Stop the agrofuel craze!

GRAIN

One can hardly open a newspaper today without being exposed to the promise of a new era of plentiful green energy that humanity is about to enter. Although the oil companies will continue to pump oil for a long time to come, a growing consensus is emerging that it is high time to start reducing the amount of oil that we burn, as it is one of the main causes of climate change, air pollution and other environmental disasters. The way to do this, it is claimed, is by using biological material to produce energy for fuel: crops such as maize and sugar cane distilled into ethanol, and crops such as oil palm, soya and canola transformed into biodiesel. And at a later stage, when biotechnology has caught up, we are told that potentially any biomass could be turned into fuel: weeds, trees, the oil we have used for cooking.… At first sight the advantages seem truly limitless. It would seem that the emissions of greenhouse gases responsible for global warming will be substantially reduced as the CO_2 emitted by the cars running on the biologically derived fuels has previously been captured by the plants that produced them. Countries will become more self-sufficient in their energy needs as they will be able to grow fuel themselves. Rural economies and communities will benefit as there will be a new market for their crops. And poor countries will have access to a bountiful new export market.

This rosy picture is painted by those who have an interest in promoting such fuels. But does this new world of green and clean energy, benefiting everyone, really exist? We are receiving reports of the territories of indigenous peoples being occupied and razed to make way for fuel plantations, of further rainforest being felled to plant millions of hectares with oil palm and soya, and of workers living in slave-like conditions in Brazil's ethanol sugar-cane plantations. As we said in the editor's letter, we believe that agrofuels is a better word than biofuels to describe the process behind this destruction: using agriculture to produce fuel to feed cars.

Bio or Business?

To understand what is really going on, it is important – first and foremost – to emphasise that the agrofuels agenda is not being drafted by policymakers concerned to avert global warming and environmental destruction. The way that agrofuels are going to be developed has already been defined, and that path is now being followed,

by huge transnational corporations and their political allies. Those in control are some of the most powerful corporations on the globe: in the oil and car industries, and among the world's food traders, biotechnology companies, and global investment firms.

The world's food processing companies and traders have already wedged a solid foot in the agrofuels door. Companies such as Cargill and ADM already control agricultural commodity production and trade in many parts of the world, and for them agrofuels represent an opportunity for a major expansion of their business and profits. The biotechnology companies, such as Monsanto, Syngenta and others, are already investing heavily to deliver crops and trees that fit the requirements of the agrofuels processors. They promise everything from crops that produce more energy to trees that produce less woody material and enzymes that more easily break down the material into agrofuels-suitable feedstock. All of this will be achieved, of course, by means of genetic engineering, for the agrofuels revolution comes with GMOs incorporated. For the petroleum companies – BP, Shell, Exxon, and so on – the agrofuels craze is a perfect opportunity to invest their petro-dollars in this new energy commodity and keep a finger in both pies. For the car companies, agrofuels are the perfect pretext for escaping the pressure of the regulators and public opinion to produce more efficient cars or perhaps even to make fewer of them! Now all they would have to do is make them bio-compatible. And the investment companies have lots of spare cash to chip in and help finance the make-over.

It is this conglomerate of powerful corporations that is writing the agrofuels agenda. These corporations sometimes compete but much more often form alliances in order to increase their profits. The world's plantation companies are teaming up with the major commodity traders to control the production chain from the crop all the way to the industrial markets. Monsanto and Cargill are working together to produce new, genetically engineered varieties of maize that can supply both the agrofuels and the animal feed markets. British Petroleum has linked up with Dupont to create "biobutanol", mixing agrofuels with petroleum, to the benefit of both companies. The list is endless, and a maze of new, interlinked collaborations is being created between what are already the world's most powerful corporations. The new billionaires and other investors, together with the world's taxpayers, who contribute through the subsidies that their governments hand out to the sector, are injecting huge amounts of fresh money into these corporate networks. The result is a massive expansion of global industrial agriculture and strengthened corporate control over it.

Blueprint for green energy?

A lot of the press attention on agrofuels in the past year has focused on George Bush's announcement that he would turn the US into an agrofuels-growing nation and thus shield it from over-dependence on petroleum imports from unreliable countries that are – or might become – dominated by terrorists. But it is plain that agrofuels cannot fulfil this function. Even if the country's entire corn and soya harvests were used to produce agrofuels, they would satisfy only 12 per cent of the country's current thirst for petrol and 6 per cent of its need for diesel.[1] The situation in Europe is even worse: the UK, for example, could not grow enough agrofuels to run all its cars even if it put the whole country under the plough. Economically too, agrofuels are not viable. Most of the US and Europe's agrofuels operations rely heavily on subsidies, and they probably wouldn't survive without them. A report from the Global Subsidies Initiative[2] found that agrofuels subsidies in the US alone currently amount to between US$5.5 billion and US$7.3 billion per year, and they are growing fast. Subsidies handed out by the US and the EU to their agrofuels industries and growers are already resulting in direct competition across the world between crops for food and crops for fuel, creating havoc in poor countries through increased food prices, and reducing global food reserves. The FAO recently calculated that, despite bumper harvests in 2007, the poorest countries will see their cereal import bill increase by one quarter in the current season alone, due to agrofuels demand.[3] But this is only the beginning: if agrofuels are to make even a small dent in the oil consumption of industrialised and industrialising countries, there will have to be a massive supply of them from plantations in the South.

In the words of a consultancy firm that carried out a study on the subject for the Inter-American Development Bank: "The growth of biofuels will give the advantage to countries with long growing seasons, tropical climates, high precipitation levels, low labor costs, low land costs … and the planning, human resources, and technological knowhow to take advantage of them."[4] The study, titled "A Blueprint for Green Energy in the Americas", makes the kind of thinking behind this agrofuels master-

1 See, for example, Brian Tokar, "Running on Hype", Counterpunch, November 2006.
http://tinyurl.com/w5swf

2 Doug Koplow, "Biofuels: at what cost? Government Support for Ethanol and Biodiesel in the United States",GSI, October 2006.
http://tinyurl.com/2s5mpw

3 FAO, "Crop Prospects and Food Situation", Rome, No. 3, May 2007.
http://tinyurl.com/2kswxw

4 "A Blueprint for Green Energy in the Americas", prepared for the Inter-American Development Bank by Garten Rothkopf (the quote is from a powerpoint presentation about the study).
http://tinyurl.com/39e67b

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plan frighteningly clear. The report's working assumption is that global agrofuels production will have to increase nearly fivefold to keep up with demand and to get agrofuels to supply just 5 per cent of global transport energy consumption by 2020 (today it supplies 1 per cent). The way to do that is through massive "capacity expansion", building new infrastructure and markets, and promoting "technical innovation". Brazil, already a major ethanol producer, is singled out as the place where a large part of this challenge of greatly increased production can be met, as there is so much land available there. Brazil already has some 6 million hectares under agrofuel crops, but the report calculates that there are over 120 million hectares in the country that could efficiently be used in this way. The Brazilian government is now formulating a new vision for the country's economic future, involving a fivefold increase in the land devoted to sugar production – to 30 million hectares.[5]

Another such blueprint report concludes that, together, sub-Saharan Africa, Latin America and East Asia can in the future provide more than half of the all the required agrofuels, but only if "the present inefficient and low-intensive agricultural management systems are replaced by 2050 by the best practice agricultural management systems and technologies".[6] In other words: replace millions of hectares of local agricultural systems, and the rural communities working in them, with large plantations. Substitute monocultures and genetic engineering for biodiversity-based indigenous cropping, grazing and pasture farming systems. And put in control the multinational corporations that manage these kinds of systems best. In addition, you take over the millions of hectares of what the blueprinters euphemistically call "wastelands" or "marginal soils", conveniently forgetting that millions of people in local communities make a living from these fragile ecosystems. And where there are no indigenous farming systems to replace, you just take the forests.

Millions of hectares, billions of dollars

In fact, even to achieve the current minuscule agrofuels contribution to the world's transport fuel, such destruction is already happening. The figures are simply mind-boggling: the scale is in millions of hectares and billions of dollars. The prime biodiesel crop is oil palm. Colombia, which had hardly any oil palm plantations a few decades ago, had planted 188,000 hectares of this crop by 2003, and is currently planting another 300,000 hectares. The target is to reach one million hectares in a few years time.[7] Indonesia, which had only about half a million hectares under oil palm cultivation in the mid-1980s, has now over 6 million hectares in production, and plans to plant an additional 20 million hectares in the next two decades, including the world's largest oil palm plantation of 1.8 million hectares in the heart of Borneo.[8] Soya, another crop in the agrofuels race, is now being planted on 21 per cent of Brazil's cultivated land – close to 20 million hectares – and the country is likely to clear an additional 60 million hectares for this crop in the near future in response to the global market pressure for agrofuels.[9] This is in addition to its planned fivefold increase in sugar plantations. The Indian government, not wanting to be left behind, is promoting the rapid expansion of another biodiesel crop, jatropha: by 2012 some 14 million hectares are to be planted on what it has classified as "wasteland",[10] but reports are already coming in of farmers being dispossessed of fertile land by companies wanting to grow jatropha.[11] All of this amounts to nothing less that the re-introduction of the colonial plantation economy, redesigned to function under the rules of the modern neoliberal, globalised world.

Where are the local farmers in this massive scheme? They are simply not there. Despite all the talk of opportunities for local communities to benefit from energy farming and local economies being revitalised by new markets, the agrofuels revolution is firmly heading in precisely the opposite direction. Part of a system of corporate-controlled plantation agriculture, the new agrofuels will destroy local employment rather than create it. By way of example, just ask the rural families of Brazil: the recent growth in sugar-cane, soya and eucalyptus plantations has resulted in the widespread expulsion of small farmers from their lands, often with the use of violence. Between 1985 and 1996, 5.3 million people were forced off the land, with the closure of 941,000 small and medium-sized farms,[12] and the rate of expulsion has intensified greatly over the last decade.

In Brazil, the majority of rural families need only a few hectares each to make a living. Plantations, by contrast, occupying millions of hectares, provide hardly any jobs: for every 100 hectares, a typical eucalyptus plantation provides one job, a soya plantation two jobs, and a sugar-cane plantation ten jobs.[13] The situation is pretty much the same across the world.

Combat climate change?

All of these crops, and all of this monoculture expansion, are direct causes of deforestation,

5 Miguel Altieri and Elisabeth Bravo, "The ecological and social tragedy of crop-based biofuel production in the Americas", April 2007. http://tinyurl.com/3dkpto

6 E. Smeets, A. Faaij, I. Lewandowski, "A quick scan of global bio-energy potentials to 2050: analysis of the regional availability of biomass resources for export in relation to underlying factors", Copernicus Institute, Utrecht University, March 2004. NWS-E-2004-109.

7 World Rainforest Movement Bulletin, Issue 1122, November 2006. http://tinyurl.com/2nb4y9

8 Ibid.

9 Miguel Altieri and Elisabeth Bravo, "The ecological and social tragedy of crop based biofuel production in the Americas", April 2007. http://tinyurl.com/3dkpto

10 UNCTAD Report, 2006: http://tinyurl.com/2apse3

11 For a discussion on the problems with jatropha in India, see: http://tinyurl.com/2ktt3v

12 *Folha de S. Paulo*, 18 June 1998. http://tinyurl.com/2sdtjn

13 Brazilian Forum of NGOs and Social Movements for the Environment and Development (FBOMS): "Agribusinesses and biofuels: an explosive mixture", Rio de Janeiro, 2006, p. 6.

eviction of local communities from their lands, water and air pollution, soil erosion, and destruction of biodiversity. They also lead, paradoxically, to a massive increase of CO_2 emissions, due to the burning of the forests and peat lands to make way for agrofuel plantations. In a country like Brazil, way ahead of everybody else in producing ethanol for transport fuel, it turns out that 80 per cent of the country's greenhouse gases comes not from cars but from deforestation, partly caused by the expanding soya and sugar-cane plantations. Recent studies have shown that the production of one tonne of palm-oil biodiesel from peatlands in South-east Asia creates 2–8 times more CO_2 than is emitted by burning 1 tonne of fossil-fuel diesel.[14] While scientists debate whether the "net energy balance" of crops such as maize, soya, sugar cane and oil palm is positive or negative, the emissions caused by the creation of many of the agrofuels plantations send any potential benefit, literally, up in smoke.

It is important to hammer this point home: far from helping to address the global warming crisis, agrofuels as pushed in the current corporate monoculture plantation model deepen it!

It is amazing that in the entire agrofuels–climate change debate none of the policymakers go back to the question of what the main causes of greenhouse gas emissions are. All attention is focused on growing crops to run cars. Of course, global transport is a major producer of greenhouse gases, accounting for 14 per cent of all emissions but, though this is hardly ever mentioned, agriculture itself is responsible for exactly the same percentage share of greenhouse gas emissions. If you add to that the emissions from changing land use (18 per cent of the total – mostly due to deforestation, which in turn is mostly caused by the encroachment of agriculture and plantations into the world's forests), one can only conclude that agriculture, and especially the industrial agricultural model, is the main factor behind global warming.[15] And this is precisely the type of agriculture that is being promoted by agrofuels.

According to the Stern Review, a major report on the economics of climate change commissioned by the British government, fertilisers are the largest single source of emissions from agriculture (followed by livestock and wetland rice cultivation), as they bring huge amounts of nitrogen into the soil, which is later emitted into the atmosphere as nitrous oxide. The same report calculates that total agriculture emissions are expected to rise by almost 30 per cent in the period to 2020, with around half of the expected increase coming from the increased use of fertilisers on agricultural soils.[16] Developing countries are expected to almost double their use of chemical fertilisers over the same period,[17] with the new energy crop plantations undoubtedly responsible for an important part of this expansion.

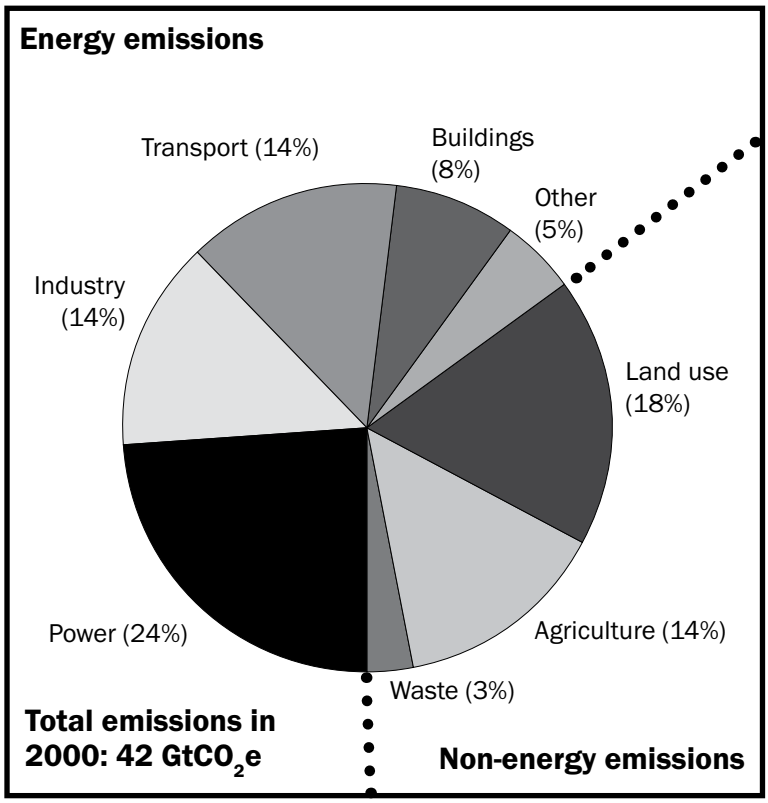


Chart: UK Government Stern Report on Climate Change, 2006.

Greenhouse gas emissions in 2000, by source

Another serious – and often overlooked – problem with agrofuel crops is the soil erosion and depletion they cause. While the soil erosion caused by crops such as maize and soya has been well documented,[18] the problems caused by the slash-and-burn strategies of the plantation companies in the world's forests cause even more serious problems. The FAO has calculated that, if current practices continue, the Third World alone might lose over 500 million hectares of rain-fed cropland because of soil erosion and degradation. This was before the agrofuel craze, and the situation is likely to get even worse with the promised "second generation" of agrofuels. When these are being grown, the companies tell us, it will then be possible to put any agricultural residues and any "biomass waste" into the distiller to increase the production of fuel. But, as farmers and agronomists know, "biomass waste" does not exist; it is the organic matter that you have to put back after harvest in order to

14 Almuth Ernsting *et al.* "Open letter to Al Gore", March 2007. http://tinyurl.com/2owref

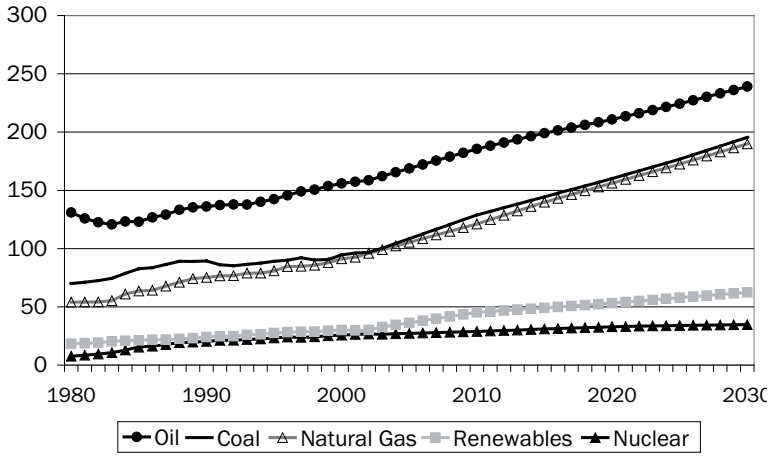
15 Percentages from: "Stern Review on the economics of climate change, Part III: The Economics of Stabilisation", p. 171. http://tinyurl.com/ye5to7

16 "Stern Review on the economics of climate change", Annex 7.g.

17 IFPRI calculates that developing countries will increase chemical fertiliser use from 62.3 nutrient tonnes in 1990 to 121.6 nutrient tonnes in 2020. B. Bump and C Baanante, "World Trends in Fertilizer Use and Projections to 2020", 2020 Vision Brief 38, IFPRI. http://tinyurl.com/362sbx

18 See, for example, Miguel Altieri and Elisabeth Bravo, "The ecological and social tragedy of crop based biofuel production in the Americas", April 2007. http://tinyurl.com/3dkpto

Global marketed energy use by fuel type, 1980–2030 (quadrillion Btu)



Sources – History: Energy Information Administration (EIA), International Energy Annual 2003 *(May–July 2005); Projections: EIA,* System for the Anlysis of Global Energy Markets *(2006)*

maintain the soil's fertility. If you don't, you mine the soil and contribute to its destruction. And that is precisely what will happen if the world's topsoil has to compete with the biodistillers.

Another issue overlooked by their proponents is that many agrofuel crops are heavy consumers of water. We are already in the middle of a serious water crisis, with about a third of the world's population facing water scarcity in one way or another. Irrigation consumes as much as three quarters of the world's fresh water, and agrofuel crops will add a lot to that demand. The International Water Management Institute (IWMI) released a report in March 2006 warning that the rush to biofuels could worsen the water crisis.[19] Another report from the same institute, looking at the situation in India and China, concludes: "it is unlikely that fast growing economies such as China and India will be able to meet future food, feed and biofuel demand without substantially aggravating already existing water scarcity problems."[20] Almost all of India's sugar cane – the country's major ethanol crop – is irrigated, as is about 45 per cent of China's chief agrofuel crop, maize. India and China, countries with scarce water resources, which are already being seriously depleted or polluted, are expected to increase their demand for irrigation water by 13–14 per cent by 2030, just to keep food production at present levels. If these countries move massively into agrofuels, these crops will consume substantially more of the scarce irrigation water: IWMI calculates that, in a country like India, each litre of sugar-cane ethanol requires 3,500 litres of irrigation water.

In short, agrofuels not only compete with food crops for land, but they will also soon be consuming much of both the organic matter needed to keep the soil healthy and the water that crops need to grow. Or, expressed in a different way, countries joining the agrofuel craze are exporting not just crops to keep cars running, but also invaluable topsoil and irrigation water needed to keep their people fed.

The energy equation

Of course, the main problem with the agrofuels debate is that it doesn't address the one issue that should be central to this whole discussion: energy consumption. Actually, it is precisely the focus on agrofuels that allows attention to be drawn away from this central question.

According to the US government's "2006 International Energy Outlook", global consumption of marketed energy is projected to rise by 71 per cent between 2003 and 2030. The US government's report is quick to point out that a lot of this growth will come from developing countries, especially those that have most successfully jumped on the trade and industrialisation bandwagon. Where will this additional energy come from? The consumption of oil will increase by some 50 per cent, the consumption of coal, natural gas and renewable energy will each almost double, and nuclear power will grow by one third. By 2030, all renewable energy (including agrofuels) will constitute not more than a meagre 9 per cent of global energy consumption. Virtually all of the rest of the projected increased energy consumption will come from burning more fossil fuels.[21]

Please read the previous paragraph again, study the graph, and memorise the figures. This is the sobering picture that we should be staring at. If anything, renewable energy will make only a tiny – but tiny – dent in the projected increase of marketed energy. All the rest stays the same or gets worse.

There is simply no escape: we have to reduce energy consumption if we are to survive on this planet. There is no point asking the car companies to make their cars a bit more energy-efficient if the number of cars is going to double and if public policies continue to be geared towards making this happen. There is no point asking people to turn off their lights if the entire economic system continues

19 Food, biofuels could worsen water shortage – report. IMWI press coverage. http://tinyurl.com/2sqls9

20 "Biofuels: implications for agricultural water use", Charlotte de Fraiture, *et al.* International Water Management Institute, P O Box 2075, Colombo, Sri Lanka.

21 EIA, "International Energy Outlook 2006". See especially figures 8 and 10. http://tinyurl.com/2vxkys

to be oriented solely towards moving goods around the globe from countries where the corporations producing them can obtain the highest profit margins. This is exactly what is happening with the current agrofuel push.

The global food system's tremendous waste of energy is certainly one of the elements that merits close examination. Looking at agriculture alone, the difference in energy use between industrial and traditional agricultural systems could not be more extreme. There is a lot of talk about how much more efficient and productive industrial agriculture is compared with traditional farming in the global South but, if one takes into consideration energy efficiency, nothing could be further from the truth. The FAO calculates that, on average, farmers in industrialised countries spend five times as much commercial energy to produce one kilo of cereal as do farmers in Africa. Looking at specific crops, the differences are even more spectacular: to produce one kilo of maize, a farmer in the US uses 33 times as much commercial energy as his or her traditional neighbour from Mexico. And to produce one kilo of rice, a farmer in the US uses 80 times the commercial energy used by a traditional farmer in the Philippines![22] This "commercial energy" that FAO speaks of is, of course, mostly the fossil-fuel oil and gas needed for the production of fertilisers and agrochemicals and used by farm machinery, all of which substantially contribute to the emission of greenhouse gases.

But then, agriculture itself is responsible for only about a quarter of the energy used to get food to our tables. The real waste of energy and the pollution happen in the broader international food system: the processing, packaging, freezing, cooking, and moving of food around the globe. Crops for animal feed may be grown in Thailand, processed in Rotterdam, fed to cattle somewhere else, which are then eaten in a McDonalds in Kentucky. Every day 3,500 pigs travel from different European countries to Spain, while on the same day 3,000 different pigs travel in the opposite direction. Spain imports 220,000 kilos of potatoes every day from the UK, while it exports 72,000 kilos of potatoes daily … to the UK. The Wuppertal Institute calculated the distance travelled by the ingredients of a strawberry yogurt sold in Germany (which could easily be produced in Germany itself) to be no fewer than 8,000 kilometres.[23]

This is where the absurdity and the waste of the globalised food system as organised by the transnational corporations become really apparent. In the industrialised food system, no fewer than 10–15 calories are spent to produce and distribute 1 calorie's worth of food. The US food system alone uses 17 per cent of the US's total energy supply.[24] None of this is really needed. The World Energy Council calculates that the total amount of energy required to cover basic human needs is roughly equivalent to a mere 7 per cent of the world's current electricity production.[25]

To address climate change, we don't need agrofuel plantations to produce fuel energy. Instead, we need to turn the industrial food system upside down. We need policies and strategies to reduce the consumption of energy and to prevent waste. Such policies and strategies already exist and are being fought for. In agriculture and food production, they mean orienting production towards local rather than international markets; they mean adopting strategies to keep people on the land, rather than throwing them off; they mean supporting sustained and sustainable approaches for bringing biodiversity back into agriculture; they mean diversifying agricultural production systems, using and expanding on local knowledge; and they mean putting local communities back in the driving seat of rural development. Such policies and strategies imply the use and further development of agro-ecological technologies to maintain and improve soil fertility and organic matter and in the process to sequester carbon dioxide in the soil rather than expelling it into the atmosphere. And they also require a head-on confrontation with the global agro-industrial complex, now stronger than ever, that is driving with its agrofuel agenda in exactly the opposite direction.

22 FAO, "The energy and agriculture nexus", Rome 2000, tables 2.2 and 2.3. http://tinyurl.com/2ubntj

23 Examples from Gustavo Duch Guillot, Director of "Veterinarios sin fronteras", Barcelona 2006. http://tinyurl.com/2mlprh

24 John Hendrickson, "Energy Use in the U.S. Food System: a summary of existing research and analysis", Center for Integrated Agricultural Systems, UW-Madison, 2004.

25 World Energy Council. "The challenge of rural energy poverty in developing countries". http://tinyurl.com/2vcu8v

"Grain alcohol? Haven't touched the stuff since college"

www.grist.org/news/maindish/2006/12/14/brazil

Sustainable agrofuels: no thanks!

Some of the concerns about the current and potential destruction caused by the agrofuel craze are slowly trickling down. In response to the mounting evidence that the agrofuels rush will undermine rather than support efforts to stop climate change, we often find suggestions in blueprint reports, investment bank plans and corporate public relations materials that measures should be taken to ensure that these fuels are going to be produced sustainably. These suggestions are usually buried somewhere after page 50.

A place where policy makers do seem a little more pro-active is the European Union, which is currently developing a revised "Biofuels Directive", which will regulate the decision that biofuels should make up 10 per cent of all transport fuels in the EU by 2020. A public consultation exercise was launched to find out how this can be done in a sustainable way. Ignoring the whole question of whether sustainability is possible at all, the European Commission proposes to establish standards and certification procedures based on three criteria:

1 With respect to a reduction in greenhouse gases, the agrofuel in question should score at least a little bit better then petrol. (The Commission suggests 10 per cent – so much for the "major contribution" that agrofuels are claimed to make in the fight against climate change!)

2 To avoid the risk of actually adding to greenhouse-gas emissions, the expansion of agrofuel plantations should not happen in ecosystems with "high carbon stocks".

3 The plantations should not encroach on areas of "exceptional biodiversity".

Unfortunately, as far as agrofuels are concerned, none of this will make much difference. This is for two reasons. First, the most important sustainability questions are left out of the equation. Second, whatever sustainability policy the EU puts in place will have little impact on what is being planted where, for the engines behind the destruction lie elsewhere.

In all the talk of sustainability, the indirect and macro-economic impacts of the agrofuel expansion are not being addressed at all. For example, it is true that in Brazil some soya farms are a direct cause of deforestation, but according to Dr Philip Fearnside, a researcher at INPA (Brazil's National Institute for Amazon Research), "they have a much greater impact on deforestation by consuming cleared land, savannah and transitional forests, thereby pushing ranchers and slash-and-burn farmers ever deeper into the forest frontier. Soybean farming also provides a key economic and political impetus for new highways and infrastructure projects, which accelerate deforestation by other actors." As with soya in Brazil, so with oil palm in Indonesia and jatropha in India.

The criteria for sustainability do not include the socio-economic impact on local communities of being thrown off their land to make way for expanding agrofuel plantations. But what about the sustainability of these people's livelihoods, their food security? What about the inhumane working conditions on many of the plantations, the human rights abuses, including murders, at the hands of plantation companies or paramilitaries, or security forces acting on their behalf? These are real issues, but the European Commission prefers to ignore them, and it explicitly excludes "social criteria" when defining "sustainable biofuels".

Perhaps most important of all, the EU's sustainability criteria cannot deal with the fact that the rules of the game of agrofuel production are not set by such policy measures at all, but rather by the price of agrofuel feedstock, which is rising largly

because of the mandatory biofuel targets that the same EU (and other) policy makers want to establish for their car users. NASA scientists have already shown that the rate of Amazon deforestation directly correlates with the world market price of soya; this is likely to be the case with other agrofuel crops.

In addition, and as documented elsewhere in this Seedling, the tremendous expansion of agrofuel business is increasing the financial and political power of the agribusiness transnationals and the local sugar and oil-palm barons that lie behind it. Agrofuel distilleries are being built all over the world at great speed, and the corporations behind them will not allow sustainability considerations to interfere with their supply chains. The decisions on when, where, how much and by whom agrofuel crops are to be planted will be dictated by corporate conglomerates, not by sustainability policy makers in Brussels.

If, despite all this, the EU were able to impose sustainability criteria on the biofuels it imports, other less scrupulous importers would be more than happy to buy up the feedstock that Europe rejected, probably obtaining it at an even lower price. In that context, the first reaction to the EU sustainability plans from Thomas Smitham, an official in the US Mission to the EU in Brussels, was telling. “From the US perspective, we think some of the sustainability criteria ... you’re tying yourself in knots over [it],” he said during a panel discussion, adding “I think it’s going to be enormously difficult to figure that out.” For once, we tend to agree with the US government’s point of view.

The sustainability discussion functions as a smokescreen behind which an agenda already defined by the world’s most powerful corporations forges ahead. The best way forward with agrofuels is not to try to regulate them, but rather to stop and think whether we want them.

What are agrofuels?

There are two main types of agrofuel: **ethanol** and **biodiesel**

Ethanol can be obtained from three main types of raw material: products rich in saccharose, such as sugar cane, molasses and sweet sorghum; substances rich in starch, such as grain (maize, wheat, barley and so on); and through the hydrolysis of substances rich in cellulose, such as wood and agricultural residues. So far, ethanol has been made commercially only from the first two, though intensive research is being carried out to produce a ‘next-generation ethanol’ from cellulose. Ethanol can be used on its own as a fuel to replace petrol, but this requires specially adapted engines. More frequently, it is blended with petrol.

Biodiesel is derived from vegetable oils (such as palm oil, rapeseed oil and soya oil) or animal fats. It is used to replace hydrocarbon diesel. It can be used pure or in a blend. For instance, B30 diesel indicates that the diesel contains 30 per cent biodiesel.