Correcting biofuel policies through environmental and social standards –
How are environmental and social aspects governed by multi-stakeholder processes?

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Abstract: To avoid negative outcomes of rising biofuel production and use, and to reduce simultaneously greenhouse gas emissions, the European Commission linked its mandatory biofuel blending requirements to sustainability criteria defined in the Directive on the Promotion of the Use of Energy from Renewable Sources (2009). Several voluntary, private standard initiatives are controlling the compliance along the value chain. Given that little experiences exist as to the certification of a large scale commodity like biofuels, there are many challenges to overcome.

One point in question is the participation of small scale farmers in this complex and price bonded process. Is it possible to create methodologies to ensure the participation of smallholders? Additional uncertainties exist as to the implementation of control tools to avoid the jeopardizing of biodiversity or land with high carbon stocks.

The objective of this study is to scrutinize the implementation of the sustainability criteria and its effects on crucial aspects as the inclusion of smallholder properties in certification schemes, effects on biodiversity or land use change. In addition, this work examines the possible limits of certification in the context of biofuel production and its claims for sustainable production patterns.

Keywords: *biofuels, certification, renewable energy legislation, private standards, environmental governance*

Chapter 1: Introduction and purpose of study

With the transition to the 21st century, energy security and the concern about the effects of rising carbon emissions became outstanding challenges for global policy makers. In this context, biofuels have once been touted as a panacea for environmental problems like climate change, poverty alleviation and energy scarcity in rural areas. However, today there is a growing concern about negative impacts caused by massive demand in combination with the dominating agricultural production system, possibly outweighing most of the benefits.

Critics found their arguments on the detrimental effects caused by a 'political demand' for biofuels and the resulting large-scale production. According to them, possible positive effects on the greenhouse gas balance during the combustion of biofuels are reversed by N2O emissions (with a GHG potential 296 times higher than CO2) from fertilizer application, high CO2 emissions from deforestation and soil carbon offset (Hoojer et al. 2006). Hence, one of the main objectives is the control and the regulation of indirect land use change (ILUC), caused by the increasing demand for arable land. Furthermore, large-scale production is seen as a major factor for causing land conflicts and inhumane working conditions for small scale farmers and farm workers.

In response to these widespread criticisms, the European Union promotes sustainability criteria expecting to regulate the negative side effects. Under the new EU Directive on the "Promotion of the Use of Energy from Renewable Sources" (2009) the European Union stipulates a 10% share of renewable sources in transport energy by 2020. Meanwhile, the EU wants to pave the way for a more environmentally and socially concerned production of biofuels by introducing sustainability criteria. Additionally, the commission wants to report on the (in)famous competition between food and biofuel production.

In different research projects on certification the theoretical frameworks were directing the view from economic geography, political economy or commodity chain approaches like the one in this study adopted on 'global commodity networks'. Referring to its notion of a market-based private instrument, researchers termed certification as *"private governance"* (Pattberg 2005), *"private system of regulation"* (Gale 2004) and *"nongovernmental market-based regulation"* (Klooster 2005).

This work will analyse the arising networks of power and influence in this governance system, the diverse domains of knowledge and economic power between the actors in the field. One of the leading questions of this research pursues the question of effects on small holders in a certified biofuel production chain. Other questions draw on the outcomes of the application of socio-ecological criteria, focussing implications on social issues like the right to assembly or working conditions. As power relations play an important role in value chain structures, this analysis questions power inequality among stakeholders of the value chain.

Chapter 2: Theoretical assumptions: The governance of global commodity networks

A useful approach to analyze the above mentioned questions offers the concept of Commodity Network Analysis, a broadened concept of the Global Commodity Chain (GCC) concept (Gerrefi and Korzeniewicz 1994), defined as the network of organizations and production resulting in a finished commodity. A central point of this analysis is the

understanding of governance, which points out to much more than a simple bargaining process about prices between the seller and the buyer. *"Commodity chain analysis illuminates the connections between consumers, producers, and workers, maintaining a focus on the unequal distribution of power between actors and the social relations of production"* (Klooster 2006, p.544). A decisive point of the concept is the assumption that the chain is shaped not only by market-based transactions, but through influences from powerful actors leading the governance of value chains.

Regarding the role of resource suppliers, environmental governance through certification can be a tool for powerful actors disciplining the activities of less powerful actors of the chain using control instruments. On the other hand certification is an instrument for parts of the network, like distributers, to *validate* (Klooster 2005, p.415) their management practices. In this sense, as Klooster (2005) claims, more attention has to be directed to certification in research studies of environmental governance dynamics.

Governance in private-rule making organizations

The focus on governance is interconnected with questions of legitimacy and power relations between the negotiating actors. Legitimacy can be a source of power, not only enabling powerful actors to exercise their concerns, but also empowering environmental and social organizations to position their requests (Bernstein 2005, p.142).

Despite the problem of democratic legitimation global production standards can establish alternative structures *"that may be more effective in enhancing transnational accountability"* (Gulbrandsen 2008, p.566). Transnational decision networks like in this case multi-stakeholder processes for standard development, can be understood as a sought of new environmental governance. Critical observers of the increasing shift from governmental regulation to private governance in sustainability regulation question the neoliberal instruments applied in this process. In environmental research certification is questioned whether it can achieve the expected transformation of the negative developments from neoliberal production processes challenging the influence of powerful actors.

How can the interests of farm workers, representing the root of the collective bargaining process of standards, be adequately represented in social standards? Which strategies are followed by this group?

Additionally, this research tries to identify potential **barriers** for biofuel commodity networks on certification and distinguishes in that sense between large scale producers and small scale farmers.

Chapter 3: Political Framework

In its Directive on the “Promotion and Use of Biofuels or other Renewable Fuels for Transport” the EU for the first time sets compulsory blending requirements for biofuels of 2% (2005) to 5,75% (2010) (European Commission 2003). In its 2005 “Biomass Action Plan” the EU promotes an increasing use of energy generated from biomass. Concerned about the increasing impacts of biofuel production, foremost soy and palm oil, a certification system to regulate the production is solicited (European Commission 2005).

The in 1998 adopted and modified Fuel Quality Directive (FQD) discourages the use of biofuels under its policy to reduce emissions from transport fuels (European Parliament 1998). The proposal revised in 2000 demands fuel suppliers to reduce GHG in fuels sold in the EU market up to 10% from 2010 to 2020. The amendments would permit higher volumes of biofuels such as ethanol to be used in gasoline. Reductions are also expected in the supply chain improving conditions in the processing, foremost in venting and flaring and efficiency gains in the refineries.

The Renewable Energy Directive (RED, 2009), coming into effect in December 2010, sets an overall EU target of 20% renewable energy in total energy consumption by 2020, translated into binding national targets for member states. Each Member State has to reach individual national targets for the overall share of renewable energy. In addition, in the transport sector, all Member States have to reach the same target of a 10% share of renewable energy (Article 3.4). Approximately 8% (personal communication with EU representative, 2010) of the 2020 target will be met with liquid biofuels. In contrast to former biofuel regulations, the new directive operates with sustainability criteria which have to be accomplished by domestically produced and imported biofuels. Due to the new regulation the biofuels used are only added to the binding quota or on the target of the Fuel Quality Directive for reducing greenhouse gas emissions if produced according to the sustainability criteria set by the European Commission (European Parliament 2009). Additionally, subsidised biofuels receiving financial support from the member states or according to the Community guidelines for environmental protection have to fulfil the sustainability requirements.

Biofuels from waste, residues, non-food cellulosic materials and ligno-cellulosic materials gain additional incentives. Article 21.2 determines that biofuels from these materials can be accounted twice towards the blending target. However, it is very likely that technology for second generation biofuels is not developed before 2020.

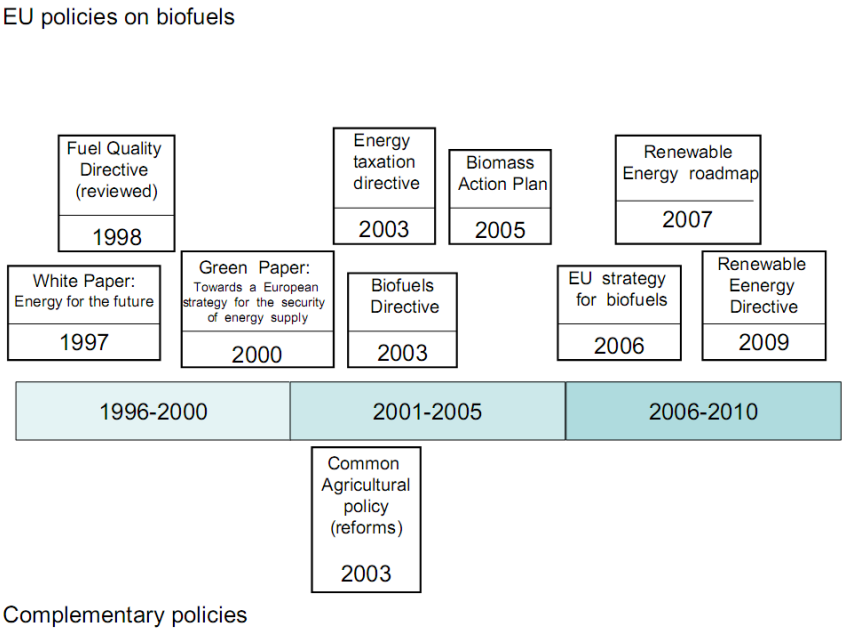

Figure 1: Development of EU biofuel policies, Author's design

According to the EC, the development of certification schemes as a control tool for the compliance of the obligatory criteria will help to fulfil the EU's requirements that biofuels must deliver substantial reductions in greenhouse gas emissions and should not come from forests, wetlands, land with high biodiversity value, land with high carbon stocks or cause further land use change.

3.1 Sustainability Criteria of the Renewable Energy Directive

The RED requirements for liquid biofuel production are based on three main pillars:

Sustainability criteria (RED § 17)

The sustainability criteria are split up into two main categories, land with high biodiversity and land with high carbon stocks. These sustainability criteria tackle the impacts of direct land use change.

Land with high biodiversity (§ 17.3)

Raw materials should not be obtained from primary forests and (primary) woodland (forest undisturbed by significant human activity), land designed for nature protection areas and highly biodiverse grassland (grassland that is species-rich, not fertilised and not degraded).

Land with high carbon stocks (§ 17.4)

In this case, raw materials should not be obtained from wetlands, peatlands, continuously forested areas, areas with a canopy cover from 10-30% and trees higher than 5 metres - if the status of the land has changed compared to its status in January 2008.

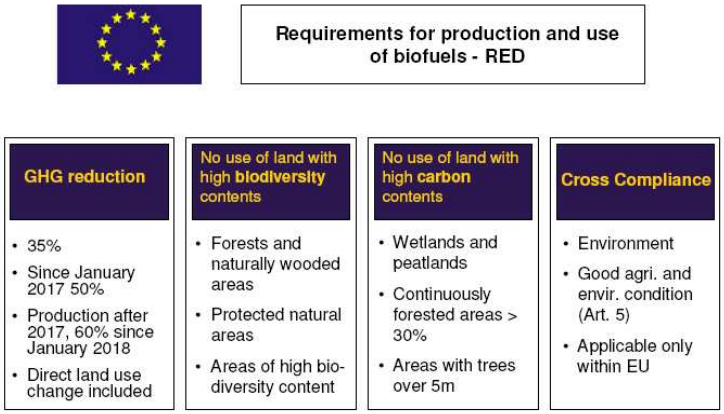

Figure 2: Requirements for production and use of biofuels, Author's design, (European Parliament 2009)

Greenhouse gas balance (§ 17.2)

The greenhouse gas balance encompasses the whole value chain, from agricultural production over distribution and combustion to end use. In these calculations, biofuels must deliver greenhouse gas savings of at least 35% compared to fossil fuels, rising to 50% in 2017 and to 60%, for biofuels and bioliquids from new plants, in 2018 (see figure 2). The commission established a so called grandfathering clause for installations operating before January 2008. These plants have to reach the criteria until the first of April 2013(European Parliament 2009), until this date they are free of meeting any GHG reduction thresholds. The EC delivers a set of default values, defined at a conservative level, to facilitate the calculation process (European Parliament 2009). The methodology is published in the annex of the Directive. Additionally, current values can be calculated using the provided methodology of the RED.

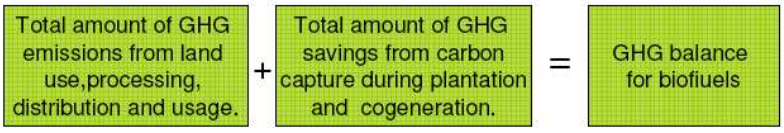

Figure 3: GHG calculation, Author's design

Apart from the sustainability criteria, the EU stimulates the production on marginal land by providing a bonus for raw materials produced in these areas. GHG calculations for fuels produced on marginal land reach positive reduction values and are expected to achieve reduction requirements of 50% from 2017 on. The higher emission thresholds are subject to a review in 2014 (§ 23.8a) which will take new technology development suitable for biofuels and bioliquids into account.

Studies estimate that the grandfathering clause for old installations and the deadline of 50% of GHG emission reductions from 2017 onwards will hamper the investment in new installations facing uncertainties in developments of biofuels meeting the sustainability criteria (Birdlife International et al. 2009).

Social Standards (§ 17.7)

The compliance of social standards is regulated by the RED through a reporting system. The commission will report on the country status of ratified relevant international standards like the International Labour Organization (ILO) Convention. In absence of international agreements, member states should demand the operators to report on environmental and social considerations.

Traceability along the chain of custody (§ 18)

The chain of custody must be controlled through independent auditors who check the whole biofuel production chain, from the farmer and the mill, via the trader, to the fuel supplier who delivers petrol or diesel to the filling station. The controller has to be an accredited auditor, who certifies the production according to the required certification standards. In its communiqué (European Commission 2010), the EU sets standards so as to guarantee the auditing to be reliable and fraud-resistant.

To retrace the proportion of biofuels produced that fulfil the criteria, a mass balance system confirming the percentage of the certified amount is adopted. As most of the raw materials are produced in a multi-linkage chain, only the final product has to meet the requirements of the Directive (European Parliament 2009).

The Directive's sustainability criteria are fully harmonized at community level, which means that under the legal statute (Article 95) EU Member States may not include additional sustainability requirements. This concept, known as "maximum harmonization", leads to a stop of national initiatives like the German sustainability ordinance, which actually goes further than the RED criteria. In order to reduce the administrative burden a meta-standard approach will be applied (Vos 2009). All existing initiatives, most of which focus on

sustainability on the production side, can be adopted if they fulfil the majority of the RED criteria. Those criteria can be complemented with the GHG calculation tool.

The above mentioned criteria on sustainability are designed to control impacts on direct land use change (Fargione et al. 2008). Since there is no tool to measure indirect land use change (ILUC) the commission will report on the handling with ILUC until December 2010. For the control of (negative) social implications of biofuel production the commission decided to release a report on social conflicts, affects on communities and food security on a biannual basis. On the voluntary level, most standards address social criteria through the adoption of the ILO criteria.

3.2 Compliance and Verification

Member states (MS) are obliged to implement sustainability criteria in their national legislations. They also have to implement a verification scheme to guarantee the fulfilment of the mandatory criteria.

There are different options for MS to guarantee the fulfilment of the criteria set by the EU Renewable Energy Directive, of which using a voluntary scheme seems to be the most promising. The options are the following:

1. Establishing a national system where the requirements are laid down and all relevant data is provided
2. Using a “voluntary scheme” that the Commission deems apt for the purpose
3. A system in accordance with the terms of a bilateral or multilateral agreement which the Commission has recognised for the purpose (European Parliament 2009)

MS have to report on the implementation of the RED criteria, covering social and environmental topics. The sustainability of the production will be verified through a documentation process which will be determined in the RED.

In the case of Germany, for example, private certification schemes and verification bodies are responsible when it comes to compliance with the sustainability criteria by economic operators. Both organs have to be accredited by the national authority for recognition and control (BLE).

Chapter 4: Certification and monitoring of social and environmental criteria

Certification as one instrument or *"new mechanism"* (Jordan et al. 2003) of environmental governance enjoys a quite brought attention in political and geographical research. The increase of biomass and biofuel production and trade has triggered a global concern on the massive impacts large scale production methods can cause. Voluntary standards, developed in multi-stakeholder processes, address these impacts by providing management practices and control systems. Presuming a positive influence of certification schemes, they can enhance corporate control of environmental and social performance in the production chain. But examples from different certificates show that *"industry-dominated schemes adopt popular and fashionable accountability recipes to divert criticism of their activities instead of acting responsively to external constituents such as environmental and social groups"* (Gulbrandsen 2008, p.563).

If a voluntary certification scheme is adopted, an independent auditor has to verify the compliance of the criteria on which the system is based. The auditor's accreditation is preferable and enforces the reliance, but accreditation is not an exclusive criterion. To reduce the administrative burden of certification systems that arise with external private certification bodies, it is recommended to use already existing meta-schemes (Cramer 2007). Experiences in voluntary certification can be adopted from forest certification like the Forest Stewardship Council or from fair-trade schemes for coffee for instance. These certificates are built on the principle of a premium price, higher than the world market price, for producer. Mill operators (in forest certification) or retailer can benefit from a grater market share (Maser & Smith 2001, p.2).

As economic costs for a certified production will arise, small farmers, producer organizations and cooperatives can opt for a "group certification" under the condition that production units are located closely and comply with similar characteristics.
A sustainability certification scheme has to be characterized by the following components, discussed in detail in the next chapters:

- **Clear standards:** ideally defined in multi-stakeholder consultation processes and representatives from different areas
- **Audit rules:** clearly defined, systematic, reliable auditing processes using a checklist or a different tool of that sort
- **Chain of custody control:** reliable traceability established through information processes
- **Transparent governance system:** to guarantee impartial management of the scheme

Types of certification

Over time, several certification types applicable for biomass were developed in different fora or state initiatives. Mainly, these schemes can be differentiated between several voluntary, non-state initiatives and some mandatory measures.

- **State-initiatives:** like the Renewable Transport Fuel Obligation (RTFO) from the British government, the criteria developed by the Dutch Cramer Commission, the initiative from the German government for a biomass sustainability ordinance or the sustainability criteria for the European RED
- **Voluntary, non-state or hybrid initiatives**: specific certification for raw materials like the Roundtable on Sustainable Palm Oil (RSPO), Round Table on Responsible Soy (RTRS), Better Sugarcane Initiative or the Roundtable on Sustainable Biofuels (RSB), the International Sustainability & Carbon Certification (with financial support from the German government), European Committee for Standardization (developing "Sustainability criteria for biomass" CEN TC 383, under supervision of the Dutch national standardisation body) and the recently developed standard of the International Standard Organization (ISO 13065 under supervision of the technical standard body of Brazil (ABNT) and Germany (DIN)) assembling the knowledge of all current initiatives
- **Information and research initiatives:** like the Bioenergy Task 40 of the IEA on Sustainable International Bioenergy Trade, the International Bioenergy Platform (IBEP) administrated by the FAO (FAO, 2006) focussing on knowledge management and transfer or the Global Bioenergy Partnership (GBEP) launched by the G8 + 5 (Brazil, China, India, Mexico and South Africa) and lead by UNDP (UN Energy 2007)

In some countries, like Brazil for instance, there are several local initiatives to certify biofuel production. Some interest groups are also developing private, sectoral certification schemes, like the German Biofuel Association, guaranteeing a minimum compliance with the RED criteria.

Most of the mentioned initiatives are still in a development process. First experiences of pilot tests in 2008 and 2009 were incorporated in the criteria development. Until 2011 first experiences with issued certificates will be available.

Control and Monitoring Systems

Implementing a reliable monitoring system along the chain of custody (CoC), as mentioned above, is one of the core elements in a certification system. Until now, it is still challenging to develop a control system dealing with the differences in production scale, crops, national contexts (legislation) and information systems along the CoC.

Reliability of the control system is a challenge in a market characterized by rapid changes of suppliers, which may erode the effectiveness of those systems. Crucial for reliability is the independence and a non direct contractual relationship between the certified company and the auditor (Mueller et al. 2009, p.519).

A decisive point is the costs for verification and the follow-up control, possibly leading to exclusion of participants of the value chain. Without prices high enough to cover the higher costs of production associated with fees for evaluations and audits, and the expenses associated with meeting higher standards in production, meeting the sustainability criteria will remain without broad interests of the market.

Several track and trace systems were developed for different production and certification chains, ensuring the control of the goods. Under the EU RED accepted methodology, a mass balance system lists the percentages of sustainable certified biofuels.

The awarding of a certification system falls under the responsibility of a verification body, officially accredited and trained with regard to the specific certificate. Auditors should follow a traceable, standardized process. Guidelines are defined by the international standardization organisation (ISO 19011) which also released a guide with general requirements for certification bodies (ISO 65).

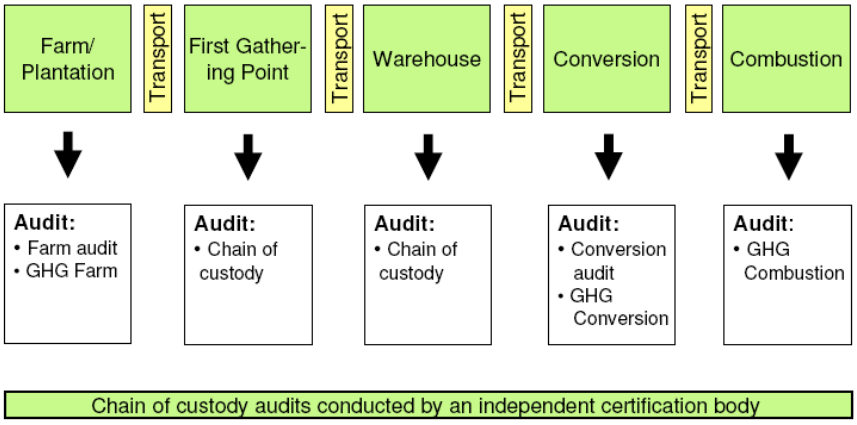

Figure 4: Chain of custody audit, Author's design

Certification for small-scale farming systems

Small scale famers are facing challenges when they aspire for a certification of their raw material production. Limited resources, lack of knowledge and information, capacity or technical skills need to be overcome. Additionally, framework conditions like missing land titles or conflicts with neighbouring land owners hamper the situation (IFOAM 2003).

A first entry barrier for small scale farmers are the in general very high auditing costs for the producers. These costs reallocated on the raw materials signify elevated costs for small producers, whereby other instruments must be adapted for these farmers. Additional costs result from actions required to improve the raw material management. In the case of forest certification for the FSC these costs can be two fold as high as the auditing costs (Klooster 2006, p.548). Compared to Fair Trade, which is working with a price premium for coffee farmers, prices of certified biofuel raw materials are left up to the mechanisms of the market. If the revenues could cover the costs of certification depends on one hand on the size of the certified area, on the other hand on price developments which still have do be expected (Sept. 2010).

Certification processes offer group certification for small farmers requiring them to be organized in cooperatives, production groups or other forms of organization. Group auditing is also possible for GHG calculations (European Parliament 2009). A yearly audit is required, the sample size has to be defined by the auditor.

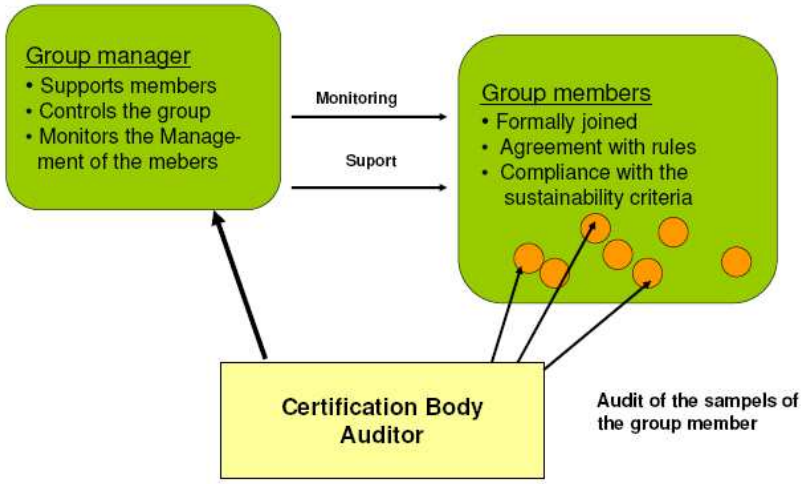

Figure 5: Group certification, Author's design

A second entry barrier can be the premium price for the certified production, which will be a leading factor for motivation of the farmers. But as no price for certified production emerged until now (July 2010) there is no additional price motivating farmers to change to certified production.

Transition to other producer systems and organization may be time consuming, which leads to advantages for large scale production systems, being easier and faster to fulfil the requirements for certification in short time. A determining issue will be the price, bringing small famers in a disadvantageous position. As small farms are more complex to certify, despite of working with samples, it will probably take more working days for certifiers to issue the certificate. Certifiers count between 13-14 working days to audit the production of 100 palm oil farmers. In contrast the audit process for one single oil mill purchasing raw materials from already certified producers is reduced to 8-9 day, lowering the costs significantly (Yacoob 2010). *"For small-scale production, extra costs for sustainability certification could potentially become prohibitive"* (van Dam 2009). First experiences with pilot audits and the recently started certifications show that compliance with the standards and control along the chain is easier if supply comes from only one big factory (Yacoob 2010).

Crucial is not only the compliance with the sustainability criteria, which could be less strict in case of smallholders, but also the compliance of the internal management including the documentation. In the latter case, technical assistance is required to build up basic capacities for the participation in certification processes.

A mainstreaming of certification as environmental governance "*through power of retailers is a Faustian bargain that marginalizes small and community forest managers, shifting the costs of environmental management onto them but without providing them with the means to cover those costs"* (Klooster 2005, p.415). Taking the example of forest certification benefits are unequally distributed. Mainly well-documented forest management is profiting, were as community forests in the global South fail to participate due to management practices and additional costs which are not necessarily compensated.

At the same time, certification systems need to be reliable and thorough but should not present a hurdle for new industries or stakeholder to participate in the value chain (World Watch Institute 2006). To guarantee a broader participation of stakeholder, the implementation of a certification scheme should go along with incentives or assistance programmes as well as capacity building.

Facilitating certification processes for smallholder in the area of biofuel certification is a hot topic and intensely discussed during conferences and stakeholder meetings. For future development of small scale farmers' certification schemes it is essential that markets can provide producers with means to cover the costs of environmental and social improvements in production. Barriers for small farmers could face hurdles of meeting the required volume, the physical quality and keeping a low production price.

Chapter 5: Discussion

There is a widespread awareness of the topics to be tackled by certification systems, like deforestation, biodiversity, social well-being or land use change. One of the main challenges is to render the sustainability principles operational. Uncertainty exists in the implementation of verification schemes. Indirect land use cover change is one of the main obstacles to overcome for a certification system which is mainly based on the company level. For a monitoring instrument regarding ILUC, meta data on national level is requested. This kind of control system demands a twofold supervision on the company and national level.

A big step for further discussions on the certification of biofuels would be a synthesis of pilot studies shedding light on the peculiarities arising during the application of the criteria. Recently (June 2010) several pilot projects were realized applying standards like RTRS or ISCC. The experiences were included in the formulation of the criteria (personnel communication, April 2010). Experiences with issued certificates are expected in 2011.

A core requirement of every certification system is the compliance with national legislation and international agreements. In the case of Brazil, for example, where the environmental legislation can be described as comprehensive, a weak inspection body leads to gaps in the thorough application of the standards. Weak government structures are a limiting factor when it comes to adhering to the requested criteria, especially because off-side effects can only be addressed through macro control tools developed by the government. In Argentina, for instance, a lack of land use planning, which is now introduced on community level, increased the risk of deforestation. Generally, land-use planning should be adopted to monitor local food production and deforestation. *"It will take a lot more than a few criteria and voluntary schemes to make them sustainable. The EU should abandon this folly and invest in genuine energy reductions in the transport sector" (Adrian Bebb,* food and agriculture campaigner at Friends of the Earth Europe, 2010). Some of the main disconcerting effects of large scale biofuel production are challenging certification systems that operate on the private level. A distinctive treatment has to be applied for on-side effects, as the use of agrochemicals or agricultural practices, and off-side (macro) effects as deforestation. An operational control tool for social conflicts, rising food prices or deforestation is a challenging exercise and doubted by critics of biofuel production, *"It is likely that this will never be solved by certification"* (Bebb 2008).

Until now, only products designated for export can be considered for certification, as only a few importing countries are demanding certified biofuels. In distinction to that, production for the local markets is still produced under worrying social conditions with negative environmental effects. *"Even in the best-case scenario, however, voluntary certification*

programs should not be seen as a replacement for a direct state role in environmental regulation and development" (Klooster 2006, p.561).

Transparency is a key factor in certification schemes, beginning with participation in the round-table meetings, publication of all relevant developments and verification schemes (Renard 2005). Abuse of the standards will and must be answered with harsh criticism by civil society actors, many of which are already voicing these concerns. Experiences from other certification schemes, e.g. from the Forest Stewardship Council, have shown that even well established certification schemes can be subject to fraud or misinterpretation by certifying bodies (FSC Watch 2010).

The case of soy bio-diesel is special, given that soy is often exported to other countries to satisfy demand for animal feed. A seriously taken certification scheme for soy would need to cover both markets, biodiesel and fodder, so political incentives are also required for animal feed based on soy.

Greenhouse gas reduction

Some voluntary standards like the RSB or the RTFO which are especially designed for biofuel certification already contain mandatory reductions in GHG emissions compared to fossil fuels. As the EU sets its own parameter for GHG calculations, the standard methodology has to be accepted under EU requirements. Standards not including GHG calculations can use the EU methodology, released as a meta-standard, or the released default values.

Biodiversity

Most of the standards work with the concept of High Conservation Value Areas (HCVA) and exclude them from agricultural production. The HCVA concept has been adopted from the FSC experience, but has also shown the same difficulties in implementation as other definitions for biodiversity. Until now, only a fraction of the world's areas are classified under the HCVA, forcing farmers to carry out their own assessment on their properties. As the process is costly, this can lead to exclusion of farmers without existing HCVA assessment on their land or small scale farmers.

Questions remain as how to define biodiversity. A communiqué is expected to be published by the commission, but as certified raw material are supposed to be used from next year (2011) on, implementation of this criterion is difficult and processes are paralyzed.

Some standards lack a clear definition of the issues they aim to address. The RTFO, for example, requires protecting threatened or endangered species; however, it does not include

a definition of what is exactly meant by that. This is despite the fact that it could be easily adopted from international agreements like CITES Red list. Insufficiently defined criteria can lead to improper implemented standards, since control is difficult.

Social criteria

Land rights and land conflicts are one of the most challenging criteria to measure. Most of the standards require a valid land title. Some standards like the RTFO and the Cramer criteria demand producers to get into dialogue with other potential land users or indigenous groups. But as a standardized methodology does not exist, there is no possibility to measure compliance. The Basel criteria[1] go a lot further than others as they require the consultation of local communities to detect land conflicts or the enforcement of land sales.

Most of the indicators for on-farm environmental impacts control were adopted from already existing certification schemes like the FSC or organic certification, therewith benefiting from practical experiences.

Thus, biofuel production is linked to broad criticism on social issues like land conflicts or impacts on indigenous communities, for example through migrant workers. There are neither standardized methodologies to measure these impacts nor clear definitions of each aspect. If there are no improvements on the issue, the standards run the risk of being too soft and compliance will be reached easily through own interpretation.

Mandatory blending requirements

A general discussion point is the target of 10% renewable fuel used in transport until 2020, which could lead to a rising biofuel use up to the mandated 10%. IFPRI (2010) warns in its study commissioned for DG TREN that *"Simulations for EU biofuels consumption above 5.6% of road transport fuels show that ILUC emissions can rapidly increase and erode the environmental sustainability of biofuels"* (Al-Riffai et al. 2010). Although sustainability criteria are applied, the sheer amount of required blending could be a barrier for sustainability. Possible greenhouse gas savings could be reduced due to GHG emissions up to 5.3 Mt CO^2 (mostly in Brazil) through ILUC, reducing the global net balance estimated to be around 13 Mt CO^2 savings over a 20 years horizon (Al-Riffai et al. 2010).

[1] The Basel Criteria for Responsible Soy Production were prepared in 2004 by ProForest in cooperation with WWF Switzerland, with the aim to provide a working definition of acceptable soy production that can be used by individual retailers or producers.

Enforcement of certification

Interests are vehemently represented in the certification processes, thus rendering the processes susceptible to corruption and fraud (Huang 2010). As there is a lot of money in the game, a complex production chain to be controlled, and mineral oil companies who are obliged to fulfil the blending requirements, the sustainable biofuel market will be heavily fought over. To ensure credibility of the sustainability criteria and to make biofuels certification a leading sustainability concept, the EU and member states have to ensure control, and in case of fraud and incompliance the possibility of punitive measures, such as the withdrawal of the certificate.

As certification is based on the private sector, a decisive point is the costs of a certificate and the price for certified production retailers and costumers are disposed to pay. Given that there is no big quantity of certified production on the European market, experiences will not be available until next year (2011).

Although voluntary certification schemes may create improvements in some aspects like workers safety conditions or ban the use of toxic pesticides, "*they do not replace a more integrated set of regulatory policies including taxes and subsidies and direct (presumably governmental) regulation of production process"* (Klooster 2006, S.561).

6 References

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