A worker holds up a handful of palm fruit at a south-east Asian plantation and mill. (Munshi Ahmed/Bloomberg via Getty Images)

THE HUNGER GRAINS

The fight is on. Time to scrap EU biofuel mandates.

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EU biofuel mandates, a subsidy to big business that could cost every adult about €30 each year by 2020, deprive millions of people of food, land and water. Countries with poor protection of land rights are magnets for land deals—most of which are to grow crops that can be used for biofuels. If the land used to produce biofuels for the EU in 2008 had been used to produce wheat and maize instead, it could have fed 127 million people for the entire year. It is completely unacceptable that we are burning food in our petrol tanks while poor families go hungry. EU governments have it within their power to make a difference to the lives of millions of hungry people. It's time to scrap EU biofuel mandates.

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SUMMARY

In 2009, EU governments committed to sourcing 10 per cent of transport energy from renewable sources by 2020: they are set to meet this target almost exclusively using biofuels made from food crops. By putting a mandate in place, European governments are propping up powerful industry and farming lobbies without spending a penny from national budgets: as direct subsidies and tax exemptions are phased out, the cost is increasingly borne by the consumer. For example, by 2020 biofuel mandates are likely to cost UK consumers between £1bn and £2bn more each year—that's about £35 from every adult—and to cost German consumers between €1.37bn and €2.15bn more—up to €30 per adult. EU governments have replaced subsidies paid out of the public purse with a subsidy that consumers, often without their knowledge, pay directly to big business.

It is frequently claimed that biofuels are worth supporting because they help fight climate change. By replacing fossil fuels, they supposedly make transport 'greener'. But, in fact, some biofuels are even worse than fossil fuels. Growing crops for biofuels displaces other agricultural production onto 'carbon sinks'—forests, peatlands and grasslands—all of which keep greenhouse gases out of the atmosphere until they are ploughed up. Modelling shows that ploughing up carbon sinks to meet EU biofuel mandates could be as bad for the environment as putting an extra 26 million cars on Europe's roads. And EU biofuel mandates have devastating impacts on millions of people around the world. The overwhelming consensus from research on the impact of large-scale biofuel production shows that benefits are reaped by a small elite. As academic research from Indonesia concludes, 'there are some winners but many losers'.

The past five years have seen two record spikes in the price of food; and prices are rising again, with corn and soy hitting record highs in summer 2012. The evidence on the contribution of biofuel policies to recent international food price spikes is so compelling that, in 2011, ten international organisations—including the IMF and the World Bank—made an unprecedented call for G20 governments to scrap biofuel mandates and subsidies. By 2020, EU biofuel mandates alone could push up the price of some foods by as much as 36 per cent. This translates into hunger and malnutrition for millions of people, especially in countries like Yemen which import most of their food.

Because much more diesel is used in the EU than petrol, EU biofuel mandates have a particular impact on the price of crops used to make biodiesel, including soy and oil palm. This drives up the retail price of cooking oil in importing countries like Haiti and exporting countries like Indonesia. Even in regions that are relatively isolated from international markets, like sub-Saharan Africa, land deals driven by biofuel production mean that there is less land available to grow local staples, fruit and vegetables, making it difficult for parents to provide their children with healthy, nutritious meals. Flexible biofuel mandates, or mandates that

are suspended when a food price spike threatens, are not the answer. Even if they could dampen price spikes on international markets, they fail to address the bigger problem: that our limited resources—land, water, soil—are being used to produce crops for biofuel production when they should be used to produce much-needed food.

Recent evidence suggests that two thirds of big land deals in the past ten years are to grow crops that can be used for biofuels, such as soy, sugarcane, palm oil and jatropha. The commercial stimulus to meet the EU mandates by 2020 means that the land needed to grow crops for biofuels must be acquired quickly, which means that many land deals for biofuel production are 'land grabs', concluded without the consent of affected communities. In one plantation in Ghana, 69 families were thrown off their land, without being consulted or provided with any kind of compensation and 1,500 more families could lose land if the plantation develops as planned. Research in Mozambique and Indonesia found that women are least likely to be consulted in land deals for biofuel production, even though they are often the most seriously affected. Indonesia is one of the EU's main sources of biodiesel, and the nascent biofuel sectors in Mozambique and Ghana are strongly connected to EU markets.

Biofuel production has a major impact on the environmental resources on which many people living in developing countries rely. For example, one farmer, living in Guatemala among plantations of sugarcane destined for export, claimed that 'the companies have stolen the water from us'. As huge soy plantations use up local water resources, one community in Paraguay has had to sink wells twice as deep into the ground to reach water suitable for drinking —only hitting the sinking water table after 20 metres, compared with an average of 10 before the plantations arrived. Most of the sugarcane ethanol produced in Guatemala goes to meeting EU demand for biofuels, and it is likely that much of the soy produced in Paraguay also ends up in EU fuel tanks.

Part of the solution to problems associated with biofuel production lies with national governments, and many governments should do far more to stop land grabs and make sure that investors act in local people's interests. But even those governments strongly committed to protecting the rights of their citizens don't stand a chance in the face of the speed of mandate-driven expansion of the biofuel sector. Advanced biofuels, sustainability criteria and critiques of governance in developing countries are all distractions from the fact that EU governments have it within their power to make a difference to the lives of millions of hungry people. It is completely unacceptable that we are burning food in our petrol tanks while poor families go hungry and millions are being pushed off their land. The fight is on: it's time to scrap the mandates.

RECOMMENDATIONS

- EU governments should scrap national biofuel mandates.
- The European Commission, European Parliament and EU governments should revise the EU Renewable Energy Directive of 2009 to:
    - remove the 10 per cent 2020 binding target for renewable energy in transport;
    - account for the entirety of the greenhouse gas emissions of biofuels by including emissions caused by indirect land use change in greenhouse gas accounting; and
    - introduce binding social sustainability criteria for biofuel production, covering food security, access to land and water, human rights, and the principle of free, prior and informed consent for all communities affected by land deals.
- The EU's post-2020 Renewable Energy Strategy should be informed by the negative impacts of the current biofuels policy on food security and access to land in developing countries. While ambitious overall renewable energy targets are an important part of promoting sustainable renewable energy, no new target should be set for the transport sector.
- EU governments should push other G20 countries to scrap biofuel mandates and subsidies.

1 EU BIOFUEL MANDATES

The EU has been promoting the use of biofuels since 2003, when a non-binding target for 5.75 per cent of transport fuels to be made up of biofuels by 2010 was set.[1] Under the 2009 Renewable Energy Directive, which requires all EU member states to source 20 per cent of all energy from renewable sources by 2020, a binding target was introduced to ensure that 10 per cent of transport fuel comes from renewable sources by 2020.[2] As a result, all 27 EU governments have introduced biofuel mandates, which, in 2011, ranged from 2.5 per cent in Cyprus to 7 per cent in France. Mandates will increase steadily to meet the 10 per cent target.[3]

Figure 1: Biofuel blending quotas for selected EU countries

	2010	2011	2012	2013	2014	2020
Belgium		4%	5%		6%	9%
France		7%				
*Germany**	6.25%	6.25%	6.25%	6.25%	6.25%	*7%**
Ireland		4%		6%	6%	10.5%
*Italy**	3.5%	4%	4.5%		5%	10%
Netherlands		4.25%	4.5%	5.0%	5.5%	
*Spain**		7%				
UK	3.5%	4%	4.5%	5%	5%	

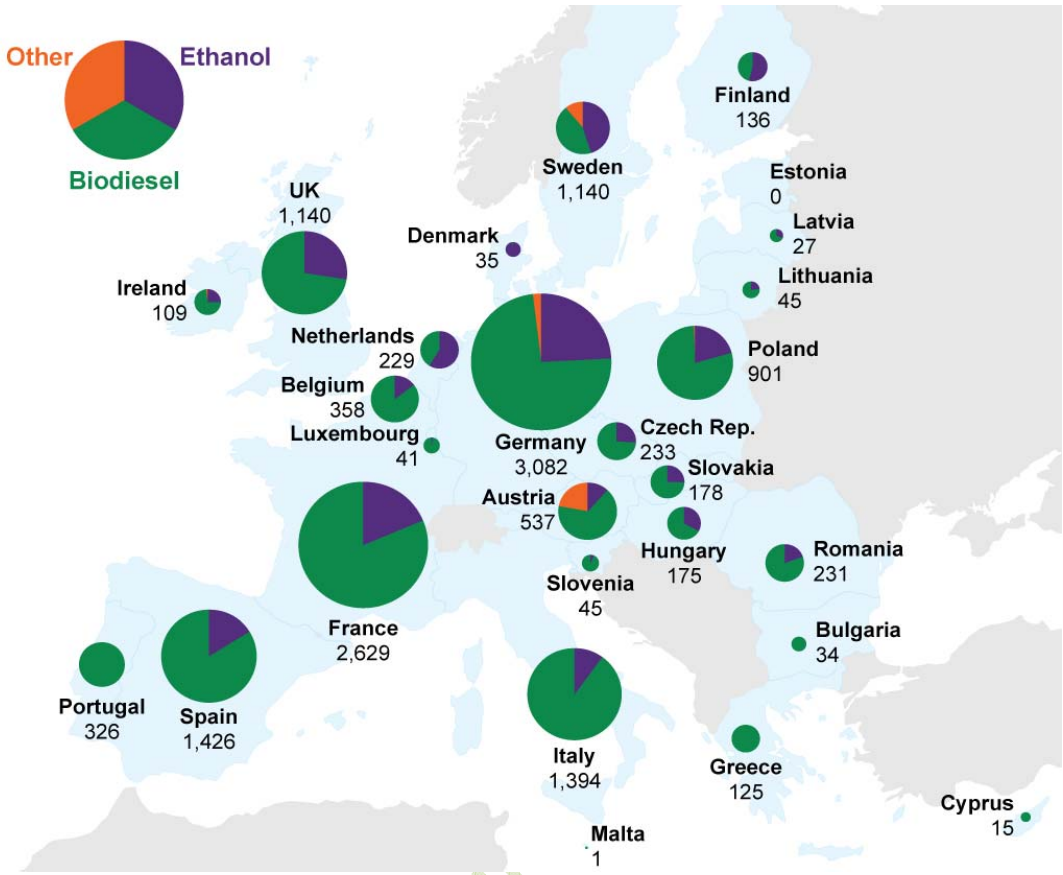
* Note: The values in this table are expressed either on the basis of on the basis of fuel volume, except for Germany, Italy and Spain where the quotas refer to the energy content of the fuel. For Germany, from 2015, net greenhouse gas reduction values will be the reference: 2015-2016: 3%; 2017-2019: 4.5%; from 2020 onward: 7%

Sources: 2011 reports of EU Member States pursuant to article 4 of the Biofuels Directive 2003/30/EC, http://ec.europa.eu/energy/renewables/biofuels/ms_reports_dir_2003_30_en.htm; National Renewable Energy Action Plans (NREAPs), pursuant to article 4 of the RED 2009/28/EC, http://ec.europa.eu/energy/renewables/action_plan_en.htm; first progress reports of EU Member States pursuant to article 22. of the RED 2009/28/EC (when available), http://ec.europa.eu/energy/renewables/reports/2011_en.htm.

First generation biofuels made from food crops account for 90 per cent of current renewable energy consumption in the transport sector and, according to the European Commission's (EC) own predictions, this will remain virtually unchanged until 2020.[4] If current policies are maintained, on average all petrol and diesel sold in the EU could contain close to 9 parts first generation biofuel for every 91 parts fossil fuel by 2020.

In 2010, biofuels made up 4.7 per cent of all ground transport fuel used in the EU. More than three quarters of the EU's biofuel is biodiesel, most of which is made from rapeseed grown in the EU and imported soy and palm oil; the remaining quarter is ethanol, most of which is made from wheat and corn grown in the EU and imported sugarcane.[5]

Figure 2: Biofuel consumption for transport in EU in 2010, ktoe



Source: EurObserv'ER (2011) 'Biofuels barometer', http://www.eurobserv-er.org/pdf/biofuels_2011.pdf

Social impacts and indirect effects: the missing pieces in EU sustainability criteria

The EC prides itself on having the most stringent biofuels sustainability criteria in the world. Biofuels must meet minimum environmental sustainability criteria to qualify for support and to count towards the renewable energy targets. However, these sustainability criteria are limited to direct environmental impacts, e.g. where biofuels are grown on land that was previously covered in natural forests, wetlands and peatlands. Social impacts, such as food price increases or land grabs, and indirect environmental impacts, such as the displacement of food crops onto other land, are not addressed. Monitoring compliance with the limited set of sustainability criteria is left to voluntary schemes recognised by the EC, individual EU governments or countries outside the EU.[6] A recent review of these schemes shows that they are full of loopholes.[7]

Box 1: The impact of indirect land use change

The 2009 Renewable Energy Directive left an unresolved issue at the heart of the environmental integrity of the EU's biofuels policy. Growing crops for biofuels displaces other agricultural production onto forests, peatlands and grasslands, all of which are high carbon stores, i.e. they keep greenhouse gases out of the atmosphere until they are ploughed up. At the moment, these emissions are not counted when the EC calculates the greenhouse

gases emitted in the production of biofuels.

Modelling of the indirect land-use change driven by EU biofuel mandates suggests that up to 69,000 km^2 of natural ecosystems could be converted into cropland by 2020, releasing between 27 and 56 million tonnes of extra CO^2 per year, which is equivalent to putting between 12 and 26 million extra cars on European roads.[8] The European Commission was due to have resolved this issue by 31 December 2010, but fierce lobbying by the biofuels industry has blocked progress in spite of an impressive body of scientific evidence showing the need to introduce feedstock specific factors to account for these emissions, including reports from the European Commission's own Joint Research Center.[9] Until indirect land use change is included in the calculation of emissions, EU blending mandates encourage the production of biofuels that are more polluting than fossil fuels to the same extent as they promote other types of biofuels that actually reduce greenhouse gas emissions.

In the absence of any mandatory social sustainability criteria, the EU Renewable Energy Directive requires the EC to prepare a biennial report on the social impacts of its biofuels policy, in particular the impacts on food prices and land rights in developing countries.[10] The first of these reports is due in 2012. Following this report, the EC is required to take 'corrective action…in particular if evidence shows that biofuel production has a significant impact on food prices'.[11] The EC alone does not have the power to scrap the binding target for renewable energy in transport. The real onus is on EU governments and the European Parliament: when the Renewable Energy Directive comes up for review in 2014, they have it within their power to scrap the target.

But at the moment, the EC is not taking account of the overwhelming evidence available on social impacts. Without waiting for the findings of this 2012 report, the EC is proceeding with the strategy for promoting renewable energy between 2020 and 2030.[12] While ambitious targets for sustainable sources of renewable energy are a vital part of the fight against climate change, unsustainable sources, like many biofuels, should not be part of the mix. The Commission has recognised the need to improve the environmental sustainability of bioenergy before it decides whether to promote its use. The EC should also recognise the need to wait until the report on social impacts of biofuels is completed before proceeding any further.

Biofuel mandates: forcing European consumers to subsidise big business

Europe's love affair with biofuels comes at a high price. In 2008, tax exemptions and other support to biofuel production in the EU was estimated to be worth €3.01bn,[13] comparable to the value of cuts under the controversial Greek bail-out deal agreed in February 2012.[14] As direct subsidies and tax exemptions are being phased out, the blending mandates allow European governments to continue to prop up powerful industry and farming lobbies without relying on national budgets: the cost is increasingly borne by the consumer.[15] EU governments have replaced subsidies paid out of the public purse with a subsidy that consumers, often without their knowledge, pay directly to big business.

Beyond Europe, a number of countries have put in place policies to promote biofuel production and consumption (see figure 3 for an overview of selected G20 members' mandates/targets). In 2011 the global biofuel market was worth about $83 bn.[16]

Figure 3: Biofuels targets and mandates in the G20

Share of biofuel that must be used in (road-)transport fuel

	Current mandate/target		Future mandate/target	
	Ethanol	*Biodiesel*	*Ethanol*	*Biodiesel*
Argentina	5%	7%	–	–
New South Wales (Australia)	4%	2%	6% (2011)	5% (2012)
Brazil	20–25%	5%	–	–
Canada	5%	2%, 3% in 3 provinces	–	–
China	10% in 9 provinces	–	–	–
India	5%	–	20% (2017)	20% (2017)
Indonesia	3%	2.5%	5% (2015) 15% (2025)	5% (2015) 20% (2025)
Japan	500m litres/year, oil equivalent		800m litres/year, oil equivalent (2018)	
Mexico	2% (in Guadalajara)	–	2% (Monterrey & Mexico City, 2012)	–
South Africa	N/A		2% (2013)	
USA	48bn litres, of which 0.02bn cellulosic ethanol		136bn litres, of which 60bn cellulosic-ethanol (2022)	

Source: IEA, Technology roadmap, Biofuels for transport (2011) see: http://www.iea.org/papers/2011/biofuels_roadmap.pdf (p10)

By artificially inflating the price of biofuels, mandates have a knock-on effect on the price of fuel. Biofuels have been more expensive than fossil fuels for most of the past ten years.[17] Modelling based on current plans for sourcing biofuels suggests that, by 2020, this policy could cost UK consumers between £1bn and £1.9bn more per year—about £35 from every adult—and German consumers between €1.37bn and €2.15bn more, which is up to €30 per adult.[18] If biofuels were a solution to the very high greenhouse gas emissions of the transport sector, and thus helped to tackle climate change, the policy would more than pay for itself. But, because of indirect land use change, they're not (see **Box 1**).

Relying on biofuels to wean us off oil may well be counterproductive. As the proportion of biofuels in transport fuel rises, the cost of putting in place infrastructure that can handle these more corrosive and slightly less stable fuels escalates. Replacing infrastructure in this way has an opportunity cost: once infrastructure is in place, it is not replaced for years, which reduces incentives to invest in more efficient and sustainable alternatives to the internal combustion engine, such as electric vehicles and light rail.[19]

The murky origins of biofuel burned in the EU

According to a report commissioned by the EC, in 2008, 42 per cent of the crops used for EU biodiesel and 24 per cent of the crops used for EU ethanol were grown outside the EU.[20] Problems with the data mean that the actual level of imports is likely to be higher. Soy, oil palm and sugarcane represent the bulk of the crops used for biofuels grown outside the EU. As the proportion of biofuel in fuel rises, imports will too. Modelling of the impact of meeting 10 per cent of demand for diesel using biodiesel suggests that, by 2020, Europe could require a fifth of all the vegetable oil produced globally just to meet its demand for fuel.[21]

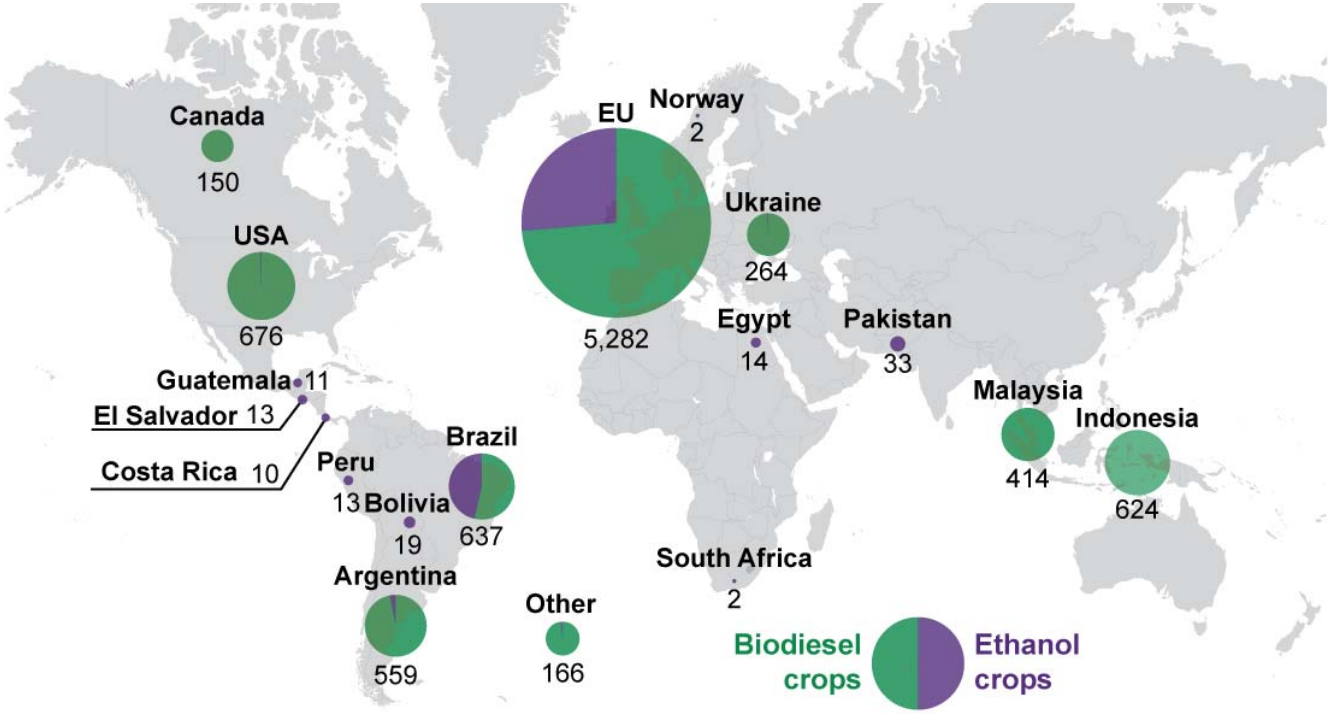
Mandate-driven biofuel production has an impact on the environment and on people throughout the production and refining processes, with the most serious problems associated with the way crops used for biofuels are grown. However, getting a comprehensive and accurate picture of where crops used in European biofuels originate is almost impossible. Even if companies involved in growing, refining and distributing biofuels know which farm the crops come from, they are unlikely to make that information public, particularly if there are social and environmental problems associated with the way that the crops are grown.

There are three particularly serious gaps in EU data on biofuel imports:

1. If a country has already mixed the biofuel with petrol or diesel before exporting it to the EU, this is recorded as an import of petrol or diesel, not biofuel;
2. If a country exports biofuels or biofuel crops to another country, and that second country exports to the EU, information on crop origin is often lost; and
3. If crops are exported to the EU to be made into biofuels in EU processing facilities, they are not recorded as biofuel crops.

Even when multiple sources are used to fill the gaps in the data, the picture of the origins of the crops used in EU biofuels—with the majority coming from the US, Argentina, Indonesia and Brazil—is imperfect at best. For example, it doesn't capture crops coming from countries like Paraguay, where much of the soy that finally goes to the EU is diverted through Uruguay and Argentina first.[22]

Figure 4: An imperfect best guess on the origin of EU biofuel crops, ktoe



Source: C. Hamelinck et al (2011) 'Biofuels Baseline 2008', Ecofys, Agra CEAS, Chalmers University, IIASA and Winrock, (EC Tender No. TREN/D1/458/2009), October 18, http://www.ecofys.com/en/publication/biofuels-baseline-2008/

The impact of EU biofuel mandates is not limited to the land where crops used for biofuels are grown. When land is used for biofuel production, the activities that formerly took place there must move elsewhere.[23] Not only does this lead to higher greenhouse gas emissions, as explained in **Box 1**, but it has major social impacts. Production of crops for biofuels often displaces other agricultural production onto land that small-scale farmers rely on to feed their families and to make a living—sometimes in the country where crops are grown for biofuels, and sometimes elsewhere. As such, EU demand for biofuels has ripple effects on communities around the world.

2 THE COST TO PEOPLE IN DEVELOPING COUNTRIES

Biofuel mandates are often justified on grounds of rural poverty reduction and environmental protection. However, many of the positive impacts of large-scale biofuel production described in the literature are hypothetical, with benefits projected into the future rather than observed; there is almost no empirical evidence of welfare benefits.[24] The consensus from research into what has actually happened—as opposed to extrapolations of what might happen should everything go well—shows that the benefits of large-scale biofuel production have been captured by urban and rural elites in developing countries, with devastating impacts on small-scale farmers and people living in poverty. As academic research from Indonesia concludes, 'there are some winners but also many losers'.[25]

Box 2: The winner takes it all in Indonesia

Between 2006 and 2010, the area of oil palm plantations in Indonesia increased by 2.37 million hectares, bringing the total productive area of plantation estates to 5.9 million hectares. According to the UN, two thirds of the current expansion of oil palm cultivation in Indonesia is based on the conversion of rainforests; if that trend continues, the total rainforest area of Indonesia could be reduced by 29 per cent between 2005 and 2030.[26]

Expansion of oil palm plantations is largely concentrated in the provinces of West Kalimantan, Papua and West Papua. Academic case studies from each of these provinces show that elites and those who are relatively well off and already have the necessary skills to work on oil palm plantations seem to benefit from their expansion, while indigenous groups and those who have not worked on such plantations before lose out. The way that oil palm is produced has led to air and water pollution, soil erosion and flooding. Widespread human rights abuses, breaches of investor agreements with communities, and the destruction of environmental resources associated with the expansion of oil palm plantations often lead to conflict.[27] A review of media reports by civil society groups suggests that, in 2010 alone, no fewer than 630 land disputes between oil palm companies and local communities took place in Indonesia.[28]

An NGO study of the impacts of the expansion of oil palm plantations in the village of Paya Rumbai on the island of Sumatra found that, while oil palm plantations do create new jobs, they also create additional unemployment. Drainage canals dug on one plantation have caused 38 streams to dry up, and reduced the size of 13 lakes, which affects the livelihoods of local fishers. Villagers have been forced to become labourers for companies on what used to be their own land, and their health is put at risk through exposure to poisonous pesticides.[29]

While much of the expansion of Indonesian oil palm plantations is due to demand from processed food markets, demand for biodiesel is also an important factor. 80 per cent of EU biofuels is biodiesel, of which a growing proportion is made from palm oil.[30] In 2008, it was estimated that Indonesia supplied about 20 percent of biodiesel imported from outside the EU, and this is likely to be an underestimate.[31]

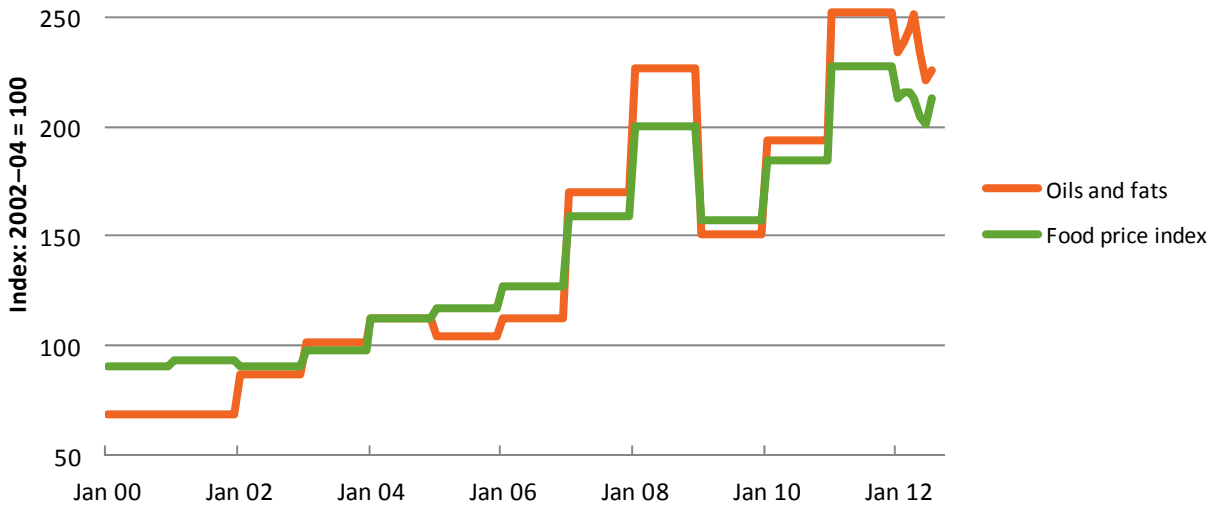
…before, Paya Rumbai's people didn't want to work for companies because there were other choices – there were a lot of forests and fish. Now hardly any of this is left, and we have no choice but become labourers on the company plantations...

Paya Rumbai villager

Pressure on food prices

In 2007, after about 30 years of fairly low and stable prices, agricultural commodity prices on international markets shot up, and, after falling in 2009, unexpectedly shot up again in 2010–11.[32] After another dip in late 2011, prices are starting to go up again in 2012, in response to droughts in North America and poor harvests in Russia and the Black Sea region.[33] Corn and wheat prices both rose by 23% in just one month, between June and July 2012, with corn reaching a record high.[34]

Figure 5: FAO food price index, Jan 2006–July 2012



Data annual to Jan 2012, after which it is monthly. The FAO food price index consists of the average of 5 commodity group price indices weighted with the average export shares of each of the groups for 2002-2004. Oils and fat price index consists of an average of 11 oils (including animal and fish oils) weighted with average export trade shares of each oil product for 2002-2004.

Source: FAO, *http://www.fao.org*

A key driver of those price increases is the global demand for biofuels.[35] More demand for the same supply of crops inevitably leads to higher prices. Recent modelling of the impact of the EU's mandates on food prices suggests that, by 2020, EU biofuel mandates could be responsible for increases in oilseed prices of up to 20 per cent and increases in vegetable oil prices of as much as 36 per cent, and could push up maize prices by as much as 22 per cent, sugar prices by as much as 21 per cent and wheat prices by as much as 13 per cent.[36]

Although these increases are already dramatic, this type of modelling probably underestimates the full impact on prices, as it assumes stable agricultural production, when in fact levels are very erratic, and will become more so as we begin to feel the effects of climate change. Not only do biofuel mandates put upward pressure on prices, they also increase volatility, contributing to sudden price spikes after bad harvests.

Demand for food is inelastic, i.e. it changes very little in response to availability or price. People need to eat more or less the same amount of food even when harvests are poor or lost. If everyone is trying to buy the food they need, but there is not enough to go around, prices go up.

People tend to buy less in response to high prices, but biofuel mandates need to be filled no matter how high prices go. By introducing an incredibly inelastic source of demand into the market, biofuel mandates take any slack out of the market and fuel food price spikes,[37] leading to hunger and malnutrition.[38]

Box 3: Demand for biofuel crops affects food prices

The severe drought in the United States during the summer of 2012 has reduced the amount of corn and soy expected to be harvested and caused a sudden rise in prices. EU and US biofuel mandates create a constant demand for soy and corn, regardless of price. As a result, soy and corn prices have risen sharply and famers have turned to other commodities—including wheat—to feed livestock. This increased demand came on top of forecasts of poor wheat harvests in Russia and the Black Sea region in 2012, sending wheat prices soaring, which affected the price of everyday essentials such as bread.[39]

Evidence of the contribution of biofuel policies to rising and increasingly volatile food prices on international markets is so compelling that it led ten international bodies—including the IMF, the World Bank, the FAO and UNCTAD—to recommend in 2011 that G20 governments abolish biofuel mandates and subsidies.[41]

Biofuel support policies in the United States and the European Union have created a demand shock that is widely considered to be one of the major causes of the international food price rise of 2007/08.

Committee on World Food Security High Level Panel of Experts [40]

Box 4: International wheat price spike hits hard in Yemen

Yemen imports 90 per cent of the wheat and all of the rice consumed domestically,[42] and was one of the countries most affected by the 2008 food price crisis.[43] As it is almost entirely reliant on imports to meet demand for staple goods, Yemen is highly vulnerable to exchange rate fluctuations, international food price shocks, and export bans. Compounding this are Yemen's political instability, high levels of poverty, mass unemployment, and social and gender inequalities.

While things did get better for a short time, they are quickly deteriorating again. In March 2012, a WFP survey showed that some 10 million people – 44 per cent of the population of Yemen – do not have enough food to eat[44]. By May 2012, the UN estimated that 267,000 Yemeni children were facing life threatening levels of malnutrition[45]. When Zuhra Wans, a widow with four children, spoke to Oxfam staff in June 2012, she said that she only has a sack of grain in the house, which she uses to make bread. 'We are eating three meals a day; it's bread in the morning and bread at night, and whatever might be available at lunch. Ramadan this year will be harder than before, because we have no money to buy food. Grain used to cost us 800 riyals, but now they cost 1,400 riyals for an 8kg sack. This will only last us for half of the Ramadan period. Prices are going up all the time.'

Recent food price inflation in Yemen is due to internal as well as external factors, but the situation is extremely vulnerable: if international wheat prices continue to rise, prices on local markets are likely to shoot up, with devastating consequences.

The impact of biofuel policies on food prices hits struggling Europeans as well as people in developing countries. Crops used for biofuels are

also used extensively in processed food, animal feed and many basic household products, so price spikes in crops used for biofuels have a direct impact on the average shopping basket in rich countries. For most EU countries, the 2007 and 2011 spikes in international food prices coincided with the highest levels of food price inflation in twenty years.[46] The most vulnerable and poorest households were hit hardest.[47]

EU biodiesel and the price of cooking oil

Biodiesel made mostly from rapeseed, soy and palm oil accounts for almost 80 per cent of the EU's biofuel use[48], which means that EU mandates have a particular impact on prices of vegetable oil and oilseeds on world markets. The price of edible oil on international markets has fluctuated dramatically between 2006 and 2012, spiking in mid-2008 and early 2011.[49] Given the importance of cooking oil in the preparation of the food eaten by billions of people every day, spikes in its price have a significant impact on poverty and hunger, for people in both importing and exporting countries.

For example, along with rice and beans, cooking oil is one of the key staples of the Haitian diet, and all of it is imported from international markets.[50] In the months after international edible oil prices spiralled, the local retail price of the most popular brand of cooking oil in Haiti almost doubled.[51] On the other side, when international prices go up, Indonesian palm oil producers increase exports without necessarily producing more oil, which has an effect on the availability and price of cooking oil in local markets.[52] Despite government efforts to keep the price of cooking oil down, retail prices doubled between early 2007 and mid-2008.[53] This has a particular impact on poor families, who spend a high proportion of their food budgets on cooking oil.

Food availability and prices at a local level

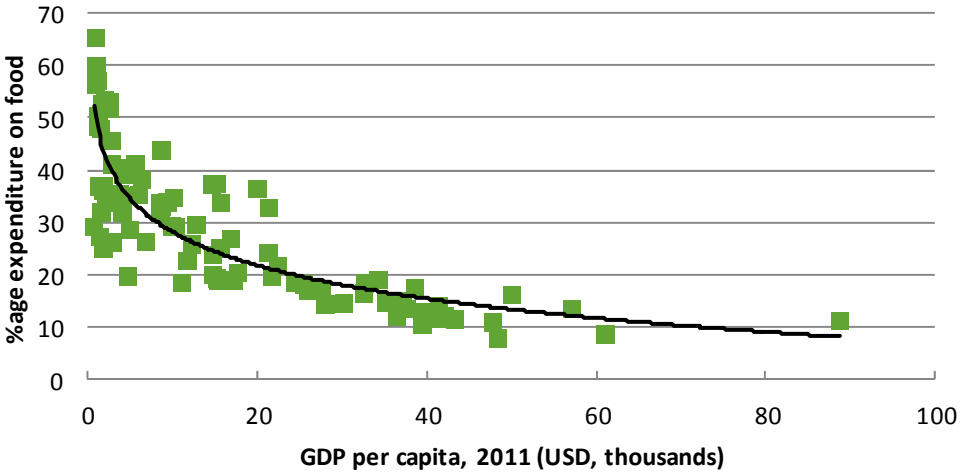
Oxfam's experience of food crises in developing countries reveals that a drop in local or regional food production has a much greater impact than international commodity prices on retail prices, especially in regions that are relatively isolated from international markets, such as sub-Saharan Africa.[54] As biofuel production displaces local, national and regional food production, it has an impact on prices that is not captured in the modelling of effects on international prices.[55] For example, a 2009 study found that the expansion of sugarcane and jatropha production for biofuels in Mozambique displaced the cultivation of food for household use as well as the cultivation of bananas for sale on regional markets.[56] Not only do people have to buy the food they would otherwise have grown, but there is less for sale; increased demand and reduced supply push up local prices.

Food price spikes hit the poorest the hardest

Food price inflation is outstripping general consumer inflation in most countries;[57] people all over the world are struggling to cope as food prices rise much quicker than wages.[58] As can be seen from **Figure 6**, people in poorer countries tend to spend a higher proportion of their income on food. The poorest families spend as much as three quarters

of their income on food, which means that even slight increases in the cost of food can force them to make agonising choices. Women in particular bear the brunt of higher prices. They often eat last and least, their assets—such as jewellery—are the first to be sold, and women often have to take on extra work in the precarious informal economy to support their families.[59]

Figure 6: Spending on food as a percentage of total expenditure by GDP per capita, 2011



Sources: World Bank (GDP), http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD; OECD (food weighting as composition of CPI), http://stats.oecd.org/Index.aspx?DataSetCode=MEI_CPI_WEIGHTS

Retail food prices go up much more quickly than they go down, and may stay high even after a dip in commodity prices on international markets. Even if prices come down again, Oxfam research shows that the coping strategies adopted by poor people in the face of sudden increases in food prices can affect families for generations. Assets, once sold off, take years to buy back. Working extra hours in second or third jobs, especially without enough to eat, leaves a legacy of exhaustion. Loans taken on to make up the gap between income and expenditure accumulate into crushing debt burdens. And missing meals, even for a relatively short period, can affect children for their entire lifetimes.[60] IFPRI modelling of the direct impact of global biofuel demand suggests that between 4 and 8.5 million more children could be malnourished by 2020.[61]

Flexible biofuel mandates are not the answer

One proposal purporting to address the impact of biofuel production on food prices is to implement flexible mandates on the assumption that crops used to produce biofuels can be diverted to food markets to bring prices down when there is a price spike.[62] But even if flexible mandates were able to dampen price spikes on international markets, they would fail to address the bigger problem: that our limited resources—land, water, soil—are being used to produce crops for biofuel production when they should be used to produce much needed food.[63] Oxfam research in the Philippines shows that land being acquired for biofuels production in 2010 could instead be used to produce up to 2.4 million metric tonnes of

rice, enough to make the Philippines self-sufficient in rice production.[64]

In 2008, when biofuels accounted for 3.5 per cent of transport fuel in the EU, a study commissioned by the EC estimated that 70,000km^2 of land was needed to grow the crops needed to meet this demand—on the basis of the very imperfect data available, close to half of that area was estimated to be outside the EU.[65] If the total amount of land had been used to produce wheat and maize instead, it could have fed 127 million people for the entire year.[66] (The calculations behind this figure can be found in the **Annex**.)

Competition with communities for land

Even as biofuel policies are causing food prices to rise, land acquisitions to produce biofuel crops are making people more dependent on volatile food markets. Evidence from the International Land Coalition suggests that land acquisitions to grow crops for biofuels—including soy, sugarcane, oil palm and jatropha—may account for over 60 per cent of all large-scale land deals globally in the past decade.[67]

The impact of land deals for biofuels on food production goes beyond what investors choose to grow on the land they acquire. They also deny millions of families access to the land they depend upon to survive. The biofuel industry claims to target marginal or degraded land, which is classified as "unused" in official statistics.[68] But, as the World Bank recognises, very little, if any, of the land classified as 'available' is free of existing claims.[69] Even where national indicators suggest large reserves of suitable land, target locations are often found within cultivated areas and farmland, particularly irrigated areas and land used for small-scale farming, suggesting that competition with local communities may be intense.[70]

Driving communities off the land on which they rely

The commercial stimulus to fulfil the EU biofuel mandates by 2020 means that the land needed to grow crops for biofuels must be acquired quickly. Doing land deals properly takes time—often more time than biofuel companies have, which makes land deals for biofuel production inherently risky. Whether or not a land acquisition is a 'land grab'[71] depends on the facts of the case, specifically whether or not it was concluded with the participation or consent of affected communities, and so it is difficult to get a sense of the scale of land acquisitions gone bad beyond counting up existing disputes.

Lack of systemic data does not mean that land grabs aren't happening: communities may not speak up out of fear, because they don't understand the process, or because they can't afford representation, among other reasons. However, it is clear that the poorer the recognition of rural land rights is in a country, the more likely it is to host land deals—many of which are to grow crops for biofuels.[72] Many investors fail to deliver on promised compensation and job creation, and skewed power relations in negotiations over access to land often lead to a bad deal for the local communities.[73]

Box 5: The promise of a market in Ghana

In 2003, smallholder agriculture accounted for about 80 per cent of total agricultural output in Ghana, and large-scale agriculture tended to involve medium-sized plantations of about 3,500 hectares. Since 2006, investors have shown an unprecedented interest in acquiring much larger tracts of land to grow crops for biofuels. The biofuels sector in Ghana is still in its infancy, but most biofuel crops grown in Ghana are likely to be exported to the EU to make biodiesel.[74] Supply chains between Ghana and European countries have already been established.[75]

Case study evidence of one biofuels plantation in Ghana shows that land deals for biofuel production can exacerbate rural poverty, as communities lose access to vital resources. 69 families lost their land when a 14,000 hectare plantation of jatropha for biodiesel production was established in north-eastern Brong Ahafo, but these families neither participated in the negotiations nor received any form of compensation for their loss. Only 18 of these families received replacement land, for which they had to pay themselves.

Women in particular lost out: they had used much of the land taken over by the plantation to grow food like groundnuts, peppers, okra and tomatoes, or to collect highly nutritious food like mushrooms and small game, as well as shea nuts and locust beans to sell at local markets. The story isn't over yet. 1,500 more families could lose land should the plantation develop as planned over the coming years.[76]

Why access to land is so important

Land acquisitions for biofuel production often result in communities losing access to land they have relied on for growing and collecting food, water, fuel and building materials, and for grazing animals that are often their main asset and source of income. Land rights are one of the most powerful resources available to poor people for improving their livelihoods. Coupled with appropriate public investment, secure land rights for small-scale producers provide opportunities for economic growth, lead to increased productivity[77] and can promote environmentally sustainable land use.[78] Going beyond individual land rights, experience shows that people living in poverty often rely on resources available on communal land and in forests to supplement their incomes by selling charcoal, craftwork and food.[79]

According to the FAO, access to resources, especially land, influenced the degree to which households with comparable incomes could cope with the 2008 food price spike, with higher food prices hitting landless households hardest.[80] Oxfam research shows that access to land and gardens has been a key source of resilience for Pacific Island households in the wake of the global economic crisis.[81] Comparing communities in Viet Nam, Oxfam research found that those areas where households still have ownership of limited areas of land that can provide sufficient food for household needs fared better than areas where families no longer have access to productive land.[82]

The right to food is only one of many human rights that are contingent upon access to land and resources.[83] Driving communities off land to

The tendency to neglect existing rights often derives from a legal framework inherited from colonial days – reinforced or more deeply entrenched post-ndependence – that presumes any unclaimed or unregistered land to be "empty" and thus available for transfer with few safeguards.

grow crops for biofuels breaks the important cultural link between communities and the land on which they are born, live and are buried.

Women at risk from land deals gone wrong

World Bank84

Land grabs concluded without the participation or consent of affected communities have devastating impacts on those who depend on that land to feed their families. Women in particular often have little opportunity to participate in the negotiation of land deals. Women are less likely than men to have formal land titles, and, because they are less likely to hold positions of power in community organisations and local government, they are in a weaker position to bargain with government authorities or investors on potential land deals in their communities.[85] Women are more likely than men to spend the income they control on food, healthcare, and their children's education—land deals for biofuel production often mean that women and their children are less able to make ends meet, even if some men benefit from higher incomes.[86]

Research into large-scale biofuel production in Mozambique found that women are rarely involved in consultations on land acquisitions and almost never sign the documents under discussion, even though they make up the majority of the workforce.[87] A study on oil palm plantations in the Sanggau district of Indonesia showed that women's rights to own and use land were systematically eroded by the practice of companies registering smallholder land—traditionally held by both women and men—in the name of the male head of household.[88] To compound this, violence against women is often a major feature of conflicts over land.[89]

Box 6: The Brazilian model should not be exported around the world

Brazil is a dominant player in global ethanol markets. Brazil's ethanol exports to the EU have increased rapidly since 2007 in response to EU biofuel mandates; in 2010 about a fifth of the country's ethanol was exported to the European Union.[90] As well as being a dominant player, Brazil is heavily engaged in 'ethanol diplomacy', marketing their model of ethanol production as the most efficient and cleanest biofuel production.[91] The Brazilian government aims to expand the market for Brazilian ethanol and Brazilian biofuel production technology. In addition, it is facilitating the overseas expansion of Brazilian companies and their multinational partners, which own increasing shares in these companies. Since 2005, Brazil has concluded a number of agreements with third countries and regions, such as the EU, the US and regional African organisations, to support the production of biofuels through political dialogue, financial support and technical cooperation agreements.[92] BNDES, the Brazilian development bank, has as one of its main priorities the expansion of the biofuel sector internationally, with a strong focus on sub-Saharan Africa.

However, there are important problems associated with the large-scale monoculture model of sugarcane production in Brazil, such as serious air and water pollution, localised water stress, soil erosion, deforestation, the loss of biodiversity and the abuse of labour rights.[93] In response to concerns about the social and environmental impacts of biofuel production, the Brazilian government has prohibited sugarcane expansion into sensitive ecosystems, and improved regulations regarding air

contamination and workers' rights, although it remains to be seen how comprehensively these will be enforced.[94] The risks multiply when biofuel production expands rapidly in countries with weaker governance frameworks.

For example, in 2009, Brazil and the EU started investing in the expansion of biofuel production in Mozambique. According to the head of international relations for Embrapa, a Brazilian state-owned company, 'in this region, half of the land is settled by small producers, and the other half is vacant, just like in west Bahia and in Mato Grosso in the 1980s'. Mozambique's minister of agriculture, José Pacheco, has said 'Brazilian farmers have a lot of experience which is very welcome. We want to repeat in Mozambique what they did in the [Brazilian] Cerrado thirty years ago. These farmers are willing to invest in Mozambique''.[95] However, while there may be land available in Mozambique, the 'vacant land' narrative has played a role in enabling access to highly sought-after prime farmland with good access to markets, even in the face of resistance from those already farming it.[96]

The strain on already scarce water resources

Given the threat that climate change poses to the availability of water for food production,[97] it is hardly surprising that the acquisition of water rights is behind many land deals.[98] In many developing countries, biofuel production competes with other uses of water, including domestic use.[99] Women, who are typically responsible for domestic chores dependant on water availability and quality—including collecting water for drinking, washing clothes and growing food for their families—experience the impact of water scarcity or pollution most directly.

Box 7: How 'companies have stolen the water' in Guatemala

Guatemala currently produces over 44 per cent of Central America's sugarcane-based ethanol, and hosts eight of the region's thirteen largest processing plants. Most of the ethanol produced in Guatemala is exported to the EU;[100] growing demand for biofuel is putting pressure on the land available for sugarcane production. While the southern coast of the country is the most suitable area for sugarcane production, there is also limited water availability. There is a precedent of water being overexploited by sugar mills upstream leaving farmers downstream without access to enough water to grow their crops.[101] Ironically, the way sugarcane is grown also removes natural flood defences, and has led to flooding during the rainy season.[102]

When Oxfam staff spoke to a farmer who lives and farms in the San Basilio community in Suchitepequez among monoculture sugarcane plantations destined for export, she explained that the sugarcane companies 'cleared all of the plantations where they sowed, and there are no longer forests along the banks of the rivers. The water sources have dried up—there used to be water sources all over for digging a well for drinking water, and they are all drying up…The companies have stolen the water from us to use it on their crops in their plantations. They are diverting the rivers to their crops and now there isn't any water in the rivers for washing clothes or bathing.'[103]

It is likely that increasing biofuel production will place further pressure on water resources already in high demand, particularly if the crops require irrigation, in direct competition with food crops.[104] Roughly 45 billion m^3 of irrigation water was used for biofuel production in 2007, which is six times more water than everyone in the world drank that year.[105]

For example, the Procana project in Mozambique will convert 30,000 hectares of land to produce sugarcane for bioethanol, taking water from a dam that already supports the irrigation of crops in local villages.[106] Expansion of sugarcane ethanol production in Mozambique is being driven by the EU and Brazil, and it is likely that most of the sugarcane ethanol produced in Mozambique will be exported to the EU.[107] Competition for scarce water resources will get more intense as the effects of climate change begin to be felt, even as demand for biofuels grows.

Equally problematic, biofuel production often requires the intensive use of pesticides and fertilisers, which cause water and soil pollution.[109] 2009 modelling suggests that biofuel production alone would account for a fifth of the increase in fertiliser use by 2030. [110] Further down the production chain, processing facilities can also contaminate water resources.[111]

When the amount and variety of foods traditionally produced by the farming families diminish, women are the ones who are forced to find outside jobs to provide food.

Clotilde Arévalo, Lote 8, Paraguay[108]

Box 8: Paraguay – the soy next door

For the 44 families living beside huge soy plantations in Lote 8 in eastern Paraguay, farming has become almost impossible. Water has become increasingly scarce as local resources are used up irrigating the plantations. As the water table falls, the community has had to sink wells twice as deep into the ground to reach drinking water—they now only hit the sinking water table after 20 metres, compared with an average of 10 before the plantations arrived.

The smallholder farmers also have to plant foods out of season so that their beans, peas, cassava and fruit crops are not damaged by the soy fumigations, which reduces the amount of food they can grow. These fumigations also damage their health, which places an additional burden on women who are primarily responsible for caring for the ill.

Most of the soy the EU records as coming from Paraguay is used in livestock feed rather than biofuels. However, this data massively underestimates the amount of soy going from Paraguay to the EU, as the majority of Paraguay's soy exports are shipped through Argentina and Uruguay before they reach other countries.[112]

Paraguay currently has very little capacity to turn soy into biodiesel.[113] This may change—the new government supports commodity traders such as ADM and Dreyfus, giving tax breaks to increase investment into soy production and crushing, potentially for production of biodiesel.[114] However, in the meantime, Argentina has huge biodiesel refineries; production capacity expanded by 700 per cent in just five years.[115]

Between 2006 and 2007, soy exports from Paraguay to Argentina almost quadrupled.[116] While Argentina has removed trade incentives for Paraguayan soy imports since 2008,[117] and relations between Argentina and Europe have been tense recently, it is unlikely that this trend has reversed completely given the very high levels of soy-based biodiesel

production in Argentina. Either Paraguay will continue exporting to Argentina, or Paraguay will develop its own biofuels sector for export to the EU.

In 2008, about 80 per cent of the biofuel used in the EU was biodiesel, of which almost a fifth was made from soybean oil.[118] With almost all of Argentinean biodiesel going to the EU,[119] we can be fairly confident that the EU biofuels mandate has had a great influence on the expansion of soy plantations in Paraguay and other South American countries.

3 TIME TO SCRAP THE MANDATES

Given the overwhelming evidence on the impact of EU biofuel mandates on access to food, land and precious environmental resources in developing countries, it is clear that something needs to be done.

Concerns over the sustainability of biofuels made from food crops are often dismissed by referring to the potential to replace these with advanced biofuels— made from tree residues, grass, algae, seaweed and other sources—in the near future.[120] However, these technologies are still a long way from becoming commercially available: International Energy Association projections show conventional biofuels to be predominant up to 2050.[121] Investment costs for advanced biofuel refineries could be about ten times those for a plant of the same capacity refining first generation biofuels.[122] According to the EC's own projections, the share of first generation biofuels in renewable energy in transport will remain virtually unchanged in the next decade, going from 90 per cent now to 88 per cent in 2020.[123]

Some advanced biofuels, such as those made from waste or those that do not require land, may present real cost, energy and carbon savings, and are worth exploring.[124] But given that many advanced biofuels are also land-based, many of the risks associated with first generation biofuels apply: large-scale monocultures are likely to threaten biodiversity, food and land rights, and compete with food production for land, water, and other agricultural inputs.

While mandate-driven expansion of biofuel production has overwhelmingly negative impacts, not all biofuel production is bad. In fact, Oxfam research shows that biofuel production can yield benefits for poor people when done properly.[125] Better sustainability criteria, to make sure that biofuels are produced properly more often, are an important part of the solution. EU sustainability criteria must be improved to account for all greenhouse gas emissions associated with biofuel production, and to start to address the devastating impacts of biofuels on the food security, access to land and water, and livelihoods of people in developing countries.

But even if they are improved, most sustainability schemes only cover a proportion of production, holding relatively responsible investors to account, while leaving irresponsible investors unaccountable.[126] And no matter how well they work in practice, sustainability criteria are not designed to solve all the problems associated with biofuel production. They are primarily aimed at improving business practices, and do not tackle issues outside the scope of company operations, e.g. the impact of biofuel production on food prices or the diversion of agricultural activities onto highly biodiverse land or land used for small-scale farming.[127] Part of the solution is at national level, and many governments should do far more to stop land grabs and make sure that

investors act in local people's interests. But even countries that are serious about protecting and promoting food and land rights don't stand a chance in the face of growing mandate-driven demand for biofuels.

The EU's 2020 target for renewable energy in transport and the blending mandates put in place by 27 EU governments are force-feeding an industry that is growing too big too fast, in an unsustainable and inequitable way. No sustainability scheme can counterbalance the powerful incentive to produce ever more biofuels at the expense of people's rights and the environment.

Advanced biofuels, sustainability criteria and critiques of governance in developing countries are all distractions from the fact that EU governments have it within their power to make a difference to the lives of millions of hungry people by tackling the problem at source. The fight is on: it's time to scrap the mandates.

RECOMMENDATIONS

- EU governments should scrap national biofuel mandates.
- The European Commission, European Parliament and EU governments should revise the EU Renewable Energy Directive of 2009 to:
    - remove the 10 per cent 2020 binding target for renewable energy in transport;
    - account for the entirety of the greenhouse gas emissions of biofuels by including emissions caused by indirect land use change in greenhouse gas accounting; and
    - introduce binding social sustainability criteria for biofuel production, covering food security, access to land and water, human rights and the principle of free, prior and informed consent for all communities affected by land deals.
- The EU's post-2020 Renewable Energy Strategy should be informed by the negative impacts of the current biofuels policy on food security and access to land in developing countries. While ambitious overall renewable energy targets are an important part of promoting sustainable renewable energy, no new target should be set for the transport sector.
- EU governments should push other G20 countries to scrap biofuel mandates and subsidies.

ANNEX

In 2008, when biofuels accounted for 3.5 per cent of transport fuel in the EU, a study commissioned by the EC estimated that 70,000km^2 of land was needed to grow the crops needed to meet this demand—on the basis of the very imperfect data available, close to half of this was estimated to be outside the EU. If the total amount of land had been used to produce wheat and maize instead, it could have fed 127 million people for the entire year.

This calculation, using the tables below, is based on the number of hectares ECOFYS estimates was used to produce biofuels for the EU markets in different countries in 2008 (see **Table 1**). It is based on the assumption that white maize can be grown on land that was used for oil palm and sugarcane, and that wheat can be grown on land which was used for soy, rapeseed, yellow maize and sugarbeet. Using the ECOFYS assumptions and FAO data, the total amount of maize and wheat that could be grown on that land was calculated as follows:

- The number of kg of wheat or maize that could be grown on land used for biofuels was calculated separately for each producing country, and the EU as a whole, (**Table 2**, showing kg on Ha available) based on average yields for each producing country in 2008 (**Table 2**, kg/Ha), and ECOFYS estimates of the amount of land used in each of these countries to produce biofuels for the EU in 2008 (**Table 2,** Biofuel Ha).
- The food energy available from harvested wheat and maize in 2008 (**Table 2**, kcal/kg) was calculated by dividing the per capita kcal supply in 2008 (by crop, by country) by the per capita kg supply in 2008 (by crop, by country) to take account of the fact that not all the energy in the crop when harvested is available as food energy when processed.
- The number of kcal that could be produced on land used for biofuels (**Table 2**, kcal/biofuel Ha) was calculated by comparing the amount of wheat or maize that could be grown on land used for biofuels in 2008 (**Table 2**, kg on Ha available), and the number of calories per kg of wheat and maize in 2008 (**Table 2**, kcal/kg).
- The number of people that could be fed using the wheat and maize produced on land otherwise used for biofuels (**Table 2**, people fed/year) was calculated on the assumption that each person requires 1,800 kcal per day, the average minimum energy requirement, according to FAO.[128]

Table 1: The amount of land used to grow crops for biofuels used in the EU in 2008.

Biofuel kha in 2008	Argentina	Bolivia	Brazil	Ethiopia	Guatemala	USA	Indonesia	Malaysia	Pakistan	Peru	Ukraine	EU	TOTAL
Sugarcane		11	91	0.1	3				16	2.5			123.6
Oil palm			0.2				190	98					288.2
Maize						0.3							0.3
Rapeseed											366	3171	3537
Wheat												360	360
Sugarbeet											0.3	131	131.3
Soybean	542	1.2	782			1270							2595.2
TOTAL													**7035.6**

Source: ECOFYS, 2012

Table 2: The amount of food that could be grown on land used for EU biofuels in 2008

Wheat, 2008	kg/Ha	kcal/capita /day	kg/capita /year	kcal/kg	Biofuel Ha	kg on biofuel Ha	kcal/biofuel Ha	People/year
Argentina	1,963	694	94	2695	542000	1063819172	2866766324035	4363419
Bolivia	1,293	398	53.8	2700	1200	1551733	4189968066	6377
Brazil	2,550	386	53.7	2624	782000	1993838812	5231135013458	7962154
Ukraine	3,670	870	111.9	2838	366300	1344252868	3814722951715	5806275
USA	3,017	614	83	2700	1270300	3833087060	10349796879178	15753115
EU	5,674	775	103.6	2730	3662000	20777536164	56732099830034	86350228
AVERAGE	**3,028**			**2714**				
TOTAL WHEAT					**6623800**			**120241569**

Maize, 2008	kg/Ha	kcal/capita /day	kg/capita /year	kcal/kg	Biofuel Ha	kg on biofuel Ha	kcal/biofuel Ha	People/year
Bolivia	2,312	275	36.9	2720	11000	25432264	69180582629	105298
Brazil	4,080	214	25	3124	91200	372091805	1162563634917	1769503
Ethiopia	2,137	412	43.6	3449	100	213673	736976854	1122
Guatemala	2,276	800	85.1	3431	3000	6827037	23425320846	35655
Indonesia	4,078	255	37.7	2469	190000	774744190	1912713938574	2911285
Malaysia	5,219	65	8.1	2929	98000	511477778	1498124726302	2280251
Pakistan	3,415	73	8.2	3249	16000	54646384	177567427034	270270
Peru	2,967	182	19.2	3460	2500	7418253	25666380915	39066
AVERAGE	**3,310**			**3,104**				
TOTAL MAIZE					**411800**			**7412449**
OVERALL TOTAL								**127654018**

Source: FAOSTAT and ECOFYS, 2012

NOTES

Web resources last accessed August 2012 unless otherwise specified

[1] Official Journal Of The European Union (2003) 'DIRECTIVE 2003/30/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL On The Promotion Of The Use Of Biofuels Or Other Renewable Fuels For Transport', May 8 2003, http://eur-lex.europa.eu/lexuriserv/lexuriserv.do?uri=OJ:L:2003:123:0042:0042:EN:PDF

[2] Eur-Lex (2009) 'Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance)', http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT. Along with the Renewable Energy Directive, another piece of legislation promoting the use of biofuels was adopted: the Fuel Quality Directive (FQD). Art. 7A of the FQD requires fuel suppliers to reduce emissions from the production of transport fuel by 6 per cent by 2020. It was expected that using more biofuels would be a key way for suppliers to meet that target. The same biofuels sustainability criteria agreed for the RED apply.

[3] A. Vecchiet (2011) '2011 European Biofuels Blending Obligations', Esse Community, http://esse-community.eu/articles/1261/. These blending mandates are expressed either in per cent of energy content or in percentage of volume.

[4] European Commission (2012) 'Renewable Energy: a major player in the European energy market', communication from the commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions, June 6, http://ec.europa.eu/energy/renewables/doc/communication/2012/comm_en.pdf, p. 5.

[5] Eurobserv'er (2011) 'Biofuels Barometer ', http://www.eurobserv-er.org/pdf/biofuels_2011.pdf; Ecofys (2008) 'Biofuels Baseline', Ecofys, http://www.ecofys.com/files/files/ecofys_2011_biofuels_baseline(2008).pdf

[6] European Commission (2011)' Biofuels - Sustainability schemes', http://ec.europa.eu/energy/renewables/biofuels/sustainability_schemes_en.htm. The schemes recognised by the European Commission provide access to the entire EU market. Member states can certify the respect of sustainability criteria for their own market. The Commission can also defer the monitoring to third countries through bilateral or multilateral agreements. The US is currently pushing for such a bilateral agreement with the EU for its soy production, see American Soybean Association (undated) 'EU Renewable Energy Directive', http://www.soygrowers.com/issues/eu_renewable_energy_directive.htm

[7] L.German and L.Schoneveld, G (2011) 'Social sustainability of EU-approved voluntary schemes for biofuels': Implications for rural livelihoods', CIFOR, http://www.cifor.org/nc/online-library/browse/view-publication/publication/3551.htm. See also: Searchinger (2009) 'Government Policies and Drivers of World Biofuels, Sustainability Criteria, Certification Proposals and their Limitations', in R.W. Howarth and S. Bringezu (eds.) (2009) *Biofuels: Environmental Consequences and Interactions with Changing Land Use: Proceedings of the Scientific Committee on Problems of the Environment SCOPE International Biofuels Project Rapid Assessment*, 22-25 September 2008, Gummersbach Germany, http://cip.cornell.edu/biofuels; and Birdlife International et al (2009)' Biofuels: handle with care: An analysis of EU biofuel policy with recommendations for action', http://www.transportenvironment.org/sites/default/files/media/2009%2011_biofuels_handle_with_care.pdf

[8] Birdlife International et al (2011) ' Driving to Destruction: The impacts of Europe's biofuel plans on carbon emissions and land', http://www.greenpeace.org/eu-unit/Global/eu-unit/reports-briefings/2011%20pubs/1/driving-to-destruction-08-11-10.pdf, and C. Bowyer (2010) 'Anticipated Indirect Land Use Change Associated with Expanded Use of Biofuels and Bioliquids in the EU – An Analysis of the National Renewable Energy Action Plans', IEEP, http://www.ieep.eu/assets/731/Anticipated_Indirect_Land_Uce_Change_Associated_with_Expanded_Use_of_Biofuels_and_Bioliquids_in_the_EU_-_An_Analysis_of_the_National_Renewable_Energy_Action_Plans.pdf.

[9] Studies on ILUC commissioned by the European Commission have now been made publicly available: see http://ec.europa.eu/energy/renewables/studies/land_use_change_en.htm. See also Transport & Environment (2012) 'Biofuels: dealing with indirect land use change (ILUC)', http://www.transportenvironment.org/publications/biofuelsand-land-use-change-review-independent-studies.

[10] Article 17.7 of the Renewable Energy Directive of 2009 stipulates:

"*The Commission shall, every two years, report to the European Parliament and the Council on the impact on social sustainability in the Community and in third countries of increased demand for biofuel, on the impact of Community biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues. Reports shall address the respect of land-use rights. (...)The Commission shall, if appropriate, propose corrective action, in particular if evidence shows that biofuel production has a significant impact on food prices.*"
The terms of reference for the report to be published by the Commission in 2012 are available here: http://ec.europa.eu/dgs/energy/tenders/doc/2011/s098_159745_tenders_specifications.pdf.

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(ii) not based on free, prior and informed consent of the affected land-users;
(iii) not based on a thorough assessment, or are in disregard of social, economic and environmental impacts, including the way they are gendered;
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