



# Briefing

## Agrofuels: Fuelling or Fooling Europe?

Friends of the Earth's position on the use  
of plant-based fuels in transport

### Summary

Friends of the Earth believes that the current rush to develop agrofuels (or biofuels) on a large scale is ill-conceived and will contribute to an already unsustainable trade whilst not solving the problems of climate change or energy security.

Liquid agrofuels<sup>1</sup> are promoted as a way of reducing greenhouse gas emissions and reducing our dependency on conventional mineral oil. In reality many agrofuels deliver poor greenhouse gas savings and some of them pose a threat to ecosystems that act as vital carbon sinks.

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<sup>1</sup> Friends of the Earth prefers to use the term *agrofuels* rather than *biofuels* as the latter can give a misleading impression of its environmental performance. The UN defines agrofuels as fuels obtained as products of agriculture biomass and by-products at a farming level, and/or industrial processing of raw material (agroindustries).

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A more effective way to reduce greenhouse gases and secure energy supply is to reduce demand, improve efficiency and develop sustainable transport and energy systems. Agrofuels are no substitute for these priorities yet the EU is driving demand for agrofuels through the targets it is setting.

The international trade in important agricultural commodities such as soy and palm oil is already unsustainable and leads to major environmental and social problems - deforestation, damage to valuable ecosystems and carbon sinks, displacement of indigenous and other local people and replacement of small-scale farming with intensively-grown monocultures. Europe's new demand for agrofuels from the same crops is likely to make this trade even more unsustainable.

Increased demand may also lead to a bigger concentration of major multinational companies in the agricultural market and increased pressure on scarce resources such as water.

Additionally, growing crops for agrofuels is already contributing to increases in food prices with potentially dire consequences for the world's rural and urban poor.

Current proposals by the European Commission for sustainability criteria are weak and will be ineffective in preventing other environmental and social impacts. Sustainability initiatives by EU member states and other organisations are based on reporting only or are voluntary and so far fail to solve the complex problems that arise from large scale agrofuels.

## **Demands**

Friends of the Earth is calling for:

- A moratorium on imports of agrofuels into the EU and on subsidies that encourage the development and large scale production of agrofuels.
- This moratorium should remain until mandatory carbon and sustainability standards are in place which empower communities to use their natural resources sustainably, guarantee carbon savings of at least 60%, and do not lead to adverse environmental or social impacts either directly or indirectly through shifting problems elsewhere.
- The European Union to drop its agrofuel quantity targets.
- The 5% volume target in the RTFO should be scrapped and implementation of the RTFO should be put on hold until mandatory carbon and sustainability standards are in place which empower communities to use their natural resources sustainably, guarantee carbon savings of at least 60%, and do not lead to adverse environmental or social impacts either directly or indirectly through shifting problems elsewhere.
- Measures to reduce the impact of transport on the climate, notably by reducing demand, promoting a modal shift from road and air transport towards rail and sea transport, and tough EU legislation to reduce CO<sub>2</sub> emissions from vehicles.
- Significantly increased investment in the development of energy-efficient technologies and renewable energy generation technologies including the sustainable use of local biomass and local biogas (from waste products).
- Initiatives to reduce the EU's disproportionately large global environmental footprint.

## Introduction

To prevent the most dangerous consequences of climate change it is necessary to dramatically reduce greenhouse gas emissions over the coming years. Friends of the Earth believes that this can be met through a combination of cutting demand, using energy more efficiently, through the development of renewable energy sources such as the sun, wind and water, developing a more sustainable transport system and forcing car manufactures (by law) to improve the efficiency of their vehicles. Others, such as the EU and the car and biotech industries, however, are pushing for the increased use of plant-based fuels (commonly called agrofuels or biofuels) as an alternative to fossil fuels.

Agrofuels are produced by using biomass (material from plants or trees) to make liquid fuel (biodiesel or bioethanol). Their use is not new but has been given new impetus through the joint challenge of reducing greenhouse gas emissions and securing energy supply. Political attention has been especially focussed on developing liquid fuels from plants such as palm, soy and sugar cane, which can be burnt in power stations or used as an alternative transport fuel to petrol and diesel. The use of crops such as maize and agricultural waste to produce biogas is also becoming popular. There are also initiatives to use biomass for producing chemicals, drugs and plastics.

The production of agrofuels has potentially far-reaching social and environmental impacts, and raises urgent questions about whether they are an effective or economical way of helping to combat climate change. Their rapid development and promotion has resulted in a number of high level warnings about their global implications for the environment, food security and economy. These range from the OECD<sup>2</sup> who reported in September 2007 that their impacts may be worse than for petrol and diesel, to the United Nations who highlighted the potential problems for the poor in developing countries in April 2007<sup>3</sup>. This paper outlines Friends of the Earth's position on the use of liquid agrofuels for transport or electricity production.

## Agrofuels and the European Union

In April 2007 European member states agreed to a proposal for a mandatory target that agrofuels should make up to 10% of all transport fuels (by energy content) by 2020. In agreeing this target, EU Heads of State made the target conditional on these fuels being sustainably produced and also on the successful commercialisation of so-called second generation fuels.<sup>4</sup> New legislation in the form of a revised Biofuels Directive will need to be introduced to implement this target and accompanying conditions. In addition, the European Commission has introduced a draft Fuel Quality Directive that requires all transport fuels to reduce greenhouse gases by 1% per annum. This will apply to all transport fuel (ie oil as well as agrofuels) and gives a greater emphasis on the climate performance of fuels.

Friends of the Earth does not support the EU's mandatory target because it will drive the expansion of unsustainable and damaging agrofuel production, causing a lot of environmental and social destruction. It sends an economic signal that triggers inappropriate speculative investments into agrofuel expansion. Malaysia and Indonesia for example have drawn up ambitious expansion plans, marking out millions of hectares of current forest land for palm oil production, explicitly referring to the expected increase in demand from the European market.”<sup>5</sup>

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<sup>2</sup> [http://www.foeeurope.org/publications/2007/OECD\\_Biofuels\\_Cure\\_Worse\\_Than\\_Disease\\_Sept07.pdf](http://www.foeeurope.org/publications/2007/OECD_Biofuels_Cure_Worse_Than_Disease_Sept07.pdf)

<sup>3</sup> <http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf>

<sup>4</sup> [http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/93135.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/93135.pdf)

<sup>5</sup> Malaysia Targets Europe in Biofuel Push, <http://www.planetark.com/dailynewsstory.cfm/newsid/32027/story.htm>

## The UK's Renewable Transport Fuel Obligation

The Renewable Transport Fuel Obligation (RTFO) in the United Kingdom is a requirement on transport fuel suppliers to replace 5% of the transport fuel sold in the UK with biofuels by 2010. The UK Government has committed to introducing sustainability standards by 2011 and linking the RTFO with greenhouse gas emission savings by 2010.

In the meantime, companies will simply be required to report on some sustainability issues. This will do little to assure sustainability. Companies will be able to report the origin of biofuels as 'unknown'. There is no incentive for companies to source sustainable biofuels and no penalties for sourcing unsustainable biofuels. There will be no independent monitoring or verification of the reports. This means that 3.1 billion litres of biofuel will be sold in the UK with Government support but with no assurance of sustainability.

## The problems with agrofuels

### *Diverts attention and resources from the real solutions*

The biggest growing contributor to climate change is the transport sector. The focus on agrofuels reduces the political and public attention needed to reduce greenhouse gas emissions from transport. For example, original EU proposals to make cars more efficient have recently been weakened after lobbying from the car industry and the use of agrofuels and other measures offered as a substitute.<sup>6</sup> There is also the danger that the public will buy agrofuels as a perceived "green" form of driving when in reality a modal shift to less damaging forms of transport is needed. In addition, agrofuels are only economically viable if they receive large subsidies. Recent research stated that in 2006 agrofuels in the EU received €3.7 billion in support and concluded that governments could achieve far more greenhouse gas reductions for the same amount of public funds by simply purchasing the reductions in the marketplace. It also noted that this figure was probably a gross underestimate.<sup>7</sup>

### *Continues to exploit Southern countries*

The EU is already hugely dependent on agricultural products from Southern countries, importing for example 3.8 million tonnes of palm oil in 2004, mainly for food ingredients in processed foods such as ice cream, margarine and chocolate.<sup>8</sup> Likewise the EU imports 40 million tonnes of raw soy products a year, mainly to be used as cheap animal feeds.<sup>9</sup> The trade in these commodities is already unsustainable and involves deforestation, biodiversity loss, the replacement of family farming by large-scale monocultures as well as serious social conflicts and poor labour conditions. The new demand for agrofuels from these countries will make the production and trade even more unsustainable as crops are expanded even further. For example, it is estimated that around 10 million hectares of land needs to be opened up to meet the global demand for palm oil agrofuel.<sup>10</sup> For a more equitable and sustainable world the EU should be looking for

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Malaysia sets store in biodiesel, [http://www.atimes.com/atimes/Southeast\\_Asia/HA31Ae02.html](http://www.atimes.com/atimes/Southeast_Asia/HA31Ae02.html)

<sup>6</sup> European Commission press release, January 31 2007, IP/07/120

<sup>7</sup> Biofuels – at what cost? Government support for ethanol and biodiesel in the European Union, Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD), October 2007

<sup>8</sup> The Ape for Oil Scandal, Friends of the Earth, 2005.

<sup>9</sup> [http://www.gmo-](http://www.gmo-compass.org/eng/grocery_shopping/processed_foods/153.animal_feed_genetic_engineering.html)

[compass.org/eng/grocery\\_shopping/processed\\_foods/153.animal\\_feed\\_genetic\\_engineering.html](http://www.gmo-compass.org/eng/grocery_shopping/processed_foods/153.animal_feed_genetic_engineering.html)

<sup>10</sup> Stephenson, T. The Round Table on Sustainable Palm Oil, Institute of Directors, London, May 18, 2006.

ways to live within its own environmental space and reduce its dependency on land and other resources aboard.

### ***Agrofuels do not necessarily reduce CO<sub>2</sub>***

Agrofuels are often described as carbon-neutral, i.e. in theory they absorb as much CO<sub>2</sub> while growing as they emit when they are combusted in vehicles or power stations. However the actual greenhouse gas balance (the total reduction of greenhouse gas emissions) from producing agrofuels is complex and needs to take into account many factors. The greenhouse gas balance depends on the crop grown, how it is grown, where it is grown and how it is processed, transported and used.

Conversion of forests or other ecosystems such as savannahs into plantations to grow crops or trees for agrofuels negates the climate benefits from growing biomass. The removal of natural vegetation, draining of peatlands, or soil erosion caused by monoculture plantations leads to the release of soil carbon as CO<sub>2</sub> and other greenhouse gases. This is particularly true in the destruction of tropical rainforests or the draining of peatlands – two major carbon sinks. For example, draining and deforesting peatlands in South-East Asia, predominantly to make way for palm plantations, accounts for a massive 8% of global annual CO<sub>2</sub> emissions.<sup>11</sup>

Fertilisers – often used on intensively grown crops - also contribute to climate change. Their production consumes energy and, crucially, they release nitrous oxide, a greenhouse gas nearly 300 times more powerful than CO<sub>2</sub>. (The greenhouse gas potential of chemical fertilisers is also 10-100 times greater in the tropics than in temperate zones.<sup>12</sup>) Recent research indicates that the effect of nitrous oxide emissions is around twice what was previously thought. The researchers conclude that for oilseed rape (which accounts for about 80% of the agrofuel production in Europe) the relative warming due to nitrous oxide emissions is 1 to 1.7 times larger than the relative cooling effect due to saved fossil CO<sub>2</sub> emissions. For maize bioethanol, the figure is 0.9 to 1.5.<sup>13</sup> In other words, fertiliser use on agrofuel crops can mean that their greenhouse gas balance is negative – i.e. they are actually worse for the climate than conventional fossil fuels.

Growing crops for agrofuels may displace crops or other agricultural activities such as cattle ranching into other areas such as rainforests that act as carbon sinks. This is a crucial factor but can be very hard to track and quantify. For example, research shows that an increase in use of oilseed rape for biodiesel in Europe has led to an increase in the price of other vegetable oils such as palm or soy. This drives their expansion often at the expense of other carbon sinks such as forests or peatlands which are destroyed in order to create new agricultural land.<sup>14</sup>

Finally, emissions are also produced when agrofuels are transported from their source. The greater the distance, over which the agrofuel is transported, the more unfavourable the greenhouse gas balance becomes.

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<sup>11</sup> Hooijer, A., Silvius, M., Wösten, H. and Page, S. 2006. PEAT-CO<sub>2</sub>, Assessment of CO<sub>2</sub> emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943 (2006)

<sup>12</sup> Intergovernmental Panel on Climate Change, Climate Change 2001: The Scientific Basis, Chapter 4, 4.2.1.2., [http://www.grida.no/climate/ipcc/wg1/wg1\\_136.htm](http://www.grida.no/climate/ipcc/wg1/wg1_136.htm)

<sup>13</sup> P. J. Crutzen et al. N<sub>2</sub>O release from agro-biofuel production negates global warming reduction by replacing fossil fuels, August 2007.

<sup>14</sup> Biofuels and Commodity Markets: Palm Oil Focus, P. Thoenes, FAO, [http://www.fao.org/es/ESC/common/ecg/110542\\_en\\_full\\_paper\\_English.pdf](http://www.fao.org/es/ESC/common/ecg/110542_en_full_paper_English.pdf).

NASA scientists have also demonstrated a link between deforestation in the Amazon and the price of soy, see: Cropland expansion changes deforestation dynamics in the southern Brazilian Amazon, Douglas C. Morton et al, PNAS 2006 103: 14637-14641, <http://www.pnas.org/cgi/content/abstract/0606377103v1?ck=nck>

In addition, the International Panel of Climate Change recognises the synergy between sustainable agriculture and the large mitigation potential from better soil management.<sup>15</sup> The development of more large scale intensive monocultures is therefore likely to contradict the action needed to mitigate climate change.

Calculating the greenhouse balance of liquid agrofuels is immensely complex and difficult. When all the above factors are taken into consideration most agrofuels provide only marginal benefits and at worse, lead to increased emissions and valuable carbon sinks being damaged. Indeed, the OECD recently estimated that overall the *“unfavourable economics of biofuels”* suggests that agrofuels will only account for some 3% of energy-related CO<sub>2</sub> emissions in a business-as-usual scenario and that *“given the projected growth in demand for transportation fuels, this will not reduce overall petroleum fuel consumption below current levels but only moderate the growth in demand”*.<sup>16</sup>

### **Biodiversity at risk**

Growing biomass for agrofuels on a large scale is leading to an expansion of monoculture plantations. The danger is illustrated by the cultivation of palm oil in South-east Asia and soy in South America where their expansions have led to dramatic rates of deforestation. So far 18 million hectares of forests have been cleared in Indonesia under the name of palm oil developments.<sup>17</sup> For the SE Asia region a staggering 10.6 million hectares (39%) of peatland was deforested in the year 2000 (an area bigger than the whole of Hungary).<sup>18</sup>

Clearing forests or biodiversity-rich areas to make room for the plantations can lead to a great loss in biodiversity. For example, the orang-utan and the Sumatran tiger are threatened through deforestation in Indonesia.<sup>19</sup>

Europe's plans to increase its own production of agrofuels within the EU will come at the expense of current set aside land and a possible further intensification of agriculture. The European Commission originally stated that 400,000 hectares of set-aside in the EU will be made available for cultivation of energy crops. Some of this land falls in areas important for nature conservation.<sup>20</sup> Recent moves by the EU have now proposed that all set-aside is removed in 2008.<sup>21</sup>

In addition, the demand for biomass may also lead to a greater demand for currently unused biomass that provides some environmental benefits. For example, whole trees or root stumps may be extracted from forests, or crop stubbles removed from fields, leading to impoverished ecosystems.

### **Competition with food supply and claims on land**

Most agricultural land is already used to grow food, animal feed, fibre and numerous other products. The growing demand for biomass for agrofuels leads to significant pressures in agricultural areas, which particularly for marginalized groups leads to competition with food

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<sup>15</sup> IPCC Working Group III Fourth Assessment Report, 2007.

<sup>16</sup> [http://www.foeeurope.org/publications/2007/OECD\\_Biofuels\\_Cure\\_Worse\\_Than\\_Disease\\_Sept07.pdf](http://www.foeeurope.org/publications/2007/OECD_Biofuels_Cure_Worse_Than_Disease_Sept07.pdf)  
<http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf>

<sup>17</sup> Marcus Colchester, Norman Jiwan, et al. (2006), Promised Land, Palm Oil and Land Acquisition in Indonesia: Implications for Local Communities and Indigenous Peoples, Forest Peoples' Programme, Perkumpulan Sawit Watch, Moreton-in-Marsh and Bogor.p.11

<sup>18</sup> Hooijer, A., Silvius, M., Wösten, H. and Page, S. 2006. PEAT-CO<sub>2</sub>, Assessment of CO<sub>2</sub> emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943 (2006)

<sup>19</sup> The Ape for Oil Scandal, Friends of the Earth, 2005.

<sup>20</sup> [http://ec.europa.eu/agriculture/biomass/biofuel/com2006\\_34\\_en.pdf](http://ec.europa.eu/agriculture/biomass/biofuel/com2006_34_en.pdf)

<sup>21</sup> [http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/agricult/95308.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/agricult/95308.pdf)

supply. The Food and Agriculture Organisation (FAO) warns that *“Traditional food and fibre use of land may lose out in this competition simply because, on the margin, the potential market for energy is huge in relation to that for food, eventually leading to rising food prices. The latter may not dent the welfare of those who can afford to pay higher prices for both food and fuel, including the population groups that benefit from the development of biofuels. However, low income consumers that do not participate in such gains may be adversely affected in their access to food.”*<sup>22</sup>

There is already growing evidence of rising food prices and commodities with FAO reporting record increases for some commodities<sup>23</sup> and stark increases in the price of food imports into developing countries. Food imports are expected to be 5% higher in 2007 partly due to competition with agrofuels with the costs of food imports in developing countries in 2007 an estimated 90% more than in 2000 (compared with only 22% for developed countries).<sup>24</sup>

In many countries in the South, people have little access to land. Expansion of the area used to export agrofuels crops will likely worsen this situation. The sheer quantity of land needed to produce agrofuels on a large scale may also lead to conflicts with food supply and peoples' access. The United Nations warns that the *“transition to liquid biofuels can be especially harmful to farmers who do not own their own land, and to the rural and urban poor who are net buyers of food...this is one of the most significant threats associated with liquid biofuel development and calls for careful consideration by decision-makers.”*<sup>25</sup>

The world stocks of grain are at their lowest for 30 years, with currently enough surplus to feed the world's population for 57 days (down from 116 days in 1999). This drop in grain stocks is already provoking price rises and impacting on low-income countries. There is a real danger that diverting agricultural land into agrofuels production will worsen the situation and is likely to compromise the UN Millennium Development Goal to eradicate extreme hunger by 2015.

### **Unsustainable agriculture**

The development of agrofuels on a large scale may also lead to more intensive farming. Because of the limited availability of land in Europe this will inevitably lead to more intensive production in Europe and an expansion of monocultures in Southern countries. Intensively farmed crops are notorious for their negative environmental and social impacts.

Growing crops for agrofuels may also lead to impoverished soils and an increase in chemical fertilisers (which also produce greenhouse gases). When crops are traditionally harvested, only a part of the biomass is removed while the remainder is often returned to the land, providing essential nutrients, organic matter, a source of food for wildlife and reducing soil erosion. However, in producing agrofuels up to 100% of the above-ground biomass may be removed. As a result nutrients and soil organic matter is lost and soil erosion may increase. The nutrient loss is partly compensated by using fertilisers leading to eventual depleted agricultural land.

In addition, the use of pesticides may increase if more land is used to produce agrofuels (for example by getting rid of set-aside land in Europe or changing crop rotations). This could have harmful consequences for the environment (biodiversity, soil, water), for plantation workers, and for the local population.

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<sup>22</sup> FAO. World agriculture: towards 2030/2050. Prospects for food, nutrition, agriculture and major commodity groups. Global Perspective Studies Unit. FAO. June 2006

<sup>23</sup> <http://www.fao.org/docrep/010/ah864e/ah864e07.htm>

<sup>24</sup> <http://www.fao.org/docrep/010/ah864e/ah864e00.htm>

<sup>25</sup> <http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf>

Many crops also need high quantities of water. For some regions water scarcity is already a major problem and farmers in arid areas may be encouraged to turn to more thirsty crops such as maize or sugar beet to meet the demand for agrofuels.<sup>26</sup>

Proponents of genetic engineering promote agrofuels in an attempt to break worldwide opposition to genetically modified (GM) foods, even though current GM crops provide no advantage when producing agrofuels. GM crops raise unacceptable health and environmental concerns as well as lead to the further intensification of agriculture and increase corporate control of agriculture. In addition, crops engineered with traits specifically intended for industrial agrofuel use will inevitably contaminate food supplies. The use of GM crops and trees should not be permitted in the production of agrofuels.

### ***Violations of human rights***

Development of large-scale plantations in the South frequently entails local communities being displaced from their land. Human rights and labour rights are also sometimes violated. For example, the use of slavery-like practices is still a persistent problem in the production of sugar cane in Brazil.<sup>27</sup>

For some regions the land of indigenous peoples is also threatened. The UN's Permanent Forum on Indigenous Issues recently reported that the expansion of palm oil in Asia *"comes with serious social and environmental costs which adversely impact on indigenous peoples, forest-dwellers and the tropical rainforests. Out of the 216 million people in Indonesia it is estimated that 100 million, of which 40 million are indigenous peoples, depend mainly on forests and natural resource goods and services. Large areas of forest lands traditionally used by indigenous peoples have already been expropriated."*<sup>28</sup>

### ***Increasing corporate control***

Friends of the Earth is concerned that EU agrofuels policy is being dominated by corporations that have vested interests in such developments. Civil society groups have, for example, not been allowed to participate in High Level advisory groups set up by the European Commission. An increase in land used to produce agrofuels will inevitably lead to further concentration in the agri-business sector and further control of the world's agriculture and (agro-)biodiversity by a small number of large corporations. This has been highlighted by the United Nations which states that: *"at their worst, biofuel programmes can result in concentration of ownership that could drive the world's poorest farmers off their land and into deeper poverty."*<sup>29</sup>

The development of second generation biofuels could possibly further facilitate the control of the sector by large corporations as this will require much larger investments and research before it is commercialised. Other interested sectors include the oil companies, industrial farmers, car manufacturers and commodity traders. The sheer lobby power of such vested interests, aided by international trade and patent rules that sideline environmental and social concerns, raises doubts about whether agrofuels can be developed sustainably and whether the companies behind them will be held accountable for their impacts on people or the environment.

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<sup>26</sup> <http://today.reuters.com/News/CrisesArticle.aspx?storyId=L18850725>

<sup>27</sup> Sustainability of ethanol from Brazil, October 2006, Amigos da Terra Brasil and Vitae Civilis.

<sup>28</sup> Oil Palm and Other Commercial Tree Plantations, Monocropping: Impacts on Indigenous Peoples' Land Tenure and Resource Management Systems and Livelihoods. Victoria Tauli-Corpuz and Parshuram Tamang

<sup>29</sup> <http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf>

## Can agrofuels be green?

Friends of the Earth believes that under current circumstances, agrofuels could cause environmental and social problems if they play a significant role in transport or energy policy. The EU has agreed that there are potential risks with agrofuels but has so far failed to propose a comprehensive plan on how to prevent problems from occurring. As they are currently proposed and produced, agrofuels represent a false solution to climate change.

### ***Second generation biofuels – hope or hype?***

The current crops being used to produce agrofuels are called first-generation fuels. In development are second generation agrofuels which will use chemical processes to break down the woody part of plants (lignocellulosic) into liquid fuels, thereby allowing a wider range of materials to be used to produce fuel, e.g. crop and forestry residue wastes and straw. There are also developments to use algae to produce biodiesel. Second generation agrofuels are still under development and are not yet commercially available, but they have been predicted by some to deliver more greenhouse gas emission reductions and are claimed not to compete with food for land use.

As they are not yet available, it is too early to say whether second generation fuels will play a significant role in a sustainable transport or energy policy. Friends of the Earth is concerned that they have been given such a high prominence in EU policy despite their infancy. We would urge a wider debate about what issues will arise from their use, such as their environmental impacts and whether they are publicly acceptable. For example, a demand for cellulosic material could further drive monoculture tree plantations around the world. In addition, the biotechnology industry is developing genetically modified (GM) trees with reduced lignin content to be used as second generation agrofuels. Friends of the Earth and many other organisations oppose the release of GM crops or trees into the environment because of their inherent risks.

A recent report by the OECD raises serious doubt about the potential of second generation fuels and questions whether transporting biomass material on a large scale will be economically feasible. They called for more research into the assumptions regarding their cost and long-term availability.<sup>30</sup>

### ***Sustainability criteria as a smokescreen?***

Certification has been proposed as a way of guaranteeing the sustainability of agrofuel crops or trees. However certification has many drawbacks and although it may lead to some improvements in individual fields or plantations, it does not make the overall trade in agricultural commodities any more sustainable. In fact, sustainability criteria can act as a smokescreen, discouraging the use of other more effective measures to promote fair and sustainable societies. There are many issues either not covered or not solved by certification schemes.

#### ***Issues not solved:***

*Shifting the problem elsewhere (leakage)* - Certification does not prevent the displacement of other crops or agricultural activities into more sensitive areas e.g. into rainforests or savannah. There is so far no solution to the problem of leakage and this undermines claims that agrofuels are produced sustainably.

*Over-consumption* - The scale of land used in developing countries to produce agricultural commodities such as palm oil and soy for various industries in Europe is already unsustainable.

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<sup>30</sup> [http://www.foeeurope.org/publications/2007/OECD\\_Biofuels\\_Cure\\_Worse\\_Than\\_Disease\\_Sept07.pdf](http://www.foeeurope.org/publications/2007/OECD_Biofuels_Cure_Worse_Than_Disease_Sept07.pdf)

Certification fails to deal with the root causes of the problem - unsustainable consumption in northern countries. False claims that agrofuels are sustainable may lead to wider acceptance and therefore more demand.

**Issues not covered:**

*Southern stakeholder involvement* - Most initiatives so far under development, such as the UK and Dutch proposals, have failed to include the stakeholders who are most likely to be affected by the expansion of agrofuels in developing countries. Southern civil society groups have on the whole not been included in such processes - either they have not been invited or they have refused on political grounds, e.g. because of their opposition to the use of their lands being used to grow crops for northern (unsustainable) lifestyles.

*Who benefits?* - Certification systems are costly to implement and monitor. They therefore benefit large businesses which are more able to cope with such practices than small scale producers.<sup>31</sup> A certification scheme also does not commit a company to ensure that all their products are produced sustainably. A company could serve the certified market whilst also continuing bad practices elsewhere.

*Sustainability guarantees* - For a variety of reasons - industry lobbying, political support for agrofuels, international trade rules, and the sheer complexity of the issue - all sustainability standards so far proposed or under development miss key sustainability issues. For example, the European Commission has been considering a simple system that does not take into account the social or macro effects.<sup>32</sup> In the Netherlands there has been a discussion for more than a year between civil servants, companies, NGOs and academics to develop sustainability criteria. Even then important problems like leakage effect and scale problems were not solved. It was very disappointing that the criteria will be voluntary and companies only need to report on the criteria but don't need to fulfil them at all, at least until 2011. Not even a minimum binding GHG saving standard is imposed. Similarly, in the UK the government pressed ahead with a Renewable Transport Fuels Obligation before developing credible and tough carbon and sustainability standards.<sup>33</sup>

In addition there are concerns about the implementation and monitoring of certification schemes to ensure full compliance. Friends of the Earth has exposed malpractices by the world's largest palm oil trader even though it is a signatory to one of the most prominent sustainability initiatives.<sup>34</sup> Without tough enforcement, certification is open to abuse and fraud and good local governance, which is often missing, is essential to ensure compliance.

## Real Solutions

### ***Increasing security of supply***

The first priority in securing energy supplies should be reducing demand and improving efficiency. Agreeing to targets to increase the amount of agrofuels in petrol or diesel, without curtailing the growth in transport, will mean that we will still need the same level of mineral fuels

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<sup>31</sup> [http://www.forestpeoples.org/documents/prv\\_sector/oil\\_palm/ghosts\\_on\\_our\\_own\\_land\\_txt\\_06\\_eng.pdf](http://www.forestpeoples.org/documents/prv_sector/oil_palm/ghosts_on_our_own_land_txt_06_eng.pdf)

<sup>32</sup>

[ec.europa.eu/energy/res/consultation/doc/2007\\_06\\_04\\_biofuels/2007\\_06\\_04\\_public\\_consultation\\_biofuels\\_en.pdf](http://ec.europa.eu/energy/res/consultation/doc/2007_06_04_biofuels/2007_06_04_public_consultation_biofuels_en.pdf)

<sup>33</sup> Friends of the Earth, Press Release: 'Green fuels' could be bad for the environment, April 2007

<sup>34</sup> Research from Friends of the Earth Netherlands and local NGOs revealed that the world's largest palm trader, Wilmar, is involved in illegally logging rainforests, setting forests on fire and violating the rights of local communities in Indonesia. Wilmar is a member of the Roundtable on Sustainable Palm Oil. See [www.foeeurope.org/press/2007/July3\\_PDC\\_Wilmar\\_PalmOil.htm](http://www.foeeurope.org/press/2007/July3_PDC_Wilmar_PalmOil.htm)

(or even more) in the near future with all the insecurities and social and environmental problems these bring. Moreover, it will mean that the volumes of agrofuels needed to meet the EU's targets will be ever-increasing.

### ***An energy efficiency revolution for the electricity generation sector***

A new production and consumption energy model is needed that leads to a reduction in the consumption of energy and significantly increased investment in energy-efficient technologies and renewables based on sun, wind, wave, tides, small-scale hydropower and small-scale, local biomass production. These feasible alternatives to agrofuels are essential, especially given that urban centres around the world will continue to have reduced but significant energy demands that still need to be met.

### ***Reducing greenhouse gas emissions from the transport sector***

A far safer and reliable method of reducing greenhouse gases from the transport sector would be to reduce our energy demands by cutting demand, wastage and massively improving energy efficiency. Friends of the Earth is urging the EU and national governments to introduce laws that lead to year-on-year reductions of greenhouse gases. This will necessitate developing a more sustainable transport system and forcing car manufactures to improve the efficiency of their vehicles through legally-binding targets for CO<sub>2</sub> emissions.

A recent study commissioned by the UK Government found that in the UK potentially up to 44% (from a 1990 base) greenhouse gas savings from transport could be made by 2030 through the take up of low emission vehicles alone and up to 20% saving through economical driving<sup>35</sup>.

In comparison: the current EU proposals for sustainability criteria for agrofuels include a minimum of 10% greenhouse gas savings. At this minimum the 10% target would translate into less than 1% greenhouse gas savings from overall road transport fuel use.

### ***A limited local role for biofuels***

As part of a new energy model, it is essential that only biofuels meeting strict social and environmental criteria are produced. They should:

- Empower communities to develop and use their natural resources sustainably and/or participate in the local production of agrofuels. Governments should ensure policies work to eliminate rather than encourage long-distance commerce in agrofuels. To achieve this, the origin of biomass must be transparent and completely traceable.
- Not conflict with food production and food sovereignty, either by directly or indirectly removing land from food production or by leading to an increase in food prices.
- Contribute to significant greenhouse gas emissions reductions of 60% across the full lifecycle of production (including land use change, production, refining, waste disposal, transport and use).
- Be based on the sustainable use of local resources and improve rather than erode biological diversity, by
  - being grown in areas that are not themselves high-biodiversity or sensitive ecosystems or areas that run the risk of losing a considerable amount of carbon from the subsoil, such as certain meadows, peat bogs, mangroves and wetlands;

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<sup>35</sup> Bartlett School of Planning, University College London and Halcrow Group for Department for Transport Looking over the Horizon, January 2006

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- being based on mosaic-style farming patterns (including forest restoration areas, etc) rather than monocultures;
- building soil structure and fertility and conserving water quantity and quality; and
- maximizing the use of waste products that would otherwise have to be disposed of.
- Not result in the displacement of local communities or Indigenous Peoples, or encroachment into any of their traditional territories, including those where these communities' land ownership has not yet been recognized in its entirety by the government in their country.
- Aid communities, especially those that are socially or economically marginalized. Local farmers and communities should have ownership and control over biomass production and processing facilities, generating income for local communities. There should be living wages for employees, and secure and good working conditions. Human rights must be respected.
- Eliminate the use of agrochemicals and artificial fertilizers. Switching to non-intensive production will also be key to reducing emissions of nitrous oxide.
- Ensure that the development of any further bioenergy technologies does not involve the development or release of GM crops or trees into the environment because of the environmental, cultural and socio-economic impacts they may have on the conservation and sustainable use of biodiversity.
- Be based on sustainable local biomass standards, certification or labelling systems, that have been developed, administered and supported by a democratic process that includes local and affected communities.