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Benefit sharing mechanisms and governance issues in Participatory Forest Management-REDD related projects: A Community Forest case-study in Tanzania

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Abstract

The current debate on climate change, especially with respect to the role of REDD projects and the push for the recognition of community (participatory) forest management as a carbon mitigation option represents a potential for communities to receive benefits from carbon sequestration. A recent study in Tanzania has estimated that communities can receive financial benefits in thousands of US\$ annually from the sale of their forest carbon credits. This notwithstanding, such kind of projects is expected to generate potential social and environmental costs with related risks of conflicts if benefit sharing and governance issues are not well addressed. However the identification and prioritization as well as the economic value of all these benefits and costs are still premature. An understanding of what these expected benefits from sustainable forest management and REDD projects are, how their (total) value can be assessed and who are stakeholders and actors in participatory forest management (PFM) can be useful in formulating equitable benefit sharing mechanisms based on principles of “good governance” that could be adopted in REDD projects implementation. The paper deals with these topics on the basis of empirical results based on a participatory action research carried out in the Angai Village Land Forest Reserve, Liwale District, in Tanzania in 2010. Guidelines for formulating governance mechanisms to reduce risks of negative social consequences and enhance benefits from PFM_REDD projects for local forest resources management are proposed. Equitable benefit sharing in PFM is considered one of the most important issues for community cohesion and conflicts solving/managing and in the avoidance of leakage or other risks in REDD projects.

Keywords: *Benefit sharing, Governance, Reduced Emission from Deforestation and Degradation (REDD), Participatory Forest Management (PFM), Community Forest, Tanzania.*

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1. Introduction

After the UNFCCC COP 13 held in Bali (Indonesia) in 2007, where countries agreed to create a mechanism for Reducing Emissions from Deforestation and Degradation (REDD) as a potential component of a post-2012 climate change regime (UNFCCC 2007) and especially after the UNFCCC COP 15 held in Copenhagen (Denmark) in 2009, REDD mechanism was developed very quickly, strongly debated and progress was made to include REDD-plus as a climate change mitigation option (UNFCCC 2009). Several REDD projects are being implemented in many tropical countries all over the world with a majority in Latin America. About seventeen projects are already operational and others are at their initial stages (examples include Noel Kempff – Bolivia, Transamazonia – Brazil, Maya Biosphere – Guatemala, Sociobosque – Ecuador). Some of these projects are already generating carbon credits for sale in the voluntary market while others are carried out as pilot projects to test the mechanism (Brown et al. 1999; Murdiyarto and Skutsch 2006; Rafli et al. 2007; Juma 2008; Cenamo et al. 2009; Johns and Johnson 2009). The relationship between forest in general and tropical forest in particular and global climate change have received considerable scientific and political attention lately (Shukla et al. 1990; IPCC 1996). But now forests are recognized to play an important role in carbon sequestering and storing: the four billion hectares of world's forests (FAO FRA 2010) account for almost one-half of the global terrestrial carbon pool or reservoir. Especially tropical forests are known to have high carbon stocks perhaps as much as 50 percent more carbon per hectare than forest in other regions (Houghton 2005). Therefore, land-use, land-use change and forestry activities have been single out as major sources of carbon emissions and active contributor of global warming. The Intergovernmental Panel on Climate change (IPCC) estimates that about 1.6 billion tons of carbon is released annually due to land-use change of which the major part is traced from tropical deforestation. Annual CO₂ emissions from deforestation in tropical and subtropical countries accounts for up to a fifth of global emissions, the second largest source of all GHG emissions (Baumert et al. 2005). Emissions from deforestation and forest degradation takes place when carbon stocks deplete and is released into the atmosphere through change in forest and other wood biomass, forest and grassland conversion, abandonment of managed lands as well as forest fires (Engel and Palmer 2008). Annually, between 1.6 -2.4 pentagrams of carbon are released into the atmosphere from tropical forest clearing (Watson et al. 2000). The main causes of deforestation² and forest degradation³ can be categorized into direct or proximate causes and underlying causes (Kaimowitz and Angelsen 1998; Geist and Lambin 2002); and intra and extra sectoral factors (Contreras-Hermosilla 2000). Direct causes include agricultural expansion, wood extraction, and infrastructure extension. Underlying causes include macro-economic factors (such as market demand, currency devaluation, trade policies, fuel and transport subsidies), governance factors (forest tenure and institutions, inappropriate forest law and weak law enforcement), and other factors (cultural, demographic and technological). Deforestation and degradation thus usually result from a combination of these factors and the different causes of deforestation interact in complex and variable ways (Kanninen et al. 2007).

The response to the problems of deforestation and forest degradation in many developing countries in the tropics has been the devolution of forest areas to local communities. Devolution and decentralization of governance of forest resources are seen as cheap and efficient ways of forest conservation. It is broadly recognized that without local people having a significant stake in the management of local forest resources, the efforts of the forest departments in protecting forest will often be ineffective (FAO 1992). According to White and Martin (2002), 22% of forests in tropical countries are managed by communities and they are predictions that it would be the dominant forest management regime in developing countries in the future (Smith and Scherr 2002). As reported by Maraseni et al. (2005) CBFM is known by different names around the world such as *Community Forests* (Nepal, Mexico, Thailand, The Gambia, Cameroon), *Village Forests* (Malawi, Mali,

Benin), *Social Forestry* (Philippines, India), *Participatory Forest Management* (Tanzania), *Joint Forest Management* (India). The definition and purpose of the concept varies between countries but they all share similar characteristics in terms of (i) local community based management of the forest resources, (ii) decentralization of power to the people, (iii) defined property rights and inclusion of and usage of traditional values and (iv) ecological knowledge in resource management (Kellert et al. 2000). The viability of each management approach depends on the characteristics of the resource systems and their contexts; formal property rights arrangements, informal practices of use and governance, and the relations of power and inequality. CBFM contribute substantially to the livelihoods of millions of rural people in the developing world (World Bank 2004). Recent scholarships on CBFM championed by Elinor Ostrom have shown that communities can manage forests sustainably in different contexts where forest policies at macro levels enable local governance efforts. This is in sharp contrast to earlier studies that suggested that CBFM leads to degradation and the tragedy of the commons (Hardin 1968; 1998).

The current discussions on climate change, especially with respect to the role of REDD projects and the formalization of REDD-plus¹ as a climate change mitigating measure, and the agreement to provide positive incentives to support REDD-plus presents enormous potential benefits for forest communities. It also presents unprecedented potentials for raising incomes, land rights securing and social development. On the other hand, as a consequence of the increasing pressures on and value of forest lands connected with the creation and commercialization of carbon credits, REDD-plus projects are expected to generate also potential social and environmental cost with related unprecedented risks of conflict between stakeholder groups and interests if benefits and costs sharing as well as governance issues are not properly and well addressed from the very beginning.

Our understanding of and knowledge about the dimension and contents of these benefits, costs and risks, how they should be properly assessed and who are the stakeholders and actors in PFM is still fragmented and incomplete. Also possible equitable benefits and costs sharing mechanisms based on 'good governance' principles to be adopted in REDD projects implementation are still highly varying with no one guideline commonly accepted and a proliferation of models/standards with very few common elements based on few ongoing selected REDD projects.

On the basis of an empirical study conducted in two selected villages of the Angai Villages Land Forest Reserve (AVLFR) in Tanzania between May to July 2010, the paper aims at identifying and analysing benefit/cost sharing and discussing governance issues related to the ongoing implementation of Participatory Forest Management project and future REDD-plus activities. Key research questions are: 1) Who will benefit or is expected to benefit from PFM and possible REDD-plus payment in the future? 2) What are the expected benefits and costs and possible risks from PFM and carbon monitoring activities? 3) What are the core aspects to be considered in formulating proper benefit sharing mechanism and adopting good governance principles in the REDD-plus mechanism implementation ?

The paper is organized into three main parts. In the first one, the theoretical background with some basic concepts and the local context are presented. In the second part, the research methods are briefly illustrated. In the third part, results are presented and discussed. Conclusions and recommendations are finally drawn up.

¹ The term 'REDD-plus' is used when referring to the full range of various possible forestry carbon-related activities listed in the Bali Action Plan (Decision 1/CP.13), such as forest conservation, sustainable management of forests, and enhancement of forest carbon stocks. In this study REDD and REDD-plus are used interchangeably.

2. Background and context

2.1 Theoretical background

Currently, land-based forest sequestration activities are not included in the CDM of the Kyoto Protocol (KP). Only afforestation and reforestation (A/R) are eligible and rewarded with regards to forestry climate change mitigation options in the framework of KP of the UNFCCC. With the recognition of REDD, Land Use, Land-Use Change and Forestry (LULUCF) and other forest based mitigation option being pushed for approval, there are equally calls from some parties for CBFM to be included as GHG mitigation option in developing countries (Klooster and Masera 2000; Skutsch 2003 and 2005; Mareseni et al. 2005; Murdiyarso and Skutsch 2006; Zahabu 2008; Karky 2009). According to the IPCC a sustainable forest-management strategy aimed at maintaining or increasing forest carbon stocks in the long term, while producing an annual sustained yield of timber, fiber, or energy from the forest, will generate the largest sustained mitigation benefit (Robledo et al. 2008). In this regard, several scholars have explored the potentials for CBFM as an instrument both for carbon saving, benefits through carbon sequestration and for climate change adaptation. Skutsch (2003) explored the potential for CBFM as an instrument for carbon saving and for adaptation under the Kyoto Protocol. Based on three case studies from Nepal, Senegal and Tanzania, she concluded that many communities involved in CBFM transform unsustainable management of existing natural forest to sustainable management. Maraseni et al. (2005) using CBFM in Nepal, argued that since enhanced natural regeneration and forest preservation activities are considered under CDM project activities, CBFM should be considered as well since it contributes to achieve the objectives CDM program as well as provides biodiversity benefits. Klooster and Masera (2000) have demonstrated the amount of benefit CBFM had contributed to the forestry sector in Mexico in terms of carbon and livelihoods and stress the necessity and relevance for its inclusion in REDD as a climate mitigation option. The authors argue that under adequate social arrangement, forest management slows and reverses deforestation, mitigates carbon emissions and provides economic alternatives to converting forest to pastures and field crops. Murdiyarso (2005) underscores the importance of carbon sequestration project through land use, land-use change and sustainable forest management and concluded that it could demonstrate a win-win situation from the point of climate change and sustainable development if the project are properly designed and implemented. He argued that these projects conserve and/or increase carbon stocks while at the same time improve rural livelihoods. Zahabu (2006a and 2006b), in the framework of the Kyoto Protocol Think Global Act Local project (K:TGAL)² have demonstrated in two separate case studies from Tanzania (Handei Village Land Forest Reserve and Kitulangalo joint forest management area) with empirical data how carbon stock in the forest is increasing as a result of management practices by the villagers. Murdiyarso and Skutsch (2006) promotes the idea of carbon benefits from community forest management by analysing 13 case studies from around the world to show how different forest management practices for different reasons have the potential to provide carbon sequestration benefits. There is mounting evidence that CBFM can deliver on multiple outcomes i.e. carbon storage, livelihood benefits and biodiversity conservation (Chazdon 2008; Ranganathan et al. 2008; cited in Angelsen 2008). CBFM can help sequester and store carbon without adversely affecting the livelihoods and equity benefits that is generated from community forests (Chhatre and Agrawal 2009). However, the key-question remains: “*Can REDD benefit community-based forest management?*”. The response is certainly difficult which is why many studies are being carried out

² Kyoto: Think Global, Act Local (K:TGAL) is a research and capacity building program, financed by the Netherlands Development Cooperation, which is investigating the possibilities and potential for Community Based Forest Management of existing natural forest to be included as an eligible carbon mitigation activity under international climate change agreements in the future. It is also exploring the value of CBFM as a climate adaptation strategy. <http://www.communitycarbonforestry.org/>

to look at the social implications of the REDD mechanism on forest communities. At the moment, the literature on this subject is sparse, since the concept is still very new. Nevertheless, many studies have analysed the benefits of PES³ schemes and if REDD-plus is considered a form of an 'international PES' (Wunder 2009; TEEB 2009) then such analyses could be applied to REDD-plus. According to Grieg-Gran et al. (2005), the introduction of market based mechanisms for environmental services has the potential to benefit rural service providers, in economic terms if the payment received more than compensates the opportunity cost of giving up a more rewarding (but less environmentally friendly) land use. Additionally, there might also be aspects of the transaction that go beyond the amount of income. These can be benefits such as diversification of income sources, reliable and steady payments, provision of training and better internal organisation among service providers. However, these transactions can impose costs, for example, increased competition for land or social tension because of jealousies from community members that do not receive payments.

Smith and Scherr (2002) have analysed the livelihood benefits and risks associated with carbon forestry projects within the CDM framework of the Kyoto Protocol. Working on the question "*Can forest carbon projects deliver livelihood benefits?*" they examined the benefits and risks under different forest carbon projects types and concluded that multiple use community management of natural forest (which is our concern) presents some livelihood benefits such as subsistence and cash income to forest dwellers, ecotourism activities. However poorly designed and underfinanced projects that fail to produce sustainable livelihood can pose a livelihood risk with various consequences. They added that where forest enterprises are community owned or managed, equity problems may arise in relation to distribution of local use rights, products or income.

Scherr *et al.* (2004) have in a very general manner presented the potential benefits and risks associated with payment for ecosystem services. They categorize the benefits in terms of financial and non financial ones. The first category includes regular direct payments with high reliability. Because these payments are supplemental income, it can serve as a strong incentive for conservation. With regards to non financial benefits, producing and protection ecosystem services for outside buyers can have important co-benefits such as high quality water supply, the establishment of new forest resources such as fuel, medicine, and improved air quality due to reduction of fire.

Drawing from data of carbon value from five CBFM areas in Tanzania (Kimunyu, Mangala, Handei, Haitemba and Warib) with a total area of 1154.5 ha comprising four villages (Gwata, Ludewa, Mgambo and Ayasanda) Zahabu and Jambiya (2007) have estimated that local communities could receive financial benefits of up to US\$ 6,500 annually (if carbon is priced at US\$ 5 per ton of CO₂ in the voluntary market) from the sale of their forest carbon credits gained through REDD-plus activities. Apart from selling carbon credits, the authors argue that selling other environmental services like biodiversity and water protection is also possible with sound forest management. They concluded that the logical incentive package for community based forest management would be to 'bundle' different forest services and sell them together. This would result in adding more values to CBFM projects and provide more benefits and tangible incentives to the local communities.

In one of the most comprehensive study done this far on strategies to involve forest communities in the global climate policy, Zahabu (2008), explored the cost and benefits of PFM projects and the expected changes if they become carbon projects. Analysing data from four villages engaged in PFM in Tanzania, he observed that significant costs are incurred to facilitate communities during the process to establish a PFM and if such projects become carbon projects and enter into carbon

³ According to Wunder (2005), PES can be defined as a voluntary transaction where a well-defined environmental service is being 'bought' by an environmental service buyer if and only if the environmental service provider secures environmental service provision. In REDD-plus, PES refers to a results-based system in which payments are made for emissions reductions or carbon stocks enhancements relative to an agreed reference level

trading, some additional activities related carbon measurements, verification and marketing will inevitably be required attracting additional 'carbon transaction cost'. This would mean some current benefits that involve biomass removal from the forest such as harvesting for timber, building poles, firewood collection and grazing need to be reduced. Despite these costs, the author estimated that depending on the price of carbon on the regulated market, even villages with small forest areas (20 to 50 ha) could earn about US\$30 per household while better forest-endowed villages (>1000 ha) might earn US\$438 per household. This means carbon projects could therefore provide significant income generation opportunities at village level even though the amounts look small and meager.

With respect to risks, it is worth mentioning that there are in general very few studies available. The focus so far has been on the benefits with less on risks and costs. This notwithstanding, critics of the mechanism have pointed out that REDD-plus poses a threat to the gains made from decentralization that is recentralisation of forest governance through the proposed national approach (Phelps et al. 2010). According to a recently published report by the Global Forest Coalition (GFC)⁸ on the realities of REDD in twelve developing countries in Africa, Asia and Latin America, market based payment for environmental services like REDD-plus will exacerbate many of the social and environmental problems that already exist in local communities and will lead to the marginalization of economically less powerful groups in forest policy including indigenous people, women and the poor in general (GFC 2009). Based on an early publication titled *Life as a Commerce*, GFC has analysed the impact of market based conservation mechanism on communities and their governance. They concluded that market based PES mechanisms have positive benefits only in theory and that it is impossible to avoid the erosion of community governance over forest resources when these mechanism are implemented. In simplistic terms, they indicated that local communities are not strong enough to defend their community's interest against powerful corporate interest driving market based projects on their land. According to the Eliasch (2008), REDD presents a danger of customary rights violations in the interest of inward investment, and abusive contracts and land speculation to the detriment of community interests. The Review indicated that without clear tenure and use rights, sustainable forest management will be impossible and carbon finance may increase social conflicts. Peskett and Harkin (2007), have also emphasized that without clear land and carbon rights, REDD would be of high risk to the poor thus stressing the importance for binding agreements in assessing and negotiating benefit distribution.

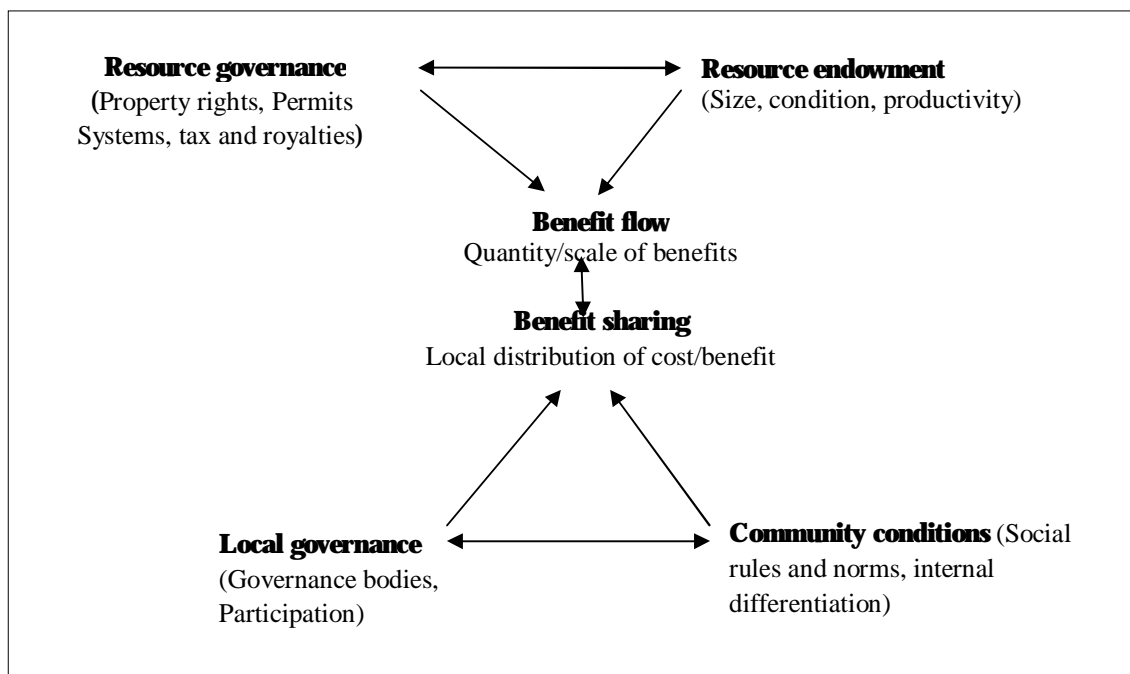
Murray (2009) in a recent study on the social and economic implication of the Belgica REDD-plus in Peru found that the project had three potential implications on the community in the areas of agriculture, education and social health services. The author indicated that limitations on agricultural expansion may impact the essentially agricultural based community, employment opportunities and diversity may make education less desirable. Table 1 presents a set of multi-benefits and multi-risks associated with REDDS project's services for local livelihoods, local economy development and forest ecosystems according to some of the existing studies and reports. According to Mahanty *et al.* (2009) benefit sharing in CBFM can be analyzed under two broad categories i.e. *benefit flow* and *benefit sharing* (Fig. 1). The analysis of *benefit flow* examines the role played by three key aspects of resource governance (i) property rights, (ii) permits and (iii) taxes or royalties) as well as the resource endowment (size, condition and productivity) in shaping the scale and timing of benefit flow. *Benefit sharing* (community level distribution of benefits) analyses focus on the influence of local governance (e.g. governance bodies and processes, participation) and community conditions (e.g. social rules and norms, internal differentiation) in mediating who gains.

Table 1 - Potential impacts of environmental service markets for local livelihoods, economy and forest ecosystems

	<i>Possible benefits</i>	<i>Possible risks</i>
Natural assets	<ul style="list-style-type: none"> - Higher forest values due to improved management - Higher productivity and more sustainable farming and forest systems for local livelihoods (e.g. food, firewood, medicines.) - Conservation of intact habitats for forest plant and animal species, conservation of species and varieties (i.e. various features of biodiversity) - Reduced fragmentation - Restoration of local ecosystem services of forest and agro-forestry (e.g. watershed maintenance, pollinator species, soil erosion control) 	<ul style="list-style-type: none"> - Lost use values (e.g timber and NTFPs) if harvesting restrictions are imposed - Lost options for forest conversion to agriculture - Replacement of native non-forest habitats by forest plantations or by non-native forest management practices - Risks of expansion of genetically modified trees
Human assets	<ul style="list-style-type: none"> - Education and training opportunities on forest and project management, negotiation, enterprise development... - Improved business and market organization in local communities - Technical assistance to local community 	<ul style="list-style-type: none"> - Additional marginalization of poor people and/or minorities (i.e. women) who have less capacity/possibility to capture educational and skills development opportunities - Reduced health and income if the poor are excluded from NTFPs collection for domestic consumption and disposable income
Social assets	<ul style="list-style-type: none"> - Increased tenure security where markets spur rights formalization - Strengthening of community-based institutions - Additional resources for community social investments - Introduction of innovation - Improvement of social capital through reinforcement of local networks and traditional communication channels - Opportunities for maintaining and enhancing local and traditional knowledge and cultural identity 	<ul style="list-style-type: none"> - Loss of rights to land access and/or to harvest products or environmental services - Loss of land ownership rights when a large (global or national) entity purchasing land for selling ecosystem services - Increasing land grabbing or other forest-related crimes where effective legal frameworks lacking - Higher competition for land causing displacement of the poor or women who often lack formal property rights (increasing marginalization of poor or women) - Erosion of cooperative arrangement due to increased inequality - Loss of control and flexibility over local development options and directions where pre-defined long-term and not properly designed contracts are signed
Financial assets	<ul style="list-style-type: none"> - New income from sales of environmental services (i.e. carbon credits) - Higher income from selling forest related sources (i.e. ecotourism, recreation activities, NTFPs, timber and firewood) - Improved security and stability of income due to diversification - Employment opportunities - Development of community-company partnership 	<ul style="list-style-type: none"> - New restrictions on forest exploitation and conversion which result in income loss - Reduced flexibility arising from long term land use contracts hampers livelihood responses to short-term shocks - Limited income and employment opportunities for poor, women and other minority groups - Market-based approaches are complex yet lucrative, encouraging fraud and corruption while discouraging community participation
Physical resources	<ul style="list-style-type: none"> - Infrastructural development: transport, marketing, health care services, schools and training centres, ... 	<ul style="list-style-type: none"> - Dismantling of infrastructure compromising the environmental service, e.g. roads

Source: based on Smith and Scherr (2002), Scherr *et al.* (2004), Grieg-Gran *et al.* (2005), von Scheliha *et al.* (2009)

Fig 1 - Analytical framework for benefit sharing in CBFM



Source: adapted from Mahanty *et al.* 2009

In the environmental policy making process at global level, both in relations to climate change, deforestation, illegal logging and several other environmental concerns, there is an ongoing debate about a shift from *government* to *participatory governance* in policy formulation and related decision-making procedures (e.g. policy implementation by means of concrete actions and projects). The introduction of this new approach in making collective choices is due to several driving forces: globalization, political systems fragmentation (decentralization, devolution, privatization), inadequacy of representative democracy to achieve accountability, decreasing role of command and control instruments traditionally implemented with a top-down approach by strong central governments, flanked by an increasing role of business, environmental, social and other organized interests and their growing demand for responsible and ethical behaviors (Clapp 1998; Coleman and Perl 1999; Kjær 2004; Shannon 2006). Some key-ideas representing these new modes of *governance* are inclusiveness, participation, dialogue and consensus, networking, multisectoriality, co-operation, co-ordination, deliberation, accountability. In this sense, '[governance] is about coordinating the plurality and complexity of hierarchies, markets and networks' (Kjær 2004). Amongst the various sectors where they have already been implemented, forestry is considered one of the most advanced, with several examples of deliberative, consensus-oriented and participatory approaches adopted in international commitments for sustainable forest management (SFM), such as FLEGT or UNFCCC, and in National Forest Programmes formulation (Pülzl and Rametsteiner 2002; Buttoud *et al.* 2004). Also several non-State, market-driven governance systems are already in place and consolidated, examples being those launched by forest certification initiatives (Cashore 2002; Cashore *et al.* 2004) or through schemes of Payments for Environmental Services (PES) for biodiversity or water conservation. These emerging economic mechanisms for promoting SFM are expected to have unprecedented effects on land use policies and institutional frameworks, requiring deep changes in the role of public administrations as well as other actors, in their reciprocal relationships, in communication systems, in decision making procedures, in channels for resources flows: in short, deep changes on key aspects of governance. At the local level, key governance issues concern (i) corruption (ii) elite capture and/or (iii) minority marginalization in terms of access to forest resources (iv) low accountability (v) lack of transparency (vi) low participation (vii) weak law enforcement (Mndolwa et al. 2009; Nuru et al. 2009; Raphael and Swai 2009). At higher

levels, the main issues are (i) corruption (ii) weak law enforcement (iii) accountability (Milledge and Elibariki 2005; URT 2009).

In respect to this, good governance is a normative concept used to emphasize that improvements to governance as usual are sought and to highlight that the ultimate goal of governance is to benefit society (Robledo *et al.* 2008). The growing importance of adopting good governance approaches is recognized within various international arenas and environmental sectors (EC 2001; Kaufmann and Kraay 2008; Swiderska *et al.* 2008; Wesselink and Paavola 2008; Kaufmann *et al.* 2009), included global forest policy (Dedeurwaerdere 2009; Umemiya *et al.* in press). Although a common understanding and definition of good governance does not exist yet, some attributes have identified that are designed to maximize benefits for both natural resources and livelihoods. These attributes are the core elements of the above mentioned new forms of participatory governance⁴: stakeholders' participation, equity, accountability, transparency and information flow, decentralization and efficiency and effectiveness (Mayers and Bass 1999; Borrini-Feyerabend *et al.* 2004a; Macqueen and Mayers 2006; cited in Swiderska *et al.* 2008). Good governance of forest resources and the participation and empowerment of forest-dependent people will substantially rely on the consideration of their priorities when institutional frameworks are defined.

With respect to good governance for REDD-plus, the Governance of Forest Initiative (GFI)⁵ have indicated that good governance has to do with the way decisions are made, the involvement of actors and stakeholders beyond government as well as the forest sector and taking into consideration the context (GFI 2009). GFI have developed a set of principles of good governance of forests and a comprehensive set of indicators for measuring and assessing its quality. The draft conceptual framework and practical toolkit are quite complex, including 94 indicators defined on the basis of multiple cross-links among 5 'principles' of good governance (Transparency, Participation, Accountability, Coordination and Capacity), 3 governance 'components' (Actors, Rules and Practice) and 4 'critical issues' in the forest sector (Forest tenure, Land use planning, Forest management, and Forest revenues and economic incentives). The scholars behind this initiative have warned that, failing to tackle problems of weak institutional capacity and coordination, accountability, transparency, and public participation may exacerbate current conflicts over the use of forest resources and risk creating perverse outcomes for forest dependent people, forest ecosystems, and the global climate.

In short, in the international debate it is assumed that any potential REDD-plus mechanisms are more likely to succeed if they are designed to incentivize and support various stakeholders to improve governance of forests and to reduce the risks of conflicts (Forsyth 2009; Global Forest Coalition 2009; GFI, 2009; von Scheliha 2009; RRI 2010; Secco *et al.* in press). Participatory governance is often reported as being necessary and important to ensure that REDD-plus effectively achieves co-benefits. The role of local networks of stakeholders and their governance capacity will be fundamental, based on evidence from a recent study on 80 forest commons in 10 countries across the tropics Chhatre and Agrawal (2009) concluded that "*greater rule-making autonomy at the local level are associated with high carbon storage and livelihoods benefits*". According to Saunders and Reeve (2010), many stakeholders engaged in developing the rules for REDD-plus believe that monitoring governance of the forest sector and of the REDD-plus mechanism itself is as important as the system that is ultimately designed to monitor carbon and as such should be given equal emphasis. They argued that this is because 1) the high-risk context in which many REDD-plus

⁴ Even if 'participation' and 'accountability' are amongst the most relevant basic concepts of the above mentioned new modes of *governance*, dilemmas (e.g. democracy/accountability vs. efficiency) (Jessop, 1998; Kjær, 2004) and open criticisms about the real capacity of participatory approaches to guarantee good collective decisions (Cooke and Kothari, 2001; Shannon, 2006; Fristch and Newig, 2009) and the risks of governance failures (Jessop, 1998 and 2002) are not lacking. Further research would be needed to explore these aspects.

⁵ The initiative is based on the collaboration between the World Resources Institute and two Brazilian organizations, Imazon and the Instituto Centro de Vida (ICV). More than 50 experts, mainly from international research centers and NGOs, have participated to the development of the first draft of 'The Governance of Forests Toolkit' (GFI, 2009).

activities will take place; and 2) the fact that, while much deforestation and logging is driven by a legal response to financial incentives which credit more value to, for example, palm oil plantations than natural forest and which can (in theory) be readjusted by REDD-plus payments, there is also a significant proportion in many REDD-plus candidate countries which is illegal.

2.2 The context: Tanzania REDD strategy and Angai Villages Land Forest Reserve (AVLFR)

According to the FAO (FRA 2006), Tanzania has a total of 34.5 M ha of forestland (about 38% of total land area) out of which 16 M ha comprise of reserved forest, 2 M ha are forest in national parks and the remainder 16 M ha (47% of all forested land) are unprotected forest in general land⁶ (URT 1998; Malimbwi 2002; URT 2006). The annual rate of deforestation is estimated at 412,000 hectares mostly occurring in forests in general land (FAO 2006; URT 2009). However, reports and studies on the assessment of different forest conditions have revealed a lot of human disturbances also inside the forest reserves including illegal harvesting for building materials, firewood collection, encroachment of forest areas, illegal mining, thus indicating that not only forests in general land are diminishing but also that of reserved forests is deteriorating as well (Zahabu 2008). Tanzania is well advanced in its efforts to participate in the REDD mechanism. The national REDD initiative was launched in August 2009 followed by the publication of the national REDD framework, which provides highlights on information regarding REDD implementation including key activities, lead institutions and indicative timeframe for their implementation. Presently, a number of pilot projects and in-depth studies are being carried out with support from the Royal Norwegian Embassy of Tanzania. Examples include studies: on the modalities of establishing and operationalising a national REDD Trust Fund; on the role of REDD for rural development in Babati and Kilosa Districts; a comprehensive review of the legal and institutional framework in the context of REDD; on the development of a business case for carbon trade through the REDD initiative. And pilot projects: on making REDD work for communities and forest conservation in Tanzania; on combining REDD, PFM and Forest Stewardship Council (FSC) certification in South Eastern Tanzania; on community-based REDD mechanism for sustainable forest management in semi arid areas. Their results are expected to feed into the national REDD strategy.

The present study was conducted in the AVLFR located in Liwale District, Lindi Region of South-eastern Tanzania. Liwale is one of the six districts in the Region, situated between latitude 8⁰’ and 10⁰50’ and between longitude 36⁰50’E and 38⁰48’E, where the estimated forest area is 1,736,100 hectares. In Table 2, the basic information on the two case study villages are reported. In Figures 2 and 3, an administrative map of Tanzania with the identification of Lindi Region and a map of the case-study area are reported respectively.

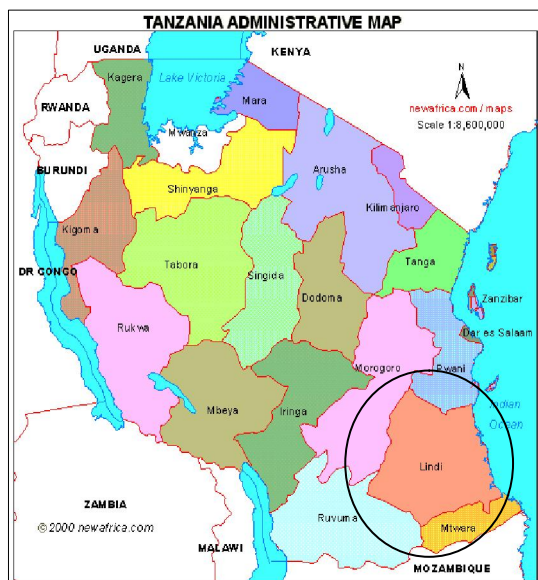
Table 2 – Basic information of case study villages

Village name	Mihumo	Ngongowele
Population	3,010 inhabitants	2,320 inhabitants
Number of households	700	386
Main economic activities	Agriculture, petty trading, beekeeping	Agriculture, beekeeping, fish farming
Number (and names) of specialized committees	7 (Security and safety, Welfare, Planning, Natural resources, Education and Water)	4 (Natural resources, Education, Health and Water)
Village land area	17,763 ha	108,674 ha
Village land area in AVLFR	11,792 ha	8,285 ha
Forest management activities	Forest patrols, fire fighting	Forest patrols
Major land use	Agriculture, settlement	Agriculture, settlement

Source: Taku Tassa 2010

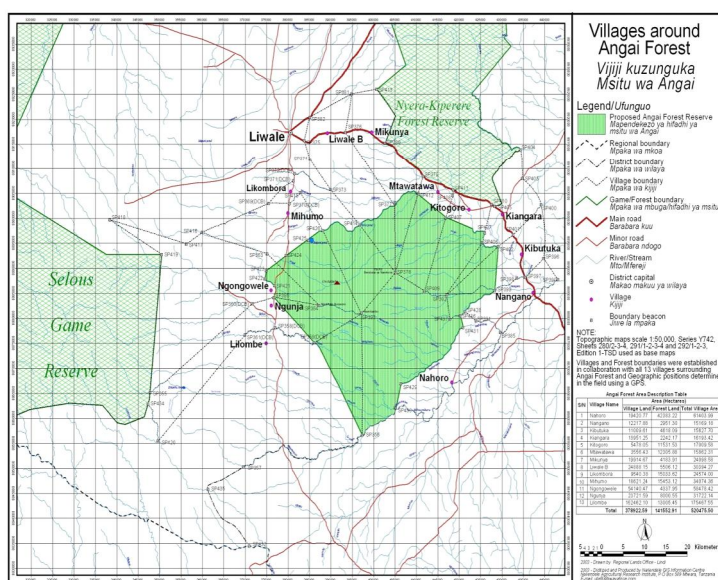
⁶General land as used here means all public land which is not reserved or village land (URT, 1999) including unoccupied or unused village land.

Figure 2 – Tanzania and Lindi Region location



Source: newafrica.com, 2000

Figure 3 – Map of case study area



Source: <https://blogs.helsinki.fi/tzredd-actionresearch/>

AVLFR is owned and managed by 13 surrounding villages with a total land area of 464,474 ha. Each of the 13 neighbouring Village Governments set aside a forest area together creating the 139,420 ha reserve making it one of the largest PFM areas in Tanzania. It is comprised of essentially the miombo woodland with high value tree species such as *pterocarpus angolensis* (locally known as *minga*), *Julbernardia globiflora* (locally known as *ntondo*) and *Dalbergia melanoxylon* generally known as African Black Wood (locally known as *mpingo*). Agriculture is the major economic activity in the area and accounts for about 93% of income for households. Other economic activities with percentage of income contribution in brackets include business (4%), employment (2.3%) and forests/tourism (1%) (CCI 2009). According to District Planning Department, estimated income per capita in 2005 and 2008 was Tshs 105,000 and 75,000 respectively. AVLFR has suffered from changes in rainy seasons which, according to local farmers, are shorter and comes late. The villages deal with pressures from shifting cultivation, forest fires, illegal logging and food shortages. Based on historical accounts by the villagers the impacts of global climate changes are very much visible in the area.

3. Methodology

AVLFR was selected as a case study area for this research paper for three reasons: (i) it is one of the largest PFM areas in Tanzania and the villages have title deeds and enjoy full ownership of the forests. Angai villages are among the 80 villages out of the 18,000 villages that make up Tanzania with title deeds (Kaale 2010); (ii) representatives from three villages, Mihumo, Ngongowele and Ngungja, have received training in participatory carbon monitoring and have established permanent carbon monitoring sample plots in their village forest management area. This is currently part of a research project⁷ with long term aims of development into a community REDD type project; (iii)

⁷ The project, entitled “*The role of Participatory Forest Management in Mitigation of and Adaptation to Climate Change: Opportunities and Constraints*” aims at analysing how the communities could benefit from improved forest management through international funding for REDD, and to contribute to the empirical and theoretical debates on local people’s participation in reduction of carbon emissions by improved forest management and avoided deforestation. The project also aimed at providing an understanding of livelihood diversification strategies related to forest management and adaptation to climate change. The project is undertaken in close co-operation with research partners from the University of Sokoine, Tanzania and researchers from Institute of Development Studies at University of Helsinki (Finland), Danish Centre for Forest, Landscape and Planning at University of

Angai is a selected site in the Tanzanian Group on Earth Observation –Forest Carbon Tracking National Demonstration Project. Satellite and aerial Lidar measurements taken in Liwale under this project will complement ground measurements carried out by the community residents. Two of the three villages (Mihumo and Ngongowe) were chosen as case study villages because the inhabitants have a relatively good knowledge on carbon forestry issues and also because Ngongowe presents an interesting case with competing land-use issues.

The research paper is based on a thorough review of relevant literature (Boote and Beile, 2005) and a case-study analysis for collecting empirical evidences on the complex contemporary phenomenon of REDD-plus mechanism design (Biggam, 2008; Yin, 2009). The empirical inquiry conducted between May to July 2010 was mainly based on qualitative research methods, included: i) semi structured interviews, ii) Participatory Rural Appraisal (PRA) methods, iii) Beneficiary assessment, as well as informal discussions, participant observation and participation in village meetings. This was complemented with secondary sources of information. Semi structured interviews to key informants (n = 16), including experts, local leaders, academics and policy makers have been conducted. The focus on these interviews was on the understanding of the PFM process, REDD-plus issues, the nature and typologies of benefits derived from the forest (current and expected), the management of the forest reserve by individual villages as well as in a group, the distribution of benefits/costs and on local community governance. In total, six PRA exercises were employed in the survey, included Venn diagram exercise (by eight participants, 4 male and 4 female); groups and focus group discussions (with villagers, members of village government and different village user groups); visioning, pathways and scenarios exercises (three scenarios^u for discussions were crafted by the facilitator); transect walks in the villages and into the forest reserve; and pair wise ranking (Chambers 1997, cited in Mikkelsen 2005; Asia Forest Network 2002; Evans et al. 2006). The participants were selected with the help of the village chairman and village executive officers. Gender was taken into consideration during the selection of participants. Participants were selected from both the old and newly created villages. A Beneficiary Assessment approach (Salmen, 2002) in the form of a focus group discussions comprising eight participants, five of which have received training on PFM and REDD, was also used to assess the direct and indirect benefits as well as expected benefits from PFM activities, carbon monitoring and possible REDD payments. Informal discussions were held with some opinion leaders in the villages (e.g. the primary school head teacher, and religious leaders) for cross checking and triangulating information gathered during interviews and focus group discussions. Finally, part of the data collection was done through participant observations and attendance of the villages general assembly meetings.

4. Results and discussion

The research results are reported hereafter by making direct reference to the three main research questions as listed in the Introduction.

4.1 Stakeholders involved in the PFM/REDD processes

Six different categories of stakeholders/actors with interest in the forest reserve, the PFM and REDD processes have been identified: (i) the local communities; (ii) the District Natural Resource Office (DNRO); (iii) the central Government; (iv) donors and international NGOs; (v) businessmen/loggers; and (iv) researchers/visitors. According to the community members opinions, in order of importance are the communities, followed by the central Government, the DNRO, donors, researchers/visitors and the least important are the businessmen/loggers (Figure 4). Their

justifications for this ranking are: the Government is the policy maker; the policies are then implemented by the DNRO in conjunction with the local communities. The implementation of the policies is often with the help of donors. Meanwhile researchers/visitors pay research permits and fees to the village when they come visiting and they learn from them as well. Businessmen/loggers are the least important because they in most cases make logging deals with the District authorities with little knowledge of the villagers. Of all these stakeholders/actors involved in the Angai PFM process, the communities are perceived to be the primary beneficiaries.

4.2 Current and expected benefits, costs and risks from PFM and REDD activities.

Angai villages, just like other forest dependent communities, depend a great deal on the forest resources for their basic livelihood needs. The forest provides both financial and non financial benefits to the villages. Information gathered from interviews indicate that at moment the forest provides essentially non financial benefits such as Non Timber Forest Products (NTFPs) (e.g. wild vegetables, honey, wild fruits especially *hangadi* in periods of hunger stress), timber for subsistence use only, bush meat, local medicines and environmental services like water resources. The financial benefit receive currently is in the form of fees paid by researcher and visitors who visit the forest. The different categories of benefits according to the community members opinion are reported and prioritized in Table 3, as emerged from a Pair wise ranking exercise. Expectations are high within the communities that in the future they will receive financial benefits from timber and most especially carbon credits with coming of REDD-plus. This in their opinion will reward their conservation efforts.

Table 3: Categorization of present and expected benefits from the reserve as expressed by the villagers

Mihumo	Ngongowele
1. Climate related benefits	1. Water
2. Financial benefits (researcher, timber, carbon credits)	2. NTFPs
3. Subsistence benefits (NTFPs)	3. Timber (for subsistence)
4. Rituals	4. Financial benefits (researcher, timber, carbon credits)
	5. Rituals

Source: Taku Tassa 2010

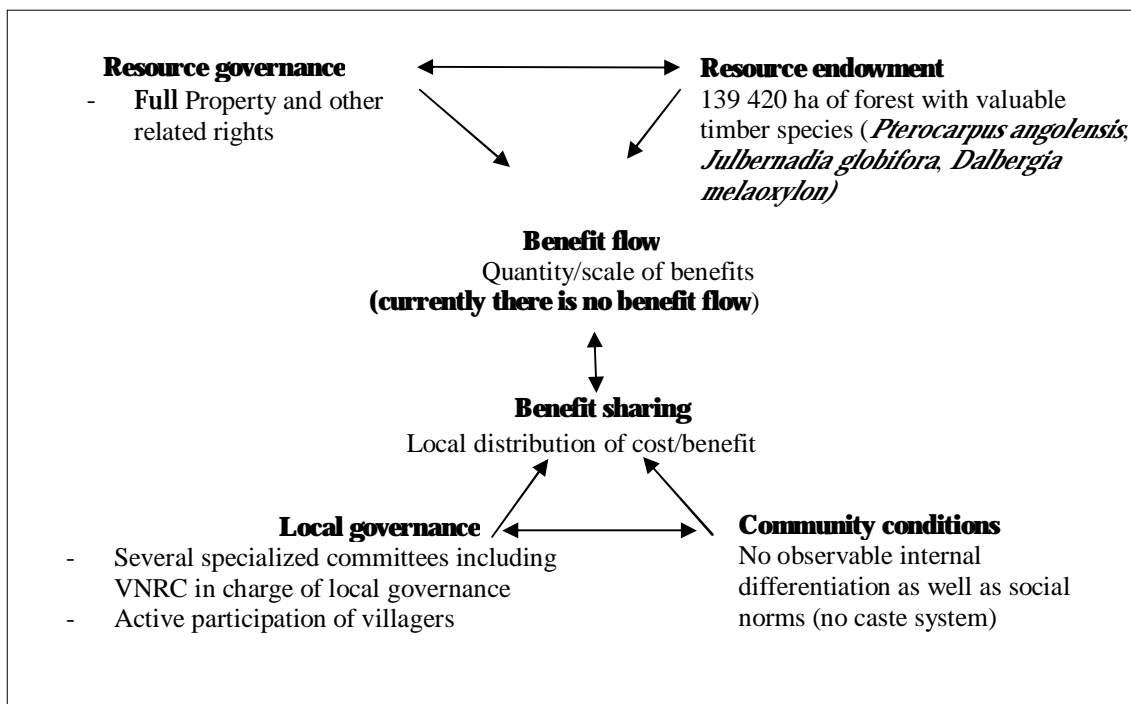
It is important to note that while there are quite consolidated (complex) economic instruments to assess for example the value of water services from forest management (by means of appraisal methods used for establishing PES mechanisms), there are no or very limited experiences in assessing the economic value of rituals. It is also worthwhile to note how financial benefits from the forest reserve are not a major priority for both the village leaders and ordinary villagers. In separate PRA carried out with village leaders and ordinary villagers, environmental services such as water provided by the forest came out as the most important priority. This priority was also affirmed during the visioning/scenario exercise. Participants in these exercises indicated their willingness to be pursue sustainable forest management practices through the ongoing PFM process in order to benefit from sustainable timber harvesting and carbon payments in the future. This is partly because of the water stress that is being observed within nearby communities such as Kibutuka. Another important benefit that Angai villages get as a result of the forest reserve is related to training. This benefit was surprisingly not mentioned during the PRA fora. This is probably because few villagers have benefited from training as beneficiaries are mostly village government members and members of the VNRC. Some members of the village government and the members of the VNRCs have received training in forest inventory as part of the carbon monitoring in view of REDD-plus project. The Beneficiary Assessment conducted with people who have received some form of training and those who have not reveal that despite lack of information sharing, there is increase awareness within the villagers of the importance of the sustainable management of the forest reserve.

In terms of costs associated to PFM activities in AVLFR, there are no real costs incurred by the communities so far. The only cost mentioned are those associated with provision of food and daily allowances to members of natural resources committee when they conduct patrols. According to one estimates, these allowances ranges between 2,000-5,000 Tsh (1.5-3.5USD) per day depending on the availability of funds in the coffers of the village government. However as observed by Zahabu (2008), PFM areas engaged in carbon production will have to grapple with other direct costs linked to measurement, verification and marketing of carbon credits.

In terms of risks, very little is known by the communities of the risks they faced when there will be fully engaged in PFM activities and eventually REDD-plus. The only risk according to one of the Village chairman interviewed would be the restriction of beekeeping activities within the forest reserve. Beekeepers are accused of causing bush fires. However as pointed in Zahabu (2008), when communities engaged in REDD, some current benefits that involve biomass removal from the forest such as harvesting of timber both for subsistence and commercial use, fuelwood collection will need to be reduced. In the case of Angai, this is not a problem because such benefits can be derived from the village land but then the problem of leakage becomes important. According to one of the experts interviewed, communities can effectively participate in REDD-plus if they are well informed of the opportunities and challenges and risks from the very beginning. However, when asked about the concerns that REDD-plus is threatening decentralization in forest governance through the national approach, one of the key informant declared the national approach is just for reporting, while it does not reverses the decentralization process and its gains.

Although there are currently no real benefits to be shared because the PFM process is not completed and the REDD-plus project is not started yet, it is worthwhile situating AVLFR in context and analysed the current situation of the resource, the policy environment and the local governance to determine how these benefits will likely be shared when it start to flow and the challenges the villages faced in designing equitable benefit sharing. The situation of Angai is therefore described by using the conceptual framework for benefit sharing in collaborative forest management presented in the Theoretical background paragraph.

Fig. 4: Benefit flow and benefit sharing framework for AVLFR



Source: adapted and modify from Mahanty *et al.* 2009

As regards *benefit flow*, Angai communities enjoy full ownership rights and in perpetuity of the resources when it comes to property rights. However, the question of carbon right which is a very recent development is unclear. This question was unfortunately avoided by experts interviewed working in the Government. Nevertheless, according to one expert, carbon rights depend on the current tenurial arrangement. Research has shown that there is a direct correlation between incentive to invest by communities and the duration of ownership rights. Shorter periods generally provide a lesser incentive for investment by communities (Agrawal and Ostrom, 2001). With such certainty there is the incentive for Angai communities to invest in management activities to enhance forest conditions. With respect to policies and legal framework for forest use, the Tanzania forestry legislations are very progressive and supportive to CBFM (Section 78 (3) and Section 65 (3)). In terms of resource endowment, the quality of the forest is very good with valuable timber tree species. Despite the repeated occurrence of forest fires, a transect walk into the forest confirmed the generally good state of the forest expressed during interviews. A recent study also concluded that AVLFR is in very good condition in terms of productivity (Mukama, *forthcoming*).

With respect to local governance conditions (governance bodies and participation) and *benefit sharing*, the findings indicate that there is active participation on the part of the villagers in village committees, committee meetings as well as in the village general assembly meeting. Data from interviews revealed that most of the members of natural resources committee were new. This is explained by the fact that the most of the previous committee members were voted out due to lack of accountability and transparency in the management of the committee. In terms of community conditions (social norms rules and norms, internal differentiation), no observable internal differentiation as well as social norms and rules among the villagers was noticed.

4.3 Governance issues and challenges

Key local institutions involved with the management of AVLFR include the village governments of the thirteen villages, the thirteen Village Natural Resources Committees (VNRC) and the inter village Union *Muongano wa Hifadhi ya Msitu wa Angai* known by the acronym MUHIMA. This oversight is stipulated in the Local Government Act of 1982. The Act puts the village assembly at the centre of the village government structure and encourages participation by considering all person aged 18 and above to be part of the village assembly. MUHIMA does have a crucial role to play as a community level institution and there is unanimity amongst the villages of this role. According to the Memorandum of Understanding (MoU) currently under discussions, MUHIMA will comprise of 65 members drawn from the thirteen villages (that is 5 members from each village) called the MUHIMA Board. From the 65 members, 17 members plus a coordinator (hired by MUHIMA) will make up the Executive Committee. The Executive Committee can form specialised sub-Committees to implement specific activities when need arises.

Attributes of good governance as identified with reference to the Angai case study includes among others participation, equity, accountability, transparency and information flow, efficiency and effectiveness. Table 4 presents good governance attributes and possible indicators as seen in the case study area. The main challenge in the governance of AVLFR is how to make MUHIMA an effective community based organisation. This is a major problem in a region where the governance of community-based organizations has been emerging as a major challenge to the effective management of resources and the equitable distribution of the benefits from wildlife (Child et al. 2007; cited in Bond et al. 2010). As pointed out by Bond et al. (2010) a common characteristic of community based organisations in East Africa is that executive activities and representative functions are blurred in an effort to keep down cost. In such an obscured management structure, community representative occupy executive functions such as secretary or treasurer.

Table 4: Observable indicators of good governance attributes in Mihumo and Ngongowele.

Good governance attributes	Observable indicators
Participation	Well-consolidated procedures (formal and informal) for deliberative decision making processes. Every villager aged 18 and above is electable without any discrimination
Equity	No special provision but issues of equity especially gender are always taken in consideration in elections and other related activities
Transparency	Reports and records of revenue collection available.
Accountability	Clear reporting system. Village government and specialized committees are accountable to the village general assembly. Village general assembly serves as supreme decision making body.
Information flow	Main cause of concern with respect to local governance. Little or no information flow noted. Poverty is blamed for lack of information dissemination.
Capacity	No special provision but the village has the capacity to formulate and implement important decisions
Efficiency	Not applicable
Effectiveness	Not applicable

Source: Taku Tassa 2010

This always creates governance problems. In the AVLFR context, the current MoU under discussions fall short of overcoming this challenge as exemplified by section 5.2.1 which stipulates that: “*The elected five MUHIMA representatives from each participating village will jointly form the MUHIMA Board. Members of the Board will elect their Chairperson, Deputy Chairperson, Secretary and Treasurer*” (Kaale 2010).

5. Conclusions and recommendations

There is no doubt today that benefits and costs sharing as well as governance issues are crucial for PFM and REDD-plus projects to succeed. As a cornerstone for success, this exploratory study has attempted to explore these issues in the context of AVLFR, in Tanzania.

Despite the presence of a multitude of stakeholders/actors involved with the management of AVLFR, the villages will be the main beneficiaries in when the PFM process is completed. This privilege is backed by provisions of the Forest Act of 2002 and other legal instruments. With respect to REDD-plus, much is still under discussions but what is certain is that the beneficiaries will be the communities and the central Government. The findings indicate the latter will become an important and powerful actor with the adoption of the national approach to REDD. However, other actors such as donors are playing an important role to help the communities stand up to the challenges of PFM and eventually REDD through organizational and capacity building activities.

With respect to benefits/costs and benefit sharing, presently no tangible benefits (most especially financial) from the reserve are flowing to the communities. This is essentially due to the fact that management plans and by-laws are not ready yet. The current benefits are in the form of NTFPs and environmental services such as water provision and biodiversity conservation. Due to the fact that the PFM process is still to be completed, there is currently little or no cost incurred by the communities in managing the reserve. What is interesting is that the resource is in a fairly good state. The findings also indicate that with the current composition of the villages and village governance, there is the possibility that benefit sharing would be equitable even though elite capture remains a major cause for concern. The current priorities of both the village government and the ordinary villages on the management of the reserve fits well into the goals for REDD-plus and there are high expectations for REDD-plus implementation within the local communities. However, shifting cultivation and wildfires are the two most important challenges for AVLFR communities if they want to fully participate and benefit from REDD-plus. The only risk currently known to the

communities for their participation in PFM and REDD is the restriction of beekeeping activities in the reserve despite fears that REDD is threatening decentralized forest management. Benefit sharing under a REDD regime would likely be 60% for communities and 40% for the Government.

Concerning governance and elements of good governance, the findings indicate that there is a good measure of governance in the way the governing structures are currently working. The current level of participation can be described as *interactive participation*. Currently all PFM and REDD initiatives are externally driven. However this falls short of the type of participation wished for that is *self mobilization*, where the villages take up the initiative independently. Transparency and information flow are equal areas where the villages are lacking behind in their drive for good governance. It is also important to highlight that there is some transaction cost associated with good governance in project such as REDD-plus. With a firm commitment by the villages to manage the resources jointly within the framework of MUHIMA, the major governance challenge is how to make the union effective in a context of low educational capacity of members of the Angai Community. With the contribution of donors this challenge might be addressed.

Summing up, even though it would be naïve to say benefit sharing under the current arrangement would be equitable, the current dispositions in terms of governance for PFM and eventually REDD-plus project look promising and could lead to fair distribution despite the challenges.

In the light of the above findings, the following final recommendations can be made. First of all, as part of the stakeholder consultations for REDD-plus implementation, Angai communities should be fully engaged with a clear knowledge of the benefit they would derive from their participation in the mechanism. Very little is known by the villages of the importance of the reserve to the national REDD framework objectives. Secondly, the current modalities of selecting community members for any sort of forest management training should be revised. Trainings should be extended to non members of the VNRC to increase information access to the broader community. As third point, any benefit sharing arrangement at the community level (that is between the villages) should take into consideration the size and state of the resource in each village. This would serve as disincentive to illegal logging reported to be carried out in the reserve of some villages. Finally, the thirteen VNRCs and village governments are encouraged to join Tanzanian Community Forestry Network (MJUMITA) and benefit from the capacity building programmes currently being undertaken nationwide for all stakeholders involved REDD. With MJUMITA membership, they would also benefit from the carbon cooperative currently under discussions which can permit them to sell their carbon credit to the Voluntary Carbon Market.

The present paper aims at providing reflections on benefits sharing and governance mechanisms in REDD projects implementation thus contributing to the debate both at global level, in Africa and in Tanzania.

References

- Agrawal, A. and Ostrom, E. 2001. Collective action, property rights, and decentralisation in resource use in India and Nepal. *Politics and Society* 29(4): 485-514.
- Angelsen, A. (ed.) 2008. Moving ahead with REDD: Issues, options and implications. CIFOR, Bogor, Indonesia.
- Asia Forest Network 2002. Participatory Rural Appraisal for Community Forest management: Tools and Techniques. Asia Forest Network, Santa Barbara, California. USA
- Baumert, K., Herzog, T and Pershing, J. 2005. Navigating the Numbers: Greenhouse Gas Data and International Climate Policy. Washington: World Resources Institute (WRI). Washington DC, USA.
- Biggam, J. 2008. Succeeding with your Master's Dissertation: A step-by-step handbook. Berkshire: Open University Press.
- Bond, I., Chambwera, M., Jones, B., Chundama, M. and Nhantumbo, I. 2010. REDD+ in dryland forests: Issues and prospects for pro-poor REDD in the miombo woodlands of southern Africa, Natural Resource Issues No. 21. IIED, London, UK.
- Boote, D. and Beile, P. 2005. Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher*, 34(6), 3 15.

- Brown, S., Burnham, M., Delaney, M., Powell, M., Vaca, R. and Moreno, A. 2000. Issues and challenges for forest based carbon offset projects: A case study of the Noel Kempff climate action project in Bolivia. *Mitigation and Adaptation Strategies for Global Change*, 5(1), 99-121.
- Buttoud, G., Solberg, B., Tikkanen, I., Pajari, B. (eds.) 2004: *The Evaluation of Forest Policies and Programmes*. EFI Proceedings No. 52, 2004. European Forest Institute, Joensuu – Finland.
- Cashore, B., 2002. Legitimacy and the privatization of environmental governance: how Non-State Market-Driven (NSDM) governance systems gain rule-making authority. *Governance* 15 (4), 503-529.
- Cashore, B., Auld, G., Newsom, D., 2004. Governing through markets. Forest certification and the emergence of non-State Authority. Yale University Press. New Haven and London.
- Chan, S., Pattberg, P., 2008. Private rule-making and the politics of accountability: analyzing global forest governance. *Global Environmental Politics* 8 (3), 103-121
- Cenam, M. C., Pavan M. N., Campos, M. T., Barros, A. C., Carvalho, F 2009. Casebook of REDD projects in Latin America. 1st Edition, Manaus, Brazil. Available online at <http://www.idesam.org.br/noticias/cop15/casebook-web.pdf> [Accessed April 2010].
- CCI 2009. Feasibility Study to Assess the Potential of the Angai Village Land Forest Reserve to become a Community REDD Project (Second Draft).
- Chhatre, A. and Agrawal, A. 2009. Trade-offs and synergies between carbon storage and livelihood benefits from forest commons. *PNAS* 106:17667-17670.
- Clapp, J., 1998. The privatization of global environmental governance: ISO 14000 and the Developing World. *Global Governance*, 4 (3), 295-316.
- Coleman, W.D., Perl, A., 1999: Internationalized policy environments and policy network analysis. *Political Studies*, 47 (4): 691-709.
- Contreras-Hermosilla, A. 2000. The Underlying causes of forest decline. CIFOR Occasional Paper No. 30. CIFOR. Bogor, Indonesia.
- Cooke, B., Kothari, U. (eds) 2001: *Participation. The new tyranny?* Led Books. London, New York.
- Dedeurwaerdere, T. 2009: *Collective Learning in the Governance of Managed Ecological Landscapes. The case of Multifunctional Forest Management*. REFGOV Working Paper Series GPS-14, Centre for Philosophy of Law, Université catholique de Louvain. Available online at: <http://refgov.cpdr.ucl.ac.be>
- EC, 2001: *European Governance, a white paper*. European Commission.
- Eliasch, J. 2008. Climate Change: Financing Global Forests. The Eliasch Review, Office of Climate Change. London, UK
- Evans, K., De Jong, W., Cronkleton, P., Sheil, D., Lynam, T., Kusumanto, T. and Colfer, C.J.P. 2006. Guide to Participatory Tools for Forest Communities. CIFOR, Bogor, Indonesia.
- FAO 1992. Community Forestry, Ten Years in Review, Food and Agriculture Organisation of the United Nation. Rome, Italy.
- FAO 2006. Global Forest Resource Assessment 2005. Food and Agriculture Organization of the United Nations. Rome, Italy.
- Forsyth, T. 2009. Multilevel, multiactor governance in REDD-plus: participation, integration and coordination. In Angelsen, A., Brockhaus, M., Kanninen, M., Sills, E., Sunderlin, W.D. and Wertz-Kanounnikoff, S. (eds) Realising REDD+: National strategy and policy options. CIFOR, Bogor, Indonesia.
- Fristch, O., Newig, J. 2009: Participatory governance and sustainability. Findings of a meta-analysis of stakeholder involvement in environmental decision-making. REFGOV Working Paper Series GPS-13, Centre for Philosophy of Law, Université catholique de Louvain (final version submitted to MIT Press).
- Geist, H. and Lambin, E. (2002). Proximate Causes and Underlying Driving Forces of Tropical Deforestation. *Bioscience* 52(2): 143-150.
- GFI. 2009. The Governance of Forests Toolkit (Version1): A draft framework of indicators for assessing governance of the forest sector. September 2009. The Governance of Forests Initiative. Imazon/ICV/WRI. Available online at <http://www.wri.org/gfi> [Accessed April 2010].
- Global Forest Coalition (2009). REDD Realities: How strategies to reduce emissions from deforestation and forest degradation could impact on biodiversity and indigenous people in developing countries. Available online at <http://www.globalforestcoalition.org/img/userpics/File/publications/REDD-Realities.pdf> - Accessed: January 2010].
- Grieg-Gran, M., Porras, I. and Wunder, S. 2005. How Can Market Mechanisms for Forest Environmental Services Help the Poor: Preliminary Lessons from Latin America. *World Development* 33(9) 1511 – 1527.

- Guarigata, M.R., Cornelius, J.P., Locatelli, B., Forner, C. and Sanchez-Azofeifa, G.A. 2007. Mitigation needs adaptation: Tropical Forestry and climate change. *Mitigation and Adaptation Strategies for Global Change* 13: 793-808.
- Hardin, G. 1968. The Tragedy of the Commons. *Science*, 162(3859), 1243–1248.
- Hardin, G. 1998. Extensions of The Tragedy of the Commons. *Science* 280(5364), 682-683.
- Hobley, M. 1999. Participatory forestry: The Process of Change in India and Nepal. Rural Development Forestry Study Guide 3, ODI, Oxford, UK
- Houghton, R. A. 2005. Tropical Deforestation as a source of greenhouse gas emission: In P. Moutinho and S. Schwartzman (eds) Tropical Deforestation and climate change, Belem, Brazil: Amazon Institute for Environmental Research (IPAM), and Washington: Environmental Defense.
- IPCC 1996. Climate change 1995. Impact, adaptation and mitigation of climate change: scientific-technical analyses. Cambridge University Press, Cambridge.
- Johns, T. and Johnson, E. 2009. An Overview of Readiness for REDD: A compilation of readiness activities prepared on behalf of the Forum on Readiness for REDD. Version 1.2. Falmouth, MA: Woods Hole Research Center.
- Jessop, B. 1998: The Rise of Governance and the Risk of Failure: The Case of Economic Development'. *International Social Science Journal* 50(155): 29-46.
- Jessop, B. 2002: *Governance and Metagovernance: On Reflexivity, Requisite Variety, and Requisite Irony*. Department of Sociology, Lancaster University, Lancaster, UK. Available on-line [Accessed July 2010] at: <http://www.comp.lancs.ac.uk/sociology/papers/Jessop-Governance-and-Metagovernance.pdf>
- JUMA 2008. The Juma Sustainable Development Reserve Project: Reducing Greenhouse Gas Emissions from Deforestation in the State of Amazonas, Brazil. Project Design Document (PDD). For validation at Climate, Community and Biodiversity Alliance (CCBA) Version 5.0.
- Kaale, B. 2010. Capacity Building of MUHIMA Angai Village Land Forest Reserve (AVLFR) in Liwale District – Lindi Region Tanzania.
- Kaale, B., Anna-Leena, S. 2005. Summary of Angai Village Land Forest Reserve Establishment Process – 1993 to March 2005 (V1and4).
- Kaimowitz, D. and Angelsen, A. 1998. Economic models of tropical deforestation - A review. CIFOR, Bogor, Indonesia.
- Kanninen, M., Murdiyarso, D., Seymour, F., Angelsen, A., Wunder, S. and German, L. 2007. Do Trees Grow on Money: The implications of deforestation research on policies to promote REDD. CIFOR, Bogor, Indonesia.
- Karky, B.S. 2009. REDD and Community Forest Management. International Center for Integrated Mountain Development (ICIMOD). Kathmandu, Nepal.
- Kauffman, D., Kraay, A. 2008: *Governance Indicators: Where Are We, Where Should We Be Going?*, The World Bank Research Observer 23(1):1-30.
- Kaufmann, D., Kraay, A., Mastruzzi, M., 2009: *Governance matters VIII: aggregate and individual governance indicators, 1996-2008*. World Bank Policy Research Working Paper No. 4978. Available from: <http://ssrn.com/abstract=1424591> [Accessed July 2009]
- Kjær, A.M. 2004. Governance: Key Concepts. Polity Press, Cambridge, UK.
- Kellert, S.R., Mehta, J.N., Ebbin, S.A. and Lichtenfeed, L.L. 2000. Community Natural Resource Management: Promise, Rhetoric and Reality. *Society and Natural Resources*. 13:705-715
- Klooster, D. and Masera, O. 2000. Community Forest management in Mexico: carbon mitigation and biodiversity conservation through rural development. *Global Environmental Change* 10 259-272.
- Mahanty, S., Guernier, J. and Yasmi, Y. 2009. A fair share? Sharing the benefits and costs of collaborative forest management. *International Forestry Review* 11 (2) 268-280.
- Malimbwi, R.E. 2002. Forest extent and ownership in Tanzania. Consultancy report, Tanzania Conservation and Management Project (TCMP), Forestry and Beekeeping Division, Dar es Salaam, Tanzania.
- Maraseni, T. N., Cockfield, G. and Apan, A. 2005. Community based forest management systems in developing countries and eligibility for clean development mechanism. *Journal of Forest and Livelihood* 4(2) 31-42.
- Mikkelsen, B. 200). Methods for development work and research: a new guide for practitioners. Second Edition, Sage. New Delhi, India
- Milledge, S. and Elibariki, R. 2005. The status of logging in Southern Tanzania. TRAFFIC East and Southern Africa.

- Mndolwa, M., Japhet, E. and Mauya, E. 2009. Effectiveness of governance on community based forest management approach: a case study of Iringa district, Tanzania. Pp. 147-158. In: Nshubemuki, L., Chamshama, S.A.O., Mbwambo, L. and Balama, C. (Eds). Proceedings of the first participatory forest management research workshop. Morogoro, Tanzania.
- Mukama, K. M. *forthcoming*. Forest Stratification and Carbon Stock in Angai Vilages Land Forest Reserve. MSc. Thesis, Sokoine University of Agriculture Morogoro, Tanzania.
- Murdiyarso, D. 2005. Sustaining local livelihoods through carbon sequestration activities: a search for practical and strategic approach. In Murdiyarso, D. and Herawati, H. (eds). Carbon Forestry: Who will benefit. CIFOR, Bogor, Indonesia.
- Murdiyarso, D. and Skutsch, M. 2006. Community Forest Management as a carbon mitigation option: Case studies. CIFOR, Bogor, Indonesia.
- Murray, J.P. 2009. Social and Economic Implications of a REDD Project: A case study of a Community Forest in Madre de Dios, Peru. MSc. SUTROFOR Thesis, University of Padova, Italy.
- Nuru, H., Rubanza, C.D.K. and Nezia, C.B. 2009. Governance of key players at district and village levels on health improvement of Urumwa forest reserve, Tabora: ten years of joint forest management. Pp.111-122. In: Nshubemuki, L., Chamshama, S.A.O., Mbwambo, L. and Balama, C. (Eds). Proceedings of the first participatory forest management research workshop. Morogoro, Tanzania.
- Peskett, L. and Harkin, Z. 2007. Risk and responsibility in Reduced Emissions from Deforestation and Degradation. ODI Forestry Briefing Paper 15.
- Phelps, J., Webb, E. L. and Agrawal, A. 2010. "Does REDD+ threaten to recentralize forest governance?." *Science* 328(5976): 312-313.
- Pulzl, H., Rametsteiner, E. 2002: Grounding international modes of governance into National Forest Programmes. *Forest Policy and Economics* 4: 249-268.
- Rafli, T.P., Usher, G. and Niles. 2007. Reducing carbon emissions from deforestation in the Ulu Masen Ecosystem. Aceh, Indonesia. Aceh Gov.
- Raphael, T. and Swai, G. 2009. The impact of participatory forest management and local peoples perception on its implementation at the village level in Mufindi district, Southern Tanzania. Pp. 133-146. In: Nshubemuki, L., Chamshama, S.A.O., Mbwambo, L. and Balama, C. (Eds). Proceedings of the first participatory forest management research workshop. Morogoro, Tanzania.
- Robledo, C., Blaser, J., Byrne, S. and Schmidt, K. 2008. Climate Change and Governance in the Forest Sector: An overview of the issues on forests and climate change with specific consideration of sector governance, tenure, and access for local stakeholders. Washington DC, USA: Rights and Resources Initiative.
- RRI 2010. The End of the Hinterland: Forests, Conflict and Climate Change. Rights and Resources, 2009-2010. Washington DC, USA Available at http://rightsandresources.org/documents/files/doc_1400.pdf [Accessed February 2010.]
- Salmen, L.F. 2002. Beneficiary Assessment: An Approach Described. Environment Department Papers, Social Assessment series, World Bank, Washington DC, USA
- Saunders, J. and Reeve, R. 2010. Monitoring Governance for Implementation of REDD+. Chatman House. London, UK
- Scherr, S., White, A., Khare, A., Inbar, N. and Molnar, A. 2004. For Services Rendered: the current status and future potentials for markets for ecosystem services provided by tropical forest. ITTO technical series No 21. International Tropical Timber Organisation.
- Secco, L., Pettenella, D. and Gatto, P. in press. Forestry Governance and Collaborative Learning Processes in Italy: Likelihood or Utopia?. *Forest Policy and Economics – Special issue: Learning and governance*.
- Shannon, M., 2006. Participation as social inquiry and social learning. Schweizerische Zeitschrift für Forstwesen 157 (10), 430–437.
- Shukla, J., Nobre, C. and Sellers, P. 1990. Amazon deforestation and climate change. *Science* 247:1322–1325.
- Skutsch, M. 2003. Community Based Forest Management as a Climate strategy. University of Twente, The Netherlands.
- Skutsch, M. 2005. Reducing Carbon Transaction Costs in Community Based Forestry Management. *Climate Policy*, 3(4), 433-443.

Smith, J. and Scherr, S. 2002 Forest Carbon and Local Livelihoods: Assessment of Opportunities and Policy Recommendations. CIFOR Occasional paper No. 37. CIFOR, Bogor, Indonesia.

Swiderska, K., Roe, D., Siegele, L., Grieg-Gran, M., 2008. The governance of nature and the nature of governance: policy that works for biodiversity and livelihoods. IIED, London. Available online at: <http://www.iied.org/pubs/pdfs/14564IIED.pdf>. [Accessed April 2009].

Taku Tassa, D. 2010. Benefit Sharing and Governance Issues in Participatory Forest Management related to REDD: A case study of the Angai Villages Land Forest Reserve, Liwale District, Tanzania. SUTROFOR MSc. Thesis, University of Padova, Italy.

Umemiya, C., Rametsteiner, E., Kraxner, F. (in press): Quantifying the impacts of the quality of governance on deforestation. *Environmental Science and Policy*, Elsevier. Available at <http://www.sciencedirect.com>

UNFCCC 2007. Reducing emissions from developing countries: approaches to stimulate action. UNFCCC Decision -/CP.13.

UNFCCC 2009. Decision -/CP.15, Copenhagen Accord.

URT 1998. National Forest Policy. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania

URT 2002. Forest Act. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania

URT 2006. *Participatory Forest Management in Tanzania- Facts and figures*. Extension and Public Unity, Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania

URT 2009. Final Draft National Forest Policy. Forest and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania

Von Scheliha, S., Hecht, B. and Christophersen, T. 2009. Biodiversity and Livelihoods: REDD benefits. GTZ/CBD. Eschborn, Germany.

Wesselink, A. and Paavola J. 2008. Multi-level Governance of Natural Resources: Tools and Processes for Biodiversity and Water Governance in Europe. UFZ-Discussion Paper. Leipzig Germany. Available at http://www.ufz.de/data/5_2008_Wesselink,%20Paavola9513.pdf

Watson, R.T., Noble, I.R., Bolin, B., Ravindranath, N.H., Verardo, D.J. and Dokken, D.J. 2000. IPCC Special Report on Land Use, Land-Use Change and Forestry. Cambridge: Cambridge University Press. Available at www.grida.no/climate/ipcc/land_use/index.htm

White, A. and Martin, A. 2002. Who owns the world's forest. Forest Trends and Center for International Environmental Law, Washington, DC, USA.

World Bank 2004. Sustaining forests: a development strategy. The World Bank, Washington, DC, USA.

Wunder, S. 2009. Can payment for environment services reduce deforestation and deforestation? In Angelsen, A., Brockhaus, M., Kanninen, M., Sills, E., Sunderlin, W.D. and Wertz-Kanounnikoff, S. (eds) Realising REDD+: National strategy and policy options. CIFOR, Bogor, Indonesia.

Yin, K.R. 2009. Case study research. Design and Methods. Fourth Edition. Applied Social Research Methods Series. Volume 5. Sage USA.

Zahabu, E. 2006a. Handei Village Forest Reserve, Tanzania. In Murdiyarso, D. and Skutsch, M. (eds). Community Forest Management as a Carbon mitigation option: Case studies. CIFOR, Bogor, Indonesia.

Zahabu, E. 2006b. Kitulangalo forest area, Tanzania. In Murdiyarso, D. and Skutsch, M. (eds). Community Forest Management as a Carbon mitigation option: Case studies. CIFOR, Bogor, Indonesia.

Zahabu, E. and Jambiya, G. 2007. Community Based Forest Management and Carbon Payments: Real possibilities for poverty reduction? *The Arc Journal*, 21:25-27.

Zahabu, E. 2008. Sinks and sources: a strategy to involve forest communities in Tanzania in global climate policy. University of Twente, the Netherlands: PhD Thesis.