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Policy brief on Biofuels Trade

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competing claims

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Policy Brief on biofuels trade

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Introduction

Biofuel production is growing rapidly. Although globally only less than 2% of all transport fuels is of vegetable origin, this contribution is expected to grow substantially in the coming years. Current production is restricted to a few countries, whereby the USA and Brazil are responsible for some 90% of the world's bio-ethanol and the EU for 60% of the global biodiesel production (Table 1). But several other, including developing, countries are investing heavily in biofuel production, in the expectation of profiting from export to the world market.

Table 1. Biofuel production by country, 2007 (million litres)

	Ethanol	**Biodiesel**	**total**
United States	26,500	1,688	28,188
Brazil	19,000	227	19,227
European Union	1,253	6,109	8,361
China	1,840	114	1,954
Canada	1,000	97	1,097
India	400	45	445
Indonesia	0	409	409
Malaysia	0	330	330
Other countries	1,017	1,186	2,203
World	**52,009**	**10,204**	**62,213**

(Source: (OECD 2008)

Biofuels have been traded already for several years but trade has grown substantially as international demand for the end-product and for its material base rises. International trade in ethanol in particular has grown significantly, while pure biodiesel is hardly traded. On the other hand, there is little trade in the inputs to ethanol (maize and sugarcane), but substantial trade in biodiesel feedstock, (palm oil and soybeans) (Motaal 2008). In 2004, an estimated 3 billion litres of biofuels were traded internationally up from one billion in 2000 (and 10% of total production in 2005). Brazil remains the global leader in ethanol exports which it has been for several years already, providing 70 percent of the world's supply in 2006; China has come up as the second largest exporter. Indonesia and Malaysia are the largest exporters of palm oil feedstock for biodiesel (OECD 2008).

The growing demand for biofuels, particularly in European countries, may offer interesting export opportunities for countries such as Mozambique as the growth of biomass is more efficient in tropical climates. However, to profit from this export potential, it is essential to be informed about the relevant international trade regulations on biofuels. Therefore, this policy brief summarizes current and expected policies with regard to international trade in biofuels.[1] In order to develop a comprehensive insight, first the most relevant domestic and international trade regulations are reviewed for the three main producers and users of biofuels: the U.S., Brazil and the EU. These national/communitarian regulations are followed by a summary of the relevant WTO and bilateral trade agreements and some of the key private certification and labelling initiatives.

Biofuel trade and the EU

The EU's interest in biofuels is primarily driven by the problems in securing farmers' incomes, by its intention to increase energy independence, and by environmental considerations to comply with the Kyoto Protocol and to promote sustainable energy in general.

Producing feedstock for biofuels in the EU is closely related to the CAP (Common Agricultural Policy). The CAP reform of 1992 created the opportunity to grow non-food crops on set-aside land, without losing the set-aside premium. The amount of oilseeds allowed to be cultivated for biofuels on set-aside land remained limited, however, by the Blair House Agreement. This 1992 Blair House Memorandum of Understanding between the United States and the EU helped to resolve an important dispute over the EU's domestic agriculture support programmes that impaired U.S. access to the European oilseed market. This Agreement restricted the maximum oilseed area in the EU for use as food to somewhat less than 5 million ha, and the annual output of oilmeal from oilseeds planted on set-aside land for non-food (i.e., industrial or energy) purposes to 1 million tones of soybean-meal equivalent. Set-aside-based oilseed production was thereby effectively restricted to roughly 0.7 million hectares (Mha). In the mid-1990s most energy crops (mainly rapeseed) were produced on set-aside land. In the period 1997-1999 this changed because of the lower set-aside obligations in the EU. Total non-food rapeseed production declined and part had to be grown on basic (non-supported) land. From 1999 the set-aside obligations stabilized at a higher level (10%) and more set-aside land was used for non-food rapeseed. After 2000, the demand for biodiesel rose very fast, especially in Germany, and it became economically profitable to grow rapeseed on basic agricultural land. In 2003, a new round of CAP (Common Agriculture Policy) reforms established a special financial assistance programme for energy crops grown on non-set-aside land. Energy crops — those grown for the production of biofuels or for use as biomass in the production of electric and thermal energy — were eligible for an annual premium of € 45 per hectare. To establish a budgetary ceiling on such outlays, the energy payments were to be restricted to a maximum guaranteed area of 1.5 Mha. In 2005, an estimated 0.5 Mha received such energy crop payment (Schnepf 2006).

[1] It is important to note that relevant policies are changing rapidly. This document covers the most relevant policies implemented and developed up to October 2008.

In 2003, the EU's environmental specifications for market fuels were amended to incorporate the use of biofuels for petrol and diesel and to achieve a 5.75% share of transport fuel by 2010 and 10% by 2020, following the EU Commission Directive on Biofuels (Directive 2003/30/EC). Realising the initial target of 5.75% was considered partly voluntary as each member state should set its own biofuel target, but deviation from the reference values needed to be justified through objective factors. To achieve its stated targets, the EU also promoted domestic biofuel production in different ways. Production for ethanol is subsidized through tax reductions of as much as € 0.65/l in Germany, £ 0.2/l in the UK, € 0.38/l in France and € 0.525/l in Sweden. These tax incentives apply only to undenatured ethanol. As the import tariff on undenatured ethanol is considerably higher than on denatured ethanol (€ 19.20 per hectoliter versus € 10.20 per hectoliter), and as some member-states only allow undenatured ethanol to be blended into gasoline, these measures serve to discourage imports. The EU introduced a biodiesel standard which fixes the iodine concentration[2] required for vegetable oil used for the production of biodiesel, which in turn determines the types of feedstock that can possibly be used. Currently, only rapeseed oil complies with these iodine standards.

In practice, the EU found achieving its 2010 target (5.75%) impossible, and only a share of about 4.2% is considered realistic.[3] Therefore the European Commission revised its policy by concentrating on its 2020 target. In early 2008 they tabled a proposal for a new Directive (Commission of the European Communities 2008), covering renewable energy for electricity production, heating and cooling, and biofuels for transport. This proposed Directive targets an overall 10% share for transport biofuels by 2020 because: (1) the transport sector results in the most rapid increase in greenhouse gas emissions of all sectors of the economy; (2) biofuels tackle the oil dependence of the transport sector, which is one of the most serious problems of insecurity in energy supply faced by the EU; (3) biofuels are currently more expensive to produce than other forms of renewable energy, which might mean that they would hardly be developed without a specific requirement.

Although the proposed biofuels target could technically be met solely from domestic production, the EC considers it both likely and desirable that the target will be met through a combination of domestic production and imports. To this end, the Commission will propose relevant measures to achieve a balanced approach between domestic production and imports, taking into account the development of multilateral and bilateral negotiations as well as environmental, cost, energy security and other considerations. Thus 'third countries should be able to benefit from the promotion of renewables in the EU through the supply of biofuels and other bioliquids which meet sustainability requirements' (Commission of the European Communities 2008: 4). Immediately after the presentation of this draft policy, the potential social and environmental impacts became issues of public debate. NGOs pointed to the potentially negative impact on food security in developing countries of supplying biofuels for European cars as scarce resources will be devoted to this end. The sustainability impact of using agricultural land for energy production also became contested, particularly as growing European demand for biofuels may lead to changes in land-use which may have dramatic effects on greenhouse gas production.

[2] The specification for the content of iodine is an indication of the content of unsaturated fatty acid present in the oil, which provides information about biodiesel's melting point.

[3] Lowering the target followed also fierce debates in several member states on the environmental and social sustainability of current crop-based biofuels, and the limited alternative biofuel sources commercially available at short notice

Partly in response to these critics, the requirements for the sustainability of (both domestically produced and imported) biofuels presented in the proposal (Art. 15) were further elaborated in a revised note in March 2008 (European Council 2008). The main conditions for biofuels to be included in the official target were:

- the greenhouse gas emission savings from the use of biofuels shall be at least 35%; as land conversion with the purpose of growing biomass for biofuels may result in a negative greenhouse gas impact, the full carbon effects of such conversion should be accounted for;
- biofuels shall not be made from land with recognized high biodiversity value;
- biofuels shall not be made from raw material obtained from land with high carbon stock, such as wetlands and continuously forested areas;
- biofuels produced from raw materials cultivated outside the territory of the Community are acceptable only if the third country in which they were cultivated has ratified and effectively implemented at least 10 of a list of international labour and environmental treaties;
- imported raw materials cultivated outside the territory of the Community have to provide information about sustainable water and soil management plans and the use of dangerous agrochemicals;
- information should be offered on the producer's right to use the land; procedures to consult and communicate with local populations and interest groups on plans and activities that may negatively affect the legal or customary rights, property, resources, or livelihoods of local peoples compliance with the labour standards.

Securing these conditions means the actual “tracing” of the biofuels which will require physical tracking, so that biofuels fulfilling the sustainability criteria can be identified and rewarded with a premium in the market. The economic operators are responsible for showing that the environmental and social criteria set out in this revised Article 15 have been fulfilled. Verification of these requirements is left to the Member States (whilst encouraging multinational certification schemes). Nevertheless, the Commission may decide that bilateral and multilateral agreements between the Community and third countries demonstrate that biofuels and other bioliquids produced from raw materials cultivated in these countries comply with the environmental and social criteria mentioned above. The required information may also be provided through participation in voluntary international or national labelling and certification schemes. The schemes should set standards for the production of sustainable biofuels and certify that the production of particular liquids meets those standards. The Commission may decide that national, multinational or international schemes to measure greenhouse gas savings contain accurate data and that voluntary schemes setting standards for the production of biomass products adequately demonstrate that consignments of biofuels comply with the environmental sustainability criteria of the proposed Directive.

The Commission’s focus has been on greenhouse gas reductions and biodiversity impacts but the European Parliament, and different Member States proposed amendments to include other sustainability criteria more strongly as well. Next to substantial reductions in greenhouse gas emissions, international conventions and regulations should be complied with, there should be no significant adverse effect on water resources or on air, water and soil quality, and no deforestation or net loss of other carbon stocks above- or below-ground should occur (Eickhout et al. 2008). This debate is still ongoing and may, for example, result in higher standards for greenhouse

gas reduction, such as 50% to offset other environmental impacts.[4] In addition, more attention is demanded on the social consequences of massive crop-based biofuel production, such as labour conditions and the consequences for food availability, especially for the poor.

Biomass productivity — whether sugarcane for bioethanol or palm oil for biodiesel — is largest in tropical environments. As a result, biofuel production costs are relatively low in a number of developing countries. In 2004, the EU imported over 3 million litres of bioethanol. About 36% of this volume was imported as normal trade whereby EU tariffs range from 22.9% to 43% according to different ethanol tariff lines. The standard import levy is equivalent to a 63% *ad valorem* tariff but a number of developing countries have preferential access which allows them to import ethanol duty free. Larger developing countries that have bilateral free trade agreements with the EU, such as Mexico and South Africa, have not been granted duty free access for ethanol. It is impossible to determine which tariff line is specifically used for fuel ethanol production because international trade is coordinated through a system of classification of products under the Harmonised System (HS), where biofuels are classified under different codes. Ethanol is traded under the code 22 07 that includes denaturated (HS 22 07 20) and undenaturated (HS 22 7 10) alcohol, but these classifications relate to its chemical composition, and there is no separate classification or sub-classification specific to fuel ethanol as opposed to ethanol used for other purposes. Brazil is the largest ethanol exporter to the EU and between 2002 and 2004 some 25% of EU ethanol imports originated from this country. During the same period, about 64% of EU ethanol imports entered under preferential trade arrangements including the Generalized System of Preferences (GSP), the Cotonou Agreement (ACP), Everything But Arms (EBA) initiative, and others.

EU imports of biodiesel are subject to an *ad valorem* duty of 6.5%. Biodiesel has recently been reclassified under HS 3824 90 – an industrial code which includes a large spectrum of chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products not elsewhere specified or included). Since biodiesel production outside of the EU is still limited there has been no significant external trade in biodiesel. However, to relax pressure on rapeseed oil production, biodiesel producers have begun sourcing feedstock from foreign sources. The European biodiesel market is protected by the relatively low *ad valorem* import tariff of 6.5%, but for vegetable oils destined for technical or industrial uses, a definition that includes biodiesel, the rate is even lower (3.2 to 5.1%). Oilseeds such as soybeans enter even duty free, reflecting a long-standing agreement between the EU and the United States that ensures relatively cheap feed for the livestock industry in Europe (c.f. the Blair House Agreement presented above). Since 1999, EU imports of palm oil (primarily from Malaysia) have more than doubled to 4.5 MMT in 2005 (representing 18% of world palm oil imports). Whether or not these imports were also used for the production of biofuels or only for other purposes is not clear. The classification of feedstock for biofuels in international trade is even more complicated than for the end-products themselves, because they can consist of many different agricultural products (or raw biomass) and such products can be used for several production processes (to produce food, feed or fuel) (Schnepf 2006).

[4] Environmental NGOs (Greenpeace) are demanding a greenhouse gas saving of 60% as they are also particularly concerned about the effects of land-use change.

Biofuels trade and the US

The US has promoted biofuels to achieve greater energy security, protect its domestic agriculture and reduce its dependency on the oil producing countries in the Middle East and Venezuela. Its orientation on domestic production of biofuels has led to the promotion of bioethanol from maize and in 2006 the US produced 18.4 billion litres of ethanol, a 24.3% increase compared with 2005 (Kojima, Mitchell and Ward 2007). The predictions are that in the coming years more than 30% of the corn harvested annually will be used for ethanol. Biodiesel production tripled from 0.28 billion litres in 2005 to 0.95 billion litres in 2006 (ibid.).

The US government required the use of ethanol as gasoline oxygenate as early as 1990 in areas with poor air quality. However, it was not until the Energy Policy Act of 2005 that the US Congress instituted a federal mandate for biofuel use in the transportation sector. The Renewable Fuels Standard (RFS) called for an escalation in the amount of renewable fuel sold in the US from 2006 through to 2012. High oil prices and a demand shock for ethanol caused by the banning of use of an alternate oxygenate (i.e. methyl-tert-butylether or MTBE), along with other incentive policies, created such a favourable environment for biofuels that the US has already exceeded its RFS mandate. By 2006, the 107 active ethanol plants were capable of producing 19.4 billion litres of ethanol per year (IATP 2006).[5] Within the US, E10G blends (gasoline with 10% ethanol) have partial tax exemption of US$ 0.052/l if locally produced biofuel is used. To secure the domestic impact, the US taxes ethanol imports at a rate of US$ 0.54/gallon (3.785 litre) and 2.5 percent *ad valorem* for undenatured ethanol for non-beverage purposes and 1.9 percent for denatured ethanol. However, some import duties for ethanol are scheduled to disappear. The US$ 0.143 per litre "secondary duty", and a 2.5 percent *ad valorem* import duty, are due to expire in 2009. On the other hand, bioethanol distillers in the US collect US$ 0.51 for every gallon they produce. In addition, every gallon of biodiesel blended with mineral diesel is eligible for a US$ 1.00 subsidy, and producers also benefit from a federal excise tax credit, as well as an income tax credit next to numerous state-level subsidies (Walter et al. 2008). A trade barrier does not apply to biodiesel, but interest groups such as the American Soybean Association are pressing Congress to enact a tariff to offset the $1.00 per gallon tax credit. Steenblik (2007) has compared the various subsidies on bio-ethanol and biodiesel production of different OECD countries, among which the EU and the US. These global annual biofuels subsidies range between US$11 billion and US$13 billion but have limited impact on imports from developing countries as biofuel tariff barriers are often eliminated through bilateral trade agreements.

Biofuels trade and Brazil

Brazil's interest in biofuels started in the 1970s with the first oil crisis when the government encouraged ethanol production through a combination of subsidies, tax incentives and regulatory measures. Production grew and despite a slump in the 1980s, ethanol production became a profitable activity, especially with the

[5] An additional 50 plants under construction and eight plant expansions will add over 14.0 billion litres, bringing total potential production capacity to nearly 34 billion litres. Above this considerable production volume, a further 150 additional plants are proposed with a total capacity of over 38 billion litres per year (data from Renewable Fuels Association Statistics).

introduction of the flex-fuel vehicle in 2000. Brazil's interest in biofuels was driven by economic need (jobs and farmers' income) to strengthen the development process. The country produced 17.5 billion litres of ethanol and exported 20% (3.5 billion litres) in the 2006-07 harvest (Kojima et al. 2007; Mol, 2007). Brazil is currently the largest ethanol exporter to the EU and during the period 2002-2004, 25% of the community's imports were from this country with all of its exports made as MFN. Brazil itself applies an import tariff of 20% on both un-denatured and denatured ethanol.

In 2004, Brazil introduced a Social Fuel Seal for biodiesel to take into account regional social inequalities and the agro-ecological potential for biodiesel feedstock production for different regions. Certification enables biodiesel producers to benefit from reduced rates of taxation on biodiesel, compared with the rates normally applied to petroleum diesel. The rate of exemption is 100% for biodiesel certified with the Social Fuel Seal produced from castor oil or palm oil in the North and North-east regions of Brazil, compared with 67% for biodiesel produced from any other source in regions that do not qualify for the Social Fuel Seal. In the way that it operates, only Brazilian firms can qualify for the higher tax breaks. Given the limited verification and certification capacity of the parastatal organization responsible, implementation and enforcement of the seal is still a problem.

Biofuels trade and the WTO

The WTO (World Trade Organisation) is an international forum for trade negotiations and it could discuss biofuels if it decided to do so. So far the WTO has not developed specific disciplines on trade in energy and therefore only the general WTO rules are applicable to energy products.

One specific problem for determining the specific trade regime for biofuels concerns their classification. As mentioned above their classification in the Harmonised System (HS) for international trade is confusing as they fall under various general codes, and consequently within the WTO ethanol – which is considered an agricultural good – falls under the Agreement of Agriculture, while biodiesel is classified as an industrial good and falls subsequently under the general WTO agreements.

Agreement on Agriculture (AoA)

Subsidies for agricultural production and trade are arranged in the AoA and within this agreement the WTO member states have agreed to harmonize their subsidies to their domestic farmers. Essentially most subsidies should be stopped or phased out over time, but for particular goals targeted subsidies are allowed; these are the so-called 'green box' subsidies. To qualify for this category, a subsidy must not distort trade, or at most cause minimal distortion; it has to be government-funded and not involve price support. Green box subsidies tend to be direct income support to farmers and decoupled from current production levels or prices. Direct support to bio-ethanol production would therefore not qualify for the status of green box, but might be an element in the broader 'amber box'. The sum of all amber box subsidies is capped at a pre-agreed level for each country and therefore face little constraints if governments decided to consider biofuel subsidies as a high priority and would be willing to make cuts to other subsidies in order to make room within the capped level.

Technical Barriers to Trade (TBT)

Certification of products such as biofuels in international trade falls under the Technical Barriers to Trade (TBT) Agreement, which recognizes that governments of WTO Member states have the right to set product specifications for a variety of different legitimate objectives, such as environmental protection. A specific condition of Article XX(b) of GATT (General Agreement of Tariffs and Trade which is one of the WTO-agreements) is that to justify trade measures they must be taken in tandem with comparable measures on production or consumption that apply to the domestic market (even-handedness). Thus, the WTO prohibits discrimination between foreign and domestic products when they are 'like' products and TBT demands that regulations should not create unnecessary trade obstacles and should be transparent. Determination of 'like' products is on a case-by-case basis applying four criteria:

- properties, nature and quality of the product
- tariff classification
- consumers' tastes and habits
- product end use.

Environment-oriented trade policy measures that do not influence the physical characteristics of a product may violate this TBT obligation because trade-regulation should be product-based and not production process-based. Furthermore, a measure that imposes purely domestic criteria on the exporting state without consultation or consideration of the different conditions on the territory of that state may well run counter to the agreement, in particular the requirement that a measure should not be applied to create arbitrary or unjustified discrimination. However, measures to minimize overall impacts on global carbon emissions of a fuel throughout its life cycle do not seem to interfere with this requirements as it relates to a global environmental problem. It may be expected that most biofuel products from developing countries will meet this requirement.

The GATT also states a few exceptions, which may justify environment-related measures on products and the use of obligatory measures to ensure these standards are met, even though they violate the general principles of GATT. These exceptions are justified when: a) necessary to protect human, animal or plant life or health (Article XX(b) of the GATT) or b) relating to conservation of exhaustible natural resources (Article XX(g) of the GATT) if such measures are made effective in conjunction with restrictions on domestic production or consumption. As air is considered an exhaustible resource, the argument of adequate supply of (sustainable) biofuels within this context has some plausibility. Also, Article XX(j) of the GATT provides an exception for measures "essential to the acquisition or distribution of products in general or local short supply." This and another exception, stated in Article XXI of the GATT, is the 'National Security Exception' which allow governments to take the necessary measures for the protection of its national interest. It is widely acknowledged that energy security is a vital dimension of national security in general and can thus possibly justify biofuel policies. No provisions exist within WTO agreements to link trade with social and labour standards, and any attempt to make such linkages has so far been met with opposition.

The Code of Good Practice (Annex 3 of TBT) provides disciplines to standardizing bodies. Members should use international standards where appropriate, but otherwise there should be a) an open market for all certification schemes b) no political action to diminish the trade of uncertified products, and c) no inclusion of the origin of the product on the label to avoid discriminatory action against specific regions.

The Sanitary and Phytosanitary Measures (SPS)

The SPS Agreement applies to "risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms" and "risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs" (Annex A). Some of these risks could clearly arise from the international trade and transportation of feedstock for biofuels. As a matter of internal regulation, some jurisdictions apply food safety regulations to the transportation of certain biofuels as the substances, despite their use as fuel, correspond to definitions of foodstuffs in domestic law (cf. un-denatured ethanol). Biomass may also fall within legal definitions of waste and therefore be regulated under those terms without regard to the different risk management issues that arise from the fact that the material is not entering the jurisdiction to be disposed of as waste, but to be transformed into or used for fuel.

Committee on Trade and the Environment (CTE)

In November 2007, the WTO Committee on Trade and the Environment (CTE) discussed a Brazilian proposal to designate biofuels, including ethanol, as environmental goods. Ethanol was until then considered an agricultural product, and developed countries therefore maintained that its liberalization should be addressed within the Doha negotiations on agriculture. Brazil, however, stated that biofuels are essentially environmental goods since they offer a promising substitute/complement for fossil fuels and other non-renewable energies. Despite several attempts and a reference to the way the EU and the US described ethanol as an environmental good in reports to the UN Framework Convention on Climate Change, Brazil has not been able to convince the other WTO members.

Trade disputes US - EU:

European biofuels producers are concerned that American 'B99' blended biodiesel can be subsidized up to € 200 a ton after adding only 0.1 % mineral diesel. This biofuel cocktail can then be exported to Europe as 'pure' biodiesel, where it is also eligible to European subsidy schemes

US biofuel producers are claiming that the EU's biodiesel fuel specification is discriminatory. EU norms for iodine prevent biodiesel production crops such as soybean, allowing only rapeseed oil to be used at present (EU Observer: 29-04-2008).

In general, biofuels – both biodiesel and bioethanol – are heavily subsidized by most of the OECD countries (cf. FAO, 2008a: 32), giving exporters reason to complain and raise trade disputes.

Biofuels trade and Mozambique and other developing countries

Biofuel production costs are relatively low in developing countries where tropical conditions prevail, although the opportunites are conditioned by the presence of adequate (material, institutional and knowledge) infrastructures and a supportive environment. However, to date their contribution to global trade has remained fairly small and this is partly due to the technological and institutional challenges in producing these goods, but also to the substantial import tariffs many countries have imposed (Coelho 2005; FAO, 2008).

International trade between most countries is regulated via the multilateral agreements of the World Trade Organisation (WTO). In addition, many countries also have bilateral free trade agreements or other arrangements to facilitate trade even further. The US, for example, exempts ethanol imports from the Caribbean under the Caribbean Basin Economic Recovery Act (CBERA), although there are specific quantitative and qualitative restrictions depending on country of origin and feedstock.

Ethanol imports to the EU fall under the general MFN-regime with a tariff of €0.195 per litre of undenatured ethyl alcohol. The standard tariff is equivalent to a 63% *ad valorem* tariff. The EU has also a General System of Preferences (GSP) for developing countries, comprising three different preference levels:

(i) the standard GSP, which applies to most developing countries and all ACP countries (Africa, Caribbean and Pacific countries, former colonies of the European powers);
(ii) the EBA (Everything But Arms) initiative, which the EU has applied to the world's LDCs since 2001;
(iii) the GSP+ regime, which grants enhanced terms to a range of countries that have ratified and implemented a list of international conventions on core labour and human rights principles.

In 2004, the EU imported just over 3 million litres of bioethanol. About 36% of this volume was imported as normal Most-Favoured Nation (MFN) trade and about 64% under various preferential trade arrangements. Pakistan, with a 20% share of EU ethanol imports, was that year the largest ethanol exporter under these preferential trade arrangements, but the country has lost its privileged status in 2005 and seems no longer competitive (USDA Foreign Agricultural Service 2005). Other ethanol exporting countries that benefit from EU trade preferences include Guatemala, Peru, Bolivia, Ecuador, Nicaragua, and Panama (unlimited duty-free access accorded under special drug diversion programmes); Ukraine and South Africa (GSP); the Democratic Republic of Congo (EBA); Swaziland and Zimbabwe (ACP); Egypt (Euro-Mediterranean Agreement); the countries of the Western Balkans and Norway (special quota) (Schnepf 2006). Larger developing countries that have bilateral free trade agreements with the EU, such as Mexico and South Africa, have not been granted duty free access for ethanol (Coelho 2005). Since biodiesel production outside of the EU is still limited, there has been no significant external trade in biodiesel.

In 2006, already 97.6% of all ACP exports entered the EU market duty free, but the EU shows little willingness to expand this by including rice and sugar as well. With the expiry of the last Lomé Agreement (IV bis) in 2007 the EC introduced a new trade and development regime. The Economic Partnership Agreements (EPA), coming into force in 2008, envisaged the creation of reciprocal trade agreements between the EU and regional blocks of ACP countries. EPAs are supposed to be more symmetrical trade agreements compared with the Lomé/Cotonou Conventions, covering not only trade in goods and services but also 'behind the border' issues, such as competition, government procurement, intellectual property rights, and trade facilitation; or, they are supposed to become a 'comprehensive trade agreement'. Consolidated ACP regions, it was envisaged, would jointly enter into an EPA with the EU thereby promoting also intra- next to extra-regional trade. In practice, however, realising these goals proved complicated as negotiations on EPA bogged down in many cases in 2007. By December 2007, only one full EPA was signed with the CARIFORUM (Caribbean countries) and limited 'goods only' EPAs with (parts of) East and Southern Africa (which includes Angola, Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland). Despite this limited success, the EU insists on

further finalising these EPAs according to their intended objectives during the coming years.

Biofuels trade and private certification and labelling schemes

The use of standards and certification schemes can help ensure that biofuels are produced in a sustainable manner. Many national governments, international organizations, private companies and research institutes are involved in developing criteria, standards and ideas on certification schemes. However, at the moment there is no clear definition of 'sustainable biofuels' – let alone a single definition! – nor is there an accepted scheme for certification and labelling. There is some agreement on the ecological issues that should be included, such as:

- reducing GHG emissions;
- ensuring a positive energy balance;
- preventing biodiversity loss; and
- controlling crop-specific and production-specific environmental effects.

The problem is that each feedstock is different and many crops produce their best yields in specific regions of the world or require certain soil or water conditions. These local differences require specific attention. Including social criteria is even more difficult as agreement lacks on the issues to be included, let alone on how to measure them (Denruyter and Earley 2006; Mol, 2007). Many different initiatives are taken and it is not yet clear if one of them will be taken up by the key players and become dominant. The currently existing initiatives can be summarized into four categories: government-initiated, NGO-initiated, private-company-initiated and hybrid combinations of these three groups. These initiatives differ in terms of the definition of sustainability, the criteria used, and in the translation of this into practices and schemes for certification and labelling. The most relevant initiatives within these four groups are summarized below.

Government initiated labelling and certification of sustainable biofuels

The Dutch Government requested a committee to develop criteria for sustainable biomass and when these were published in 2006 they became known as the 'Cramer Criteria' after the name of the chairperson (Cramer 2006; Doornbosch and Steenblik 2007; Van Dam et al. 2008). The proposed generic criteria for the use of biomass for energy and fuel production do not distinguish between imported and domestically produced biomass. The committee started its work on the general approach of 'people, planet, and profit' to elaborate a comprehensive framework. Based on extensive consultation with different stakeholders, the committee formulated a list of nine principles and added a translation into criteria, indicators, requirements and reporting obligations. Where possible the committee suggested that links should be made with existing conventions and certification systems (such as FSC), making this a form of meta-standard. See Box 1 for an overview of the principles .

Box 1: The 'Cramer Criteria' for sustainable biofuels

1. The greenhouse gas balance of the production chain and application of the biomass must be positive
2. Biomass production must not come at the expense of important carbon sinks in the vegetation and in the soil.
3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials)
4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity
5. In the production and processing of biomass the soil, and soil quality must be retained or even improved
6. In the production and processing of biomass ground and surface water must not be depleted and the water quality must be maintained or improved
7. In the production and processing of biomass the air quality must be maintained or improved
8. Production of biomass must contribute towards local prosperity
9. The production of biomass must contribute towards the social well-being of the employees and the local population

Source: (Van Dam et al. 2008)

Another relevant governmental initiative is the UK government's 'Renewable Transport Fuel Obligation' (RTFO) (Government of the UK: Department for Transport 2008), developed in close collaboration with the Dutch initiative. This is essentially a reporting requirement for biofuels suppliers who have to show that the direct impacts of biofuel production on GHG savings, as well as on sustainability in general, are positive. Reporting on the potential indirect impacts of biofuel production will remain the responsibility of the official Renewable Fuels Agency. The criteria will be applied more strictly in the coming years and only by April 2011, will all criteria be in full force. Calculation of the GHG impacts is based on standard calculations for the main feedstock products supplemented with additional qualitative and quantitative data (see Box 2 for the UK sustainability criteria). As in the Netherlands, it is recommended in the UK that existing standards and certification schemes can be used as a basis for biofuel labelling. Whereas the Dutch initiative has been put on hold to wait for the European directive, the UK system has been implemented.

Box 2: RTFO sustainability principles

Environmental principles:

1. Biomass production will not destroy or damage large above or below ground carbon stocks
2. Biomass production will not lead to the destruction or damage to high biodiversity areas
3. Biomass production does not lead to soil degradation
4. Biomass production does not lead to the contamination or depletion of water sources
5. Biomass production does not lead to air pollution

Social principles:

6. Biomass production does not adversely affect workers rights and working relationships
7. Biomass production does not adversely affect existing land rights and community relations

Source: (Government of the UK: Department for Transport 2008)

These initiatives by the Dutch and UK governments are currently the most well elaborated certification schemes in the EU, but other member states such as Germany (Schmitz 2007) and Sweden are taking similar initiatives .

NGO initiated labelling and certification of sustainable biofuels

NGOs are actively participating in public debates on the sustainability of biofuel production and trade. As yet, they have not developed specific international certification and labelling schemes for biofuels. But many have participated in different existing initiatives such as the 'round tables' presented below (van den Hombergh, 2008). Others have formulated national schemes for assessing the sustainability of biofuels (such as the Dutch NGO Stichting Natuur en Milieu; SNM, 2008). Yet others have restricted their engagement to providing critical comments on other initiatives. Nevertheless some of the already existing international NGO-based certification schemes are often included as elements of broader (meta-) certification schemes.

The *Forest Stewardship Council* (FSC) has become a well known standard for sustainably produced wood and fibre products and has been operational since 1994. Certification is possible for sustainably managed timber exploitations and through chain-of-custody certification it becomes possible for retailers to sell FSC-labeled timber. FSC certifies only wood and fibre products and may therefore not be of direct interest for first generation biofuels, but it may form a promising standard for biomass for electricity and second generation biofuels. Moreover, the development, organization and implementation of this scheme is generally conceived as an interesting model for other product categories.

The Sustainable Agriculture Network (SAN), an initiative from the Rainforest Alliance, has developed a generic standard and several crop specific standards for coffee, bananas, flowers, citrus, cacao and flowers and ferns. While no specific standards yet exist for energy crops the generic standard would give a good coverage of sustainability issues also for biofuels production. The Rainforest Alliance has stated that it is interested in developing specific standards for energy crops if demand for such certified produce arises.

Utz Certified (Good Inside) is a standard and label for Corporate Social Responsibility (CSR) and after its successful introduction in the production of coffee, the Dutch NGO Solidaridad is adapting the Utz concept for other commodities, including cocoa, tea, palm oil and biofuels. To this end, Utz Kapeh changed its name into Utz Certified and uses the label "Good Inside". Solidaridad is focusing in its programme 'renewable energy' on biomass for export from developing countries and is implementing, together with the Dutch energy company Essent, a pilot biomass certification project for Utz Certified coffee husks from Brazil. The coffee husks originate from coffee plantations, certified by Utz Certified. The pilot project is externally monitored.

The *ISEAL Alliance* regroups some of the most well-known international NGOs involved in certification and labelling, such as Fairtrade, FSC, IFOAM, NAC, MSC, Rainforest Alliance, and SAI. Its goal is to define and codify best practices, at the international level, for the design and implementation of social and environmental standards systems. The ISEAL Alliance provides a global framework for the social and environmental standards movement to coordinate, cooperate and build its capacity to deliver positive global impacts. The organization has yet to suggest a particular scheme for biofuels.

Private company initiated labelling and certification of sustainable biofuels

Besides governments and NGOs, some private companies have initiated schemes, generally limited to internal company practices. Van Dam et al. (2008) mention the examples of Essent, Electrabel, BioX, Daimler-Chrysler, Volkswagen and Shell. Their experiences and some of their general principles may be very useful for future application by a wider community of users, but currently their internal company-approach limits their significance in policy terms. Therefore some other initiatives intended for use by a broader group of companies may be more promising at the moment.

The *GlobalGAP* (previously know as EurepGAP), is a generic standard for good agricultural practice. The generic standard and subsequently various detailed guidelines for the production and processing of various food products have been introduced by a consortium of European retailers. These guidelines have rapidly become a globally accepted standard, particularly for food safety. GlobalGAP nevertheless contains also some criteria on environmental and social sustainability and several palm oil plantations in Malaysia are currently certified by the Fruit and Vegetable Standard of GlobalGAP. A recent initiative by the organization is the development of International Sustainability & Carbon Certification (ISCC) as a 'reliable certification scheme allowing for the differentiation between sustainable and non-sustainable biofuels'. Within two years this project should result in such a scheme.

The *Global Reporting Initiative (GRI)* is an organization of private companies and consultants engaged in promoting corporate social responsibility. The GRI has developed a widely used sustainability reporting framework which sets out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. Sustainability reports can be used to benchmark organizational performance with respect to laws, norms, codes, performance standards and voluntary initiatives; demonstrate organizational commitment to sustainable development; and compare organizational performance over time.

Hybrid combinations initiating labelling and certification of sustainable biofuels
Finally, several initiatives have been taken to develop standards, guidelines and certification schemes through multi-stakeholder approaches bringing together private companies, NGOs and sometimes governments as well. There is one Roundtable which addresses all biofuels but others deal with one crop only.

The *Roundtable on Sustainable Biofuels* (RSB) was the follow up of a multi-stakeholder workshop organized by the EPFL in Lausanne (Switzerland) in 2007. The RSB aims to achieve global, multistakeholder consensus around the principles and criteria of sustainable biofuels production, while building on existing national and commodity based initiatives.

The most well-known round table on a specific crop is the *Roundtable on Sustainable Palm Oil* (RSPO), already existing since 2002 and created by organizations carrying out their activities in and around the entire supply chain for palm oil. It involves the main stakeholders in considering the sustainability impacts of producing, trading and processing palm oil. The objective of this multi stakeholder initiative is the development and implementation of a standard for sustainable palm oil. RSPO has developed a set of 8 principles and 39 criteria for sustainable palm oil production, which were adopted at the end of 2005. The principles relate to social, economic, ecological and general criteria and became operational in 2008 after a two-year trial phase (when a first ship of certified palm oil was exported from Malaysia to the Netherlands). Third party verification arrangements are being put in place for evaluation of compliance with RSPO principles and criteria, and in supply chain audits to verify compliance with requirements for sustainable palm oil traceability.

Another initiative is the *Roundtable on Responsible Soy Production* (RSPS), which is similar to the RSPO but not as far developed. The organization was officially founded in November 2006 and has as one of its objectives to develop and promote criteria for the production of soybean on an economically viable, socially equitable and environmentally sustainable basis. In September 2007, a technical working group has started to develop principles, criteria and a verification system. The 'Basel Criteria for Responsible Soy Production' forms a relevant background document. These criteria were formulated with a limited stakeholder consultation commissioned by COOP-Suisse and provide a preliminary working set of criteria for sustainable soybean.

The *Better Sugarcane Initiative* (BSI) is also a multi-stakeholder forum destined to determine principles and define globally applicable performance-based standards for 'better sugarcane' with respect to its environmental and social impacts.

Conclusions

In recent years, the field of biofuels has become a very dynamic area for domestic and international trade policy. Frequent changes occur for reasons of energy security, economic objectives or environmental concerns and the unexpected (side-)effects of particular policy decisions. Similarly, different key actors in the field of international biofuel trade also have different policy goals making the future perspectives for export from developing countries rather unclear. It may be expected that some of these issues will become more clear in the coming years, but at the moment it is hard to predict how this will develop. This paper has shown that biofuel production is growing, that international trade is also growing and that public and private actors are seeking ways to ensure the positive environmental and social effects of production

and trade. So far it seems that agreement on the environmental conditions is more likely than on the social effects, while economic impacts continue to be heavily influenced by protective measures as biofuels subsidies range between US$11 billion and US$13 billion a year (Von Braun 2008) and up to US$1 per litre (FAO, 2008a). A particular worry influencing the debate on international biofuel trade concerns the impact on the world food prices.

World market prices for food rose dramatically from January 2002 to June 2008 and this was considered to be caused by a confluence of factors. Production for biofuels was considered by some the most important one (Mitchell 2008).[6] Increased biofuel demand in 2000-07 is estimated to have contributed to 30% of the weighed average increase of cereal prices (Von Braun 2008). World production of cereals in 2008/9 is forecast to reach 2,2416 M tonnes, up 5.3% from the previous season and above the ten-year trend for the second consecutive season (FAO 2008b). This expansion is driven primarily by the high food prices in 2007 and the growth in industrial use (up 11.8%), including prices for biofuels, mostly in the US. This increased production has meant, however, that since the middle of the year 2008, food prices are falling sharply, raising doubts about the close link between food prices and biofuel production. Overall the FAO expects world grain prices to be very volatile in the coming years because of the reaction of farmers to the volatile prices for their products as well as for their inputs (notably oil), and because of the global financial and economic crisis since the middle of 2008.

At the moment, it is neither justified nor possible to make a final assessment of biofuels and their positive or negative impacts, as this is largely determined by the specific conditions of their production and trade.

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[6] Total utilization of grains for production of ethanol in 2007/8 is estimated at roughly 98 M tonnes, up 27 M tonnes, or 40%, from the previous season. Maize accounts for most of this use, at nearly 92 M tonnes, of which some 79 M tonnes are used by the US alone. Based on the latest forecast from the USDA, the use of maize for production of ethanol in the US will increase to 101.6 M tonnes in 2008/9, nearly 25 M tonnes more than in 2007/8 and almost twice as much as in 2006/7 (FAO 2008a).

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