

The EU's agrofuel folly: policy capture by corporate interests

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Despite growing public concern about the risks associated to agrofuels^[1], the European Union (EU) is throwing its weight behind the promotion of these often very harmful crops. In March 2007, a proposal set targets to increase the use of agrofuels in all road transport fuel to 10 percent by 2020. The Commission is also planning to channel large amounts of EU public funds towards the research & development of agrofuel projects.

The EU's agrofuel folly has been influenced by the strong lobbying activities of interested industries, such as car-manufacturers, biotech companies and the oil industry. These industries have forged new alliances with each other and in recent years, have been invited by the European Commission to shape EU policy on agrofuels through several industry-dominated advisory bodies. These include the Advisory Research Council for Biofuels (BIOFRAC), CARS21 and more recently the European Biofuels Technology Platform (EBFTP).

The impacts of this one-sided advice are far-reaching. It has affected how the EU is tackling the fundamental problem of reducing CO2 emissions from road transport. Furthermore, the so-called solution threatens to not only exacerbate the problem it aims to resolve, i.e. climate change, but will also create a range of new insecurities and devastation. It could not be further away from effective policy aimed at energy saving and reduced consumption.

The EU Spring Council, meeting 8 - 9 March 2007, proposed, as part of a broader energy package, mandatory targets for 10% use of agrofuels in all road transport fuel by 2020. This almost doubles the current (non-binding) target of 5.75% by 2010. This proposal was presented as a major step to combat climate change.

However, a closer look at agrofuels, reveals a devastating picture; a so-called solution accompanied by a raft of new problems.^[2] Agrofuels:

- Compete with food for agricultural resources, and their expansion has already resulted in rising food prices which directly threatens the food security of the world's poorest communities;
- Increase the pressure on land which causes, amongst other things, an increased deforestation rate;
- Are farmed in huge mono-crop plantations, involving intensive use of pesticides and fertilisers, and in many cases with the risk of genetically modified contamination. This threatens biodiversity along with other environmental hazards;
- threaten land rights as they are accompanied by plans for monoculture expansion, which tends to be controlled by big agribusiness and wealthy land owners. This threatens the human rights of small farmers and indigenous peoples across the Global South as they are evicted from their lands or face ill-health, poor working conditions and land conflicts.

Furthermore, to add insult to injury, there is growing evidence that agrofuels are indeed aggravating, not mitigating, climate change.

Was the Commission aware of this before backing agrofuels with a host of policy measures? According to an official Commission impact assessment, completed in 2006, they were.^[3] This document mentions that, "increased use of biofuels in the EU will be

accompanied by an increased external demand for biofuels and their feedstocks, which is likely to have various effects on developing countries... In addition, there are substantial CO₂ losses if grassland is ploughed up or forest cleared. These losses can be expected to outweigh CO₂ gains from biofuels for many years." It clearly states that "there will be increasing pressures on eco-sensitive areas, notably rainforests, where several millions of hectares could be transformed into plantations." Among the social effects the paper acknowledges the competition with food, the higher food prices which would hit the poor in developing countries and the pressure on vulnerable communities (to move away or drastically adapt their lifestyles).

The Commission's agrofuel policy has not been driven by the fight against climate change, it has sought to secure energy supply and serve the needs of large farmers and agribusiness, alongside the automotive, oil and biotech sectors, all with a direct interest in maintaining the existing status quo. The Commission has enabled these corporate interests to enter into the policy dialogue and design policy outcomes, by setting up advisory groups with a clear industry bias.

Corporate advise for corporate benefit

The Biofuels Research Advisory Council (BIOFRAC) was created by DG Research in early 2005. A "group of high level experts representing widely different sectors of the biofuel chain" was invited "to develop a foresight report - a vision for biofuels up to 2030 and beyond, to ensure a breakthrough of biofuels and increase their deployment in the EU."^[4] In addition to this 'foresight report', the Commission also invited BIOFRAC to prepare the ground for the so-called 'Strategic Research Agenda', and to provide considerable input for the Seventh Framework Research Programme (FP7), the EU's main instrument for funding research in Europe from 2007 to 2013.

Membership of BIOFRAC (now dissolved) was unbalanced, dominated by specific corporate interests. The automotive industry was represented with four members, oil; three, biofuel; three, and biotech with lobby group EuropaBio. One member from the food industry, one from a forestry company and one from an energy company, one farmer representative and eight from research centres or universities (some with very close links to the oil and biotech industry) completed participation. According to the Commission, members were appointed as individuals, on the basis of their knowledge and expertise, and not as representatives of their organisations. However, it is not unreasonable to assume their role and their recommendations would be reflective of the corporations or organisations for which they work. Indeed BIOFRAC's corporate-bias was clearly reflected in its final report, issued in June 2006, "Biofuels in the European Union. A vision for 2030 and beyond".^[5] The report is an official Commission document.

Biofuels in the European Union. A vision for 2030 and beyond.

"VISION. By 2030, the European Union covers as much as one quarter of its road transport fuel needs by clean and CO₂-efficient biofuels. A substantial part is provided by a competitive European industry. This significantly decreases the EU fossil fuel import dependence. Biofuels are produced using sustainable and innovative technologies; these create opportunities for biomass providers, biofuel producers and the automotive industry."^[6]

Members of the Biofuels Research Advisory Council (as for the date of publication of their Vision Report)

Anders Roj, Chair, Volvo Technology Corporation
Olivier Appert, Vice-chair, (substitute: Alexandre Rojey) Institut Francais du Petrole
Javier Salgado, Vice-chair, (substitute: Ricardo Arjona) Abengoa Bioenergy

Olivier Alexandre, Total
Michel Baumgartner, British Sugar
Gerard Belot, (substitute: Beatrice Perrier Maurer) PSA Peugeot Citroen
Dirk Carrez, EuropaBio
Matthias Rudloff, (substitute: Michael Deutmeyer) CHOREN
Ann-Britt Edfast, SVEASKOG
Hartmut Heinrich, (substitute: Frank Seyfried) Volkswagen AG
Raffaello Garofalo, European Biodiesel Board
Dietrich Klein, COPA-COGECA
Darran Messenm, SHELL
Calliope Panoutsou, CRES
Kimmo Rahkamo, (substitute: Ari Juva) Neste Oil Corporation
Meinrad Signer, Iveco Powertrain
Rene Van Ree, ECN
Guy Riba, (substitute: Ghislain Gosse) INRA
Liisa Viikari, VTT Biotechnology
Eckhard Weidner, Fraunhofer UMSICHT
Arthur Wellinger, Nova Energie
Grzegorz Wis'niewski, (substitute: Magdalena Rogulska) EC-BREC
Guido Zacchi, Lund University

A striking ambition stands out in the report, to fulfil a 25% of the EU road transport fuel with agrofuels by 2030. Apart from that, the report heavily promotes second generation agrofuels. In general, those aim to improve the performance, usually using the whole plant and therefore improving the CO₂ balance and costs.^[7] According to BIOFRAC, these second generation agrofuels, will be produced from a wider range of raw materials, reduce competition for land and food, and will help to reduce costs of "saved" CO₂. To conclude, the report recommended the establishment of a Biofuels Technology Platform that would coordinate all the Commission's work on agrofuels, and "provide an agreed analytical base to assist all Commission services concerned (e.g. Directorates-General Research, Energy and Transport, Trade, External Relations, Agriculture and Rural Development, Environment and Economic and Financial Affairs)."

On 7 June 2006, with its mission accomplished, BIOFRAC was dissolved. On the same day, in line with the recommendations in the Biofuels Vision Report, a steering committee of the European Biofuels Technology Platform (EBFTP) was appointed and the new Platform was officially launched a day later, in Paris. The EBFTP mission is "to contribute to the development of cost-competitive world-class biofuels technologies, to the creation of a healthy biofuels industry and to accelerate the deployment of biofuels in the European Union through a process of guidance, prioritisation and promotion of research, development and demonstration."^[8]

A key role of the EBFTP is the elaboration of the EU's Strategic Research Agenda (SRA) on agrofuels. This means identifying key research working areas for the next 10 years, in order to achieve the Vision 2030 designed by BIOFRAC. According to the EBFTP, its main objective is to implement the major proposals outlined in the BIOFRAC's Vision report.^[9] The Commission pays for the Secretariat, which includes funding the website, meeting general administrative costs and setting up a Stakeholder Plenary Meeting.

The Platform is composed of five working groups and a steering committee. A few months before the launch of the EBFTP, the Commission invited "expressions of interest for membership of the steering committee and working groups" of the EBFTP, announcing it to be "open to the active participation of all stakeholders".^[10] The EBFTP was promoted as a means to "bring together research institutions, companies, NGOs, financial entities and regulatory authorities at European Level". However, the actual composition of the Platform is now heavily dominated by industry. The European Environment Bureau's (EEB) had earlier on complained about BIOFRAC's industry bias

and had called on the Commission "to address this imbalance in the composition of the Steering Group for the Biofuels Technology Platform", a call that went ignored.^[11]

Despite rhetoric about open participation, the membership of the Platform was a stitch up from the start. To begin with, steering committee members were selected by BIOFRAC's Chair (Anders Roj from Volvo) and Vice chairs (Olivier Appert from the Institut Francais du Petrole and Abengoa Bioenergy's CEO Javier Salgado), in consultation with the Commission. Perhaps not surprisingly, the resulting EBFTP steering committee is dominated by industry.^[12] As with BIOFRAC the oil and automotive industries have highest representation in the steering committee, with three members each. They are followed by biotech with two, forestry with one, energy with one and food with one. Then joined by one farmer representative and four from research/university centres. The Steering Committee is chaired by Luis Cabra of Spanish oil company Repsol YPF, with Roj and Appert as vice-chairs. There is not a single citizens' organisation representative on the Steering Committee.

Furthermore, at the next tier down, the five working groups are vastly dominated by industry and research centres representatives.^[13] Despite promises of multiple stakeholders representation, it is now clear this lack of broad representation is a deliberate choice. According to the Platform newsletter "an adequate balance of industry vs. research/public centers was established in order to preserve the Platform as *an industry-led body* (italics added)".^[14] Over 300 people applied to be part of the working groups. Yet with a maximum of 25 members per group, more than half were excluded. The final outcome is that there are only 2 NGO representatives out of some 125 working group members.^[15] The Secretariat has refused to release the initial list of 300 candidates, and Corporate Europe Observatory (CEO) is still waiting for a promised breakdown by backgrounds.

The Commission has ensured that the same companies who shaped the EU's vision on agrofuels through BIOFRAC, are now implementing its recommendations and designing the agrofuels research and development agenda. These are corporations with a direct commercial interest in the development of agrofuels in the EU. The process outlined here shows how they are set to determine a strategic research agenda for this area, and together with the Commission, deciding on the allocation of research and development funds over the coming ten years.

This pattern which connects strategic research to policy is not only confined to agrofuels. The Commission is rapidly creating numerous Technology Platforms in a variety of fields, referring to them as, "proving to be powerful actors in the development of European research policy, in particular in orienting the Seventh Research Framework Programme to better meet the needs of industry".^[16] Other Technology Platforms, also industry dominated, that deal with agrofuels, are Suschem (Sustainable Chemistry), Food for Life, Plants for the Future and Forestry.

There is a need for a broader public debate at EU level about the risks associated with agrofuels set in the context of the problem they seek to address. This must involve a wider range of stakeholders, including those directly affected in the global South. Furthermore, the process for determining policy through research and development where public money is passed to industry players with a direct interest in a certain outcome has no democratic justification and must be challenged.

Oiling wells and wheels

The automotive, oil and biotech industries are the most involved in the design of the EU agrofuel research policy and they all have their own reasons to pursue the expansion of agrofuels.

Car-manufacturers, such as Volvo and Volkswagen, advocate agrofuels in the context of a broader strategy to avoid lower CO₂-emission criteria for passenger cars. They have made a case for agrofuels as a solution aimed at reducing CO₂ emissions. Earlier in 2007, prior to some of the policy-decisions described in this report, the Commission wanted to impose a mandatory efficiency standard for passenger cars which would have enforced lower CO₂ emissions. In response, car-manufacturers, launched a heavy lobby campaign and managed to water down the reduction target from the intended average 120 gr CO₂ per km to 130 gr/km. Furthermore, this difference can be made up for with other so-called CO₂ reduction measures, such as the use of agrofuels.[\[17\]](#)

Fuelling Climate Change

Road transport accounts for 30% of total energy consumption in the EU, and it is 98% dependent on fossil fuels. The growing transport sector is considered to be one of the main reasons for the EU failing to meet the Kyoto targets.[\[18\]](#) It is expected that 90% of the increase of CO₂ emissions between 1990 and 2010 will be attributable to transport.[\[19\]](#) Despite the huge negative impact of road transport in the overall EU greenhouse gas emissions and the threats posed by climate change, the European Commission is not putting the required effort into reducing the volume of transport. Current trends show the reverse with freight transport by road, and private vehicles for personal transport on the increase.[\[20\]](#)

The lobby role of car-manufacturers is well illustrated with the case of Volvo. Volvo's Anders Roj chaired BIOFRAC and is now vice-chair of the EBFTP Steering committee. Volvo affirms its support for a greenhouse gas reduction target of 30% by 2020 for developed countries and for an EU greenhouse reduction commitment of 20% by 2020. Yet, at the same time it creates vulnerability within the EU economy by threatening relocation: "the competitiveness of in particular the energy intensive industry must be followed to avoid the possible moving out from the EU to third countries".[\[21\]](#) It also supports a binding target for agrofuels of 10% of all vehicle fuels by 2020. This is a common corporate strategy, on one hand paying lip service to environmental measures while on the other warning that if those measures hit their pockets (which might well be the case if government action is effective) they will move away from Europe taking their jobs with them.

The car industry also shaped the agrofuel debate through CARS21, another high-level advisory group set up in 2005 at the initiative of Industry Commissioner Verheugen. CARS 21, which was crucial in the EU battle over mandatory efficiency standards for vehicles, strongly promoted agrofuels.[\[22\]](#)

Most European automotive companies are involved in partnerships with oil and biotech corporations for the development of second generation agrofuels. These partnerships are growing in number and reflect a shared interest in the development of agrofuels. For example, in March 2006, European car manufacturers DaimlerChrysler, Renault and Volkswagen together with oil companies Sasol Chevron and Shell formed the 'Alliance for Synthetic Fuels in Europe' (ASFE). This alliance also attracted political support with Industry Commissioner Verheugen attending the launch of this new grouping. In his speech he commented on how at the political level this work has to be supported with "the right framework conditions to help pave the way for alternative fuels into the market and ensure that they are available to consumers."[\[23\]](#)

The heavy involvement of major oil companies in the agrofuels business, including in infrastructure and second-generation fuels, is relatively new. Government support for agrofuels, with mandatory targets, subsidies and other incentives is one reason for the growing interest from the oil companies. Furthermore, increased use of agrofuels will prolong current dependency of transport systems on liquid (petrol-like) fuels, which in

turn allows oil companies to continue their profitable business while keeping a hand of control over the transition away from fossil fuels.

Alliances are being forged for common political lobby platforms (such as the ASFE described above), and also practical research and development partnerships. The latter are growing in number, and have not been without controversy. They demonstrate the convergence of these huge corporate-industrial sectors through the issue of agrofuels.

- Shell, which boasts to be the world largest distributor of transport agrofuels partnered, in 2002, with Iogen, a Canadian biotech company, to create cellulose ethanol from straw using enzymes.
- In 2006 Shell, Iogen and Volkswagen joined in a cellulose ethanol project in Germany. German biofuel company CHOREN Industries is working with DaimlerChrysler, Volkswagen and Shell in SunDiesel, a synthetic fuel or Biomass to Liquid (BTL).
- Since 2003, European oil giant BP has been working with biotech company DuPont in a biobutanol project. Biobutanol is already produced using existing technology. However, BP's research with DuPont is exploring a new biotechnology process to reduce costs. Ford and British Sugar are also working with both companies on this agrofuel.
- BP, which currently accounts for around 10% of the global agrofuel market, hit the headlines recently with one of the most controversial partnership agreements. In February 2007 it signed a \$500 million deal with the University of Berkeley, California (UCB) and its partners (University of Illinois Urbana-Champaign and the Lawrence Berkeley National Laboratory). This is to create the Energy Bioscience Institute, which will house up to 50 BP staff at two campuses. The bulk of the research work will focus on using biotechnology to produce agrofuel crops. The deal has been widely criticised within the University of Berkeley, with faculty members complaining of lack of consultation and conflict of interests that affect most of the University elite involved in taking this decision.[\[24\]](#)

The come back of the biotech industry

The main European biotech lobby group, EuropaBio, was a member of BIOFRAC and is also an active member of the EBFTP. As EuropaBio's secretary general Johan Vanhemelrijck explains "We have worked hard to establish excellent working relations with the Commission and our close involvement with the new Biofuels Technology Platform is one of the fruits of this."[\[25\]](#)

The biotech industry hopes to overcome the fierce public resistance to GM crops, by developing 'improved' crops for agrofuel production. Growing public concern for climate change and the green label that still attaches itself to agrofuel development could offer the biotech 'fix' an opportunity for more PR success than in the past. Genetically engineered crops that are rejected for food, may be more publicly acceptable if they are providing fuel for passenger cars in a way that is promoted as more 'climate friendly'. Messaging from EuropaBio reflects this new discourse. They talk about how biotechnology is 'climate friendly', and more than this it will drive expansion of the global economy, increase wealth while reducing humankind's environmental footprint, reduce dependence on oil imports and provide an income stream for farmers. Their new buzzword is the 'bio-based economy', "a term which encapsulates our vision of a future society no longer wholly dependent on fossil fuels for energy and industrial raw materials... The whole world is now in transition from the Age of Chemistry to the Age of Biotechnology".[\[26\]](#)

Yet, the negative impacts already associated with large-scale monoculture containing genetically engineered crops will be exacerbated by the large expansion of agrofuels.

GM contamination is likely to increase and become more complex, when food crops are engineered with traits designed for non-food purposes.[\[27\]](#) Currently, GM crops are mainly for animal feed, and the same corporations that control these crops and inputs for animal feed are the ones set to benefit from their use for agrofuels.

According to Berkeley professor Miguel Altieri and Food First executive director Eric Holt-Gimenez, the agrofuel agenda offers biotech companies like Monsanto "the opportunity to irreversibly convert agriculture to genetically engineered crops. Presently 52% of corn, 89% of soy and 50% of canola in the US is genetically modified (GM)." The authors argue that "the expansion of corn genetically tailored for special ethanol processing plants will remove all practical barriers to the permanent contamination of all non-GMO crops."[\[28\]](#)

In the EU consumer resistance has to a large extent kept GM crops out. With agrofuels, the biotech industry has a chance to gain access by the back door, presenting GM crops as energy crops, not food crops. However, the risks of contamination to non-GM crops remain. For example, Syngenta has applied in Europe for authorisation to import a type of GM maize, named Event 3272, specifically intended for ethanol agrofuels. This maize can help convert itself into ethanol by growing a particular enzyme (which breaks starch into simpler molecules of carbohydrate easing the transformation into ethanol). However, it also contains a marker gene derived from E coli. "Agrofuels: Towards a Reality Check in nine key areas", a recent paper produced by several organisations campaigning on agrofuels, explains how applications for import of this GM maize in the EU and South Africa show that it is expected to contaminate both food and animal feed, as Syngenta has applied for authorisation for both.[\[29\]](#)

Agrofuels are already enhancing the profits of the biotech industry, and the race is on for new GM energy crops. DuPont indicates annual revenues from the global agrofuel markets, largely from agricultural inputs to fuel ethanol of about US\$300 million.[\[30\]](#) Last February the company announced a US\$100 million reinvestment plan to shorten the time to access the market for new seed products for Pioneer, DuPont's subsidiary. According to Bill Niebur, Vice President for genetics research and development, "Demand for ethanol means that the race is on to rapidly ramp up grain yields."[\[31\]](#) Monsanto is also in the race. The world's largest developer of genetically modified seeds announced recently record profits because of growing ethanol demand.[\[32\]](#) Monsanto will boost seed production capacity this year, planning to spend US\$500 million to meet rising corn-seed demand. The biotech industry is also investing heavily in second generation agrofuels, designing special traits for feedstock and investing in the processes to convert feedstock into fuels, using for example, enzymes.

Second generation agrofuels, the blanket solution?

Both industry and governments are responding to growing concerns about the large expansion of agrofuels by advocating second-generation agrofuels. Using the whole plant instead of isolated parts, it is claimed can achieve a better CO₂ performance and reduce production costs. Furthermore, there is advantage because a wider range of feedstocks can be used, such as trees, plant waste, grass or straw. So for example, using trees instead of food crops is offered as an opportunity to avoid agrofuel's competition with food supplies. Yet, this approach is certainly not without problems. For example, large tree plantations will still compete with food in terms of land and water use. An additional problem of using whole plants is that more is being taken out of the soil as reduced organic matter remains, and this has a negative impact on ecosystems. More fundamentally, irrespective of the pros and cons and risks of individual agrofuels the main problem will still be the scale needed to meet governments' targets. There is no way of avoiding the fact that this means large monoculture plantations, in most cases controlled by big agribusiness firms and wealthy land owners, so is accompanied by the

predictable negative environmental and social costs that this way of organising agricultural production brings.

These second generation agrofuels are not yet commercially viable, and remains uncertain as to whether they ever will be. Yet, despite the lack of evidence of their role as a solution to climate change and no impact assessment of the risks involved, governments are funding their development with public money and putting them at the core of their agrofuel policies.

The case being made for the development of second generation agrofuels in terms of the solutions they will bring in the medium-long term, in part offers an excuse for the unabated present-day expansion of existing agrofuels. This is in the face of growing evidence of their negative consequences. Activist and writer George Monbiot puts it clearly: "It used to be a matter of good intentions gone awry. Now it is plain fraud. The governments using biofuels to tackle global warming know that it causes more harm than good. But they plough on regardless."[\[33\]](#) The reality is that the EU's agrofuel folly, with its corporate bias, will do nothing to stop climate change and will have a severe impact on the global South. "While Europeans maintain their lifestyle based on automobile culture, the population of Southern countries will have less and less land for food crops and will lose its food sovereignty"[\[34\]](#) warned Latin American networks of civil society groups when they asked the EU not to adopt agrofuels mandatory targets.

In public-policy terms, it seems foolish to set targets for agrofuels, as the EU has done, given the lack of risk assessment for second generation agrofuels and the negative consequences associated with any large-scale promotion of existing agrofuels. This report has shown both the mechanisms behind existing EU policies and the motivations of key corporate players. The EU's choice for agrofuels has been largely driven by industries that will directly benefit from the further development and large-scale use of agrofuels.

This biased policy-making process will bring high costs to other stakeholders, both inside and outside the EU. There is a lot of talk about some type of certification scheme to ensure that only sustainable agrofuels or raw materials are imported into the EU or can enjoy subsidies and other incentives. However, certification can simply not address the problem of displacement, the fact that 'sustainable' production will displace 'unsustainable' production (not only of crops for agrofuels but also of those same crops for other uses such as animal feed and paper) somewhere else, therefore merely shifting the problem to another place. If the EU is genuinely interested in averting climate change then policies need to reflect opportunities for fundamental change focusing on reducing energy consumption and the EU's global ecological and social footprint. In the meanwhile the only sensible thing would be to establish a moratorium on all EU agrofuel targets.

Appendix

Agrofuels: A reality check

Agrofuel fever has infected governments across the globe. User-incentives and the introduction of mandatory targets are creating a new and rapidly expanding market. However, a closer look at agrofuels reveals a series of negative impacts. A recent paper, 'Agrofuels: Towards a reality check in nine key areas',[\[35\]](#) draws together these impacts in a compelling case against agrofuels. The account below draws heavily on this research, which represents the tip of the iceberg in terms of the threats posed by the large scale introduction of agrofuels.

Large scale expansion of agrofuels creates competition for the use of agricultural resources pitting food production against fuel production. In other words, the over 800 million people suffering from hunger in the world, will compete for food/energy crops with over 800 million motor road vehicles (a figure that is fast increasing), in a highly unbalanced struggle. In reality, world food reserves are already at their lowest for decades, and for several years demand for grains and oilseeds has surpassed supply. Already, expansion of agrofuel production is resulting in rapid food price rises. For example the increasing demand for ethanol in the US has driven maize export price up by 70%. The knock-on effect of this has been a contributory factor to social unrest in Mexico, where tortillas (corn) is a staple diet.

Increased demand for agrofuels in industrialised countries undermines food sovereignty across the globe. Hot-spot countries for agrofuel crop production such as Malaysia or Argentina, are being encouraged to turn land into fuel export zones, rather than concentrate on local, diverse agricultural production for domestic need.

Large scale agrofuel production puts a growing pressure on land. Agricultural frontiers are expanded as more land is put to monocrop production. This threatens biodiversity as it involves a dramatic change in land use (for example, deforestation) and increased use of fertilisers with higher water demands. For example, in Europe, designated wildlife areas are under threat from agrofuel's expansion with a European Commission announcement about the intention, by 2008, to abolish compulsory protected areas to allow agrofuel expansion. In producer countries of the Global South, the expansion in production of crops such as palm, soya and sugarcane that are used for agrofuels have already resulted in biodiversity loss.

As an attempt to balance up these consequences, agrofuels are presented as an 'opportunity' for the developing world, with many studies taking as given, that they will help rural development and create employment. Yet the development of agrofuels is likely to follow the typical market-led pattern of monoculture expansion controlled by big agribusiness and wealthy land-owners. The connection between mono-agricultural production and the demise of small scale farming systems bringing with it increasing impoverishment is well documented. It leads to 'farming without farmers', where people are evicted by economic pressure (which can involve the use of violence and irregular 'land buying') and poisoning by agrochemicals. In employment terms, people are often replaced by mechanisation or face very poor working conditions. Growing popular resistance to the large-scale expansion of agrofuels in some countries of the South reinforces this case that the poor are not the ones who will benefit.

All of this begs the question, are there any benefits? The main case made by agrofuel proponents is that they help fight climate change, as they are CO₂ neutral (what they absorb while growing as crops neutralises what they emit when burnt as fuels). However, growing evidence actually suggests the opposite. The mentioned background paper, "Agrofuels: Towards a Reality Check in nine key areas" explains how, "there is strong evidence that any emission savings from reduced fossil fuel burning are undone by far greater emissions from deforestation, peat drainage and burning, other land use change, soil carbon losses and nitrous oxide emission". Optimistic proponents of agrofuels as energy efficiency and CO₂ neutral, have not taken into account the massive land use issues thrown up by their production. Nor have they considered the energy inputs involved, mainly derived from burning fossil fuels, in the growing process (fertilizers, pesticides, etc), processing crops into fuel and transporting to their final use point.

A very relevant example for Europe, is the case of palm oil from South East Asia. If the EU is to meet the mandatory targets that it has proposed, a big bulk of the crop for agrofuel use in the EU will be palm oil from Indonesia and Malaysia. A study by Delft Hydraulics and Wetlands International^[36] reveals that the decomposing of peatland can

release 70 to 100 tonnes of CO₂ per hectare per year. The report shows that European use of Southeast Asian palm oil would generate up to 10 times more CO₂ than the equivalent emissions from burning fossil diesel. Indonesia alone holds 60% of all tropical peatlands, and most of these are predicted to drain, mostly for plantations, in coming years or decades leading to more than 40 billion tones of carbon emissions.^[37] This is the equivalent of around six years of global fossil fuel emissions.^[38] In spite of the Commission's claims to the contrary, EU imports will not reduce greenhouse gas emissions.

Notes

1. In this article we use the term agrofuels instead of biofuels, as the latter has unmerited environmentally-friendly connotations. Agrofuels stresses the link with industrial agriculture.
2. For a more detailed account of the negative impacts of agrofuels see the appendix: [Agrofuels: A reality check](#).
3. [An EU Strategy for Biofuels](#), Impact Assessment {COM(2006) 34 final}, Commission Staff Working Document, Annex to the Communication from the Commission, Commission of the European Communities, Brussels, SEC(2006) 142.
4. Science and Research Commissioner Janez Potocnik quoted in: [Biofuels in the European Union. A vision for 2030 and beyond](#). Final report of the Biofuels Research Advisory Council, Directorate-General for Research, Sustainable Energy Systems, 2006.
5. The final draft report was published 14 March 2006 and a consultation process was then open until April 2006 to react to the draft. We did ask the Commission for the responses received and the answer in May 2007, more than a year after the responses were received, is that the secretariat of the technology platform on biofuels [EBFTP] is working on that and that once it is ready, it will be made public through the website.
6. [Biofuels in the European Union. A vision for 2030 and beyond](#). Final report of the Biofuels Research Advisory Council, Directorate-General for Research, Sustainable Energy Systems, 2006.
7. There is not yet a fixed definition of second generation agrofuels, but some characteristics can be given. They are often defined by the feedstocks (wood, pulp, straw, residues and waste) as opposed to vegetable oils and food crops used in first generation agrofuels. A difference with first generation agrofuels would be that second generation can use the whole plant and not only parts (for instance also using the straw of the wheat). Most common they refer to agroethanol from ligno-cellulosic biomass and agrodiesel from biomass gasification. Main advantages would be not to compete with food, improve the energy performance per hectare and reduce costs. However, sometimes also means 'improved' (genetically modified) agrofuels crops with new traits specific for agrofuel production geared towards producing oil. As most government policies are greatly favouring the development of second generation agrofuels and channeling enormous amounts of money into their research and development, there is a vested interest in being included under the term 'second generation agrofuel'.
8. [Newsletter One](#), European Biofuels Technology Platform (EBFTP), March 2007.
9. [Project Overview](#), European Biofuels Technology Platform website, accessed 29 May 2007.
10. [Call for Expression of Interest to participate in the European Biofuels Technology Platform](#), European Commission website, accessed 29 May 2007.

11. "We see the complete omission of environmental stakeholders in this high level advisory group as a serious imbalance", [EEB comments on the public consultation on the Vision Report of the Biofuels Research Advisory Council \(BIOFRAC\)](#), Brussels, 20 April 2006. The Steering Committee of the EBFTP has not a single environmental NGO. The EEB is member of the working group n4, "sustainability".
12. [Membership list for the steering committee](#) of the European Biofuels Technology Platform, EBFTP website, accessed 29 May 2007.
13. [Membership list for the working groups](#) of the European Biofuels Technology Platform, EBFTP website, accessed 29 May 2007.
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