

***Development policy stance on agrofuels***

*- Discussion paper -*

**Executive summary**

Over the past few years, agrofuels have increasingly been used in the transport sector as an alternative to fossil fuels, in the hope that this will help achieve climate protection goals. In many industrialised countries and more advanced developing countries, governments have introduced policies to promote agrofuels. Germany's governing coalition parties agreed in November 2005 to increase the share of agrofuels in total fuel consumption to 5.75% by the year 2010 and replace the exemption of agrofuels from the mineral oil tax with the compulsory addition ("blending") of agrofuels to mineral oil. This agreement was put into effect by the Biofuels Quota Act, which came into force on 1 January 2007 and provides for the blending target to be increased to 8% by 2015. In March 2007, the European Union set even higher blending goals. The German government took on board these goals at its cabinet meeting in Meseberg and they are currently being translated into law through national and European legislative procedures.

Even more than these political decisions, it has been the rise in oil prices that has boosted demand for alternative fuels from biomass. As a result, the agricultural sector in developing countries is increasingly concentrating on fuel production.

Recent in-depth analyses and studies into the situation have prompted a re-examination of the opportunities and risks presented by agrofuels.

- The growing demand for agroenergy is in competition with world food security and is resulting in competition over limited natural resources. Developing countries, from which considerable amounts of fuel will need to be sourced if these blending targets are to be met, will also face considerable social and ecological risks, for example as a result of local people and smallholders' families being forced from good production locations, poor conditions for workers on plantations and the destruction of the environment and biodiversity.
- So far, there is no international regulatory framework on agrofuels to mitigate these social and ecological risks.

- The greenhouse gas balance of agrofuels varies widely depending on the feedstock used. That is particularly true when both the entire life cycle, from production to processing, and also changes in land use are taken into account.
- For developing countries, it would appear that establishing appropriate decentralised supply and energy systems for the local population is more beneficial to development than exporting agrofuels.

In view of the legislative steps the European Union is taking, now is a good time to review the situation from both an environmental and also a development point of view. Important aspects were addressed at the hearing in the German parliament on 20 February 2008 on "Biomass – opportunities and risks for global climate protection, biodiversity, energy security, food security and poverty reduction", jointly staged by the Committee for Economic Cooperation, the Committee for Food, Agriculture and Consumer Protection and the Committee for the Environment, and by the debate on the floor of the House on 21 February 2008 on the amendment of Germany's Federal Immission Control Act.

In order to ensure a coherent approach that encompasses global food security, environmental protection, climate protection and observation of minimum social standards in equal measure, it is now vital to formulate the right policies. These policies should reflect the following recommendations:

- The aim of German and European agrofuel legislation should be to minimise risks, in particular by defining criteria for ecological and social sustainability and thus ensuring acceptable blending quotas.
- Since no international regulatory framework currently exists that could be taken as the basis for certifying agroenergy and ensuring that it is ecologically, economically and socially sustainable, the first step now should be to test and develop certification systems and to strive for international agreements.
- Research and development should be promoted, particularly with regard to improved land use systems and appropriate sources of agroenergy in rural areas in developing countries.
- Partner countries should be advised on the implementation of national food security strategies and biomass strategies that are suited to the country's specific potential and form part of a broader rural development strategy.

## 1. The agroenergy market <sup>1</sup>

The current debate on climate change and the rise in oil prices have greatly increased interest in ways of enhancing energy efficiency and replacing fossil fuels with renewable energies. Many industrialised countries and more advanced developing countries are now seeking to regulate the market for agrofuels by introducing subsidies, tax rebates and blending quotas. **In Europe, incentives are being offered principally in the form of binding blending quotas accompanied by tax relief.** EU Directive 2003/30/EC sets a target whereby agrofuels are to make up at least 5.75% of all fuel used for transport purposes in the member states by 2010. The European Parliament and Council are currently debating the draft of a Directive on renewable energies that provides for an increase in this share to 10% by 2020.<sup>2</sup>

In anticipation of a rise in demand, investment in agrofuel production has boomed.

**There are a number of reasons why searching questions need to be asked about the impact of this growth market:**

- **Climate impact**

Recent analyses have shown that the role played by agrofuels in reducing greenhouse gas emissions varies widely depending on the type of crop, cultivation method and technology used. So far, there is no internationally recognised method of drawing up and verifying a greenhouse gas balance. A number of methods exist, each producing widely divergent findings. Since tropical plants use the sun's energy more efficiently, the biomass produced in developing countries has a much more positive greenhouse gas balance than that produced in Europe, for example, provided it is not associated with the direct or indirect destruction of forests or moorland. On the other hand, finite natural resources (land, water), over which there is increasing competition, must be used in the production of agrofuels. A more effective approach to preventing climate change would therefore be to reduce total energy consumption and increase energy efficiency whilst, above all, promoting second generation<sup>3</sup> agrofuels in industrialised countries, as well as solar energy, wind power and hydropower.

- **Impact on developing countries**

The blending quotas set by the industrialised countries are highly relevant to development policy because they can, in all likelihood, only be met by means of massive imports of agrofuel/biomass from developing countries. That is partly because Europe does not have

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<sup>1</sup> This paper examines the use of biomass for agrofuel. It is generally acknowledged that, by comparison, the use of biomass for electricity or heating is a more energy-efficient option.

<sup>2</sup> The 10% target was set based on the assumption that second generation agrofuels would be available.

<sup>3</sup> The technologies required for what are referred to as second generation agrofuels are still at the development stage and it is likely to be several years before they reach a stage where they can be used on a large scale. Second generation agrofuels are synthetic fuels made out of organic matter (e.g. wood, organic waste).

enough farmland to produce the amount of biomass required (using current technology, over 70% of available farmland would have to be used) and partly because, potentially, developing countries can be more productive and have a better greenhouse gas balance when it comes to the production of biomass. This latter aspect is significant as the German government's biomass sustainability ordinance demands potential greenhouse gas reductions of at least 30% (and, as of 1 January 2011, at least 40%) if the biomass concerned is to be eligible for inclusion in blending quotas and tax rebates granted.

## **2. Risks and potential for developing countries**

Whether promoting agroenergy presents more opportunities or risks to the developing countries depends to a large extent on the regulatory framework but also in particular on how intensive these efforts are and what form they take. Whilst the impact is generally positive when the aim is to establish decentralised energy supply sourced from small farms, the risks of export-oriented mass production in response to booming demand from industrialised countries are considerable. From a development policy point of view, the following **risks** should be highlighted:

- **Increasing competition over farmland and water**

Current efforts to promote agroenergy threaten to unleash tougher competition over farmland and water across the world. The likely negative impact of climate change (decreasing agricultural yields and reduced water availability) will heighten this competition in all countries of the South. High population growth and the sharp rise in global demand for foodstuffs will aggravate matters.

- **Displacement of food production and rise in food prices – spread of hunger**

One particular risk of increased competition over farmland and water is the displacement of food production. Experience has shown that it is not only unused, inferior land that is being used for agroenergy production but often the best land because of the higher yields. The result would be a drop in world food supply and therefore a rise in food prices. This food scarcity can make it even harder for the poor to obtain adequate supplies of food. According to the IFPRI<sup>4</sup>, for every percentage increase in food prices, an additional 16 million people are threatened with hunger. The rural and urban poor are worst hit. Poor developing countries that are net food importers and are unable to rapidly mobilise productive capacity reserves will be particularly hard hit by rising prices for agricultural produce.

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- **Displacement of smallholders and other groups**

The search for new locations on which to site large-scale plantations can result in smallholders, pastoralists and indigenous peoples being forced off their land. It is not uncommon for investors to tacitly accept landgrabbing and the displacement of locals, often supported or tolerated by top political officials. This phenomenon is currently particularly apparent in African countries.

Rising land and leasehold prices as a result of the increased demand for land are also threatening to block smallholders' access to land. Even if oil prices continue to rise, agrofuels will only be competitive at international level if they are industrially produced using every possible opportunity for rationalisation and thus cost-effectively (thanks to economies of scale). Agroenergy produced for the world market by small farmers therefore has little chance of being competitive.

- **Risks for the environment and biodiversity**

The environment and biodiversity suffer when tropical forests, nature reserves and other areas of great natural or agricultural biodiversity are destroyed and used for food or agroenergy production. When land is converted, the harmful greenhouse gases stored in the biomass are released, which has a lasting negative impact on the greenhouse gas balance and the climate. When smallholders are forced off their land to make way for agroenergy production, they are then likely to seek to develop new farmland by means of slash-and-burn techniques, compounding the negative impact on the climate. The vast amounts of chemical pesticides and mineral fertiliser required for the industrial production of biomass also have a negative impact on the climate, the environment, soil fertility and the health of workers and locals.

Agroenergy production only offers **benefits** for developing countries if effective **mechanisms** are developed and implemented **for averting these risks**. The international community urgently needs to develop mechanisms of this kind. Given the way the market is already developing, however, it is questionable whether these mechanisms will be able to take immediate effect.

Developing countries can tap into the potential offered by agroenergy production in the following ways:

- **Biomass production for local decentralised energy supply:**
  - can reduce poverty, increase incomes and boost the local economy; if the capital generated by the rise in incomes is then invested in local food production, productivity is likely to rise and food prices drop in the medium term,

- can offer an alternative to the importation of fossil fuels, which has a positive impact on the balance of foreign exchange payments and on rural energy supply; the local supply of household energy benefits women in particular,
- has particular advantages for landlocked countries, who are faced with high transport costs for fuel imports and for whom regionally produced agroenergy therefore offers comparative advantages,
- has the advantage, when grown as part of mixed cultivation (cultivation of energy plants and food crops), of causing less soil degradation than monocultivation and also offers producers greater food security, should there be unfavourable developments on the agroenergy market.
- can, when **produced for export**, boost sustainable development by increasing foreign exchange receipts if smallholders are able to participate fully and as long as it does not compromise the availability of foodstuffs. To what extent this can be achieved depends on the context within each country and on international regulations. In general, priority must be given to measures to realise the human right to food, particularly where undernutrition and malnutrition are prevalent. It must be ensured that the appropriate government regulations are in place, in line with binding international sustainability standards, and that they are implemented effectively.

Developing countries need the appropriate advice and support if they are to use this potential. Development cooperation can play an important role.

### **3. Development approach and recommended action**

There is tension between the increased demand for agroenergy and efforts to ensure global food security and protect biodiversity, the environment and the climate. Forward-looking policies must be adopted at an early stage in order to resolve this tension as far as possible. The following actions are to be recommended.

#### **a) Giving priority to food**

Non-governmental organisations and experts, including the UN Special Rapporteur on the Right to Food and the German Council of Environmental Advisers, have demanded that, when there is competition between the production of food and the production of fuel, priority be given to food. Policymakers should respond constructively to this demand. Efforts to meet statutory blending quotas in Germany or the EU should not result in pressure on production sites in developing countries. In view of both this and recent findings on the various impacts

and precise balance of agrofuels, any further increase in current blending targets should be carefully considered.

The following approach is recommended:

### **Focusing German and European legislation on minimising the risks**

Care must be taken in particular to ensure that this **legislation incorporates both ecological and social sustainability criteria**. This would mean, for example, that biomass is only eligible for inclusion in the blending quota if proof can be provided that its production in the country concerned will not have any of the negative impacts outlined above (particularly the displacement of food production and small farmers or non-observance of ILO core labour standards). Since the German sustainability ordinance is likely to be **replaced by EU-wide regulation, consultations on a draft EU directive offer an important opportunity for Germany to ensure that social criteria are reflected**. The current revision of the EU Fuels Directive (Directives 98/70/EC and 1999/32/32) also offers a good opportunity for incorporating such criteria. **Strategic alliances should be formed with other countries advocating social sustainability criteria (e.g. the Netherlands and the UK)**.

Another important challenge is to introduce into the international debate new arguments on the WTO compatibility of social standards.

### **b) Voluntary commitments and certification systems**

Since it has not so far been possible to incorporate binding social standards into existing regulations, the focus for now should be on supporting voluntary sustainability initiatives in the following ways:

#### **Testing and development of certification systems and sustainability criteria**

A large number of international initiatives have already been launched to develop standards and certification systems. So far, however, no uniform international standards have emerged. The relevant international players should work together more closely on further elaborating these standards and achieving uniformity. **The Cramer Commission's<sup>5</sup> assessment framework is one important source that can be drawn on**. It defines the following social and ecological criteria:

- significant reduction in greenhouse gases across the entire chain from production to application; proof must be provided that there has been no direct or indirect interference in existing carbon sinks (forests and soils),

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<sup>5</sup> The government of the Netherlands requested a commission headed by Professor Cramer to assemble all the various different viewpoints on the sustainable production of biomass and to develop a framework of concrete criteria and indicators for assessing the sustainability of biomass production. Professor Cramer is now continuing this work as Minister of the Environment of the Netherlands.

- conservation and, if possible, improvement of natural and agricultural biodiversity; no deterioration of nature reserves,
- environmental protection: preventing chemicals entering air, water, soil,
- no negative effect on food supply in region concerned as a result of the production of biomass for energy generation; priority must be given to measures to realise the human right to food,
- growth and prosperity: the production of agrofuels must have a positive impact on the economy, employment and income distribution,
- proven observation of economic and social rights; this includes ILO standards, land use rights and land title for small farmers.

One particularly important aspect when developing certification systems is that the process be participatory and non-discriminatory and that small farmers be included.

### **Striving for international agreements**

In order to ensure that agroenergy is produced sustainably, agreements should be concluded between producer countries and importing countries. These should reflect their shared responsibility for creating a framework for regulation and monitoring. The countries concerned should also commit to measures to counteract any negative impacts that should emerge. In particular, the agreements should make reference to the relevant commitments under international law (such as, for example, the duty to observe, safeguard and provide the right to food, which also implies an international responsibility). Should it become necessary to take these corrective steps, consideration should also be given to revising existing blending targets. In this context, WTO rules (Agreement on Technical Barriers to Trade) on standard setting should provide the frame of reference.

### **c) Research and development**

Support should be provided for research and development into the following topics in particular:

- appropriate agroenergy sources for rural areas in developing countries, including increased research into the use of biogas,
- improved land use systems that also include energy crops,
- development of indicators on all relevant sustainability criteria (in particular food situation/right to food, biodiversity, preservation of small farming) as a basis for the application of certification systems, ordinances etc.



**d) Advising countries as part of development cooperation**

- Special advice should be given in particular to LDCs that are net food importers on how they can guarantee nationwide food security over the short and long term in the face of rising food prices.
- The 29 members of the Global Donor Platform for Rural Development should develop a common approach to advising partner countries on drawing up biomass strategies. This should include a careful analysis of the risks mentioned in section 2 and the recommendations formulated on that basis.
- Partner countries should be advised on the development and implementation of sustainable biomass production strategies that include the aspects of food security and social and environmental standards whilst ruling out any possibility of land use changes with harmful consequences for the climate.