on political lobbying for access to land tenure by given *quilombola* communities of Oriximiná, while supporting his wife in here position within as member of the board of ARQMO.

Yet, one of the leaders of Tapagem who is responsible for the community boat, stated that:

“Buyers from here continue to borrow money from buyers from outside [the *quilombola* communities at the TRBR]: one lends to the other. The ones from here do not have enough [financial] resources to buy [Brazil nuts] themselves with their own

115 “Seria bom emprestar um pouquinho de dinheiro no banco, sabe, no banco do Amazonas, pra gente tirar a castanha, pra evitar de vender pro regatão e comprar a mercadoria dele.”

money.”¹¹⁶ (Interview with Brazil nut gatherer from the community of Tapagem, Tapagem, 13.06.2014)

Building on that, it could be profitable for local buyers themselves to acquire bank credits at low interest rates and gain autonomy in trade, while enhancing their bargaining power vis-à-vis larger buyers ‘from outside’ or processing mills. Yet, the access to credit provided by state or private-owned banks is still a rare exception for extractivists – e.g. access to ‘Pronaf *Mulher*’ is very scarce in the Brazilian Amazon (see Below 2013: 66) –, particularly in the study area where dependence entailed by the provision of advanced payments from local buyers to gatherers is prevailing. This type of ‘credit relation’ goes further downstream the Brazil nut value chain though. Not only gatherers receive advanced payments, but also community-based as well as external buyers, including ‘intermediary buyers’ from processing mill owners – most buyers along the Brazil nut value chain are lenders and borrowers at the same time.

However, the less financially capitalized and more geographically isolated from markets, the more dependent and vulnerable in economic terms; whereby often vulnerable Brazil nut gatherers are risk averse given their fear of acquiring a bank credit and not being able to pay back such loans¹¹⁷. Within the Brazil nut value chain, gatherers are most dependent, including due to ‘institutionalized’ indebtedness through ‘informal credit relations’ per *aviamento* compelling them to work for paying off their ‘debts’ to the same buyers over generations. The institutionalization of patron-client relations as well as acceptance of *aviamento* and respective dependence, especially on advanced payments, have gotten to the point to be considered normal including by gatherers to being compelled to strive to reduce debts they have with buyers, while in fact often increasing them harvest by harvest.

Still, are there ways to contribute to evening out the playing field of these trade and ‘credit parties’ within NTFP value chains in the Amazon – in particular the Brazil nut chain in the Lower Amazon region?

Socioeconomic Upgrading and Enhanced Ability of Upstream Chain Actors for Sustainably Accessing Resources and Markets

Ability-based socioeconomic upgrading can be reached by enhancing the ability of upstream value chain actors (NTFP extractivists) to sustainably accessing resources and markets. Such upgrading and access to resources and markets on a sustainable basis can be reached under certain conditions: overcoming the aforementioned limitations of *aviamento* as an informal institution, while enabling gatherers and their families to make a living out of more balanced Brazil nut trade relations. This is a key intermediary outcome desired by these upstream chain actors towards strengthening their position vis-à-vis further downstream chain nodes.

116 “Compradores daqui continuam pegando dinheiro emprestado de comprador de fora: um avia o outro. Os daqui não têm condições para comprar eles mesmo com o próprio dinheiro.”

117 In terms of loans, banks are not very keen to granting credits to the Brazil nut gatherers at stake given they cannot compensate for their lack of material and financial capital through physical capital that smallholders can, given the former live in and from ‘collective(ly occupied) lands’, including TQs.

Such strengthened position of Brazil nut gatherers would benefit from overall socio-economic upgrading that could be fulfilled if lead firms – in this case, the three processing mills in the Lower Amazon basin – would offer local buyers and also gatherers employee-like working conditions. This would imply in these firms complying to decent work and labor conditions considering both such intermediary buyers and, particularly, gatherers at least as valuable suppliers if not under their payroll.

In the realm of promoting socioeconomic upgrading (see Chapter VI), such a change in buyer-supplier relations can be implemented in line with employer-employee relations through similar working conditions offered per contract for the ‘in-house’ staff by regional lead firms. While the processing mill that would further comply to sustainability standards per fair trade and organic certification could acquire competitive advantage, it could also benefit through the following measures for co-enhancing the ‘human capital’ and ability of upstream chain actors: (i) post-harvest training already realized in study area in 2013, whereby both the co-leader of the course representing Mundial Exportadora Ltda. and the largest buyer at CCPT were very keen on collaborating with each other, including as they talked about the idea of the course together at the BioFach America Latina¹¹⁸ (Fieldwork diary, note taken in São Paulo, 27.06.2013); (ii) on-the-job-training in processing mills for upstream value chain actors to learn certain processes within mills; and even (iii) potentially employing middlemen ‘champions’ in procurement department as they are already trusted by gatherers for having established trade relations at community level. Limitations of both the former measures could be the need for ensuring a considerable return-on-investment (ROI)¹¹⁹ for lead firms to be willing to pay for such trainings, whereas the latter measure has a potential trade-off since it could reinforce respective imbalances among these ‘upgraded buyers’ vis-à-vis their long-term local suppliers.

Whilst it is too early to measure the ROI or assess any impact of the post-harvest training co-financed by Mundial Exportadora Ltda., there is a case for such capacity-building measures provided by the processing mills to their local (intermediary) buyers and suppliers (gatherers), given their potential to lead to mutual benefits.

At the national level, for marginalized NTFP extractivists to sustainably access natural resources and markets, while strengthening their position along respective chains the following conditions are to be in place: socioeconomic upgrading and inclusive governance, which is primarily determined by an enabling institutional environment to be shaped by upstream chain actors endowed with respective ability. Such conducive institutional environment can be created by opening up spaces that allow for local ‘democratic’ participation in decision-making of NTFP gatherers, specifically, on

118 BioFach is an international fair mostly for organic products, which took place in São Paulo from 27–30.06.2013.

119 While ROI is still broadly used worldwide, especially by the private sector; a few more innovative organizations go beyond financial input and output assessments towards more holistic sustainability-based metric for monitoring and evaluating their performance. For such a mixed-methods monitoring and evaluation methodology based on sustainable livelihood capitals and respective assets, see Donovan & Stoian (2012). Yet, business as usual continues to prevail and measuring organizational performance against SDGs is not yet a reality.

the co-management of natural resources and also on market access possibilities of gatherers in given PAs – including the TRBR –, e.g. by transforming the current governance structure of consultative councils into a deliberative one (detailed in Chapter V.2.4.2). The transformation at stake could not only apply to the council of the TRBR but also to all PAs of full environmental protection inhabited by populations who have even been there before the establishment of such PAs in Brazil. It would mean an institutional change not only concerning formal institutions such as the TdC but potentially informal institutions like the *aviamento* system, while strengthening the position of extractivists in given value chains and potentially their income from sustainably managing NTFPs in these areas in Brazil (see Chapter VI).

Still, on the pathway to an enabling institutional environment based on a more equitable trade relation between gatherers and buyers for a sustainable access to natural resources and markets, Cano *et al.* (2014) put forward their overall perspective of what is needed:

“[...] normative changes linked to the civil condition (individual and collective participation) and readdressing of land property rights and access to natural resources in favour of rural populations”. (ibid.: 546)

Thereby, they emphasize the importance of institutional change and civic engagement, including for revising land tenure and property rights as well as the access to natural resources by rural dwellers – this applies to different contexts, including rural *Amazônia*.

In addition, what could lead to mutual benefits among upstream value chain actors is not only increased participation of NTFP extractivists in decision-making processes concerning sustainable access to natural resources and markets but also diversification of (sustainable) income sources of extractivists, amongst other means. This is shown with the case of gatherers who could thereby decrease dependency on Brazil nut as well as on the buyers of this product *in natura*.

In the frame of concluding remarks of this chapter, *aviamento* as an informal institution might have persisted over generations due to lack of viable alternatives to enable geographically and economically marginalized NTFP gatherers to sustainably access resources and markets. In spite of *aviamento* not representing such an alternative, it still allowed for accessing Brazil nut and marketing it in the subnational region at stake. However, at the same time the informal institution in question consolidated dependency relations between extractivists and buyers, and weakened the former's chain position. Yet, institutionalized patron-client relations and respective asymmetric (inter)dependencies preclude the emergence of equitable trade relations in the Brazilian Amazon. In so being *aviamento* but also 'collective rural enterprises characterized by the lack of compliance to cooperative principles and insufficient active membership' represent suboptimal 'solutions' for problems and needs faced by the upstream value chain actors at stake (see citation of Berger & Luckmann 1980: 74).

Wrapping up, there is no ideal one fits all alternative for overcoming dependency within trade relations among upstream actors of NTFP chains, as it depends on local livelihoods strategies, environmental conditions and institutional setting of each rural context. However, through social organization, mutually beneficial collective marketing via well-managed cooperatives, socioeconomic upgrading and inclusive

governance structures the position of a considerable portion of Brazil nut gatherers and NTFP extractivists could potentially be strengthened. Thereby a viable alternative for self-determined and self-reliant development of NTFP value chains could be co-shaped by respective chain actors and stakeholders in the Brazilian Amazon.

Still, two parts of the main research and sub-research questions referring to the building block (2) (see right side of Figure 2) on determinants and processes of resource and market access (see right side of Figure 6) remain to be addressed in Chapter V.2, as follows.

2 Formal(ized) Access Restrictions per Term of Compromise

Upfront and in the frame of the main research question, it is noteworthy that the TdC is the 'formal institution in use' filtering and functioning as a key determinant of the resource and market access by the upstream chain actors at stake. However, in other contexts, research and development problems of (lack of) access to resources and/or markets can reveal other determinants of such access, i.e. other formal as well as informal institutions in use or even other factors. Important is thereby to identify limitations as leverage points for enabling environmentally sound resource and market access while strengthening the position of economically and geographically marginalized value chain actors. Yet, in order to scope for key leverage points, it is to be zoomed back into the formal institution in use in the TRBR as a PA of full environmental protection within the upstream nodes of the Brazil nut chain.

When striving to answer the main research question herein, it is of utmost importance to understand the role the TdC and its components play. Attention is paid particularly to how Clause 10 of the TdC of the TRBR¹²⁰ among ICMBio and *quilombola* associations (ARQMO and AMOCREQ) can restrict the access to natural resources (Brazil nut) and markets by upstream actors of the respective value chain. Further evidences are also provided for responding to the sub-research question while addressing how access limiting institutions are formalized. Prior to the TdC of the TRBR, related restrictions induced by informal institutional arrangements that were formalized and enforced per this legally grounded instrument already existed, namely the 'Brazil nut Project'¹²¹ (as of 2001, prior to the foundation of the cooperative CEQMO in 2006),

¹²⁰ The TdC is a formal institution established based on Federal Decree 4340/2002 (Brasil 2002) and used by ICMBio throughout the country for regulating the access to natural resources while trying to overcome conflicts with populations living in PAs of full environmental protection – whereby the TdC of the TRBR was established in 2012 (see Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b). More specifically, its Clause 10 – through its formal prescription of 10 signatures of Brazil nut gatherers in addition to the representatives' from *quilombolas* and ICMBio – formally allows for the exclusion of external buyers, leading to local oligopsonies and further market asymmetries (detailed in Chapters V.2.2.2 and V.2.2.3).

¹²¹ The establishment of the 'Brazil nut Project' in 2001 was an informal institutional arrangement, a predecessor of the '*quilombola* cooperative' CEQMO. It was induced and overall led by CPI-SP (per acronyms in Portuguese) in cooperation with the *quilombola* association ARQMO, involving all *quilombolas* communities along the Trombetas and Erepecuru rivers, except for the CCPT.

and the ‘Brazil nut Agreement’¹²² (as of 2005, prior to the promulgation of the TdC in 2012). This is analyzed in this chapter (V.2), against the following background: The establishment of the TRBR within the Lower Amazon region limited overall access to natural resources as well as to policies and markets, the TdC of the TRBR further formally consolidates restrictions upon extractivists’ access to natural resources, in particular to Brazil nuts. Whilst access to Brazil nut stands depends on various factors beyond such restrictions pertaining to the establishment of TdC of the TRBR – e.g. accessibility and distances to Brazil nut stands (see Chapter V.1.5 with detailed quantification of correlations between such accessibility and income) – implications of the TdC in terms of access restrictions are presented in Chapter V.2.2.3.

For capturing the complexity of the problem of limited natural resource and market access of Brazil nut gatherers as well as the relations among the variables – TdC as formal institution and natural resource as well as market access – hereby the following is analyzed at next: Intentions and interests related to the access to natural resources per TdC and the TRBR are presented at first (Chapter V.2.1), followed by the formalization of the limitation of the natural resource and market access from informal institutional arrangements (Chapter V.2.2.1) to the TdC of the TRBR as a formal institution (Chapter V.2.2.2), while zooming into the role of its Clause 10 in shaping the access to markets and the chain position of Brazil nut gatherers (Chapter V.2.2.3), and wrapping up with the respective multiple perceptions of involved actors on its implications (Chapter V.2.3). Whilst TdC related negative effects on market access prevail, at the end not only a concrete positive implication of the formalization is discussed (Chapter V.2.4.1) but also respective leverage points are scoped for towards inclusive governance for co-managing PA(s) and adapting TdC(s) (Chapters V.2.4.2 and V.2.4.3).

At first it is crucial to understand what lies behind the design and establishment of the TdC of the TRBR.

2.1 Intentions with the Term of Compromise

This chapter is devoted to understanding the intentions and interests behind the Term of Compromise (TdC, per acronyms in Portuguese) of the TRBR – particularly the ones that led to its establishment – against the background of land tenure access related to this PA. The TRBR covering 385.000 hectares of (forest) land was ‘unilaterally’ established in 1979 per Federal Decree 84.018 from 21.09.1979 (based on Brasil (1979), IBAMA (2004)) and managed at first by IBDF from 1979-1989, from 1989-2007 by IBAMA and since then by ICMBio. Local conflicts over natural resources have been occurring ever since 1979, while formal territorial disputes among these branches of MMA and *quilombola* associations (ARQMO and AMOCREQ) have been taking place since the establishment of ARQMO in 1989. Article 68 of the Federal Constitution of Brazil from 1988 formalized the right to land tenure access by *quilombola* populations, decreeing in the Article 68 of the Constitution (Brasil 1988) that:

122 The ‘Brazil nut Agreement’ was established in 2005 was an informal institutional arrangement, a predecessor of the TdC. It was led by ICMBio Porto Trombetas in ‘agreement’ *quilombola* leaders (mostly Brazil nut buyers at the same time) for establishing norms for the Brazil nut and market access while paving the way to regulating such access vis-à-vis external gatherers and, particularly, buyers (detailed in Chapter V.2.2.1).

“*Quilombolas* in traditionally occupied lands are granted definitive properties to be titled by the State”¹²³. (ibid.: 1)

Hereby reference is made to titling as a formalization process of land tenure per rights based access (see Figure 6) of respective *quilombolas* to TQs. However, such access is far from being reached and lies in the background of overall access to natural resources and markets at stake.

While land tenure access and further natural resource use related conflicts among ICMBio and *quilombolas* living in the TRBR area can be mutually reinforcing – it is important not to lose sight of the focus herein, which goes beyond land tenure access *per se*. The analysis of the determinants of these conflicts is undertaken by dissecting the intentions of *quilombolas* and ICMBio in the frame of the TdC of the TRBR when striving to overcome conflicts concerning access to natural resources, including Brazil nut, which is also commercialized. Thereby, respective explicit interests are explored in detail and contextualized with underlying interests related to land tenure access in the TRBR.

Upfront, the official governmental definition of the TdC as a legally grounded instrument based on the Federal Decree 4340/2002 published in the ‘Official Diary of the Union’¹²⁴ (DOU, per acronyms in Portuguese) on 22 August, 2002 (Brasil 2002) and, specifically, on the Normative Instruction (IN, per acronyms in Portuguese) Number 26 published in the DOU on 6th July, 2012 (Brasil 2012a):

“Article 2 [...] Term of Compromise: instrument for managing and mediating conflicts, of temporary character, to be signed among the Institute Chico Mendes [of Conservation of Biodiversity (ICMBio)] and traditional populations living in protected areas where their presence is not admitted, i.e. in disagreement with management instruments, aimed at conserving biodiversity, and the socioeconomic and cultural characteristics of the involved social groups”.¹²⁵ (ibid.: 84)

This definition applies to all TdCs implemented in PAs in Brazil. The TdC is a legally based mechanism for striving to overcome conflicts between ICMBio and traditional populations living in PAs of full environmental protection where no human ‘settlement’ is allowed. The IN Number 26 promulgates that TdCs have a ‘temporary’ character until a definite solution to respective conflicts is found (Brasil 2012a), i.e. until the

123 “Art. 68. Aos remanescentes das comunidades dos quilombos que estejam ocupando suas terras é reconhecida a propriedade definitiva, devendo o Estado emitir-lhes os títulos respectivos”.

124 The ‘Official Diary of the Union’ (*Diário Oficial da União*, in Portuguese) is a daily ‘newspaper’ issued by the Brazilian government, which functions as the official outlet for publishing decrees, laws and legal mechanisms among other formally binding communication from the federal government.

125 “Art. 2 [...] termo de compromisso: instrumento de gestão e mediação de conflitos, de caráter transitório, a ser firmado entre o Instituto Chico Mendes e populações tradicionais residentes em unidades de conservação onde a sua presença não seja admitida ou esteja em desacordo com os instrumentos de gestão, visando garantir a conservação da biodiversidade e as características socioeconômicas e culturais dos grupos sociais envolvidos”.

(long established) inhabitants of such federal PAs have been ‘resettled’¹²⁶, according to ICMBio. However, in most cases the settlements referred to were created before the establishment of respective federal PAs by the responsible branch for managing them at MMA (formerly, IBDF and currently, ICMBio). Whilst environmental conservation is pursued through such PAs, ‘conserving socioeconomic and cultural features’ of traditional populations is often not ensured. Instead, in some cases, including through the TdC of the TRBR, the maintenance of socioeconomic conditions and livelihood strategies is disrupted. Yet, before going into the respective implications (detailed in Chapters V.2.2.2 and V.2.2.3) – what were the intentions and interests behind the establishment of the TdC?

Intentions from Both Parties of the Term of Compromise

An overview of key intentions for laying the groundwork of the analysis focused upon in this subsection is provided with the following table.

Table 8: Intentions of *Quilombolas* and ICMBio in Overcoming Natural Resource Conflicts at the TRBR through the Term of Compromise

ICMBio (Porto Trombetas unit)	<i>Quilombola</i> communities/ (leaders of) associations
<ul style="list-style-type: none"> - To have a ‘legal backing’, given <i>quilombolas</i> depend on natural resources and inevitably gather as well as sell Brazil nut, including in the TRBR - Preserving natural resources, including Brazil nut - Reducing the extraction of Brazil nut through registration as well as control and sanction systems based on the TdC as a formal institution 	<ul style="list-style-type: none"> - To have a backing by the federal government while being ‘allowed’ to access natural resources/ at least Brazil nut and selling it in and around the TRBR

Source: Own elaboration

More specifically, Table 8 shows key intentions of both parties involved in the conflicts over the access to and commercialization of Brazil nut – as the most important natural resource in socioeconomic terms – at the TRBR in the frame of the TdC.

An identified common intention related to the TdC – as an agreement grounded in Federal Decree 4340/2002 (Brasil 2002) – is that both parties wanted to have a backing per legally based instrument anchored at the level of the federal government for

¹²⁶ Resettlement has drastic impacts on the livelihoods of such forest dependent dwellers (e.g. traditional populations) who have long lived in such rural areas and from (sustainably) using respective resources. Besides, indemnifications due to resettling measures by the federal government are symbolic corresponding to the monetary value of houses and home gardens (based on Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015).

their actions with regard to the use of Brazil nut at local level (in the case of the TRBR that applies to such regulations on natural use in other PAs).

“The Term of Compromise is also for them [*quilombolas*] to ‘have more tranquility’ for knowing that they are doing something with [‘legal’] backing and formalized instead of only a signed [Brazil nut] agreement [...] neither I [ICMBio Porto Trombetas] nor they [*quilombolas*] had legal backing [before the TdC].”¹²⁷ (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014)

In addition, he – as coordinator of ICMBio Porto Trombetas at that time – wanted to have an official consent from its headquarters for formally allowing *quilombolas* and actors they authorize to gather and sell Brazil nut at the TRBR.

In general, an evident intent¹²⁸ of ICMBio is to limit the number of individuals who enter PAs they manage. From ICMBio’s perspective the TdC is an inevitable means for taking the tension-relieving steps most demanded by local populations and only allowing restricted access to the most relevant natural resources for the livelihoods of such populations, while still prioritizing environmental protection in the type of PA at stake (Fieldwork diary, note taken in Porto Trombetas, 18.06.2013).

The TdC of the TRBR restricts the entrance of external Brazil nut gatherers (natural resource access), specifically its Clause 5, which only allows new registration of additional gatherers if they are from the *quilombola* communities of the TRBR area, originally included per TdC (see Term of Compromise of the Trombetas River Biological Reserve, Clause 5; Brasil 2012b¹²⁹: IV). Thereby they need an authorization of their representative *quilombola* association to be allowed to collect in respective Brazil nut stands (based on Term of Compromise of the Trombetas River Biological Reserve, Clause 5; Brasil 2012b: IV). While Clause 5 formally limits the access to natural resources (Brazil nuts), more importantly, Clause 10 of the TdC of the TRBR formally restricts the market access of gatherers as well as the one of buyers to purchase Brazil nuts at the TRBR area (detailed in Chapter V.2.2.3).

Through the TdC of the TRBR, ICMBio established legally grounded control and sanction systems (see Chapter V.2.2), while limiting the extraction of Brazil nut in this PA and fulfilling another one of its intentions with this formal instrument written by this

127 “O Termo de Compromisso é pra eles terem também uma maior tranquilidade de que estão fazendo uma coisa respaldada e formalizada ao invés de só um acordo assinado [...] nem eu nem eles tinha respaldo legal.”

128 ‘Intent’ is employed when referred to related interests of ICMBio given its purposeful formal design, deliberation and action as responsible governmental entity for managing the TRBR.

129 This reference contains all Paragraphs and Clauses of the TdC of the TRBR – including Clause 5 and Clause 10, while the latter is taken under the loop in the frame of the analysis herein.

federal environmental entity¹³⁰. Still, in the ‘discourses’ of several employees of ICMBio, they convey the message to be considerate of the livelihoods of inhabitants of these PAs (based on interviews with coordinators from ICMBio at its units in Porto Trombetas and Santarém as well as in its headquarters in Brasília).

It is ICMBio’s mandate to conserve existing biodiversity in federal PAs, particularly in PAs of full environmental protection including the ones that have TdCs for managing conflicts over natural resources, which is confirmed by the Brazilian Ministry of Agrarian Development (SEAD (formerly, MDA), per acronyms in Portuguese):

“I think that this issue of limiting the number of external buyers was related to the will [of ICMBio] of environmental conservation. [...]. I think that ICMBio does that, as it thinks about avoiding over-exploitation [of natural resources in such protected areas].”¹³¹ (Interview with a project coordinator of SEAD (formerly, MDA), Brasília, 04.02.2015)

While she works for SEAD (formerly, MDA) – including on policies for so-called ‘family agriculture’ (*agricultura familiar*¹³², in Portuguese) – she shows understanding for ICMBio’s concern for protecting nature from unsustainable resource use and market demand. She indicates ICMBio’s intention to limit external buyers’ procurement in PAs they manage, which relates to Clause 10 of the TdC of the TRBR. Yet, SEAD

¹³⁰ In addition to formal(ized) restriction to natural resource and market access per TdC, ICMBio has an overall formal requirement for research conducted in PAs under its management responsibility: Scholars without ICMBio headquarters’ prior authorization through its SISBio are not allowed to enter such PAs to conduct research. Representatives of ICMBio claimed to be open for supporting development practitioners and researchers, including from abroad and from disciplines other than biology or ecology (Fieldwork diary, note taken in Brasília, 05.02.2015). However, a foreign scholar who was already informally collaborating with a Brazilian university had to formalize this collaboration in the frame of a joint SISBio with a Brazilian professor for receiving the respective authorization eight months after submission of the SISBio application form (based on informal conversation with a foreign scholar). Another indicator for this selective restriction is its unwillingness to make interview appointments and postponing some of those more than three times with the coordinator of an NGO and a researcher, ICMBio Porto Trombetas shows considerable resistance against scholars who consider socioeconomic components of the livelihood strategies of local *quilombolas* living in and from the environment at stake (Fieldwork diary, note taken in Oriximiná, 19.06.2013). This can also inhibit the establishment of fruitful collaboration among different stakeholders of the TRBR and overall actors directly or indirectly involved in issues pertaining to PAs, given preconditions that in some cases can be prohibitive for certain agents (e.g. from abroad) to be authorized per SISBio and conducting research aiming at striking a balance between environmental conservation and local livelihoods. Some scholars face prohibitive preconditions due to long processing time for evaluating project proposals (e.g. master students who only have a couple of months to submit their theses), while additional bureaucratic hurdles are imposed to foreign scholars who are formally required to submit a project proposal led by a Brazilian research entity through ICMBio’s SISBio system.

¹³¹ “Acho que essa questão de delimitar os atravessadores foi por isso, de querer [...] conservação ambiental. [...]. Eu acho que o ICMBio faz isso pensando em evitar a super-exploração.”

¹³² (Small-scale) family agriculture referred to hereby is agriculture that employs mostly ‘on-farm’ labor from the family itself.

(formerly, MDA) also knows that small-scale producers and, particularly, forest dependent rural populations who manage their territories collectively (like in the case focused upon herein), overall, have low-impact livelihood strategies while most have long been practicing sustainable use of natural resources (see e.g. OECD 2015).

In this context, it is important to state that ICMBio's purpose of legally based environmental conservation through the TdC is not evidently achieved given it is not assured that less buyers purchase less quantities of Brazil nuts. At the same time, such local (traditional) populations would in principle not support over-exploitation of natural resources by external actors – independent of respective resource access restriction formalized per TdC –, including capitalized buyers who could endanger their subsistence and income sources. While there are cases of individualistic pursuit for private benefits e.g. by collaborating with logging enterprises, this does not prevail in the study area within the Lower Amazon region, which is composed to over three fourths of its surface by either PAs or overall collectively occupied and managed territories.

Further interests of *quilombolas* in pushing for the natural resource access and use to be allowed at the TRBR are presented at next.

Explicit Interests of *Quilombolas* in Natural Resource Use to be Allowed

Identified 'explicit interests'¹³³ of *quilombolas* living in the TRBR for the use of natural resources to be allowed are not homogeneous (see e.g. Leach *et al.* 1999) and are to be differentiated. They can be disentangled into the following 'explicit interests in an allowed use of natural resources': (i) of *quilombola* communities overall; (ii) of their leaders, particularly of the coordination of the associations ARQMO as well as AMOCREQ and of the cooperative CEQMO; and (iii) of 'other *quilombolas* besides leaders', including Brazil nut gatherers.

The main 'explicit interests in an allowed use of natural resources' of (i) *quilombola* communities overall was to be 'legally allowed' to access Brazil nut in the area of the TRBR as well as to sell it to individual buyers or to the cooperative (CEQMO).

They wanted to avoid being in a vulnerable situation, as any use they made of any natural resource within the TRBR – as a PA of full environmental protection – used to be forbidden based on the Federal Law 9.985, 18.07.2000 on SNUC published in the DOU on 18th July, 2000 (Brasil 2000).

“It was the worse situation they could be in. They [*quilombolas* living in and from the TRBR] were acting against the law in anything they did. And there could come a new manager from ICMBio of the TRBR who could say: no, this year there won't be such [Brazil nut] 'agreement', because this is a biological reserve and you shouldn't even

133 'Explicit interests' are interests that are evident and herein clearly as well as directly related to aspirations when it comes to natural resource use. Further, it relates to the scope of this thesis, which is neither designed to pursue a psychological nor an ethnographic investigation of interests based on intrinsic motivations with regard to natural resource use. What is hereby at stake is rather the discussion of interests identified through interviews, including narrative ones, followed by specific questions whose responses serve as a background foundation to reply to both the research questions.

be here, nor collect Brazil nut.”¹³⁴ (Interview with a project manager at IMAFLORA, Piracicaba, 11.02.2015)

He adds that a new manager¹³⁵ could be allocated to Porto Trombetas and cancel the ‘Brazil nut Agreement’, given its ‘informality’ – as well as dependence on former local managers – and lack of formalization per decree by ICMBio’s headquarters (based on Interview with a project manager at IMAFLORA, Piracicaba, 11.02.2015).

Besides, given their well-known livelihood strategies as well as necessity and will of collectively living in and from forest resources (including from the TRBR), *quilombolas* wanted to come to terms with ICMBio for finding a dignifying alternative for not being compelled to live in illegality in order to survive. The demand for having a ‘backing per legally grounded instrument’ aligned to the Federal Decree 4340/2002 (Brasil 2002) – what came to be the legal anchor of the TdC of the TRBR – was put forward through a formal request by MPF¹³⁶. It claimed for the possibility – under legal conditions – to use natural resources relevant for the livelihoods of the populations living in and from the TRBR. At the end the sustainable use of Brazil nut – the most important product for their rural income and subsistence – was ‘legalized’ through the TdC.

“With the Term of Compromise the activity of extracting [and selling] Brazil nut from the TRBR was ‘legalized’ and this Term of Compromise was signed in 2011”¹³⁷. (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014)

With the establishment of the TRBR in 1979, the sustainable use of natural resources – conducted for over four generations by *quilombolas* living there – had turned ‘illegal’. Only per aforementioned request, building on the claim *quilombola* leaders helped push through the MPF, the traditional livelihood strategy of using Brazil nuts was ‘legally allowed’ by the TdC of the TRBR again, effective as of 2012. Still, Brazil nut gathering and marketing at the TRBR have since then been formally restricted by the TdC of the TRBR, particularly Clause 10 that has formalized restrictions on market access in and around this PA.

In the frame of the TdC in question, one of the main ‘explicit interests in an allowed use of natural resources’ of (ii) *quilombola* leaders – including the heads of ARQMO, AMOCREQ and CEQMO, who are at the same time Brazil nut buyers willing to maxi-

134 “Era a pior situação que eles poderiam estar. Eles estavam contra a lei em qualquer coisa que eles fizessem. E poderia entrar um gestor e falar: não, esse ano não vai ter acordo, porque isso aqui é uma reserva biológica e vocês nem deveriam estar ai dentro, quanto mais coletar.”

135 There is a high fluctuation rate in the TRBR: three ICMBio managers since 2011. This can also be an indicator for potential conflicts or at least for that managing the ICMBio Porto Trombetas unit is ‘not an easy task’, including due to the large area it covers (385.000 hectares).

136 The MPF has established itself as one of the main entities of the federal government that mediates among small-scale producers, traditional as well as overall rural populations at the one hand and public and private actors at the other hand, for protecting the rights of the former.

137 “Com o termo de compromisso se legalizou a atividade da retirada da castanha da Rebio e em 2011 se assinou formalmente esse Termo de Compromisso”.

mize purchased quantity while minimizing the price they pay for gatherers – is to raise their market power by limiting the number of (external) buyers competing with them in the TRBR. The formation of local oligopsonies as well as of cartels resulting from the TdC and its Clause 10 (see Chapters V.2.2.2 and V.2.2.3) is in line with ‘explicit interests in an allowed use of natural resources’ of *quilombola* leaders, especially if they are buyers themselves, which is often the case.

As opposed to key identified ‘explicit interests in an allowed use of natural resources’ of (iii) ‘other *quilombolas* besides leaders’ – including Brazil nut gatherers who were practically ‘excluded’ from the decision-making process for designing the TdC (see Chapter 2.2.2) and would rather have more competition among buyers (based on interviews with Brazil nut gatherers in the communities of Tapagem and CCPT; see Chapter V.2.3). In so being, they would not only have increased bargaining power as well as negotiation possibilities but would also *c.p.* most likely be paid higher prices at the farm-gate level.

Further, when it comes to the access to rural properties and the management of territories, 50% of the total area of 400.000 hectares of the TRBR overlaps with land claimed by *quilombola* communities who settled in the respective area long before the establishment of the TRBR in 1979 (Andrade 2011: 15 – see map in Annex IX). This calls for analyzing the underlying interests on land tenure access.

Underlying Interests of ICMBio and *Quilombolas* on Land Tenure Access

Overall preferences and related ‘underlying interests¹³⁸ on land tenure access’ are to be considered as well, since they build the foundations for the abovementioned intent from ICMBio (to limit the number of individuals who enter PAs they manage) as well as for *quilombolas*’ ‘explicit interests in an allowed use of natural resources’.

In the frame of the identification of these preferences and ‘underlying interests on land tenure access’, a representative of the upper management of ICMBio sets the stage:

“If you ask [the *quilombolas*] they will say that the solution is to title [their traditionally occupied collective lands]. All right, but while we [the Brazilian government] don’t title, what can be improved? I’m not sure if there is consensus [on the latter].”¹³⁹ (Interview with the coordinator of the socio-environmental action department at the headquarters of ICMBio, Brasília, 05.02.2015)

This statement captures the preference and related main ‘underlying interest on land tenure access’ of all *quilombolas* who are not yet endowed with a ‘land title’ to have

138 ‘Underlying interests in land tenure access’ are hereby referred to interests related to motives for accessing lands, given that the access to natural resources also depends on land tenure relations.

139 “Se você perguntar vão dizer que a solução é titular. Tudo bem, mas enquanto a gente não titula, o que que pode melhorar? Não sei se tem consenso.”

their collective property titled as TQs¹⁴⁰. The lack of consensus expressed by the representative of ICMBio above indicates the environmental entity's opposition to a change from the current tenure status of a PA of full environmental protection under the federal governments' property to a TQ in the frame of the devolution of the ownership to local (traditional) populations.

What is currently under discussion at ministerial level is a less 'radical' change in the tenure status of the TRBR, transforming it from a biological reserve to a 'reserve for sustainable development'¹⁴¹ (RDS, per acronyms in Portuguese). While respective decisions have not been made and related legal processes are not yet publically available, such an analysis would be beyond the scope of this research.

Building on the 'explicit interests in an allowed use of natural resources' elaborated above, overall preferences related to 'underlying interests in land tenure access' of *quilombolas* and ICMBio, including perspectives for dealing with conflicts over access to natural resources are analyzed, as follows. This analysis requires taking into account tenure issues while it draws upon alternative scenarios based on the 'status-quo' from the viewpoints of both *quilombolas* and ICMBio, which are simplified and displayed in the following table.

With reference to this tabular overview of scenarios, the status-quo is represented by the TdC of the TRBR in force (2015-2017), which has been renewed without any changes since it first entered into force in 2012, as explained below (based on Fieldwork diary, note taken in Oriximiná, 10.02.2014 as well as on Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b, 2015). From the point of view of *quilombolas* (overall), particularly of upstream Brazil nut chain actors – they perceive this legally grounded instrument managed by ICMBio as a 'formal permission' to have limited gathering and marketing of Brazil nut (see Chapter V.2.3). Whereas, from ICMBio's perspective, the TdC is a means for maintaining the tenure status of the TRBR as a PA of full environmental protection and alleviating the pressure for accessing natural resources by allowing the 'sustainable' use of Brazil nut for subsistence and commercialization under certain conditions. These conditions are contained in the TdC's clauses prescribing, *inter alia*, who is allowed to gather and buy Brazil nuts – Clauses 5 and 10, respectively – as well as the allowed period for harvesting and transporting Brazil nut – Clause 2 and 12, respectively – (based on Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b).

140 Underlying interests – pertaining to land tenure access – of *quilombolas* are grounded primarily in Article 68 of the Federal Constitution (Brasil 1988) promulgating *quilombolas*' land titling as TQs, even though it is difficult for them to get their collectively occupied lands titled (based on Andrade 2011). Despite such incipient possibilities for accessing affirmative action policies, other public policies except for 'Bolsa Verde' and 'Bolsa Família' (see Footnote 24) cannot be accessed in PAs of full environmental protection.

141 According to the Article 20 of the Federal Law 9.985, 18.07.2000 on SNUC, the PA category 'Reserve for Sustainable Development' is a natural area that shelters traditional populations, whose existence is based on sustainable systems of exploitation of natural resources, developed over generations and adapted to local ecological conditions and play a key role in protecting nature and maintaining biological diversity. As opposed to the biological reserve that falls under the pa category of full environmental protection, the RDS belongs to the second category, namely 'PAs of sustainable use' (Brasil 2000).

Table 9: Scenarios for Dealing with Natural Resource and Land Tenure Access Conflicts

Scenarios	'Status-quo'	'Realistic'	'Ideal'
Quilombolas' Perspective	Unchanged TdC of the TRBR in force for 2015-2017 (replicating exact same text of TdC for effective 2012-2014) allowing 'restricted' use of Brazil nut for subsistence and commercialization	Adapted TdC allowing sustainable use of natural resources – beyond Brazil nut – as subsistence and income source	Land Titling as 'Quilombola Territories' (TQs, per acronyms in Portuguese) per 'devolution' from ICMBio managed TRBR to collective territory owned by the respective traditional population
ICMBio's Perspective	Unchanged TdC of the TRBR in force for 2015-2017 (replicating exact same text of TdC effective for 2012-2014) allowing 'sustainable' use of Brazil nut for subsistence and commercialization	Unchanged TdC of the TRBR effective for 2018-2020 (replicating exact same text of TdC effective for 2012-2014)	'Untouchable' TRBR and reallocation of <i>quilombolas</i> elsewhere outside this PA

Source: Own elaboration

The maintenance of the 'status-quo' by ICMBio was camouflaged as an initiative of its Porto Trombetas unit to revisit and 'legitimize' the content of the TdC of the TRBR in force for 2012-2014 (Fieldwork diary, note taken in Oriximiná, 10.02.2014). Based on claims of *quilombolas* channeled through the MPF Santarém, local consultations were undertaken by ICMBio Porto Trombetas in a few selected *quilombola* communities concerning the sustainable use and commercialization of natural resources in the TRBR. Not only the access to and use of Brazil nut but also of other NTFP were raised by a few 'representatives' of *quilombolas* e.g. *copaíba* (*Copaifera spp.*) and *breu* (*Protium pallidum*). Even though the use of these natural resources in addition to Brazil nut had been considered to some extent among *quilombola* leaders and ICMBio Porto Trombetas, the TdC effective from 2012 was renewed (see Brasil 2015), without any of the discussed modifications for the period of 2015-2017 (based on Meeting on TdC of the TRBR among acting coordinator of ICMBio Porto Trombetas at that time, leaders of *quilombola* communities and representatives of the NGOs Kirwane as well as of IMAFLORA, Porto Trombetas, 09.12.2013).

The TdC of the TRBR effective for 2015-2017 remained unchanged, replicating the exact same words contained in its precursor TdC effective for 2012-2014 and representing the 'status-quo' (see Table 9) anchored in a legal framework for allowing 'sustainable' use of Brazil nut in this PA.

However, neither one of the involved parties is pleased with this status-quo. Before going into alternative scenarios to the current one, the above-described status-quo is complemented with a synthesizing characterization of the management of the TRBR area and its TdC. The TdC and the management of the TRBR area are, overall, char-

acterized by given ‘compromises’ between both involved parties: on the one hand, for gathering and marketing Brazil nut at the local and regional level; yet, on the other hand, while these ‘compromises’ are led by ICMBio, conflicts around the TdC have created a momentum for further pushing judicial procedures at national level through the ‘General Advocacy of the Union’ (AGU, per acronyms in Portuguese). Such procedures are based on claims via MPF for titling their collective land as a *TQ* around the TRBR but also elsewhere in Brazil, yet the description of this process of formalizing land tenure rights does not fall under the scope of this thesis. Still, it is to be stressed, that the TdC was maintained as a legally grounded instrument only because ICMBio was ‘forced’ by MPF’s recommendation to renew the TdC of the TRBR (see MPF 2014). However, it was kept unchanged by ICMBio – with reference to the TdC of the TRBR effective for 2012-2014.

In the realm of alternatives to the ‘status-quo’, a ‘realistic’ scenario that would be ‘acceptable’ for the *quilombolas* is an adapted TdC of the TRBR allowing further natural resource access and use, including small-scale fishing and hunting (of species not threatened by extinction) for subsistence as well as the sustainable access to and marketing of not only Brazil nut but also other NTFP, such as *copaíba* and *breu*.

Given both the acting coordinator and the coordinator have left ICMBio Porto Trombetas – the ones who conducted the aforementioned consultations in 2014 – the TdC effective for 2018-2020 is once more likely to be renewed without any previously considered modification while remaining ‘unchanged’ with reference to the TdC that was effective from 2012-2014 (see Table 9). This ‘realistic’ scenario from ICMBio’s viewpoint relates to the ‘unwillingness’ of its headquarters to allow for the respective extension of the natural resource access by the inhabitants of the PA at stake, indicating that any further use including of additional natural resources would not be ‘acceptable’ for ICMBio – particularly under the new strictly preservationist management including of the MMA in Brasília.

All in all, ICMBio’s ‘ideal scenario’ – in line with its ultimate ‘underlying interest in land tenure access’ – is to have an untouchable TRBR¹⁴² and the reallocation of *quilombolas* elsewhere outside this PA while paying symbolic indemnifications for housing *quilombolas* would thereby lose based on the Federal Decree 4340/2002 (Brasil 2002). Thereby, ‘untouchable’ refers to the interest of this environmental entity for total biodiversity preservation without any (sustainable) use of its natural resources – not even by such populations affected by respective PA establishment long after their settlement in these areas. This ‘ideal scenario’ for ICMBio – referred in the TdC document to as “definitive solution” (Term of Compromise of the Trombetas River Biological Reserve, Clause 40; Brasil 2012b: VIII) – for ‘overcoming conflicts on natural resources’ in this case of the TRBR is confirmed by ICMBio’s unit in Santarém with

142 Within ICMBio there are different positions, including for and against the TdC as a formal agreement as they referred to, in addition to respective positions related to resource and market access in PAs (including in the ones of full environmental protection): ICMBio’s new director (Roberto Vizentin) and the Minister of Environment (Isabella Teixeira) at that time want to keep such PAs in that format without allowing access to natural resources (through a TdC).

responsibility over its unit in Porto Trombetas (based on Interview with a staff member of ICMBio's middle management, Santarém, 28.05.2014).

Whereas *quilombolas* overall would ideally have all their collectively used lands titled as TQs (benefiting over 15 thousand '*quilombola* families'), which has been the case in only "2,41% out of all *quilombola* areas with open processes" for such land titling at INCRA at national level (MPF 2013: 3) – resulting mainly through their social organization and collective claims of their associations channeled through MPF throughout the country.

With reference to the 'ideal' scenario from *quilombolas*' perspective, their first preference would overall be to have a specific devolution of their traditionally occupied territories from the federal government to be owned by them – given the overlap of half of the TRBR's area, which is claimed by *quilombola* communities (see map in Annex IX). This corresponds to their ultimate 'underlying interest in land tenure access', which is also recognized by a representative of ICMBio's upper management in his statement, as follows. Thereby, he adds that it would be 'complicated' – him diplomatically expressing 'unrealistic' – to change the tenure status from 'biological reserve' (the TRBR as a case of PA of full environmental protection) to TQ.

"In reality, the *quilombolas* wanted something else, you know? They did not want a TdC but it was their only way [to overcome abovementioned conflicts]. They wanted more autonomy but being inside a conservation unit [in this case a PA of full environmental protection] it is complicated."¹⁴³ (Interview with the coordinator of the socio-environmental action department at the headquarters of ICMBio, Brasília, 05.02.2015)

He refers to the fact that *quilombolas* (who have not been 'entitled with a TQ') value the autonomy they would effectively acquire if entitled with their own collective property – TQ as an 'ideal' scenario for them (see Table 9). This is so, even though some *quilombolas* see the benefits of the 'control' for biodiversity conservation ensured by ICMBio's presence in the TRBR area. According to the interviewed coordinator of ICMBio's department for socio-environmental actions – who reports directly to its president – the change in land tenure status of the TRBR to a TQ represents the worst-case scenario in terms of biodiversity management for ICMBio. Ideally, per its overall preference, ICMBio would rather have no human interference in any PA of full environmental protection including 'biological reserves' (to remain 'untouchable' – as is the case in some regions of Brazil, yet not in the TRBR – see Table 9) –, which would represent the worst-case scenario for the *quilombola* communities in the reserve at stake.

However, land tenure access issues are not the focus herein, and related 'underlying interests in land tenure access' (this subsection within Chapter V.2.1) are only analyzed as they serve to better understand explicit interests from ICMBio and *quilombolas* with regard to natural resources access and also to markets (previous subsection within Chapter V.2.1).

143 "Na verdade os quilombolas queriam uma outra coisa, né? Eles não queriam um termo de compromisso, mas foi a maneira que deu. Eles queriam mais autonomia, mas como está dentro da unidade de conservação fica complicado."

Still, at the end, without intending to polarize yet only stressing the importance to deal with persisting conflicts over natural resources and land tenure access: if no effective and constructive mutual approximation takes place so as to accommodate ‘explicit’ and ‘underlying interests in land tenure access’ of both parties – potentially under a ‘realistic’ scenario with a locally ‘democratically’ adapted TdC (see Chapter V.2.4.2) –, the ‘ideal’ for one can represent the ‘worst-case scenario’ for the other.

Finally, given the previously described intentions and (explicit and underlying) interests of both parties of the TdC of the TRBR concerning mainly the access to natural resources in such PAs, the next chapter will concentrate on the role this formal institution and its formalization process play in the access to markets by upstream value chain actors.

2.2 Formalization of Resources and Markets Access Limitations per Term of Compromise

In order to thoroughly analyze the role of the TdC in the access to natural resources and markets of upstream value chain actors, the TdC as a formal institution and the process of formalization from certain social norms to rules formalized through this legally grounded instrument are assessed. This analysis is conducted against the background of the transition from informal institutions to the formal institution of the TdC of the TRBR and, particularly, related restrictions upon natural resource as well as market access by such actors.

Prior to the TdC, there were informal institutional arrangements (detailed in Chapter V.2.2.1): the so-called ‘Brazil nut Project’ as a predecessor of the *quilombola* cooperative CEQMO in terms of a collective marketing pursuit and the ‘Brazil nut Agreement’ as a predecessor of the TdC of the TRBR for regulating the access in question. While they were initially induced by the NGO CPI-SP and ICMBio, these arrangements of informal institutions also played a role in restricting the entrance of external buyers to procure Brazil nut in the TRBR area. However, it was Clause 10 of the TdC that has enabled legally-based exclusion of external buyers while precluding them from purchasing Brazil nut in communities in this PA along the Trombetas River in Oriximiná (see Chapters V.2.2.2 and V.2.2.3).

Both the aforementioned informal institutional arrangements are based solely on informal verbal agreements and social norms. In addition, leaders of the ‘Brazil nut Project’ pledged for limiting not only the commercialization to external buyers but also to local ones other than themselves (based on Interview with the former coordinator of the Area Association ‘Mãe Domingas’ and board member of ARQMO, Tapagem, 09.06.2014). These coordinators of *quilombola* associations – who have been purchasing Brazil nut since the beginning of the ‘Brazil nut Project’ in 2001 – have since then been calling themselves ‘collective buyers’ when making reference to this label in their discourse. In fact, a considerable portion of ‘*quilombola* extractivists’ complain about the limitation of the access to natural resources and markets (based on Fieldwork diary, note taken at the community of Tapagem, 01.06.2014). They mention the establishment of the TRBR in 1979 as a determinant while some state the TdC and a few the lobbying of the local leaders – from CEQMO and associations who are often

Brazil nut buyers (and not gatherers as the majority) – for limiting the entrance of external buyers to purchase Brazil nut there.

Beyond the legal basis of the TRBR as a PA of full environmental protection (Federal Decree 84018/1979; Brasil 1979), the history of *quilombolas* – of having had to flee from ‘slavery structures’¹⁴⁴ and settle in remote forest areas hiding from or resisting against ‘exploitative actors’ – further limits to some extent the entrance of external actors into the area. This historically shaped restricted access to *quilombola* communities is grounded in internalized informal social norms stemming from mistrust towards external actors to whom they are not acquainted, which is entailed by oppression through slavery and persisting racism (see Figure 9). O’Dwyer (2011) refers to a defensive isolation as a long-term strategy to consciously select their relationships with ‘agents from outside’ while protecting the territories where *quilombolas* have settled at the end of the 19th century.

Anyone who wants to visit and/ or collaborate with *quilombola* communities from Oriximiná, has to ask their local leaders first, whereby such access to communities at the TRBR area require ICMBio’s authorization in addition. In the case of Brazil nut trade relations, there has to be some kind of collaboration between them and the mill owners in order for their intermediary buyers to be able – “legitimized” (Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015) – to purchase Brazil nut at the *quilombola* communities. Along the Trombetas river, next to the TRBR there are two TQs, which are property of respective *quilombolas* – yet beyond that, in other territories they have long been living in and from, they are strict in requiring outsiders to ask for permission to enter these areas (Fieldwork diary, note taken at the ‘Tabuleiro’ base of ICMBio by Porto Trombetas, 13.03.2013). This also applies to *quilombola* communities along the Erepecuru River (Fieldwork diary, note taken in the community of Cachoeira Pancada, 15.11.2012).

If neither the TRBR nor its TdC existed, the processing mills – particularly the owner of Mundial Exportadora Ltda., who has built up trust with key local leaders – would still have local buyers from the *quilombola* communities themselves procuring Brazil nut for him.

“[...] I don’t think that if there was no TRBR basis [from ICMBio], Chocron [head of Mundial Exportadora Ltda.] would send his intermediary buyers from Óbidos to buy Brazil nut at CCPT. [Instead] he would continue to have an agreement with Ivanildo [largest local buyer and *quilombola* leader], as he is local, so he can organize the supply and all [...].”¹⁴⁵ (Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015)

However, the related informal control of the accessibility to such communities is not legally grounded, as compared to the TdC of the TRBR and its respective limitation per federal decree, which was exogenously determined and is constantly controlled

144 They fled mainly from large-scale farms in Oriximiná, Óbidos, Santarém and Belém to settle along the Trombetas and Erepecuru rivers (see Acevedo & Castro 1998).

145 “[...] não acho que se não tivesse a base da Rebio, o Chocron ia mandar o comprador próprio dele lá de Óbidos bater em Cachoeira Porteira. Ele ia continuar a fazer acordo com o Ivanildo, porque é, o cara é local, o cara, enfim, consegue organizar a entrega e tal [...].”

and enforced per environmental monitoring by ICMBio in the area at stake (Fieldwork diary, note taken at the ‘Tabuleiro’ base of ICMBio by Porto Trombetas, 13.03.2013). With reference to the main research question on determinants of resource (Brazil nut) and access of upstream chain actors, the TdC is the only formal institution ‘in use’¹⁴⁶ limiting the extraction and marketing of Brazil nut in the TRBR (see Figure 6). To put the TdC into a broader perspective, it is to state that, as formal institution it serves as a legal basis for regulating resource access in five other PAs throughout Brazil. Yet, in the frame of the main and sub-research questions, the following is to be zoomed in at next: How does the TdC lead to a formalization of these ‘already existing’ informal institutions while enabling – through its Clause 10 – the legally-based exclusion of external buyers from directly buying Brazil nut at the TRBR area?

2.2.1 Informal Institutional Arrangements Prior to the Term of Compromise

The ‘Brazil nut Project’ (*Projeto da Castanha*, in Portuguese) and the ‘Brazil nut Agreement’ (*Acordo da Castanha*, in Portuguese) are the institutional arrangements focused upon in this chapter, given their direct implications on the Brazil nut and market access by upstream value chain actors. Besides, there are additional decrees pertaining to the TRBR as a federal PA, which include the decree for establishing the TRBR in 1979 (Federal Decree 84018/1979; Brasil 1979), as well as its management plan building up on Article 12 of the Federal Decree 4.340/2002 (see Brasil 2002), and, overall, the Federal Law 9.985, 18.07.2000 on SNUC (Brasil 2000).

Before going into the informal institutional arrangements at stake, a brief contextualization on the management of the territory of the TRBR is offered, where related disputes over natural resource use and marketing take place. The TRBR has an area of 385.000 hectares and there is only one ICMBio coordinator and two environmental analysts managing this large PA. It is difficult to manage the entire territory while striving to protect nature and having to consider that *quilombolas* have been living in and from forest for over a century there.

With emerging conflicts among ICMBio and *quilombolas* on the access to natural resources and related market access, both parties came to a ‘local agreement’ to allow sustainable extraction and commercialization of Brazil nut under certain conditions. Based on social norms put forward by ‘*quilombola* leaders’ – and not ‘the more numerous rest of *quilombolas*’ including Brazil nut gatherers – crystallized in an informal yet locally binding agreement, the so-called ‘Brazil nut Agreement’, established in 2005. Prior to going into the details of this Agreement as a predecessor of the TdC, the ‘Brazil nut Project’ – induced and funded through an external actor, yet further promoted by local leaders – is to be analyzed at next. Thereby, it is to be considered that as ‘*quilombola* leaders’ are often Brazil nut buyers themselves, they have their own interests, including in limiting the competition with external buyers purchasing in and around the TRBR.

¹⁴⁶ Institution ‘in use’ being an institution applied in a given context (detailed in Chapter II.2).

‘Brazil nut Project’ as an Informal Institutional Arrangement

Incentivized by CPI-SP – a Brazilian NGO that raised international funds for the so-called ‘Brazil nut Project’ with the perspective of forming a cooperative (CEQMO) – ‘*quilombola* leaders’ have long introduced internal norms in ‘their communities’ for not selling to external buyers (based on informal conversations with Brazil nut extractivists and a *quilombola* leader captured in Fieldwork diary, note taken in Oriximiná, 07.12.2013). ‘*Quilombola* leaders’ involved in the procurement of Brazil nuts initiated the respective ‘mobilization of upstream chain actors’¹⁴⁷ in 2000 – who later became the heads of the ‘Brazil nut Project’ in 2001 and of CEQMO in 2006. While promoting collective marketing of Brazil nuts such buyers claimed to be engaged for the benefits of the ‘Brazil nut Project’ as precursor of CEQMO and not of other individual buyers (including local ones), even though some of them profited individually from buying and selling Brazil nuts themselves.

Beyond social organization, the so-called ‘productive organization’¹⁴⁸ (*organização produtiva*, in Portuguese) at *quilombola* communities under the lead of ARQMO – assisted by CPI-SP – started, in preparation to the ‘Brazil nut Project’ and was pioneered by CEQMO’s coordinator as well as by one of the eldest *quilombola* leaders.

“And then, people thought that it was the association [ARQMO in the process of establishing the cooperative CEQMO] that had prohibited these guys to enter; it didn’t, we didn’t, we made a ‘pact’ [between Brazil nut gatherers and buyers from *quilombola* communities under the lead of ARQMO], you know, and within this ‘pact’ we started to organize ourselves”¹⁴⁹. (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current buyer of the community of Tapagem, Tapagem, 07.02.2014)

With ‘pact’, he refers to the, unilaterally promoted limitation – in fact by local *quilombola* buyers – of individually selling to external buyers for the sake of the consolidation of collective marketing through the ‘Brazil nut Project’. Such lobbying by the *quilombolas* at stake (see Chapter V.1.7), in their roles of leaders and buyers (detailed in Chapter V.3), prepared the ground for the establishment of the cooperative CEQMO.

“We could not take [Brazil nut] to sell [it in town], because we would disrespect the cooperative [CEQMO]. In 2000 [before the ‘Brazil nut Project’], there was a year that everyone was on his own and a buyer from outside came and paid a price that was a bit better. But his measuring ‘thing’ [for measuring the Brazil nut supply of gather-

147 This mobilization is based on a process called *conscientização* (in Portuguese), initiated by *quilombola* leaders – who are Brazil nut buyers at the same time – for convincing other *quilombolas* of collective marketing through the ‘Brazil nut Project’ and the cooperative ‘CEQMO’.

148 ‘Productive organization’ can be untangled into social and economic organization. Yet, it is a widely used term in Brazil – including by association and cooperative leaders who incorporated the discourse of development practitioners and related ministries – for characterizing not only the organization of production but also required social organization as well as the one of transport, logistics within the supply chain.

149 “E aí, o pessoal ficou pensando que a associação tinha proibido esses companheiros de entrar; não proibiu, a gente não, a gente fez um pacto, né, e dentro desse pacto a gente começou a se organizar”.

ers] was 2 to 3 liters bigger [than the standard measuring item]; but even CEQMO had a 55 liters measuring ‘thing’ [5 liters larger than the standard measuring item, which they used more often]. In the past, it [Brazil nut] was sold to whom paid a better price.”¹⁵⁰ (Interview with a Brazil nut gatherer at the community of Cachoeira Pancada, 19.01.2014)

While this interviewee refers to the ‘awareness raising’ (*conscientização*, in Portuguese – termed by CPI-SP and applied by *quilombola* leaders in the aforementioned mobilization process) of Brazil nut gatherers towards collective marketing promoted by CEQMO, he further reveals that even this *quilombola* cooperative happened to use larger items to measure Brazil nuts supplied by gatherers. This is contradicting, as it was one of the main arguments when leaders (buyers) from the cooperative lobbied for gatherers not to sell Brazil nuts to external buyers. Thereby, he refers to how it has changed, as before the ‘Brazil nut Project’ – and the ‘Brazil nut Agreement’ as pre-deciding informal institutional arrangement of the formal institution TdC, to be presented at next – gatherers could sell Brazil nut to whom paid higher prices at the farm-gate level. However, Chapter V.1 – on *aviamento* as a debt-peonage system representing an informal institution that is present throughout the Brazilian Amazon – shows that over generations, gatherers have been submitted to long-term dependence from buyers who provide them with advanced payments and have their suppliers pay them back with Brazil nuts at low prices.

The ‘Brazil nut Agreement’ as an Informal Institutional Arrangement

As opposed to the ‘Brazil nut Project’ – driven by civil society organizations –, the ‘Brazil nut Agreement’ has had an environmental government entity (by then IBAMA¹⁵¹) at the front of its design and decision making process since the late 1990s. However, similarly to the ‘Brazil nut Project’, the ‘Brazil nut Agreement’ was also based on an informal institutional arrangement that functioned as a ‘not legally yet locally binding barrier’ limiting the procurement of Brazil nut by external buyers within the TRBR.

The ‘Brazil nut Agreement’ itself is an informal institutional arrangement established among IBAMA Porto Trombetas – without formalization by its headquarters in Brasília – and local *quilombola* organizations including ARQMO and AMOCREQ in 2005. This ‘Agreement’ was formalized six years later through the legally grounded TdC published by ICMBio’s headquarters in the DOU (Brasil 2011). Yet, related discussions on the access to Brazil nut and its commercialization started through meetings involving the leaders of both parties at the local level as early as 2002.

In addition, the ‘Brazil nut Agreement’ contained first written monitoring mechanisms represented by registration cards for upstream Brazil nut value chain actors issued by IBAMA Porto Trombetas to ensure ‘controlled sustainable local extraction’ and

150 “Não podia levar para vender porque ia desrespeitar a CEQMO. Em 2000, teve um ano era cada um por si e veio um atravessador que deu um preço um pouco melhor. Mas a coisa de medida dele era 2 a 3 litros maior; mas até na CEQMO tinha uma coisa de medida de 55 litros. Antigamente vendia para quem dava um preço melhor.”

151 IBAMA’s auspices for ‘command and control’ over national PAs was taken over by ICMBio – with its foundation by MMA on 28th August, 2007 – as the responsible branch of MMA for managing federal PAs of full environmental protection.

marketing (related registration and monitoring systems are detailed in the following two subsections within Chapter V.2.2.1). This unilaterally as well as exogenously established control system – beyond respective intra- and inter-community social control – corroborates with the formalization of these social norms in the frame of the TdC (Fieldwork diary, note taken in the community of Tapagem, 11.06.2014).

Another written monitoring mechanism that came with the establishment of the ‘Brazil nut Agreement’ was a list written by the leaders of *quilombola* communities containing the names of both gatherers and buyers.

“Each community made a list of Brazil nut gatherers and buyers and handed it in to IBAMA in 2005”¹⁵². (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014)

This list of Brazil nut value chain actors – mostly internal gatherers and buyers – was submitted to IBAMA Porto Trombetas for its coordinator (currently, ICMBio’s regional coordinator for the Lower Amazon basin and Santarém) to issue a locally binding informal authorization.

The ‘Brazil nut Agreement’ ‘allowed’ *quilombolas* residing in the area of the TRBR to gather, sell and buy, and ‘external acquaintance’ authorized by both parties to enter the TRBR to do the same provided the authorization of ‘internal *quilombolas*’.

“The ‘Brazil nut Agreement’ was not a ‘Term of compromise’, it was not legally binding, but it was an agreement [...]. The [*quilombola*] communities and associations signed it in agreement. And there were some rules [hereby understood as social norms], it was a basic embryo of the ‘Term of compromise’.”¹⁵³ (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014)

The abovementioned Agreement can be seen as an ‘informal yet at municipality level binding’ precursor of the TdC, containing first norms for the extraction and marketing of Brazil nut operationalized by IBAMA (later taken over by ICMBio).

With this informal instrument, ICMBio Porto Trombetas aimed at providing a framework of norms for the sustainable use of Brazil nut, given its inevitable extraction by gatherers. It contained a registration and a monitoring system, which laid the basis for the control and sanction system of the TdC as a legally grounded instrument in the frame of PAs of full environmental protection with long-term human presence, under the management responsibility of ICMBio. The registration and monitoring systems referred to herein are both aligned to the overall goal of full environmental protection of the TRBR – regulating the resource access with (unintended) limitations upon market access –, which is the focus of the aforementioned ‘Agreement’ as well as of the TdC.

152 “Cada comunidade fez uma lista de castanheiros e compradores e entregaram para o IBAMA em 2005”.

153 “O Acordo da Castanha não era um termo de compromisso, não era nada legalizado, mas era um acordo [...]. As comunidades e associações assinaram isso em acordo. E tinha umas regras, era um embrião básico do termo de compromisso.”

The Registration System of the TRBR

The registration system functions as follows. For the, by ICMBio called ‘traditionals’ (*tradicionalis* or *quilombola filho/a da terra*, in Portuguese) residing in the area of the TRBR, the ‘Term of Accession’¹⁵⁴ – later formalized per TdC – does not have an expiration date. Yet, their registration cards representing buyer and gatherer permits (*papeletas de controle*, in Portuguese) must be renewed annually. They contain a person’s name, as well as data on the community of origin, quantity and date gathered from each Brazil nut stand. Additionally, in the case of buyers, quantity bought and transported for selling as well as date of purchase and from whom they bought it.

For the so-called ‘non-traditionals’ – mostly men who ‘marry’ a *quilombola* woman who resides in the area of the TRBR (*quilombola filha da terra*, in Portuguese) – there is a ‘Term of Responsibility’ (*Termo de Responsabilidade*, in Portuguese), formalized later per TdC. This term has a validity of one year, given high ‘divorce-rates’ and is signed by ICMBio (formerly done by IBAMA) and the ‘traditional’ who is responsible for the ‘non-traditional’ – by March 2013, there were only 20 such cases, according to ICMBio Porto Trombetas (Interview with its environmental analyst who showed archives from ICMBio Porto Trombetas, Oriximiná, 18.06.2013). Having resided in the area of the TRBR – long before the TRBR was created in 1979 –, and having gathered Brazil nut over generations play a role in the village coordinator’s ‘consent’ on someone to be ‘traditional’, but the community itself decides after the principle of self-identification¹⁵⁵ (based on ILO 1989).

The Monitoring System of the TRBR

Building up on the aforementioned registration of upstream value chain actors, the monitoring system that functioned as a precursor of the control and sanction system formalized per TdC of the TRBR is hereby presented (see Chapter V.2.2.2). This monitoring system compelled Brazil nut gatherers and buyers to hand in their registration cards to the so-called coordinators of each community who submitted them for annual renewal at ICMBio Porto Trombetas. Boats with loads of natural resources – whereby only sustainable extraction of Brazil nut was informally allowed per ‘Agreement’ and other resources formally as well as informally prohibited – have been controlled by MMA¹⁵⁶ (by IBAMA and later by ICMBio) in at least one of the three ICMBio bases at the Trombetas riverside since 2005. This monitoring of the use of natural resources

154 The Term of Accession (*Termo de Adesão*, in Portuguese) is a document issued by ICMBio, which contains gatherers’ identification (ID, per ‘universal’ acronym) as well as the social security number and signature confirming that: they (i) ‘identify’ themselves as ‘traditional Brazil nut gatherer’; (ii) depend on Brazil nut extraction from the TRBR for their family’s ‘subsistence’; and (iii) ‘voluntarily accept to fulfill their duties agreed upon under the TdC for regulating the use of Brazil nut at the TRBR and, otherwise being sanctioned as determined by the TdC and legislation’ (Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b).

155 The principle of self-identification is a decisive criterion based on the right to “self-identification as indigenous or tribal” first recognized by ILO Convention 169 (ILO 1989: Article 1), ratified in Brazil per Federal Legislative Decree 143 in 20.06.2002.

156 In terms of overall management of the TRBR, with its establishment in 1979, this PA was managed by IBDF at first, followed by IBAMA and since then by ICMBio.

was further formalized through the TdC beyond the usual stock taking of the quantity of Brazil nut and the date of transport to urban markets (see Chapter V.2.2.2). 15th January – 31st May is the allowed Brazil nut harvest and transport period, formally agreed between ARQMO and ICMBio for all *quilombola* communities (see Term of Compromise of the Trombetas River Biological Reserve, Clause 2; Brasil 2012b: III). Thereby, as harvest of the community of CCPT lags behind by a month there was a verbal agreement in 2013 between AMOCREQ and ICMBio for extending accordingly¹⁵⁷.

Both the registration and monitoring systems established by IBAMA and later by ICMBio – which claimed to have liberalized the access to Brazil nut per ‘Brazil nut Agreement’ – have instead paved the way for formally regulating the access to natural resources.

‘Brazil nut Agreement’ and TdC Claimed as ‘Liberalization’ of Brazil nut Access by ICMBio?

The former coordination at ICMBio Porto Trombetas initiated the design of the ‘Brazil nut Agreement’, which was later formalized through the establishment of the TdC of the TRBR in 2012. This process took ten years, not only due to local discussions but also due to the back and forth sending of drafts of the TdC from ICMBio Porto Trombetas to Brasília for revision by ICMBio’s headquarters regarding the outputs from local discussions on natural resource use within the TRBR. In this regard, divergent perceptions from different actors affected by the TdC and its Clause 10 and their arguments in favor or against this legally grounded instrument are presented in Chapter V.2.3.

However, even within ICMBio, the term ‘liberalization of Brazil nut’ – “*liberalização da castanha*” (in Portuguese) as voiced by ICMBio’s regional coordinator for the Lower Amazon basin and Santarém – exemplify how distinct these perceptions might be. He refers to the ‘liberalization of Brazil nut’ through the ‘Brazil nut Agreement’, which was not welcomed by ICMBio’s headquarters in Brasília (based on Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014). Its headquarters will was to maintain the ‘untouchable character’ of a PA of full environmental protection and avoid to formally ‘liberalizing the use of Brazil nut’ through the TdC of the TRBR. The TdC of the TRBR would most probably not have been renewed (for the period from 2015-2017) if it wasn’t for the request channeled through the MPF Santarém at the end of 2014, which led to the late renewal of TdC shortly before the Christmas break of 2014 (see MPF 2014).

Yet, the ‘liberalization of Brazil nut’ in question expressed by ICMBio at its subnational regional level of governance did neither take place with the ‘Brazil nut Agreement’ nor with the TdC. What he meant, in fact, with these terms was the liberalization of the use of such natural resource taking the point of reference of when it got prohibited

157 In 2016, despite the period formally agreed upon per TdC of the TRBR, it was verbally changed to February 1 – May 31 for all *quilombola* communities and 1st March – 30th June for CCPT. The ‘verbally allowed’ periods can vary from one year to the other, given biological variation of production of Brazil nut trees, and they are announced by ICMBio Porto Trombetas at the beginning of every year.

through the establishment of the TRBR in 1979. But if the conditions for accessing natural resources when neither IBDF and IBAMA nor ICMBio (all entities under MMA) existed are taken as reference, then ‘liberalized use of Brazil nut’ (and other natural resources) does not apply to the conditions of that ‘unrestricted time’. It only applies, if at all, in relation to the situation shortly before 1979 – given limitations imposed on gathering and buying Brazil nut due to irregularly claimed properties by so-called ‘landlords’ (see Chapter V.1.2). Yet, the ‘liberalization’ at stake, in fact, does not apply in relation to the natural resource and market access conditions finally decided upon in 2005 by IBAMA through the informal institutional arrangement per ‘Brazil nut Agreement’ formalized per TdC in 2012. Instead of the respectively claimed ‘liberalization of Brazil nut’, per national legislation in the frame of SNUC enacted per Federal Law 9.985 (Brasil 2000) both the TRBR established by IBDF and further ICMBio’s legally grounded TdC have overall limited the access to Brazil nut and – per its Clause 10 – to its markets in the TRBR area, Oriximiná, Pará.

2.2.2 Formal Institution Limiting Resource and Market Access: The Term of Compromise

Prior to zooming into the TdC as a legally grounded instrument created and applied by the branches of MMA responsible for managing federal PAs (IBAMA followed by ICMBio) for dealing with conflicts over the access to and use of natural resources with (traditional) populations residing in these areas, background information on the emergence of PAs at a global level is provided.

Overview on the Pathway Towards Regulating Natural Resources and Markets Access

Upfront, a PA is defined as follows:

“A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”. (Borrini-Feyerabend *et al.* 2013: 1)

Building up on the work of the International Union for Conservation of Nature and Natural Resources (IUCN – founded in 1948), PAs have been broadly promoted as one of the main strategies for conserving biodiversity in the last three decades and more prominently since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992¹⁵⁸ and the establishment of the Convention on Biological Diversity (CBD) as well as the adoption of a system for the management of PA of different categories (see IUCN 2004: 1-9)¹⁵⁹. Biological Reserves – such as the TRBR – belong to the category of full environmental protection (Brasil 2000), in line with the global classification of “strict protection” (IUCN 2004: 10). Given human

158 Two other conventions had agreements set at the UNCED (also called ‘Earth Summit’) in preparation for the parties to subsequently sign them: The United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC).

159 For further details on PAs as a measure to preserve nature and natural resources worldwide, see IUCN (1994), Borrini-Feyerabend (1996), Borrini-Feyerabend *et al.* (2004), Dudley (2008), Borrini-Feyerabend *et al.* (2013).

settlements established long before these PAs – including traditional populations who have been living in and from natural resources – it has often come to conflicts among these populations and IBAMA as well as ICMBio, more recently. In the pursuit of creating means for dealing with such conflicts, IBAMA, and later ICMBio, came up with the legally grounded instrument of TdCs.

The legal groundwork for TdCs was established by the Federal Decree 4340/2002 (Brasil 2002):

“Article 39 – While not resettled, the conditions for traditional populations to stay in a Protected Area of full Environmental Protection will be regulated per term of comprise, negotiated among the executing entity and the populations in consultation with the Council of the Protected Area”¹⁶⁰. (Brasil 2002: IX)

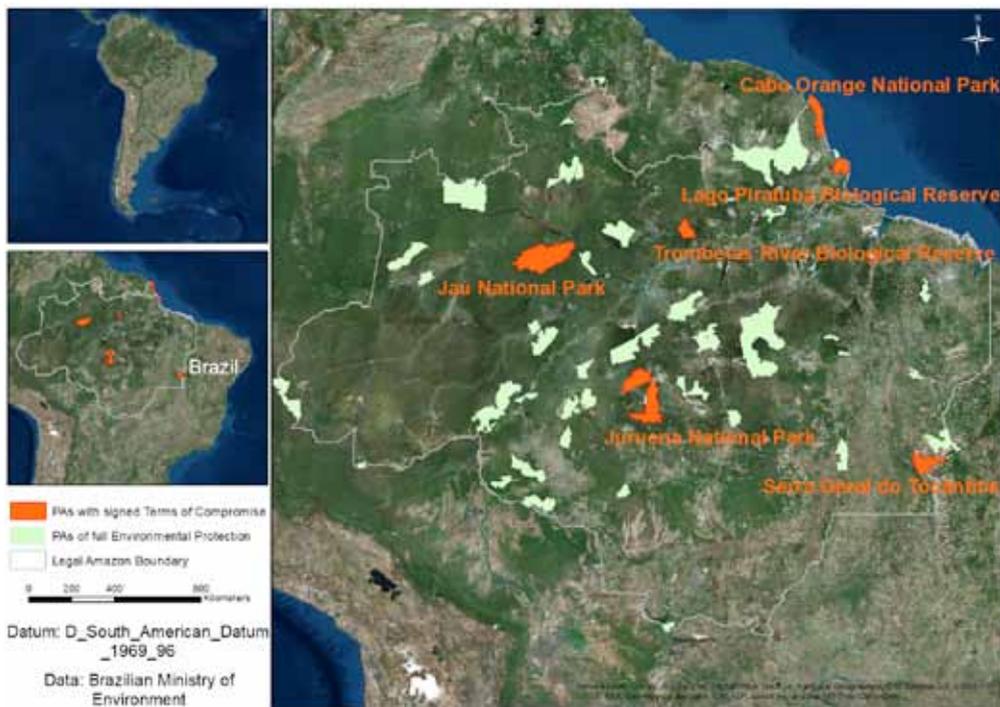
TdCs have the overall objective of conserving biodiversity in federal PAs of full environmental protection with long-term human presence, while allowing sustainable management of natural resources in the framework of formal rules for regulating their use. It is a legally grounded instrument that surged from the need for overcoming conflicts on access to natural resources among IBAMA (and later ICMBio) and extractivists in such PAs under the management responsibility of ICMBio. Extractivists include traditional populations – e.g. *quilombolas* and indigenous peoples (Almeida 2011: 55-59) – who have long been living in the territories related to such disputes over natural resources from forests and waters (e.g. in protected coastal and marine areas¹⁶¹) throughout Brazil, particularly in the Amazon.

Until January 2015, there were six TdCs signed in Brazil, including the TdC of the TRBR and other PAs of full environmental protection within different states in the North, Northeast and Central-Eastern regions of Brazil – as depicted in Figure 10.

160 “Art. 39 – Enquanto não forem reassentadas, as condições de permanência das populações tradicionais em Unidade de Conservação de Proteção Integral serão reguladas por termo de compromisso, negociado entre o órgão executor e as populações, ouvido o Conselho das Unidades de Conservação”.

161 TdCs have not yet been applied at marine areas declared by ICMBio as federal PAs involving fisheries along Brazil’s coast (based on Interview with the vice-president of CNS, Belém, 26.05.2014).

Figure 10: Map – Protected Areas (PAs) with Terms of Compromise in the Legal Amazon¹⁶², Brazil



Source: Own elaboration

Whilst five of the six PAs with signed TdCs – Trombetas River Biological Reserve (Pará), Jaú National Park (Amazonas), Cabo Orange National Park (Amapá), Lago Piratuba Biological Reserve (Amapá), Juruena National Park (Mato Grosso) – pertain to PAs that are fully located in the Legal Amazon (*Amazônia Legal*, in Portuguese) and are part of the MMA Program ‘Protected Areas of the Amazon’ (ARPA, per acronyms in Portuguese). With the only exception being the TdC of the Serra Geral do Tocantins Ecological Station located in the states of Tocantins and Bahia – whereby, most surface of this PA is located in the Legal Amazon –, this strong correlation of TdC established in those PAs comprised by ARPA shows TdCs have not been adopted broadly as suggested per Federal Decree 4340/2002 (Brasil 2002). This combined with the fact that there are numerous other PAs of full environmental protection in the Brazilian Amazon without a TdC indicates ICMBio’s overall reluctance in applying TdCs; albeit well-known conflict over natural resource access and use in other PAs throughout the country.

Instead, TdCs have overall been implemented within ARPA – the largest program for conserving PAs worldwide –, which is run by GIZ and other partners who consider

¹⁶² The Legal Amazon comprises 9 states in Brazil and is represented in the map above (see Figure 10).

environmental conservation amongst other social factors important for sustainably managing these areas in the long-term. In territories facing conflicts among ICMBio and local associations for accessing natural resources, this holistic perspective of such partners also contributes to the elaboration of instruments for striving to strike a balance between fully protecting the biodiversity of these areas and livelihood strategies. One such legally grounded mechanism for overcoming the resource conflicts at stake is the TdC, as per intention officially claimed by ICMBio – yet is this original purpose fulfilled? In order to reply to this background question, it is to be turned to how the TdC of the TRBR surged at next.

The Emergence of the TdC of the TRBR

In the case of the TRBR, the TdC stems from an obliging approach of ICMBio Porto Trombetas based on MPF's claim for trying to alleviate tensions concerning land tenure (see Chapter V.2.1) and overcoming natural resource use conflicts with *quilombolas*, marked by sanctions perceived as too strict by the latter given their low-impact livelihood strategies.

The objective of the TdC of the TRBR is written by ICMBio in its official document as follows:

“The present Term of Compromise [of the TRBR] aims at establishing rules for gathering and marketing Brazil nut within the boundaries of the Trombetas River Biological Reserve [...] by the communities that live there [...] and that have Brazil nut as an important income and subsistence source, with the goal of ensuring the dignified survival of the communities, without a loss in conservation of natural resources protected by this Conservation Unit [PA].”¹⁶³ (Term of Compromise of the Trombetas River Biological Reserve, Clause 1; Brasil 2012b: II

The TdC of the TRBR was signed in December 2011 and entered into force in January 2012 with a validity of three years while it was renewed with the exact same content (see Table 9) in January 2015 and will expire in December 2017. By then, ICMBio wants to have a “definitive solution” (Term of Compromise of the Trombetas River Biological Reserve, Clause 40; Brasil 2012b: VIII) for the conflicts over natural resources in question.

The pathway until the TdC of the TRBR entered into force was marked by disputes over the use of Brazil nut among IBAMA (and, as of 2007, ICMBio) and *quilombola* associations (ARQMO and AMOCREQ) in the PA at stake. Issued in 2002, the Federal Decree 4340/2002 (Brasil 2002), as a formal institution at the national level, provided first legal foundations for discussions over the highly contested management of natural resources in PAs of full environmental protection among the government (IBAMA and later ICMBio) and representatives of local populations (e.g. *quilombola*, indigenous) throughout the country. This was the time when discussions for the ‘Brazil

163 “O presente Termo de Compromisso visa estabelecer regras para a coleta e a comercialização da castanha-do-pará [castanha-do-brasil] dentro dos limites da Reserva Biológica do Rio Trombetas [...] pelas comunidades que a habitam [...] e que tem nela importante fonte de renda e subsistência, a fim de assegurar a sobrevivência digna das comunidades, sem prejuízo da conservação dos recursos naturais protegidos pela Unidade de Conservação.”

nut Agreement’ started, which was established for the TRBR area with the aforementioned registration and monitoring system by the IBAMA unit of Porto Trombetas three years later in 2005. It contained endogenously established social norms as scaffold for the exogenously determined TdC of the TRBR as a legally grounded mechanism. In total it took 10 years to get from an informal institutional arrangement (‘Brazil nut Agreement’) to a formal institution – the TdC of the TRBR published in the DOU in 2012 (Term of Compromise of the Trombetas River Biological Reserve; Brasil 2012b).

During this time span, and even before, similar social norms have been promoted by *quilombola* leaders who lobbied for that Brazil nut gatherers only sell to them¹⁶⁴ and/or CEQMO (building on the ‘Brazil nut Project’) and not to external buyers. Both these informal institutional ‘arrangements’ at the local level – the former (‘Brazil nut Agreement’) being based on norms established among ICMBio and *quilombola* associations and the latter (‘Brazil nut Project’) on norms for protecting local Brazil nut trade among (leaders of) *quilombolas* themselves – were set prior to the TdC (see respective subsections within Chapter V.2.2.1). They both informally allowed for limiting the entrance of external buyers to *quilombola* communities at the TRBR.

Yet, this limitation of the access to natural resources and markets was reinforced with its formalization per TdC of the TRBR, as a legally grounded instrument established at the national level by ICMBio’s headquarters and effective as of 2012. ICMBio’s regional coordinator for the Lower Amazon basin and Santarém confirms this process of formalization:

“The Brazil nut Agreement was not a Term of Compromise, there was nothing with a legal basis, but it was an informal agreement signed by [*quilombola*] communities and associations. And there were rules, it was an embryo of the Term of Compromise, you know? For it to be actually signed in legal terms in 2011 [...] we chose this path, [...], going through informal things [social norms], as if it was a little ladder, for then to formalize it in the Term of Compromise.”¹⁶⁵ (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014)

In the same interview he further refers to the process of transformation from informal norms into formal rules per TdC, as to “we got to the second level”¹⁶⁶ (Interview with ICMBio’s regional coordinator for the Lower Amazon basin and Santarém, Santarém, 10.07.2014).

The successor of the coordination at ICMBio Porto Trombetas who ended up signing the TdC as representative of such ICMBio unit in 2011, refers to the ‘reception’ by affected *quilombolas* – including local buyers – of the formal rules contained in the TdC:

164 Such strategy is similarly applied by *regatões* who compel Brazil nut gatherers to supply them in the frame of the aviamento system (detailed in Chapter V.1).

165 “O acordo da castanha, não era um termo de compromisso, não tinha nada com base legal, mas era um acordo informal assinado por comunidades e associações. E tinha umas regras, era um embrião do termo de compromisso, entendeu? Pra ser de fato assinado legalmente em dois mil e onze. [...] a gente escolheu esse caminho, [...], passar por coisas informais, como se fosse uma escadinha, pra depois formalizar no termo de compromisso.”

166 “[...] a gente passou para o segundo nível”.

“We have the Term of Compromise and we establish some norms [herein referred to as rules] for [Brazil nut] gathering, transporting and a bit for commercialization [...]. But some people resist and often don't want that [such rules from the TdC] or sometimes think that that is not important; [they] think that we are making up things and so. But this is determined by legislation, you know. Theoretically, I mean, by law, there shouldn't be a direct use of the [natural] resources in the Trombetas River Biological Reserve. And then for having this use, it has to be via Term of Compromise and the [Federal] Decree 4340/2002 talks specifically about the Term of Compromise. Last year there were cases of people that did not want to register.”¹⁶⁷ (Interview with the coordinator of ICMBio at Porto Trombetas, Porto Trombetas, 18.06.2013)

He refers particularly to specific ‘internal Brazil nut buyers’, who refuse at times to be submitted to ICMBio’s registration system formalized in the legally grounded TdC and do not renew their registration cards as authorized buyers from one year to the other. Thereby, he indicates the legal foundation for ICMBio to sanction such infractions, while charging fines and confiscating the Brazil nuts ‘illegally’ transported on their boats. As per ICMBio’s discourse, one of its employees stated that they do not like to ‘punish deviant behavior’ of local populations, yet that they are compelled to comply to the respective legal prescriptions, including those written in the TdC (based on Interview with coordinator of ICMBio at Porto Trombetas, Porto Trombetas, 18.06.2013).

Intrapersonal Role Conflicts Entailed by the TdC of the TRBR

This subsection builds up on the definition of ‘role’ Berger & Luckmann (1980: 78) provided in Chapter III.2.3 to present intrapersonal ‘role conflicts’ (see Merton 1957)¹⁶⁸.

Intrapersonal conflicts stemming from the formalization process brought about by the TdC of the TRBR is evidenced through an emblematic case of a young *quilombola* leader and village coordinator who has been contracted by ICMBio Porto Trombetas for controlling the compliance to TRBR and TdC ‘rules’, as follows. He argues that the TdC was an agreement of both parties – ICMBio Porto Trombetas and associations representing *quilombolas* affected by the TRBR – and that it established a set of jointly designed formal rules for the use of natural resources in the TRBR, which is to be followed by these parties. Thereby, non-compliance can imply in having to pay fines.

“It was an agreement [TdC of the TRBR] from the communities with ICMBio for us to stay [at the TRBR], for us to have access to the reserve [TRBR]. But this [TdC] can

167 “A gente tem o Termo de Compromisso, e a gente estabelece algumas normas para a coleta, o transporte e um pouco de comercialização [...]. Mas algumas pessoas elas resistem a muitas vezes a não querer [...] ou, às vezes acha que aquilo não é importante; acha que a gente que tá inventando as coisas e tal. Só que isso tem, tem previsão na legislação, né. Teoricamente, assim, por lei, não poderia ter uso direto dos recursos na Reserva Biológica. E aí pra ter esse uso, tem que ser via Termo de Compromisso, e o Decreto 4340/2002 fala especificamente no Termo de Compromisso. No ano passado teve caso também que a pessoa não quis se cadastrar.”

168 Merton (1957: 323-324) put forward the following role related conflicts: (i) intra-role conflict, which occurs because expectations from different members of an individual’s role-set for one role held by an individual clash; and (ii) interrole conflict that occurs because expectations for different roles held by a single individual clash.

be used against them [*quilombolas*]. It was an agreement for the Brazil nut [use and commercialization]. So if you make an agreement, you have to know that ‘agreement’ is agreement. [...] if it is found out that someone is doing something against what is agreed on, he will be fined. So the agreement can be used against him.”¹⁶⁹ (Interview with the coordinator of the community of Tapagem and assistant at ICMBio Porto Trombetas, Tapagem, 12.06.2014)

The interviewee first refers to *quilombolas* of Oriximiná as “us” – *quilombolas* who have been living there long before this protected area was established –, indicating he belongs to this social group. Yet, only in situations not related to his job at ICMBio Porto Trombetas, such as the one captured in the interview excerpt above on “an agreement [...] for us to stay [in the TRBR area]”. However, by subsequently referring to *quilombolas* as “them”, he does not count himself as one of them when it comes to the TdC and its implications. Instead, he includes himself as part of ICMBio in his job of controlling the compliance to the rules contained in the TdC. This indicates his struggle with the expectations from each party, while showing ‘inner conflicts’ of belonging to one group or the other depending on the situation, context and topic at stake.

As coordinator of *quilombola* community of Tapagem and assistant at ICMBio Porto Trombetas, he ‘personifies’ the disputes over the use and protection of natural resources, while facing ‘intrapersonal role conflicts’ due to the two contrasting roles he is endowed with:

“[...] I am from the [*quilombola*] communities and I know the necessities [the *quilombolas* have] but I have to obey to orders [from ICMBio]”¹⁷⁰. (Interview with the coordinator of the community of Tapagem and assistant at ICMBio Porto Trombetas, Tapagem, 12.06.2014)

In an informal conversation following this interview, he also referred to situations where he saw his friends from Tapagem transporting animals they had hunted in the TRBR on their boats after gathering Brazil nut in remote stands (Fieldwork diary, note taken in the community of Tapagem, 12.06.2014). He said he ‘had no other choice’ than confiscating the animals and in case of the transport of turtles (*tracajás*, in Portuguese) – for the protection of whom the TRBR was established – denouncing it to his “boss” at ICMBio Porto Trombetas (based on Interview with the coordinator of the community of Tapagem and assistant at ICMBio Porto Trombetas, Tapagem, 12.06.2014).

The question remains, as to what extent this viewpoint of the TdC as being a ‘bilateral agreement’ is shared by other *quilombolas* in the Trombetas River basin. Numerous interviewed *quilombola* extractivists complained about the lack of chance to effectively take part in decision-making processes, including for designing the TdC of the

169 “Foi um acordo das comunidades com o ICMBio pra a gente permanecer, pra a gente poder ter acesso na reserva. Mas isso pode ser usado contra eles. Foi um acordo sobre castanha então se você faz um acordo tem que saber que acordo, é acordo. [...] se for descoberto que a pessoa tá fazendo alguma coisa fora do acordo, ela já vai ser multada. Então, o acordo pode ser usado contra ele.”

170 “[...] sou das comunidades eu conheço as necessidades, mas eu tenho que obedecer ordens”.

TRBR, which was dominated by leaders of both parties to this so-called agreement, particularly of IBAMA (and ICMBio succeeding IBAMA as of 2007).

(Lack of) Participation in ‘Brazil nut Agreement’ and TdC of the TRBR

In spite of the ‘discourse’ of leaders of both parties stating that the ‘Brazil nut Agreement’ was designed and agreed upon with the participation of both parties, prior to the TdC, most interviewed Brazil nut gatherers claimed the ‘Brazil nut Agreement’ to have been determined per decisions made by IBAMA at the end (Fieldwork diary, note taken in the community of Tapagem, 08.02.2014).

Still, the TdC has provided even less room for the participation of upstream value chain agents in the registration system than it was the case in the ‘Brazil nut Agreement’. The governance structure of the latter was decentralized to the extent that it included AMOCREQ and ARQMO as responsible, at first, for registering chain actors in ‘their communities’, whose leaders handed in the respective registration cards to IBAMA and later on to ICMBio Porto Trombetas for authorization (based on Term of Compromise of the Trombetas River Biological Reserve, Clause 17; Brasil 2012b: VI)¹⁷¹. Whereas, the governance structure in the frame of the TdC has shifted towards centralization, *quilombolas* have been ‘disempowered’ as ICMBio is now in charge of the entire registration process. It has conducted meetings once a year, in order to register Brazil nut buyers as well as gatherers and renew their permits. These rare meetings took place only in a few communities with high natural occurrence of Brazil nut and upstream value chain actors from other communities were compelled to either go to one of these meetings or to ICMBio’s office in Porto Trombetas. In so being, they faced high transaction costs, including for having to pay themselves for transport to get there.

Further, lack of participation of most *quilombolas* was evidenced in the decision-making process for establishing the TdC of the TRBR (effective for 2012-2014, which was renewed for the period of 2015-2017). Most *quilombolas* did not take part in the respective discussions among leaders of both parties nor were they properly informed by them about the content and implications of the TdC – in spite of such information provision being part of *quilombola* leaders’ role when representing *quilombolas*. A considerable number of affected Brazil nut gatherers and buyers only perceived the limitations on the access to natural resources and markets through the respective control and sanction system established by ICMBio.

Even though two managers of ICMBio Porto Trombetas conducted discussions on the use of natural resources in addition to Brazil nut – e.g. *copaiba*, an NTFP with high economic value – in certain communities, the TdC (effective for 2012-2014) was maintained for the period of 2015-2017 without discussed changes. This combined with the fact that Clause 10 of the TdC is negatively perceived by most *quilombola* extractivists as their position within the Brazil nut value chain is weakened (see Chapter V.2.3), is an evidence for that the voice of most *quilombolas* at the TRBR area are not being heard. In this context:

¹⁷¹ The respective permit issued for Brazil nut buyers by ICMBio was the so-called ‘Authorization for Transporting and Buying Brazil nuts’ (*Autorização de Tráfego e Compra de Castanhas*, in Portuguese).

“Leaders, you know, are involved in discussions on the TdC [of the TRBR] but in fact sometimes not representing the interest of most [*quilombolas* in the TRBR area]”¹⁷².
(Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015)

However, leaders are not the only ones to blame for the lack of participation of *quilombolas* affected by the TdC. The lack of initiative of these extractivists to protest against their ‘exclusion’ also persists and precludes them from actively creating spaces for participating in decision-making pertaining to resource and market access related to the TdC and beyond it. Overall, the interests of *quilombola* extractivists are, to a large extent, neither being represented by their leaders (see Chapter V.3), nor taken into consideration when it comes to the access to and use of natural resources within these geographic boundaries.

Formalization as Transition from Registration and Monitoring to Control and Sanction Systems of the TdC

The formalization process of the registration and monitoring of the ‘Brazil nut Agreement’ into control and sanction systems of the TdC is analyzed as follows.

In the ‘Brazil nut Agreement’, as an informal institutional arrangement, its registration and monitoring systems established the verification of compliance to this agreement at the local level (*quilombola* communities in and around the TRBR area in the municipality of Oriximiná). When compared to the TdC, the verification of compliance to this legally grounded instrument gained on bureaucratic structures and was formalized per decree in control and sanction systems with fines for ‘deviant behavior’ to given clauses of the TdC.

In the frame of the control and sanction systems, the aforementioned formalization per TdC and its perceived implications (detailed in Chapter V.2.3) are illustrated through the following case: buyers who navigate at the Trombetas River without such a valid registration card (for being allowed to transport and/ or sell Brazil nuts) are subjected to having their Brazil nut loads confiscated on top of being fined by ICMBio. Before going into cases of sanctions applied to so-called ‘lawbreakers’, a set of rules formalized per TdC is synthesized at next.

Amongst the ‘rules’ that have to be complied with by local Brazil nut extractivists and buyers, which have been refined and formalized through the TdC are the following: (i) to have a ‘Term of Accession’ or ‘Term of Responsibility’ (detailed in Chapter V.2.2.1) for receiving respective registration cards, (ii) stopping at (one of the) bases from ICMBio along the Trombetas River for it to check if one has a valid permit, (iii) handing in the registration cards for annual control by ICMBio that decides upon the renewal of these documents, while (iv) the renewal depends upon infractions, including compliance to the allowed gathering and buying period as well as other ‘infractions’¹⁷³ committed throughout the year. All upstream chain actors have to hand in their permit cards annually for ICMBio’s monitoring of natural resource use and if they do

172 “Lideranças, né, estão envolvidos no processo de discussão sobre o termo de compromisso, mas às vezes não representando o interesse da maioria”.

173 Conflicts caused by alcohol consumption while at Brazil nut stands are also subject to be sanctioned by ICMBio (Term of Compromise of the Trombetas River Biological Reserve, Clause 25; Brasil 2012b: VII).

not submit their permits to its control or have not yet paid fines entailed by infractions throughout the year, they are not permitted to enter the TRBR for participating in the economic activity in the subsequent Brazil nut harvest season.

In addition to compliance to the abovementioned rules, prior formal authorization for Brazil nut buyers has to be issued by leaders of *quilombola* communities and ICMBio, respectively. In case they do not have such permits, ICMBio confiscates the Brazil nuts they are transporting and fines the ‘infractors’, which is criticized not only by the latter but also by (*quilombola*) extractivists/ buyers who are by far larger in number and still comply to such rules and formalities (see Chapter V.2.3).

What is also criticized by such ‘infractors’ is that they claim that smallholders and small-scale buyers are hit worst by fines while the mining corporation *Mineração Rio do Norte*¹⁷⁴ (MRN, per acronyms in Portuguese), which provokes large-scale deterioration of soils for bauxite extraction can further expand their areas of access to mineral resources with ICMBio’s consent¹⁷⁵. These pressures on biodiversity and livelihoods of local populations from large-scale mining and logging enterprises as well as hydropower plants incentivized by the federal government in the frame of the ‘Growth Acceleration Program’ (PAC, per acronyms in Portuguese)¹⁷⁶ are not the focus herein. Yet, it is important to contrast them with alternative land and resource use strategies to ensuring sustainable access to natural resources and markets, including per adapted TdC of maintaining self-sustaining low-impact livelihood strategies of extractivists in the Brazilian Amazon.

Attention is rather paid to the formalization process – from an endogenously established informal institutional arrangement per social norms of the ‘Brazil nut Agreement’ within the TRBR to exogenously formalized rules for regulating the use and commercialization of Brazil nut per TdC. Despite the possibility of evolving from informal norms to formal rules as represented by the diagram on the continuum of institutions from informal to formal institutions (see Chapter III.2.1 and the upper red arrow of Figure 6), formalization per TdC makes a significant difference in limiting the commercialization opportunities of upstream value chain actors. Among the formal rules contained in the TdC on gathering and buying Brazil nut within the TRBR, focus is laid on the restrictions with regard to market access per Clause 10 of the TdC at next.

174 The *Mineração Rio do Norte* (MRN, per acronyms in Portuguese) is the largest bauxite extracting enterprise in Brazil and is partially owned by the multinational ALCOA. MRN has been expanding its area of extraction with 40.000 hectares overlapping with TQs in Oriximiná by 2016 (see <<http://www.quilombo.org.br/mineracao>>, accessed on: 05.10.2017).

175 By 2016, ICMBio Porto Trombetas had received BRL 73.285.394,36 from MRN as indemnification for forest areas degraded by this company for bauxite extraction in Oriximiná (see <<http://www.quilombo.org.br/mineracao>>, accessed on: 05.10.2017).

176 The *Programa de Aceleração do Crescimento* (PAC, per acronyms in Portuguese) is a national program created by the Brazil’s government in 2007 for investments in infrastructure, including in large-scale energy generation projects, e.g. hydropower plants in the Brazilian Amazon (see <<http://www.pac.gov.br>>, accessed on: 05.10.2017).

2.2.3 Clause 10 of the Term of Compromise and its Implications on Market Access

Given the importance of market access in shaping the position of gatherers within the Brazil nut value chain, the respective role of Clause 10 of the TdC is hereby analyzed, whereby its implications and socioeconomic effects are further elaborated on in Chapter V.2.2.3. As can be understood from its content as follows, this formal institution regulates the access to Brazil nuts by external buyers and, thereby, the access to market (outlets) of gatherers.

“Clause 10 – ICMBio will only authorize the entrance of boats from Brazil nut buyers indicated by ARQMO or a community, with the signature of the coordinator and at least 10 authorized gatherers [endowed with respective permit], through the form ‘Requisition of Buyer’ provided by ICMBio.

‘Stand-alone’ Paragraph – For the purpose of this Term of Compromise, the ‘Requisition of Buyer’ is understood as a form of request from the buyer in order to purchase Brazil nuts gathered within the Trombetas River Biological Reserve.”¹⁷⁷ (Term of Compromise of the Trombetas River Biological Reserve, Clause 10; Brasil 2012b: V)

Building up on bureaucratic hurdles including requirements written in this Clause of the TdC, it not only limits the entrance of external buyers into the TRBR to purchase Brazil nuts but also the marketing possibilities of Brazil nut gatherers. With this the number of buyers purchasing at the TRBR area tends to decrease, mainly due to the considerably low probability of a buyer from outside the *quilombola* communities of this area – who is not acquainted with Brazil nut gatherers – to succeed in attaining the required number of signatures (10) and consents of both parties to the TdC. This and other implications of Clause 10 and overall of the TdC of the TRBR are elaborated in more detail in what follows.

Implications of Clause 10 of the TdC

Focused upon herein are market structure and, particularly, market access implications entailed by Clause 10 of the TdC of the TRBR as a formal institution.

Derived from the well-known market dynamics of supply and demand determining prices, as well as on interviews, especially with Brazil nut gatherers: The less Brazil nut buyers and implied lowered competition, the greater the bargaining power of these few purchasers and the lower the one of gatherers. While such market conditions enable buyers to push down prices paid to Brazil nut gatherers at the farm-gate level, it harms the latter who make up the ‘majority’ of upstream chain actors. The market structure got to the point of forming local oligopsonies, characterized by having very few buyers who can set farm-gate prices vis-à-vis a comparably large number

177 “Clausula Décima – O ICMBio somente autorizará a entrada de embarcações de compradores de castanha indicadas pela ARQMO ou comunidade, com assinatura do coordenador e de no mínimo 10 (dez) castanheiros autorizados, através de formulário de Solicitação de Regatão, disponibilizado pelo ICMBio.

Parágrafo Único – Para fins deste termo de compromisso, entende-se por Solicitação de Regatão o formulário de requerimento realizado pelo comerciante para comprar as castanhas coletadas no interior da REBIO do Rio Trombetas.”

of suppliers (gatherers). In addition to already asymmetric market structures at the subnational regional level of the Lower Amazon basin with its three processing mills, oligopsonies at community level in the TRBR area as well as cartel building at CCPT have been facilitated and formalized by the respective TdC.

Ever since the establishment of the TdC of the TRBR in 2012, limited financial resources at *quilombola* communities have been concentrated in the hands of the few remaining buyers – the ‘internal’ ones – who receive advanced payments from one of the three processing mills while functioning as their intermediary buyers.

These implications on local market structure and access to markets might be in contrary to what was in principle intended with this legally grounded instrument, which was to help overcome natural resource conflicts by controlling the entrance of external actors (including Brazil nut buyers from ‘outside’ – *regatões*, in Portuguese) into the TRBR. Limiting the entrance of external buyers into the TRBR to purchase Brazil nut and/ or natural resources that are not allowed to be extracted nor marketed is a key intention claimed by another staff member of ICMBio’s middle management in an interview conducted in Santarém on 28.05.2014 (as referred to in Chapter V.2.1). This is confirmed and complemented with the following statement:

“We [ICMBio] are interested in conserving biodiversity and do everything for that. But we are not interested in regulating the [local Brazil nut] market and price.”¹⁷⁸ (Interview with a staff member of ICMBio’s middle management, Brasília, 22.07.2014)

Herewith he stated that it is not ICMBio’s task or interest (see Chapter 2.1) to intervene in markets, nor that they had been aware of potential market access limitations caused by Clause 10 of the TdC.

Unintended Consequences of the TdC and its Clause 10

Whilst IBAMA’s and ICMBio’s evident intention were to have a legal foundation for environmental conservation per TdC, the resulting formalized market restrictions can be characterized by an ‘unintended consequence of social action’ (Boudon 1982: 1) or by an ‘unanticipated consequence of purposive social action’ (Merton 1936: 894). In the case analyzed herein, ‘social action’ refers to the ‘action’ for establishing the TdC, including its Clause 10, led by ICMBio and supported by *quilombola* leaders affecting not only potential external buyers but also all *quilombola* extractivists and overall Brazil nut trade at the TRBR area.

Whether the consequences were intended or not is secondary: the effects of the TdC for the aforementioned upstream chain actors have overall been undesirable, including according to the perception of affected extractivists (detailed in Chapter V.2.3). This is so, due to (re)inforced imbalances in negotiation possibilities and generated unintended market access restrictions, given prevailing negative implications, especially for the most numerous as well as economically and geographically marginalized group within the respective chain – the Brazil nut gatherers (see Chapter III.2.1 and the lower red arrow of Figure 6).

¹⁷⁸ “A gente está interessado em conservar a biodiversidade e faz tudo para isso. Mas, a gente não está interessado em regular o mercado e o preço.”

Further, one can argue that Clause 10 of the TdC is an output resulting from discussions among leaders of both parties. Besides, while this Clause endows upstream chain actors with some decision-making power as they can sign or not such ‘purchase requests’ from buyers, it formalizes not only restrictions on the access to Brazil nut but also upon its marketing in the TRBR area officially attributing the final decision to be made by ICMBio. As the governmental entity responsible for managing federal PAs including of full environmental protection, ICMBio has created the formal instrument of the TdC to be applied nationwide for overcoming conflicts with (traditional) populations residing in these areas. Thereby, ICMBio is responsible for the TdC and not only its environmental implications but also socioeconomic, *inter alia* in the TRBR area in Oriximiná.

All in all, the TdC – of the TRBR with its Clause 10 – was promulgated by ICMBio with the intention of having a ‘legal’ backing for conserving biodiversity in territories already inhabited by *quilombola* extractivists. However, there is no evidence for the effectiveness of such mechanism in assuring environmental conservation. This is so including due to the fact that it is not automatically guaranteed that permitting less external buyers to enter the TRBR to procure Brazil nut per TdC, will reduce the quantities of this NTFP to be used for commercial purposes – given that less buyers (the remaining ‘internal’ ones) can potentially purchase the same amount or more than if there was no Clause 10 in the TdC of the TRBR. Therefore, while one can argue that the less external purchasers entering the TRBR area for buying this and other natural resources the lower the risk of losing control of biodiversity use, the effectiveness of such Clause of the TdC in terms of environmental conservation is still questionable.

Clause 10 of the TdC Limiting Market Access by Already Marginalized Value Chain Actors

According to Clause 10 of the TdC of the TRBR, for buyers to be issued an authorization from ICMBio, they must collect 10 signatures from Brazil nut gatherers and have the coordinators of the respective *quilombola* association (AMOCREQ or ARQMO) and ICMBio sign their registration cards (Term of Compromise of the Trombetas River Biological Reserve, Clause 10; Brasil 2012b: V).

An indicator for that regulations of this Clause have trickled down to the local economic activity of gathering and commercializing Brazil nuts at the TRBR is the confirmation by a gatherer of the content of Clause 10 of the TdC of the TRBR, including the required signatures of 10 gatherers as well the registration of the few authorized buyers and their boats (based on Interview with a Brazil nut gatherer and young leader from the community of CCPT, CCPT, 02.06.2014). This is so to the extent that even its details are well-known not only to buyers who are otherwise not formally allowed to purchase Brazil nut, but also to this young gatherer, who is currently one of the most productive Brazil nut gatherers of the community of CCPT and part of AMOCREQ’s board. The formalized restriction for external buyers to buy Brazil nut in the TRBR is voiced by the former coordinator of ARQMO who points to the ‘impossibility’ for them to acquire the 10 required signatures from gatherers, as they often do not know sufficient local ‘internal gatherers’.

“The ones [external buyers] who do not know ‘internal people’ [Brazil nut gatherers from *quilombola* communities] do not get access [to the TRBR area] to buy [Brazil nut]”.¹⁷⁹ (Interview with the former president of ARQMO and one of the main *quilombola* leaders of Oriximiná, Oriximiná, 07.12.2013)

This considerable amount of signatures functions as a formal pre-requisite and in most cases – as a barrier for external buyers to be legally allowed to enter the TRBR to buy Brazil nut. However, there were two exceptions of external Brazil nut buyers from Óbidos who still managed to enter the TRBR to buy this product *in natura* at the communities. One of them managed to get the required 10 signatures from Brazil nut gatherers in addition to the ones from ARQMO or AMOCREQ (in the case of CCPT) and ICMBio to enter the TRBR in the season of 2012 and the other one in 2013 (based on Interview with the wife of the former coordinator of AMOCREQ and leader from the community of CCPT, CCPT, 29.01.2014). They have been exceptionally successful in complying to this formal requirement per Clause 10 of the TdC, as they have been buying Brazil nut at the *quilombola* communities including from the TRBR over decades, so they are well-acquainted with the ICMBio and *quilombola* leaders, which enables them to get the respective authorizations.

Yet, there are also informal restrictions faced by external actors willing to enter the area of the TRBR. As indicated in Chapter V.1, to visit *quilombola* communities, one ought to have a prior consent of respective village leaders, which has implied in selective access to such traditionally occupied territories. This ‘restriction’ to the accessibility to these villages (established by themselves) and the ‘Brazil nut Agreement’ as an informal institution limiting the entrance of external buyers into the TRBR area are both means for (community) ‘internal protection’ from ‘external risks’.

Still, remarkable discrepancies between such informal restrictions and the formal ones imposed by the TdC and its Clause 10 (on top of bureaucratic requirements for entering the TRBR as a PA managed by ICMBio) are mostly related to their ‘enforcement’ and effectiveness for ‘excluding’ external buyers from purchasing Brazil nut at the TRBR. Clause 10 of the TdC has formalized ‘asymmetric market structures’ – local oligopsonies as well as cartel formation at community level (see Chapters V.2.2.3 and V.2.3, respectively), which benefits only respective buyers (in terms of protection of their demand and bargaining power while having less competition from additional external buyers) in detriment of their suppliers (gatherers as most numerous group of the value chain). The TdC builds up on the Federal Decree 4340/2002 (Brasil 2002) and comes with sanctions and control by law. This legal grounding allows for enforcement backed by federal government and potentially more effectiveness. Having formal institutions combined with strict registration as well as control and sanction systems (including ICMBio bases and personnel), restricts the entrance of external actors, including Brazil nut gatherers and, particularly, buyers much more than in verbal informal institutional arrangements – including the ‘Brazil nut Agreement’ and the ‘Brazil nut Project’.

All in all, Clause 10 of the TdC limits external actors to access natural resources for their commercialization as well as Brazil nut gatherers to access market (outlets)

179 “Quem não conhece gente de dentro não consegue entrar para comprar”.

along the value chain at stake. Thereby, it further limits gatherers' bargaining power and negotiation capacity – which implies in their limited ability to benefit from economically unfavorable commercialization conditions vis-à-vis few remaining buyers –, given their restricted contact possibilities to buyers other than (community) 'internal' buyers. Besides, this is a formal barrier for trade relations with external buyers (*re-gatões*) who cannot exert their function of providers of services (e.g. taking to hospital in emergency cases) as well as of industrialized goods they used to sell for gatherers and their families to have the products they want from the neighboring urban center for spending most harvest season at remote Brazil nut stands (e.g. machete for cracking Brazil nut shells, coffee, sugar, salt and fuel). Since then, Brazil nut gatherers have been depending (more) on these few local buyers (see Chapter V.1) who can *c.p.* set the prices so as to maximize their profits while institutionalizing unbalanced market power and also related distribution of benefits.

However, the bargaining power and access to commercialization possibilities also depend on the access to information, e.g. Brazil nut prices at processing mills in Oriximiná and Óbidos. If Brazil nut gatherers would have (first hand) continuously updated price information for always knowing how much more they could earn when transporting their product to neighboring towns themselves, they could make better informed decisions and sell at the farm-gate or in urban markets at a potentially higher Brazil nut price. It would still depend on whether they had already committed to supplying their product to buyers at the community level or if they do not owe it to anyone and can freely decide to sell to the highest paying buyer. Yet, as explored in Chapter V.1, such dependency upon given buyers (the former aforementioned case) is by far the most common case in the Amazon. Thereby, Clause 10 of the TdC of the TRBR has reinforced and formalized the indebtedness of Brazil nut gatherers vis-à-vis established buyers by limiting their market outlets through this legally grounded instrument enforced by ICMBio. With Clause 10 of the TdC of the TRBR the restriction of the entrance of external Brazil nut buyers¹⁸⁰ is formalized; i.e. the internal institutional arrangement of the 'Brazil nut Agreement', established by actors from outside *quilombola* communities and *quilombola* leaders for not selling to other buyers than themselves is turned into a formal institution (TdC of the TRBR with additional formal rules) –, while resulting in an oligopsonic market structure. Thereby, the access to Brazil nut and, particularly, its marketing is limited, which *inter alia* entails low farm-gate prices¹⁸¹, having a negative effect on the income of upstream actors of the respective

180 Whilst market liberalization and unlimited access to natural resources is far from being the pursued intention herein (given local environmental and livelihoods risks), competition among (a high enough number of) buyers is still favored by most Brazil nut gatherers – the most numerous group along lower tiers of the Brazil nut value chain at stake.

181 One ought to consider that it is not only Clause 10 of the TdC of the TRBR that decreases the number of buyers and eventually the price at the sub-national (for which there are several other price determinants at national level as well as per global trade not at focus herein). To be also taken into account is that this formal institution is preceded by aforementioned institutional arrangements – 'Brazil nut Agreement' as well as the 'Brazil nut Project' (see Chapter V.2.2.1). Yet, there are additional determinants, such as the lack of cash flow faced by 1st level intermediary buyers stemming from prior indebtedness vis-à-vis mill owners.

chain while restricting livelihood strategies of Brazil nut gatherers. The respective ‘formalized economic deprivation’ can go as far as hindering gatherers to ensure the provision of basic (food) products to their families.

Finally, selected implications of Clause 10 of the TdC of the TRBR are synthetically presented in the following table:

Table 10: Selected Market Implications of TdC Clause 10 in the TRBR area

In the TRBR area	Mostly negative implications for Brazil nut gatherers	Mostly positive implications for local Brazil nut buyers
Local Brazil nut demand	Decrease in number of external buyers and reduced local demand in the TRBR area	Cooperative (CEQMO) and local buyers have faced less competition with external buyers in the TRBR area
Local Brazil nut market structure	Formation of oligopsonies and cartels at community level	Facilitated price-squeezing at community level

Source: Own elaboration

Table 10 captures key implications of Clause 10 of the TdC of the TRBR, which leads to reduced local demand (less buyers purchasing in TRBR area) and the formation of local oligopsonies and cartels at community level. Such unbalanced market conditions allow for price-squeezing and even setting by fewer Brazil nut buyers vis-à-vis gatherers in the surveyed *quilombola* communities at the TRBR area. If the only local cooperative would have been operating¹⁸², it could benefit from such market conditions, as one of the remaining local buyers could potentially benefit from reduced competition with external purchasers (who used to enter the TRBR area for buying Brazil nuts).

Wrapping up, Clause 10 of the TdC of the TRBR enables the ‘exclusion’ of external buyers and the emergence of ‘asymmetric market structures’ (local oligopsonies and cartels), while weakening the position of gatherers – given restricted marketing possibilities and bargaining power – vis-à-vis buyers within respective upstream nodes of the Brazil nut value chain in the Lower Amazon basin.

To put it into context against the background of reconciling livelihood strategies with biodiversity conservation: the establishment of PAs of full environmental protection in territories already inhabited and sustainably used by traditional populations often ‘displace’ and ‘unroot’ those who have a low (negative) environmental impact from their

¹⁸² CEQMO has not been functioning due to lack of cash-flow since the Brazil nut harvest season of 2012.

subsistence and income generating activities¹⁸³. Herewith, research input is provided to raise awareness of ICMBio on PA and also TdC related implications upon livelihood relevant resource and market access by affected populations, so as to avoid a double burdening them. Faced by formally limited possibilities to make a living from Brazil nut gathering and marketing in such PAs, young extractivists in these areas of the Amazon are compelled to pursue alternative income generating activities outside their communities and even municipalities. Beside the loss of contributions from youth to conserving the so-called socio-biodiversity per sustainable extractivism and related traditional knowledge, off-farm activities in the Brazilian Amazon are often related to direct or indirect deforestation through temporary low-paid jobs. These types of occupations are characterized by bad working conditions, for instance in dam construction firms, including partners for outsourcing and wage dumping, as well as logging enterprises and cattle ranchers paying BRL 25-35/day¹⁸⁴.

Finally, considering alternative land-uses, it is worth putting the TdC into perspective as a formal institution regulating NTFP gathering and marketing as part of (sustainable) livelihood strategies of (traditional) populations, when learning from the aforementioned formal(ized) restrictions upon lower tiers of the Brazil nut chain. Limiting entry of small-scale purchasers to the TRBR per (Clause 10 of the) TdC can be counter-productive, as more (controlled) access to Brazil nut stands can secure or raise income of economically marginalized extractivists without undermining environmental conservation instead of having unsustainable land-uses (e.g. extensive cattle ranching by already powerful and capitalized actors).

In so being, evidenced and analyzed key limitations per TdC upon the resource and market access of economically and geographically marginalized chain agents indicate the pathway for inclusive governance along the Brazil nut value chain. Such analyzed evidences on how a given formal institution restricts the respective access are to be complemented by concrete perceptions of both Brazil nut gatherers and buyers in the realm of a thorough account of TdC implications. This combination of TdC's limiting effects on the access in question with respective perceptions builds up a solid groundwork towards exploring leverage points (see Chapter V.2.4); yet, beforehand local voices corresponding to such perceptions are to be heard.

At next, multiple perspectives on the limitations and 'gains' perceived by different VC actors and *quilombola* leaders concerning the registration and monitoring as well as control and sanction system – particularly in the frame of the TdC – are discussed.

2.3 Perceptions on the Implications of the Term of Compromise

Further evidences are herewith provided based on the background question, as to whether the TdC as a formal institution with its limitations of the access to livelihood

183 Hereby, it is also referred to in literature as green grabbing (see e.g. McAfee 1999, Fairhead *et al.* 2012) and related global benefits from respective conservation (including climate change mitigation and adaptation strategies, see e.g. Rodriguez *et al.* 2014) vis-à-vis local costs debates (e.g. forest dependent dwellers burdened with (opportunity) costs of having to avoid using natural resources) (see e.g. Neudert *et al.* 2017).

184 This pay range reflects not only the difficulty of the work that is to be done but also related qualifications required, e.g. know-how to work with chainsaws.

relevant natural resources and markets is beneficial for a significant portion of upstream actors of given NTFP value chains in the Brazilian Amazon, including Brazil nut gatherers or if it could also affect them negatively (e.g. in terms of negotiation possibilities and price paid at farm-gate level).

In order to qualitatively address this open question on the implications of the (Clause 10 of the) TdC of the TRBR on the access to natural resources (Brazil nut) and markets, it is crucial to analyze the perceptions reported by upstream Brazil nut chain actors and *quilombola* leaders from the municipality of Oriximiná, Pará, Brazil. This analysis calls for taking into account such different perceptions on the TdC of the TRBR including its Clause 10 – beyond mere rules for the access of natural resources of the TRBR as a PA of full environmental protection – when striving for obtaining a holistic and ‘distilled assessment’ of perceptions of multiple actors on this legal instrument. Its compilation, interpretation, contrasting, assessment and contextualization serves as a basis for deriving not only specific yet also comprehensive implications and socioeconomic effects of the legally based instrument decreed by ICMBio as well as potential for adapting it to given local contexts (see Chapters V.2.2.3 and V.2.4.2, respectively).

In so being, it is important to consider the perceptions on the TdC of the TRBR – particularly its Clause 10 – by local Brazil nut gatherers (whose voice are rarely heard) and buyers, including local male and also female leaders, who live in the area of the TRBR and mainly from the extraction as well as commercialization *inter alia* of Brazil nut.

To be stated upfront on perceptions, is that at the one hand upstream value chain actors critically indicated their views so as to question why formalizing resource and market access regulations through a TdC of the TRBR if sustainable Brazil nut use and commercialization was already regulated per informal institutional arrangement (‘Brazil nut Agreement’). On the other hand, certain leaders of both parties claim that it is useful for them as it provides legal backing for regulating the use and commercialization of Brazil nut.

Given the ambiguous yet protagonist role of Clause 10 of the TdC of the TRBR in the formalization of unbalanced bargaining power among a few Brazil nut buyers and numerous gatherers¹⁸⁵, the opinions voiced by both chain actor groups on this formal rule – as well as on the TdC of the TRBR overall – and its resulting local oligopsonies are at the core of the analysis herein.

The perceptions were codified in MAXQDA and, subsequently, clustered overall in ‘contra implications’ of (Clause 10 of) the TdC of the TRBR and ‘pro implications’ of (Clause 10 of) the TdC of the TRBR. In addition, the reasons for why the interviewees were against (‘cons’) or, accordingly, in favor (‘pros’) – the abovementioned were classified into 8 and 4 categories, respectively – which are formulated as key messages rather than headings. All categories, except for 7 and 8 from the ‘cons’ side on the Clause 10 of the TdC of the TRBR, relate to its effect in diminishing the number

185 588 Brazil nut gatherers along the Trombetas river in Oriximiná as of the beginning of the Brazil nut harvest season in March 2013 (based on Interview with a technical analyst of ICMBio Porto Trombetas, Porto Trombetas, 18.06.2013).

of buyers entering the area of the TRBR, especially from outside/ neighboring urban areas. Categories 7 and 8 relate to the TdC of the TRBR overall. After contrasting all such (i) ‘cons’ and ‘(ii) pros’, (iii) respective complementing remarks as well as a synthesis on key local perception are offered.

(i) ‘Cons’: Contra implications of (Clause 10 of) the TdC of the TRBR

1. Due to Clause 10 of the TdC of the TRBR: Formation of Local Oligopsonies – Less Bargaining Power of Brazil nut Gatherers vis-à-vis Fewer Buyers at the Local Level with Increased Market Power

Given the importance of local market structure as a key determinant of the negotiation power and marketing possibilities of Brazil nut gatherers, this subsection is devoted to describing it in the frame of the implications of the (Clause 10 of the) TdC of the TRBR.

Oligopsonies are often generated over a period of time through barriers to entry into a given market. According to Hansis (1998), property rights can function as barriers to diminishing the impact of potential buyers entering markets. In the study area, such barriers were created by changing the land tenure status at first – from traditionally occupied lands with potential of becoming titled TQs to a PA of full environmental protection –, while starting to limit the access to natural resources and markets, when the TRBR was established by IBDF (former branch of MMA responsible for managing federal PAs) in 1979. For establishing the TRBR none of the *quilombolas* living in the area were consulted (Acevedo & Castro 1998), this was not quite the case for the TdC of the TRBR: There was limited participation of *quilombola* leaders and no democratic decision on the overall content of the TdC of the TRBR, at the end it was decided by ICMBio and entered into force in 2012 (see Chapter V.2.2.2). Still, when asked about it, some *quilombolas*, particularly Brazil nut buyers and leaders ‘refer in their discourses’ to the TdC of the TRBR as having been an agreement, as does the following son of the third largest buyer at the community of CCPT.

“It was an ‘agreement’ between IBAMA [ICMBio] and *quilombola* associations to concentrate power in the hands of a few buyers [characteristic for an oligopsony]. But it [the bargaining power] got worse for the Brazil nut gatherer. The more buyers, the better for the gatherer; for the buyer it isn’t good.”¹⁸⁶ (Interview with son of Brazil nut buyer from the community of CCPT, 34 years old¹⁸⁷, CCPT, 24.06.2013)

186 “Foi um acordo entre o Ibama e as associações para concentrar o poder na mão de poucos compradores. Mas piorou para o castanheiro. Quanto mais comprador, melhor para o coletor; para o comprador não é bom.”

187 Age is registered in this Chapter on perceptions, so as to capture the viewpoints of a diverse array of interviewees on the implications of (Clause 10 of) the TdC of the TRBR, while avoiding respective bias and missing out on an age as well gender related typology of Brazil nut gatherers, buyers and *quilombola* leaders. Thereby, it was strived for ensuring representativity and objectivity – as far as possible – so as to compensate for ‘perceptions’ related subjectivity, without undermining anonymity: Both female and male of all (age) groups were interviewed based on their prior consent.

This statement confirms that not only does the legally based instrument at stake formalize the limitation of the access to Brazil nut, but also the negotiation possibilities of Brazil nut gatherers. Thereby only internal buyers – purchasers living in *quilombola* communities at the TRBR area – benefit from the ‘crowding-out’ of external buyers formalized per TdC of the TRBR (and its Clause 10).

Further, particularly buyers who have not yet established themselves as selected intermediary buyers of Brazil nut processing mills are mostly in favor of an open market structure – at least until they enter it. Additionally, gatherers who are eager to upgrade to 2nd level intermediary buyers have little room for upgrading. Both upstream Brazil nut value chain actors face barriers to entry the market, including due to Clause 10 of the TdC of the TRBR.

The resulting oligopsonic market structure at community level, including at the community of CCPT (from 9 buyers to 4), produces ‘losers’ and ‘winners’ – corresponding to Brazil nut gatherers and internal buyers.

“The rule [Clause 10 of the TdC of the TRBR] made the price for buyers get better, since there are less of them now. They say the price is that much and the Brazil nut gatherer has to accept it, otherwise he does not sell.”¹⁸⁸ (Interview with Brazil nut gatherer from the community of CCPT, 33 years old, CCPT, 03.06.2014)

Clause 10 of the TdC of the TRBR leads to less buyers profiting from their increased market power vis-à-vis Brazil nut gatherers, who are geographically isolated and often compelled to accept their position as price-takers – at CCPT and other *quilombola* communities, including along the Erepecuru river.

Yet another effect of Clause 10 of the TdC of the TRBR is cartel formation, which can be facilitated by decreasing numbers of Brazil nut buyers purchasing at community level while potentially leading to unbalanced benefit sharing among upstream value chain actors.

2. Based on Clause 10 of the TdC of the TRBR: Cartel Formation by Few Local Buyers at Community Level

“It [the situation] got worse with the rule [Clause 10 of the TdC of the TRBR], the buyers from here fix a common price”.¹⁸⁹ (Interview with Brazil nut gatherer from the community of CCPT, 32 years old, in CCPT, 22.06.2013)

The two largest local buyers at CCPT have been practically setting farm-gate prices they agree upon to their convenience – this cartel formation is known by community members. However, due to the remote geographic location and the aforementioned closed market systems resulting *inter alia* from Clause 10 of the TdC of the TRBR, Brazil nut gatherers are disempowered by the lack of market information. This restricted access to market information – including alternative market outlets and current prices in neighboring urban areas – is aggravated by the lack of provision of this update by local buyers to other chain actors at community level.

188 “A regra fez o preço melhorar para os compradores, porque tem poucos deles agora. Eles falam que o preço é esse tanto e o castanheiro tem que aceitar, se não, ele não vende.”

189 “Piorou com a regra, porque os comprador daqui agora são pouco e combinam preço”.

Yet, albeit this fact and provided relatively low competition in local procurement (implied by Clause 10 of the TdC of the TRBR), the third largest buyer managed to access a new market outlet in the state of Mato Grosso – through his brother who owns a boat and lives in the urban area of Oriximiná – in 2013. This allows him to pay higher prices than the aforementioned other two buyers at the farm-gate level¹⁹⁰, while being practically independent from the price setting dynamics of the regional oligopsony; as opposed to both cartel members who, as intermediary buyers are also faced with price squeezing by Mundial Exportadora Ltda.

“They [the two largest local buyers at CCPT] started to pay 35,00 BRL/box and had to raise the price afterwards and paid up to 50,00 [BRL/box] and [the largest local buyer] paid up to 60,00 BRL/box”¹⁹¹. (Interview with Brazil nut gatherer from the community of CCPT, 56 years old, CCPT, 02.06.2014)

At the end of the Brazil nut harvest – in the case of the CCPT – most gatherers sold their Brazil nut to the latter buyer (who raised his market share from being the third to largest buyer of the CCPT) who paid the highest price, even though the cartel members had their fixed suppliers who owed them Brazil nut to pay off their debts.

3. Based on Clause 10 of the TdC of the TRBR: Decrease in farm-gate prices implying in less income for Brazil nut gatherers and further ‘distributing more benefits’ to local buyers

To be mentioned upfront is that the price paid for Brazil nuts at the farm-gate level is not determined by local buyers alone who have comparatively modest mark-ups, but more so by larger downstream value chain actors. Beyond the first nodes of the Brazil nut chain, the three processing mills in Oriximiná and Óbidos play a key role in setting the prices, which represents a regional oligopsony. If low prices are ‘regionally set’ by the latter, it reflects on prices paid at the farm-gate level. However, if higher prices are set per trade by actors further downstream the Brazil nut value chain (e.g. in São Paulo, Brazil), then regional and local buyers in the study area do not necessarily pass on these higher prices at community level.

Still, a naturally recurring reason for Brazil nut price variability *inter alia* in the studied basins of the Trombetas and Erepecuru rivers, is the price fluctuation due to the (locally) varying demand and supply dynamics that the biologically determined biennial peaks of *Bertholletia excelsa* ‘production’ entails (see Scoles & Gribel 2012). The following statement from a female leader and Brazil nut gatherer supports respective scientific findings and price setting mechanisms with traditional knowledge shared by value chain actors living in communities near Brazil nut stands on varying quantities of pods found by its trees.

“This year [2014] the price went up, because there was little production of Brazil nut. Last year, there was a lot of Brazil nut and the price was low; it was very bad for the

190 The third largest buyer of the community of CCPT started paying R\$ 45,00 at the beginning of the harvest of 2013 while Ivanildo was paying R\$ 30,00 and ended the harvest paying R\$ 60,00 compared to R\$ 50,00 paid by the largest and second largest buyers.

191 “Eles começaram a pagar 35,00 R\$/caixa e depois eles tiveram que subir o preço e chegaram a pagar 50,00 e [...] chegou a pagar 60,00 R\$/caixa”.

gatherer.”¹⁹² (Interview with Brazil nut gatherer and female leader from the community of CCPT 30 years old, CCPT, 07.06.2014)

Moving forward on the analysis of the determinants of the access to natural resources (Brazil nut) and markets, attention is paid to implications of the formal institution in question on local market structure. Thereby, the formation of Brazil nut prices at community level is focused on herein: The price at the farm-gate is squeezed by the ‘remaining (local) buyers’ who benefit from market entry restrictions per Clause 10 of the TdC of the TRBR.

If external buyers would still be able to enter the TRBR without given formal restrictions (Clause 10 of the TdC of the TRBR), there would be more competition and potentially higher prices offered to gatherers at community level.

“If buyers from outside would come, it would result in a higher price because of competition. And then, either the buyers from here raised the price or they would lose to the competitors. At the same time, if more buyers enter [the TRBR], then the income of buyers from here is reduced. So then, for improving the sale [raising the price] for the Brazil nut gatherer there had to be more buyers.”¹⁹³ (Interview with Brazil nut gatherer from the community of CCPT, 35 years old, CCPT, 06.06.2013)

While he is overall in favor of increased competition provided allowed market entry of external Brazil nut buyers, this engaged gatherer and young community leader recognizes the potential negative implications for internal buyers. Still, at the end he indicates competition to be of economic benefit for Brazil nut gatherers.

Gatherers further refer to unbalanced distribution of benefits among Brazil nut chain actors, like the following who indicates how gatherers and their families are ‘left behind’.

“Some time ago [before the TdC of the TRBR with its Clause 10] we could afford buying a milk. [...]. Let’s say that a buyer from here pays 40,00 [BRL/box], then he makes a profit of BRL 10,00 and so even takes the milk out of my daughters mouth. We live humiliated. I am against it [the Clause 10 of the TdC of the TRBR], they [local leaders who are buyers at the same time] only think of themselves for that only they want to buy Brazil nut and do not let other buyers come in.”¹⁹⁴ (Interview with Brazil nut gatherer from the community of CCPT, 32 years old, CCPT, 22.06.2013)

He complains about reduced purchasing power, making it harder for him to buy basic goods for the food security of his children. Although this trend relates to a consider-

192 “Esse ano subiu o preço, porque deu pouca castanha. No ano passado, deu muita castanha e o preço foi baixo; foi muito ruim para o tirador.”

193 “Se compradores de fora viessem, ia dar um preço melhor devido a concorrência. E aí ou os compradores daqui aumentavam o preço ou perdia para a concorrência. Ao mesmo tempo, se entrar mais compradores, aí diminui a renda do comprador daqui. Mas então, para melhorar a venda para o castanheiro tinha que ter mais compradores.”

194 “Antigamente, dava pra a gente comprar um leite [...]. Vamos dizer que comprador daqui pague 40,00 [R\$/caixa], aí ele tira R\$ 10,00 de lucro e aí tira até o leite da boca da minha filha. A gente vive humilhado. Eu sou contra, eles pensam só neles, só eles querem comprar castanha e não deixarem entrar mais compradores.”

able extent to high inflation rates¹⁹⁵, which economically disadvantaged know very well, what dominates their perception is the unfair daily business. Community leaders – often part of the ‘remaining Brazil nut buyers’ as of 2012 (when the TdC of the TRBR entered into force) – are also seen as patrons who squeeze prices to increase their mark-ups. Gatherers’ economic hardship is perceived to have been aggravated with the formalization – per Clause 10 of the TdC of the TRBR – of the limitation of the entrance of external buyers into this PA managed by ICMBio.

“The external buyer used to ‘bring the price from outside’ [Brazil nut prices at neighboring urban markets] and now the price has fallen”¹⁹⁶. (Interview with Brazil nut gatherer and ‘director of properties’ responsible for the community boat from the community of Tapagem, 40 years old, Tapagem, 10.06.2014)

Hereby one of the leaders of the *quilombola* community Tapagem confirms the – for the Brazil nut gatherers – problematic dropping prices of their product at the farm-gate level.

Moreover, one of the main leaders of *quilombolas* in Oriximiná – who was involved in ARQMO’s foundation in 1989 and, shortly afterwards, assumed the coordination of one of the area associations under ARQMO – is convinced that the majority of the *quilombolas* are in favor of further allowing the entrance of external buyers into the TRBR.

“It would be a good thing for most [who are Brazil nut gatherers] if buyers would enter [the TRBR]. Well, for sure! Because then the price [paid for gatherers at the farm-gate level] would increase; there would be competition.”¹⁹⁷ (Interview with the former coordinator of the area association ‘Mãe Domingas’ and former board member of ARQMO from the community of Tapagem, 46 years old, Oriximiná, 10.02.2014)

He vehemently argues that provided more Brazil nut buyers in the TRBR, which can only be reestablished by upholding or changing Clause 10 of the TdC of the TRBR, the price paid for Brazil nut gatherers in their communities would increase – and so would *c.p.* their income and potentially their share of benefits.

195 Inflation rate in Brazil was of 8-12%, including for basic food products, in the last three years; for a detailed overview of inflation rates over the past 18 years, see <<http://www.bcb.gov.br/?RI>>, accessed on: 11.10.2017.

196 “O regatão trazia o preço de fora e agora o preço caiu”.

197 “Seria um bom negócio se entrasse regatão, pra maioria. Mas é com certeza! Porque aí aumenta o preço; existe a concorrência.”

4. Based on Clause 10 of the TdC of the TRBR and related decreased number of external buyers: Brazil nut gatherers face frequent delay in payments, including when gatherers sell to the cooperative (CEQMO)

Over generations, Brazil nut gatherers have been used to receiving ‘advanced payments’¹⁹⁸ for gathering Brazil nut – even if non-monetary – from given external buyers (*regatões*, in Portuguese), who thereby guaranteed their supply (see Chapter V.1). Whereas selling Brazil nut to CEQMO and not to individual buyers – who have decreased in number – implied in gatherers having to wait for the shipping and payment by CEQMO, while risking to facing losses in quality of their product, including through aflatoxin¹⁹⁹ contamination.

“But people here do not have the habit to hand in their Brazil nut and be paid only afterwards, how it has gotten to be with the cooperative [CEQMO]. What we are used is to supply the Brazil nut, finish calculating the amount and getting the payment from the external buyer: there were times that when we got back from the forest, the external buyer was already waiting at our harbor. It has happened that the Brazil nut gatherer had to wait for the boat from the cooperative to arrive and the Brazil nut had already rotted.”²⁰⁰ (Interview with a female leader from the community of Abuí, 56 years old, Abuí, 18.01.2014)

While waiting for buyers, some gatherers leave their Brazil nuts mounted in the forest; others store them at their homes for extended periods. Yet, a few Brazil nut gatherers who are capitalized enough or are not compelled to rely on daily payments for their product or ‘workforce’ also wait for the price to rise at the end of the harvest when communities are short of supply.

Still, with less buyers purchasing at the PA in question, as a result *inter alia* from Clause 10 of the TdC of the TRBR, there are less alternative buyers who could provide immediate or even advanced payments. Overall, gatherers have, thus, been not only limited in their commercialization opportunities (market access) but also in receiving financial resources that are needed for their families on a daily basis.

198 In addition to payments in advance for Brazil nut extraction, overall in the Brazilian Amazon, gatherers they have been used to receiving ‘cash’ for their products or services (e.g. clearing plots for neighboring cattle ranchers) immediately after their provision – instead of having to wait for the pay from a given cooperative (e.g. CEQMO).

199 Aflatoxin is a fungus that emerges with humidity over time, if Brazil nut (and other products *in natura*) are not dried; for European Union (EU) aflatoxin standard as a challenge for Brazil nut exports from Brazil to the EU, see Coslovsky (2014).

200 “Mas o pessoal aqui não tem o costume de entregar a castanha e receber só depois, como passou a ser com a cooperativa. O nosso costume era entregar, terminar de medir e já receber o dinheiro do regatão: às vezes quando a gente chegava do mato, o regatão já tava aí no porto. Já aconteceu do castanheiro ter que esperar a chegada do barco da cooperativa e a castanha já ter estragado.”

5. Due to Clause 10 of the TdC of the TRBR: Decreased number of external buyers who provided certain services and industrialized goods from town – done by upstream Brazil nut chain actors, accruing transaction costs for gatherers in addition to limited market access and increased dependence on local buyers

“Before last year there were a lot of external buyers and we only had to wave and they would come sell their goods and buy Brazil nut and we already got paid.”²⁰¹ (Interview with a Brazil nut gatherer from the community of Abuí, 36 years old, Abuí, 04.02.2014)

It is herewith referred to the Brazil nut harvest seasons until 2012, when the first TdC of the TRBR entered into force. External buyers (*regatões*) used to bring further products with inflated prices from the urban center of Oriximiná that *quilombolas* did not have or hardly had access to and could thus ‘avoid spending money’ for the community boat²⁰² (not counting expenses for their stay in town) to get from their remote communities to town.

Some Brazil nut gatherers have to take their product to urban markets – being compelled to pay BRL 20-30,00 per boat trip – to sell it in Oriximiná or Óbidos²⁰³ and to buy other products they acquired in communities from *regatões* before (the establishment of the TRBR, in particular, as of 2012 with the TdC of the TRBR). Despite the fact that some *quilombolas* find the products brought from (super)markets in Oriximiná by these buyers (*regatões*) expensive, it was nevertheless an additional service offered by them. Based on the aforementioned, the number of these service providers was reduced mainly in consequence of Clause 10 of the TdC of the TRBR, which has not only limited the access to markets but also raised the transaction costs of Brazil nut gatherers (see Chapter V.2).

6. Due to TdC of the TRBR: It has become harder for them to sell traditionally extracted natural resources (e.g. breu/ cipó as NTFPs as well as fish) and agricultural goods, for the few ones who produce e.g. cassava and banana

By limiting the number of external buyers, Clause 10 of the TdC of the TRBR has reduced the supply and demand for such goods from the communities along the Trombetas river, which might have contributed to discouraging respective diversification of income sources at the collective plots and gardens of the *quilombolas* at stake (detailed in Chapter V.1.6).

Thus, given this limitation in the demand (mostly by formerly active external buyers), Brazil nut gatherers have been facing severe economic hardship – especially during

201 “Antes do ano passado, tinha muitos regatões e era só acenar que eles vinham para vender mercadoria e comprar a castanha e a gente já ficava com o dinheiro.”

202 To be taken into account, however, is that such high prices paid by extractivists at communities for such industrialized products have respective transport costs incorporated by *regatões* into them.

203 Alternatively, a few take their products to the closest urban center with a small market at the county of Porto Trombetas by the Trombetas river within the municipality of Oriximiná, having less expenses with fuel than if transported to the urban centers of Óbidos or even Oriximiná itself.

the off-harvest season (*entressafra*, in Portuguese) –, which is commonly reported among gatherers.

“When the Brazil nut harvest is over, nobody buys anything here”²⁰⁴. (Interview with a Brazil nut gatherer from the community of Tapagem, 55 years old, Tapagem, 10.06.2014)

This is an emblematic statement of members of *quilombola* communities along the Trombetas and Erepecuru rivers, particularly of Brazil nut gatherers who do not have access to alternative (off-farm) jobs.

Even selling Brazil nut has become harder due to insufficient buyers in given communities:

“Sometimes Brazil nut gatherers have Brazil nut [to sell] and cannot sell it”.²⁰⁵ (Interview with a female teacher married to a Brazil nut gatherer from the community of Cachoeira Pancada, 34 years old, Cachoeira Pancada, 25.06.2014)

It is well-known that proximity to urban markets plays an important role not only in market access but also in income generation of forest dependent rural populations (Angelsen *et al.* 2011: 8). However, in Oriximiná, *quilombola* communities are located in remote areas with boat access only. While Cachoeira Pancada happens to be the last community up the Erepecuru River, it is the one with highest Brazil nut production among the ones located along this river. In former times – before the formal and informal institutional arrangements for inhibiting the purchase of Brazil nut other than themselves at ‘their communities’, i.e. prior to 2001 (see Chapter V.2.2.1) – there used to be plenty of external buyers acquiring large quantities of Brazil nut. They would also buy banana from two Brazil nut gatherers who at that time planted numerous banana trees by their houses and obtain a considerable share of their income from selling this agricultural product. They both complain about high transport costs they have to cover themselves for shipping it with small boats to Oriximiná (9 hours boat trip), which they only do when they can combine it with fulfilling other needs. While striving to compensate for respective transaction costs, one of them does so when getting his pension fund and, the other when withdrawing money his family receives from the conditional-cash transfer program *Bolsa Família*.

7. Due to TdC of the TRBR: Bureaucracy faced by Brazil nut gatherers and buyers

Bureaucratic requirements have been formalized (including with sanctions – see Chapter V.2.2.2), while having increased with the establishment of the TdC of the TRBR, e.g. for gatherers to register the amount of Brazil nuts they collect in each gathering point (*ponto de coleta de castanha*, in Portuguese, also called *ponta de castanha* by gatherers) and Brazil nut stand. While it is relevant for ICMBio to keep track of extracted quantities in the frame of monitoring for environmental conservation, they also try to capture how much each Brazil nut stand yields. Albeit filling in ICMBio’s registration cards (*papeletas de controle*, in Portuguese) is important for quantifying Brazil nut use, gatherers complain as it is hard to comply to respective traceability

204 “Terminou a castanha, aí ninguém compra mais nada aqui”.

205 “Às vezes castanheiro tem castanha e não consegue vender”.

requirements to distinguish where each Brazil nut comes from afterwards. Brazil nut gatherers have been used to only quantifying how much they have collected when they supply the buyers after having had to transport different loads mixed together in small boats and/or trucks over long distances under difficult conditions.

Further, TdC related bureaucratic procedures lead to transaction costs of having to go to ICMBio Porto Trombetas to receive their registration cards in case they miss the registration date when the entity's representatives pay respective visits at certain communities.

“Now there is a lot of bureaucracy for buying and selling, we have to go to the base of ICMBio to get the authorization. We have to spend about six liters of fuel to get there, if we miss their [ICMBio members'] visit [in a *quilombola* community nearby]. It is a lot of money for us [BRL 30,00]. It would be more feasible, if ICMBio would leave the control of registrations in charge of the associations [of *quilombolas*], how it used to be before; registration would be much easier.”²⁰⁶ (Interview with Brazil nut gatherer and ‘director of properties’ responsible for the community boat from the community of Tapagem, 40 years old, Tapagem, 10.06.2014)

This experienced Brazil nut gatherer argues for the ‘devolution’ of the management of the registration system from ICMBio to associations of *quilombolas*. In spite of the additional workload for such groups – which they had already coped with before – it would further promote ownership of related monitoring of Brazil nut quantities extracted and sold in the TRBR area. Additionally, managing such registration system would not only enable them to be empowered to make decisions on their own but also internalizing related rules and compliance to them (see Chapter V.2.2.1).

However, this ‘devolution’ has not yet occurred, mainly due to lack of trust between both parties related to misunderstandings pertaining to this registration system, which had already been in charge of *quilombolas* – who have thereby been disempowered. Hence, empowerment per respective devolution is key for both long-term environmental conservation and re-establishing mutual trust while raising self-esteem of *quilombolas*, given the past of oppression they had been submitted to during the slavery period in Brazil.

Still, two heads of households reported their mistrust and resistance vis-à-vis any ‘control’ by the environmental entity, including the participation in the registration system²⁰⁷ at stake. They had been compelled by IBDF and the Federal Police to leave their homes – areas with the highest biodiversity at the TRBR – and to forcedly migrate to the community of Tapagem.

206 “Agora tem uma burocracia danada para comprar e vender, nós temos que ir e voltar para a base do ICMBio para pegar autorização. Tem que gastar uns seis litros de gasolina para chegar lá, se perder a visita deles para cadastrar. É muito dinheiro para nós. Seria melhor, se o ICMBio deixasse esse controle de cadastros por conta das associações, como era antes; seria muito mais fácil o cadastramento.”

207 It might be that they are especially against this (once) authoritarian system, provided they witnessed how of one of their relatives was shot dead in the so-called ‘incidence of the Jacaré’ in 1979, when Brazil was still under dictatorship (Acevedo & Castro 1998).

In the context of the bureaucratization and formalization of existing norms, the respective registration and monitoring schemes has turned into a control and sanction system (see Chapter V.2.2.2), which is complained against by a considerable portion of upstream Brazil nut chain actors living in and from the TRBR. As part of the bureaucratic apparel formally established through Clause 10 of the TdC of the TRBR, what further limits the access to natural resources by external Brazil nut buyers as well as the market access of gatherers is the following. Perceived as a ‘too strict limitation’, this Clause specifies that Brazil nut buyers have to collect the signatures of 10 gatherers as well as the ones from ARQMO or AMOCREQ and ICMBio (see Chapter V.2.2.3), in order to have their buyers’ permit issued and to be authorized to enter the TRBR to buy Brazil nut from this area.

“They [members of ICMBio] turn things way too bureaucratic and make it harder for us, ‘riverines’²⁰⁸ [riverside inhabitants including *quilombola* communities] from here. They have to make it harder for the ones who want to get into our area, into the reserve [TRBR]; that they should do, not for us who are from here to get out [of the TRBR area].”²⁰⁹ (Interview with son of Brazil nut buyer from the community of CCPT, 34 years old, CCPT, 24.06.2013)

Herewith, the son of the third largest Brazil nut buyer, voices a common complaint by both gatherers and buyers on bureaucratization of the access to Brazil nut as well as to markets.

8. Due to TdC of the TRBR: Critical perceptions of upstream Brazil nut value chain actors on control and sanctions by ICMBio

The TdC of the TRBR formalizes certain norms for using Brazil nut (i.e. informal institutional arrangements of ‘Brazil nut Agreement’ and ‘Brazil nut Project’), while formalizing control and allowing for sanctions concerning natural resource and market access. This formalization process led by ICMBio – from informal institutional arrangements to legally based control and sanctions – is overall critically perceived by *quilombolas* living in and from the TRBR. In fact, the establishment of the TRBR in 1979 had already provoked resistance by them.

With the TdC of the TRBR, legally grounded and published in the DOU in 2012, the traditional economic activity of gathering and marketing Brazil nut was formally controlled by ICMBio. In accordance with environmental law (Federal Law 9.985, 18.07.2000 on SNUC) and this legal instrument, ‘violators’ – who do not have a valid

208 Riverines (*ribeirinhos* in Portuguese) are rural dwellers living in communities along rivers whose livelihood strategies are considerably based upon use of natural resources on a small-scale, including NTFPs and agricultural products. They have been granted the right for self-identification as traditional population based on the ILO Convention 169 (ILO 1989); for details on additional categories to indigenous and certain Afro-descendants (communities) under indigenous and tribal peoples in Brazil, see e.g. Almeida (2011). In Brazil, *ribeirinhos* (in Portuguese), NTFP extractivists as well as fishermen and women are represented by the CNS.

209 “Eles fazem as coisas ficarem burocráticas demais e eles dificultam pro ribeirão aqui. Eles têm que dificultar é pra quem vem entrando pra dentro da nossa área, pra dentro da reserva; aí sim, mas pra gente que tá aqui dentro, pra sair, não.”

permit when transporting Brazil nut from communities along the Trombetas River to the neighboring urban markets or who do it after the allowed period determined by TdC of the TRBR – are sanctioned (confiscated and/ or fined) by ICMBio.

‘Lawbreakers’ and their relatives show strong disagreement in interviews when reporting such cases, including due to incurred loss and related fine.

“The only bad thing is the control and the fines we have to pay. We [*quilombolas*] were here before. Why do we have to ask for authorization to do what we have always done: my grandfather, my mother. The Brazil nut business is already a tradition.”²¹⁰
(Interview with son of Brazil nut buyer from the community of CCPT, 34 years old, CCPT, 24.06.2013)

Despite his understanding of certain regulations by ICMBio for the conservation of biodiversity, he is strongly against the control and sanction system brought about with the establishment of the TRBR and reinforced by the TdC of the TRBR in 2012. He complains about the necessity of having to apply for ICMBio’s permission for *quilombolas* – who have long traditionally gathered and bought Brazil nut – to be ‘officially allowed’ to keep their tradition under given legal constraints.

When it comes to the perception concerning social control induced by the participation of *quilombolas* in the control and sanction system, most *quilombolas* have similarly critical viewpoints. According to the son of the third largest buyer from CCPT, *quilombolas* of this community have denounced him to ICMBio claiming he had not renewed his buyer permit (*papeleta de controle de comprador*, in Portuguese) for the harvest of 2013, which shows distrust among competing buyers. Similarly at Tapagem, its coordinator who is also endowed with the role of monitoring environmental ‘infractions’ as temporary ICMBio ‘employee’ faces an intrapersonal role conflict (based on Merton 1957), which is reinforced by ‘mobbing’ of some community members of Tapagem who have called him “betrayers” (based on Interview with a Brazil nut gatherer and *quilombola* leader from the community of Tapagem, 33 years old, Tapagem, 13.06.2014). Both these cases of the two largest communities at the TRBR show that the control and sanction system as it is can even lead to tensions among *quilombolas* themselves. The following might also have similar implications.

Quilombolas are encouraged by ICMBio to assist it in controlling the use of Brazil nut in the TRBR – “the gatherers [...] authorized to collect Brazil nut in protected areas [TRBR] are to help ICMBio in monitoring by denouncing [irregular use of natural resources]”²¹¹ (Term of Compromise of the Trombetas River Biological Reserve, Clause 34; Brasil 2012b: IX). However, this behavior backed by ICMBio does not legitimize such actions within *quilombola* communities, including in the CCPT where it was negatively commented.

What has also had a negative reception leading to verbal complaints as several community members of Tapagem reported in interviews there, was the fact they perceive

210 “A única coisa ruim é o controle e as multas que a gente tem que pagar. A gente estava aqui antes. Por quê tem que pedir autorização para fazer o que a gente sempre fez: meu avô, minha mãe. O negócio da castanha já é uma tradição.”

211 “Os castanheiros [...] autorizados a coletar nas unidades de conservação, auxiliarão o ICMBio na fiscalização através de denúncias”.

him as a ‘betrayal’ when it comes to denouncing infractions concerning the use of natural resources by them.

“It is our obligation because otherwise the boss finds out, and says ‘what are you doing there at the [ICMBio] base?’ [...] sometimes people [*quilombolas* from the community] say this that you are a ‘spy’; even friends or a person that I really like [say that], but that is our job.”²¹² (Interview with the coordinator of Tapagem and assistant at ICMBio Porto Trombetas from the community of Tapagem, 32 years old, Tapagem, 12.06.2014)

Employment of *quilombolas* as assistants by ICMBio provides modest yet otherwise rare cash-income for a few selected families and thereby raises their contribution to environmental conservation at least in a short to middle term. As hereby voiced however, it also causes frictions on a daily basis among *quilombolas* hired by ICMBio Porto Trombetas and others from the same community, especially when extracted natural resources are confiscated and fines issued. These actions must also be undertaken by *quilombolas* working half of the month in one of ICMBio’s basis, who claim that they have to do it, as they fear their ‘boss’ at ICMBio might find out if they pretended they had not detected any ‘infraction’. While putting local assistants in such positions, the reference made to the ‘boss’ indicates the existing hierarchical and unbalanced power structures even within the environmental entity, particularly in relation to *quilombolas*. In this context, for avoiding a biased perspective on the control and sanction system at stake, the perception of the ‘boss’ – referred to by his assistant – on the repeated infraction committed by the same person is also provided:

“This year again, the same person did not renew his registration card. And, as we are also a monitoring entity, we have to act according to what is written in the Term [of Compromise], you know.”²¹³ (Interview with the former coordinator of ICMBio Porto Trombetas, 43 years old, Porto Trombetas, 18.06.2013)

However, it does not mean that most *quilombolas* practice infractions and are thereby against existing formal environmental rules (per TdC of the TRBR), as according to the coordination of the ICMBio Porto Trombetas, most comply with the rules of the TdC of the TRBR. Although ICMBio is the party ‘empowered to write down these rules²¹⁴’ in the respective legally based instrument, he also reported that from the perspective of the respective ICMBio unit the relation among both parties ‘is not the easiest’ one. Further, the number and dimension of infractions can be regarded as indicators for the disagreement of certain *quilombolas* with the TdC of the TRBR, which formalizes the aforementioned bureaucratic procedures and compels Brazil nut gatherers and buyers to comply to this legislation. Three buyers – one had two infractions (showing his disagreement with ICMBio’s control) – and one gatherer reported to have had their Brazil nut load confiscated by ICMBio in 2013 and 2014.

212 “E é obrigação da gente por que se não o chefe descobre e fala ‘o que tu fazes ai na base afinal?’ [...] de vez em quando o pessoal fala isso que a gente é ‘olheiro’; mesmo amigos ou uma pessoa que eu considero bastante, mas nosso trabalho é esse.”

213 “E esse ano também, a pessoa não renovou o cadastro. E, como a gente é um órgão também fiscalizador, a gente tem que fazer cumprir o que tá escrito no termo, né.”

214 For a thorough conceptualization of written rules, see North (1990), Ostrom (2005).

ICMBio confiscated the Brazil nut load a local buyer was transporting in his boat, accruing a BRL 3.600,00 loss – corresponding to Brazil nut they could have sold in the urban center of Oriximiná. Similarly in 2011, he tried to pass the ICMBio bases after the allowed period, which accrued a loss of Brazil nut to him in the amount of BRL 5.000,00. He was also fined then, which has led him to recur to this sanction with a lawyer from the MPF.

Besides, according to a *quilombola* leader from the community of CCPT there were two more ‘infractions’ by Brazil nut buyers, which resulted in a loss of BRL 2.400,00 and BRL 5.600,00, respectively. Moreover, a buyer had his Brazil nut confiscated when transporting it after the allowed period. Yet, after recurring to ICMBio’s local manager, he received his product back and did not have to pay a fine.

There are a few Brazil nut buyers – mainly from one family that has been purchasing this NTFP for three generations – who have repeatedly been fined due to expired registration cards. In interviews with both father and son, the third largest buyers at CCPT while purchasing also in the communities of Abuí and Tapagem – strongly criticized ICMBio’s registration as well as control and sanction systems several times²¹⁵ (see Chapters V.2.2.1 and V.2.2.2). They both explicitly voiced their criticism in terms of limitation of their access to natural resources²¹⁶, compared to overall freedom they used to have before the establishment of the TRBR and the TdC of the TRBR (Field-work diary, note taken at the community of CCPT, 01.02.2014). Their resistance in complying to the registration as well as control and sanction systems of this PA – legally binding from 2012 per TdC of the TRBR – is evidenced by the three fines they have received from ICMBio as of 2014.

Albeit it does not represent an overall high infraction rate, the dimension of accrued loss²¹⁷ for upstream chain actors is still substantive given their limited income. In particular repeated infractions cannot be neglected, as it is an indicator of the manifestation of disagreement and resistance against ICMBio’s registration and control system in the frame of the TdC of the TRBR. This is so, *inter alia* to due to the fact that ICMBio makes sure information on environmental regulations is widespread among populations living in the TRBR, yet resistance including to the TdC of the TRBR leads some *quilombolas* to still take the risk of losing large sums of their already limited income.

Finally, repeated environmental ‘infractions’ indicate that fines can be counter-productive in terms of compliance to environmental laws and decrees in this case. Beyond the scope of this research and its hereby presented primarily qualitative results, the cost-effectiveness of the registration as well as control and sanction systems for biodiversity conservation in PAs (managed by ICMBio) can be further studied. Yet, in private properties where a different institutional arrangement applies – *inter alia*

215 The frequency of critical statements of actors affected by the TdC of the TRBR can be hereby seen as an indicator of the importance and/ or urgency of the ‘problem’ within an ‘ordinal scale’ (see Diekmann 2007: 608).

216 Not only Brazil nut but also wood, among other natural resources from the TRBR area. There, sustainable small-scale logging for renovating their own house is allowed, but selling wood to your neighbor (e.g. for him to build her/ his home) is not.

217 The accrued loss is composed by the sum of the fine and the value of Brazil nuts confiscated.

the ‘New Brazilian Forest Act’²¹⁸ –, environmental sanction schemes including a new deforestation monitoring from INPE (*Instituto Nacional de Pesquisas Espaciais*, in Portuguese) and enforcement system²¹⁹ of IBAMA in cooperation with the Federal Police might be effective for conserving forests in such given contexts (see e.g. Börner *et al.* 2015). Still, findings – including on perceptions of populations directly affected by the formalized limitation of the Brazil nut and market access indicate that: In the publically owned or collectively occupied lands at stake it seems that the control and sanction infrastructure in place has neither harnessed the potential for environmental conservation yet, nor provided room for further constructive arrangements among both aforementioned parties for inclusive sustainable development of the Brazil nut value chain in the Lower Amazon basin.

Moving forward – in addition to the reasons for why the interviewees were against the (Clause 10 of the) TdC of the TRBR and its implications, building up on the establishment of the TRBR – arguments in favor are presented at next.

(ii) ‘Pros’: In favor of implications of (Clause 10 of) the TdC of the TRBR

1. Due to TdC of the TRBR: Benefits for ‘internal’ gatherers and, especially, buyers as well as economy at community level, overall; while it provides a legally based backing to its parties at the TRBR area

Upfront, emblematic for this subsection, a relatively frequent argument in favor of the TdC of the TRBR supporting local Brazil nut gatherers and buyers for the benefit of local economies at community level is voiced by a gatherer:

“The number of external buyers has fallen because we have to help the ones from our community. It used to be full of buyers, they would buy half of the [available] Brazil nuts and people [buyers] from here would miss out on buying that. We used to gather more boxes [of Brazil nut] when more people from outside [the TRBR area, i.e. urban areas of Oriximiná and Óbidos] would come to gather Brazil nut as well.”²²⁰ (Interview with a Brazil nut gatherer from the community of CCPT, 49 years old, CCPT, 31.01.2014)

This interview excerpt includes an argument supporting the limited entrance of external actors and related practical restriction of the access to Brazil nut stands for gatherers formalized per Clause 4 of the TdC of the TRBR (Term of Compromise of the Trombetas River Biological Reserve, Clause 4; Brasil 2012b: IV). This Clause legally allows only for so-called ‘traditional gatherers’ (*coleteiros tradicionais*, in Portuguese) and gatherers married to so-called ‘traditionals’ (see Chapter V.2.2.1) to submit their

218 For details on the revision process of the Brazilian Forest Act (also referred to as New Brazilian Forest Code), see e.g. Sparovek *et al.* (2012).

219 This deforestation monitoring and enforcement scheme with rapid interventions by IBAMA and the Federal Police, after detection of deforestation per satellite imagery, shows positive correlations between fines and forest conservation (see Börner *et al.* 2015) – even though fines are often not paid.

220 “Diminuiu o número de atravessadores porque a gente tem que ajudar os daqui da comunidade. Era cheio de compradores, metade das castanhas eles compravam e o pessoal daqui ficava sentindo falta. A gente tirava menos caixas quando tinha mais gente de fora que vinha tirar castanha também.”

requisitions for authorization of local *quilombola* associations, followed by a formal permit from ICMBio.

However, in the case of Brazil nut buyers, a leader from Tapagem, states that even internal buyers spend a considerable amount of resources in town while not benefiting local economy as it is.

“The buyer from here also spends his money outside [the community]. He goes to town to buy something and at the end, the [economic] resources will not only remain at the community, you know, at the end, right?”²²¹ (Interview a Brazil nut gatherer and *quilombola* leader from the community of Tapagem, 33 years old, Tapagem, 13.06.2014)

With less competitors coming from outside the communities along the Trombetas River, it is hereby argued that internal buyers – including due to their family ties – can buy more Brazil nut and profit from an increased market share.

Further, with the restriction of their entrance into the area of the TRBR per TdC, more capitalized leaders, including the ones who own boats, took over this ‘business’ of bringing the aforementioned goods to sell in small stores in the communities they live in (detailed in Chapter V.1). Not only boat owners, but especially Brazil nut buyers started to create their own businesses. They buy basic goods e.g. coffee, sugar, cooking oil and even cassava flour in urban markets in order to sell it at a higher price in their communities. Moreover, a few internal buyers have also been able to acquire their own boats – which used to be one of the main advantages of external buyers –, while enabling them to gain market power vis-à-vis their competitors. In this context, an old leader and long-time buyer from the community of Tapagem, talks about the case of a local Brazil nut buyer who comes from a family of buyers from CCPT:

“Then, if we had a way to take this Brazil nut there [to urban markets] ourselves. Like [...] [the abovementioned Brazil nut buyer] himself said: *If there were 20 Brazil nut gatherers that would gather, for example, 200, 300, even thousand boxes gathered here, then freight my boat and I take it [the Brazil nut load] to Óbidos and you [Brazil nut gatherers] sell at a fair price.* So this [possibility] would give [commercialization] ideas to lots of people.”²²² (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current buyer of the community of Tapagem, 71 years old, Tapagem, 07.02.2014)

He mentions the win-win situation that surged for Brazil nut gatherers and buyers (both ‘internal’) when the buyer he referred to once offered a group of gatherers to freight his boat to sell their product at a higher price in Óbidos, instead of being paid a low farm-gate price. This also stimulated related entrepreneurship at the local level that would have less chance to come through in the competitive local markets with the numerous external buyers from before the Clause 10 of the TdC of the TRBR was established.

221 “Comprador daqui ele também vai gastar pra fora. Ele vai na cidade comprar alguma coisa e não vai ficar só pra comunidade o recurso, né, no final das contas, né?”

222 “Aí, se a gente tinha como levar essa castanha lá, como o próprio [...] ele dizia assim: *Se tiver aqui 20 castanheiros que juntar, por exemplo, 200, 300, até mil caixa que junte aqui, freta o meu motor aqui e eu levo lá em Óbidos e vocês vendem pelo preço justo.* Então, isso aí foi dando ideia pra muitas pessoas.”

“If that [Clause 10 of the TdC of the TRBR] did not exist, if it [the collection of 10 signatures from Brazil nut gatherers by external buyers] was not necessary, imagine how many buyers wouldn’t be here”²²³. (Interview with the coordinator of Tapagem and assistant at ICMBio Porto Trombetas from the community of Tapagem, 32 years old, Tapagem, 12.06.2014)

As both a member of ICMBio Porto Trombetas and a local leader – albeit not a Brazil nut buyer – he favors the aforementioned formal limitation (per Clause 10 of the TdC of the TRBR) of the entrance of external buyers into the TRBR. Local leaders at such (remote) communities tend to be very protectionist, including in *quilombola* ones given their past resistance escape after years of submission to oppression during slavery not only in the Brazilian Amazon but also elsewhere (see e.g. Acevedo & Castro 1998).

2. Based on Clause 10 of the TdC of the TRBR: Limited potential ‘exploitation’ of Brazil nut gatherers by external buyers (*regatões*) and benefits collective marketing through the cooperative (CEQMO)

Particularly more experienced *quilombola* buyers and leaders, referred to the exploitation of Brazil nut gatherers by external buyers (*regatões*). Some of them talked about the latter’s ‘cheating’ in the quantification of the former’s supply – implying unbalanced benefits – that was predominant in the 1980s and 1990s, as reported by such internal buyers and leaders. Prior to the TdC of the TRBR, with the ‘Brazil nut Project’ and the ‘Brazil nut Agreement’ (2001 and 2005, respectively – see Chapter V.2.2.1), the exclusion of external buyers was promoted through these informal institutional arrangements. Especially *quilombola* leaders and buyers who later became part of the board of their association (ARQMO) and cooperative (CEQMO) lobbied for them to be able to buy more including through CEQMO while inhibiting competition with external buyers. In so being, such leaders (Brazil nut buyers at the same time) agreed to have the respective informal restriction to market entrance in the TRBR area formalized per (Clause 10 of the) TdC of the TRBR.

In this context, the former president of ARQMO²²⁴ mentioned a survey conducted by IBAMA indicating that *regatões* strategically used bigger measuring items when buying Brazil nuts from gatherers.

“In a survey done by IBAMA [later called ICMBio] in the communities, the result was that the gatherers said that the external buyers were the ones who used to make profits. They had bigger ‘measuring items’ [for quantifying Brazil nuts that should correspond to one hectoliter] that would be the same as 3 boxes and not 2 boxes and a half and expensive goods as well. Gatherers would only pay off their debts with Brazil nut. IBAMA [ICMBio] itself did not want to let [external buyers] get in [the TRBR], only

223 “Se não houvesse isso, se não fosse preciso isso aqui, imagina quantos compradores não teriam aqui”.

224 He showed persistent resistance towards being interviewed by any researcher, including by the author of this thesis. This interview was only conducted after having been able to only briefly talk to him twice informally to overcome mistrust (Fieldwork diary, note taken in Oriximiná, 07.12.2013).

if quilombolas [from respective communities] would let them in.”²²⁵ (Interview with the former president of ARQMO and one of the main *quilombola* leaders of Oriximiná, 56 years old, Oriximiná, 07.12.2013)

Following his arguments, such external buyers did not pay higher prices at the farm-gate level and instead ‘got more from gatherers for the same price’. Deprived from achieving surpluses, gatherers used to – at the most – manage to pay off their debts by supplying their Brazil nuts to such external buyers, according to him.

In line with the local discourse of *quilombola* leaders, in the pursuit of ‘freeing gatherers from exploitation’, CEQMO’s leaders promoted the collective marketing of Brazil nut. This discourse implied in the reinforcement of the aforementioned socioeconomic effects of reduced ‘alternative’ buyers – object of Clause 10 of the TdC of the TRBR to enable the ‘exclusion of external buyers’ at stake, signed by leaders from ICMBio, AMOCREQ and ARQMO²²⁶.

“But then people [*quilombola* extractivists and community members] started to think that it was the [*quilombola*] association [ARQMO and later the cooperative CEQMO] that had prohibited these ‘fellows’ of entering; no it did not, we did not. We had a pact, you know, and within this pact, we started to organize ourselves.”²²⁷ (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current buyer of the community of Tapagem, 71 years old, Tapagem, 07.02.2014)

Thereby, one of the eldest leaders and buyers from Tapagem hereby talks about the – already before the TdC of the TRBR existing – ‘promotion’ for organizing Brazil nut gatherers and buyers in a cooperative (CEQMO) for the benefit of community members and not external buyers. This ‘productive organization’ started with the ‘Brazil nut Project’ in 2001, which was an informal institutional arrangement, referred by him as ‘pact’ among *quilombola* association leaders for Brazil nut gatherers and buyers in and around the TRBR.

However, CEQMO has not had sufficient cash flow (*capital de giro*, in Portuguese) for buying Brazil nut since 2012, not even from their members, which is related to rare commercialization contracts with larger (external) buyers, except for the first years following its foundation in 2006, referred to including by a Brazil nut gatherer from Abuí.

“They [CEQMO’s president and vice-president] committed themselves to buy Brazil nut, but the cooperative [CEQMO] did not have money to buy it. We are the ones who

225 “Num diagnóstico feito pelo IBAMA nas comunidades o resultado do que os castanheiros disseram foi que quem lucra com a safra da castanha são os atravessadores. Os produtores diziam que atravessadores que lucravam, tinham medida maior, dava 3 caixas e não 2 caixas e meia e a mercadoria muito cara também. Coletores só pagavam dívidas com castanha. O próprio Ibama não quis deixar entrar mais, só se os *quilombolas* deixassem.”

226 ARQMO’s president was an elder brother of CEQMO’s coordinator. As indicated before, CEQMO was established in 2006 building up on prior social and productive organization conducted by ARQMO, beginning with the Brazil nut Project in 2001 supported by the NGO CPI-SP.

227 “E aí, ficaram pensando que a associação tinha proibido esses companheiros de entrar; não proibiu, a gente não. A gente fez um pacto, né, e dentro desse pacto a gente começou a se organizar.”

are feeling the crisis here now.”²²⁸ (Interview with a Brazil nut gatherer from the community of Abuí, 36 years old, Abuí, 05.02.2014)

Yet, in 2012, CEQMO was supported by IMAFLORA to sell high-quality Brazil nut (the so-called *castanha de boas-práticas*, in Portuguese) for 40,00 BRL/box to an enterprise from the State of Sao Paulo, Brazil – when others were paying 25,00 BRL/box. It was a year of fruitful harvest as well as successful collective marketing. However, considerable additional social organization and capacity building for enhancing specific human capital – including the ability for resource mobilization and access to new market outlets (see Chapter VII) – is required in order to make it feasible for gatherers to refrain from selling Brazil nut to individual buyers and for CEQMO’s performance of 2012 to be maintained throughout the years.

3. Based on the establishment of the TRBR and on (Clause 10 of) the TdC of the TRBR: Avoided risk of letting external buyers enter the TRBR, who could unsustainably explore other natural resources than Brazil nut for commercial purposes

Prior to the establishment of the TRBR, external buyers would enter this area to buy Brazil nut from upstream actors and – according to some *quilombolas*, including a gatherer and leader from Tapagem – procured other products *in natura*, which can also be harmful for the ecosystem if not done in a sustainable manner.

“They [ICMBio Porto Trombetas members] do not want that the external buyer comes, because they say that the external buyer would come and then fill their boats’ basement with [Amazon-]turtles and cover them with Brazil nut. Then a guy [buyer] came to buy Brazil nut and made this mistake: he went there to talk to Chocron [owner of Mundial Exportadora Ltda.], to offer him turtle and he is against it. This was a big mistake, then well, then IBAMA [ICMBio] forbid it. This was six years ago.”²²⁹ (Interview with a Brazil nut gatherer and *quilombola* leader from the community of Tapagem, 33 years old, Tapagem, 13.06.2014)

Conservation of biodiversity – in particular Amazon-turtles, as per Management Plan of the TRBR (see Bonach 2004, IBAMA 2004), among other natural resources such as wood and fish – is the main goal of the TRBR and its unsustainable extraction for commercial purposes led to the complete prohibition even of its consumption by families in that area.

One of the eldest leaders from CCPT also mentions the benefits of the TRBR.

“Before the reserve [TRBR] and IBAMA [ICMBio], there were lots of ‘geleiros’ who would come up the river [Trombetas river] and take all our fish to sell it in the city

228 “Eles se comprometeram com a compra de castanha, mas a cooperativa não tem dinheiro para comprar. Quem tá sentindo a crise aqui agora, somos nós.”

229 “Eles não querem que o regatão venha, porque eles dizem que o regatão vinha, aí enchia o porão de tartaruga e a castanha por cima. Aí um cara veio comprando castanha aí fez esse erro: foi lá com o Chocron, oferecer uma tartaruga pra ele, e ele é contra. Isso deu um erro grande, aí, bom, aí que o IBAMA proibiu mesmo. Tá com uns seis anos isso.”

[urban center of Oriximiná]²³⁰. (Interview with *quilombola* leader and former Brazil nut gatherer from the community of CCPT, 82 years old, CCPT, 31.01.2014)

While pivotal for local food security and sovereignty, fish is the primary source of protein for *quilombola* families, including the ones living in the TRBR. Control of the sustainable use of natural resources of this PA of full environmental protection lies also in the interest of residents of such area. What is referred to above is that there used to be more predatory business conducted mainly by external actors who would extract large amounts of fish, including *Pirarucu*, and sell it at urban markets prior to the establishment of the TRBR in 1979.

In so being, this potential harm for the environment and given upstream Brazil nut actors is minimized through the management of the TRBR by ICMBio and the Clause 10 of the TdC of the TRBR, restricting the entrance of external (Brazil nut) buyers as well as of other actors with unsustainable business purposes.

4. Due to (Clause 10 of the) TdC of the TRBR: Avoided economic loss for local buyers who provide advance payments for their suppliers if more buyers were to enter the TRBR to whom these gatherers would sell Brazil nut (at a higher price) instead

The analyzed value chain is a network of lenders and/ or borrowers of credits for ‘financing’ the extraction of Brazil nut (local buyers lend money to gatherers) and its acquisition (mill owners directly or indirectly lend money to ‘their intermediary buyers’ up to the local buyers in the communities).

The Clause 10 of the TdC of the TRBR, serves to indirectly protect local Brazil nut buyers as well as processing mills from losing money or gaining less due to avoided competition from external buyers that would otherwise enter the TRBR.

The risk of Brazil nut gatherers not complying to their commitment to a certain local buyer by paying off their debts with Brazil nut is lower given less alternative buyers to buyers with whom gatherers are in debt with per *aviamento* system (see Chapter V.1). Thereby, the risk of the processing mills losing resources invested in ‘their local buyers’ is also reduced.

“I [and the largest buyer at CCPT] finance the Brazil nut gatherers with food and equipment and sometimes they do not sell it to me, they sell it to [...] [the third largest buyer of CCPT] who is paying 60 BRL/box. He does not offer advanced payments to Brazil nut gatherers.”²³¹ (Interview with a Brazil nut buyer from the community of CCPT, 41 years old, CCPT, 02.06.2014)

Despite the reduced number of Brazil nut buyers in and around the TRBR, there still is competition among internal buyers, for instance at the community of CCPT in 2014. Yet, the above reported loss of the committed supply of Brazil nut by indebted gatherers to other (internal) buyers, could be avoided if they paid more. Mundial Exportadora Ltda. as the main purchaser of Brazil nut from *quilombola* communities as well as the

230 “Antes da reserva e do IBAMA, tinha muitos ‘geleiros’ que subiam o rio e pegavam todo o nosso peixe para vender na cidade”.

231 “Eu financio os castanheiros com rancho e às vezes eles não entregam para mim, entregam para [...] que está pagando R\$ 60/caixa. Ele não financia castanheiros.”

two other processing mills, however, would not automatically pay more to ensure ‘their intermediary buyers’ get their supply.

This recurring issue has led the third largest buyer of the community of CCPT to change his strategy. He refrains from having a ‘fixed buyer and borrower’ – being able to establish trade (contracts) with new market outlets, e.g. with larger buyers from Mato Grosso in 2014 –, while no longer providing advanced payments for Brazil nut gatherers. As can be noticed the economic conditions in the frame of his Brazil nut business have improved, as he and his son reported themselves. Erstwhile, he was compelled to do so while making suppliers dependent on him, due to the strong competition with external buyers who would ‘overbid’ the price he offered and lose resources invested in the gatherers who were supposed to supply him and not other buyers. Although this risk is reduced with less competition, it can occur anyway, like it has happened to the largest and second largest buyers of the community of CCPT. However, a female leader claims that Brazil nut gatherers do fulfill their commitments by paying off their debts with their supply to the (local) buyers that lend them money.

“With the rule, it [the situation] stayed the same for us. We are already in debt with one buyer, [we] can only sell to him.”²³² (Interview with a Brazil nut gatherer and female leader from the community of CCPT, 55 years old, CCPT, 31.01.2014)

Thereby, she indicates that the Clause 10 of the TdC of the TRBR does not influence to whom Brazil nuts are supplied to, as the gatherers are dependent on advanced payments from (local) buyers and can, in principle, only supply them and not other buyers. Yet, as argued before, the less local Brazil nut buyers, the more dependent the gatherers are on them – which reasserts respective effects of the Clause 10 of the TdC of the TRBR on the decision of the gatherer upon to whom to sell his product.

Further, when put into context of the *quilombola* communities overall, a Brazil nut gatherer from Jauarí, provides an emblematic statement:

“We won’t give [sell] Brazil nut to others [other buyers], we sell it to our relatives, to my uncle, Hugo”²³³. (Interview with a Brazil nut gatherer from the community of Jauarí, 32 years old, Jauarí, 23.06.2014)

He claims that even if Clause 10 of the TdC of the TRBR did not exist, gatherers would continue to sell the Brazil nuts they often collect in family teams to their relatives. To consider hereby is that most *quilombolas* have some degree of kinship in both, the Trombetas and Erepecuru rivers.

Yet, the arguments contained in the two latter statements are weakened by respective findings of participant observation that confirmed the former arguments herein: several gatherers do not necessarily supply their borrowers or relatives but buyers who pay more (Fieldwork diary, note taken at the community of CCPT, 01.02.2014). In addition, albeit seldom the case, a few gatherers do not depend on advanced payments from buyers, as they have some initial capital to buy food and equipment to go to their ‘their collecting point’ at a Brazil nut stand (the so-called *ponto de castanha*, in Portuguese). In such cases, if ‘independent’ gatherers were offered higher prices, stemming from

232 “Com a regra, ficou igual para a gente. A gente já deve para um, só pode vender para ele.”

233 “A gente não vai dar castanha para outros, nós vendemos para parente, para o meu tio, o Hugo”.

increased competition including with external buyers, then only a State-led intervention could reassure the avoidance of loss of suppliers from ‘borrowing buyers’ to other (external) buyers – such as an adapted TdC (see Chapter V.2.4.2).

(iii) Complementing Remarks and Discussion on Local Perceptions

In the frame of complementing remarks, being the largest group of upstream value chain agents, Brazil nut gatherers are overall against the respective formalized²³⁴ limitation of their access to markets and criticize potential unfavorable price setting by fewer remaining buyers. Whereas they are in favor of competition among Brazil nut buyers for it potentially yielding higher economic returns for gatherers, which is supported by one of the eldest leaders of CCPT who used to be a gatherer himself.

“If more buyers would come, the price would rise and that local buyer has to increase [the price he pays at farm-gate level, as well]. And if buyers from outside come bringing a higher price from Óbidos, then the price rises with competition; and the more buyers would enter the higher would be the price.”²³⁵ (Interview with former Brazil nut gatherer and leader from the community of CCPT, 82 years old, CCPT, 31.01.2014)

He synthetically reports on key determinants of higher local prices for Brazil nut gatherers – such as increased competition among buyers, including external ones. He does so albeit it is known at the community level that he rather supports the local economy, as he owns one of the two ‘bars’/ grocery stores at CCPT and depends on local purchasing power. Being a *quilombola* leader in Oriximiná, he puts forward the above presented differentiated and objective view on what is better for the majority within the chain segment at stake – in this case the Brazil nut gatherers.

In the frame of more general complementing remarks, both gatherers and buyers are interested in limiting competition in collecting and purchasing Brazil nut, respectively. This is common sense and speaks in part for Clause 10 of the TdC of the TRBR, even though there are some Brazil nut gatherers that claim that potential external gatherers should not be allowed to collect ‘their Brazil nut’, as they say (reflected in Clause 4 of the TdC of the TRBR) – while they argue ‘the more buyers, the better’. Whereas most buyers are indifferent about how many Brazil nut gatherers there are, so long as they are supplied with this product at the lowest price possible.

Beyond these well-known relationships, the analysis of the perceptions of Brazil nut gatherers and buyers, complemented with viewpoints leaders from *quilombola* associations and the cooperative ‘CEQMO’ – both female and male for the sake of avoiding gender-biased positioning – rendered fruitful insights into reasons for and against key implications of the TdC of the TRBR and its Clause 10. Evidences and points of view of affected individuals who represent the aforementioned different *quilombola* groups from CCPT and other communities along the Trombetas and Erepecuru rivers were presented above and discussed herein – having perceptions of multiple chain

²³⁴ Formalization per Clause 10 of the TdC of the TRBR as a State-led intervention with market structure implications –, limiting the possibilities for negotiation possibilities and access to market outlets of Brazil nut gatherers (detailed in Chapter V.2.2.3).

²³⁵ “Chegando mais comprador aumenta o preço, e aquele comprador local tem que aumentar. E se vem comprador de fora trazendo preço de Óbidos mais alto, aí sobe o preço com a concorrência; e quanto mais compradores entrassem maior seria o preço.”

actors and given *quilombola* leaders ‘weighed equally’ while avoiding polarization and an ‘unfruitful dichotomy’. In the frame of the discussion on local perceptions of both sides ‘cons and pros TdC of the TRBR and its Clause 10’ is not intended to polarize and create an obstructive dichotomy – they are two sides of the same coin. Such two-fold structuring is a means for differentiated contrasting towards objectivity of perceptions from key actors directly as well as indirectly involved in the lower tiers of the Brazil nut value chain. This direct contrasting proved to be a constructive way to capture arguments from both sides – not only those agents in favor of (Clause 10 of) the TdC and its implications and the ones against it, but also further differentiating towards grasping pros and cons of the same actor on specific elements of (the implications of) the TdC of the TRBR without losing sight of punctual commonalities on the natural resource and market access at stake.

All in all, different factors affect local access to Brazil nuts and markets, including the TdC of the TRBR and its Clause 10. How norms formalized per TdC of the TRBR and the respective restricted entrance of external buyers is perceived varies according to the role and position assumed by actors within the Brazil nut chain at stake. Practically all internal Brazil nut buyers – except for two who want their sons to be paid ‘fair’ prices as gatherers – are against additional competition at community level with external buyers and, thus, in favor of (maintaining) the Clause 10 of the TdC of the TRBR. Whereas Brazil nut gatherers are overall contrary to the restriction of the entrance into the TRBR area for buying Brazil nut, formalized in Clause 10 of the TdC of the TRBR.

Summarizing the Discussion on Multiple Stakeholders’ Perceptions on the Implications of the Term of Compromise and its Clause 10

The perceptions voiced by upstream Brazil nut gatherers and buyers on implications of Clause 10 – and of the TdC overall –, including its resulting local oligopsonies are synthesized as concluding remarks on this formal institution filtering the access to natural resources and, particularly, to markets. To be stated upfront is that it is too early to assess the environmental impacts of the TdC of the TRBR, in addition to already captured positive effects on the increased number of ‘Amazon-turtles’ (*Podocnemis expansa*) per establishment of the TRBR (Bonach 2004). However, the specific effect of the TdC upon biodiversity as well as ecosystem goods and services cannot be measured yet in the TRBR area, neither in quantitative nor in qualitative terms.

Still, one cannot decouple the implications or effects of (Clause 10 of) the TdC on the access to natural resources (Brazil nut) and markets from respective perceptions reported by upstream Brazil nut value chain actors and *quilombola* leaders from the municipality of Oriximiná, Pará, Brazil. The viewpoints of these agents directly involved in the chain²³⁶ can render fruitful insights into reasons for and against (key implications of) the TdC and its Clause 10 – while assessing the need for adapting it.

236 The following is taken under consideration pertaining to the perceptions of value chain actors on implications of the TdC and its Clause 10: Both female and male viewpoints were captured for the sake of avoiding gender-biased positioning, but also both suppliers and buyers’ perceptions were equally taken into account, while avoiding unfruitful polarization or a skewed assessment.

Perceptions concerning the TdC vary not only between both the involved parties, but also within them. There is a difference between ICMBio's headquarters and ICMBio Porto Trombetas whose coordinator knows the context-specific needs better, including due to brief TdC consultations conducted in selected *quilombola* communities in the TRBR area. They know how dependent *quilombolas* are from NTFP gathering and marketing, particularly of Brazil nuts as key component of their livelihood strategies.

While evidences and perceptions of affected individuals who 'represent' different *quilombola* communities along the Trombetas and Erepecuru rivers were presented and discussed as 'cons' and 'pros' regarding the formal institution in question (detailed in Chapter V.2.3), related key messages of Brazil nut gatherers and buyers are outlined at next.

(i) Cons:

1. Due to Clause 10 of the TdC of the TRBR: Formation of Local Oligopsonies – Less Bargaining Power of Brazil nut Gatherers vis-à-vis Fewer Buyers at the Local Level with Increased Market Power
2. Based on Clause 10 of the TdC of the TRBR: Cartel Formation by Few Local Buyers at Community Level
3. Based on Clause 10 of the TdC of the TRBR: Decrease in farm-gate prices implying in less income for Brazil nut gatherers and further 'distributing more benefits' to local buyers
4. Based on Clause 10 of the TdC of the TRBR and related decreased number of external buyers: Brazil nut gatherers face frequent delay in payments, including when gatherers sell to the cooperative (CEQMO)
5. Due to Clause 10 of the TdC of the TRBR: Decreased number of external buyers who provided certain services and industrialized goods from town – done by upstream Brazil nut chain actors, accruing transaction costs for gatherers in addition to limited market access and increased dependence on local buyers

(ii) Pros:

1. Due to TdC of the TRBR: Benefits for 'internal' gatherers and, especially, buyers as well as economy at community level, overall; while it provides a legally based backing to its parties at the TRBR area
2. Based on Clause 10 of the TdC of the TRBR: Limited potential 'exploitation' of Brazil nut gatherers by external buyers (*regatões*) and benefits collective marketing through the cooperative (CEQMO)
3. Due to (Clause 10 of the) TdC of the TRBR: Avoided economic loss for local buyers who provide advanced payments for their suppliers if more buyers were to enter the TRBR to whom these gatherers would sell Brazil nut (at a higher price) instead

To be noted is that perceptions concerning the TdC vary not only between both the involved parties, but also within them. There is a difference between ICMBio's headquarters and ICMBio Porto Trombetas whose coordinator knows the context-specific needs better, including due to brief TdC consultations conducted in selected *quilombola* communities in the TRBR area. They know how dependent *quilombolas* are from NTFP gathering and marketing, particularly of Brazil nuts as key component of their livelihood strategies.

Whilst there are different factors affecting local access to Brazil nuts and markets, the TdC (and its Clause 10) features as a key determinant of such access. How the norms formalized per TdC and the respective restricted entrance of external buyers is perceived varies according to the role and position assumed by actors within the Brazil nut value chain at stake. Practically all internal Brazil nut buyers – except for two who want their sons to be paid 'fair' prices as gatherers – are against additional competition at community level with external buyers and, thus, in favor of (maintaining) the Clause 10 of the TdC. Whereas Brazil nut gatherers are overall contrary to the restriction of the entrance into the TRBR area for buying Brazil nuts – formalized in Clause 10 of the TdC – given their decreased bargaining power and negotiation possibilities. To showcase this perception it is to draw on a concrete example²³⁷: An interviewed gatherer complained about related lower Brazil nut prices paid at community level (CCPT), which resulted in reduced purchasing power, having made it harder for him to buy basic goods for his children as of 2012.

Moving forward, formalization can not only be access limiting yet also enabling, which is to be supported with further evidences captured at multiple levels as leverage points for inclusive governance and a locally adapted TdC of the TRBR.

2.4 Inclusive Governance and Adapted Term of Compromise for Overcoming Access Limitations

To be stated upfront is that the importance of the worldwide well-established environmental conservation measure of PAs is not hereby contested. Neither it is to undermine the responsibility of respective ministries of environment to ensure the protection of nature, including for strictly protecting areas with high biodiversity, especially the ones uninhabited. Yet, particularly, territories – such as traditionally occupied lands – striking a balance between respective conservation and allowing for sustainable use of livelihood relevant resources by rural populations long living in these areas is to be further considered. While key steps for enabling sustainable human-nature relations have been taken – including by IUCN on co-management per pluralist board composition of given PAs –, there is a long way to go for effective joint decision-making through inclusive governance structures for managing PAs.

237 For further elaboration on each one of the above messages regarding the implications of the TdC and its Clause 10, in total '8 cons' and '4 pros', see Chapter V.2.3.

2.4.1 Transforming Governance of Councils for Co-Managing Protected Areas: From ‘Consultative’ to ‘Deliberative’

The existence of often well-functioning co-management and horizontal governance structures of PAs – e.g. “collaborative management (various degrees of influence) [and] joint management (pluralist management board)” (Borrini-Feyerabend *et al.* 2008: 1) – is indisputable. However, such participatory modalities for PA management – including areas that have been sustainably managed prior to their establishment – have not yet been applied to PAs of full environmental protection in Brazil (ICMBio 2014: 7). While there are consultative councils allowing, to a limited degree, for participation of affected populations in the management of such PA type (as well as other national and state level PAs of full environmental protection), in practice their voice remains unheard.

A key foundation of this limited room for participation in the management of these areas is the governance structure of respective councils – consultative and not deliberative –, while providing a framework for consultation of such populations and not for their participation in decision making. Decisions concerning the PAs in question are made only by ICMBio as the responsible governmental entity. What adds to the challenge of participation is the fact that representatives of *quilombolas* in the Consultative Council for the Management of the TRBR do not live any longer in the PA at stake (Fieldwork diary, note taken in Oriximiná, 16.06.2014). They do not always represent the interests of directly affected *quilombolas* – neither of Brazil nut gatherers and buyers nor of other *quilombolas* living in the TRBR area who overall depend on the (sustainable) use of natural resources. Yet, ‘non-leader’²³⁸ *quilombolas* are not to be victimized, as they hardly protest – neither vis-à-vis their leaders nor ICMBio – against the lack of representation of their interests. Similarly to their long-term strive for land tenure and property rights per TQs, they could further engage in claiming their rights to effectively participate in decision-making beyond land titling. I.e. overall, decisions on the management of the TRBR and, more, specifically, towards sustainable Brazil nut and market access through an adapted TdC of the TRBR. This also requires further organization of Brazil nut gatherers – the ones most negatively affected in their livelihood strategies (e.g. through low farm-gate prices due to weakened bargaining power per establishment of the TRBR and TdC). However, such bottom-up efforts seldom result in governance and institutional changes needed for promoting sustainable inclusive development, in the case analyzed herein, for strengthening Brazil nut gatherers’ chain position, without neglecting environmental conservation.

What is further needed is transforming from the current governance type of consultative councils for managing federal PAs – in this case, the Consultative Council for the Management of the TRBR established per federal decree (Brasil 2006) –, which are under ICMBio’s responsibility to deliberative ones. This requires an institutional change of respective federal decrees per SNUC at national level. This change in governance structures based on the change of formal institutions strongly depends on the political will of ICMBio (detailed in Chapter VII).

²³⁸ The ones who are not coordinators of a FUG or community.

This would not only enable the voice of directly affected actors to be heard but also to raise issues – e.g. limited access to Brazil nut and respective markets per TdC – to be jointly decided upon according to the principle of “one member, one vote”²³⁹. This would be a considerable step towards effective co-management of such PAs allowing for sustainable use of natural resources by such populations. What further favors changing the governance structure of such PAs is the lack of evidence for a positive environmental conservation impact/ effectiveness in PAs in Brazil, overall²⁴⁰. In the case of the TRBR the only such evidence is the rising number of ‘Amazon-turtles’ (*Podocnemis expansa*), which is the main goal of the TRBR (ICMBio 2014: 58). In fact, the respective institutional change would allow for locally owned engagement in inclusive value chain development of NTFPs (e.g. Brazil nut), without undermining biodiversity conservation – based on sustainable natural resource and market access. Such chain development of NTFPs would be a win-win measure in terms of maintaining the forest by sustainably using e.g. Brazil nut and at the same time ensuring local socioeconomic development. This would further add locally value to the local Brazil nut business and raise the self-esteem of Brazil nut gatherers at community as well as municipality levels. Moreover, it would not only mitigate the risk of rural dwellers residing in these PAs to switch to more harmful land use practices than small-scale NTFP use (e.g. logging, cattle ranching) or migrating and expanding the agricultural frontier, but also promote long-term sustainable development. Under certain conditions – *inter alia* continued collaboration with ICMBio for monitoring and controlling for potential overexploitation of natural resources – sustainable NTFP (Brazil nut) use could even raise the effectiveness of environmental conservation (see Scoles & Gribel 2012), including in PAs (of full protection).

What is certain is that a deliberative council for the management of the TRBR can serve as a platform for Brazil nut gatherers to effectively participate in respective decision-making. The gatherers could then effectively participate in shaping the change they – as the majority of upstream Brazil nut chain actors – want concerning an adapted TdC. Such adaptation of the TdC could entail an amendment *inter alia* to its Clause 10 for moving beyond the often impassable hurdle of the required signatures of both ICMBio and the *quilombola* associations ARQMO or AMOCREQ (in the case of the community of CCPT) on top of the ones from 10 gatherers to authorize each ‘external’ buyer to purchase in the TRBR area. Discussions on how the TdC of the TRBR is to be changed have already been initiated by *quilombola* leaders and ICMBio, however none of the changes suggested by the former have been taken into account, which is evidenced by the renewed TdC with the exact same content as the previous one. A considerable number of *quilombola* gatherers have expressed their discontent with the TdC as it is and its implications including local oligopsonies given the reduced number of buyers at community level (see Chapter V.2.3). Moving forward, it is up to

239 Thereby, in PAs of full environmental protection, ICMBio could be the only member of such deliberative councils to be endowed with the possibility of vetoing any move towards unsustainable use of natural resources.

240 For environmental conservation issues in PAs, while showing deforestation increase in such areas throughout Brazil, see Araújo *et al.* (2017).

them together with their representatives to discuss institutional changes with ICMBio and come to ‘terms’ per democratically decided ‘compromise’.

2.4.2 Adapted Term of Compromise for Strengthening the Position of Gatherers

A locally adapted TdC together with further ‘social and productive organization’ could strengthen Brazil nut gatherers’ position within the respective value chain, building on an enabling institutional environment for them to overcome their trade dependency on given buyers.

Further, a democratic revision of the TdC could allow for the gatherers to determine how many buyers they – and not only their leaders and ICMBio – allow to purchase NTFPs (including Brazil nut) in the TRBR area, while enabling them to overcome market asymmetries established through this formal institution. Instead of reinforcing institutionalized asymmetric patron-client relations among Brazil nut gatherers and buyers per *aviamento* as debt-peonage system, an adapted TdC could help the former diminish unbalanced (bargaining) power relations vis-à-vis local buyers.

Yet, per evidence from interviews at ICMBio’s headquarters, its coordinators in Brasília have expressed their lack of interest in the TdC, which was confirmed by the fact that it only reacted to renew the already adopted TdC just before the respective expiration date, which corresponded to the deadline the MPF gave it to take this action. Despite it not being the ideal solution for neither one of the parties, it was still considered ‘better than nothing’ by the actors at the local level – ICMBio Porto Trombetas and *quilombola* (gatherers and buyers) –, given their will to have a ‘formal backing’ per TdC for the unavoidable yet traditionally sustainable use of Brazil nuts in the TRBR area. Whereas changing the governance structure of the councils at stake to deliberative is another measure ICMBio, particularly its headquarters, would most probably not be favorable of.

However, there is a self-declared need for finding locally-owned ‘solutions’ without negative (unintended) consequences for any of the parties in PAs such as the TRBR – i.e. ‘alternatives’ congruent with the principles of ‘do no harm’ as well as ‘leaving no one behind’ (United Nations General Assembly 2015: 1)²⁴¹. Thereby, a first step for coping with harmful negative implications of the TdC (Chapter V.2.2.3) is changing governance structures of the PAs they apply for in Brazil.

241 The principle to ‘leave no one behind’ was first published in the Resolution “A/RES/70/1” adopted at the United Nations General Assembly (UNGA) (United Nations General Assembly 2015: 1), as an outcome document signed by 193 member states at the ‘United Nations Sustainable Development Summit’ in the frame of the 70th session of the UNGA starting on 25.09.2017. The ‘pledge for not leaving anyone behind’ intends to put the most vulnerable at the center of development cooperation initiatives for them not to be further marginalized, while it is contained in the preamble of the post-2015 universal agenda for sustainable development and published in a piece titled “Transforming our World: The 2030 Agenda for Sustainable Development” (United Nations 2015: 5).

2.4.3 Formalized Commission for Value Chain Governance in the Lower Amazon Region

All in all, there is a positive side of formalization in the case of the Brazil nut value chain in the Lower Amazon basin, namely “Governance Commission for Strengthening the Brazil nut Value Chain in the Lower Amazon Basin, Pará”.

Evidences show positive implications of the formalization of the Brazil nut value chain in the Lower Amazon basin by having the Brazilian Ministry of Development, Industry and Foreign Trade (MDIC, per acronyms in Portuguese) take it under consideration as a cluster/ local productive arrangement (APL, per acronyms in Portuguese) within the ‘National Policy for APLs’ (local cluster development) led by MDIC. The formalization process was initiated by establishing the ‘Governance Commission for Strengthening the Brazil nut Value Chain in the Lower Amazon Basin, Pará’ launched at the seminar with the same title led by SECTI with the support of the Puxirum-Sociobio.net Project in Óbidos in February 2014. The establishment of this governance structure fulfilled a key requirement of the MDIC for it to officially recognize the respective Brazil nut cluster at the national level and granting access to resources channeled through the ‘National Policy for APLs’. This process illustrates an exceptional case, in which formalization – through ‘vertical integration’ by the federal government of an informal institutional arrangement into a formal national policy – enlarges (instead of restricting) the access to resources, policies and, particularly, to markets by involved value chain actors and entities, while potentially strengthening the value chain on a sustainable basis. This is a case of best practice of a ‘multisectoral’ and multiscalar cooperation. Thereby, CEQMO that has been cooperating with IMAFLORA, as well as both Brazil nut processing mills from Óbidos have managed – with the support of academia (particularly, the *Freie Universität Berlin*, in German) – to launch their commission for strengthening the respective value chain through the formalization and integration into the ‘National Policy for APLs’.

Having thoroughly explored leverage points for inclusive governance along the Brazil nut value chain, building on given formalization processes as well as how the implications of the TdC at stake are perceived by upstream chain actors and *quilombola* leaders – what role do extractivist leaders play in the resource and market access by Brazil nut extractivists?

3 Discussing the Role of *Quilombola* Leaders in Accessing Resources and Markets

The rationale of Chapter V.3 is to synthesize the role of *quilombola* leaders – given challenges and leverage points they pose upon *quilombola* extractivists’ resource and market access based informal and formal institutions, yet primarily exploring individual versus collective benefits. Thereby, the intention with this chapter is to discuss empirical insights (based on theoretical, analytical evidences) while striving to objectively respond to both research questions herein. Such evidences pertain to the resource (Brazil nut) and market access by NTFP extractivists in the realm of offering an unbiased picture of access determinants and processes without victimizing any of the involved Brazil nut value chain actors (e.g. gatherers) in the study area.

To be stated upfront is the fact that three coordinators of ICMBio (two from the Porto Trombetas unit and one from the regional unit of Santarém) have conducted initial discussions on possibilities for using livelihood relevant natural resources from the TRBR and accessing markets – to expand the current TdC (based on Meeting on TdC of the TRBR among acting coordinator of ICMBio Porto Trombetas at that time, leaders of *quilombola* communities and representatives of the NGOs Kirwane as well as of IMAFLORA, Porto Trombetas, 09.12.2013). However, this TdC discussion process for the TRBR has fallen short not only of information sharing between ICMBio and *quilombolas* but also of the latter's leaders vis-à-vis whom they represent. Such meetings to discuss the TdC of the TRBR were characterized by very limited spaces for participation in decision making of *quilombolas* themselves.

Whilst having had a consultative character for the co-design of the TdC of the TRBR, the discussions at stake initiated by ICMBio Porto Trombetas are far from enabling effective participation for inclusive decision-making processes on sustainable resource use at the TRBR area. Leaders from both parties – from ICMBio as well as of ARQMO and AMOCREQ – have not provided room for including further members of *quilombola* communities in decision-making concerning their access to livelihood relevant natural resources and markets.

On the one hand, the case of projects related to the access to Brazil nut and its commercialization show how *quilombola* leaders have acted as brokers of projects for collective benefits – beyond collective land titling, TQs, by founding a Brazil nut cooperative, CEQMO. On the other hand, the same leaders have exerted gatekeeping regarding the access to information and economic resources for their own individual benefits. The former role of leaders as brokers for collective benefits can imply in dependency from other *quilombolas* on them, whereas the latter role as gatekeepers for their own exclusive benefits²⁴² goes one step further in exacerbating socioeconomic inequalities. Aligned to what was put forward by Ribot & Peluso (2003), the ability – building on human capital and actor-centered networks, beyond property rights – to access resources plays a decisive role in how derived benefits are distributed.

These challenging conditions for most *quilombolas* can be enhanced, for instance, by promoting leadership among local youth as well as providing incentives and creating captivating alternatives based on youngsters demands at community level while minimizing rural exodus. Some scholars regard communities as homogenous social units (see e.g. Etzioni 1961) with inherent social cohesion – particularly in the case of *quilombolas* (traditional populations) who are mostly relatives and have a common history. Other researchers have dissected these social systems so as to identify the prevalent heterogeneity of villages (see e.g. Leach *et al.* 1999). Herein the assumption of a relatively solid social cohesion of *quilombola* communities is challenged by analyzing decision-making on the access to resources as well as markets and the lack of claims by community members upon leaders for a more democratic participation.

242 Platteau & Abraham (2001) have, for instance, addressed potential problems emerging from power leaders are endowed with.

3.1 Three Processes Characterized by the Lack of Local Participation

In what follows, three processes pertaining to the lack of participation of the majority of *quilombolas* – i.e. of community members other than respective leaders – are outlined.

The first process, in which most *quilombolas* have not been involved, is the transition from the Brazil nut Project as of 2001 to the establishment of the cooperative CEQMO in 2006 is called by its leaders “The Path of the Best Business”²⁴³. Beyond leaders’ discourse, however, both this process and the one for consolidating ARQMO with external support in the framework of an EU funded project, have – except for engaging *quilombola* leaders – not enabled a broad and effective participation of most directly affected actors, particularly local *quilombola* extractivists. Decision-making in this process has been undertaken by leaders of both *quilombolas* and external actors (NGOs such as CPI-SP with the support of Christian Aid and other organizations).

The second process concerns partial participation of *quilombola* leaders in the consultative governance structure established by ICMBio for managing PAs of full environmental protection under its responsibility. Thereby, most *quilombolas* have not been involved in the Consultative Council for the Management of the TRBR, led by ICMBio in brief consultations with leaders of *quilombola* associations and other organizations (see Chapters V.2.4.1 and VII). *Quilombolas*’ participation is further restricted by the lack of sharing of information by *quilombola* leaders with other community members in the frame of the management of this PA (based on Interview with a Brazil nut gatherer from the community of Abuí, Abuí, 04.02.2014).

The third process concerns the establishment and renewal of the TdC of the TRBR characterized by partial participation of *quilombola* leaders. Thereby, the lack of participation of *quilombolas*’ other than leaders is also exacerbated by the lack of sharing of information by *quilombola* leaders from respective punctual meetings they attended with ICMBio Porto Trombetas. Such lack of participation was specifically evidenced in the decision-making process prior to the renewal of the TdC of the TRBR in 2014 (based on Meeting on TdC of the TRBR among acting coordinator of ICMBio Porto Trombetas at that time, leaders of *quilombola* communities and representatives of the NGOs Kirwane as well as of IMAFLORA, Porto Trombetas, 09.12.2013). Some input on its clauses was given by ARQMO as well as AMOCREQ, yet none of their demands for accessing further livelihood relevant natural resources (beyond Brazil nut) was considered by decisions of ICMBio in 2014. At the end the same TdC (2012-2014) was renewed for another three years for formally regulating Brazil nut and market access (see Chapter V.2.1). This governmental entity has pushed its own environmental conservation interests while *quilombola* community members were neither involved in the process of the establishment of the TdC of the TRBR nor in its renewal.

Overall, there is a lack of democratic participation including insufficient (political) will from leaders of both parties to provide entry points for local *quilombolas* to participate in decision-making. In addition, there is a weak engagement of the latter to claim their

²⁴³ *O Caminho do Melhor Negócio*, as it is called in Portuguese by current CEQMO coordinators and local *quilombola* leaders who are supportive of this cooperative.

participation and creating spaces for fulfilling respective rights²⁴⁴. It also indicates leaders' strive for own individual benefits while it characterizes a lack of collective action, as conceptualized by Olson (1965)²⁴⁵. At last, some community members let leaders act for them while showing lack of interest in investing time for participating in meetings of community concern (Fieldwork diary, note taken in Oriximiná, on 02.07.2013).

3.2 Local Leaders as 'Brokers' and 'Gatekeepers' for Individual and Collective Benefits?

Overall, local leaders of *quilombola* associations and cooperative have used their 'social networks and political influence' for collective outcomes by playing a key role as 'brokers' (e.g. in the titling process of TQs) as well as for their own individual benefits. In the latter case, they have, for instance, filtered the access to resources as 'gatekeepers' (e.g. in the access to resources such as financial resources and information) of *quilombola* communities in Oriximiná.

All three leaders from the Association of the Remaining Communities of *Quilombos* from the Erepecuru River (ACORQUE)²⁴⁶, ARQMO and CEQMO are brothers, which indicates a tendency for existing 'nepotism' in the study area (Fieldwork diary, note taken in Oriximiná, 16.11.2012). Overall, they accumulate different roles at community level (e.g. coordinators of local associations and Brazil nut buyers), and centralize decision-making and power²⁴⁷. *Quilombola* leaders have large social networks, being endowed with vertical, heterophilic and weak ties²⁴⁸, while often functioning as (stand-alone) bridge builders²⁴⁹ to strategic policy-makers as well to owners of at least one of the three regional processing mills.

244 For instance, civil rights and right to food – based on access to livelihood relevant natural resources, such as traditionally and sustainably gathered Brazil nuts in this case.

245 For further conceptual and empirical evidences on collective action, see Olson (1992), Ostrom (1990, 1994), Udéhn (1993).

246 ARQMO is the umbrella *quilombola* association for *quilombolas* living communities along both the Erepecuru and Trombetas rivers based in the urban center of Oriximiná; whereby ACORQUE is affiliated to it as a so-called 'area association' (*associação de área*, in Portuguese) of the Erepecuru river.

247 Political resources – kinship in the frame of individual benefits from respective 'favors', such as in the case of cooperative leaders and the mayor of Oriximiná – and in some cases, project resources since the beginning of the activities of ARQMO in the 1990's.

248 All these concepts stem from social capital scholarship, while it can be understood as contacts from community (internal) members to key external decision-makers. For further reading on social capital, see e.g. Coleman (1988), Portes (1998), Wasserman & Faust (1994), Putnam (2000), Woolcock & Narayan (2000), Grotaert & Bastelaer (2001), Lin (2002), Huber (2009). For a critical perspective on social capital, see e.g. Portes & Landolt (2000), Harriss (2002), Ballet *et al.* (2007).

249 Specifically on bridging and linking social capital, see e.g. Woolcock & Sweetser (2002), Cosyns *et al.* (2013). Both these publications as well as Pooley *et al.* (2005) – through the notion of 'sense of community' (*ibid.*: 71) – and Porter & Lyon (2006) further refer to group-based or bonding social capital, as social ties within a social system/ group (e.g. a village/ community). For a more comprehensive and in depth societal analysis, see Tönnies (1887).

Quilombola communities and their members have different degrees of interaction with external actors as well as with other communities and respective individuals. CCPT has been isolated from other communities, including due to a local leader's decision to form his own association, AMOCREQ, for representing the community of CCPT as of the 1990's. It has always been independent from ARQMO, whose foundation purpose was to represent all other 36 *quilombola* communities of Oriximiná, accounting for 10.000 inhabitants, particularly for acquiring formal access to collective lands while succeeding in having 25% of them – yet much less of the surface of respective territories – titled as part of respective TQs (Andrade 2015: 196).

According to CPI-SP and IMAFLORA that have been collaborating with ARQMO and CEQMO through projects since their establishment in 1989 and 2006, respectively, they both find that AMOCREQ lacks openness for project collaboration with them (based on Interview with the coordinator of CPI-SP, São Paulo, 28.01.2015, and on Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015). This can be explained in part due to the fact that under ARQMO there are four different area associations and thus representation of multiple interests, whereas AMOCREQ was led by one person at the community of CCPT – who strived to 'protect the community's interests', as reported by him, from such external intervention²⁵⁰ – for over 15 years (based on Interview with *quilombola* leader as well as former coordinator of AMOCREQ from the community of CCPT, CCPT, 01.02.2014). Yet, there are also indicatives of some leaders taking advantage of their role of functioning as linking element between the cities and communities. Thereby, such leaders while being endowed with a larger social network – than other community members for influencing decision-making for their own benefits – they often do not share resources they access. There is a case of the use of the direct contact of a leader from the community of CCPT to Mundial Exportadora Ltda. who acquired a truck for transporting Brazil nut from this processing mill (based on Interview with a Brazil nut gatherer from the community of CCPT, CCPT, 22.06.2013).

An additional example of collectively owned resources per TQ for private instead of joint benefits – which could be achieved e.g. through community-based sustainable forest management – is the case of a large logging firm that installed itself by the community of Jaurí along the Erepecuru river, early this decade. With an ambitious forest management plan, it promised in its 'contract' with surrounding communities employment generation and 3000,00 BRL/month per family 'associated to the area association ACORQUE'. They did not even keep the former promise, as only very few local *quilombolas* are employed there for the firm to control who has access to information on the amount of trees and species they have been logging, which is not only unsustainable but rather devastating. According to an interviewee from the *quilombola* community of Jaurí, only ACORQUE's leader has some information and, potentially, related financial benefits (Interview with a Brazil nut gatherer from the

250 Still, AMOCREQ through its former coordinator has focused on strategic alliances with key partners – from the government at the state level of Pará (e.g. with IDESP) as well as non-governmental at national level (e.g. AMAZON) and private sector at the Lower Amazon basin (e.g. Mundial Exportadora Ltda.) – for land tenure per *quilombolas*' overall priority as well as for capacity-building and Brazil nut market outlet, respectively.

community of Jauarí, Jauarí, 23.06.2014). Participant observation confirmed that this leader informed the communities under the administration of ACORQUE, that respective families would only receive BRL 3000,00 after three years of intense large-scale logging in areas with one of the highest biodiversity in Brazil, including high-value tree species, such as *Mogno (Swietenia macrophylla)* (Fieldwork diary, note taken in the community of Jauarí, 03.07.2013)²⁵¹.

In so being the extent to which leaders use their political influence and social networks to shape the access to resources also depends on the leaders themselves and their interests – who can assume different roles either as brokers primarily for collective benefits or as gatekeepers in their own individual interests. Even a sole leader can establish connections to ‘key external actors’, including larger Brazil nut buyers, independently of how well organized and connected an association or cooperative might be. This principle of collective action was put forward by Olson (1965) on ‘powerful’ individuals in heterogeneous groups who can still make the production of collective goods happen. Other leaders do not share information e.g. from meetings they ‘represented’ their communities in and use these opportunities for their own instead of collective benefits.

All in all, most communities have a leader who profits from his/ her social position while providing for: (i) collective benefits – e.g. playing the role of a broker when using his/ her vertical social ties to have the local mayor build community centers and/ or co-sponsor communities’ traditional annual festivities; and/ or (ii) own individual profits, which is related to intra-communitarian socioeconomic stratification and information asymmetry. The latter resonates with the role assumed by leaders as so-called gatekeepers e.g. when filtering information only they receive from external actors, which also applies to the aforementioned case.

While asymmetries occur at different scales, the following statement puts information asymmetry into a broader context, as a root cause for power imbalances and overall inequalities among socioeconomic strata within communities and among different social groups worldwide.

“This is indeed the information age. The divide between the rich and the poor, the privileged and the deprived, the powerful and the marginalised have become marked primarily by a differentiation in access to knowledge and information. Those who have access to cutting edge knowledge hold the advantage in all arenas of social, political and economic life today.” (Nelson Mandela’s opening address of the 26th International Conference on Improving Teaching, Johannesburg, South Africa, 01.07.2001)

Zooming back into the study area as a transition to the next subsection, gatekeeping herein further manifests in lack of transparency or even mismanagement and individual misuse/ deviation of collective resources by leaders of given FUGs.

251 This is a case of illegal logging involving corruption induced by a large external logging firm, which has not been monitored by the government entity IBAMA (part of MMA), which is responsible for monitoring and sanctioning actors involved in illegal logging and deforestation in Brazil.

3.3 Three Cases of Mismanagement of Local Associations

An emblematic case of mismanagement or individual misuse of (financial) resources by leaders of ARQMO occurred in the EU-funded ‘*Quilombola* Handicraft Project’ in cooperation with CPI-SP, involving 11 women from *quilombola* communities along the rivers Trombetas and Erepecuru. Contrary to what was agreed among project participants, only 5% of the prices paid in São Paulo and Porto Trombetas was paid to local women who worked hard in crafting such artwork out of Brazil nut pods – the rest remained with leaders of ARQMO who organized the transport and made the link to these market outlets through CPI-SP.

“There was the project of the [Brazil nut] pods for handicrafts. My daughter, Cleita and another ten [women] worked [in this project], but only BRL 2,00 arrived here for them and there in São Paulo [the handicrafts] were sold for BRL 40,00 and for [BRL] 30,00 at the MRN [*Mineradora Rio do Norte* in Porto Trombetas] – the rest was taken by ARQMO[s coordinators].”²⁵² (Interview with mother of woman from the community of Tapagem who participated in the ‘*Quilombola* Handicraft Project’, Tapagem, 07.02.2014)

This statement also illustrates that even among *quilombolas* – including relatives – there are cases of certain leaders acting for their own benefit (e.g. per corruption) to the detriment of others’ joint interests in the frame of business relations and externally induced projects resulting in unequal benefit sharing.

Similarly, yet at a smaller scale, financial resources got individually diverted in the frame of a project led by IMAFLORA with selected *quilombola* communities for sustainable marketing of *copaíba*, a naturally occurring NTFP.

This led both CPI-SP and IMAFLORA to change its strategy to cooperate at the local level in Oriximiná towards centralizing the management of project resources (based on Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015).

Further FUGs in Oriximiná – e.g. ASCONB, the association from the community of Nova Betel in the Bec road whose former coordinator took credits via FNO for himself, which led to its bankruptcy (Interview with leader from the community of Nova Betel, Nova Betel, 11.12.2013) – have been accused of mismanagement, which applies for numerous associations and cooperatives in rural *Amazônia*.

Still, there are good governance and management cases among FUGs and small-scale rural enterprises in the Amazon, *inter alia*, respectively, two exceptionally well-managed cooperatives, Cooperacre in Brasília, Acre, and the ‘Mixed Cooperative of Rural Producers of Tomé-Açú’ (CAMTA, per acronyms in Portuguese) in Tomé-Açú, Pará. While social cohesion also played a role for the success of both these cooperatives, it also presents risks – both sides, particularly the latter is to be explored in the next subsection.

252 “Teve o projeto de capungo para fazer artesanato. Minha filha, Cleita e mais umas dez trabalharam, mas só chegava R\$ 2,00 para elas aqui e lá São Paulo vendia por R\$ 40,00 e 30,00 na MRN – o resto era desviado pela ARQMO.”

3.4 Social Cohesion and the Lack of Claims for Joint Decision-making

Whilst social cohesion can catalyze collective action – whereby leaders play a decisive role in creating as well as accessing public goods for the benefit of respective social groups (Olson 1965) – it is only part of the story.

Given most are relatives and have a common culture and history of having fled from oppression of so-called ‘slave-owners’ shortly before the abolishment of slavery in 1888 and settled in remote communities, quilombolas are perceived to have a relatively higher ‘pre-disposition’ for social cohesion. Yet, aforementioned centralized decision-making by leaders might not enable social cohesion to result in democratic collective action nor in collective but rather individual benefits. Egoistic actions taken for their own benefit by local actors endowed with extensive social networks and access to political power deteriorate common values as well as objectives (e.g. collective marketing of Brazil nut by a consolidated cooperative) and potential for mutually beneficial collective action²⁵³. However, the risk of inherent social cohesion lies in not only its tendency to homogenize opinions in line with the position of leaders but also in inhibiting *quilombolas* to take actions against decisions from heads of local organizations as they fear potential cohesive reactions (e.g. through sanctions) by ‘powerful’ leaders, including of the same community.

Key reasons for that most *quilombolas* do not protest against such imbalances in power and exclusion of decision-making are: (i) different social roles (see Chapter V.2.3)²⁵⁴ certain ‘powerful’ leaders assume within the respective community (e.g. as a parent of numerous children, coordinator of the local association, teacher, health agent and even buyer of local NTFP including Brazil nut, which is the case of CCPT) – such multiple roles enable leaders to even exert sanctions against other community members; (ii) related hierarchies whereby leaders have privileged positions and social status within communities; (iii) intra-communitarian socioeconomic stratification and inequalities while causing dependency e.g. from Brazil nut gatherers who need the same leaders to buy their product, which corroborates with:

“Internal village stratification supported by the external political-economic relations and the legal environment subvert resistance and production continues”. (Ribot 1995: 1593)

In addition to these power asymmetry related reasons, there is a further observed reason: (iv) Due to history and culture – a considerable portion of the Afro-Brazilians at stake has the habit of not contesting, which comes from their past as (children of) slaves who had no other option than obeying their so-called ‘owners’ orders (based on Acevedo & Castro 1998). Thereby, they avoid conflict situations, particularly with relatives as well as community members they see and often depend upon on a daily basis, which was evidenced particularly in community meetings (Fieldwork diary note

²⁵³ For the conceptualization including potential and limitation of collective action, see Olson (1965, 1992), Ostrom (1990, 1994), and for further related reading on communitarianism, see Etzioni (1961). For a related in depth sociological analysis of social structures in society, see Durkheim [1883] (1977), Tönnies (1887).

²⁵⁴ Social roles have been thoroughly analyzed by Merton (1957), whose analysis can serve as a solid theoretical basis for further assessing the relation between social capital and access to resources in Oriximiná.

taken in the community of CCPT, CCPT, 07.06.2014). This is confirmed by the statement that “it is difficult for *quilombolas* to disagree in public”²⁵⁵ (Interview with the coordinator of CPI-SP, São Paulo, 28.01.2015). In so being, it is hard to tell when they are in disagreement with an issue, as they hardly say no, they do not disagree directly²⁵⁶.

Moreover, social cohesion is reinforced by insufficient self-esteem of a considerable proportion of *quilombola* community members and instead ‘excessive other-esteem’ vis-à-vis leaders, which can manifest in lack of ‘protest’ based on social organization albeit commonly perceived disturbing issue. A considerable portion of community members do not organize themselves to complain against exclusion. This applies not only to the case of exclusion of external Brazil nut buyers from purchasing at the TRBR area formalized by ICMBio per (Clause 10 of the) TdC but also in cases of lack of information sharing by local *quilombola* leaders. The lack of protest at stake also stems from asymmetric power and gender relations, evidenced in the above-described case of the ‘*Quilombola* Handicraft Project’, upon which *quilombola* women did not complain to leaders about the reported deviation of financial resources in question.

The next subsection serves to complete the yet partial picture of *quilombola* leaders while exploring the determinants and processes affecting the natural resource and market access of Brazil nut gatherers, building on the analytical framework presented in Chapter III (see Figure 6).

3.5 Underutilized Potential in Brokering Access for Collective Benefits

Quilombola leaders endowed with considerable ‘social networks and political influence’ also enable access to so-called ‘development projects’ and public policies, when functioning as brokers for collective benefits. Such leaders can play a key role in bringing benefits for entire communities and their environment, particularly if it is a topic of collective interests with a common goal (e.g. having a traditionally occupied collective land titled as TQ). This ability of leaders includes strategic relations (also to external powerful actors), individual skills and propensity for providing collective goods after Olson (1965). Such brokering for collective benefits implies power asymmetries among community members and among actors along a given value chain as well as beyond respective trade partners (based on Ribot & Peluso 2003).

There is still underutilized potential of *quilombolas* leaders to employ their ability, i.e. individual skills (e.g. negotiation competency vis-à-vis Brazil nut processing mills) and social relations for *quilombolas*’ joint benefits based on collective action (e.g. collective supply and marketing through CEQMO). Whereas ‘rights based access’ (see Figure 6) to resources and markets can be further claimed through participation in decision-making by *quilombolas* from their leaders as well as from government organizations, e.g. ICMBio regarding decisions related to natural resource management and the TdC of the TRBR.

255 “É muito difícil eles discordarem um dos outros em público”.

256 *Quilombolas* like many other Brazilians often avoid tension while not contesting directly – one has to ask them several times and/ or observe empathically and perceive what they *de facto* mean.

There are notable dependency relations among community members and their coordinators – beyond trade dependency among Brazil nut gatherers and buyers, respectively (detailed in Chapter V.1). Thereby, *quilombola* leaders have functioned as brokers between *quilombola* associations and external organizations in several occasions, including with NGOs (e.g. CPI-SP and IMAZON) as well as with government organizations for sporadically obtaining TQ titles over the last two decades (e.g. the Institute of Land of Pará – ITERPA, per acronyms in Portuguese). Besides, leaders who are often Brazil nut buyers are also focal points of the private sector, e.g. as they function as key local middlemen of processing mills while buying most Brazil nuts from members of their communities and in some cases also from neighboring ones. CEQMO's coordinator played a key role in acquiring the support of the NGO IMAFLORA for accessing a better paying market outlet with the enterprise Firminich in 2012. Albeit its respective procurement occurred only this year, such new market outlet for 'good practice Brazil nut' (*castanha de boas práticas*, in Portuguese) yielded 37,5% higher prices at the farm-gate level compared to the highest paying regional processing mill (based on Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015).

IMAFLORA's project coordinator synthesizes the role leaders play in accessing resources and markets – in this case, a leader of an association from a *quilombola* community in Oriximiná – while illustrating its ambiguity when providing for individual and collective benefits.

“A super-politicized leader like him can make a big difference in a large area, [...] this association is strong, this cooperative is strong, because there is a super-politicized leader who seeks to bring collective benefits. Elsewhere, you will see [...] another super-politicized leader who uses this for his own benefit. So he monopolizes the [access to] information in his community, he does not bring as much information as he could be sharing. He makes a commercial bridge and he is the focal point, he buys Brazil nut, you know? He goes there [to the city center], gets a truck from the [Brazil nut processing] mill, which was actually donated to the [community] association and will say at the community that it is his truck, you know? I am paying it [the truck] at monthly rates [he would say]. [...] I think that some local leaders take advantage of being a focal point for interaction among the city and communities.”²⁵⁷ (Interview with a project coordinator at IMAFLORA, Piracicaba, 11.02.2015)

At first, this reported critical synthesis – illustrating an emblematic case of gatekeeping per individual use of centralized trade relation with a Brazil nut mill – calls for more

257 “Uma liderança superpoliticizada dessa pode fazer toda diferença em uma área grande [...] essa associação é forte, essa cooperativa é forte, porque tem um líder ali superpoliticizado que busca trazer esses benefícios de forma coletiva. Num outro lugar você vai ver [...] um outro líder superpoliticizado que usa isso pro seu bem próprio. Então ele monopoliza a informação ali na sua comunidade, ele não traz tanta informação quanto ele poderia estar compartilhando. Ele faz a ponte comercial e ele que é o ponto, ele que compra essa castanha, entendeu? Ele vai lá, vai ganhar uma doação da usina de um caminhão, que é doado pra associação e vai dizer na comunidade que esse caminhão é meu, entendeu? Estou pagando ele por mês pro Chocron. [...] acho que algumas lideranças locais aproveitaram esse ponto de articulação que elas são entre a cidade e comunidades.”

social control to channel social networks and political influence of *quilombola* leaders for collective *in lieu* of individual benefits.

Such ‘mutual monitoring’ – instead of ‘coercion’ first promoted by Olson (1965) – for enabling collective action depends on local democratic empowerment by overcoming power asymmetries implied by historic as well as gender barriers²⁵⁸.

At last, the outlined challenges for Brazil nut gatherers and community members other than leaders to access livelihood relevant resources and markets in this chapter (V.3.5) also urge for exploring respective leverage points for strengthening their community and, particularly, value chain position. In so being, current limitations they face can be transformed into respective leverage points building on their engagement in claiming their access rights and ability – not only for leaders’ power to be further channeled towards collective benefits yet also for enhancing their own ability – for accessing natural resources and markets access.

3.6 Leverage Points for Increased Participation

‘Investment in building up local human capital’ is key for increasing *quilombolas* (Brazil nut gatherers’) ability to fight for their own interests and rights – ‘vis-à-vis their leaders and also external actors (e.g. Government including in Brasília)’ – for participating in accessing resources and markets.

A sociology professor from UFPA refers to the persistence of the same leaders in the position of coordinators of FUGs in given communities within PAs, such as Extractivist Reserves (RESEX, per acronyms in Portuguese) in Brazil, whose establishment spread throughout the country after the Federal Decree 98.897 (Brasil 1990)²⁵⁹:

“[...] the leaders who are in power in the main associations of Extractivist Reserves [RESEX], which is my area of work, are the same from the 1990s until today, right; when the process of creation of RESEX was instituted, so you know, the same people [leaders] continue there. One does not see an engagement for having new leaders; there are, but they are few [new leaders], and, in general, when this is the case, it is someone linked to the elite that traditionally established itself in power, and there are no incentives for a process of building [capacities for] new leaders.”²⁶⁰ (Interview with a Sociology Professor of UFPA, Belém, 23.05.2014)

The professor hereby reports the domination of coordination position by the same leaders or at least the same so-called ‘elites’ over 25 years at community level in most RESEX, which also applies for other PAs *inter alia* the TRBR, while playing a role in fur-

258 For a detailed empirical and conceptual analysis on gender related exclusion and asymmetries among rural (forest dependent) dwellers, see e.g. Agarwal (2001).

259 The Federal Decree 98.897, in its 1st Article, defined Extractivist Reserves as: “[...] territorial spaces destined for the ‘self-sustaining’ [auto-sustentável, in Portuguese] development and conservation of renewable natural resources by extractivist populations”. (Brasil 1990: i)

260 “[...] as lideranças que até hoje estão no poder nas principais associações das reservas extrativistas, que é o meu campo de atuação, são as mesmas de mil novecentos e noventa e né; quando o processo de criação das RESEX se instituiu, então sabe, continuam as mesmas pessoas lá. Não se vê um engajamento para ter novas lideranças; tem, mas são poucas, e, geralmente, quando se tem é alguém ligado muito a essa elite que tradicionalmente no poder, e não se tem incentivo do processo de construção de novas lideranças.”

ther socioeconomic marginalization of most community members Brazil nut gatherers. This implies in not only limiting their position within communities and associations yet also in cooperatives, e.g. CEQMO (operating *inter alia* at the TRBR area), whose core business is collective Brazil nut supply and marketing. While CEQMO's coordinators are the same since its foundation in 2006, Brazil nut gatherers are relatively deprived – compared to such leaders – from socioeconomic benefits stemming from this cooperative's access respective resources (e.g. a 25HP²⁶¹ motorboat under leaders' control). This is an indicator for the lack of not only spaces yet also good governance structures for democratic participation in accessing livelihood relevant resources and markets. The asymmetry in asset endowment of different livelihood capitals (not only in terms of financial and social capital but also human capital), urges for further analyzing how the ability of the largest group among *quilombolas* – the youth – can be enhanced in the realm of inclusive sustainable development in the long run.

3.7 Enhanced Ability for Leadership of Local Youth and Women

Empowering rural youth by co-developing their human capital related ability can be achieved through access to education as well as capacity-building measures, given the well-known correlation between formal as well as informal education and participation in cooperatives (e.g. Cechin *et al.* 2013).

“We have to invest in young people for them to go to school and also university. Then, they can come back to lead their communities and improve the Brazil nut business.”²⁶² (Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current buyer of the community of Tapagem, Tapagem, 07.02.2014)

This claim is put forward by a Brazil nut buyer who has established himself as a loyal supplier of CEQMO, who has been engaged in co-leading collective marketing opportunities through this cooperative over the years (based on Interview with one of the eldest *quilombola* leaders of Oriximiná, former Brazil nut gatherer and current buyer of the community of Tapagem, Tapagem, 07.02.2014). While in this role of cooperative member it would be natural for him to be protective of CEQMO's coordination so as to maintain his position as one of its leaders and founding members of this cooperative. Instead he pledges for the youth's ability to be enhanced and their leadership in strengthening the collective marketing of Brazil nut at stake. He does so perhaps given his age (71), yet most probably due to his apparent disappointment as CEQMO has not been operating since 2012 due to lack of cash-flow and overall limited market possibilities.

Whilst not directly related to the Brazil nut business in the Lower Amazon basin, recent initiatives can enhance young gatherers' overall human capital, leadership and self-esteem for strengthening their position in communities and society with potential co-benefits for ability-based socioeconomic upgrading (detailed in Chapter V.1.7).

261 HP is the abbreviation for horse power, used as unit to measure the power of engines of different vehicles, including of motorboats.

262 “A gente tem que investir no jovem para eles irem para a escola e também fazerem faculdade. Aí, eles podem voltar para liderar a comunidade deles e melhorar o negócio da castanha.”

There are first signs of the promotion of leadership and engagement in communal decision-making processes of youngsters for self-sustaining inclusive development in the study area. In line with the Brazilian Ministry of Education (MEC, per acronyms in Portuguese) and together with ARQMO and AMOCREQ as well as IDESP and AMAZON among others have been pushing high-school modules at schools of two communities.

In addition, there is a recent initiative in cooperation with CPI-SP and Christian Aid for empowering the *quilombola* youth in Oriximiná and strengthening their leadership for sustainable engagement beyond the ongoing ‘*Quilombola Music Project*’ for their communities.

“[...] the idea of working with youngsters is to have more leaders, more involved people and not depending from the same [leaders], because we need to renew you know, [...] for not staying that centralized, [...] and then on our experience with this [culture] project, we chose the music theme, we already knew that young people would participate, and it was the first project that was given for them to manage [...]. We have to know how to attract the youth [...].”²⁶³ (Interview with the coordinator of the CPI-SP, São Paulo, 28.01.2015)

Hereby the coordinator of CPI-SP stresses the importance of collaborating with local youth for raising their participation in decision-making processes affecting their communities. Thereby, raising the engagement of youngsters and their endowment with leadership can function as a means for decentralization and democratization of decisions once taken mostly by established leaders who have not always represented their communities, as delineated above. This aforementioned project aims at maintaining *quilombola* traditions and promoting culture through music, including by supporting a local band with their own *repertoire*. It is based on ancient *quilombola* songs – e.g. on Brazil nut gathering and its importance for *quilombola* communities from a leader from Juará and board member of Malungo, who is endowed with the largest social network and probably the furthest reaching political influence beyond the state of Pará.

Finally, strengthened intergenerational exchange and (intra- and inter-communitarian) capacity building can be an inclusive and effective means to promote leadership. This would enable effective participation of *quilombolas* – including women – in related decision-making processes *inter alia* concerning livelihood relevant natural resources and markets access, while strengthening Brazil nut gatherers’ chain position on a sustainable basis.

In what follows, concluding remarks are put forward (Chapter VI), whereby highlights of the responses to the main and sub-research questions are elaborated on (Chapter VI.1), following the structure of the core of Chapter V, corresponding to each one of the two building blocks of this thesis (see Figure 2).

263 “[...] a idéia de trabalhar com jovens é pra ter mais lideranças, pra ter mais gente envolvida e não ficar em cima dos mesmos, porque não precisa renovar né, [...] pra não ficar muito centralizado, [...] e aí a nossa experiência com esse projeto, [...] a gente pegou o tema de música, a gente sabia, né, que os jovens iam participar, e foi o primeiro projeto que foi entregue pra eles administrarem. A gente tem que saber chamar o jovem [...].”

VI. Conclusions

This chapter starts by outlining the responses to the main research question and the sub-research question (Chapter VI.1).

Based on a synthesis of how the natural resource, and, particularly, market access of upstream Brazil nut value chain actors is affected by informal (in this case, *aviamento*) and formal institutions (in this case, TdC) as well as respective processes; *aviamento* and TdC related leverage points for creating an enabling institutional environment are outlined. Such leverage points (Chapters VI.1.2.1 and VI.1.2.2) build up on problems (Chapters VI.1.1.1 and VI.1.2.1) in the form of access limiting institutions and access restrictions faced by upstream chain actors, which are assessed herein based on the analytical framework hereby developed (see Figure 6). Focus is laid on limitations to this access as concrete leverage points – instead of trying to come up with context-blind (external) ‘solutions’. Identified research and development gaps indicate that value chains are all about resource and market access and the determinants as well as processes that filter access.

In a (Brazil) nutshell, this thesis adds particularly to the literature on value chain analysis and development with ingredients for overcoming access limitations per informal and formal institutions and respective access limiting processes are provided: (i) ‘socioeconomic upgrading’ of the position of upstream value chain actors builds on ability and self-organization of smallholders in ‘well-managed’ cooperatives (complying to widespread cooperative principles); and (ii) self-reliant sustainable Brazil nut value chain development depends on democratic participation in decision-making for locally adapted TdC by transforming the governance structures of councils for managing PAs from ‘consultative’ to ‘deliberative’ ones, while co-shaping a conducive context-sensitive institutional environment, policies and service provision.

In the frame of this concluding chapter, the scope for strengthening the value chain position of economically and geographically marginalized chain actors (Brazil nut gatherers) within the respective value chain is synthesized; without undermining biodiversity conservation (of the TRBR).

Finally, a concise overall wrap-up is offered accompanied by lessons learned as well as a contextualization beyond the Brazilian Amazon for sustainable inclusive rural development in different contexts (Chapter VI.2).

1 Responses to the Research Questions

The main research question refers to the determinants of access:

How do informal and formal institutions affect the access to Brazil nuts and markets by buyers, and, especially, by gatherers within the Brazil nut value chain in the Lower Amazon basin?

The sub-research question refers to the processes of access:

How are institutions – that affect resource and market access – institutionalized and formalized?

While answering the main and sub-research questions theoretical and conceptual foundations are combined with empirical evidences. Thereby, relevant theory is drawn

upon for understanding empirical phenomena (see Tables 3 and 4). All thesis components feature in the analytical framework (see Chapters I.1.7, III and Figure 6), whilst its left and right side correspond to the building blocks (see Chapter I.1.3 and Figure 2) of this thesis. Each one of them captures respective relations between an informal institution (*aviamento*) and access as well as to a formal institution ('TdC') and the access in question. Respective access determinants are grasped as are access process in terms of how access limiting institutions (i.e. institutions affecting resource and market access) by the upstream value chains actors at stake are institutionalized and formalized.

1.1 Informal Institution-Based Access Limitations and Institutionalization

As per both research questions and building blocks depicted in Figure 2, at next, the building block (1 – comprising Chapter V.1) is designed to highlight the informal institution-based access limitations addressed by the component of the main research question (1.A): how the informal institution *aviamento* (as a determinant) affects the natural resource and market access of upstream value chain actors; and the component of the sub-research question (1.B): how access limitations occur per institutionalization of the patron-client relations of this debt-peonage system (as a process).

Chapter VI.1.1.1 corresponding to building block (1) begins by synthesizing the responses to the research questions (cutting across components 1.A and 1.B) pertaining to the following elements of the respective answers. Synthesized in Chapter VI.1.1.1 are access limitations: Natural Resource and Market Access Filtered per *Aviamento*. This chapter includes the subsections: Institutionalization of 'Patron-Client' Relations Making up *Aviamento*; and Characterization of *Aviamento* as Informal Institution.

Building up on such key restrictions upon access to Brazil nuts and, particularly, market access of respective extractivists (detailed in Footnotes 208, 186 and 390), the main leverage points regarding *aviamento* for strengthening the chain position of Brazil nut gatherers are synthesized in Chapter VI.1.1.2. This chapter includes the subsections: Strategies of Upstream Value Chain Actors Brazil nut to Deal with Asymmetric (Inter)dependencies; General Alternatives to Deal with *Aviamento*: Cooperatives and Credits?; and Specific Alternatives to Deal with *Aviamento*: Enhanced Ability and Socioeconomic Upgrading of Extractivists.

1.1.1 Resource and Market Access Limited per *Aviamento*

Highlights of the responses to both the main and sub-research questions are provided herein, while it was analyzed how *aviamento* (as a determinant) and the institutionalization of patron-client relations (as a process) limit the access to such natural resources and respective markets of upstream Brazil nut value chain actors. Prior to going into the essence of this building block with its key elements and messages for paving the way towards sustainable access to natural resources and markets, a synthesized definition of *aviamento* – as a debt-peonage system present in the Amazon – is recapitulated (detailed in Chapter V.1.1): a traditional barter scheme where a debt is paid back to the lender with the workforce of the borrower (based on Bauer 1979: 53-57, Knight 1988: 103-107).

Unbalanced dependency relations between gatherers and buyers are one of the manifestations of the *aviamento* system trapping the former into a vulnerable position within the Brazil nut value chain in the Lower Amazon basin. Such asymmetric (inter) dependency is composed by trade and personal dependence relations that reinforce each other over time (detailed in Chapter V.1.4). However, two background questions that arose – while answering both the main and sub-research questions – were the following. Isn't there a trade-off between combating these dependence relations per 'debt-peonage' system and refrain from services provided through these value chain actors (*regatões*)? Is the elimination of intermediary buyers – often promoted by development practitioners without providing a concrete alternative – the solution for increasing bargaining power and fostering direct access to local and regional markets of NTFP gatherers?

To be stated upfront is the fact that most public policies and services are neither adapted to nor accessible by populations living in remote rural contexts such as the Lower Amazon region. The Brazilian government falls short in fulfilling respective duties and responsibilities vis-à-vis such citizens. Thereby, the perpetuation of *aviamento* is grounded not only in asymmetric (inter)dependency based on unbalanced trade and debt relations but also in the lack of infrastructure and NTFP extractivists' limited endowment with financial capital to transport produce and/ or NTFP to urban centers themselves.

The role of the government in providing services (e.g. health care system) has been assumed to some – even though not large – extent by *regatões*. They sporadically transport community members in urgent need of a boat ride to the hospital in the neighboring urban centers due to the inexistence of such infrastructure in most remote 'villages' in the Brazilian Amazon, which was evidenced by the analysis of *aviamento* in the study area (Fieldwork diary, note taken in Oriximiná, 08.06.2014).

In particular, the three functions (Brazil nut purchase, service and good provision by *regatões*) of the role of *regatões* (described in Chapters V.1.2 and V.1.3) lead to asymmetric (inter)dependencies over time.

In further replying to the background questions above, one of the reasons is the filling of the gap concerning the lack of access to credits through advanced payments by *regatões* as well as service and processed goods provision as per functions they assume in the frame of *aviamento*. Yet, such industrialized goods were sold by *regatões* at a much higher price at the community level as well as considerably higher than Brazil nut prices so as to lead to further indebtedness of respective gatherers. Nowadays, these products are still sold at an inflated price in community stores owned in part by local Brazil nut buyers in addition or in lieu of such *regatões*. These local Brazil nut buyers benefit from their increased market share concerning the provision of industrialized goods (assuming in part the respective third function of the role of *regatões* – detailed in Chapter V.1.3) at community level as well. This recent partly reallocation of the provision of industrialized goods towards local buyers does also reallocate dependency to some extent and establish new patron-client relations.

However, imbalances in patron-client relations of Brazil nut gatherers and *regatões* (a few external buyers) still persists, given (the other two functions of) their long established role within the respective value chain (see Chapter V.1.3). This asymmetric

‘non-monetized exchange’ has been accepted and reproduced by both trade parties over time – as if the gatherers were owing them something (either a favor or goods or financial capital or all of the aforementioned) and in fact most were indebted per unbalanced trade and personal relations. Both such unbalanced relations reinforce each other, while they are strongly intertwined in an inseparable institutionalized overall dependency of gatherers (clients) upon buyers (patrons). Institutionalization of patron-client relations that comes with *aviamento* is grounded in an asymmetric – mostly non-monetized – trade entailed by this debt-peonage system perpetuated over generations in the Amazon.

While this process of institutionalization will be synthetically dissected in the next chapter (VI.1.1.2), the following remarks wrap up the reply to the background questions above.

The persistence of *aviamento* heavily relies on its components: Beyond the three functions of the role of *regatões* (as patrons); *aviamento* is also composed by three layers (see Figure 9). Particularly such layers make up this debt-peonage system as an informal institution (see this chapter’s subsection “Characterization of *Aviamento* as Informal Institution”, as follows).

With regard to the access to Brazil nuts and respective markets by upstream actors of the chain at stake, the highlights of the related process of institutionalization corresponding to the sub-research question (component 1.B of Figure 2) are to be outlined before coming to *aviamento* as an informal institution itself (component 1.A of Figure 2).

Institutionalization of Patron-Client Relations Making up *Aviamento*

Building on the conceptualization of the process of institutionalization (see Chapter III.3.1 and Figure 6), what is institutionalized are hierarchical – mostly non-monetized – patron-client relations between Brazil nut buyers and gatherers over time. Thereby, trade underlying social norms requiring indebted Brazil nut gatherers to supply a given buyer – as lender of advanced payments in the form of industrialized goods for the gathering activity – are consolidated over generations (detailed in Chapter V.1.3). Unbalanced trade per rigid patron-client relations and respective asymmetric (inter) dependency among upstream chain actors – as the core of *aviamento* – are institutionalized through long-term indebtedness of Brazil nut gatherers in the Lower Amazon basin.

Beyond the context focused herein, Ribot & Peluso (2003: 167) stated that patron-client relations were used – not only in Latin America but also in Africa and Asia – by the buyers (patrons) to access natural resources and labor. 15 years later after the respective statement by Jesse Ribot and Nancy Peluso, this still holds true for these regions, especially in their portions located in the southern hemisphere.

More specifically, labor allocation is immobilized, given that the (financial) capital required for the gathering activity is monopolized by buyers whom respective extractivists have to supply with Brazil nuts while struggling to reduce the debts they have with such purchasers. Further evidences captured through this research showed that local price setting and overall bargaining power is still determined by Brazil nut buyers. This entails that a considerable portion of Brazil nut gatherers get further indebted harvest by harvest, often turning the Brazil nut activity in a debt instead of income source for

such NTFP extractivists (detailed in Interview conducted by the author with Brazil nut gatherer – see Chapter V.1).

Finally, on key implications of this process of institutionalization: The institutionalization of *aviamento* as a debt-peonage system restricts the bargaining power of Brazil nut gatherers (clients) vis-à-vis buyers (patrons), while limiting the former's market access and chain position.

Having answered the sub-research question, for further responding to the main research question it was analyzed how *aviamento* (as a determinant) limits the access to Brazil nuts and respective markets of upstream Brazil nut value chain actors.

Characterization of *Aviamento* as Informal Institution

Based on Berger & Luckmann's (1980) conceptualization of institutionalization to the extent of regarding reality as an object that exists for itself – as objectivized reality (ibid.: 78) –, patron-client relations are institutionalized so as to consolidate *aviamento* as an informal institution. Per delineation in Chapter V.1.4, it exists for itself as concrete as an object building on persisting unbalanced (inter)dependency between Brazil nut buyers (patrons) and gatherers (clients).

The institutionalization process of patron-client relations builds on the theoretical foundations provided in Chapter V.1.3. Institutionalization can be understood as the consolidation of interaction schemes and patterns of two or more actors (based on Weber [1921] 1976, Berger & Luckmann 1980) – in institutionalized asymmetric trade relations – characterizing the *aviamento* as an informal institution. Beyond the process of institutionalization of patron-client relations – towards the characterization of the *aviamento* system –, theory supported with evidence (see Chapter V.1.4) indicate three layers making up *aviamento* as an informal institution: (i) the inequitable exchange of industrialized goods with products *in natura* causing debts of Brazil nut gatherers – vis-à-vis the same buyers – persisting over generations; (ii) this 'inequitable trade relation' is perpetuated based on the acceptance of an unbalanced action arena with unequal (bargaining) power relations resulting from the institutionalized 'patron-client relations' that include service provision of the former to the latter; and (iii) the history of submission internalized by extractivists in upstream nodes of NTFP value chains to 'their patrons' (purchasers) has further established enabling conditions for perpetuating unbalanced trade relations, which characterize the *aviamento* system as an overarching informal institution.

All three layers are rigidified through acceptance of involved trade parties (involuntary acceptance by clients and voluntary by patrons) while serving as groundwork for the consolidation of *aviamento* as an informal institution. It limits the access to natural resources and markets by gatherers – particularly in terms of respective negotiation possibilities – while maintaining their chain position weak or further weakening it.

1.1.2 Leverage Points Concerning *Aviamento* for Strengthening Chain Position of Gatherers

Moving forward – beyond the analysis and findings of the limitations related to both research questions, towards leverage points pertaining to 'sustainable' resource and

market access – subsections summarizing respective strategies and alternatives are presented in what follows.

Strategies of Upstream Value Chain Actors Brazil nut to deal with Asymmetric (Inter)dependencies

Given persisting interrelated challenges faced by the weaker party of the *aviamento* system outlined above, the following strategies were developed by (a) Brazil nut buyers and (b) gatherers to deal with asymmetric (inter)dependencies and access to resources and markets.

Key strategies (out of the 7 strategies described in Chapter V.1.6) employed by (a) buyers to increase their economic returns and overall benefits within the value chain, including dependency from gatherers upon them, as follows.

In filtering information on market prices of Brazil nut, buyers avoid to share real prices paid at neighboring urban centers with gatherers when purchasing at community level. Most buyers establish trade agreements with gatherers, setting the prices to be paid at farm-gate level shortly before the harvest season when price information is still scarcely spread and prices are low. Advanced payments (equipment and food for gathering activity) are provided to respective extractivists by buyers at community level, as soon as the latter themselves receive their payments from purchasers further downstream the Brazil nut value chain. Such ‘transactions’ are done by respective buyers (patrons) at the end of each year or at the beginning of the harvest at the latest, so as to maximize the number of gatherers they tie as their suppliers through this annual acquisition of clients. Some buyers even manipulate information on deadlines imposed upon them by larger buyers to supply them in respective urban centers (Oriximiná and Óbidos), so as to conduct purchases at community level when prices are low. Beyond such squeeze of farm-gate prices, capitalized community members – mostly locally established Brazil nut buyers – exacerbate debts gatherers have with them from one or more harvest seasons, by selling industrialized good with inflated prices, including at their village grocery stores throughout the year.

All in all, buyers use every means to generate dependency from gatherers upon them, while compelling them to pay off trade and personal debts with Brazil nuts, so as to lead to the institutionalization of an asymmetric non-monetized exchange.

Moreover, key strategies (out of the 7 strategies described in Chapter 1.2.6) employed by Brazil nut gatherers (b) in their pursuit for strengthening their position within upstream chain segments, while at least mitigating their dependency upon buyers. The following strategies can further be regarded as locally owned solutions approaches (similarly referred to by Mistry *et al.* 2016: 1).

By marketing Brazil nuts through other gatherers who are not indebted to buyers, certain already indebted gatherers are able to sell to other purchasers who pay better prices at a given moment. Whilst only a few gatherers are capitalized enough to be able to wait and sell their Brazil nuts at the end of the harvest, when demand surpasses supply and prices are higher than before, it is a locally identified and owned solution applied by a minority of gatherers. Another strategy applied by some gatherers before the establishment of the TRBR – when they were forced to supply respective landlords (see Chapter V.1.2) with Brazil nuts – is that they would also ‘illegally’ (in

the eyes of landlords) sell them at the end of each harvest season and/ or to *regatões* at night. Besides, with the proliferation of motorboats as of the mid of 20th century, some gatherers who could afford going at least once a month to the neighboring urban center usually succeeded in accessing price information themselves. The access to this piece of information has already enhanced their ability to negotiate Brazil nut prices and scope for market outlets that pay better. The access to such outlets is mostly limited to a few Brazil nut gatherers who can cover the costs of the gathering activity themselves and do not depend on buyers' advanced payments. The autonomy thereby acquired also enhances the bargaining power and negotiation possibilities of respective gatherers, while there are rare cases who have even managed to upgrade to local buyers (including through market restrictions formalized per TdC of the TRBR).

Moving forward, highlights on alternatives to *aviamento* are provided at next.

Scoping for Alternatives to *Aviamento*

A representative of SEAD (formerly, MDA) – who was one of the main promoters of cooperatives and ‘cooperativism’ workshops in the Brazilian Amazon – sets the stage for discussing alternatives to deal with *aviamento*: “*regatões* are a necessary evil” (Interview with a Project Coordinator from SEAD (formerly, MDA), Brasília, 04.02.2015).

Thereby, she refers to the abovementioned background questions on the persistence of such debt-peonage system over generations of NTFP ‘extractivism’ in the Brazilian Amazon. Yet, based on extensive interviews and participant observation:

Firstly, while there are significant commonalities – for it was referred to mal-functioning cooperatives as new *regatões* and/ or patrons – simply replacing *regatões* with cooperatives does not automatically solve all trade related problems of upstream actors of NTFP value chains, particularly of those extractivists living in the remote areas at stake. In these territories, if alternatives are not provided *aviamento* will persist, including to cover gaps in respective service provision by the Brazilian government. Well-managed cooperatives are still scarce in the Brazilian Amazon and demand ability as well as time for building such collective enterprises¹. In so being, what was sought – beyond screening over-studied reasons for participating in cooperatives taken as a long-term solution (see Chapters V.1.6, V.1.7) – were locally adapted options², in the meantime, as small-scale producer/ gatherers demand short to mid-term alternatives towards inclusive sustainable rural development.

Secondly, the less financially capitalized and more geographically isolated from markets the NTFP gatherers, the more dependent and economically deprived vis-à-vis buyers (‘patrons’). Thereby, Brazil nut gatherers living in remote areas – including *quilombola* communities of the TRBR area/ Oriximiná – are considerably dependent

1 For an overall sociological categorization of motives of human action, see Weber [1921] (1976); on reasons for participation in rural cooperatives and associations as well as in what is also termed as FUGs, see e.g. MacQueen *et al.* (2005, 2006); and on access by rural dwellers to markets access, see e.g. Markelova *et al.* (2009).

2 What is hereby meant with locally adapted options is: “[...] resource-based communities have the knowledge and practices essential for maintaining and promoting social-ecological sustainability”. (Berkes 2012 in Mistry *et al.* 2016: 1)

on a few purchasers in the Lower Amazon region given institutionalized debt-based patron-client relations per *aviamento*.

Still, how can trade related measures foster sustainable resource and market access by extractivists, while strengthening their position in given NTFP value chains?

In what follows, a synthesized scope is explored for related viable alternatives to deal with *aviamento* for creating a conducive (organizational and) institutional environment towards surpassing the current vulnerable chain position of Brazil nut gatherers in the Lower Amazon region.

Such alternatives to deal with *aviamento*, as measures that can mitigate limitations to Brazil nut gatherers' chain position – two 'general' (bank credits and cooperatives) and two specific (co-enhanced³ ability and socioeconomic upgrading) – are presented at next.

General Alternatives to Deal with *Aviamento*: Credits and Cooperatives

Bank Credits for Extractivists

Credit provision and facilitated access to them are key enabling measures for NTFP extractivists to overcome limitations in the access to market outlets, while striving to strengthen their position within respective value chains in the long run.

In Oriximiná, the associations of extractivists ARQMO and ASCONB as well as the *quilombola* cooperative CEQMO have been affected by both positive and negative implications of accessing standard credits⁴ for rural dwellers. They were all once provided with such financial capital and only managed to be operational for a short period of time, after which they got indebted (see Chapter V.3.2). In the case of forest dependent dwellers with limited respective management skills, if no locally adapted credit option for NTFP extractivists is provided, risks of bankruptcy can surpass benefits of respective collective enterprises – like it happened to ASCONB. Ideally, credit provision is to be accompanied by accounting trainings as well as knowledge sharing measures, while respective skill-building and information is to be shared among all involved members of given groups so as to avoid individual misuse of financial, human and social capital (see Chapter V.3).

In the case of CEQMO the general PRONAF credit line only sufficed to cover the items extractivists needed for their gathering activity in Brazil nut stands, whereas they did not supply enough Brazil nuts to compensate for such loan in 2011 (otherwise provided by *regatões*). Yet, in the harvest seasons following 2012, CEQMO was worse off without credit and thus cash flow for purchasing Brazil nuts, which has put its collective marketing on stand-by ever since.

3 The terms 'co-enhancing', 'co-shaping', 'co-developing' are herein used with the purpose of emphasizing the importance of the engagement of different actors – especially the ones directly involved in a given value chain (e.g. Brazil nut gatherers and buyers) – towards self-determined inclusive sustainable rural development.

4 These are general PRONAF credits lines (from the state-owned bank: *Banco do Brasil*) mostly designed for larger rural enterprises and not for economically and geographically marginalized ones, which still represents a policy gap to be filled.

Overall, evidences speak for credits to be an alternative for gatherers being indebted vis-à-vis (larger) buyers, which was voiced by multiple interview partners directly and indirectly involved in the Brazil nut value in the Lower Amazon basin. Building on the assessed cases of Oriximiná, the following two conditions for the effectiveness of credits in the realm of sustainable inclusive development of NTFP value chains can be put forward. *Firstly*, specific credit lines for NTFP extractivists can be created so as to come to terms with indebtedness and dependency from such gatherers on *regatões* entailed by *aviamento*, while promoting respective autonomous decision-making on the buyer to whom and when to sell. *Secondly*, the effectiveness of credit provision in championing cooperatives is further bound to ‘pay-back capacities’ and related ‘financial management ability’ of borrowers.

In so being, there is considerable room for improvement of the (re)allocation of sectoral investments by the Brazilian government, *inter alia* through incentivizing low interest rate loans e.g. by state owned banks for small-scale extractivists. This would effectively help Brazil nut gatherers diminish their respective dependence on purchasers per institutionalized patron-client relations making up *aviamento*, while augmenting their negotiation possibilities and access to market outlets.

Whilst the establishment of cooperatives is not a new ‘rural development measure’, the potential and challenges for such collective rural enterprises to function as an alternative to deal with *aviamento* are synthesized at next.

Cooperatives

To begin with it is well known that organization in cooperatives has contributed to increasing the bargaining power and trade autonomy of gatherers in the Brazil nut trade in the Amazon. Both these benefits of cooperatives have been achieved to some extent by CEQMO and to a considerable extent by Cooperacre, which distinguishes itself from *regatões*. Still, cooperatives in localities with difficult accessibility – such as in the case of CEQMO – are more prone to end up assuming similar roles of *regatões* and, overall, falling under the category of new *regatões* and patrons.

Particularly in remote areas such as in the Lower Amazon basin, accessibility is difficult not only for gatherers to access Brazil nut markets but also given prohibitive transport costs to urban centers for purchasing industrialized goods (cooking oil, coffee, sugar, etc.) needed on a regular basis. While these gaps have been mostly covered by *regatões* over the years, eliminating them from a given NTFP value chain – as is promoted by numerous organizations involved in so-called ‘development interventions’ – and not providing alternatives to dealing with *aviamento* would suffocate respective extractivists.

Additionally, on the downside of cooperatives: individual strive of cooperative members (former coordinators in the case analyzed herein) for private benefits has deteriorated collective goods and benefits⁵. Apart from 37,5% higher farm-gate prices of

5 This is so in numerous rural contexts, including in Oriximiná; even though most *quilombola* extractivists have been managing collectively (their) traditionally occupied lands for over half a century, on top a common history of having jointly fled from ‘slave owners’ to settle in *quilombos*.

Brazil nut⁶ – than the annual average in *quilombola* communities of Oriximiná – negotiated by CEQMO's coordinators through IMAFLORA with Firminich in 2012, the fulfillment of the leadership role by representatives of such collective enterprises to push for collective benefits has fallen short of expectations. Thereby, new patron-client relations – less hierarchical than before, given most *quilombolas* are relatives – have been established. In particular 'mismanaged' cooperatives with low participation or membership – can assume similar functions to the ones comprised in the role of *regatões*. In referring to the functions of *regatões* elaborated above, the provision of service and industrialized goods as well as of advanced payments not only reinforce asymmetric (inter)dependencies yet also power imbalances between respective patrons and clients; in this case between the cooperative CEQMO and Brazil nut gatherers (see Chapters V.1.6 and V.1.7).

In the Brazilian Amazon, overall – with rare exceptions (e.g. Cooperacre) – cooperatives have not yet changed the social and economic relations of personal and trade dependency between geographically marginalized NTFP extractivists and purchasers. Instead they have fallen short in terms of fulfilling expectations of involved groups – ranging from so-called beneficiaries to donors – when pursuing positive transformations through effective collective action in the realm of sustainable resource and market access in *Amazônia*.

Both the establishment of specific locally adapted credit lines and well-managed cooperative – for collective benefits compliant to cooperative principles – further depend on NTFP extractivists' ability to demand their right to access respective services and policies as well as on their own engagement and skills for managing such collective enterprises. Based on thereby required collective action, both these general measures if locally adapted can function as concrete alternatives to asymmetric trade relations imposed by *aviamento*, so as to increase gatherers' bargaining power, negotiation possibilities and autonomy in decision making concerning to whom and when to sell Brazil nuts.

Moving forward, two specific alternatives to deal with *aviamento* – enhanced ability and socioeconomic upgrading of extractivists – are explored as they are both measures for further fostering sustainable natural resource as well as market access and strengthening the position of Brazil nut gatherers by overcoming asymmetric trade dependency per *aviamento* as informal institution.

Specific Alternatives to Deal with *Aviamento*: Enhanced Ability and Socioeconomic Upgrading of Extractivists

Enhanced Ability of Extractivists

Recapitulating the conceptualization of ability (based on Ribot & Peluso 2003) – beyond property towards social relations of actors embedded in an institutional environment, the following is hereby meant with enhanced ability. Co-development of the ability of Brazil nut gatherers is building up their human capital together with them – which enhances respective 'powers' of such chain actors to co-transform 'benefit

6 Such considerably higher farm-gate prices were paid to 'best practice Brazil nut (*castanha de boas práticas*, in Portuguese).

strands' (as referred to by Ribot & Peluso 2003) – for them to benefit from natural resources and access markets on a sustainable basis. Thereby, human capital assets can be built up by providing tailored capacity development to Brazil nut gatherers (see Chapter VII), based on their self-declared needs.

When scoping for specific alternatives to deal with *aviamento*, for both the above-described general measures to be effective – particularly (sustainable) development interventions for building up cooperatives – they are to first ensure that required capacities are in place, also referred to as “people’s ability” (Ribot & Peluso 2003: 154). Depending on the context, these initiatives often need to be preceded or accompanied by specific measures to co-enhance local ability, for instance, capacity building for business management and accounting.

Whilst respective initiatives including on so-called ‘associativism’ and ‘cooperativism’ (including learning modules on cooperative principles) have been conducted throughout the Brazilian Amazon by governmental and particularly non-governmental organizations, their inclusive sustainable development potential remains underutilized. Respective empowerment⁷ needed for establishing well-managed self-reliant cooperatives for sustainable natural resource and market access of upstream NTFP value chain actors has fallen short of expectations in the analyzed subnational region.

Beyond promoting the abovementioned standardized capacity building initiatives – *inter alia* ‘cooperativism’ courses originally developed for medium to large collective rural enterprises of the more economically developed regions of Brazil –, such measures could be further context-sensitive. Further, specific ‘recommendations’ are provided to given actors directly or indirectly involved in the Brazil nut value chain at stake (see Chapter VII.1). Yet, beforehand, socioeconomic upgrading of NTFP extractivists along upstream nodes of the Brazil nut chain is highlighted at next, as it is a novel approach – not yet explored in literature – to integrating social and economic upgrading.

Socioeconomic Upgrading of Extractivists

The current status-quo on value chain upgrading is that it is mostly approached by development agents and scholars as economic upgrading⁸ induced mainly by lead firms in the realm of developing global value chains. Building on the concept of socioeconomic upgrading (see Chapter II.1.3), what is put forward herein is an inclusive sustainable rural development approach that integrates both social⁹ and economic upgrading.

Away from being trapped in respective silos, socioeconomic upgrading is to be co-promoted *inter alia* by lead firms per win-win measures within upstream nodes of given value chains. Such measures – in addition to the ones to be under the responsibility of the government for enhancing the ability of extractivists synthesized above – include capacity building co-promoted by lead firms at the regional level for their

7 For conceptual and analytical approaches as well as selected cases pertaining to respective empowerment, see e.g. Sen (1999), Narayan (2002), Uphoff (2005), Samman & Santos (2009).

8 For pioneering conceptualization of economic upgrading along global value chains, see e.g. Humphrey & Schmitz (2000).

9 For the conceptualization of social upgrading, see Barrientos *et al.* (2011).

suppliers; in this case Brazil nut gatherers and buyers in the lower tiers of the value chain at stake. Yet, what is hereby meant with socioeconomic upgrading and sustainable access to natural resources and markets by economically and geographically marginalized chain actors is to be further recapitulated.

In order to promote socioeconomic upgrading – *inter alia* enhancing the working conditions of gatherers/ small-scale producers towards employee-like contract entitlements and locally adding value while reaping higher ‘farm-gate’ prices – the following is needed: an ‘adaptation’ of trade relations towards a client (supplier) and not only patron (buyer) orientation within a more ‘leveled’ commercialization field.

Socioeconomic upgrading and access to resources and markets on a sustainable basis can be reached under certain conditions: overcoming the aforementioned limitations of *aviamento* as an informal institution, while enabling gatherers and their families to make a living out of equitable Brazil nut trade relations.

In the realm of socioeconomic upgrading, this transformation in employer-employee relations can be implemented through similar working conditions offered per contract for the ‘in-house’ staff by regional lead firms – including ‘living wages’ for a decent living standard¹⁰. Such mutually beneficial change can also be implemented through measures for co-enhancing the ‘human capital’ and ability of upstream chain actors (detailed in Chapter VII).

Further, for evidencing the nexus between co-enhanced ability and firm benefits, in this case of the processing mills, concretely: Socioeconomic upgrading can be achieved provided lead firms – in this case, the three Brazil nut processing mills in the Lower Amazon basin – regard middlemen and also gatherers as suppliers whose delivery of products *in natura* who are to be effectively valued and ability co-enhanced.

Concluding, ‘sustainable’ access to resources and markets can be pursued by co-developing the ability of Brazil nut gatherers as well as by co-promoting their socioeconomic upgrading within the respective value chain in the Lower Amazon region. In so being, the two specific alternatives for dealing with limitations on the weaker party of trade relations synthesized above provide an input for strengthening the value chain position of Brazil nut gatherers.

However, there is a long way to go still on how to break through business as usual and move beyond asymmetric ‘patron-client’ relations, particularly in (unstructured) NTFP value chains in the Amazon. There is no ideal one size fits all solution for overcoming dependency within asymmetric trade relations among upstream actors of NTFP chains, given varying specificities of local livelihoods strategies and environmental conditions of each rural context. Yet, what can play an important role in strengthening the position of Brazil nut gatherers are their social organization including for accessing credits, policies and services (e.g. from the Brazilian government), well-managed cooperatives for mutually beneficial collective marketing, as well as their co-enhanced ability and socioeconomic upgrading.

Finally, these alternatives to deal with *aviamento* can also be combined – towards ability-based socioeconomic upgrading (detailed in Chapter VII) – on the pathway to

10 For a conceptual and methodological review as well as the history of these concepts, particularly the one of ‘living wage’, see e.g. Anker (2011).

co-developing a conducive institutional environment based on more equitable trade relations between Brazil nut gatherers and buyers for access to natural resources and markets on a sustainable basis. Thereby, a viable locally owned solution in the realm of self-determined and self-reliant development of NTFP value chains could be co-shaped by directly involved upstream chain actors and stakeholders in the Brazilian Amazon.

Yet, an enabling institutional environment requires institutional change¹¹ not only of informal institutions such as *aviamento* but also of formal institutions such as the TdC for reaching sustainable natural resource and market access. This leads to the next chapter on the TdC (and its Clause 10 in the case of the TRBR) as a formal institution affecting/ limiting the access to natural resources (Brazil nut) and markets.

1.2 Formal Institution-Based Access Limitations and Formalization

As per both research questions and building blocks depicted in Figure 2, at next, the building block (2 – comprising Chapter V.2) is herein synthesized to understand how the determinant TdC as formal institution (2.A) and the respective formalization process (2.B) affect the natural resource and market access of upstream value chain actors.

Chapter VI.1.2.1 corresponding to building block (2) starts with summing up the main points concerning access to natural resources filtered per TdC of the TRBR (as a PA of full environmental protection) (see Chapter V.2.1), followed by a synthesis on the formalization of the limitation of such access by upstream Brazil nut chain actors from informal institutional arrangements (see Chapter V.2.2) to the TdC of the TRBR as a formal institution (detailed in Chapter V.2.2.1). It is then zoomed into the role of its Clause 10 and its (unintended) consequences in shaping the access to markets and the chain position of Brazil nut gatherers (detailed in Chapters V.2.2.2 and V.2.2.3). Multiple perceptions of actors involved in the respective value chain on its implications as well as effects are highlighted (detailed in Chapter V.2.3). Such elements of the evidences provided in Chapter V.2 are summarized at next.

1.2.1 Resource and Market Access Limited per Term of Compromise

Formal(ized) Restrictions on the Access to Resources and Markets

For answering both the research questions herein, it was of utmost importance to understand the role the TdC and its components play. Attention is paid particularly to how Clause 10 of the TdC of the TRBR¹² among ICMBio and *quilombola* associations (ARQMO and AMOCREQ) can restrict the access to natural resources (Brazil

11 Herein, the change in the formal institution TdC is coupled with a respective shift in governance structures from captive to inclusive according to theoretical foundations (see Chapter II.1.3), and to a change of the management structure of given PAs from consultative to deliberative councils (see Chapter V.2.4).

12 The TdC is a formal institution established based on Federal Decree 4340/2002 (Brasil 2002) and used by ICMBio for regulating the access to natural resources while trying to overcome conflicts with populations living in PAs of full environmental protection – whereby the TdC of the TRBR was established in 2012 (see Brasil 2012b).

nut) and markets by upstream actors of the respective value chain. Prior to the TdC of the TRBR, related restrictions induced by informal institutional arrangements that were formalized and enforced through this legal instrument already existed, namely the ‘Brazil nut Agreement’ (as of 2005, prior to the establishment of the TdC in 2012) and the ‘Brazil nut Project’ (as of 2001, prior to the foundation of the Cooperative CE-QMO in 2006)¹³. Whilst they were initially induced by the NGO CPI-SP and ICMBio, respectively (detailed in Chapter V.2.2.1), these arrangements of informal institutions also played a role in restricting the entrance of external buyers to procure Brazil nut in the TRBR area. However, it was Clause 10 of the TdC of the TRBR, which has enabled legally-based exclusion of external buyers. Putting it into a broader perspective before zooming in, ICMBio has created the formal instrument of the TdC to be applied nationwide for overcoming conflicts with (traditional) populations residing in federal PAs, as the governmental entity responsible for managing these areas. Thereby, its responsibility under MMA further comprises not only environmental implications of the TdC but also socioeconomic ones upon local livelihood strategies (including in the TRBR area).

In the case of the TRBR, the TdC stems from an obliging approach of ICMBio Porto Trombetas based on MPF’s claim for trying to alleviate tensions concerning land tenure (see Chapter V.2.1) and overcoming natural resource use conflicts with *quilombolas*.

Still, without intending to polarize yet only stressing the importance to deal with persisting conflicts over natural resources and land tenure access, if no effective and constructive mutual approximation takes place the ‘ideal’ for one can represent the ‘worst-case scenario’ for the other (see Table 9). This middle ground can potentially be achieved under a ‘realistic’ scenario with a locally democratically adapted TdC so as to accommodate related interests of both parties while enabling ‘sustainable’ access to Brazil nut and markets, without undermining the TRBR’s biodiversity.

Beyond scenarios for dealing with natural resource and land tenure access conflicts, attention is rather paid to the formalization process of limitations on natural resource and market access entailed by the TdC and its Clause 10.

Formal Institution Limiting the Access to Natural Resources and Markets at the TRBR: The Term of Compromise and its Clause 10 Formalizing the Exclusion of External Buyers

For answering the second part of the main research question on the formal institution TdC as per ‘building block component 2.A’ (depicted in Figure 2), findings show that Clause 10 of the TdC of the TRBR limits external actors to access natural resources for their commercialization and also Brazil nut gatherers to access market (outlets) along the value chain at stake. Not only does this clause of the TdC formally limit the entrance of external buyers into the TRBR to purchase Brazil nuts but also the marketing possibilities of Brazil nut gatherers (see Chapters V.2.2.2 and V.2.2.3). It thereby restricts gatherers’ bargaining power – which implies in their limited ability

13 The establishment of the ‘Brazil nut Project’ as an informal institutional arrangement involving all *quilombolas* communities along the Trombetas and Erepecuru rivers, except for CCPT, was induced by CPI-SP.

to effectively benefit from commercialization vis-à-vis a few remaining buyers –, given their restricted negotiation possibilities to sell their products to buyers other than (community) ‘internal’ buyers.

Beyond limitations on market access, Clause 10 of the TdC functions as a formal barrier for trade relations with external buyers (*regatões*) who cannot exert their function of providers of services (e.g. taking to hospital in emergency cases) as well as of industrialized goods they used to sell for gatherers and their families to have the products they want from the neighboring urban centers for spending most harvest season at remote Brazil nut stands (e.g. machete for cracking Brazil nut shells, coffee, sugar, salt and fuel).

Further, for answering the second part of the sub-research question on the formalization process as per building block component 2.B (depicted in Figure 2): It consists in a transition from an endogenously established informal institutional arrangement based on social norms – the ‘Brazil nut Agreement’ within the TRBR – to exogenously formalized rules for regulating the use and commercialization of Brazil nut per TdC. Formalization further occurred via the transition from the ‘informal’ registration and monitoring system of the volumes of Brazil nuts from the TRBR gathered and marketed first established by the ‘Brazil nut Agreement’ towards a control and sanction system per TdC – both led by ICMBio. Despite the possibility of evolving from informal norms to formal rules as represented by the diagram on the continuum of institutions from informal to formal institutions (see Figure 7, corresponding to the top red arrow from the right to the left side of Figure 6), formalization per TdC *de facto* makes a significant difference in limiting the commercialization opportunities of upstream Brazil nut value chain actors.

Amongst the formal rules contained in the TdC of gathering and procuring Brazil nut within the TRBR, focus is laid on the restrictions with regard to market access by upstream chain agents per Clause 10 of the TdC.

Even though the final decision to establish the TdC was made by ICMBio, its Clause 10 of the TdC is an output resulting from overall TdC discussions among leaders (‘supposedly representatives’) from both parties. Still, it formalizes not only restrictions on the access to Brazil nut but also upon its marketing in the TRBR area. While it is common sense that implications of any action – in this case the action being the adoption of the TdC of the TRBR – cannot be anticipated to its full extent, its key (unintended) effects are to be delineated at next.

Unintended Consequences of the TdC and its Clause 10?

Whilst IBAMA’s and later ICMBio’s evident intention were to have a legal basis for environmental conservation per TdC (effective as of 2012), the resulting formalized market restrictions can be characterized by an ‘unintended consequence of social action’ (Boudon 1982: 1) or by an ‘unanticipated consequence of purposive social action’ (Merton 1936: 1). In the case analyzed herein, ‘social action’ refers to the ‘action’ for establishing the TdC – including its Clause 10 – led by ICMBio and concurred by *quilombola* leaders. Clause 10 of the TdC of the TRBR has not only affected potential external buyers but also all *quilombola* extractivists and overall Brazil nut trade at the TRBR area. Such clause of the TdC has enabled the ‘exclusion’ of external buyers

and the emergence of ‘asymmetric market structures’ – local oligopsonies and cartels (respective implications are depicted in Table 10). It thereby, unintentionally weakened the position of gatherers – given restricted marketing possibilities and bargaining power – vis-à-vis buyers within respective upstream nodes of the Brazil nut value chain in the Lower Amazon basin.

Whether the consequences were intended or not is secondary: the effects of the TdC for the aforementioned upstream chain actors have overall been undesirable as per their overall perceptions (detailed in Chapter V.2.3). This is so, due to (re)inforced imbalances in negotiation possibilities and generated unintended market access restrictions. In so being, negative implications especially for the most numerous and economically as well as geographically marginalized prevail within the respective chain – the Brazil nut gatherers (see Chapter V.2.2). Whereas the number of buyers at the TRBR area has decreased as of 2012, mainly due to the considerably low likelihood of buyers from outside the *quilombola* communities of this area – particularly the ones who are not acquainted with Brazil nut gatherers – to succeed in attaining the required number of signatures (10) and consents of both parties to the TdC.

Therefore, since the TdC of the TRBR entered into force in 2012, Brazil nut gatherers have been depending (more) on such few community internal buyers (see Chapter V.2.2). The reason for this is that such buyers can set the prices so as to maximize their profits while formalizing already institutionalized unbalanced dependency and distribution of benefits per patron-client relations in the frame of the ‘Amazonian debt-peonage system’ *aviamento*.

In this regard, the TdC of the TRBR and its Clause 10 intended to conserve biodiversity by limiting entry to this PA and reducing gatherers’ marketing possibilities is found to be counter-productive. This is so, as environmentally sound access to Brazil nuts and respective markets can provide more income on a sustainable basis instead of having large extractive industries and hydropower plants and/ or extensive cattle ranching.

Before synthetically presenting leverage mechanisms towards institutional change (of the TdC as the formal institution in use in the TRBR area) and inclusive governance structures for democratic decision-making on resource and market access, it is to be stated that: The intention herewith is not to deconstruct the TdC as a formal institution intended to overcome conflicts over natural resources between its parties, yet to provide an overview on multiple perceptions of directly involved Brazil nut gatherers as well as buyers and at the same time local leaders pertaining to its implications. Such evidences can serve as input for the actors themselves to evaluate this formal institution and, potentially, come up with a democratically adapted TdC in the realm of locally owned alternatives for ‘sustainable’ resource and market access in a long term. On the pathway to institutional change (i.e. locally adapted TdC), a change in governance structure is to precede (i.e. a change from consultative councils of given PAs in Brazil to deliberative councils for regulating respective natural resource use) – which is outlined as follows.

1.2.2 Leverage Points Concerning Term of Compromise for Strengthening Chain Position of Gatherers

Building up on such key limitations of the resource and, particularly, market access of respective extractivists, the main leverage points regarding the TdC in the realm of creating an enabling institutional environment for strengthening the chain position of Brazil nut gatherers can be brought about by an inclusive governance structure and Adapted Term of Compromise to Overcome related Limitations on Resource and Market Access (detailed in Chapter V.2.4). This is synthesized in the present Chapter (VI.1.2.2), which is composed by the following subsections: Transforming the Governance Structures of Councils for Co-Managing Federal Protected Areas: From ‘Consultative’ to ‘Deliberative’; and Adapted TdC building on Inclusive Governance for Strengthening the Position of Extractivists? To show the complete picture, evidence is also provided for formalization manifesting in a positive example along the analyzed chain: Formalized Commission for the Governance of the Brazil nut Value Chain in the Lower Amazon Region, Pará.

Transforming the Governance Structures of Councils for Co-Managing Federal Protected Areas: From ‘Consultative’ to ‘Deliberative’

Herein proposed inclusive sustainable rural development in and around PAs does neither imply in undermining livelihood strategies of rural populations who have long been living in PAs nor in liberalizing extensive use of natural resources in such areas. Instead, it emphasizes the win-win opportunity for respective ministries (including ICMBio under MMA) to create governance structures for striking a balance between respective conservation – particularly, in territories where traditionally occupied lands overlap with PAs.

For achieving this dual goal, locally adapted governance that allows for access to livelihood relevant resources and markets by economically and geographically marginalized populations on a sustainable basis is required. While considerable steps, including by IUCN have been taken in this direction, i.e. for enabling sustainable human-nature relations, the scope for ‘joint governance’ structures of PAs is not yet exhausted. Such co-management modalities have not yet been applied to PAs of full environmental protection in Brazil (ICMBio 2014: 7). While there are consultative councils allowing, to a limited degree, for participation of affected populations in the management of such PA type (as well as other national and state level PAs of full environmental protection), in practice their voice remains unheard.

There still is limited room for participation in the management of these areas is the governance structure of respective councils – consultative and not deliberative –, while providing a framework for consultation of such populations and not for their participation in decision making. Decisions concerning the PAs in question are made only by ICMBio as the responsible governmental entity. What adds to the challenge of participation is the fact that *quilombola* leaders neither always represent the interests of Brazil nut gatherers and buyers nor of other *quilombolas* living in the TRBR area who overall depend on the (sustainable) use of natural resources. Yet, such *quilombolas* are not to be victimized, as they hardly protest – neither vis-à-vis their leaders nor ICMBio – against the lack of representation of their interests. Similarly to their

long-term strive for land tenure and property rights per TQs, they could further engage in claiming their rights to effectively participate in decision-making beyond land titling. I.e. overall, decisions on the management of the TRBR and, more, specifically, towards sustainable Brazil nut and market access through an adapted TdC of the TRBR. This also requires further organization of Brazil nut gatherers – the ones most negatively affected in their livelihood strategies (e.g. through low farm-gate prices due to weakened bargaining power per establishment of the TRBR and TdC). However, such bottom-up efforts alone – if not accompanied by policy-making for conducive environmentally sound resource and market access – seldom result in governance and institutional changes needed for promoting sustainable inclusive development – in the case analyzed herein, for strengthening Brazil nut gatherers' chain position.

On the pathway to sustainable use of natural resources, transforming from the current governance type of consultative councils for managing federal PAs, which are under ICMBio's responsibility to deliberative ones would be a considerable step towards effective co-management of such PAs. The proposed governance structure combined with institutional change – derived from a shift in formal institutions, i.e. a change of respective federal decrees per SNUC at national level – strongly depends on the political will of ICMBio (see Chapters V.2.4.1 and VII). This would not only enable the voice of directly affected actors to be heard but also democratic decision-making – on livelihood relevant issues such as limited access to Brazil nut and respective markets per TdC –, yet also allow for sustainable use of natural resources by such populations. In fact, such institutional change would allow for locally owned engagement in inclusive value chain development of NTFPs (e.g. Brazil nut), without undermining biodiversity conservation – based on sustainable natural resource and market access.

Such chain development of NTFPs would be a win-win measure in terms of maintaining the forest by sustainably using e.g. Brazil nut and at the same time ensuring local socioeconomic development. This would further locally add value to the local Brazil nut business and raise the self-esteem of Brazil nut gatherers at community as well as municipality levels. Moreover, it would mitigate the risk of rural dwellers residing in these PAs to switch to more harmful land use practices than NTFP use – e.g. deployment of labor for mining¹⁴ and illegal logging – or migrating and expanding the agricultural frontier. Additionally, promoting respective small-scale NTFP use could also lead to long-term sustainable development. Under certain conditions – *inter alia* continued collaboration with ICMBio for monitoring and controlling for potential overexploitation of natural resources – sustainable NTFP (Brazil nut) use could even raise the effectiveness of environmental conservation (see Scoles & Gribel 2012), including in PAs (of full protection).

What is certain is that a deliberative council for the management of the TRBR can serve as a platform for Brazil nut gatherers to effectively participate in respective decision-making. The gatherers could then effectively participate in shaping the change they – as the majority of upstream Brazil nut chain actors – want concerning an adapted TdC.

14 Mining-induced forest clearing accounts for triple the mean of the deforestation rate in the Brazilian Amazon from 2005-2015 (see Sonter *et al.* 2017: 4).

Adapted Term of Compromise building on Inclusive Governance for Strengthening the Position of Extractivists

An adaptation of the TdC could entail an amendment *inter alia* to its Clause 10 for moving beyond the often impassable hurdle of the required signatures of both ICMBio and the *quilombola* associations ARQMO or AMOCREQ (in the case of the community of CCPT) on top of the ones from 10 gatherers to authorize each ‘external’ buyer to purchase in the TRBR area. Discussions on how the TdC of the TRBR is to be changed have already been initiated by *quilombola* leaders and ICMBio, however none of the changes suggested by the former have been taken into account, which is evidenced by the renewed TdC with the exact same content as the previous one. A considerable number of *quilombola* gatherers have expressed their discontent with the TdC as it is and its implications, such as the formation of local oligopsonies given the reduced number of buyers at community level (see Chapter V.2.3). Moving forward, it is up to them together with their representatives to discuss respective institutional changes with ICMBio and come to ‘terms’ per democratically decided ‘compromise’.

A locally adapted TdC accompanied by further ‘social and productive organization’ could strengthen Brazil nut gatherers’ position within the respective value chain, building on an enabling institutional environment for them to overcome their trade dependency on given buyers.

Further, a democratic revision of the TdC could allow for the gatherers to determine how many buyers they – and not only their leaders and ICMBio – allow to purchase NTFPs (including Brazil nut) in the TRBR area, while enabling them to overcome market asymmetries established through this formal institution. Instead of reinforcing institutionalized asymmetric patron-client relations among Brazil nut gatherers and buyers per *aviamento* as debt-peonage system, an adapted TdC could help the former diminish unbalanced (bargaining) power relations vis-à-vis local buyers. Yet, per evidence from interviews with ICMBio coordinators in Brasília, this entity’s headquarters have expressed its lack of interest in the TdC, which was confirmed by the fact that it only reacted to renew the already adopted TdC just before the respective expiration date, when MPF requested ICMBio to take this action. Despite it not being the ideal solution for neither one of the parties, it was still considered ‘better than nothing’ by a small but existing portion of actors at the local level – ICMBio Porto Trombetas and *quilombola* (gatherers and buyers) –, given their will to have a ‘formal backing’ per TdC for the unavoidable yet traditionally sustainable use of Brazil nuts in the TRBR area. Whereas changing the governance structure of the councils at stake to deliberative is another measure ICMBio, particularly its headquarters, would most probably not be favorable of.

However, there is a self-declared need for finding locally-owned ‘solutions’ without negative (unintended) consequences for any of the parties in PAs such as the TRBR – i.e. ‘alternatives’ as ‘no regret options’ congruent with the principles of ‘do no harm’ and ‘leaving no one behind’ (United Nations General Assembly 2015: 1). Thereby, a first step for coping with harmful negative implications of the TdC (Chapter V.2.2.3) is changing governance structures of the PAs they apply for in Brazil. One could go one step further in stating the proposed change towards an ‘inclusive governance’ structure (defined in Chapter II.1.3) of such PAs could even make TdCs obsolete, given

the reduction of the propensity of conflict over natural resources between ICMBio and traditional populations residing in these PAs. Whilst the TdC is an instrument created exactly for this purpose it would not be needed any longer if issues on natural resource and market access could already be resolved with effective participation of both parties within a deliberative council for managing such federal PAs throughout the country.

Formalized Commission for the Governance of the Brazil nut Value Chain in the Lower Amazon Region, Pará

There is a positive side of formalization in the case of the Brazil nut value chain in the Lower Amazon basin, namely “Governance Commission for Strengthening the Brazil nut Value Chain in the Lower Amazon Basin, Pará”. Evidences show positive implications of the formalization of the Brazil nut value chain in the Lower Amazon basin by having the Ministry of Development, Industry and Foreign Trade (MDIC, per acronyms in Portuguese) take it under consideration as a cluster/ local productive arrangement (APL, per acronyms in Portuguese) within the ‘National Policy for APLs’ (local cluster development) led by MDIC. The formalization process was initiated by establishing the ‘Governance Commission for Strengthening the Brazil nut Value Chain in the Lower Amazon Basin, Pará’ launched at the seminar with the same title led by SECTI with the support of the Puxirum-Sociobio.net Project in Óbidos in February 2014. The establishment of this governance structure fulfilled a key requirement of the MDIC for it to officially recognize the respective Brazil nut cluster at the national level and creating the possibility to access financial resources channeled through the ‘National Policy for APLs’. This process illustrates an exceptional case, in which formalization – through ‘vertical integration’ by the federal government of an informal institutional arrangement into a formal national policy – enlarges (instead of restricting) the access to resources, policies and, particularly, to markets by involved value chain actors and entities, while potentially strengthening the value chain on a sustainable basis.

This is a case of best practice of a multisectoral and multiscale cooperation. Thereby, CEQMO that has been cooperating with IMAFLORA, as well as both Brazil nut processing mills from Óbidos have managed – with the support of academia (particularly, the *Freie Universität Berlin*, in German) – to launch their commission for strengthening the respective value chain through the formalization and integration into the ‘National Policy for APLs’.

Having thoroughly explored leverage points for inclusive governance along the Brazil nut value chain – building on given formalization processes as well as how (the implications of) the TdC are perceived by upstream chain actors and *quilombola* leaders – the above delineated responses to both research questions are put into a broader perspective and wrapped up at next.

2 Wrapping up, Lessons Learned and Contextualization: Towards Inclusive Sustainable Rural Development

Scientific input is herewith provided for policy-makers and other actors indirectly as well as directly involved in NTFP value chains to further engage in strengthening upstream nodes of such chains through an enabling institutional environment for en-

sureing resource and market access on a sustainable basis. Strengthening the position of NTFP extractivists is show-cased to rely on co-adapting informal (in this case, *aviamento*) and formal institutions (in this case, TdC), which limit their access to livelihood relevant natural resources and markets. Hereby conceptually and empirically explored leverage points for Brazil nut gatherers in the Brazilian Amazon, in this case, to achieve such access include ability-based socioeconomic upgrading (towards overcoming *aviamento* related access limitations) and inclusive governance structures (towards overcoming TdC related access limitations). These leverage points combined with the effective participation of such economically and geographically marginalized forest dwellers in the respective institutionalization and formalization processes analyzed herein – can lead to inclusive value chain development in line with their local sustainable livelihood strategies. Thereby, biodiversity conservation can be promoted and more environmentally harmful land-use alternatives prevented in the long run (e.g. extensive cattle ranching and illegal logging, large-scale mineral extraction and hydro-power generating dams).

Wrapping up on Natural Resource and Market Access and Its (Institutional) Determinants and Processes

Given the unit of analysis of the Brazil nut value chain in the Lower Amazon basin, findings show limitation of gatherers' bargaining power and negotiation possibilities institutionalized in the frame of the informal institution *aviamento*. Not only does this debt-peonage system restrict the access to natural resources of upstream value chain actors, yet it also limits gatherers' market access, as it compels suppliers to sell Brazil nuts to only one buyer who provides them with advanced payments (see Chapter V.1). The latter limitation is formalized and reinforced by the formal institution TdC – a legally-based mechanism that can be applied for PAs of full environmental protection throughout Brazil – detailed as follows.

The value chain position of Brazil nut gatherers is limited by such informal and formal institutions (corresponding to the main research question) and respective institutionalization and formalization processes (corresponding to the sub-research question) in this chain at the TRBR area. The TdC of the TRBR formally established by ICMBio further limits the access to natural resources and markets, while its Clause 10 restricts the number of 'external' buyers who can enter the TRBR to purchase Brazil nuts at community level. This leads to local oligopsonies, in addition to already existing regional ones, which facilitate local cartel building and forms an institutional environment favorable for price squeezing by such firms. It further favors local buyers who even manage to upgrade from 2nd level intermediary buyers to 1st level ones (see Figure 4) who can set the farm-gate prices based on the prices dictated by their patrons (one of the three regional processing mills) – on top of price determination by world markets and multinational companies' vertical integration induced price and wage squeezes within global value chains.

In so being, Brazil nut gatherers are restricted in their negotiation possibilities, while it is difficult for them to expand their bargaining and marketing scope themselves given (i) institutionalized debt-based patron-client relations per *aviamento* and (ii) formalized dependency upon a few local buyers per (Clause 10 of the) TdC of the TRBR.

Whilst (i) and (ii) might not be problems per se, they are symptoms. Symptoms of the lack of access to natural resources and markets on a sustainable basis by upstream Brazil nut value chain actors in the TRBR area. Thereby, this lack of access is mainly determined per trade dependency induced by *aviamento* and by TdC reinforced limitations, especially, to market outlets as well as respective processes of institutionalization and formalization of asymmetric trade relations between Brazil nut gatherers and buyers.

With regard to (i): Institutionalized non-monetary debt-based relations of Brazil nut gatherers (clients) vis-à-vis their buyers (patrons, who provide the former with advanced payments as industrialized goods for gathering activity as 'deposit' for the same gatherers to supply them with Brazil nuts) call for strengthening the chain position of gatherers.

This can be achieved, *inter alia*, provided Brazil nut gatherers voluntarily engage in organizing their supply and collective marketing through FUGs, including locally owned 'well-functioning' small rural enterprises based on cooperative principles (detailed in Chapter V.1.7). Yet, gatherers are to decide what is best for (most of) them, as opposed to external promotion of cooperatives building on 'development interventions' that have long been pushed while seldom accompanied by required capacity-building for effective chain participation (see Chapter VII). Tailored 'investment in human capital' can enhance small-scale rural dwellers' ability in the frame of socioeconomic upgrading aimed at strengthening their position in given chains.

So long 'well-managed' Brazil nut gatherers' cooperatives or even a small processing mill of their own and direct circuits from gatherers to processing mill are not realistically achievable mutually beneficial self-reliant solutions (such as in the context at stake), a short to mid-term alternative is to promote the institutional change needed for enhancing gatherers' negotiation possibilities. Such change in institutions builds on governance change through a new decree by ICMBio to change governance structures of councils for managing PAs from consultative to deliberative where there is a claim by populations living in these areas e.g. TRBR as well as to locally adapt the TdC so as to avoid described unintended consequences of limiting market access.

In so being, concerning (ii) it is important to stress that a considerable proportion of Brazil nut gatherers expressed their discontent regarding (Clause 10 of the) TdC, while willing to participate in changing it (detailed in Chapter V.2.3). In addition, the Brazilian government (SEAD – formerly MDA) can further promote local access to state-induced markets such as the PAA and PNAE, so as to contribute to dealing with price squeezed facilitated by respective oligopsonies (see Chapter VII.1). All in all, scientific input is hereby provided for NTFP extractivists to shape both formal and informal institutions in the frame of a conducive institutional environment for strengthening their position in the Brazil nut value chain based on sustainable access to Brazil nut and markets.

Concluding, the key message put forward for sustainable rural development in the Brazilian Amazon, is that a conducive institutional environment can only be achieved under three conditions: (1) democratic participation in decision-making processes by transforming the governance structure of councils for managing PAs from consultative into deliberative ones, including for enabling context-sensitive and co-adapted

institutions, policies and service provision; (2) organization of smallholders in ‘well-managed’ cooperatives characterized by significant/ active membership; and (3) ‘self-reliant mutually beneficial value chain development’ of NTFPs can emerge from ‘ability-based socioeconomic upgrading’ of the position of upstream value chain actors (Brazil nut gatherers).

Lessons Learned and Contextualization: Pathway Towards Sustainable Inclusive Rural Development

In the frame of the chain at stake, lessons learned indicate the following comprehensive leverage points found to create an enabling institutional environment for potentially contributing to strengthening the position of a considerable portion of Brazil nut gatherers in the chain at stake: social organization, mutually beneficial collective marketing via well-managed cooperatives (detailed in Chapter V.1.7), entailed by ability-based socioeconomic upgrading and inclusive governance structures (detailed in Chapter V.2.4).

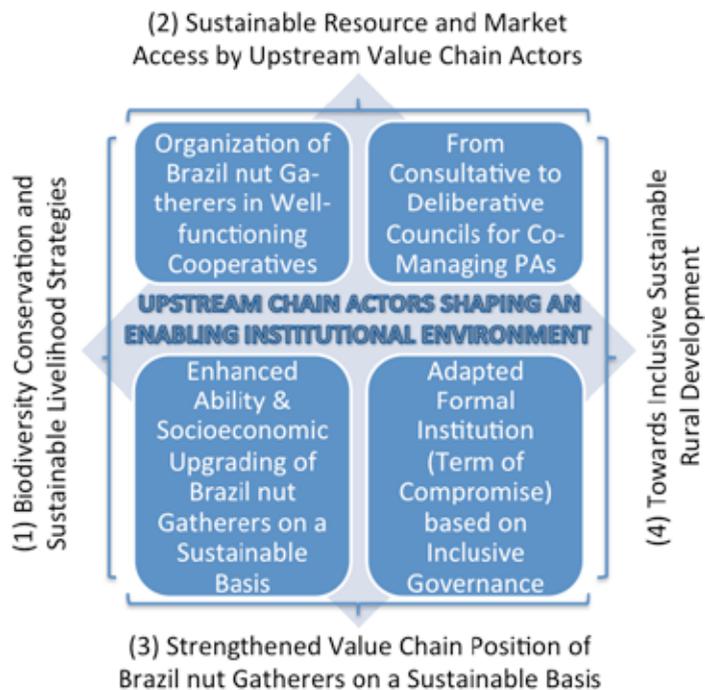
An important part of the lessons learned of this subsection is shaped against the background of understanding the role of *regatões* in the frame of *aviamento* (detailed in Chapters V.1.3 and V.1.4), while providing a key question that further research for sustainable development initiatives can ask themselves: If gatherers are dependent on specific functions that have long been assumed by *regatões*, how can cooperatives fulfill non-exploitative components of these functions while praising for collective benefits (according to cooperative principles)? Thereby, before intervening for respectively shortening a value chain – encompassing geographically marginalized NTFP extractivists –, a critical appraisal of the role of such chain actor and the service provision gap that could emerge from eliminating *regatões* is to be conducted. In so being for designing any of such interventions, alternatives are to be thought through (e.g. locally adapted credit provision – detailed in Chapter V.1.7) based on lessons drawn from the detailed analysis on how Brazil nut gatherers can be supported to deal with *aviamento* induced informal access limitations. Specific strategies and leverage points found herein can be extracted and implemented by using actionable elements of Chapters V.1.6 and VI.1.2.2.

This positive transformation can be operationalized through the following: more transparent, ethical and overall sustainable trade relations among up- and downstream value chain actors, while praising for environmental conservation and a more equitable share of benefits – e.g. per participatory locally adapted sustainability certifications schemes for local collective enterprises/ cooperatives and, overall, geographic indication combined with *quilombola* labels, that could be explored by sustainable rural development initiatives for the Brazil nut value chain in question.

Further, provided such lessons are put in practice, the following outcomes can be reached along the Brazil nut value chain in the Lower Amazon basin and beyond:

The four squares depict afore-described leverage points towards an enabling institutional environment, which can be paired up on the (path)way to achieving each one of the four outcomes (see (1), (2), (3), (4) in Figure 11). Herein evidenced leverage points concerning the informal institution *aviamento* are ‘socioeconomic upgrading’ of the position of upstream chain actors building on the ability as well as self-organ-

Figure 11: Outcome Pathway – Enabling Institutional Environment for Inclusive Sustainable Rural Development



Source: Own elaboration

zation of smallholders in 'well-managed' cooperatives. Leverage points on the formal institution TdC towards self-reliant sustainable inclusive development of the chain at stake depends on democratic participation in decision-making for a locally adapted TdC by transforming the governance structures of councils for managing PAs from 'consultative' to 'deliberative' ones, while shaping a conducive context-sensitive institutional environment, policies and service provision.

Whilst value chain development is all about resources and market access by chain actors, the actor- and network-centered approach followed herein (see Chapter II.1.1) requires an overall concerted shift in practices of three main actors for respective specific recommendations (detailed in Chapter VII) to work: (i) NTFP gatherers that can further strengthen their social organization not only for accessing (better) markets *inter alia* by effectively being part of and engaging in well-managed cooperatives for mutually beneficial collective marketing, but also by accessing credits, policies and services (not only from the Brazilian government); (ii) NTFP purchasers including processing mills that can reap positive co-benefits by treating their suppliers as actual employees and investing in win-win capacity building measures (e.g. courses for quality assurance along the supply chain); and (iii) the Brazilian government – ICMBio to change governance structures of councils for managing PAs from consultative to de-

liberative accompanied by amendments in laws/ federal decrees and locally adapted as well as accessible policies and (extension/ advisory and financial) services, building on political will.

In the frame of contextualization, similarly to Brazil, Bolivia and Peru are countries¹⁵, in whose remote forests areas debt-peonage and traditional barter systems prevail, while Brazil nut gatherers present weak (bargaining) positions vis-à-vis buyers as well. In Peru and Bolivia, changes in national forest and land laws – implying in property rights changes and the creation of Brazil nut concessions – favored upstream Brazil nut actors¹⁶ to some extent. In addition, while in Northern Bolivia institutional changes came along with increased participation; this was not the case in the TRBR. This is a PA where participation has not yet been effectively enhanced, as there is only a Consultative Council for the Management of the TRBR as governance structure per formal institution (based on Ikdhal *et al.* 2005: 4) and not a deliberative one, which would also require ‘amendments’ to the SNUC as changes to this formal institution (Brasil 2000). Whilst in both other countries the aforementioned changes contributed to strengthening the position of Brazil nut gatherers within respective value chains, such institutional changes have not yet taken place in the TRBR area along the Trombetas river.

Zooming out of the (sub)national towards international levels, lessons learned for overcoming negative implications at the local level beyond vertical integration at regional and global levels, urge for concerted horizontal and vertical coordination among actors of a given value chain for co-developing inclusive governance structures. In sum, in order to counter-act price squeezes while scoping for increased farm-gate prices and overall mutual benefits along a given value chain, ability-based socioeconomic upgrading as well as governance schemes that foster the above-mentioned concerted coordination can play a key role.

Finally – while evidence is combined with innovative conceptual approaches and analytical insights –, this thesis provides a novel research-policy-practice input not only for inclusive sustainable value chain development of NTFPs (and also agricultural products) in different contexts in line with 2030 Agenda for Sustainable Development (United Nations 2015). In this realm, at next, recommendations are explored, this thesis’ contribution to literature and respective debates as well as the herein proposed ‘institution-based and access-oriented value chain analysis and development approach’ is highlighted, as are an outlook and future research ‘needs’ in the last chapter of this thesis (Chapter VII).

15 Bolivia and Peru are the only two other countries, besides Brazil, whose Amazon biome harbors naturally occurring Brazil nut trees (Guariguata *et al.* 2017: 2008).

16 Property rights changes occurred to certain extent in very few collectively occupied lands (see Almeida 2004) along the Erepecuru river with the emergence of TQs and the cooperative (CEQMO), while strengthening the position of gatherers at least for the first couple of years after its creation in 2006.

VII. Recommendations, Contribution, Outlook and Future Research ‘Needs’

At first recommendations as ‘suggestions for actions and policy-making’ are offered (Chapter VII.1), followed by the contribution of this thesis (Chapter VII.2), an outlook for new research frontiers combining conceptual, analytical and empirical spheres (Chapter VII.3), as well as future research ‘needs’ (Chapter VII.4).

1 Multi-level Recommendations for Actors Involved in Brazil nut Value Chain

Whilst actors who are directly involved in a given value chain (suppliers and purchasers) ‘know best what is best for them’, recommendations are put forward rather as ‘suggestions’ for them and other actors – including policy-makers – indirectly involved in the Brazil nut value chain and overall NTFP ‘extractivism’ sector with a focus on the Brazilian Amazon.

As follows, concrete recommendations are provided for actors directly or indirectly involved in given agricultural and, particularly, NTFP value chains at multiple administrative levels, action arenas and chain nodes. These ‘suggestions for actions’ are put forward in the realm of what is further needed for sustainable resource and market access, while scoping for strengthening the position of NTFP extractivists. They are derived from answering both the main and sub-research questions¹ and are divided into three clusters of ‘suggestions’² (hereafter called recommendations for the sake of common understanding) for different agents – (1) Recommendations for Dealing with Asymmetries in NTFP (Brazil nut) Trade through Ability-based Socioeconomic Upgrading (Actions Primarily at Subnational Level); and (2) Recommendations for Dealing with Formal(ized) Limitations for Sustainable Resource and Market Access through Inclusive Governance Structures (Actions at National, Embedded in International Level) – according to each one of the two building blocks of this thesis (depicted in Figure 2). In addition, (3) Trans-scalar Recommendations for Joint Actions of Directly or Indirectly Involved Actors in NTFP Value Chains cutting across both (1) and (2) as well as through all three aforementioned levels are provided. Building on (1) and (2), (3) helps capturing interconnections between them as well as synergies among NTFP value chain actors from science to policy-makers and development practitioners (in Brazil and beyond) in the realm of concerted actions towards inclusive sustainable rural development in the Brazilian Amazon.

1 The main research question refers to the determinants of access: How do informal and formal institutions affect the access to Brazil nuts and markets by buyers, and, especially, by gatherers within the Brazil nut value chain in the Lower Amazon basin?

The sub-research question refers to the process of access: How are institutions – that affect resource and market access – institutionalized and formalized?

2 This structure follows the building blocks of this thesis (detailed in Figure 2), which are both constructed upon the main and the sub-research questions. This allows for actors from different (administrative) levels and sectors – private, public and civil society – to whom the ‘recommendations’ are provided, to better discern if given ‘suggestions’ resonate with their experiences.

(1) Recommendations for Dealing with Asymmetries in NTFP (Brazil nut) Trade through Ability-based Socioeconomic Upgrading (Actions Primarily at Subnational Level)

(1.1) Brazil nut Gatherers, Including Extractivist Members of FUGs

- Social and economic (self-)organization of Brazil nut gatherers into FUGs, *inter alia* ‘well-functioning’ small rural enterprises co-managed by its cooperative members based on democratic participation and effective engagement of small-scale producers and NTFP gatherers. Stimulate overall engagement and a minimum number of members to ensure collective marketing (based on Olson 1965), whose ability for accounting and securing the cash-flow of the cooperative (in this case, CEQMO) is to be further developed.
- For cooperatives (in the Brazilian Amazon, including CEQMO) to function well, the following cooperative principles amongst others can lead to positive outcomes provided compliance to the following: Every member is to take cooperative principles seriously, so that they effectively engage not only in supplying yet also *de facto* collectively marketing – according to the principles of identity and democratic participation, considering equal voting rights (‘one member, one vote’). Further collective benefits can be reaped if coordinators of such collective enterprises are to be more transparent in their management practices (e.g. sharing respective balance sheets with all members), while submitting themselves to respective control and monitoring – per democratic member control principle (based on ICA 1995, Zerche *et al.* 1998: 15).
- ‘Replicating best-practices’ including with regard to collective marketing of NTFPs and also agricultural products (e.g. Cooperacre, CAMTA³, ‘Ouro Verde Amazônia’ as part of the ‘ORSA Group’) through ‘peer-to-peer’ exchange with CEQMO yielding positive learning effects – particularly, for the latter cooperative. This would foster horizontal cooperation and (traditional) local knowledge sharing, while raising adoption as well as of being more effective than top-down ‘development interventions’ (often context blind initiatives), which are widespread and have long been practiced in the Amazon. Cooperacre could, for instance, share its experiences concerning its locally owned solutions on how it managed to add value to Brazil nut and other NTFPs at the village level, access credits and other policies as well as profitable markets while conserving biodiversity in a long-term. Thereby, ARQMO and AMOCREQ can further contribute to strengthening CEQMO’s collective marketing through using their bridging social capital (see Cunha 2014: 341-342) to attract resources for implementing respective experience exchanges with well-established rural associations and enterprises. A (cost-)effective tool for operationalizing such exchange are self-made videos promoting such locally-owned alternatives derived from self-declared problems aimed at sustainable rural development.
- Strengthening safety nets through social ties among them and with actors further downstream the Brazil nut value chain in this case – for building resilience including to climate change and also coping with economic risks –, without undermining their

3 Mixed Agricultural Cooperative from Tomé-Açú (CAMTA, per acronyms in Portuguese).

rights to social security system to be demanded from the government e.g. through STTR.

- Protest more – whenever their voice is not heard – against leaders/ representatives and entities responsible for issues of their interest: e.g. land tenure (INCRA at national level, ITERPA at state level of Pará) as well as sustainable natural access to resources and markets (ICMBio in the case of the TRBR, SEAD (formerly, MDA) as well as CONAB for accessing markets through PNAE, PAA and PGPM-Bio).
- ‘Name and shame’ as a means for negative (mouth-to-mouth) propaganda about given buyers who practice price squeezing against Brazil nut gatherers – if they organize themselves and spread the word, buyers could start paying higher prices.
- Further stimulating youth’s ability to become future leaders based on initiatives already supported by NGOs – such as AMAZON and CPI-SP, including their ongoing project for promoting *quilombola* culture through a music band (e.g. songs and instruments have references to Brazil nut gathering). This initiative fosters youth’s ‘pride’ to be *quilombolas* as well as the self-esteem of the Brazil nut extractivists (*castanheiros/ as*, in Portuguese).

(1.2) Brazil nut Buyers, Including Processing Mills

- In the realm of promoting socioeconomic upgrading (see Chapters V.1.6, V.1.7), a change in supplier-buyer relations can be implemented through similar working conditions offered per contract for the ‘in-house’ staff by regional lead firms based on an ‘adaptation’ of trade relations towards a client (supplier) and not only patron (buyer, including processing mills) orientation within more ‘leveled’ trade relations is needed. Thereby, conceding Brazil nut gatherers employee-like entitlements – i.e. decent working conditions, as put forward by the International Labour Organization (ILO) – and locally adding value while reaping higher ‘farm-gate’ prices that allow for a ‘living wage’/ decent living standard.
- For enhancing the ability in terms of ‘human capital’ of upstream chain actors, the following win-win capacity development measures can be provided by the processing mills to their local (intermediary) buyers and suppliers (gatherers):
 - Further modules of post-harvest trainings like the one already realized by UFOPA in the study area (19.-21.09.2013), whereby both the co-leader of the course representing Mundial Exportadora Ltda. and the largest buyer at the community of CCPT were very keen on collaborating with each other, including as they had the idea of the course together.
 - On-the-job-training in NTFP (Brazil nut) processing mills for upstream value chain actors to learn certain processes (e.g. management) within mills.
 - Potentially employing middlemen ‘champions’ in the procurement department of respective local and regional rural enterprises as they are already trusted by NTFP extractivists for having established trade relations at community level. Mutual benefits can be reaped, if the potential trade-off of reinforcing respective imbalances among these ‘upgraded buyers’ vis-à-vis their long-term local suppliers can be avoided.

(1.3) (Inter)National Non-governmental Organizations and Government

- Implementing context-sensitive measures for overcoming trade asymmetries and dependencies, while enhancing the bargaining ability of NTFP/ Brazil nut gatherers. The government could invest in specific workshops for transmitting negotiation competencies for empowering (geographically and economically) marginalized extractivists. Respective effectiveness as well as ownership pertaining to such courses are facilitated if they are conducted by cooperatives who have gone through the same challenges and succeeded in acquiring respective skills (e.g. Cooperacre, CAMTA, 'Ouro Verde Amazônia' as part of the 'ORSA Group').
- Investing in capacity building demanded by upstream actors of NTFP (Brazil nut) value chains. NGOs (e.g. IPAM⁴, ISA⁵, IMAFLORA) are in a good position for capturing these demands and translating them to policy-makers for respective service provision in a long-term.
- Building up human capital through e.g. good practice courses (*curso de boas práticas*, in Portuguese) in quality assurance techniques such as locally adapted certification systems, while co-designing mutually beneficial value adding strategies within NTFP value chains.
- Prioritize value chain development initiatives that show clear link to integrated land-use planning and add value at the local level while safeguarding livelihoods and ecosystem services.
- Training for FUGs members to elaborate a 'business plan' for own Brazil nut/ NTFP processing mill for adding value and increasing economic benefits at local level. Prior to establishing a collective processing mill of their own – as a means to effectively overcoming dependence relations institutionalized in the frame of *aviamento* – an 'important milestone' would be to have a well-managed cooperative.
- On the way towards achieving this 'milestone' for making such mutually beneficial collective enterprise 'profitable' for its members: grassroots organizations, in particular, could help identifying potential short to mid-term strategies that foster collective benefits based on alternatives to fulfilling the role and functions of *regatões* beyond cooperatives⁶. In face of cooperatives (in)operating for exclusive benefits of leaders, such strategies could be more suitable to the interests of the majority of Brazil nut gatherers in the meantime (preceding a well-functioning cooperative). This applies to the case of the Brazil nut value chain in the Lower Amazon basin, yet possibly also to remote upstream segments of other NTFP chains in the Amazon.
- 'Well-managed' cooperatives can be established – together with local suppliers and buyers – under the condition of enhanced ability of Brazil nut and other NTFP extractivists to autonomously manage such collective enterprises. For instance, enhancing their ability to maintaining positive benefit-cost ratios as per respective balance sheets of their collective enterprise, while fulfilling all principles of coopera-

4 The Amazon Environmental Research Institute (IPAM, per acronyms in Portuguese).

5 The Socio-Environmental Institute (ISA, per acronyms in Portuguese).

6 For a detailed analysis on how Brazil nut gatherers (are to) deal with *aviamento* induced informal access limitations through respective strategies, leverage points and alternatives, see Chapters V.1.6 and V.1.7.

- tives for providing collective benefits. Such enhancement of their ability has to come along with locally owned measures for ‘social as well as productive’ organization (as described in the section above on ‘suggestions’ for Brazil nut gatherers and FUGs).
- Tailored capacity development is to be co-designed by government entities as well as NGOs and/ or development agencies together with so-called ‘target groups’ (Brazil nut gatherers, in this case): context-sensitive ‘cooperativism’ courses, instead of standardized ones originally developed for medium to large collective rural enterprises of the more economically developed regions of Brazil; the CNS is well-positioned to conduct such locally adapted courses for the respective empowerment of forest peoples (NTFP extractivists) whom they represent, while partnering with key entities (e.g. MMA) and lobbying for an enabling policy environment.
 - Specific capacity building workshops for enhancing the ability of Brazil nut gatherers for autonomously managing a cooperative (e.g. accounting modules, including for maintaining cash-flow) as a collective enterprise, while raising participation of Brazil nut gatherers in supplying as well as marketing collectively and fulfilling all principles of cooperatives for providing collective benefits is to be ensured (see Chapter V.1.7).
 - Trainings in financial resource management (e.g. by SEBRAE⁷ with its capillarity reaching remote municipalities) for enhancing capacities to pay back credits and minimizing debts vis-à-vis Brazil nut gatherers and other NTFP buyers.
 - Prioritize domestic financing vehicles, while avoiding to rely on only one funding source (e.g. banks with high interest rates); and, whenever possible, use blended financing (government, international as well as national funds and private donors), so as to diversify the interests that are to be addressed by a given sustainable development initiative.
 - Establishment of a decentralized Center for NTFPs to function as a center for capacity building in context-specific needs for trainings in managing cooperatives, (collective) marketing strategies, knowledge generation, management and exchange. In 2013, SECTI initiated planning activities to implement a Center for Technological Extension (*Núcleo de Extensão Tecnológica* – NEXT, per acronyms in Portuguese) in the Lower Amazon region to strengthen the different segments of the Brazil nut value chain through know-how development and service provision. This could be further developed by SECTI, SEICOM with the support from MDIC.
 - Inclusion of disciplines on NTFP extractivism and management in curricula of decentralized extension/ education programs (e.g. *casa familiar rural, educação da alternância/ da floresta*⁸, in Portuguese), as well as in standard curricula of graduate and/ or post-graduate courses in forest engineering, (agro)forestry, (agro)ecology, agronomy, natural resource and agricultural economics.
 - Conclude process of high-school creation at community level: Project already started by IMAZON in cooperation with Ministry of Education (MEC, per acronyms in

7 Brazilian Micro and Small Business Support Service (SEBRAE, per acronyms in Portuguese).

8 In such educational programs, contents and examples are taken from the direct environment in which pupils/ students live in and often from.

Portuguese) (both at national level) and IDESP (in the administrative level of the state of Pará) at the community of CCPT.

- The National Program for Access to the Technical Education and Employment (*Programa Nacional de Acesso ao Ensino Técnico e Emprego* – PRONATEC, per acronyms in Portuguese) as a well-established vocational training anchored at MEC could be expanded so as to offer tailored know-how for forest dependent youth towards ‘PRONATEC *Extrativista*’.
- Designing courses (specialization/ master programs) specifically targeted at extractivism/ NTFP value chains, particularly in universities of the Brazilian Amazon.

Such capacity development measures in the realm of ability enhancement for socio-economic upgrading of NTFP extractivists – as specific alternative to deal with *aviamiento* – can lead to the outcome of ‘sustainable’ resource and market access (see Figure 11). In the realm of strengthening Brazil nut gatherers’ value chain position, what can also contribute to the referred outcome are inclusive governance structures (based on institutional change – see Chapter VI.1.2.2), which is to be explored at next.

(2) Recommendations for Dealing with Formal(ized) Limitations for Sustainable Resource and Market Access through Inclusive Governance Structures (Actions Primarily at National and Embedded in International Level)

(2.1) Government

- State-driven market access: Further promoting sustainable inclusive access to markets (so-called *mercados institucionais*: PAA and PNAE, per acronyms in Portuguese).
- Requirements for public policy and service provision: Locally adapted workshops by the ministries MMA and SEAD (formerly, MDA) as well as by the National Agency for Technical Assistance and Extension Services (ANATER and its state-level representations: Enterprise for Technical Assistance and Extension Services, EMATER, per acronyms in Portuguese) on what is needed for accessing suitable technical know-how, policies and credits for NTFP extractivists. Thereby, formal requirements include having land titles based on respective property rights and official documents e.g. DAP issued by the Brazilian government (SEAD (formerly, MDA)). Such requirements are to be further adapted to local conditions of gatherers, particularly the extractivists who deal with NTFP as a sustainable common pool resource.
- Financial services: Providing alternatives to advanced payments, i.e. specific low interest credit lines for (agro)extractivists, including Brazil nut gatherers. For instance, building on the ‘PRONAF *Florestal*’, a ‘PRONAF *Extrativista*’ with zero interest rates for NTFP extractivists could be further established: Counting with the respective adaption to pay-back capacities tailored to target groups’ socioeconomic conditions. Learning from past experiences, i.e. credit provision through the ‘Constitutional Fund for Financing of the North’ (FNO⁹, per acronyms in Portuguese) – which

9 What is hereby meant is to thoroughly consider the pay-back capacities of rural dwellers, so as to avoid their indebtedness and prohibition of further bank loan taking, as happened with credits provided by the FNO.

has excluded rural dweller groups (e.g. FUGs) at their first unmet criteria – without undermining the responsibility of public bank managers for ensuring criteria are met by such eligible groups.

- Locally adapted microfinancing: Adapting successful microfinance approaches and measures at international level¹⁰ – with loans managed by women – to local Amazonian contexts with (to be) established small-scale rural enterprises interested in accessing such programs. Without undermining debt related risks of already economically marginalized households, yet for small-scale NTFP extractivists to reduce *aviamento* induced dependence on advanced payments by (intermediary) buyers and overcome extreme poverty thresholds and traps.

(2.2) Specific Governmental Entities in Brazil and International Organizations

- CONAB: There is a case to establish high enough minimum prices for products of the socio-biodiversity in the frame of the PGPM-Bio launched by CONAB, SEAD (formerly, MDA) and MMA in 2009, while enabling access to subsidies when market prices fall below respective minimum prices (see Footnote 259). Given high costs of Brazil nut gatherers, CONAB is to consider all production, labor and transport costs of such extractivists, so as to raise the PGPM-Bio for Brazil nut, whilst facilitating gatherers to market Brazil nuts as well as to access this policy, including in Pará. Beyond that, with strengthened chain position of given upstream actors in a long-term perspective, CONAB could reallocate some of the resources spent for PGPM-Bio subsidies in incentives for local extension agents to provide capacity building (e.g. strategic bargaining) for FUGs.
- FCP under the Ministry of Culture: To revise their approach as federal entity responsible for *de facto* ensuring *quilombola* rights, without undermining affirmative action for overcoming currently underrepresented local interests of such traditional populations concerning: land tenure rights as well as access rights to livelihood relevant resources.
- MMA: Ensuring access to existing (e.g. MMA's program *Bolsa Verde*, in Portuguese) and new policies by promoting locally adapted and context-sensitive federal programs, plans and projects.
- ICMBio:
 - Democratic participation in decision making: Transforming the governance structure – from consultative to deliberative – of councils for the management of any type of PA where there were people living in and from the territory before a given PA was established in Brazil. This change towards an inclusive governance structure can serve as a platform for geographically and economically marginalized NTFP gatherers to have their voice heard in respective decision-making. NTFP extractivists can then effectively participate in shaping the change they want – as the majority of upstream actors of any NTFP – concerning an adapted TdC. In the case of the TRBR, the adaptation of the TdC could entail an amendment *inter*

10 Micro-loans such as the one microfinancing scheme pioneered by the Grameen Bank can be replicated in remote rural contexts with low HDIs throughout the Amazon based on local demands.

alia to its Clause 10 for moving beyond the practically impassable hurdle of the required signatures of both ICMBio and the *quilombola* associations ARQMO or AMOCREQ (in the case of the community of CCPT) on top of the ones from 10 gatherers to authorize each 'external' buyer to purchase in the TRBR area. This can be regarded as a first step for empowering gatherers within the Brazil nut value chain in the Lower Amazon basin towards sustainable access to better paying market outlets, while enabling their participation in decision making.

- Assessment, review and monitoring of implications of the TdC of the TRBR (currently in force as well as and its future (re)design) in terms of environmental benefits and effects on livelihoods, including income of *quilombola* extractivists living in TRBR.
- Alignment of action and decision-making at national level (ICMBio Brasília) to local needs of extractivists, particularly traditional populations – at least key/ urgent needs for ensuring food security and sovereignty as well as sustainable livelihood strategies identified by ICMBio at municipality and local levels (e.g. ICMBio Porto Trombetas).
- Land tenure: Securing access per Article 68 of the Federal Constitution (Brasil 1988) to land and property rights of traditional populations (TQs or a tenure type that is compatible with ICMBio's control for sustainable use natural resources).
- Legislation: Revisiting laws and decrees for sustainable access to livelihood relevant natural resources by adapting specific usage concessions, while combating land-grabbing (i.e. *grilagem*, in Portuguese) and deforestation.
- Developing legal basis for co-management of PAs (of full environmental protection) by populations living in these areas.
- Overall, for long-term cooperation with (traditional) populations, in particular, the ones whose settlements date back prior to the establishment of respective PAs: ICMBio (MMA) is to revise how it deals with such conflicts not only in the case at stake (TRBR) but also in other PAs, while avoiding weakening the position of NTFP extractivists in a given value chain, in this case the Brazil nut chain in the Lower Amazon basin. Instead, ICMBio could collaborate with schools and universities for extractivists' formal learning on sustainability issues, including ability enabling elements for further ensuring sustainable livelihood strategies and forest conservation in a long-term.
- International Union for Conservation of Nature (IUCN) and the UNCBD: Further develop globally binding governance structures for co-management of PAs as well as benefit sharing (based on Greiber *et al.* 2012, Borrini-Feyerabend *et al.* 2013) in order to achieve sustainable rural development in the long-term. Yet, particularly in territories such as traditionally occupied lands, ensuring biodiversity conservation by allowing for sustainable use of livelihood relevant resources by rural populations long living in these areas is to be further considered. While considerable steps, including by IUCN as well as by the United Nations Convention to Combat Desertification (UNCCD) – as the only international legally binding agreement on land and environment – have been taken in this direction, i.e. for enabling long-term human-nature relations on a sustainable basis, the scope for 'joint governance' structures

of PAs is not yet exhausted. Moving forward, exploring pathways towards formalization of related commissions and committees already committed to sustainable rural development is pivotal. Means for reaching this are, for instance, providing formalization steps and legal ground for the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)¹¹ towards more inclusive legally binding decisions for reconciling environmental conservation and sustainable livelihoods strategies.

(2.3) Governance Structures for Sustainable Integration into Markets

- Given NTFP relevant national governance structures are to be included into/ considered by global ones (and vice-versa), so as to promote coordination and cooperation among all involved actors from international to community level:
 - Such governance structures can be established, *inter alia* through context-sensitive certification schemes – fair trade certification for local collective enterprises/cooperatives and, overall, geographic indication based on ‘community-corporation protocols’ for participatory socio-environmental certification and combined with the label ‘Origin Brazil’¹² and the Brazilian *quilombola* label (*Selo Quilombos do Brasil*¹³, in Portuguese). The (socioeconomic and biophysical) conditions are to be considered under which such (quality) assurance systems can contribute to more transparent, ethical and inclusive sustainable trade relations among up- and downstream value chain actors, while praising for a more equitable share of benefits. This can be operationalized e.g. through the abovementioned certification systems provided they are locally adapted and that alignment of standards set in Europe further consider local value addition as well as socioeconomic and environmental conditions of the contexts from which given products are sourced.
 - Beyond certification, concerted horizontal and vertical coordination towards inclusive sustainable governance requires the engagement of actors from all sectors and nodes of a given value chain – from the wholesale and international brokers to ‘community-based buyers’ and gatherers of NTFP (Brazil nut, in this case).

(3) Trans-scalar Recommendations for Joint Actions of Directly or Indirectly Involved Actors in NTFP Value Chains:

(3.1) ‘Development interventions’ from international to subnational/ community levels

- Overall, funding of such initiatives for inclusive sustainable governance is still strongly reliant on an increase in Official Development Assistance (ODA – as well as the proportion of ODA) and investments by UN member states targeted at SDG

11 The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security were designed by FAO and endorsed by the Committee on World Food Security (CFS) in 2012 (see FAO 2012).

12 For detailed information on the certification and labelling initiative ‘Origin Brazil’ (*Selo Origens Brasil*, in Portuguese), see IMAFLORA (2015).

13 For detailed information on such quality assurance schemes as well as a critical analysis of food market struggles, see e.g. Niederle (2016).

12¹⁴ (more specifically 12.2 – United Nations (2015)) without undermining SDGs 1, 2 (more specifically, 1.4, 1b, 2.4 and 2c), and life on land as per SDG 15 (more specifically, 15.1, 15.3, 15.5 and 15.9) – which relates to benefit sharing and overcoming horizontal and vertical inequalities while ensuring shared prosperity and dignity (SDG 10 – more specifically 10.2 and 10.3). Efforts at the global level e.g. from ILO are to be further supported for operationalizing a legally binding framework for ensuring decent work along global production networks and value chains (SDG 9 – more specifically, 9.3). This would constructively counteract measures recently taken by the Brazilian Government to weaken the legal basis for securing labor rights, while leaving entry-points for slave-like working conditions by sub-contracting through independent firms and outsourcing work once done by employees (based on Paes *et al.* 2017: 55).

- Any kind of ‘intervention’ – e.g. for conserving biodiversity and/ or reducing poverty – from civil society organizations as well as from the private sector and policy-makers are to consider the principles of ‘leaving no one behind’ and ‘doing no harm’ (see Chapter VI.1.2.2).
- Problem-solution oriented field visits from representatives of MMA and SEAD (formerly, MDA) from Brasília for co-designing locally accessible demand-based policies for the extractivism sector. Thereby, upstream NTFP chain actors are to be offered the opportunity to engage in related programs – if they so desire – since the beginning or adapting them in the frame of change management. This approach – as opposed to a top-down or, as done by MMA branches ‘command and control’ – is prone not only to raising willingness to collaborate but also adoption as well as ownership of ‘initiatives’ and access to policies at the local level.
- Integrated landscape planning and sustainable rural development measures are to be coordinated among different government levels and sectors beyond infrastructure projects towards strengthening small rural enterprises *inter alia* through service provision and targeted tailored policies.
- Prioritize scoping for leverage points of the position of economically (and geographically) marginalized value chain actors while reconciling livelihoods with environmental conservation in the frame of multi-stakeholder sustainable development initiatives.

(3.2) Interorganizational Governance, Monitoring and Access to Information in Brazil

- Policy coherence and coordination among ministries for setting joint agendas as well as commitment to implementing synergies for strengthening the NTFP sector or at least avoiding negative spillover effects stemming from programs of e.g. the Brazilian Ministry of Agriculture (MAPA, per acronyms in Portuguese) and ICMBio. Respective decisions of government entities can affect entire domestic markets as

14 For further information and reference, see the 2030 Agenda for Sustainable Development (United Nations 2015), which builds up on the Agenda 21 (United Nations 1992) and the Millennium Development Goals (MDGs), specifically MDGs 1a, c, 7a, b, 8a, e (United Nations General Assembly 2015).

well as access to natural resources and markets of upstream actors in respective value chains, given increasing interconnectedness of actors (entailed by *inter alia* continued globalization and modernization).

- Good governance¹⁵: Investing in multi-level governance platforms while ensuring good governance along NTFP chains in Brazil and further developing already existing steering committees. Formalized governance commissions – such as the ‘Governance Commission for Strengthening the Brazil nut Value Chain in Pará’ (formalized by MDIC – detailed in Chapter V.2.4.3) – can enable the access to specific policies, services and (financial) resources channeled by this through relevant ministries, particularly if it is further transformed into a committee under the National Policy for Clusters (*Política Nacional de APLs*, in Portuguese) from MDIC.
- Increase in vertical integration and alignment for policy access and effectiveness: Clear responsibilities between national, subnational and municipal level government entities – including a detailed scheduling of deadlines by when each one of the respective focal points is to deliver specific outputs – are to be jointly determined in the realm of the implementation of policies.
- Monitoring and information sharing: Establishing market and price ‘observatories’, while avoiding price squeezes from Brazil nut buyers vis-à-vis gatherers, enhancing transparency and reducing (trade as well as market) asymmetries, including in related access to information by gatherers.
- Promoting market access and marketing possibilities through the information exchange and own strive of (upstream) NTFP value chain actors for ‘networking’ opportunities: New business opportunities and partnerships can emerge from the participation of upstream value chain actors at national and international (trade) fairs. In the case of the Brazil nut value chain both representatives of gatherers and the processing mill Exportadora Mundial Ltda. participated in the ‘BioFach Latin America’ in São Paulo, 27.-30.6.2013, where they agreed on the abovementioned course for gatherers conducted by this mill together with UFOPA on good-practices in post-harvest management in the same year¹⁶. Additionally, first-hand detailed information on requirements for certifying Brazil nuts was provided for both the aforementioned representatives by organic and fair-trade certification and labeling firms.
- Fostering access to information and citizenship in the long-term: It would benefit NTFP gatherers and small-scale producers if further trainings on how to access information – not only to claim their rights and effectively access public policies; yet, particularly, to up-to-date price information is to be co-developed by service providers as well as other actors directly or indirectly involved in a given value chain.

15 For a detailed analysis of (local) good governance, see Segebart (2007).

16 Both the participation in the ‘BioFach Latin America’ as well as the course were part of the activities under the Sociobio.net Project coordinated by the *Freie Universität Berlin* in the frame of the GIZ Program ‘NoPa’ funded by the BMZ and launched by GIZ in cooperation with DAAD and CAPES, in which the author of this thesis took part.

(3.3) Science-Policy-Practice Interface in Brazil

- Identification and conversion of synergies among research, policy and development initiatives pertaining to NTFP for inclusive sustainable rural development with positive impact (e.g. through workshops on challenges and potential for up- and out-scaling).
- Strengthening of already established networks and initiatives – from NGOs and Civil Society Organizations (CSOs)/ FUGs (including associations and cooperatives), initiatives of academia, private and public sector –, which are working on NTFP related issues throughout the country, including on environmentally sound access and marketing of these products.
- Knowledge management: Establishing a platform for providing relevant information on NTFP through a common database and community of practice for sharing knowledge, developing novel initiatives and better coordination among different actors involved in the NTFP sector at multiple scales.
- Build up the political importance of and funding for the value chains of products of the socio-biodiversity component within the agenda of the public policy PLANAPO at SEAD (formerly, MDA). It is found to be critical to maintain the implementation commitments made for NTFP extractivists through the PNPSB (see Segebart *et al.* 2015). PNPSB is a program from the Brazilian government under the PLANAPO plan, in the frame of PNAP¹⁷ whose establishment is formalized per Federal Decree 7794/2012 (see Chapter I.1).
- Step-by-step methodology for the implementation of policies for neglected agricultural sectors (including agroecology) and NTFP extractivism. Such implementation requires disbursement of financial resources and allocation of personnel for policies and, particularly, policy implementation to work for economically and geographically marginalized (agro)extractivists.
- Overall raising the political will for strengthening the value chains of products of Brazil's socio-biodiversity (see Chapter II.1.5), while exploring the potential of NTFP sector for reaping its 'neglected' environmental and socioeconomic benefits based on actionable scientific input.

2 Contribution of this Thesis

Given the research and development gap of the lack of analysis of the context and role of the institutional environment for upstream NTFP (Brazil nut) value chain actors for accessing natural resources and markets on a sustainable basis, an innovative institutions-based and access-oriented approach for 'value chain analysis and development' in the Lower Amazon basin¹⁸ and beyond is offered. This thesis thoroughly demonstrates how value chain analysis and development is all about resource and market access, by offering a coherent combination of conceptual, analytical and empirical

17 For an overview on policies for strengthening (agro)extractivism (*agroextrativismo* in Portuguese) in Brazil, see e.g. Miccolis *et al.* (2011).

18 In this context, the economic importance of Brazil nut extraction and marketing as a key livelihood strategy in the Lower Amazon basin is quantified (13,07%), on top of a detailed qualitative assessment of the role of this NTFP use in this sub-national region.

elements for understanding limitations to such access – in this case restrictions per institutions. By identifying such access restrictions per informal and formal institutions as well as related processes affecting given economically and geographically marginalized upstream value chain actors, concrete leverage points are unveiled. Instead of trying to come up with context-blind (external) ‘solutions’, evidence-based input – for enhancing the institutional environment such agents are embedded in – in the realm of strengthening their chain position is provided. What can support the identification of problems (detailed in Chapter 1.4), upon which research initiatives can be inductively designed from scratch are background questions asked herein (e.g. If/ how livelihood relevant natural resources and markets are accessed economically and marginalized value chain actors? If not; what are reasons for the lack of such access, and what limits and fosters such access?).

Part of what this thesis offers is an institutions and problem-based approach towards access to livelihood relevant resources (Brazil nut) and markets along upstream nodes of given chains in the following figure.

Figure 12: Model – Analytical Ingredients for Strengthening Upstream Value Chain Nodes



Source: Own elaboration

This model on analytical ingredients (blue bubbles on the top left and right sides of Figure 12) refer to the components of the research questions and building blocks of this thesis captured in Figures 2 and 12 and, more specifically, in the analytical framework Figure 6. Key access limiting determinants (informal and formal institutions) and processes (institutionalization and formalization) are captured herein in the frame of understanding the (lack) of resource and market access by upstream value chain actors of a given chain. Such understanding lies in the intersection of analytical and

empirical evidences that combined can turn identified ample problems (synthesized in Chapters VI.1.1.1 and VI.1.2.1) into leverage points (synthesized in Chapters VI.1.1.2 and VI.1.2.2) for environmentally sound and inclusive resource and market access – which is further offered by this thesis. In so being, evidence-based leverage points are provided towards locally adapted informal and formal institutions for self-sustained strengthening the value chain position of economically and geographically marginalized actors – in this case Brazil nut gatherers. Problem-based insights are provided as is a solution-oriented replicable research approach that can feed into ingredients for agents directly and indirectly involved in a given agricultural or NTFP value chain to shape inclusive sustainable value chains.

The analytical ingredients provided above form a model to help explain empirical phenomena pertaining to the institutionalization and formalization of access limiting institutions (corresponding to the sub-research question herein). Building on conceptual foundations from Berger & Luckmann (1980) who put forward that institutions turn into an ‘objective reality’ (contained in the title of their publication) this model adds analytical elements for capturing the formalization process of given informal institution-based access restrictions.

In this regard, Berger & Luckmann (1980) provide an entry point towards creating an enabling institutional environment:

“The continuity of an institution is grounded on societal recognition of it as a ‘permanent’ solution of a ‘permanent’ problem”¹⁹. (ibid.: 74 – citation dissected in Chapter III.3.1).

Building on their in-depth sociological institution(-alization) approach and on the analytical framework proposed herein, the model presented in Figure 12 further enables tracking down the institutionalization and formalization of access limiting institutions in a given rural territory (e.g. remote areas characterized by different claims over the same resource and difficult market access(ibility)). Going one step forward, it can serve as an analytical platform for transforming respective institution-based access problems towards the outcome of adapted access enabling institutions for strengthened upstream nodes of food chains in the long-term.

In so being, this thesis innovates and contributes to scholarship with a context-sensitive and evidence-based inductive research approach, which draws upon a fruitful combination of different research fields – ‘value chain analysis and development’ building on institutions and, especially, access theory to address the research questions. The answers to both the main and sub-research questions herein can provide conceptual and empirical insights pertaining to global issues: For instance, to the need for strengthening the position of upstream value chain actors – by overcoming limiting factors – for pursuing inclusive sustainable value chain development; particularly in production networks characterized by the lack of access to natural resources and markets in the so-called Global South. This research shows how to identify respective locally self-declared limitations (empirically captured, in particular by effectively listening and valuing the voice of the most marginalized chain actors) to the natural re-

19 “*Das Fortwirken einer Institution gründet sich auf ihre gesellschaftlicher Anerkennung als ‘permanente’ Lösung eines ‘permanenten’ Problems*”.

source and market access while scoping for identifying leverage points building on informal and formal institutions (key access determinants) as well as institutionalization and formalization (key access processes). This comprehensive research approach provides concrete positive transformation potential, including through locally-owned and context-sensitive institutional change, instead of only exploring enabling factors in place or even creating potential solutions from outside (by academia and government as well as non-governmental organizations) detached from local demands. In sum, this approach is an innovative take on ‘research for development’ that can be more efficient, effective and adoption-prone for self-declared ‘improvement’ of the value chain position of NTFP extractivists; as compared to creating a ‘new solution’ that has a higher risk of not being locally owned, adopted or adapted to the problems in question.

More specifically, a novel scientific input is hereby offered for striving to overcome formal(ized) limitations (in this case, per TdC) and informal restrictions (in this case, *aviamento*) for extractivists to make a sustainable living out of NTFPs. Such input includes a conceptual groundwork and empirical evidences for contributing to shaping an institutional environment that is conducive for ability-based socioeconomic upgrading and inclusive governance in the realm of strengthening the chain position of Brazil nut gatherers. Results provide the basis for such institutional change (of formal and informal institutions) to allow for sustainable gathering and, particularly, market access for selling Brazil nut in and around the TRBR area. Such conceptual, analytical and empirical insights apply to other contexts in Brazil – given TdC and *aviamento* as debt-peonage system are widespread institutions –, while they can be further replicated in the context of other PAs inhabited with forest dependent (traditional) populations facing challenges for attaining long-term sustainability.

A key component of the policy relevant scientific contribution of this thesis is a novel analytical framework for analyzing the access to natural resources and markets as an innovative approach for ‘value chain analysis and development’ of NTFPs, which can also be applied for agricultural products. The herewith proposed framework is useful for dissecting determinants and processes related to the (lack of) resource and market access in given upstream nodes of value chains. The analytical framework helps capturing elements limiting such access in order to provide leverage points as concrete research input for actors involved in respective production networks to design counter-action measures (as outlined in the subsection on recommendations above) in given rural landscapes. These, together with the fact that it can be applied in different contexts, are key reasons for the relevance of the proposed framework.

The analytical framework and problem-based research approach can serve as scientific input for identifying leverage points for strengthening the value chain position of ‘marginalized’ upstream chain actors in the realm of inclusive self-determined sustainable value chain development of NTFPs in other rural contexts.

Both the analytical framework and research approach (including mixed methods towards findings – see Chapter I.8) can be useful for other contexts, action arenas or fields as shared spaces (territories, landscapes or PAs) with similar contradicting interests, contestations, disputes and overall struggles to deal with entangled ambiguities pertaining to the access to natural resources and markets. In the frame of the background of this research, the intention herein is to avoid polarizing between the

broadly debated antagonistic dichotomies of biodiversity conservation or sustaining livelihood strategies, yet to provide scientific input for the respective equilibrium towards inclusive sustainable value chain development. In so being, this thesis' added value to 'research for development' lies in thoroughly analyzing existing factors limiting natural resource as well as market access and does not rely on creating elements originally thought of to be conducive for local sustainable development (e.g. cooperatives for collective marketing that turn out to only promote individual benefits of its leaders and hardly any collective socioeconomic benefit).

Finally, this thesis adds value to the science-policy-practice interface by analyzing leverage points for overcoming specific determinants and processes limiting the sustainable access to natural resources and markets by upstream value chain actors who can further shape the institutional environment for inclusive self-sustaining value chain development. Thereby, a solid research base is provided for not only promoting biodiversity conservation but also contributing to strengthening the chain position of (economically and geographically marginalized) upstream NTFP actors. Its analytical and empirical evidences feed into SDGs 1, 2, 3, 4, 8, 10, 12, 13, 15 and 17, while contributing to the debates²⁰ on the 2030 Agenda for Sustainable Development (United Nations 2015) with scientific ingredients for institutional, organizational and structural changes. Such insights can serve as concrete steps towards locally adapted policies for livelihood relevant and environmentally sound resource and market access in the realm of mutually beneficial self-reliant inclusive sustainable rural development in a long-term.

3 Outlook for New Research Frontiers

This thesis has unveiled new research frontiers in the intersection of conceptual, analytical and empirical spheres, while addressing the self-declared problem of lack of access to resources and, especially, to markets by upstream actors of a given chain – in this case, the Brazil nut value in the Lower Amazon basin. Still, there is a long way to go on how to transform business as usual and move beyond asymmetric 'patron-client' relations reinforced by formal(ized) limitations on gatherers' bargaining power and market access, particularly in remote upstream segments of NTFP value chains in the Amazon.

This research could feed into herewith initiated unprecedented scientific endeavor in the field of value chain analysis and development towards analyzing organizational development of upstream value chain segments as part of an 'organization'. This new research perspective could draw from the novel ability-based socioeconomic upgrading proposed herein, while framing it under the perspective of organizational development: Regarding upstream nodes of a value chain as departments of an organization (i.e. supply and procurement units as part of a whole) and working as a team on a common goal – overcoming challenges of individualistic rational choices (see Thaler

20 The 'future we want' is the title of the Outcome Document of the United Nations Conference on Sustainable Development, which was formally published as a Resolution of the General Assembly of the United Nations on 11.09.2012 (United Nations 2012). It further stimulated debates for the design of the new universal agenda for sustainable development, the Post 2015 Development Agenda, also known as 2030 Agenda for Sustainable Development.

2016) as well as of developing a sense of organizational belonging –, while striving to maximize mutual benefits would add value to value chain development analysis and practice. This approach would build up on what was pioneered by Senge (1990) with the notion of a 'learning organization' as a group of people – in this case, upstream value chain actors – who are engaged in the constant enhancement of their (cap)abilities according to the group's vision.

What is hereby envisioned as an outlook for organizational development could also expand its original disciplinary scope of business psychology and administration. It would mean to move beyond the widespread outsourcing by multinational enterprises of production segments within global value chains to places where production input and labor are cheaper. Yet, such an approach to organizational development – of considering upstream value chain nodes as units of one organization – has not yet been transferred to value chain development.

This organizational development approach as well as the one to be outlined in the next paragraph can serve as an inspirational perspective for rethinking value chain development for it to be further driven by more inclusive and locally owned decision-making processes – including of directly involved upstream chain actors about institutions and 'sustainable' resource as well as market access.

Whilst this thesis offers analytical and empirical insights anchored in theory, they can be further utilized for exploring conceptual iterations among: (i) the capability approach (Sen 1985) for empowerment, ownership and entitlement, (ii) the endowment-entitlement framework from Sen (1981), and (iii) the environmental entitlement framework by Leach *et al.* (1999) complemented with the Institutional Analysis and Development framework from Ostrom (2005). The combination of such conceptual foundations could render further insights on how (economically and geographically) marginalized rural populations can access, maintain and benefit from resources on a sustainable basis, while engaging in endogenous self-reliant sustainable development they want without undermining their food security and sovereignty.

Additionally, as an outlook, the following research perspective on value chain analysis for development is herewith opened – against the background of striking a balance between environmental conservation and socioeconomic development – that can be further explored: Understanding drivers of poverty reduction and for value adding – beyond economic added value in line with aforementioned policies for promoting socio-biodiversity – at the local level based on quantitative assessments of the environmental and socioeconomic impact to be further conducted of global production networks, while accounting for the provision of ecosystem services. Valuing socio-biodiversity (products) is to be further promoted, including by consumers' willingness-to-pay for nutritious and healthy food, whose sustainable supply fosters the reproduction of NTFPs (Brazil nut) and of cultural treats as well as local knowledge of traditional populations (*quilombolas*) and other extractivists. Thereby, this research can play an additional role in making causal links between forest conservation (and related ecosystem services, functions as well as goods) and the maintenance of traditional livelihood strategies.

4 Future Research ‘Needs’

Future research can build up on presented results and cover the limitations of both this research (see Chapter IV.5) and other literature – as well as on data from ICMBio – by taking it as a baseline (2011 – before the TdC of the TRBR) on livelihood capitals considering the Sustainable Livelihoods Framework (DFID 1999) for quantitatively assessing changes in respective assets from when the TdC entered into force (as of 2012). Thereby, local biodiversity and livelihoods could be quantitatively assessed before and after the TdC – which was initiated by the author using mainly qualitative methods – or ex-post, which would complement the analysis herein. This would allow for making further decisions in terms of potential additional changes to the TdC of the TRBR. The same approach can be replicated in other PAs, so as to allow for comparison and further generalization pertaining to if and how to adapt the TdC towards a formal institution for effectively overcoming conflicts between (traditional) populations living in respective PAs and ICMBio. Given similar struggles in other countries beyond the Amazon, one could use the analytical framework and research approach provided herein to capture limitations and transform them into leverage points for institutional changes beyond sustainable development of a given value chain towards long-term reconciliation of biodiversity conservation and sustaining livelihood strategies of rural dwellers (living in and around PAs).

Besides, the role of social capital in inclusive sustainable value chain development can be further explored building up on Cunha (2014), as well the one of human capital, which could be further explored by scholars endowed with extensive experience in capacity development (e.g. business psychologists and pedagogues yet also other researchers and development practitioners). Moreover, collecting and analyzing quantitative data on processing costs (which were not provided to the author) of the mills in Oriximiná and Óbidos would allow for a detailed assessment of respective mark-ups and benefit sharing along the Brazil nut value chain. Beyond the subnational region at stake, such research could also consider information on actors further downstream at national and international levels (e.g. data from brokers in Europe), while taking global trade effects into account as key determinants of Brazil nut prices.

Power relations among social agents in given action arenas (based on Foucault 1982, Bourdieu 1986, Long 1999, Latour 2005) can be further assessed in more depth e.g. by ethnologists and anthropologists as well as inter-/ transdisciplinary scholars endowed with extensive experience in conducting participant observation. This would demand at least 1,5 years fieldwork living in villages with Brazil nut gatherers and buyers – for effectively capturing determinants of power imbalances as well as changes from one harvest to the other without undermining relations in off-harvest periods.

Future research is to further take gender issues into consideration per in-depth analyses of how to build assets on a sustainable basis at community level based on intra-household data collection – gender-disaggregated data collected including from female headed households, beyond inter-household gathering of information and ‘so-called’ expert interviews. Such research could provide input for inclusive value chain development ‘interventions’ that effectively contribute to building women’s human capital and overall ability to manage household income from marketing Brazil nuts, NTFPs and other agricultural products. For instance, feasibility studies could

follow for implementing locally adapted microfinancing schemes for business headed and/ or managed by women based on self-declared problems to be overcome with respective small-scale (collective) rural enterprises. In addition to gender issues, further research for development could consider measuring the degree of such inclusion through an inclusivity/ inclusiveness index with specific quantitative indicators and qualitative criteria, *inter alia* access to credits by and bargaining power of Brazil nut and other NTFP gatherers.

Moreover, while certification as quality assurance system has vastly been explored²¹, further research and sustainable rural development initiatives are needed in the case of the Brazil nut value chain – while tackling the research and development gap of limiting and enabling conditions for certification to provide mutual benefits for chain actors on a sustainable basis. To be taken into account is the fact that several Brazil nut gatherers – amongst other rural dwellers in the Amazon who face lack of access to respective information – understandably do not know what certification, standards and labels are and might be skeptical in participating in such schemes. Thereby, feasibility including benefit-cost ratios is to be assessed (whereby certification costs might surpass cooperatives' budgets).

Moving beyond the scope of this thesis in the frame of further research perspectives: What is needed is to use already collected data for conducting specific cost-benefit analyses on diversification of (sustainable) income sources of extractivists, so as to potentially suggest evidence-based actions to decrease dependency²² on Brazil nut. Further needed is the identification of drivers and incentives for collective action to further reap mutual benefits among upstream value chain actors based on institutional change and civic engagement, including for revisiting land tenure and property rights while changing respective structures to enable environmentally sound resource and market access by economically and geographically marginalized rural dwellers.

Last but not least, local leaders demanded research for analyzing the potential and challenges for communities of Oriximiná (in the state of Pará, Brazil) to establish 'Brazil nut based agroforestry systems'. Intended therewith would be to shorten distances to Brazil nut trees and further tree species (including *copaiba* – *Copaifera spp.*), while improving cost-benefit ratios of NTFP gatherers as well as overall access to livelihood relevant resources and markets. Further, analyses of inhibitors and drivers of adoption are to be assessed for such intercropping systems, including their ecosystem services, functions and goods for enhancing rural livelihoods. Such research can include experimental production areas in *quilombola* communities (interest already shown by two of them), which would benefit from advisory services for locally adapted agroforestry techniques to be provided by the EMATER unit of Oriximiná. Respective

21 For the potential and challenges as well as the socioeconomic and environmental impact of different certification schemes, see e.g. Reynolds *et al.* (2007), Gibbon *et al.* (2008), Nelson & Pound (2009), Blackman & Rivera (2010), Duchelle *et al.* (2014).

22 It could be investigated to what extent/ under which conditions diversification of income sources mitigates exposure to dependency (e.g. gatherers being compelled to supply given purchasers with Brazil nuts) and helps to enhance resilience for coping with climatic risks as well as other hazards (e.g. stark price fluctuations, which affects both upstream trade parties).

upscaling for restoring degraded areas towards achieving SDG 15.3 per land degradation neutrality could follow, if given research for sustainable rural development initiatives prove to provide multiple benefits, including food security as well as resilience of tree covered land and people. In so being, the position of (agro)extractivists could be strengthened on the pathway to consolidating various inclusive sustainable value chains without undermining food sovereignty and biodiversity conservation.

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Annex

Annex I – Key Data Collection Tools

(I.1) Questionnaire for Socioeconomic and Natural Resource Survey [questionnaire applied in interviews with Brazil nut gatherers/(Agro)extractivists]

Questionário para Levantamento Quantitativo junto a (Agro)extrativistas

Notas técnicas:

- Trata-se de formulário elaborado pelo autor, utilizando uma metodologia adaptada PEN-RAVA (CIFOR-ICRAF) utilizado para o respectivo levantamento socioeconômico e de recursos naturais em Alenquer, Curuá. A referida metodologia foi aplicada em 25 países de todos os continentes e possibilita futuros estudos comparativos.
- Os números para as perguntas, linhas e colunas nas tabelas serão usados para atribuir a cada célula de dados um único código digital, e portanto não podem ser alterados.
- Legenda de códigos:
 - O código "1" deve ser usado para indicar que a pergunta foi respondida com "sim" e o código "0" deve ser usado para indicar que a pergunta foi respondida com "não", quando houver indicação "0-1" no campo da resposta.
 - O código "8" (**oito, negativo**) deve ser usado para indicar que a pergunta "não se aplica" para as circunstâncias do(s) entrevistado(s).
 - O código "9" (**nove, negativo**) deve ser usado para alternativas "Eu não sei" ou "o entrevistado não sabe". Naturalmente, se deve minimizar a utilização destas respostas, mas em alguns casos seu uso será inevitável.
 - Sempre que utilizados os códigos acima, o mesmo deverá ser indicado claramente para não confundir com valores numéricos (Por exemplo, distância para o mercado).

Informação para controle

Atividade	Data(s)	Por quem?	Está OK? Se não, faça comentários
Entrevista			
Revisão do questionário			
Codificação do questionário			
Digitalização de dados			
Verificação e aprovação da digitalização de dados			

A. Identificação

1. Identificação e localização do domicílio.

1. Nome e número do domicílio		*(nome)	(domicílio #IDH)
2. Comunidade		*(nome)	(comunidade #IDC)
3. Distrito/Município		*(nome)	(município #IDM)
4. Nome e número de identificação pessoal IDP do entrevistado primário (vide B, abaixo)		*(nome)	(IDP)
5. Nome e número de identificação pessoal IDP do entrevistado secundário (vide B, abaixo)		*(nome)	(IDP)

6. Ponto de referência do com base em GPS		
7. Distância do domicílio ao centro da comunidade (em minutos a pé, e em km)	1. <i>min</i>	2. <i>km</i>
8. Distância do domicílio ao rio/igarapé mais próximo	1. <i>min</i>	2. <i>km</i>
9. Distância do domicílio à estrada mais próxima (trafegável o ano todo?)	1. <i>min</i>	2. <i>km</i>

B. Composição do domicílio

1. Quem são as pessoas que vivem no domicílio?

1. Número de identificação pessoal (IDP)	* Nome do membro do domicílio	2. Parentesco com o/a responsável pelo domicílio ¹⁾	3. Ano de nascimento (aaaa)	4. Sexo 0=masculino 1=feminino	5. Educação (anos de estudo que completou)
1		Responsável domicílio			
2					
3					
4					
5					
6					
7					
8					
9					
10					

1) Códigos: 1=esposa/o; 2 filho/filha; 3=genro/nora; 4=neto(a); 5=Mãe/pai; 6=sogra/sogro; 7=irmão ou irmã; 8=cunhado/a; 9=tio/tia; 10=sobrinho/sobrinha; 11=filho/filha adotivo(a); 12=outra relação familiar; 13=não parente.

2. Gostaríamos de fazer perguntas sobre sua unidade familiar.

1. O/a responsável pelo domicílio nasceu na comunidade? Se 'sim', dirija-se para 4..		(1-0)
2. A quanto tempo o/a responsável pelo domicílio vive nesta comunidade?		Anos
3. Se respondeu 'não' à pergunta 2: de onde veio antes de morar nesta comunidade? Códigos: 1=comunidade vizinha; 2= município vizinho; 3=outra estado; 4= outro		
4. O cônjuge (esposa/marido) do/a responsável pelo domicílio nasceu na comunidade?		(1-0)
5. Se 'não': A quanto tempo o cônjuge do/s responsável pelo domicílio vive nesta comunidade?		Anos
6. Número de filhos		Filhos
7. Os membros do domicílio contrairam algum doença tropical grave nos últimos 12 meses? Códigos: 1=malária; 2= dengue; 3=leishmaniose; 4= outra doença grave (especificar)		peessoas

C. Categorias florestais e de uso/cobertura da terra

0. Por favor informe sobre a terra que ocupa e utiliza:

1. Desde que ano explora a terra (onde está sendo feita a entrevista)?		aaaa
2. De que maneira chegou a esta terra? Códigos: 1=posse ou ocupação pelo próprio entrevistado; 2=posse ou ocupação de seus antepassados; 3=comprou a terra de terceiros; 4=obteve através do governo (colonização ou assentamento); 5=recebeu propriedade como herança; 9=outras, especifique.		
3. Como define esta terra que ocupa/utiliza? Códigos: 1=terra própria individual; 2=terra coletiva em nome de um grupo ou associação; 3=terra com direito de uso comum; 4=terra arrendada, alugada (por ex. meeiro); 5=não ocupa nem utiliza terra; 9=outras, especifique (por ex. Unidade de Conservação).		
4. Qual é o valor estimado da terra?		R\$
5. Possui algum tipo de documento desta terra Códigos: 1=título definitivo individual; 2=título provisório individual; 3=documento definitivo para um grupo/associação; 4=documento provisório para um grupo/associação; 5=nenhum documento; 9=outras, especifique.		
6. Qual o tamanho (área em hectares) da"terra"		ha

1. Categorias de uso da terra na comunidade (área aproximada em hectares)

(Amazônia: 1ha=4 tarefas; 2,4 ha= 1 alqueire paulista; 4,8 ha = 1 alqueire mineiro).

1. Categoria de terra (código-terra)	2. Área total (ha)	3. Categorias de posse da terra (ha)			
		3. Governo	4. Coletiva	5. Individual	6. Acesso livre (de fato)
<i>Floresta:</i>					
1. Floresta Natural					
2. Floresta Manejada					
3. Floresta Plantada					
<i>Terra Agrícola:</i>					
4. Áreas de cultivo agrícola					
5a. Pasto natural					
5b. Pastagem plantada					
6. Sistemas agroflorestais					
7. Silvistoril					
8a. Pousio/Capoeira fina (até 5 anos)					
8b. Pousio/Capoeira grossa (> 5 anos)					
9.a Arbustos/Cerrado/Campina					
9.b Campestre que não serve de pasto					
9.c Áreas Residenciais, infra-estrutura					
9.d Zonas de Pântanos/Igapó/Várzea					
10. Outro, especifique:					
<i>Total da área</i>					

2. Por favor informe sobre as áreas de cultivo agrícola incluindo cultivos agroflorestais:

1. Quantas áreas/parcelas agrícolas está utilizando ou colhendo neste ano?				<i>parcelas</i>	
2. Para cada parcela, informe o tamanho, qual(is) o(s) cultivo(s) presentes em cada uma delas ¹⁾ , os anos de pousio para cultivos anuais, e os anos de estabelecimento para cultivos perenes?					
#	1. Área (ha)	2. Cultivos presentes (caso consorciado)	3. Principal cultivo	4. Anos de pousio (para anuais)	5. Anos do plantio (para perenes e semi-perenes)
1					
2					
3					
4					
5					
6					
7					
8					

Códigos:

Anuais: 201=arroz de sequeiro; 215=arroz de várzea; 202=milho; 212=milho verde; 221=macaxeira/aipim; 222=batata; 223=batata-doce; 226= mandioca; 241=soja; 245=caupi; 254=feijão; 256=fava; 382= cana-de-açúcar; 401= algodão;

Perenes: 312=banana; 325= maracujá; 326=abacaxi;; 351=cacau; 352=café; 367=pimenta-do-reino; 381=dendê; 404=seringueira; 504=cupuaçu; 508=pupunha; 510=açaí cultivado;

D. Bens, poupanças e patrimônio

1a. Por favor indique o tipo de casa que possui?

1. A casa em que mora é própria? ¹⁾	
2. Qual é o tipo principal (mais comum) de material no sua casa? ²⁾	
3. Quantos m ² aproximadamente tem a casa?	<i>m²</i>
4. Qual é o tipo principal (mais comum) de material do piso e das paredes? ⁴⁾	
5. Como é o abastecimento de água em sua casa? ⁵⁾	

6. Qual é o tipo de sanitário presente em sua casa? ⁶⁾	
7. Possui eletricidade em sua casa? ⁷⁾	
8. Possui outra casa além desta em que está morando / casa na cidade?	

1) Códigos: 0=não; 1=casa própria; 2=casa própria compartilhada com outra pessoa(s); 3=aluga a casa sozinho; 4=aluga a casa com outra família(s); 9=outros, e especifique:

2) Códigos: 1=barro/areia; 2=madeira; 3=peças metálicas; 4=tijolos ou cimento; 5=tronco de palmeira; 6=folhas de palmeiras; 9=outro, especifique:

4) Códigos: 1=barro/terra batida; 2=madeira (tábuas); 3=cimento; 4=lajotas/cerâmica; 9=outros, especifique:

5) Códigos: 1=encaçada; 2= manual (poço empadrado); 3>manual (chafariz); 4>manual (rio/lago); 9=outros, especifique:

6) Códigos: 1= interno c/água corrente; 2= externo c/ a.c.; 3=fossa séptica/latrina; 4=fossa rústica; 0= não possui;

7) Códigos: 1=rede elétrica; 2= gerador próprio; 3=painel solar; 0= não possui; 9=outros, especifique:

1b. Por favor indique o número e valor das benfeitorias que a família possui.

	1. Unidades possuídas	2. Valor total ¹⁾		1. Unidades possuídas	2. Valor total ¹⁾
1. Paiol / galpão de alvenaria			2. Galpão aberto		
3. Curral			4. Cerca	km	
5. Açude ou tanques			6. Outras construções		

1) valor que seria obtido pela benfeitoria, no caso da venda da terra. (Se a benfeitoria não for própria, coloque '0')

2. Por favor indique o número e valor dos equipamentos e outros bens que a família possui.

	1. Unidades	2. Valor ¹⁾		1. Unidades	2. Valor ¹⁾
1. Carro/caminhão			14. Carroça para bois		
2. Trator			15. Espingarda/revólver		
3. Moto			16. Antena parabólica		
4. Bicicleta			17. Gerador		
5. Telefone fixo/ celular			18. Balança		
6. TV					
7. Rádio			19. Máquinas p/ farinha		
8. Gravador/CD/Vídeo/DVD			20. Piladora de arroz		
9. Fogão (a gás ou elétrico)			21. Máquina de costura		

10. Geladeira/congelador			22. Plantadora manual		
11. Barco de pesca e motor			24. Pulverizador manual		
12. Moto serra			25. Motobomba d'água		
			Outros (preço de compra > R\$100)		

OBS. Criações animais que a família possui

3. Por favor indique as poupanças e dívidas que a família possui (em moeda local).

1. Quanto a família possui de poupança em bancos, associações de crédito ou clubes de poupança?	R\$
2. Quanto a família possui de poupança em bens não produtivos como ouro e jóias?	R\$
3. A família recebeu crédito bancário ou de alguma outra fonte de crédito?	(1-0)
5. Qual o valor das dívidas não pagas pela família?	R\$

E. Base de recursos florestais [see Annex II for corresponding table in data base]

1. Qual a distância entre a casa e a margem da mata/floresta natural ou manejada mais próxima a qual tem acesso e pode usar?	1. ... medida em distância (linha reta?)	<i>km</i>
	2. ... medida em termos de tempo (minutos a caminhar)?	<i>min</i>
2. A família coleta castanha do Pará?		(1-0)
3. Se 'sim' : quantas horas por semana os membros da família gastam coletando castanha do Pará para uso familiar? (o tempo dos adultos deve ser reportado; o tempo de crianças = 50% do tempo de adultos) (considerar também o tempo para ir da casa à floresta)		(horas)
4. Comparando com 10 anos atrás, no domicílio vocês gastam mais ou menos tempo para coletar castanha do Pará? <i>Códigos: 1=mais; 2=mais ou menos igual; 3=menos</i>		
5. Como é que mudou a disponibilidade de castanha do Pará nos últimos 10 anos? <i>Códigos: 1=diminuiu; 2=mais ou menos a mesma; 3=aumentou se a resposta for o código '1', dirija-se para 6</i>		
6. Se tiver diminuído (código '1' da pergunta acima), como é que vocês reagiram frente ao declínio da disponibilidade de Castanha do Pará? <i>Por favor ordene as respostas mais importantes, máximo 3.</i>	Resposta	Ordene 1-3
	1. Aumentou o tempo de coleta (ex. o local de coleta é mais distante de casa)	
	2. Plantio de árvores em terra própria/particular	
	3. Outros, especifique:	

F. Grupos de usuários florestais (GUFs)

Nota: O entrevistador deve primeiro explicar o que quer dizer GUF

1. Você ou outro membro do domicílio são membros de alguma organização (associação, cooperativa, grupo) que trabalha junto e/ou usa os recursos florestais de forma conjunta? Se 'não', dirija-se para 11.	(1-0)
1b. Qual o nome desta organização?	
2. O domicílio faz pagamentos em dinheiro ou contribuições para esta organização? Se 'não', dirija-se para 8.	(1-0)
3. Se 'sim' : Quanto é que pagou nos últimos 12 meses? (<i>moeda nacional</i>)	R\$
4. O domicílio recebeu algum pagamento em dinheiro desta organização (p. ex., divisão das vendas/ receitas) nos últimos 12 meses?.	(1-0)

5. Se 'sim' : Quanto é que recebeu nos últimos 12 meses? (<i>Moeda nacional</i>)		R\$																						
6. Quais foram as razões para vocês se juntarem a esta organização? <i>Por favor ordene as razões mais importantes, max 3.</i>	<table border="1"> <thead> <tr> <th>Razões</th> <th>Ordene 1-3</th> </tr> </thead> <tbody> <tr> <td>1. Aumentar o acesso aos produtos florestais</td> <td></td> </tr> <tr> <td>2. Melhorar o manejo florestal e mais benefícios no futuro</td> <td></td> </tr> <tr> <td>3. Acesso a outros benefícios, p.ex., apoio governamental, programas de agências doadoras</td> <td></td> </tr> <tr> <td>4. É obrigação proteger a floresta para a comunidade e para o futuro</td> <td></td> </tr> <tr> <td>5. Para ser respeitado e considerado como pessoa responsável na comunidade</td> <td></td> </tr> <tr> <td>6. Aspectos sociais (encontrar-se com outras pessoas, trabalhar em grupo, receio de exclusão, etc.)</td> <td></td> </tr> <tr> <td>7. Forçado pelo Governo/líderes/vizinhos</td> <td></td> </tr> <tr> <td>8. Melhor preço para produtos florestais</td> <td></td> </tr> <tr> <td>9. Melhor qualidade dos produtos florestais</td> <td></td> </tr> <tr> <td>10. . Outros, especifique:</td> <td></td> </tr> </tbody> </table>	Razões	Ordene 1-3	1. Aumentar o acesso aos produtos florestais		2. Melhorar o manejo florestal e mais benefícios no futuro		3. Acesso a outros benefícios, p.ex., apoio governamental, programas de agências doadoras		4. É obrigação proteger a floresta para a comunidade e para o futuro		5. Para ser respeitado e considerado como pessoa responsável na comunidade		6. Aspectos sociais (encontrar-se com outras pessoas, trabalhar em grupo, receio de exclusão, etc.)		7. Forçado pelo Governo/líderes/vizinhos		8. Melhor preço para produtos florestais		9. Melhor qualidade dos produtos florestais		10. . Outros, especifique:		
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10. . Outros, especifique:																								
7. De um modo geral, o que diria sobre como a existência da organização tem afetado os benefícios que a famílias obtêm da floresta/dos recursos naturais? <i>Códigos: 1= grande efeito negativo; 2=pequeno efeito negativo; 3=nenhum efeito; 4=pequeno efeito positivo; 5=grande efeito positivo.</i>																								
8. Se não participa de um GUF, por que? <i>Por favor ordene as razões mais importantes, max 3.</i>	<table border="1"> <thead> <tr> <th>Razões</th> <th>Ordene 1-3</th> </tr> </thead> <tbody> <tr> <td>1. Não há um grupo destes na comunidade</td> <td></td> </tr> <tr> <td>2. Sou novo na comunidade</td> <td></td> </tr> <tr> <td>3. Os membros da organização de um modo geral pertencem a grupo(s) (etnia, partido político, religião, etc.) diferentes do meu</td> <td></td> </tr> <tr> <td>4. Não possui o tempo disponível</td> <td></td> </tr> <tr> <td>5. Não possui o recurso/dinheiro requerido para pagar</td> <td></td> </tr> <tr> <td>6. Os membros da organização iriam restringir/empatar o meu uso da floresta, e eu pretendo usar a floresta em função das minhas necessidades</td> <td></td> </tr> <tr> <td>7. Não acredito que a organização saiba fazer o manejo da floresta</td> <td></td> </tr> <tr> <td>8. Falta de produtos florestais</td> <td></td> </tr> <tr> <td>9. Outros, especifique:</td> <td></td> </tr> </tbody> </table>	Razões	Ordene 1-3	1. Não há um grupo destes na comunidade		2. Sou novo na comunidade		3. Os membros da organização de um modo geral pertencem a grupo(s) (etnia, partido político, religião, etc.) diferentes do meu		4. Não possui o tempo disponível		5. Não possui o recurso/dinheiro requerido para pagar		6. Os membros da organização iriam restringir/empatar o meu uso da floresta, e eu pretendo usar a floresta em função das minhas necessidades		7. Não acredito que a organização saiba fazer o manejo da floresta		8. Falta de produtos florestais		9. Outros, especifique:				
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8. Falta de produtos florestais																								
9. Outros, especifique:																								

G. Riscos e Oportunidades

1. O domicílio sofreu alguma crise nos últimos 12 meses? Códigos: 0= Não; 1=sim, crise moderada; 2=sim, crise severa	1. Enchente/alagamento e/ou excesso de chuva						
	2. Seca						
	3. Incêndios/queimadas (em cultivos/ florestas/pastos, etc.)						
	4. Ataque generalizado de animais/pragas/doenças na época da colheita; ou doença em animais						
	5. Epidemias humanas (doenças)						
	6. Outras, especifique:						
2. Para cada categoria:	Razões	Ordene	Ordene	Ordene	Ordene	Ordene	Ordene
		1-3	1-3	1-3	1-3	1-3	1-3
Se a disponibilidade de PMI (produto mais importante) nesta categoria diminuiu, quais são as razões? <i>Por favor ordene os motivos mais importantes, máx. 3 (Deixe o resto em branco).</i>	1. Redução da área florestal devido a abertura de pequenos roçados para agricultura						
	2. Redução da área florestal devido a grandes projetos (plantações, assentamentos, etc)						
	3. Redução da área florestal devido a compra de terra por pessoas de fora que restringem acesso						
	4. Aumento no uso de PMI porque as pessoas locais (da comunidade) coletam mais						
	5. Aumento no uso de PMI porque as pessoas de outras comunidades coletam mais						
	6. Restrições de uso pelo governo federal ou estadual (p. ex., para conservação florestal)						
	7. Restrições locais de uso (p.ex., regras comunitárias)						
	8. Mudanças climáticas, p.ex., seca e menos chuva						

	9. Outras, especifique:						
3. Se a disponibilidade de PMI nesta categoria aumentou , quais são as razões? <i>Por favor ordene os motivos mais importantes, max. 3.</i>	Razões	Ordene 1-3	Ordene 1-3	Ordene 1-3	Ordene 1-3	Ordene 1-3	Ordene 1-3
	1. Menor desmatamento para agricultura (incluindo criação)						
	2. Menor uso/coleta do produto por pessoas da comunidade						
	3. Menor uso/coleta do produto por pessoas de fora						
	4. Menor uso/coleta do produto por usuários de grande escala comercial/projetos						
	5. Mudanças no manejo das florestas						
	6. Mudanças climáticas, p. ex., mais chuva						
	9. Outras, especifique:						

H. Crises e despesas inesperadas

1. O domicílio tem enfrentado falta de rendimentos financeiros ou despesas inesperadas grandes nos últimos 12 meses?

Evento	1. Código ¹⁾	Como compensaram a perda de renda ou custos? Ordene max. 3 ²⁾		
		3.Ordem 1	4.Ordem 2	4.Ordem 3
1. Sérias perdas de produção devido a secas				
2. Sérias perdas de produção devido a enchentes				
3. Sérias perdas de produção devido a preço baixo				

4. Doença grave na família (adulto economicamente ativo incapaz de trabalhar por mais de um mês nos últimos 12 meses devido à doença ou por tomar conta de alguém doente; ou custos médicos elevados)				
5. Morte de um adulto em idade produtiva				
6. Perda de terra (desapropriação, etc.)				
7. Perda grande de criações animais (roubo, seca, etc.)				
8. Outra perda grande de bens (fogo, roubo, enchente, etc.)				
9. Perda de salário/emprego				
10. Gastos grandes com casamento ou outros eventos sociais				
11. Migração: ausência de membros economicamente ativos do domicílio				
12. Outro, especifique:				

1) Códigos: 0=Não; 1=Sim, crise moderada; 2= Sim, crise séria.

2) Códigos:

1. Explora mais produtos florestais
2. Explora mais produtos naturais/silvestres não florestais
3. Planta e colhe mais produtos agrícolas
4. Gastou as poupanças (dinheiro)
5. Venda de bens (terra, gado, etc.)
6. Faz trabalho casual/serviço prestado/por diária
7. Assistência de amigos ou parentes
8. Assistência de uma ONG, organização comunitária, organização religiosa ou similar
9. Obteve empréstimo de um empréstador de dinheiro, associação credora, banco etc.
10. Tentou reduzir as despesas familiares
11. Não fez nada em particular
- 12.. Outros, especificar:

I. Percepções de bem-estar e capital social

1. De forma geral, como você avalia a sua condição de vida nos últimos 12 meses? Códigos: 1=muito insatisfeito; 2=insatisfeito; 3=indiferente; 4=satisfeito; 5=muito satisfeito	
2. O extrativismo/ produção de alimentos e os ganhos da família nos últimos 12 meses tem sido suficientes para cobrir o que voce considera que sejam as necessidades do domicílio? Códigos: 1=não; 2=apenas em parte; 3=sim	
3. Comparando com a média da comunidade, como você considera a condição de vida em seu domicílio? Códigos: 1=pior 2=na média; 3=melhor	
4. Comparando com 10 anos atrás, como você considera a condição de vida atual em seu domicílio? Códigos: 1=pior agora; 2=a mesma; 3=melhor agora Caso 1 ou 3, dirija-se para 5. Caso 2, dirija-se para 6.	

5. Se melhor ou pior: Qual a principal razão para a mudança?	Motivo: Mudança em ...	Ordem 1-3
<p><i>Por favor ordene as razões mais importantes, max 3.</i></p>	1. emprego fora da área/lote/propriedade	
	2. tamanho do imóvel (ex: compra ou venda de terra)	
	3. recursos florestais	
	4. preços dos produtos (florestais, agrícolas)	
	5. apoio de organizações externas (governo, ONG, ..)	
	6. remessas de dinheiro	
	7. custo de vida (ex., inflação alta)	
	8. guerra, desordem civil, conflitos	
	9. desentendimentos na comunidade (não-violentos)	
	10.mudança na situação familiar (ex. perda de membro da família)	
	11.doença	
	12.acesso (ex. nova estrada)	
	13. outro (especificar):	
6. Você considera sua comunidade como um lugar bom para se viver?		
<p><i>Códigos: 1=não; 2=parcialmente; 3=sim</i></p>		
7. Em geral, você confia nas pessoas de sua comunidade?		
<p><i>Códigos: 1=não; 2=parcialmente, confio somente em alguns; 3=sim</i></p>		
8. No caso de uma necessidade, você pode contar com o apoio de pessoas de sua comunidade? Por exemplo, conseguiria dinheiro no caso alguém de sua família ficasse doente e precisasse de tratamento?		
<p><i>Códigos: 1=não; 2= às vezes, mas nem sempre; 3=sim</i></p>		

L. Pesca

1. Quanto peixe foi obtido durante o ano passado?

1. Tipo de peixe (listar os nomes locais)	Onde foi coletado?		3. Total pescado (kg) (4+5)	4. Uso próprio (incl. presente)	5. Venda (incl. trocas)	6. Preço por kg	7. Valor bruto (3x6)	8. Custos (insumos, mão-de-obra, venda/transporte)	9. Rendimento líquido (7-8)
	2. Tipo de terra	3. Tipo de posse							

M. Rendimentos salariais

1. Algum membro da família recebeu pagamentos por trabalho realizado no ano passado?

Nota: Uma pessoa poderá ser indicada mais do que uma vez para diferentes trabalhos.

1. Membro da família (IDP)	2. Tipo de trabalho	3. Dias de trabalho no mês passado	4. Pagamento diário (R\$/dia)	5. Receita salarial total (3 x 4)

N. Rendimento do negócio próprio

1. Possui algum tipo de negócio próprio, e caso sim, qual o rendimento bruto e os custos relacionados com o mesmo no ano passado?

Nota: Se a família estiver envolvida em diferentes tipos de negócios, deve preencher uma coluna para cada negócio.

	1. Negócio 1	2. Negócio 2	3. Negócio 3
1. Qual é o tipo de negócio? ¹⁾			
2. Rendimento bruto (vendas)			
Custos:			
3. Compra de insumos/materiais			
4. Insumos próprios, não incluindo mão-de-obra (valor equivalente de mercado)			
5. Mão-de-obra assalariada			
6. Custos de transporte e venda			
7. Custos de reparação, manutenção, etc.			
8. Outros custos			
9. Rendimento líquido (2 - itens 3-8)			
10. Valor corrente do capital armazenado			

1) Códigos: 1=loja/comércio; 2=processamento agrícola; 3=artesanato; 4=carpintaria; 5=outro baseado em floresta; 6=outro mão-de-obra treinada; 7=transporte (carro, barco,...); 8=acomodação/restaurante; 19=outra, especifique:

O. Rendimento a partir da agricultura – culturas

1. Quais são as quantidades e valores das culturas que a família colheu no ano passado?

1. Culturas (código-produto)	2. Área de produção (m ²)	3. Produção Total (5+6)	4. Unidades (para produção)	5. Uso próprio (incl. presente)	6. Vendas (incl. trocas)	7. Preço por unidade	8. Valor total (3 x 7)

2. Quais são as quantidades e valores dos insumos da produção/ extrativismo no ano passado? (refere-se a despesas da agricultura pagas em dinheiro)

Nota: tomar em consideração todos os cultivos da tabela anterior.

1. Insumos/Materiais	2. Quantidade	3. Unidades	4. Preço por unidade	5. Custo total (1 x 3)
1. Sementes				
2. Fertilizantes / adubo químico/ calcário				
3. Pesticidas/herbicidas				
4. Estrume / adubo animal				
5. Tração animal / animal de trabalho				

Q. Outras fontes de renda

1. Por favor descreva qualquer outra fonte de rendimento que a família vêm recebendo no ano passado.

1. Tipo de rendimento	2. Quantia total recebida
1. Remessas (apoio financeiro por parentes/amigos que moram em outro lugar)	
2. Apoio governamental, de ONGs, ou organizações similares	
3. Presentes/apoio de amigos e parentes	
4. Pensão e/ou aposentadoria	
5. Pagamento por serviços florestais	
6. Pagamento pelo aluguel da terra (se for em serviços e bens, indique o equivalente em valores monetários)	
7. Outros, especifique:	

R. Consumo e gastos familiares

1. Qual foi o gasto do domicílio no ano passado com:

1. Compra de alimentos para o domicílio	
2. transporte	
3. saúde	
4. educação	
5. vestuário	
6. moradia	
7. objetos / bens	
8. diversão / lazer	

(I.2) Questionnaire to Assess Effects of Clause 10 of the Term of Comprise (TdC) on (A.) the the Number of Brazil nut Buyers to Purchase in TRBR, and (B.) on the Brazil nut Price and its Variability [questionnaire applied in interviews with Brazil nut buyers and ICMBio]

Questionário para Avaliar os efeitos do TdC (A.) no número de castanheiros permitidos para comprar na TRBR e (B.) no Preço da Castanha-do-brasil [questionário aplicado em entrevistas com compradores e ICMBio]

A. Quantos compradores tinha:

- i. em 2011....
- ii. em 2012....
- iii. em 2013....
- iv. em 2014....

B. Preço/ caixa:

- i. Início..... meio..... final..... safra 2011
- ii. Início..... meio..... final..... safra 2012
- iii. Início..... meio..... final..... safra 2013
- iv. Início..... meio..... final..... safra 2014

(I.3) Questionnaire on Gathering Costs (Equipment/ Input) and Farm-gate Prices paid to Brazil nut gatherers [questionnaire applied in interviews with Brazil nut gatherers]

Questionário – Custos de Coleta (equipamento/insumos) e Preços Pagos a Castanheiros nas Comunidades

A. Identificação comprador(a)

- 1) Comunidade.....
- 2) Nome.....
- 3) Idade.....
- 4) Compra de quem e vende para quem?.....

B. Custos castanheiros com materiais e rancho:

Mão-de-obra....

Caminhão.../ Girico....

Canoa....

Remo

Barco....

Camisa.... Calça.... Chinela....

Paneiro....

Terçado....

Bota....

Lona....

Espingarda....

Cartucho/ espoleta....

Pólvora....

Anzol....

Chumbo....

Linha....

Malhadeira....

Lanterna....

Pilhas....

Lamparina....

Combustol (querosene).... gasolina.... / Diesel.... óleo de 2 ou 4 tempos....

Farinha.... Óleo (comida).... Café.... Açúcar.... Sal.... Tempero....

Sabão....

Papel higiênico....

Escova e pasta de dente....

Vela....

Isqueiro....

Saca..../Caixa....

Photo showing the Response to Questionnaire (I.3): Costs (Equipment/ Input) for Gathering Activity listed during Interview with Author by a Brazil Nut Gatherer at CCPT:

30 LT g	120.00
X 1 LT óleo	15.00
+ 1/1 Tensado	15.00
X 1 Bota	28.00
X 1 Lima	12.00
X 1 Lana 100.00	20.00
X 1 Lanterna	12.00
3 1 FICHA	9.00
2a KL. AÇÚCAR	8.40
4 KL. SAL.	4.00
1 LT. óleo	4.50
4/ Tempero	4.00
1 PC. BAMBUI.	2.50
X 1 Tb. povora	52.00
1 KL. chumbo	24.00
X 1 CX. espádua	25.00
1 RL. pH. igienico	0.75
1 mc. vela	2.50
1 Tb. pasta	2.00
1 / isqueiro	2.50
2 Pa. café	3.00
1 BA sabão	3.00

(I.4) Questionnaire on Gathering Costs for Purchasing and Selling by Local Brazil nut Buyers [questionnaire applied in interviews with Brazil nut buyers]

Questionário – Custos de Compra e Venda para Compradores Locais de Castanha-do-brasil

- A. Identificação comprador(a)
- a. Comunidade.....
 - b. Nome.....
 - c. Idade.
 - d. Compra de quem e vende para quem?
- B. Transporte
- a. dentro da comunidade: castanhal até beira do rio Trombetas .../ Erepecuru... :
 1. Caminhão
 - a. Diesel:
 - b. Óleo (2 ou 4 tempos).....
 2. Moto
 - a. Gasolina.....
 - b. Óleo (2 ou 4 tempos).....
 3. Girico: gastos cobertos pela prefeitura? Sim.....Não:.....
 - b. fora (da comunidade até o mercado – considerar o que usinas cobrem):
 - i. Oriximiná.....
 1. frete barco.....
 2. barco próprio.../ comunidade.../ igreja...
 - a. Diesel:
 - b. Óleo (2 ou 4 tempos).....
 - c. manutenção (quem paga/ quanto por ano?).....
 3. Alimentação
 - a. na viagem.....
 - b. na cidade.....
 - ii. Óbidos
 1. frete barco.....
 2. barco próprio.../ comunidade... / igreja...
 - a. Diesel:
 - b. Óleo (2 ou 4 tempos).....
 - c. manutenção (quem paga/ quanto por ano?).....
 3. Alimentação
 - a. na viagem.....
 - b. na cidade.....

- C. Embalagem
- a. R\$/caixa (20 kg).....
 - i. Quantas caixas.....
 - b. R\$/saca (60 kg).....
 - i. Quantas sacas.....
- D. Perdas (castanha chocha/podre, etc.)

Photo Showing Difficult Accessibility and Transport by Brazil nut Gatherers (see Section B of I.4), Including at the Community of Cachoeira Pancada (one of the Communities with the Highest Natural Occurrence of Brazil nut trees):



Source: Photo provided by the cooperative CEQMO during fieldwork in 2012

Annex II – Database with Data Collected Through the Questionnaire⁴⁸⁴

The following screen shot of the table of the database corresponds to the section “E. Base de recursos forestais” of I.1:

	2. Biomassa (t/ha)	3. Área (ha)	4. Volume (m³)	5. Valor (R\$)	6. Prod. (t/ha)	7. Prod. (R\$)	8. Prod. (t/ha)	9. Prod. (R\$)	10. Prod. (t/ha)	11. Prod. (R\$)
1. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
2. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
3. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
4. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
5. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
6. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
7. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
8. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
9. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
10. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
11. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
12. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
13. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
14. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
15. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
16. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
17. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
18. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
19. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0
20. Biomassa (t/ha)	0	0	0	0	0	0	0	0	0	0

⁴⁸⁴ See questionnaire in Annex I.1.

(III.2) List of Codes (in MAXQDA)⁴⁸⁵

Code	Page
Lista de códigos	3389
↳ Atividades & Income sources - needs, skills, entrepreneur	232
↳ Cash-Benefit-Quota - Dir./Accão, transporte	95
↳ Coerência x focal deo & deo rural east - rd ICMBio, consórcio	70
↳ Colaboração informativa e Passado area de participativa ICMBio	37
↳ Col. Benefit Compartilhado, Invasão (produtos), semear	49
↳ Códigos cast e avaliação dura de características	82
↳ Acesso Público Pro. (Proj. Serv. Edu. Saúde, Info, Infra	157
↳ FAPSA, Planço etc. - am. cit., gov. ca. org	22
↳ model. jérea e múltipla	9
↳ Inovações transferências	14
↳ Acesso a crédito	25
↳ relações: empregar & empregado, empreendedorismo, empreendedor	27
↳ Acesso Market	79
↳ Nota Fiscal - Passado, controle ad. Governamental	74
↳ Papeles - Inovação (atividade INEA, Info, Infra, I)	17
↳ Ocio (Inopacidade, Inopacidade)	10
↳ Acesso Rec. Nat (Itens Intelectuais e ambientais)	81
↳ pol. mb e gestão terr. nat. SUC, TD, J, terra. Infra, saúde	42
↳ NCC/ Cadastro Operativ. - distribuição beneficiária, prazo & cop. legal	124
↳ Institucional Criação	8
↳ M&A	4
↳ M&A e avaliação: condições	17
↳ M&A (M&A)	2
↳ Alternativas de investimento	27
↳ Inovação - Org. & características	84
↳ IM&A e cult. (políticas & conflitos, inova	52
↳ Inovação: áreas e aplicações	10
↳ Inovação: Inovação	11
↳ Inovação: Inovação	6
↳ Inovação: Inovação	4
↳ Correção - INCC, Leitura: inopacidade, INCC	30
↳ IC & Regio. Inovação: Inovação: Inovação: Inovação	104
↳ Inovação: Inovação: Inovação: Inovação	23
↳ Inovação: Inovação: Inovação: Inovação	12
↳ Inovação: Inovação: Inovação: Inovação	21
↳ Inovação: Inovação: Inovação: Inovação	15
↳ Inovação: Inovação: Inovação: Inovação	24
↳ Inovação: Inovação: Inovação: Inovação	18
↳ Inovação: Inovação: Inovação: Inovação	9
↳ Inovação: Inovação: Inovação: Inovação	19
↳ Inovação: Inovação: Inovação: Inovação	22
↳ Inovação: Inovação: Inovação: Inovação	62
↳ Inovação: Inovação: Inovação: Inovação	118
↳ Inovação: Inovação: Inovação: Inovação	117
↳ Inovação: Inovação: Inovação: Inovação	23
↳ Inovação: Inovação: Inovação: Inovação	81
↳ Inovação: Inovação: Inovação: Inovação	6

⁴⁸⁵ The Codes in MAXQDA correspond – to the extent possible – to the Table of Contents of this thesis.

Annex IV – Narrative based on Interview with the Head of the Cooperative

[Title of the Narrative] *Quilombola Voice on the “Pathway to the Best Business Practice for Brazil nut”*: Organization of Gathering and Marketing for Local Processing and Adding Value in Oriximiná, Pará, Brazil

Voz Quilombola sobre o “Caminho do Melhor Negócio da Castanha”: Organização da Coleta e Comercialização para o Beneficiamento Local e a Agregação de Valor em Oriximiná, Pará, Brasil

[Introduction to Narrative⁴⁸⁶ based on transcribed interview⁴⁸⁷]

Introdução

A presente narrativa visa dar voz a um líder quilombola, que vem há décadas, juntamente com as comunidades quilombolas de Oriximiná, lutando por seus direitos, pelo acesso aos recursos naturais, sobretudo pela titulação de Terras Quilombolas e pela integração mais justa em mercados da castanha. O Senhor Francisco Hugo de Souza, presidente da Cooperativa Mista Extrativista dos Quilombolas do Município de Oriximiná (CEQMO), nasceu na comunidade de Jauary às margens do Rio Erepecuru em Oriximiná, Pará, e passou praticamente toda a sua vida coletando e comprando castanha em seu município natal.

O entrevistador (próprio autor) deu início à entrevista mediante uma breve introdução, pedindo, gentilmente, para o entrevistado expor a sua perspectiva quanto ao processo de organização social com foco nas origens e iniciativas de grupos quilombolas relacionados à extração e comercialização da castanha, além de estratégias para a agregação de valor em nível local. Subsequentemente, com o intuito de ouvir e evitar interrupções, o entrevistador passou a palavra para o entrevistado. A entrevista, realizada em 11 de dezembro de 2013, em Oriximiná, Pará, serviu de fonte para se transcrever e extrair as seguintes passagens de sua fala relacionadas a sua experiência com o processo acima descrito:

⁴⁸⁶ Narrative (*narrativa*, in Portuguese).

⁴⁸⁷ Only the voice of Francisco Hugo de Souza is captured here (not the questions by the author of this thesis), given the respective title and purpose of this narrative to give voice to the leader of the only quilombola Brazil nut cooperative/ NTFP cooperative in Oriximiná.

[Transcribed interview with Francisco Hugo de Souza, Head of *Quilombola* Extractivist Cooperative of the Municipality of Oriximiná (CEQMO, per acronyms in Portuguese) on 11.12.2013, Oriximiná, Pará, Brazil]

Voz de Francisco Hugo de Souza, Presidente da Cooperativa Mista Extrativista dos Quilombolas do Município de Oriximiná (CEQMO):

O processo de organização dos quilombolas daqui [comunidades quilombolas às margens dos rios Erepecuru e Trombetas em Oriximiná] começou mesmo com a fundação da ARQMO [Associação dos Remanescentes de Quilombos do Município de Oriximiná], em 18 de junho de 1989, para lutar pelos direitos das comunidades quilombolas. Em 2000, nós começamos a mobilizar os quilombolas para a organização da produção e a venda coletiva da castanha, e em 2001, o nosso Projeto Castanha começou. A CEQMO foi fundada em 17 de setembro de 2006, para buscar alternativas de geração de renda para os quilombolas, através da venda da castanha.

Nós estamos agora numa etapa de um caminho que a gente chama de Caminho do Melhor Negócio da Castanha, para daqui a uns tempos, a gente ter a nossa própria Usina Quilombola de beneficiamento da castanha. Mas, é um caminho longo, de muita luta e eu queria falar mais sobre como tem sido o nosso Caminho do Melhor Negócio da Castanha:

As estruturas para mobilizar os quilombolas para a organização da produção têm origem com a criação da ARQMO, em 1989. A prioridade da Associação era lutar pela titulação de terras quilombolas. E esse processo de titulação de terras coletivas veio terminando de conscientizar o nosso pessoal para o coletivo. Já tinha uma base do espírito coletivo dos quilombolas e a nossa cultura de coletividade passou de pai para filho. O quilombola tem um laço familiar forte e um costume de viver em comunidade, um compartilhando com o outro. O trabalho com a castanha vem de uma tradição de muitas gerações. Até 2000, a gente coletava e vendia de forma individual para os atravessadores, que a gente chama de regatões. Os castanheiros recebiam na hora da entrega da castanha nas caixas dos regatões [em parte, acima do padrão do volume de 45 litros] um valor menor pela castanha. Conhecendo outras experiências [por exemplo, a Cooperativa Central de Comercialização Extrativista do Acre – COOPERACRE], a gente descobriu que quem se organiza pode conseguir negociar melhor a castanha.

Percebemos isso, quando nós passamos a ter nossos próprios barcos nas comunidades, com o apoio da Paróquia, e começamos a levar nossa castanha para vender na cidade [em Oriximiná, ou mesmo no município vizinho: Óbidos, Pará]. Assim, nós conseguimos entender como funciona essa outra metade da cadeia. A primeira metade, do castanhal até os barcos, a gente já conhecia, mas a gente descobriu que, vendendo para o regatão, nós não estávamos

ganhando quase nada. Nós fomos percebendo isso e conhecendo melhor a cadeia fora das comunidades.

A gente viu também que, na cadeia da castanha, a melhoria do preço não chega para quem está produzindo, lá para o castanheiro que tem o trabalho mais pesado. Você está na comunidade, você tira a castanha lá, você precisa de dinheiro no dia-a-dia e vende para o regatão, o regatão vende para as indústrias, as indústrias beneficiam, vendem para outra indústria para ela fazer os produtos, aí a castanha volta muito mais cara para a gente comprar. Se nas comunidades, vamos supor, é R\$15, na cidade é R\$25 [por caixa, contendo 20kg de castanha]. 1kg de castanha beneficiada custa R\$30 [após descascamento e venda na usina] em Oriximiná. A gente descobriu que nessa metade da cadeia, tinha gente que estava ganhando mais do que a metade dos recursos financeiros.

Mas, dentro da cadeia da castanha, nós temos o principal: os castanhais e as pessoas. Então, pensamos que daria para ganhar uma fatia maior do bolo, se a gente se organizasse e levasse a castanha nós mesmos para a cidade, para as indústrias. A gente ficou animado e foi aí que surgiu o Projeto Castanha em 2001, com o apoio da Comissão Pró-Índio [Comissão Pró-Índio de São Paulo]. No começo do Projeto Castanha, tinha 570 inscritos das comunidades quilombolas. Nós trabalhamos para juntar castanha de muita gente para fazer um pacote grande de castanha de boas práticas [de manejo pós-coleta], o que a gente achava que as indústrias iam valorizar. A gente não se organizou para vender para o atravessador, que ganhava em cima da gente na castanha e na mercadoria que ele trazia, mas para fazer o processo de boas práticas e vender para as indústrias por um preço melhor.

Essa era a ideia do Projeto Castanha e, para avançar no nosso Caminho, a gente queria criar uma Cooperativa para trabalhar mais com a castanha de boas práticas e tentar conseguir um preço melhor. Mas, na verdade, esse tipo de castanha não foi valorizado aqui na região como a gente pensou, o que desestimulou muitos castanheiros que tiveram todo o trabalho para fazer as boas práticas: ir para o mato, amontoar e quebrar [os ouriços da castanha], e lavar, enxugar, carregar no barco e levar a castanha para a cidade. E aí, se não pagam um preço melhor mesmo, não vale a pena. Mas, teve um grupo do Projeto Castanha [incluindo Francisco Hugo de Souza] que não desanimou e continuou trabalhando para tentar valorizar a nossa castanha. Dentro da cadeia, a gente aprendeu, que em Óbidos o preço da castanha é diferente do preço de Oriximiná. Parte da nossa castanha é graúda e o preço da graúda é mais alto que o preço da miúda em Óbidos. E, com isso, nós começamos a descobrir que de município para município tem diferença e a gente queria ver como conseguir um valor maior pelo nosso produto de qualidade.

A gente criou a Cooperativa [CEQMO], em 2006, para vender a castanha no nome dos quilombolas, porque não tinha como vender no nome da Associação [ARQMO]. A ideia era a gente se juntar para vender de forma coletiva e conseguir um preço melhor. No ano da fundação da Cooperativa, tinha 230 cooperados.

O trabalho da Cooperativa pode ser facilitado se a gente conseguir capital de giro, principalmente nos anos que dá pouca castanha. Nesses anos, por exemplo, a gente acaba conseguindo comprar pouca castanha e os castanheiros acabam vendendo a castanha para os regatões, que pagam na hora. Isso acontece porque falta capital de giro e os nossos castanheiros não podem ficar esperando o dinheiro para comprar o açúcar, o café. A gente precisa ter capital de giro sempre para não deixar os castanheiros desanimarem de vender para a Cooperativa, mas, às vezes não depende da gente.

Em 2012, por exemplo, a Cooperativa conseguiu negociar com um comprador do Mato Grosso, com o apoio do Imaflora [Instituto de Manejo e Certificação Florestal e Agrícola], e nós conseguimos pagar a metade na hora que a gente recebia a castanha de boas práticas dos castanheiros. A outra metade a gente pagava depois de um mês. Nesse ano, conseguimos vender a nossa castanha de boas práticas por mais que o dobro do preço pago pela castanha sem lavar [sem fazer uso de boas práticas pós-coleta da castanha] na cidade.

Tem compradores, no Brasil e fora do Brasil, que estão querendo saber a origem da castanha, como vem, se está beneficiando o pequeno [agroextrativista]. Vai chegar a hora que o pessoal vai querer comprar castanha de área que está sendo protegida, que não está sendo derrubada por fazendeiro ou madeireiro. Para a gente chegar um dia a certificar esse produto, a gente vai ter que ter uma rastreabilidade desse produto. De onde ele veio, como ele é movimentado, e com isso gerar mais renda. Um dia nós podemos ter a nossa castanha de boas práticas beneficiada e com certificação. Agora, a gente está trabalhando para ter um grupo de pessoas bem informadas e preparadas para trabalhar na nossa futura usina. Mas, é um processo demorado.

No Caminho do Melhor Negócio da Castanha, a Usina Quilombola é uma coisa que queremos deixar de herança para os nossos filhos.

O empreendimento depende de vários tipos de capacitação, porque não é só pegar a castanha, tirar do mato, botar na indústria, um quebra, outro lava, outro encaixota, outro vende. É preciso todo um procedimento para ver o que vende, onde e como é que vende, como que tem que funcionar uma usina. Tem que ter um administrador, tem que ter uma secretária. Estamos

trabalhando para conseguir financiamento para as máquinas e para capacitar o pessoal para operar as máquinas. A gente precisa ter um grupo para fazer a gestão da nossa usina, um grupo que esteja preparado para vitórias e derrotas.

Nós já conseguimos um terreno que foi doado para a gente pela prefeitura [de Oriximiná]. As parcerias tem sido importantes nesse Caminho e estamos buscando novas parcerias para conseguir recursos para capacitar o pessoal para trabalhar na usina e para construir a nossa Usina Quilombola de beneficiamento da castanha.

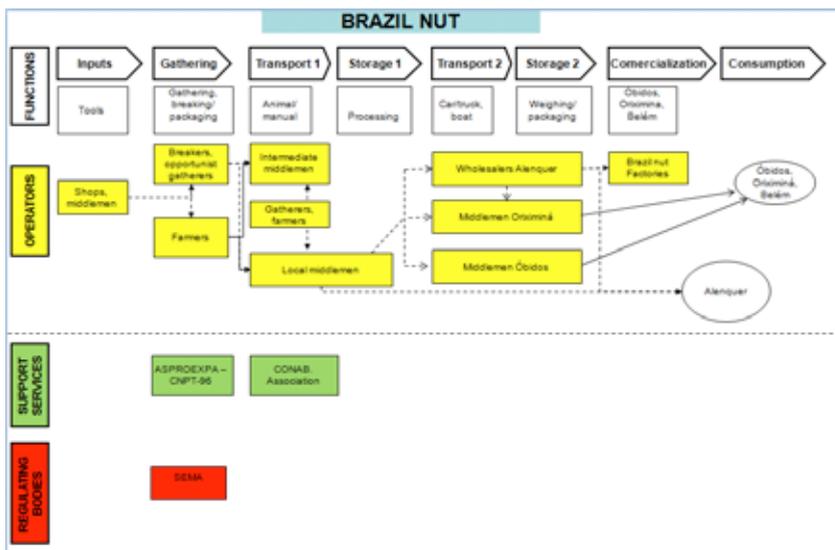
Annex V – Brazil nut Value Chain in the Lower Amazon Basin (Oriximiná, Óbidos)



Source: Own elaboration

The photo sequence above illustrates the following activities: First, gathering and cracking Brazil nut pods in remote Brazil nut stands (first two photos), then transporting shelled Brazil nuts to urban centers (third photo). Followed by selecting shelled Brazil nuts at the processing mill 'Mundial Exportadora e Comercial Ltda.' (fourth photo) and unshelled Brazil nuts at the 'CAIBA Indústria e Comércio S/A' (fifth photo) – both mills located in Óbidos. Finally, the sixth photo shows vacuum packaging of unshelled Brazil nuts at 'Exportadora Florenzano Ltda' in Oriximiná – from there such packaged Brazil nuts are sold nationally as well as exported (see Table 5). This is the analyzed Brazil nut value chain in a (Brazil) nutshell, encompassing the main activities from rural to urban centers of Oriximiná and Óbidos (see Figure 4), where all three processing mills of the Lower Amazon basin are located.

Annex VI – Mapped Brazil nut Value Chain of the Lower Amazon Basin (Alenquer)



Legend:

Functions (arrows and white boxes); sectors and processes/ activities

Operators (yellow boxes); actors and their relationships

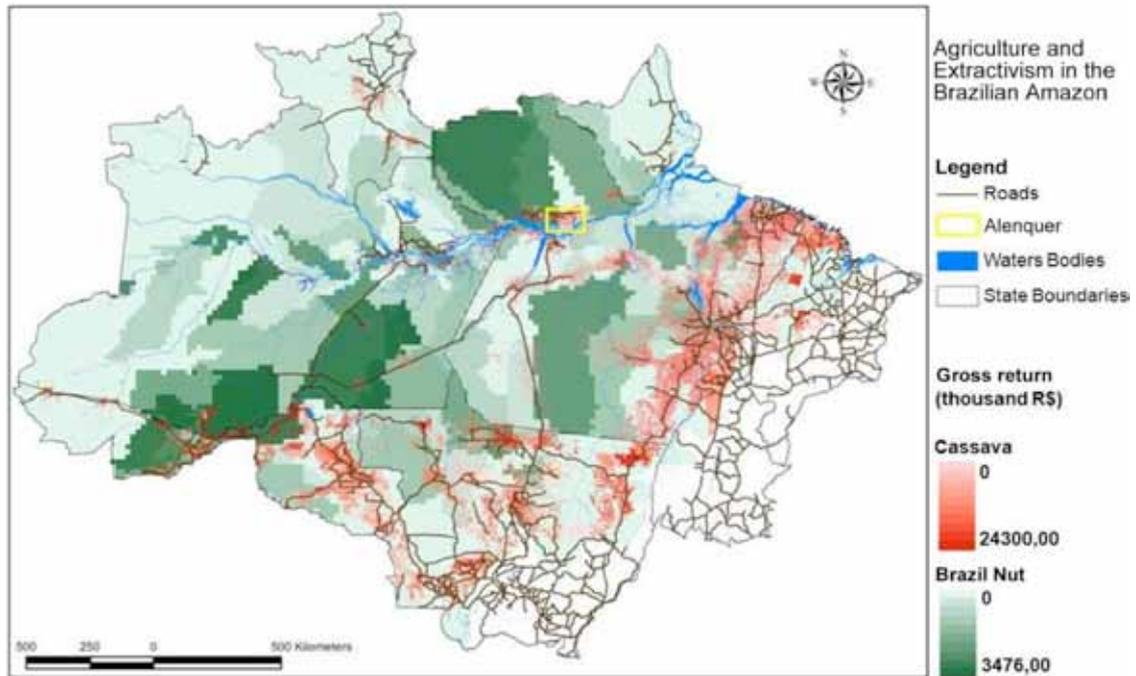
Support services (green boxes)

Regulating bodies (red boxes)

Lines connecting the boxes: dotted lines = free supply; lines = contract relations

Source: Adapted from Calha Norte Project led by CIFOR in collaboration with the GIZ and funded by the BMZ (author participated in this project)

Annex VII – Map of Gross Return⁴⁸⁸ of Cassava and Brazil nut in the Brazilian Amazon



Source: Map by Nathalia Nascimento (unpublished) based on data from IBGE (2010) – adapted and presented by Cunha at the Tropentag Conference (2010)

⁴⁸⁸ Gross return is c.p. equivalent to gross value of production.

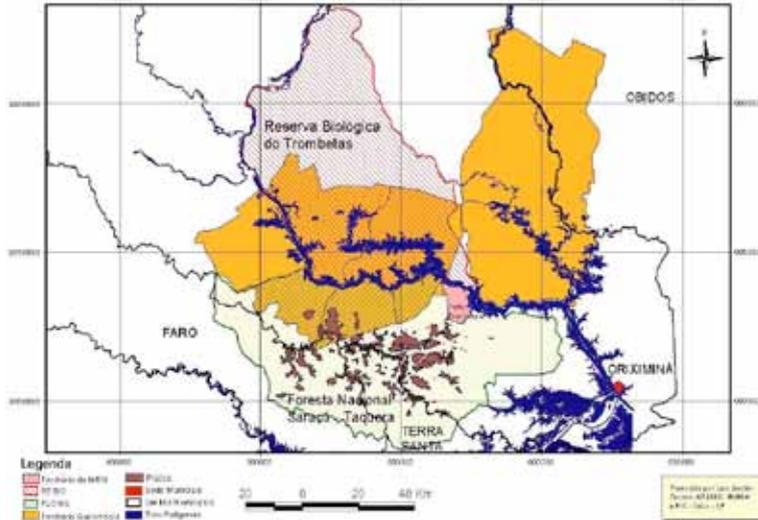
Annex VIII – Map of Municipalities of the Calha Norte Region⁴⁸⁹



Source: Santos *et al.* (2012: 16-17)

⁴⁸⁹ The Calha Norte region (within the Lower Amazon basin) includes the surveyed municipalities of Oriximiná, Óbidos, Curuá and Alenquer.

Annex IX – Map of Land Tenure Overlap: TRBR and Claimed Quilombola Territory



Translation and Explanation of Legend

- *Território da MRN* (pink): Territory of the 'Mineração Rio do Norte' (MRN, per acronyms in Portuguese) located in Porto Trombetas (urban infrastructure MRN created)
- *Rebio* (striped red): *Reserva Biológica do Rio Trombetas* (Rebio, per acronyms in Portuguese) – Trombetas River Biological Reserve (TRBR)
- *FLONA* (striped green): *Floresta Nacional* (FLONA, per acronyms in Portuguese) Saracá-Taquera – National Forest of Saracá-Taquera
- *Territórios Quilombolas* (yellow): TQs (per acronyms in Portuguese) – Titled *Quilombola* Territories
- *Territórios Quilombolas* (yellow overlaid with red and green stripes): Overlapping areas that are part of territories claimed by *quilombola* communities yet currently owned by the Federal Government of Brazil (ICMBio)
- *Platos* (purple): *Plateaus*, areas impacted by MRN, the largest Bauxite Mining Industry of Brazil
- *Sede Municipal* (red): Urban center of the municipality of Orximiná
- *Limites Municipais* (black): Municipality boundaries
- *Rios Poligonais* (blue): Rivers and other water bodies (lakes)

Source: Map by Luiz Jardim (unpublished) based on data from ARQMO, IBAMA and Pro-Indigenous Peoples Commission of São Paulo

Annex X – Map of Brazil nut stands by the Community: Abuí⁴⁹⁰



Source: Map provided by Brazil nut Processing mill Exportadora Florenzano Ltda. (unpublished), collected during fieldwork by the author in 2012

⁴⁹⁰ The community of Abuí is located by the Trombetas river in Oriximiná while Óbidos, Curuá and Alenquer are also depicted.

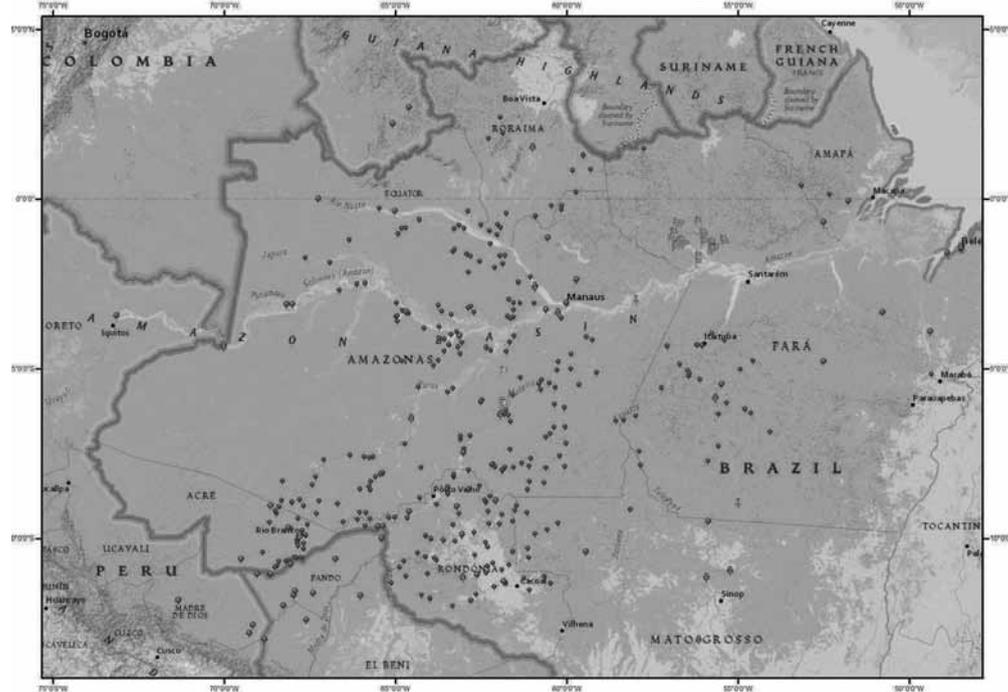
Annex XI – Map of Brazil nut stands by Communities: Jauarí, Cachoeira Pancada⁴⁹¹



Source: Map by Brazil nut Processing mill Exportadora Florenzano Ltda. (unpublished), collected during fieldwork by the author in 2012

⁴⁹¹ The communities of Jauarí and Cachoeira Pancada are located by Erepecuru River in Oriximiná while Óbidos and Curuá are also depicted.

Annex XII – Map of Natural Occurrence of Brazil nut trees in the Amazon Region⁴⁹²



Source: Unpublished map presented by König in 2012 based on data from IBGE, Research Institute of the Amazon (INPA, per acronyms in Portuguese), and GPS data collected by the author (see flags in the study area) during fieldwork in 2012

⁴⁹² States in Brazil: Pará, Acre, Amazonas, Roraima, Amapá, Mato Grosso; in Bolivia: Pando, El Beni; in Peru: Madre de Diós

Annex XIII – CURRICULUM VITAE & List of Publications

Marcelo Inácio da Cunha

Academic Background

10/13 – 06/18	<p>Free University of Berlin (Berlin – Germany) Ph.D. thesis and defense (29.06.2018) grade “<i>magna cum laude/ sehr gut</i>” – full CAPEX-DAAD scholarship (<i>Academic Exchange Services from the Brazilian and German governments</i>); extra-curricular courses: “Impact Evaluation of Development and Environmental Projects” (02-07/15, Center for Development Research/ZEF, University of Bonn); Summer school in Geography “Perspectives on Development” (10/16, University of Bonn)</p>
10/03 – 12/08	<p>University of Cologne (Cologne – Germany) <i>Diplom Volkswirt</i> (Numerus Clausus: 95%): “M.Sc. and B.Sc.” in Economics (Social Sciences, Environmental Policy, Natural Resource Economics, Theory of Change, Debating and Management Seminars) – full DAAD scholarship – <i>Diplom Thesis</i>: “Corporate Social Responsibility (CSR) in Brazil and Germany” – Research Project: Ethanol in Brazil and the USA</p>
10/91 – 12/03	<p>Humboldt School (German School in São Paulo – Brazil) Abitur (German High-school Conclusion) awarded with “Best of Class 2003”</p>
08/00 – 06/01	<p>Maranacook High School (Maine – USA) High-school diploma: 3,7 “grade point average” – member of the “National Honor Society”, “Civil Rights and Diversity Leadership Team”; “Creative Writing” class – best academic and social performance of foreign students of 2001 class</p>

Work Experience

Since 11/17	<p>UNCCD secretariat, Bonn – Associate Programme Officer; Science, Technology and Implementation (STI) unit and co-coordination of its Science-Policy Interface</p>
10/13 – 10/17	<p>In the frame of Ph.D. in Geography on Inclusive & Sustainable Rural Development: elaborating articles and outreach material (e.g. press interviews, policy briefs), value chain analysis & development of non-timber forest products, coordinating science-policy events for research uptake</p>
03/10 – 11/13	<p>Researcher at the World Agroforestry Centre (ICRAF/ Consultative Group on International Agricultural Research – CGIAR) in Belém – Brazil: ‘seconded by GIZ’ for first 2 years, Sustainable Natural Resource and Land Use/Governance, Value Chains, Cost-benefit, Institutions and Policy Analysis; <u>Organization and presentations at international R&D conferences, 16 publications</u></p> <ol style="list-style-type: none"> General coordinator of ICRAF’s project “CertCacao”: Responsible for proposal, implementation and financial reporting; acting coordinator of the “NoPa project” in Brazil funded by BMZ with GIZ, ICRAF, Embrapa, universities for enhancing the science-policy interface and sustainable pro-poor value chains Co-coordinator of ICRAF’s ‘RAVA-PEN Poverty and Environment Network’ in 7 countries of the Amazon: Responsible for event and data management (MS Access), analyses (STATA, R, @risk) for publications on livelihoods, climate change, ecosystem services, sustainable natural resource use Amazon coordinator of CIFOR’s climate change project “Calha Norte” funded by BMZ (GIZ): Responsible for data collection and methodology for assessing climate change adaptation and socioeconomic risks of smallholders

Internships

01/09 – 03/09	United Nations Global Compact (UNGC) Office in New York – USA: Responsibility for selecting the member enterprises and reviewing their CSR reports as a member of UNGC's Participant Management team and for facilitating the involvement of firms in projects with UN agencies by creating a knowledge management platform as a member of the UN-Business Partnerships team
04/08 – 08/08	UNEP/ Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) in Wuppertal – Germany: Responsibility for writing its Sustainability Report based on a self-composed survey to collect data concerning the social and environmental impact (mobility, paper and energy consumption) of CSCP's members; development of an own methodology to calculate their carbon foot-/handprint
10/06 – 10/07	University of Cologne in Cologne – Germany: Research Project and Working Paper on “Wage Inequality among Men and Women” , using STATA to conduct a multivariate data analysis on the discrimination between men and women in labor markets, e.g. same on-the-job-trainings resulting in unequal pay
08/06 – 10/06	AIESEC in Yaoundé – Cameroon: Development Traineeship – Responsibility for organizing the conference “Creating an Alliance for Sustainable Development and Social Responsibility of Enterprises” as leader of the Sustainability Team (which was engaged in the CSR and “AIESEC's Empowering Africa Program”) Établissement Nkono (civil construction firm, specialized in schools) in Yaoundé – Cameroon: Responsibility for Budgeting 2005/06 income and expenses while co-shaping organizational development towards sustainability
03/06 – 04/06	Transparency International in São Paulo – Brazil: Participation in an international project concerning the issue of “combating corruption” by analyzing the financing process of political campaigns in the Latin American countries
08/05 – 09/05	Kienbaum (former Roland Berger) in São Paulo – Brazil: Active contribution to “Executive Search Area” for organizing Assessment Centers and assessing interviews with candidates; responsible for IT-Project for updating the firm's website and implementing a data base software for knowledge management
04/05 – 06/05	Südwind (Institute for Development Cooperation) in Siegburg – Germany: Significant contribution to CSR & Codes of Conduct Book , based on an analysis of information about the precarious working conditions – the infraction of labor rights, established by the UN International Labour Organization and the absence of an enduring CSR strategy in multinational enterprises in the Global South
09/04 – 10/04	Siemens in São Paulo – Brazil: Assisting in daily business of Human Resources department, including Recruiting, Diversity, Social Projects, Knowledge Sharing

Languages

Portuguese	Native language
German	Native language
English	Proficient knowledge
Spanish, French	Advanced knowledge

IT

Stata, R, MS Access, Excel, @risk, Stella, MaxQDA	Advanced knowledge (applies to all hereby listed softwares); R statistical programming software (04/2015 – 07/2015): “Program theory, impact pathways” (University of Bonn/ ZEF); Training on Carbon Assessment for Climate Change Mitigation & Sustainable Land Management by Carbon Benefit Projects tool (hosted by GEF, UNEP)
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Voluntary Work

Since 10/04	UNICEF Cologne: Participation in projects to combat child labor worldwide
10/04 – 02/05	Amnesty International in Cologne: Participation in projects for raising awareness on human rights in different countries
04/04 – 02/05	AIESEC (world's largest student organization) in Cologne: Finding positions at multi-national companies in Germany for exchange students from abroad

Certificates

01/17 – 05/17	“Decent Work in Global Supply Chains” Course from the Global Labour University led by universities (Penn State, Cornell and Kassel) and the UN (ILO)
08/16	United Nations Summer Academy (organized by UNSSC Bonn) due to oral presentation and session coordination on <i>Inclusive Sustainable Development of Value Chains for Poverty Reduction and Environmental Conservation</i>
02/13 – 03/13	Risk Assessment for Users of @RISK and Decision Tools Suite Training from Palisade in São Paulo, Brazil
09/12	“Assessing the Poverty Impacts of Value Chain Development” Training at the World Agroforestry Centre (ICRAF) in Lima, Peru
08/11	“Entrenamiento STATA – Taller PEN-RAVA Project” in Florencia, Colombia
08/09	“Cours de Langue et Civilisation Française” Université de la Sorbonne, Paris
01/09 – 03/09	“United Nations in the 21st-Century” UN Seminars at the United Nations Headquarters in New York, USA
12/07	“Bonn International Model United Nations (BIMUN) for Sustainable Development” in Bonn, Germany
06/02	Cambridge Exam – Certificate of Advanced English (CAE)

List of selected publications

Books:

- Donovan, J., **Cunha, M.**, Franzel, S., Gyau, A. & Mithöfer, D. 2013. Value chains and trade: guides for value chain development - a comparative review. Technical Centre for Agricultural and Rural Cooperation (CTA). Wageningen, The Netherlands: 1-76.
- Donovan, J., **Cunha, M.**, Franzel, S., Gyau, A., & Mithöfer, D. 2013. Guías para el desarrollo de cadenas de valor: una revisión comparativa. Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). Turrialba, Costa Rica: 1-79.

Journal articles (peer reviewed):

- Rodrigues, O. V., Börner, J., & **Cunha, M.** 2014. Scoping adaptation needs for smallholders in the Brazilian Amazon: a municipal level case study. *Change and Adaptation in Socio-Ecological Systems*: 12-25.
- Cunha, M.** 2014. Social capital and access to (natural) resources and markets along the Brazil nut (*Bertholletia excelsa*) value chain in the Lower Amazon basin, Pará. *Boletim do Museu Paraense Emílio Goeldi (MPEG). Ciências Naturais* 9(2). Belém, Brasil: 337-352.
- Donovan, J., Franzel, S., **Cunha, M.**, Gyau, A. & Mithöfer, D. 2015. Guides for Value Chain Development – A Comparative Review. *Journal of Agribusiness in Developing and Emerging Economies* 5(1): 2-23.

Book chapters (peer reviewed):

- Rodrigues, O.V., Börner, J. & **Cunha, M.** 2014. Small-scale producers, risk and climate change in an Amazonian municipality. In: Lac, S. & McHenry, M. (Eds.). *Climate change and forest ecosystems*. Nova Science Publishers, Inc. New York: 135-151.
- Segebart, D., **Cunha, M.** & Scoles, R. 2015. Strengthening Brazil Nut Value Chains in the State of Pará, Amazon. In: Menezes et al. (Eds.). *The NoPa Case: New partnerships for innovation in sustainable development reflections and achievements*. Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Brasília, Brazil: 46-66.
- Donovan, J., Franzel, S., **Cunha, M.**, Gyau, A. & Mithöfer, D. 2016. Guides For Value Chain Development – A Comparative Review. In: Devaux, A., Torero, M., Donovan, J. & Horton, D. *Innovation for inclusive value-chain development: Successes and challenges*. International Food Policy Research Institute (IFPRI), Washington DC.

Bulletin articles:

- Cunha, M.** 2011. Certificação Orgânica de Cacau: Contribuição Efetiva para Meios de Vida e Ambiente Amazônico? In: Porro, R. (Ed.). *Amazônia Agroflorestal*. The World Agroforestry Centre (ICRAF). Belém, Brazil: 12-13.
- Cunha, M.** 2011. Criação da Rede Agroflorestal de Cacau na Amazônia (RAFCA) Marca Início de Trabalho Participativo Para a Promoção de Sistemas Agroflorestais Baseados em Cacau na Pan-Amazônia. In Porro, R. (Ed.). *Amazônia Agroflorestal*. The World Agroforestry Centre (ICRAF). Belém, Brazil: 24-25.

Book of Abstracts (Presentations/ Proceedings):

- Cunha, M.**, Börner, J. & Nascimento, N. C. C. 2010. Vulnerability of Rural Small-scale Producers in the Brazilian Amazon: Priorities and Research Needs for Climate Change Adaptation Planning. In: Tielkes (Ed.): 22.

- Cunha, M.** 2012. Does Organic Cocoa Certification Contribute to Socioeconomic and Environmental Conservation? Comparative Study in the Brazilian and Peruvian Amazon. Oral presentation at the 54th International Congress of Americanists, 15-20 July, Vienna, Austria. In: Abstractbook: 3000.
- Cunha, M.** 2013. How do social capital and diversification of income sources influence vulnerability of Brazil nut value chain actors in the Amazon? International Union of Forest Research Organizations (IUFRO) Congress. San José, Costa Rica.
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- Cunha, M.** 2017. Sustainable Resource and Market Access: Towards an Enabling Institutional Environment along the Value Chain of a Non-Timber Forest Product in Amazonia? In: Tielkes, E. Book of Abstracts: Future Agriculture: Socio-ecological transitions and bio-cultural shifts. Tropentag Conference, 20 – 22 September 2017, Bonn, Germany. <<http://www.tropentag.de/2017/proceedings/proceedings.pdf>>
- Cunha, M.** 2017. Adapted Institutional Environment and Sustainable Resource Access: Evidences for Co-Developing Value Chains of Forest(tree) and Agricultural Products in the Amazon. International Union of Forest Research Organizations (IUFRO) Congress. Interconnecting Forests, Science and People. 125th IUFRO Anniversary Congress - Book of Abstracts, 2017. Freiburg. 724 p. Forstliche Versuchs- und Forschungsanstalt (FVA) Baden-Württemberg. <https://www.iufro.org/events/anniversary-congress/#c24907>

Technical revision of (Portuguese version of):

- Dawson, I., Harwood, C., Jamnadass, R. & Beniést, J. (eds.). 2012. Agroforestry tree domestication: a primer. The World Agroforestry Centre. Nairobi, Kenya: 1-148.
- Donovan, J. & Stoian, D. 2012. 5 Capitals: A Tool for Assessing the Poverty Impact of Value Chain Development. Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). Turrialba, Costa Rica: 1-70.

List of selected oral presentations and coordination of conference sessions

Event/Location	Title	Date
International Workshop coordinated by ICRAF: Investigación colaborativa y desarrollo participativo de sistemas agroforestales Amazónicos para la producción de cacao – Pucallpa, Peru	„Estado de la Producción de Cacao a nivel global e en la Amazonía ”	08.12.2010
Kick-off Conference coordinated by the University of Göttingen: Carbon sequestration, biodiversity and social structures in Southern Amazonia: models and implementation of carbon-optimized land management strategies – Cuiabá, Brazil	„ Research and Development Initiatives in the Transamazon Region ” (I was invited as key-note speaker together with Philip Fearnside)	06.07.2011
“Desenvolvimento Sustentável na Amazônia Brasileira. Diálogos Transdisciplinares entre Ciência e Política – Perspectivas para novos formatos da cooperação científica alemã com o Brasil” – Institute for Latin American Studies (LAI) – Berlin, Germany	“Does Social Capital Influence Resource Access and Vulnerability?: Environmental and Socioeconomic (Dis)connection in the Amazon nut (<i>Bertholletia excelsa</i>) Value Chain in the Lower Amazon Basin”	09.11.2013
Workshop coordinated by Free University of Berlin: Castanha-da-Amazônia – perspectivas multidisciplinares sobre um produto da sociobiodiversidade Amazônica – Belém, Brazil	“Capital social, acesso a recursos e vulnerabilidade na cadeia de valor da castanha (<i>Bertholletia excelsa</i>) na Calha Norte, Pará”	26.11.2013
Science meets Policy Making coordinated by Free University of Berlin: “ Diálogo entre ciência e política – Fortalecendo cadeias de valor dos produtos da sociobiodiversidade: o caso da Castanha do Brasil” – Brasília, Brasil	“Capital social, riscos e condições para o acesso a recursos na cadeia de valor da castanha (<i>Bertholletia excelsa</i>) na Calha Norte, Pará”	29.11.2013
Third IUFRO Latin American Congress – San José, Costa Rica	“How do social capital and diversification of income sources influence vulnerability of Brazil nut value chain actors in the Amazon?”	12.06.2013
Coordination of session in seminar at the Centre for Development Studies (ZELF) – Berlin, Germany	„ Institutions and Social Capital for Sustainable Resource and Market Access? Towards an Inclusive Development of the Value Chain of a NTFP : Opportunities and Struggles of Brazil nut Gatherers and Buyers in Amazonia”	15.07.2015
Coordination of Application Lab session at the United Nations Summer Academy 2016 titled ‘Shaping a Sustainable Future’, organized by the United Nations System Staff College (UNSSC) , Knowledge Centre for Sustainable Development – Bonn, Germany	“ Value chains and the role of the institutional environment in the access to natural resources and markets by food chain actors in the Amazon : A novel analytical framework as an innovative input for evidence-based pro-poor sustainable value chain development”	25.08.2016

Coordination of session at '2016 United Nations VCD Expert Meeting' – Interagency Workshop on Inclusiveness in Value Chain Development (VCD) at FAO – Rome, Italy	Sustainable Access to Resources and Markets? A Novel Analytical Framework as an Evidence-based Input for Inclusive Sustainable Value Chain Development	07.10.2016
Presentation on the United Nations Convention to Combat Desertification (UNCCD) <i>Checklist for Land Degradation Neutrality (LDN) Transformative Projects and Programmes</i> at the Science-Policy Interface Coordination Workshop in the frame of the 1st Global LDN Forum (also attended by Ban Ki-moon) – Seoul, Republic of Korea	"Features Checklist for Land Degradation Neutrality (LDN) Transformative Projects and Programmes" of the UNCCD	02.06.2018
Co-coordination of breakout session at the Global Land Forum 2018 (co-organized by the International Land Coalition/ ILC hosted by the International Fund for Agricultural Development/ IFAD) and presentation on Responsible Governance and Land Degradation Neutrality – Bandung, Indonesia	Breakout Session "SDG15 – Realising Sustainable Life on Land and Leaving No one Behind" and Presentation "Responsible Governance and Land Degradation Neutrality – from Concept to Practice"; Soft opening of the Global Land Forum 2018 by Indonesia's president and participants from 77 countries	25.09.2018

Source: http://www.geo.fu-berlin.de/geog/fachrichtungen/anthrogeog/zelf/MitarbeiterInnen/Marcelo_Cunha/index.html

