

Power, certification, and the social sustainability of Brazilian bioethanol: views from Brazil

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Abstract

International discussions on the sustainability of Brazilian ethanol biofuel and efforts to develop biofuel sustainability certification have until recently concentrated on the environmental effects of the expected expansion of sugarcane cultivation, notably deforestation and the indirect land use impacts. The social impacts of large-scale sugarcane cultivation have appeared in the debate only over the past couple of years. However, most of the debate has focused on impacts in the main producing areas of São Paulo and the areas of sugarcane expansion in the Centre-West of the country. This paper brings into focus the socio-economic situation in the Northeast of Brazil and the potential impacts of the current ‘biofuel boom’ in this poor region, whose economy has been dominated by sugarcane cultivation since the 17th century. In particular, the paper starts from the assumption that the highly unequal power relations in the Northeast crucially shape the impact of biofuel expansion in this region, and that the exercise of power should be given greater attention especially when designing biofuel certification schemes.

The paper examines Brazilian stakeholders’ views on fuel ethanol policies in general, on the role of the Northeast in those policies, and on the potential of certification to improve the sustainability of the Brazilian ethanol sector. An overview of the socio-economic situation in the Northeastern sugarcane-growing region is followed by an analysis of the views by the Brazilian government, sugar and ethanol industry, NGOs and experts concerning bioethanol in general, and certification in the Northeast in particular. Conclusions concern the implications of the unequal Brazilian conditions and the diverging views of stakeholders for the potential of sustainability certification to remedy especially the social problems associated with the expansion of ethanol production in Brazil.

1. Introduction: certification as a means of ensuring social sustainability of biofuels?

While the environmental and economic dimensions of sustainability have received plenty of attention in biofuel policies and assessment, only recently has the social ‘pillar’ gained increasing weight, demonstrated e.g. by debates over the dilemmas such as food vs. fuel and large vs. small-scale biofuel production. Perhaps to an even greater degree than the environmental sustainability, decisions and debates concerning the social aspects of sustainability are intricately linked with power structures in society. The importance of power relations manifests itself, for instance, in the unequal access of different actors to economic resources and political decision-making, including unequal structures of landownership. Inequality concerns also the discursive level, different actors having highly varying degrees of influence on the ways in which problems are framed, whose knowledge on the problem is considered authoritative, and which societal visions are perceived as desirable.

Such unequal power relations crucially influence policies in the emerging context of hybrid governance in the area of biofuels (see e.g. Swyngedouw 2005). The definition of standards, meta-standards, labelling schemes, and codes of conduct – often in collaboration between supra-national organisations, governments, industry and civil society organisations – is a central part of such multilevel governance. The multiplication of sustainability certification schemes at different levels has prompted attempts at harmonisation, for instance through the creation of meta-standards or internationally harmonised certification systems, notably within the European Union. In parallel, there is an emerging academic literature on the subject, including suggestions on how an appropriate certification should look like (for suggestions concerning Brazil, see e.g. Delzeit & Holm-Müller 2009).

This paper looks more specifically at the social and political conditions for establishing a sustainability certification system for Brazilian ethanol. The case of Brazil is relevant not only because of the country’s position, since the launching of the national alcohol programme in 1975, as the world leader in the production of sugarcane ethanol, but also because of Brazil’s ambitions of turning ethanol into an

internationally tradable commodity, a task in which the establishment of a credible certification is expected to play a central role. Furthermore, and more importantly for the purposes of this article, certification could at least in principle be a major means of introducing social aspects into a biofuel debate hitherto largely dominated by environmental concerns (Abramovay 2008).

However, Brazilian ethanol experience also highlights some of the complexities and limitations of certification as an instrument towards sustainability in general, and social sustainability in particular. The Brazilian history of sugarcane ethanol production is marked by two contradicting yet powerful characteristics: on the one hand, the sector represents the spearhead of Brazilian modernisation and technological innovation, while on the other hand it carries the historical burden of large-scale plantation agriculture, with its roots in the use of slave labour. Until recently this double nature of Brazilian ethanol sector has been a typical manifestation of centre-periphery relationships (Lehtonen 2009). In the context of the emergence of global biofuel markets and politics, the historically unequal power relations and centre-periphery relations become embedded in, and are transformed by, a far more complex set-up involving the entry of new players in the field, and the creation of new network structures, involving increasing interplay between governments, industry, experts, and NGOs across national boundaries. From the perspective of social sustainability, a fundamental question in such a situation is whether the expansion of Brazilian ethanol can indeed be done in a manner compatible with social sustainability, and whether certification can play a positive role in such a transformation.

More specifically, a key question for this paper is whether certification can foster the social sustainability of bioethanol in Brazil by transforming the entrenched centre-periphery relationships in the sugar and alcohol sector. In this paper, a special focus will be on the Brazilian Northeast, an area that used to be the main producer of sugarcane in Brazil until the early 1950s, but today only accounts for less than 15% of national production. Despite the small participation in national ethanol supply, the evolution of the biofuel sector has crucial impact on the socio-economic conditions in the coastal sugarcane zone especially in the states economically most dependent on sugarcane. And yet, debates on the sustainability of Brazilian ethanol have almost

exclusively focused on the impacts in the main producing regions in the Southeast and the areas of the expected greatest expansion of ethanol production in the Centre-West.

Discursive power and sustainability discourse: whose sustainability?

This paper will focus in particular on the discursive types of power, and their impacts on biofuel sustainability. As sustainability has become one of the overarching discursive frames within which debates on biofuels are being conducted, the key question concerns the discursive struggles over the definition of sustainability. The processes of developing certification schemes are major arenas for such struggles. In Brazil, the leading São Paulo producers have sought to portray ethanol as a modern, clean, and environmentally benign alternative to petrol ever since the early 1990s (see e.g. CTC 1989), while the Northeast producers recently called for a ‘social certificate’ for their own ethanol production, arguing that it promotes more socially harmonious development and regional equity (Bacoccina 2007). The Brazilian government has likewise consistently underlined ethanol’s social and environmental virtues, backed up by Brazilian and international experts. Many Brazilian and international NGOs, in turn, condemn ethanol arguing it is a source of social injustice and environmental destruction. Scientific knowledge has an ambiguous role in such highly politicised situations, on the one hand helping to critically examine these contradicting claims, while on the other hand serving, intentionally or inadvertently, the claims made by different protagonists in the biofuel debate.

The aim of this paper is to provide a glance to the internal Brazilian debates on biofuels, in particular to the extent that they have relevance to the current sustainability certification plans. A particular attempt will be made to different stakeholders’ views on the situation in the Northeast, and the potential of sustainability certification. The debates taking place in Brazil are internationally relatively little known, and the dominant perception tends to be one of Brazilians vigorously defending their biofuel against what they perceive as unfounded claims by Northern governments and NGOs motivated by protectionist interests rather than true sustainability concerns. This paper seeks to provide a first, necessarily superficial, glance at the multiplicity of views and the complexities of the Brazilian internal biofuel debates.

The article is based on documentary analysis, consisting of data gathered from different stakeholders' websites, scientific articles and media debate. The data search was largely web-based, involving the use of 'snowball' technique, whereby documents and actors mentioned in a document were further searched and added to the text corpus. The corpus remains, at this stage, highly incomplete and preliminary, and needs to be expanded to allow more systematic analysis, possibly applying the method of 'socio-informatics', relying on pragmatic sociology and centred around the software 'Prospéro' (see e.g. Chateauraynaud 2003).

The paper is structured as follows. The next section describes the history and the structure of the Brazilian sugar and alcohol sector, followed by a brief summary of the main environmental and social virtues and problems of sugarcane ethanol. A brief description is then given of the socio-economic situation in the coastal Northeast 'sugarcane zone'. Section X briefly describes the main certification schemes currently in use or under preparation. Section Y presents the analysis of key Brazilian stakeholders' views on biofuels in general and sustainability certification in particular. Section Z concludes.

2. Brazilian sugarcane ethanol and power: history & structures

Sugarcane cultivation in Brazil started in the country's Northeast coastal zone in the mid 16th century. Until the abolishment of slavery in 1888, cultivation was based on slave labour, which has left its marks in the highly unequal worker-employer relationships, antiquated production methods, and the overwhelming dominance of sugarcane in the economy and agricultural employment of large areas of the coastal zone in the Northeast. However, the impacts on the societal discourse and the identities in the Northeast have been at least equally significant. The complexity of the highly polarised social relations and their influence on public imagery is highlighted by Rogers (2005, 2), who argues that even Gilberto Freyre, a renowned sociologists and writer of the first critical 'cultural history' of the Northeast slave economy, in fact, helped to perpetuate the very elite discourse which naturalised the domination that Freyre criticised.

Part of the Northeast self-identity is the history of oppression by the dominant landowning classes on the one hand, and the continuous decline of the region accompanied by the modernisation in the Southeast (move of the capital from Salvador to Rio de Janeiro in the 18th century, and the rise of São Paulo as the leading industrial area in the early 20th century). This decline was manifest also in the sugar sector, as the centre of the sugar sector gradually began to shift to São Paulo, as part of the modernisation of the industry in the early 20th century. In addition to the natural conditions more favourable to sugarcane cultivation, São Paulo benefited from the more entrepreneurial attitude of its industrial elite, contrasted by the traditionalism of the landowning aristocracy in the Northeast. The Northeast state of Pernambuco was the country's largest producer of sugar until the early 1950s, but by the mid-1970s, São Paulo had taken the place as the incontestable leader in the sector [9, 516]. Today, São Paulo produces about 60% of the Brazilian sugarcane, while the share of the Northeast has dropped below 14% (DIEESE 2007).

The declining share of the technologically stagnant Northeast in the country's ethanol supply has also allowed a continued increase of the average productivity in the Brazilian ethanol sector, helping to make the sector economically viable without direct state subsidies. In practice, the sector still enjoys numerous benefits, in the form of favourable tax treatment to ethanol, blending mandates, tax reductions and exemptions to flex-fuel vehicles, and, most notably, support to investment and R&D. Indeed, a major part of the expansion in the sugar and alcohol industry is funded by public resources through the Brazilian economic and social development bank (BNDES), Banco do Brasil and other government agencies (FIAN 2009, 23). The introduction of the 'flex-fuel' vehicles in the national market in 2003, capable of running on either petrol, ethanol or any combination of the two, triggered the current ethanol boom, with sugarcane cultivation expanding most rapidly outside the traditional growing regions of São Paulo and the Northeast, in the states of Goiás, Mato Grosso do Sul and Minas Gerais. In recent years, the cultivated area has increased in these states by between 20% and 50% (Repórter Brasil 2010, 7). The Lula government has taken a number of steps to facilitate the expansion of ethanol production, resulting in the installation of more than one hundred new mills since 2006, with an estimated production capacity of one third of the total production in the country. During the current presidential election campaign, Lula has been described

as the president with the most favourable policy ever towards the sugar and ethanol sector in Brazil, and Lula has gone as far as to calling mill owners as ‘heroes’.¹

The transformation of São Paulo into not only the industrial core, but also to an agricultural powerhouse also laid the early bases for Brazil’s current agro-industrial development model, of which the sugarcane ethanol industry is an integral part (e.g. Hall et al. 2009; de Miranda et al. 2007). Hence, the Lula government’s ‘ethanol diplomacy’, i.e. the efforts to create international markets for Brazilian exports of both ethanol and ethanol-related know-how and technology, must be seen against the central place of ethanol in this agro-industrial development model. In order for ethanol to become a ‘commodity’, the number of producing countries will need to be expanded, in order to create a sufficient diversity of producing countries, and thereby assure the potential buyers about the security and stability of supply (e.g. Repórter Brasil 2010, 9). Certification, in turn, is an essential element in attempts to ensure that Brazilian ethanol enjoys sufficient legitimacy and credibility in the eyes of the buyers.

Until the recent internationalisation of the biofuel markets and politics, the social, economic and institutional conditions in Brazil’s sugar and ethanol sector could adequately be described through a centre-periphery model (Galtung 1972; Lehtonen 2009). The centre-periphery relationships were manifest in the highly unequal and one-directional exchange relationships at two levels: on the one hand, between the prosperous Southeast and the poor, stagnant Northeast, and on the other hand, within the sugar and alcohol sector itself, i.e. between the poor farm and industry workers and the landowning industrial elite. The sugar and alcohol industrialists, ‘usineiros’, constituted the economic, political, cultural and ideological centre of their respective regions, with the farm and distillery workers at the periphery of their respective regions. In both regions, the middle ground was occupied by a class of independent sugarcane growers supplying cane to the factories, a class which has been in a continuous decline since the 1960s.

The increasing globalisation of biofuel politics, the subsequent entry of new players in the field, and the increasing networking between different players have brought the

¹ Etanol glorifica Lula, mas hesita na sucessão, Valor, 09/06/2010.

Brazilian centre-periphery relations within the context of international networks. On the one hand, international capital has entered in the Brazilian biofuel industry, with foreign capital today controlling about 25% of the sugarcane processed for Brazilian sugar and ethanol production. Only of the five largest sugar and alcohol producers in the country, the Santa Terezinha company, is still fully in national ownership.² Yet, despite the concentration, the Brazilian sugar ethanol industry remains a highly fragmented market with the five largest companies controlling only about 20% of the market.³

Networking and internationalisation are central features also in the processes of certification, operation of experts, and NGO activities. Importantly, the internationalisation and the development of global biofuel markets have also meant the importation of a sustainability discourse to Brazil, and the adoption of such a discourse by major actors. The biofuel boom has brought numerous local grassroots level battles, for instance those fought by local trade unions in the Northeast of Brazil, to connection to the activities of various worldwide anti-capitalist movements. In this context, international pressure through sustainability certification could be one of the few possibilities of introducing social concerns into the Brazilian biofuel sector (e.g. Abramovay 2008), thereby possibly helping to break down the existing centre-periphery relationships. However, certification is by no means a panacea, and there are good reasons to remain cautious about its potential in effecting such positive change. For instance, Hall et al. (2009, S81) remain pessimistic in the face of the expansion and growing internationalisation of biofuel, suggesting “that increased international trade will likely exacerbate this paradox of economic efficiencies at the expense of greater social inclusion, as greater demand and strong motivation from suppliers encourage industry concentration.”

² *[‘Nunca um governo fez tanto por nosso setor’, diz usineiro.](#)* *Unisinos* 05/04/2010; *An Internationalized Business. Brasil Energy* 04/06/2010.

³ Luiz Ildelfonso Simões Lopes, Brascan. Presentation at the Ethanol Summit 2009. <http://www.ethanolsummit.com.br/upload/palestrante/20090615041736671-701210055.pdf>. Whether the accompanying consolidation trend in the industry, i.e. mergers and acquisitions, will continue, is uncertain, and industry experts hold diverging views on the issue. While some (e.g. Simões Lopes) predict further consolidation, others predict that the trend will slow down once the economic prospects improve. Moreover, large companies may find greenfield investments more profitable than the absorption of small and medium-sized mills that often have relatively outdated equipment (An Internationalized Business. Brasil Energy 04/06/2010).

3. Environmental and social virtues and vices of Brazilian ethanol

A broad consensus prevails today concerning the position of Brazilian sugarcane as the environmentally most sustainable – or least unsustainable – among the currently available biofuels. Debates and controversies still continue over the exact amount of greenhouse gas emission reductions, impacts of the expansion of sugarcane cultivation on cerrado shrublands, the indirect land use impacts, as well as the wider environmental impacts of Brazilian sugarcane ethanol (e.g. on biodiversity, water use and water pollution). Overall, impacts of sugarcane cultivation are deemed comparable to or slightly less harmful than those from other agricultural crops, and ethanol fares well with regard to its environmental impacts, as compared to other ‘first generation’ biofuels. The pollution problems are deemed manageable, for instance by using the effluents from sugar and alcohol mills for ferti-irrigation in the fields, and by mechanising sugarcane harvesting in order to avoid the need to burn the sugarcane fields prior to harvesting.

By contrast, the social impacts of ethanol are much more ambiguous. Key issues are associated with the model of large-scale monoculture cultivation inherent to sugarcane production, highly unequal distribution of landownership, as well as poor working conditions and frequent violations of worker legislation, including serious health risks from inappropriate use of agrochemicals.

The internationalisation of the sector has been accompanied by an increasing concentration of landownership and economic capital. The increasing share of São Paulo in the total sugar and ethanol production has reduced employment opportunities, because of the significantly higher rate of mechanised harvesting in São Paulo.⁴ Mill owners are frequently accused of violation of labour legislation and the use of slave labour (DIEESE 2007; Repórter Brasil 2010). Reports commissioned by the US State Department in 2008 and 2009 accused the Brazilian government for having failed to report on a large number of cases in which sugarcane farmers have been accused of using slave labour in their fields,⁵ providing figures in line with those

⁴ The sugar and alcohol sector provided jobs for a total of 770 000 workers in 1992, but only little over 510 000 in 2002 (DIEESE 2007, 20).

⁵ EUA acusam Brasil de explorar trabalho escravo. *O Estado de S.Paulo*, 05/06/2008.

given by Brazilian NGOs.⁶ The use of child labour is common, yet less frequent in sugarcane and ethanol production than in other agricultural activities (Smeets et al. 2008, 798).⁷ On both occasions, the Brazilian Foreign Office and sugarcane industry rejected these claims, stating that an increasing number of slave workers have been rescued from their poor working conditions.⁸

Among the most acute health risks to workers in the sugarcane fields are inappropriate use of pesticides and the increasingly ambitious cutting targets (e.g. DIEESE 2007, 24; Lehtonen 2009b). The highly repetitive and physically strenuous work frequently leads to injuries and even deaths from exhaustion.

Hence, the impact of bioethanol production on employment is highly ambiguous. On the one hand, the sector is a major source of employment, thanks to its highly labour-intensive character especially in the Northeast, and the increasing mechanisation of the cutting work reduces the positive employment effects. On the other hand, mechanisation reduces the need for physically demanding work, and hence serves a potentially positive function.

Finally, and crucially, the political influence of the sugar and ethanol elite has been a decisive factor in maintaining the highly unequal social relations in the sector. While the sector seemed to lose some of its direct access to political power with the drastic reduction of state economic support to the sector since the late 1980s, the recent biofuel boom has placed the sugar and ethanol production again at the heart of the Brazilian development model. A mill owner recently praised President Lula for being the best-ever president for the sugar and alcohol sector, thanks notably to the numerous support policies Lula had introduced to help the sector survive the

⁶ According to the “Campanha Nacional de Combate ao Trabalho Escravo da CPT”, in 2007, 51% of the 5.974 workers rescued from slavery in Brazil worked in sugarcane plantations. In 2008, the share of sugarcane workers was 48% of the 5.266 slavery cases, and in 2009, 52% out of the total of 1.830 rescued. (Certificação social favorece produtores de etanol e não muda práticas trabalhistas. Mercado Etico, 29/06/2009)

⁷ Indeed, (Certificação social favorece produtores de etanol e não muda práticas trabalhistas Mercado Etico, 29/06/2009).

⁸ EUA acusam Brasil de explorar trabalho escravo, *O Estado de S.Paulo*, 05/06/2008. The Sugarcane Industry Association UNICA argued that none of the cases identified by the State Department led to condemnation and denied any violation of labour legislation (Etanol aparece em relatório de trabalho escravo, *Folha de S.Paulo*, 17/06/2009).

economic and financial crisis.⁹ In slightly simplified terms, one could argue that the potential social and environmental benefits of the biofuel boom depend on the degree to which the policy measures and market dynamics result in the diminution of the sugar elite's political and economic power in the region.

Efforts to reduce the harmful social and environmental impacts of ethanol production

Numerous efforts have been made to reduce the harmful social and environmental impacts of biofuel, both nationally and especially in the state of São Paulo. These include

- the *Green Ethanol Programme*, one of the São Paulo Environment Secretariat's strategic projects whose aim is to reward good practices in the sugar and alcohol sector;¹⁰
- *UNICA Sustainability Report*, based on Global Reporting Initiative (GRI) guidelines;¹¹
- '**RenovAção**' project, according to the sugar and ethanol industry, the world's most extensive programme of retraining of workers delocalised as a mechanisation of sugarcane harvesting;¹²
- **the National Commitment to Improve Labour Conditions in the Sugarcane Activity** ("*Compromisso Nacional para Aperfeiçoar as Condições de Trabalho na Cana-de-Açúcar*"), a state-led three-partite agreement signed by federal and state authorities (including five ministries) as well as by labour market organisations at national and São Paulo levels;¹³

⁹ The mill owner further noted that while the previous president Fernando Henrique Cardoso laid the bases for support to the sugarcane sector, Lula and Dilma Rousseff (the presidential candidate of PT) "constructed the channels with us" (construíram os canais conosco) (['Nunca um governo fez tanto por nosso setor', diz usineiro](#). Unisinos 05/04/2010).

¹⁰ To obtain an 'Agro-Environmental Certificate of Conformity' the producers must adhere to mainly environmental criteria, which nevertheless tend to include only vague reference to 'good practice' (Schaffel & La Rovere 2010). According to the State Environment Secretary, 145 out of 177 plants in São Paulo have adhered to the Protocol [26].

¹¹ This report claims to be the Brazilian sugar and alcohol sector's sustainability report, yet it only covers producers from Minas Gerais (in the Southeast region of the country), Mato Grosso do Sul and Goiás (Centre-West) (Schaffel & La Rovere 2010).

¹² Certificação do etanol: a visão da indústria brasileira de cana-de-açúcar. Emmanuel Desplechin, UNICA website, March 2010.

¹³ The signatories were the ministries for Labour and Employment; Agrarian Development; Agriculture, Livestock and Supply; Education and Social Development and the Fight against Hunger; the General Secretariat of the Presidency of the Republic and the President's Office; the Federation of

- *the Bill for agro-ecological zoning (ZAE)* for sugarcane, signed in September 2009 by President Lula, which forbids the expansion of sugarcane cultivation and the installation of new mills in environmentally sensitive areas or threatening food security;¹⁴

These efforts can be seen as essential elements in the attempts by the industry and the government to not only expand the production of ethanol, but also to ensure international buyers that Brazilian ethanol is produced “sustainably” (Repórter Brasil 2010, 35).

4. The forgotten Northeast

Most of the debate on Brazilian bioethanol tends to concentrate on the potential impacts of sugarcane cultivation in São Paulo and the new production regions, while the Northeast tends to receive little attention, presumably because the region produces only 11-12% of total Brazilian sugarcane, and is unlikely to see a major increase in production. However, because of the dominance of sugarcane in the regional economy of states such as Alagoas and Pernambuco, the social and environmental impacts of the ‘ethanol boom’ are likely to be considerable.

In 2006, 84 out of the country’s 334 mills were located in the Northeast and no new mills were under planning or construction, while the Southeast hosted almost two-thirds (205) of the mills (NAT 2007). The Northeast sugar and alcohol sector crisis reached its deepest point in the end of the 1990s, when for example only third of the 45 mills that processed cane in Pernambuco in the late 70s were still in operation, others having gone bankrupt or ceased to operate.¹⁵ In 2006, the number of Pernambuco mills in operation had increased again to 30 (NAT 2007). Yet, a total of 18 mills were closed in the state of Pernambuco between 1992 and 2007, while 30

Registered Rural Workers in the State of São Paulo (FERAESP); the National Confederation of Workers in Agriculture (CONTAG); the sugar and ethanol industry organisation UNICA; and the National Sugar-Energy Forum (Schaffel & La Rovere 2010).

¹⁴ The code bans sugarcane from the Amazon region, Pantanal and the river basin of Alto Paraguai; defines areas of primary vegetation that cannot be deforested for cane cultivation; forbids the expansion of cane cultivation on hills too steep to permit mechanisation (equal or superior to 12%); and requires any new sugarcane cultivation project to obtain from the Ministry of Agriculture a certificate proving that it does not pose a threat to food security (Repórter Brasil 2010, 35-36).

¹⁵ Êxodo nordestino, *Veja*, 21/01/1998.

new mills were set up in São Paulo between 2005 and 2007 alone.¹⁶ The deep cuts in state subsidies to the sugar and alcohol sector in the late 1980s prompted the more entrepreneurial and the wealthiest among the Northeast sugar elite to invest in sugar and alcohol production in the Southeast and Centre-West, particularly in Minas Gerais.

Since the Second World War, a small number of large land-owning industrialists (usineiros), have gained an increasing control over the sector. The small and medium-sized producers ('cultivadores' and 'fornecedores') have progressively lost markets and status, as the industrialists increasingly cultivate their own cane, instead of buying it from the fornecedores and cultivadores.¹⁷ From the point of view of workers' situation, the decline of the small and medium producers is, however, a double-edged sword. On the one hand, the small and medium-sized producers are major employers, as their production methods are highly labour-intensive, while on the other, the working conditions on their farms are often even worse than on the large industrial farms.

Overall, the Northeast production mode is highly labour-intensive, reflected in the fact that the region still provides 35% of the jobs in the sector,¹⁸ while sugar and alcohol sector represents as much as 50% of economic output in some states of the region.¹⁹ Most of these jobs are, however, of low quality, hard manual labour, because of low degree of mechanisation. The coastal sugarcane-growing area in the Northeast is characterised by an extreme inequality, be it in terms of income, wealth or education. Pernambuco has the fifth-lowest HDI (Human Development Index) in the country, with the coastal area populations often enduring the poorest living conditions, lacking adequate sanitation, minimum social infrastructure such as

¹⁶ Marco Bahé, Folha de Pernambuco, 08/07/07.

¹⁷ It was estimated that the state of Pernambuco had, in 2007, about 13 000 fornecedores and cultivadores producing between 1 and 1000 tons of sugarcane per year, most of whom family farmers. The share of sugarcane provided by these producers of the entire amount of sugarcane processed by the mills in Pernambuco had declined to 30% from the all-time high of 70%. CANA-DE-AÇÚCAR: Estado terá pequenas destilarias. JORNAL DO COMMERCCIO / ECONOMIA, 25.02.2007. According to the Comissão Pastoral da Terra (CPT), this share of small and medium producers is only 20% of sugarcane produced in Brazil (Fritz 2008, 11).

¹⁸ Guedes Pereira, 11/07/2010, Folha de Pernambuco.

¹⁹ Firma responsável pelas operações do terminal açucareiro muda o código de atividade para sonegar impostos. Extra Alagoas, 15 de julho de 2008.

minimum sanitation, access to drinking water or medical care.²⁰ About 70% of the working population in the Northeast coastal zone earns the minimum wage or less, and only 2.55% have a higher-level educational degree (Saldanha 2004). In the municipalities of the sugarcane-growing coastal zone in Pernambuco, the concentration of landownership reaches figures of 0.9 measured by the GINI index.²¹ Sugarcane field workers have a very low education level, almost 40% of them lack guaranteed labour rights, and their salary reaches only 32.6% of the average wage of an ethanol factory worker in the same region (DIEESE 2007, 21).²²

The expansion of biofuel production in the Southeast also indirectly influences the social conditions in the Northeast, which provides a large share of the migrant seasonal labour force in the São Paulo sugarcane plantations. These workers are frequently non-unionised and often end up being exploited by the intermediaries recruiting workers for the mills in the Southeast (e.g. Fritz 2008, 14).

Political, economic and cultural hegemony of the Northeast 'usineiro'

A major obstacle preventing the improvement of social conditions in the Northeast is the historically highly unequal distribution of power between the 'sugar barons' on the one hand and the poor and uneducated farm workers on the other. Such inequality is perpetuated by the intimate links between economic and political elites in the region.²³ The consequences of this political inequity – the almost caricatural centre-periphery relationships between social classes in the Northeast – manifest themselves in a number of ways, with more or less direct consequences on the social conditions in the area.

The sugar and alcohol sector in general and the Northeast 'usineiros' in particular have been highly capable to ensure state support in the recurrent situations of crisis. The São Paulo producers had direct access to political power at the federal level

²⁰ 'A Mãe Terra é quem nos culpa' . Website of CPT, 07/07/2010.

²¹ 'A Mãe Terra é quem nos culpa' . Website of CPT, 07/07/2010.

²² In the Centre-South, a field worker earns almost 50% of the average salary of an ethanol factory worker (DIEESE 2007, 21).

²³ The large-scale landowners and industrialists in the sugar and alcohol sector habitually choose among themselves a candidate for state elections or support a common candidate (Johnson 1983; Demetrius 1990).

through the state's sugar and alcohol producers' cooperative, Copersucar,²⁴ whereas the Northeast sugar elite has had two main avenues for exercising political power. First, the Sugar and Alcohol Institute (IAA) was ever since its creation in the early 1930s until its closure in 1990 a major defendant of the interests of especially the independent sugarcane growers in the region.²⁵ Second, the Northeast sugar and alcohol sector has had an indirect access to political power at the national level, through its close links with the regional political elites.²⁶

The political clout of the Northeast 'sugar barons' has also been a major reason for the weak implementation and enforcement of the slowly emerging labour and environmental regulation in the sector. Both burning of the fields prior to harvesting and the discharging of distillery effluents untreated to watercourses still represent serious problems in the Northeast, admittedly in part for economic reasons (Abramovay 2008). The use of child and slave labour are probably more acute problems in the Northeast than in the Southeast.²⁷

The chronic indebtedness of the sugar and alcohol producers in the Northeast, and the tradition of the state to rescue the ailing industries are two constants in the Northeast sugarcane economy. Some of the recent events have further consolidated the widespread perception in the Northeast that the sugar and alcohol sector, notably the large landowners and mill owners, are systematically privileged at the expense of other sectors of agriculture. In 2007, as the cane growers were experiencing one of the most lucrative periods of their history, the Banco do Brasil accorded debt relief of more than R\$ 1 mrd. to at least 20 mills, most of which in the Northeast.²⁸ The politicians and the sugar elite in the Northeast are frequently accused of nepotism, fiscal fraud, and clientelism, often manifest in vote buying.²⁹ Critics have also claimed that the very same mill owners that are highly competitive in the Southeast

²⁴ In 1997, Copersucar was transformed and renamed UNICA.

²⁵ Through its national cane improvement programme, PLANALSUCAR, the IAA played a key role in developing cane varieties adapted to the conditions of the Northeast, while Copersucar's development activities focused on cane varieties and production technologies for the Southeast.

²⁶ During the military rule (1964-1985), the sugar elite were an important ally of the military government in regional politics.

²⁷ In 2009, four out of the total of sixteen mills accused of using slave labour in the country were from the Northeast state of Pernambuco. (Repórter Brasil 2010, 16).

²⁸ Folha de São Paulo 14/01/2007; Bancada do Nordeste, 10/04/2007.

²⁹ Firma responsável pelas operações do terminal açucareiro muda o código de atividade para sonegar impostos. Extra Alagoas, 15 de julho de 2008 (CPT08715).

are among the first to call for subsidies, which would permit them to continue producing in the Northeast. Indeed, the requests by the Northeast producers include that of providing the region a privileged status similar to the one enjoyed by the Tax Free Zone of Manaus and the car industry.³⁰

While the poorer natural conditions and the hilly landscape are the main reasons for the steady decline of the Northeast in the country's sugar and alcohol sector, poor growing conditions do not explain all. Notably the Proalcool programme fostered the expansion of sugarcane cultivation to steep hills and areas with insufficient rainfall (Sicsú & Silva 2001), yet the low take-up of new technologies, stemming largely from the general conservatism and strong political power of the region's sugarcane elite is a major contributing factor. Indeed, the willingness of the state to act as the ultimate guarantor and bail out the debt-ridden Northeast producers in times of trouble has often been put forward as an explanation for the absence of productivity improvement in the region.

The globalisation of the sector has reached also the Northeast, with multinational groups investing in mills in the region. Some observers have seen the arrival of international capital as an opportunity to improve the "socio-environmental management" in the sugar and alcohol sector, as multinationals presumably would need to pay more attention to social and environmental issues.³¹

Yet another consequence of the close links of the sugar and alcohol elite with political decision-making, is the ability of the sector to secure continuous economic support, thereby largely preventing the diversification of agriculture and economic activities in the cane-growing coastal zone, recognised for a long time already as essential for a harmonious development of the region (e.g. FIPE 1990). Some progress has taken place, partly thanks to efforts by the regional authorities to promote the cultivation, in the coastal zone, of local fruit crops.³² Yet, for example the state of Alagoas depends to more than 90% on sugar, ethanol and molasses for its export revenue (Saldanha 2005).

³⁰ Nordeste fica de fora da 'festa' do álcool, Folha de Pernambuco, 08/07/2007.

³¹ CANA-DE-AÇÚCAR: Multinacionais não preocupam fornecedor. JORNAL DO COMMERCIO / ECONOMIA, 25.02.2007

³² Êxodo nordestino, Veja, 21/01/1998. http://pt.wikipedia.org/wiki/Zona_da_Mata_%28Nordeste%29

The biofuel boom and the future of Northeast sugar and ethanol sector

There is a fear that the current ethanol boom might not benefit the Northeast sugar and alcohol sector, because of its weak competitiveness stemming from the poorer climatic and natural conditions. Some have even argued that the Northeast has already “given what it can” in terms of sugarcane, and that there is no way to increase productivity in the area. Not only the topography prevents mechanisation, but four decades of monoculture are said to have completely exhausted the soil.³³ And yet, an opposite argument was made in 2007: the Northeast would be better placed than São Paulo to benefit, because the Southeast (notably São Paulo) already had reached a saturation point in terms of the land area occupied by sugarcane. Further advantages of the Northeast include:

- the different timing of harvesting periods in the Northeast and in the Southeast lead to complementarity rather than competition;
- preferential access to the American market (quotas and guaranteed prices above the world-market price); and
- lower production costs than international average (Sicsú & Silva 2001).

Three suggestions have been made to ensure that the poorer areas of the Northeast actually benefits from the ethanol boom. First, projects are underway to expand sugarcane cultivation to the semi-arid inland ‘sertão’ region. By 2026, the project is expected to generate as many as 333.000 jobs in 17 municipalities and benefit a total of 640 000 persons,³⁴ but subsidies from the federal government would be needed to realise the needed USD 2mrd. investment and to install the necessary irrigation canals.³⁵ Second, mini-distilleries have been constructed, partly by financing from BNDES, to replace old and abandoned mills in areas that had become pockets of major poverty, for instance in the coastal area of the state of Pernambuco.³⁶ Past experience from the Proálcool programme suggests that making mini-distilleries

³³ Êxodo nordestino, *Veja*, 21/01/1998.

³⁴ PANORAMA DOS BIOCMBUSTÍVEIS NO BRASIL: NORTE/NORDESTE. Presentation by Sérgio Peres, Universidade de Pernambuco, Escola Politécnica de Pernambuco, POLICOM - Laboratório de Combustíveis e Energia. 2009.

³⁵ Nordeste fica de fora da ‘festa’ do álcool, *Folha de Pernambuco*, 08/07/2007.

³⁶ CANA-DE-AÇÚCAR: Estado terá pequenas destilarias. *JORNAL DO COMMERCCIO / ECONOMIA*, 25.02.2007.

economically viable in a market dominated by large players is not easy. Thirdly, the old plans have been revived to produce ethanol from manioc, predominantly cultivated by smallholders and more suitable for small-scale production in micro- and mini-distilleries for local demand.³⁷ Again, it is uncertain, however, whether the conditions for success of manioc ethanol would be any greater today than they were during the early years of Proalcool, when the projects of small-scale manioc production failed because of their inability to compete with the large-scale sugarcane producers.

Also, historical experience from attempts to reduce poverty, in particular by improving access to water in the poor rural areas of inland Northeast invites to scepticism and caution. The often grandiose projects entailing, for instance, the construction of water reservoirs and cisterns in sertão have in the past invariably ended up benefiting the rich political elite, through what has become known as “the industry of drought”.

One may ask whether the recent biofuel boom might not prove a curse rather than a blessing, preventing the necessary reorganisation and diversification of the economic (notably agricultural) activities in the coastal sugarcane area. The crisis of the late 1990s may have been an opportunity for a gradual ‘normalisation’ of the sector and the entire economy in the Northeast – an opportunity lost once the ethanol boom again improved the competitiveness of the sector. In particular, the idea of a more harmonious coexistence of small and large-scale producers in the region, as part of an agrarian reform, may have turned into an illusion. Indeed, many of the NGOs mention the conflicts with agrarian reform as a major problem of the current agro-industrial model within which the biofuel production is embedded in Brazil. Hence, the prospects for further diversification of economy, and the small-scale production will depend decisively on the extent to which the sugar and alcohol elite manages to retain its privileges, as well as on the success in breaking the widespread and longstanding belief that sugarcane represents the only viable agricultural crop in the region. On a more positive note, the Brazilian government’s anti-poverty political agenda, together with international concerns for social sustainability and the certification schemes

³⁷ Agência Brasil. Norte e Nordeste serão os mais beneficiados pelo etanol da mandioca, dizem especialistas. 01/03/2009.

under development could help make the small-scale projects successful. The recent changes in the political structures and power relations might also signal that change is underway. For the first time in the history of the state of Alagoas, two mill owners were disputing for the position of state governorship. This may suggest that the politics in the region are being “normalised”, with political divisions entering the sugar and alcohol sector, hence replacing the old tradition whereby the mill owners would not directly enter politics, but would unite – and finance – a single candidate to represent their cause.³⁸

5. Mutually contradicting expectations concerning certification schemes

Numerous sustainability certification schemes and multistakeholder initiatives worldwide are in use or under development to ensure that biofuels are produced in a sustainable manner. Van Dam (2009) identified 35 schemes worldwide that attempted to define some form of sustainability criteria for energy derived from biomass, both for transport fuel and other forms of energy consumption. In addition, numerous schemes exist for certifying the cultivation of major biofuel crops (soy, sugarcane, palm oil) and forestry and agriculture certification schemes with potential relevance to biofuels production (Anon). Figure 1 presents some of the major certification schemes in place or under development at various levels of governance.

³⁸ “Pela primeira vez na política alagoana dois usineiros disputaram e polarizaram a eleição para o governo do Estado. Em anos anteriores o setor sucroalcooleiro unia-se para apoiar – e financiar – nome que o representasse, sem que os donos das usinas entrassem na corrida eleitoral.” (Firma responsável pelas operações do terminal açucareiro muda o código de atividade para sonegar impostos. Extra Alagoas, 15 de julho de 2008).

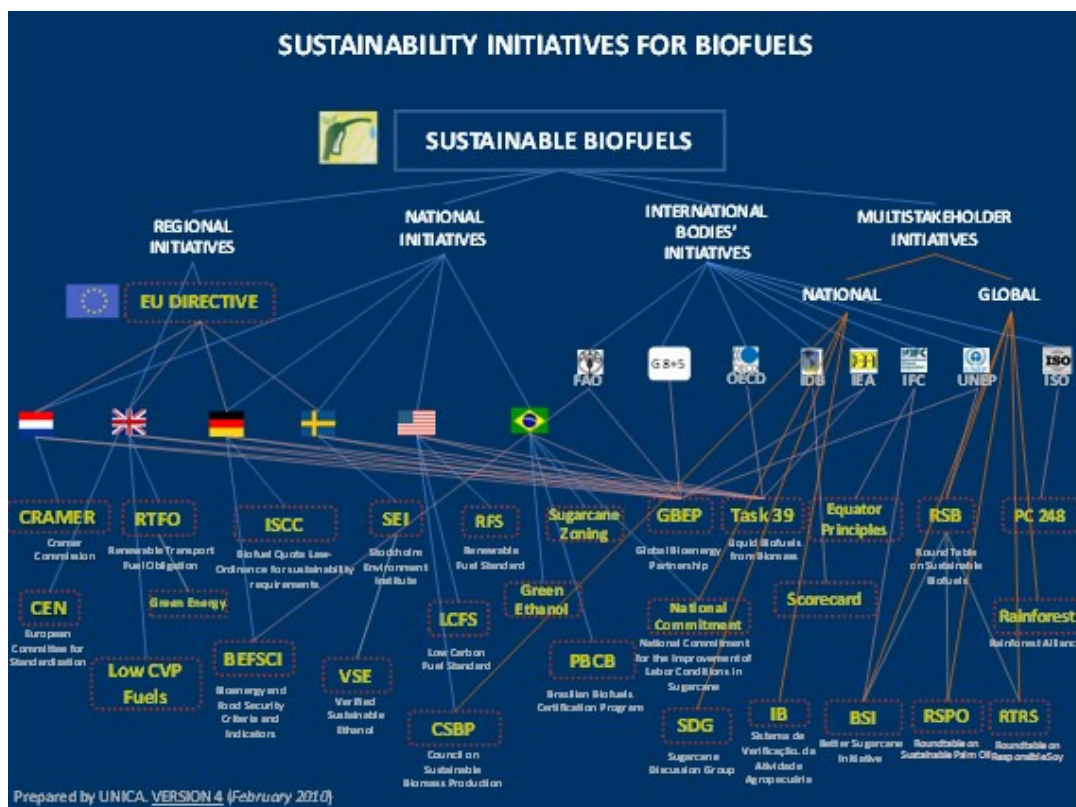


Figure 1: Major biofuel sustainability certification schemes at different levels of governance (source: UNICA³⁹).

Most current certification schemes are voluntary. The Roundtable on Sustainable Biofuel (RSB), coordinated by the Energy Centre of the Ecole Polytechnique Fédérale de Lausanne (EPFL), and the Better Sugarcane Initiative (BSI) are among the voluntary, business-driven schemes. However, one of the most important schemes for the Brazilian ethanol industry –the EU scheme under the Directive on Renewable Energies – is mandatory and potentially very powerful.

In addition to these international schemes, pilot programmes have been introduced in different regions of Brazil. In 2008, largely in response to the international concern for the sustainability of the Brazilian ethanol, and for the needs of the export industry, a programme was launched under the leadership of the national standardising organisation Inmetro (Instituto Nacional de Metrologia, Normalização e Qualidade Industrial). Selected participating mills were included from São Paulo, Centre-West, Northeast and Paraná. The criteria were developed in collaboration with foreign

³⁹ Certificação do etanol: a visão da indústria brasileira de cana-de-açúcar. Emmanuel Desplechin, UNICA website, March 2010.

experts, notably those from Germany, in view of harmonisation with future international umbrella criteria.⁴⁰

In the Northeast state of Alagoas, a producers' cooperative launched its own certification system, aimed at proving that no child labour has been used. However, the credibility of the scheme has been called into question (Delzeit and Holm-Müller 2009, 665). In São Paulo, a pilot scheme of socio-environmental certification was started at the initiative of a certification organisation OIA – Organização Internacional Agropecuária – commissioned by a local producers' organisation. This scheme sought to attend particularly to the needs of small producers.⁴¹

In addition, Brazilian companies have signed several bilateral agreements with importing countries, including provisions concerning sustainability criteria and their verification.

The key question for Brazil concerns the efforts and success in influencing the international schemes; from the perspective of social sustainability, it is essential who actually 'speaks in the name of Brazil', i.e. which stakeholder groups have a say on the contents of the certification schemes. Different stakeholder groups have obviously very different expectations concerning certification, with the industry seeking to ensure access to export markets, while the NGOs tend to be more concerned about the actual effects on sustainability. It is conceivable that the sugarcane industry's decision to invest especially in participation in the Better Sugarcane Initiative (BSI) and the Roundtable on Sustainable Biofuels reflects its assessment that these schemes are likely to become dominant in the world scene.

6. Brazilian stakeholder views on biofuels and certification

The following section summarises the views of different Brazilian stakeholder groups on biofuels, the Northeast sugar and alcohol sector, and biofuel sustainability certification. This preliminary analysis presents views from the Brazilian government and political leaders, ethanol industry, NGOs and biofuel experts.

⁴⁰ 24HorasNews, 29/09/2008. Brasil testa certificação do etanol em outubro.

⁴¹ *Certificação sócio-ambiental do álcool. Pastoral do Migrante, 03 de agosto de 2009.*

6.1 Government and political leaders

The government views on ethanol and biofuel in general and certification in particular have been very much in line with the interests of the ethanol industry. The government sees sustainability certification essentially from this angle of ‘commodity creation’, as a means of ensuring that Brazilian ethanol has sufficient credibility in the potential buyer markets in the North, and to prevent protectionism. The government has frequently accused the industrialised nations of practicing protectionism. For instance, it lamented the exclusion of ethanol from the list of 42 ‘environmental products’ to be exempt from import tariffs, as proposed by the US and the EU prior to the Bali climate meeting in December 2007⁴², it has frequently condemned the import tariffs imposed on Brazilian ethanol by the US and the EU⁴³, and criticised EU plans for biofuel sustainability certification of disguised protectionism.⁴⁴

Lula has made several state visits in order to promote Brazil’s ethanol diplomacy.⁴⁵ Lula has been described as the president with the most favourable policy ever towards the sugar and ethanol sector in Brazil, and the president has gone as far as to calling mill owners ‘heroes’.⁴⁶ This way he has sought to create an image that goes squarely against the received wisdom and the traditional image of especially the Northeastern ‘usineiros’ as ruthless exploiters of the labour force living of state subsidies.⁴⁷

Even the otherwise outspoken former environment minister of the Lula government and current presidential candidate Marina Silva, declared her general support to Brazilian ethanol and technology exports. According to Silva, certification would be a tool to ensure sustainability and non-competition with food production, but also a

⁴² O Estado de São Paulo, 05/12/2007.

⁴³ Compromisso Trabalhista para a cana-de-açúcar é anunciado com mais de 75% de adesão, UNICA website, 25/06/2009.

⁴⁴ O Estado de São Paulo, 15/01/2008.

⁴⁵ E.g. LULA CHEGA À FINLÂNDIA E FALA SOBRE ETANOL. Folha de São Paulo, 10/09/2007.

⁴⁶ Etanol glorifica Lula, mas hesita na sucessão, Valor, 09/06/2010.

⁴⁷ This image and the Southeast-Northeast feud surfaced again in 2008 in a dispute following the accusations by the environment minister Carlos Minc calling the Northeastern ‘usineiros’ as outlaws and considering the state of Pernambuco as the “disaster of a disaster” (Minc diz que Pernambuco é ‘desastre do desastre’. O Globo, 01/07/2010).

means of ensuring that ethanol exports from Brazil are not rejected on the false claim that ethanol production causes deforestation of the Amazon rainforest.⁴⁸

The government's rhetoric in favour of its 'ethanol diplomacy' also includes a mixture of arguments appealing to national pride and 'higher' universal values. Hence, the Brazilian exports of ethanol-related technology and know-how in the South is portrayed as a way of reducing poverty in the emerging economies.⁴⁹

The national-pride discourse, in turn, is visible in the frequent direct or indirect reference to national sovereignty. A typical example is when claims by NGOs about the harmful impacts of Brazilian ethanol are discredited on the grounds that the international NGOs are being used by foreign governments and enterprises as instruments in advancing protectionist policies. Sometimes the NGOs, for instance the Friends of the Earth, are accused of being directly financed by the industry and 'obscure quasi-governmental bodies'. The mayor of São Paulo, in his speech at the the 2009 Ethanol Summit, mixed arguments appealing to national pride with those evoking rationality, progress, the promise of new technologies and the need to tackle the great threats against the humankind. Therefore, after describing the Brazilian ethanol as a prime instrument in the fight against climate change, the mayor continued: *"The second reason for our defense of ethanol is in the need to neutralize the innuendo, namely attempts to imply that our sugarcane fields somehow threaten on our forests, particularly the Amazon. We, **Brazilians**, are witnesses to the fact that this is not true, and we need to offer up our testimonials, **with objectivity but vehemently**, to prevent the spread of that **misguided notion**. Brazil has grown as an agricultural power after we discovered how to manage vast areas in the Cerrado, back in the 1970s. Since then, we've become a major breadbasket to the world. We've made great contributions to **reduce world hunger**. Sugarcane has not reduced our agricultural output in any way, **as our harvests grow each year**. Quite the contrary, **new technologies** allow us to produce more and more ethanol on diminishing*

⁴⁸ Marina critica expansão do etanol brasileiro. Estado do São Paulo, 26/04/2010.

⁴⁹ LULA FAZ 'POLÍTICA DO ETANOL' EM GIRO POR PAÍSES NÓRDICOS. BBC Brasil, 10/09/2007.

amounts of land, without ever having threatened the Amazon.” (Ethanol Summit 2009, 9)⁵⁰

The Northeast appears seldom in statements by government members and national-level politicians, and the few references to Northeastern sugar and alcohol sector tend to portray the Northeast as a problem, such as in the above-mentioned statements by the environment minister Carlos Minc about the Northeastern ‘usineiros’ as the “disaster in disaster”. The reason for Minc’s criticism was that by continuing to violate environmental legislation, the Northeastern sugar and alcohol elite compromises Brazil’s international credibility as a producer of ‘sustainable’ biofuel. This argumentation therefore combines elements of national pride, ecological modernisation discourse, and enduring perceptions about the backwardness of the Northeast ‘sugar barons’.

6.2 Sugar and ethanol industry

Rather unsurprisingly, the Union of Sugarcane Industries, UNICA, is active in the debates concerning biofuels in general and sustainability certification in particular. The organisation sees sustainability certification as having three major objectives, namely product differentiation, assisting clients and consumers in making their choices, and legitimising the image of the sectors involved.⁵¹ UNICA’s statements are, however, somewhat ambiguous with regard to the objectives of certification. At times it openly flags for certification as an excellent “commercial opportunity”, and concludes that “certification must work in favour of the product, not to denigrate it”. On the other hand, it has underlined that even though certification helps the industry create export markets, this is merely a beneficial side-effect of the various genuine efforts by the industry and the government to move towards sustainable ethanol production.⁵² UNICA aims in particular to correct what it considers as erroneous claims about the environmental and social downsides of Brazilian ethanol; claims that

⁵⁰ Emphasis by the author.

⁵¹ Biocombustíveis certificados: como chegar lá. Géraldine Kutas, UNICA website, July 2009.

⁵² “Apesar destas iniciativas não terem sido motivadas por interesses no mercado internacional de etanol de cana, elas vão auxiliar o setor a comprovar a sustentabilidade de sua produção e certificar o etanol brasileiro de acordo com requisitos recém-adotados no âmbito da Diretiva Europeia de Recursos de Energia Renováveis.” (Certificação do etanol: a visão da indústria brasileira de cana-de-açúcar. Emmanuel Desplechin, UNICA website, March 2010.)

is seen as mere excuses for disguised protectionism against products from the South. As for the industry measures to ensure social sustainability, UNICA stresses that the measures were initiated prior to EU criteria (ibid.).

Environmental arguments are in a central position in UNICA's marketing, with certification as a major instrument in this work. However, the environmental credentials of the industry were called into question in 2009, when the president of UNICA, Marcos Jank, criticised the requirement contained in the country's forest code that sugarcane farmers dedicate at least 20% of the land area to forest reserves. According to Jank, such a requirement would be completely impossible to fulfil in many sugarcane producing areas and would perform no environmental function, but would dramatically reduce the economic viability of sugarcane cultivation. (Repórter Brasil 2010, 24)

UNICA is concerned about the multiplication of various overlapping and competing certification schemes, which it fears will not only create room for protectionism against products from developing countries, but also constitute an obstacle to investments.⁵³ Creation of export markets guides the international activities of UNICA, as demonstrated in the choice of UNICA not to join the international alliance of ethanol producers, on the grounds that this group of American, Canadian and European producers would not seek to create a free market for biofuels.⁵⁴

To ensure that certification does not work 'against the product' UNICA considers that all three pillars of sustainability should be included in certification criteria. The organisation probably fears that the economic aspects become downplayed at the cost of social and environmental criteria. Furthermore, the entire supply chain should be considered in order to spread the costs of certification amongst the various players along the supply chain, and a broad range of sustainability criteria should be applied

⁵³ *"Trata-se de um processo contra-producente, que desestimula investimentos. A possibilidade de que muitas destas certificações possam incentivar a implementação de barreiras comerciais causa muita preocupação, especialmente para países em desenvolvimento como o Brasil."* (Certificação do etanol: a visão da indústria brasileira de cana-de-açúcar. Emmanuel Desplechin, UNICA website, March 2010 and Biocombustíveis certificados: como chegar lá. Géraldine Kutas, UNICA website, July 2009.)

⁵⁴ "Sem mercado livre, Brasil não entra em aliança. Grupo não quer negociar um mercado de etanol global sem tarifas protecionistas nem subsídios". Website "Notícias Agrícolas", 26/02/2009: <http://www.noticiasagricolas.com.br/noticias.php?pagina=4&busca=&id=40613>

to avoid a situation where only a small proportion of the products would qualify for a certificate, while others would be deprived of an incentive to improve their performance. This latter view contrasts with a lot of the philosophy behind certification and eco-labelling, based precisely on the idea that to ensure the credibility of the scheme only a small proportion (e.g. 10-30%) of products should be eligible for a label. The incentive for continuous improvement would be the desire to obtain a label, rather than the rules governing the certified production itself. UNICA's view that certification should play a role in promoting biofuels is also at odds with a view defended for instance by Delzeit and Holm-Müller (2009, 663) that *"it is in the own interest of producers to look after their profits and it is not the task of a certification system to ensure the viability of a certain industry"*.

Further, UNICA emphasises the need to develop certification through a gradual multi-stakeholder process, based on principles of transparency and non-discrimination in order to reconcile the "naturally distinct" interests of all involved parties.⁵⁵ Interestingly, the sugar and ethanol industry seems to be the most active advocate of participatory processes in designing certification schemes, as a means of securing that these enjoy sufficient legitimacy.⁵⁶

UNICA criticises the EU for having been slow to introduce clear criteria for certification, which would provide a baseline for other certification schemes wishing to ensure they are in line with the EU Directive. UNICA has decided to prioritise the Better Sugarcane Initiative (BSI) as a major forum for its certification work, arguing that it allows certification of both sugar and ethanol, has a multi-stakeholder and global character, and is based on the idea of continuing improvement. Also, UNICA mentions as a virtue of BSI that its level of ambition goes beyond that of the EU Directive.⁵⁷

The Northeast sugar and alcohol producers' union, Sindaçúcar, emphasises the role of ethanol as a "clean fuel", and argues against retroactive application of the forest code,

⁵⁵ Biocombustíveis certificados: como chegar lá. Géraldine Kutas, UNICA website, July 2009.

⁵⁶ Márcio Nappo: Certificação socioambiental: benefício ou obstáculo? UNICA, 10/10/2008. Biocombustíveis certificados: como chegar lá. Géraldine Kutas, UNICA website, July 2009.

⁵⁷ Certificação do etanol: a visão da indústria brasileira de cana-de-açúcar. Emmanuel Desplechin, UNICA website, March 2010.

which would forbid the cutting of forests, since this would generate “hunger, absence of production and unemployment” in a region where forests have been cleared long time ago already, to create space for sugarcane cultivation. The industry declares as one of its major objectives to reduce the productivity gap in relation to São Paulo, but, reminding that with only 11-12% of national production the Northeast nevertheless provides 35% of employment in the sector, underlines the benefits of the highly labour-intensive mode of production in the region.⁵⁸

Finally, the industry has sought to resist the inclusion of indirect land use change in the criteria for biofuel sustainability certification. It underlines that ILUC cannot be examined in isolation of the global dynamics of agricultural markets, and claims that the methods for assessing ILUC are still very poorly developed and “theoretical”.⁵⁹

6.3 Radical NGOs: vehemently against the model of export agriculture

The Brazilian NGO field seems to an extent divided into two separate categories: on the one hand, the conservation- and environment-oriented organisations with international base, such as the WWF and Nature Conservancy; and on the other, human rights and local peasants movements. The distinction is far from clear-cut⁶⁰, yet it is reflected for instance in the attitudes of the NGOs to multi-stakeholder initiatives such as the BSI and RSB. The following presentation concentrates on views expressed by the more radical side of the NGOs, close to trade union and small-farmers’ associations.

Often, yet not always, the NGOs opposed to biofuels prefer using the word ‘agrofuels’ as they consider that ‘biofuel’ gives the false impression of a ‘green’ product. The anti-biofuel NGOs’ criticism is often framed in terms of opposition against the ‘agro-exports’ model, which they see as the general context of the government’s ‘official agro-energy policy’ (e.g. Stedile 2007). The development model based on agri-business is condemned for its various harmful impacts on small-

⁵⁸ Perspectivas para o setor sucroalcooleiro. Luiz Renato Guédes; interview with the head of Sindaçucar, Renato Cunha. Folha de Pernambuco 11/07/2010.

⁵⁹ UNICA: Só perspectiva global sobre ILUC garante eficácia das políticas da UE. UNICA, 12/07/2010.

⁶⁰ For instance the WWF-Brasil⁶⁰, despite its emphasis on the environment, on its website it nevertheless mentions the impacts on food production and “social impacts” as topics to be addressed.

scale farmers and environmental protection.⁶¹ The benefits from biofuel development would accrue exclusively to the agri-business, while the workers and family farmers would suffer the bulk of the downsides in terms of intensified exploitation of workers, concentration of landownership, environmental destruction, and weakened food security. NGOs also argue that the expansion of sugarcane cultivation in the Southeast and Centre-West of Brazil have altered the dynamics of land use, and put halt to the process of agrarian reform (Assis e Zucarelli 2007). They criticise the lack of regulation of the sector, as well as the increasing penetration of international capital, and suggest that the purchase of land by foreign companies should be controlled, in order to set limits to the concentration of landownership (e.g. FIAN 2008). To a certain extent, their arguments therefore draw on a discourse of national sovereignty.

Some of the arguments put the ethanol diplomacy' openly within the frame of 'power politics', such as the claim that commercial agreements between the US and the Brazilian government attest to the US government's desire to destabilise and "weaken the regional influence of countries such as Venezuela and Bolivia".⁶²

However, some Northeastern NGOs are more nuanced in their views concerning the role of international capital. The agricultural workers' union of the state of Pernambuco, FETAPE, fears the potential further concentration of landownership resulting from the entry of foreign capital, yet it also acknowledges that the entry of multinational capital could improve labour conditions in the sugarcane sector.⁶³ Hence, the Northeast NGOs and trade unions are in a somewhat difficult position in seeking to balance between two types of critique: one against the 'colonial model of sugarcane monoculture for exportation', sustainable only thanks to government subsidies, fiscal fraud, work analogous to slavery, and environmental destruction⁶⁴

⁶¹ "Neste contexto, o papel internacional do governo brasileiro na autopromoção dos agrocombustíveis, em particular do etanol, como um 'modelo de produção sustentável de biomassa' vem recebendo fortes críticas dos movimentos sociais do campo, de organizações ambientalistas e de direitos humanos da sociedade civil no Brasil. Estes atores se opõem veementemente à política oficial de agroenergia, planejada na lógica da agroexportação." (NAT 2007, 10)

⁶² Full Tanks, Empty Stomachs. Statement by Comissão Pastoral da Terra (CPT), Movimento Sem Terra (MST), Serviço Pastoral dos Migrantes (SPM), Rede Social de Justiça e Direitos Humanos, and Via Campesina.

⁶³ CANA-DE-AÇÚCAR: Multinacionais não preocupam fornecedor. JORNAL DO COMMERCCIO / ECONOMIA, 25.02.2007

⁶⁴ Dois mil trabalhadores ocupam Usina Salgado em Ipojuca. FETAPE, 08/10/2007.

and essentially based on national capital, and another against the expansion of international agro-business and increasing foreign ownership in the sector.

The NGOs likewise reject the claim that ethanol would be economically viable, underlining instead that the sector enjoys numerous indirect forms of support. These would take the form of support to logistics favouring transport of raw materials within the large-scale production systems and tax breaks to export producers, and underpaid labour.⁶⁵ Instead, the NGOs call for the creation of cooperatives of family agriculture, support to multicropping practices, general diversification of agriculture in general and biofuel feedstock production in particular (Ortiz 2006, 29), and micro-distilleries of biofuel, referring to positive examples from the South of Brazil (e.g. Rio Grande do Sul). (NAT 2007)

The support to large-scale ethanol production from the national economic and social development bank, BNDES, is deemed critical by many NGOs. The bank is accused of injecting tens of billions of Brazilian real, originating from resources collected through a labour protection fund,⁶⁶ to finance the expansion of sugar and ethanol projects, without regard to the compliance by the producers of minimum social and environmental criteria (Plataforma BNDES 2008).⁶⁷ Also the former environment minister and current presidential candidate Marina Silva highlighted the problematic role of the BNDES (Diário de Pernambuco).

Many NGOs see certification with great suspicion, as a totally insufficient measure to guarantee sustainability in the current context of rapidly growing demand for biofuel. Hence, the NGOs claim that the current debates have overlooked the demand side, and underline what they see as the fundamental question, i.e. whether biomass should be used to feed cars or people' (e.g. Cordeiro 2008). Instead, the NGOs consider certification as a 'smokescreen' and a 'green label' for inherently unsustainable large-scale biofuel business.⁶⁸ Such sceptical attitudes, and allegations that "peasants are

⁶⁵ Enquanto Lula promove etanol nos países nórdicos, rede de TV sueca faz denúncias, CPT website, 12/09/2007.

⁶⁶ Fundo de Amparo ao Trabalhador.

⁶⁷ CPT – Comissão Pastoral da Terra. Crítica à certificação do etanol, entrevista com Bruno Ribeiro. 29 Junho 2009. CPT website.

⁶⁸ See e.g. Fritz (2008, 71) and Friends of the Earth Europe, 2008: Sustainability as a smokescreen. The inadequacy of certifying fuels and feeds. Bruxelles, April 2008.

being used to lend legitimacy to the agribusiness”, are frequent also among farmers and field workers, both in ethanol and biodiesel industries (e.g. FIAN 2008; Pinto et al., 2007). For instance, a group of small-scale farmers’ associations and NGOs condemned the biodiesel programme of being, despite its explicitly stated objectives of poverty reduction, nothing but a ‘fig-leaf’, a disguised attempt to give a social label to the expansion of agro-industry⁶⁹ and a ‘compensation’ destined to conceal the absolute primacy of large-scale sugarcane ethanol in the Northeast.⁷⁰

The NGOs evoke the ‘failed’ roundtable processes⁷¹ between industry, civil society and governments, which they claim have had as their primary objective turning monocultures of soy, palm and sugarcane ‘sustainable’. (NAT 2007) Yet these NGOs do not completely condemn certification, but call for the creation of a specific sustainability label for biofuel sourced from family agriculture.⁷² But for such a label to work, it should be placed within a broader context of biofuel demand. Hence, more emphasis should be given to energy efficiency and demand reduction, energy projects for local level development, awareness-raising within governments and more broadly in society, capacity-building and technology transfer for land use planning, as well as empowerment of and support to NGOs in developing countries (Ortiz 2006).

One of the most active and radical biofuel critics, the Comissão Pastoral da Terra (CPT), joins the strong criticism against certification as essentially ‘greenwashing’,⁷³ and seems to reject any possibility for a peaceful reform, arguing that changing the model is unviable as long as the political lobby power of the agri-business in Brazil

⁶⁹ Full Tanks, Empty Stomachs. Statement by Comissão Pastoral da Terra (CPT), Movimento Sem Terra (MST), Serviço Pastoral dos Migrantes (SPM), Rede Social de Justiça e Direitos Humanos, and Via Campesina.

<http://www.waronwant.org/component/content/article/14487>

⁷⁰ “A produção do biodiesel pela mamona é uma forma de compensação social. É errado apostar na inclusão social em Pernambuco, onde sabemos que o principal objetivo é o etanol e a cana. Vivemos agora a tomada dos assentamentos da reforma agrária para a produção de biodiesel e da Zona da Mata para a produção de cana.” (Statement by José Cláudio da Silva, MST; “Biodiesel e etanol são temas polêmicos em Pernambuco”, Comissão Pastoral da Terra, 11/04/2009: <http://www.cptpe.org.br/modules.php?name=News&file=print&sid=1182>)

⁷¹ Such as the Roundtable for sustainable soy, roundtable for sustainable palm oil and the Better Sugarcane Initiative.

⁷² A legislative proposal to this effect was put forward by a representative in the state of Rio Grande do Sul in 2007: PROJETO DE LEI Nº 417/2007 Deputado Elvino Bohn Gass Institui o Selo Biocombustível Sustentável da Agricultura Familiar no Estado do Rio Grande do Sul e dá outras providências. (NAT 2007)

⁷³ Enquanto Lula promove etanol nos países nórdicos, rede de TV sueca faz denúncias. CPT website, 12/09/2007.

persists, and that changing the mentality of large landowners and industrialists is impossible.⁷⁴ CPT considers certification as a convenient marketing tool, which would not force ethanol producers to change labour practices, but allows the government to respond to international criticism against the alleged unsustainability of its ethanol production. Lula's conciliatory approach would be detrimental in ignoring what CPT sees as the most enduring characteristic of the history of Brazilian sugarcane economy, namely the use of slave labour.⁷⁵

While not completely rejecting certification, CPT nevertheless considers the chances of success very small, especially in the Northeast. If the working conditions in the sugar and ethanol sector of São Paulo leave a lot to desire, how could certification succeed in enforcing adequate labour protection in the Northeast?⁷⁶

A typical feature of the radical NGOs' argumentation is the critique against the 'moderates'. Hence, the Brazilian Forum of NGOs and Social Movements for the Environment and the Development (FBOMS) accused the former environment minister Marina Silva of having contributed to the biofuel "propaganda" of Lula. Instead of producing 'sustainably', FBOMS argued, the Brazilian industry complies with neither the basic national environmental and labour legislation nor ILO labour codes.⁷⁷

In a similar radical vein, the Friends of the Earth Brazil denounce the 'market environmentalism' as manifest by the use of instruments such as certification, markets for ecosystem services, and patenting of genetic resources. Instead, family agriculture should be developed, to counter the expansion of global agrofuel markets, and

⁷⁴ "Mudar o modelo, sem uma revolução no campo que preceda a estas mudanças, é politicamente inviável na atualidade, dada a força e penetração política do agronegócio no Brasil, especialmente dos setores mais fortes como álcool e açúcar, soja e pecuária. Quanto a mudar a mentalidade de latifundiários e usineiros, é mais fácil passar um caminhão de cana pelo buraco de uma agulha." (Etanol: herói ou vilão? CPT – Comissão Pastoral da Terra: <http://www.cptpe.org.br/modules.php?name=News&file=article&sid=110>. Rogério Grassetto Teixeira da Cunha.)

⁷⁵ Certificação social favorece produtores de etanol e não muda práticas trabalhistas Mercado Etico, 29/06/2009.

⁷⁶ CPT – Comissão Pastoral da Terra. Crítica à certificação do etanol, entrevista com Bruno Ribeiro. 29 Junho 2009. CPT website.

⁷⁷ AGROCOMBUSTÍVEIS. Marina Silva assume propaganda da indústria sucro-alcooleira. FBOMS press release; FBOMS website, 06/05/2008.

renewable energy should serve the ‘relocalisation’ of economy rather than export markets.⁷⁸

Despite their often highly critical position on biofuels and the criticism against the ‘failed roundtable processes’, many of the Brazilian NGOs participated in 2008, as members of the Brazilian civil society network on biofuels,⁷⁹ in a consultation organised by the Roundtable on Sustainable Biofuels (RSB). The network gave detailed comments on the draft set of sustainability criteria, some of the comments being based on consensus. The network gave details comments even on issues on which consensus could not be reached, without however expressing a clear position. The indirect land use impacts of biofuels were among the most controversial issues, some of the participants arguing that ILUC should be excluded from criteria, because it would not be the responsibility of an individual producer, while others were in favour of including ILUC (RSB 2008, 8). No similar extensive consultation process on RSB seems to have taken place in Brazil since then, and the future of the process is therefore uncertain.

6.4 Experts

Various academic and non-academic experts, together with authoritative (former) NGO representatives, play a central role in the Brazilian biofuel debates, legitimising or criticising the biofuels. The first observation concerning the Brazilian expert scene is that the overwhelming majority of the research institutes are based in the prosperous Southeast. More specifically with regard to sugarcane and ethanol, the abolishment of the national sugar and alcohol institute, IAA, in 1990, meant that the Northeast sugar and alcohol industry lost its main defender at national level politics, a research organisation developing crop varieties suited to the region, and a body providing protection against the instability caused by market fluctuations (Lima & Sicsú 2001; Cavalcanti et al. 2002).

⁷⁸ Camila Moreno e Lucia Ortiz. 2007. Construindo a SOBERANIA ENERGÉTICA E ALIMENTAR: experiências autônomas de produção de combustíveis renováveis na agricultura familiar e de enfrentamento do agronegócio da energia. – Porto Alegre : Núcleo Amigos da Terra/Brasil.

⁷⁹ The organisations participating in the network were Amigos da Terra – Amazônia Brasileira, CASA, Conservação Internacional do Brasil, DIEESE, ECOA, IMAFLORA, AMAZON, Instituto Centro de Vida (ICV), Instituto Vitae Civilis, Mater Natura, Quatro Cantos do Mundo, and Repórter Brasil (RSB 2008).

The second observation is the frequent participation by a number of ethanol and biofuel experts, together with government and industry representatives, in Brazilian delegations making rather open publicity for Brazilian ethanol in various international events. Side-events organised in the UNFCCC climate conferences are a typical example, but similar events have been organised also on a bilateral basis, e.g. in European capitals. Typically, the presentations in these events seek to scientifically demonstrate the superiority of Brazil's sugarcane ethanol in terms of cost and CO₂ emission reductions, and to refute the claims that the expansion of sugarcane cultivation would threaten the Amazon rainforests or food security (e.g. Macedo, Goldemberg, Weber Amaral...). Examples and data on ethanol production to justify the claims are almost invariably taken from the state of São Paulo or from the areas of strongest biofuel expansion in the Centre-South, whereas the Northeast is often not even mentioned.

The international activity of Brazilian scientists has been exemplified by the discussions on the indirect land use effects of biofuels. José Goldemberg, a physicist and former science and education minister, was among the 111 scientists who signed a letter addressed to the Government of California contesting the figures of an LCA-study on the ILUC effects of various types of biofuels published by American researchers in 2008.⁸⁰ In particular, the critics argued that scientific knowledge was still far too uncertain to allow ILUC effects to be calculated in a reliable manner (Ethanol Summit 2009, 14).

The international **Ethanol Summit**, organised by the Brazilian sugarcane industry association (UNICA), and held for the first time in 2007 in São Paulo, is one of the high-profile events following the same format, i.e. industry-led events in which invited expert scientists give presentations portraying Brazilian ethanol in a highly positive light.⁸¹ In many of the presentations, the allegations against European and

⁸⁰ http://www.arb.ca.gov/lists/lcfs-general-ws/28-phd_lcfs_mar09.pdf

⁸¹ Already by looking at the titles of some of the sessions in the 2009 summit (http://www.revistaopinioes.com.br/aa/edicao_materias.php?id=30) one gets a flavour of the general thrust of argument. The session on food security, moderated by one of the prominent biofuel researchers, Armando Walter Weber Amaral, was titled "Food vs Fuel: Dilemma or Dogma?", with [Alexandre Betinardi Strapasson](#), [Fabian Delcros](#), [Ron Litterer](#), and Ismael Perina as invited speakers. Another session was devoted to certification, under the heading "Certified Biofuels: How to get there".

American protectionism are frequent (e.g. Barbosa Branco 2009; Ethanol Summit 2009, 14-15).

Some of the more ‘moderate’ experts, despite their overall positive assessment of Brazilian ethanol, that problems still persist. Schaffel and La Rovere (2010), for instance, acknowledge the existence of social problems, noting that the Brazilian Proálcool ethanol programme fell short of expectations in reducing regional inequalities, as the production was increasingly concentrated in the state of São Paulo. Schaffel and La Rovere (2010) hence join the NGOs in their criticism against the overly limited and technical approach to biofuel sustainability assessment. Instead, focus should be placed on “eco-social efficiency”, which would go beyond improvement of production efficiency within a given framework, and incorporate in the analysis the demand-side, i.e. ethanol consumption.

A third group of experts, sometimes working closely with peasant farmers, adheres to the radical criticism of NGOs and call for a major overhaul of the agricultural development model, ultimately a transformation in the relations between man and nature, as an essential precondition for social sustainability of ethanol. This critique also includes the argument that biofuels, or agrofuels, feed the cars of the middle and upper classes, while threatening food security at the local level.⁸²

Close to this third category, Hall et al. (2009) situate biofuels within the debate on the ‘resource curse’ theory. According to this theory, resource-rich countries frequently fail to benefit from their natural wealth, and tend to be among the least democratic and plagued by problems of inequitable distribution of wealth, misallocation of resources through corruption, environmental degradation, social exclusion and even civil war [22,23]. (Barbier, 2005; Rosser, 2006).

Experts crossing boundaries

The above brief categorisation of experts is, of course, highly simplified, and the boundaries between different groups are more or less fluid. For instance, while in

⁸² Statement by professor Jorge Tavares (Universidade Federal Rural de Pernambuco), Biodiesel e etanol são temas polêmicos em Pernambuco. CPT, 11/04/2008.

general positive about the prospects of biofuels in general and ethanol in particular, the powerful agricultural extension and research organisation, EMPBRAPA, hosts also experts with more critical views on both biofuels and sustainability certification (e.g. Hall et al. 2009).

Two further dimensions of boundary-crossing are relevant. On the one hand, experts frequently combine their research functions with those of a consultant, government adviser, politician or NGO activist, and on the other, both experts and other stakeholders increasingly operate across national boundaries. José Goldemberg again provides a clear example of an academic turned politician and activist, and operating at multiple international fronts (as in signing the above-mentioned letter to the California State government). Fabio Feldman, former NGO activist and politician, currently working as an environmental consultant⁸³, is another example of a ‘moderate’ and highly respected expert whom the biofuel advocates like to use as an invited speaker in their events.

While far from uncommon among academic experts internationally, such boundary-crossing obviously poses questions about the independence of these experts. In broad terms, while the pro-biofuel lobby seems to have its own trusted experts, the anti-biofuel critics, led by humanitarian NGOs, likewise have their own experts. The arguments of the pro-biofuel experts are usually couched in terms of scientific objectivity, life-cycle assessments, and other studies targeted at analysing the impacts of specific biofuel options, whereas the opponents usually adopt an approach closer to political economy, denouncing large agribusiness, and ultimately rejecting the capitalist development model underpinning the Brazilian biofuel development.⁸⁴ Two questions might merit further analysis. First, is the model of an ‘engaged scientist’ more frequent in Brazil than elsewhere, and the boundaries more fluid between the roles of expert, consultant, and NGO activist? Second, to what extent is the debate on biofuels more (or less) polarised in Brazil than in other biofuel-producing countries,

⁸³ Founder of SOS Mata Atlântica, OIKOS, Funatura and Biodiversitas. Ex-Sec Meio Ambiente, ex-Dep. Federal. (<http://www.ethanolsummit.com.br/upload/palestrante/20090615040507437-827762922.pdf>),

⁸⁴ „Der Klimaschutz ist nur vorgeschoben“, Interview with Klemens Laschefski, FDCL, [Lateinamerika Nachrichten](#) N° 396, June 2007.

by virtue of the specific history of sugarcane on the one hand, and the central place of ethanol in the Brazilian development model on the other?

7. Summary of views, discussion & conclusions

The above brief analysis of the Brazilian stakeholders' views on biofuels and sustainability certification demonstrate the importance of issue framing in defining the extent to which biofuels are assessed positively or negatively. Both the advocates and critics of Brazilian ethanol place the question in a broader context, yet each in a very different one. While the government and ethanol industry locate the debates within the framework of trade policy, avoidance of protectionism, global climate politics and techno-economic development, the biofuel critics see sugarcane ethanol as an integral part of the country's development model based on agro-industrial exports, and stress the need to pay more attention to the demand-side – the transport system and policy..

The two sides have clearly distinct expectations towards sustainability certification. While the biofuel advocates quite explicitly see as the main objectives of certification the promotion of Brazilian exports, and the avoidance of protectionism by the countries of the North, the critics emphasise the environmental and social sustainability as the primary function of certification.

The opposing views on biofuels can be examined through Laschefski's (XXX) distinction of four attitudes towards biofuels – ecological modernisation; the reconstruction of the urban-industrial-capitalist society; a model calling into question the universalised development model and underlining instead the heterogeneity of cultures; and the environmental justice movement. Without going into details of Laschefski's categorisation, it is clear that the pro-ethanol discourse in Brazil clearly falls within the ecological modernisation model, whereas the opponents employ a mix of arguments drawing mainly on the three remaining models. Given that certification clearly falls within the ecological modernisation frame, it is easy to see why the more radical NGOs refuse to consider certification as a serious means of achieving the objective, i.e. a complete revamping of the current development model in Brazil, and the vision of autonomous small-scale production for local demand.

Ultimately, one must ask whether certification is, indeed, totally incompatible with other ‘meta-frames’ than ecological modernisation. Views by NGOs and experts concerning small-scale community certification suggest that this may not be the case, yet the current certification schemes are clearly developed within the ecological modernisation framework. In any case, the debates have amply demonstrated one of the main shortcomings of certification: its inability to address many of the macro level issues (e.g. ILUC, fuel demand, transport policy), which are crucial for the sustainability of biofuel production and consumption.

Even if one accepts the positive potential of certification, the Brazilian ethanol example points at a number of difficulties. Delzeit & Holm-Müller (2009, 663) have listed three key criteria for successful certification: the system needs to be based on theory, relevant to key stakeholders, and verifiable. While the relevance criterion faces challenges because of the highly different expectations of stakeholders, the power relations especially in the Brazilian Northeast pose problems especially for the verifiability and theory-based nature of certification. Insufficient enforcement of labour and environmental legislation is a chronic problem in the Brazilian sugar and alcohol sector in general and in the Northeast in particular. It is unlikely that certification could easily remedy this enforcement gap.

The challenges are compounded by the asymmetries in knowledge and expertise between different stakeholders. For instance, the life-cycle analyses, on which certification should to a large extent rely, are contested and contestable. There are few peer reviewed studies in the area, and even the peer reviewed high-profile studies generate debate and controversy. The space that such uncertainty leaves for power play highlights the crucial role of experts – both Brazilian and international – in defining the criteria of sustainability. One needs only to look at the tremendous impact that individual studies have had on international debate (e.g. Searchinger, Fargione and Pimentel at the international level, and Macedo et al. on Brazilian ethanol specifically). The Brazilian industry and government have clearly recognised the importance of being proactive in the design of certification schemes, and have managed to influence for instance the German biofuel certification criteria.

Given the polarisation of positions between the pro- and anti-biofuel stakeholders in Brazil, the issue of participation in certification schemes becomes crucial. The first, in principle simple, question is who should be included in international ‘roundtable’ processes and other processes whereby certification criteria are designed. How could Northeastern smallholders participate on a level playing field with multinational ethanol industry? Could the smallholders ever have the required resources and expertise for such participation? In the light of the brief analysis of stakeholder views above it seems unlikely that the smallholders and their organisations would, even wish to participate, given their wholesale rejection of the agro-industrial development model and certification as mere greenwashing on the one hand, and the dominant position of the government, industry and pro-biofuel experts in the processes. The eagerness with which the ethanol industry advocates broad stakeholder participation suggests that it does not believe the radical critics would gain sufficient credibility.

Two aspects in common to both pro- and anti-biofuel stakeholders merit attention. First, both have sought to appeal to national pride in order to support their arguments. For the pro-biofuel side this means underlining the sovereign right of Brazil to decide on the use of its natural resources, condemnation of ‘northern protectionism’ aimed at preventing competition from the South, the role of the ethanol industrialists as national ‘heroes’, and the techno-economic progress that the ethanol sector has achieved during the past 35 years. In the discourse of the opponents, the nationalist tone is more subdued, but nevertheless visible for instance in the opposition against the entry of foreign capital. National pride is therefore an issue that may shape the success of certification: an argument that certification is a means for foreigners to gain control over Brazilian internal politics and resource use may well have resonance in the Brazilian debates.

The second commonality relates to the near-absence of the Northeast in the discussions concerning the sustainability of Brazilian ethanol. The Northeast is mentioned, usually by the biofuel critics, and of course by the Northeast sugar and alcohol industry itself, yet even the majority of the ‘warning’ examples evoked by the biofuel critics refer to the effects of the expansion of sugarcane cultivation in the Southeast and the Centre-West. The Northeastern sugar elite is going through a transformation, yet the extent, direction and consequences of such changes remain

uncertain. Open questions concern, for instance, the effects of the direct involvement of mill owners in regional politics, the extent and impact of the penetration of foreign capital in the Northeastern sugar and alcohol sector, and the consequences from the investments of the Northeastern usineiros in the Southeast. The key question for the region's future is how well the sugar elite manages to retain its overwhelming influence in regional politics. To attenuate the negative impacts of unequal distribution of power, international pressure would be welcome – possibly even indispensable – yet the continuing absence of the Northeast from even the national debate hardly gives reason for optimism.

Apart from the particularly unequal power relations, the problems of certification specific to the Northeast are not very different from those experienced in many other poor biofuel feedstock producing regions in the South. The productivity gap and the different production systems between São Paulo and the Northeast is perhaps the most obvious challenge: which production figures, emission factors, labour-intensity factors, etc. should be taken as the starting point when designing criteria for ethanol sustainability certification? Reliance on national averages would give a highly distorted picture, whereas obtaining regionally or locally specific numbers is resource-intensive and prone to influence by powerful local lobbies. Likewise, if certification and verification were to be decentralised to the local level, how to safeguard the independence and credibility of certification in the context of strong inequality? Given that the working conditions on some of the smallholder sugarcane plantations have been even worse than on large industrial plantations, the promotion of small-scale cane cultivation may work against social sustainability, unless well designed. And, how realistic is the objective of overcoming the deeply engrained hostility and polarisation between the landowning industrial elite on the one hand and the poor working population on the other, in the context of extremely high political and economic stakes in the country's ethanol politics?

Finally, two comments on the research method are in order. First, the paper was based on a preliminary analysis of debate in the Brazilian media. However, the role of the media itself, and the views of different newspapers, for instance, would merit being examined. For example, some of the central economic press (e.g. Valor Econômico) seems rather outspoken in its pro-ethanol discourse. Likewise, contrasting the biofuel

reporting in the Northeast press with the national media would provide further insights into the inter-regional differences. Second, in a multilevel governance context, analysing Brazilian stakeholder views in isolation from the broader international debate on biofuels obviously gives a somewhat one-sided picture of reality. The positions of Brazilian industry, government and NGOs have evolved largely in reaction to international debate concerning the sustainability of biofuels, while experts have designed their research agendas accordingly. This internationalisation of the debates has meant both intensified collaboration and confrontation of views between different players. Such interpenetration of debates poses particular challenges for attempts to follow the debates, as national players react to inputs into international sphere. Despite its inherent shortcomings, an analysis of Brazilian debate alone seems relevant, not least because most international outside inputs enter the Brazilian debate through the Brazilian media.

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