

# ECOLOGIST

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## We'll need more carpet...



**There's a certain air of smugness that seems to accompany the UK in international environmental negotiations.**

On the surface, much of it might appear legitimate: the country looks set to surpass its commitments to reduce greenhouse gas emissions under the Kyoto protocol; it has one of the only domestic legal obligations in the world to hit a 2050 carbon reduction target in the shape of the Climate Change Act; and it campaigns noisily for international action on tackling global warming.

In other areas, the UK has played a role in some progressive European legislation, on chemical usage (REACH), on carbon trading (the EU-ETS) and, recently, with a call by Environment Secretary Hilary Benn for an endangered listing for bluefin tuna.

But, despite this (undeniably good) progress, there's much that the fervent policy-making hides, or shifts out of view.

This month's features help to shine a light on some of these inconsistencies. Dan Box's unravelling of the complex world of trade disputes highlights the extremely awkward situation that is fast emerging in the world of climate change policy – that countries (like the UK) that have been proactive on legal action to tackle greenhouse gas emissions now face the difficult choice of watching their energy-intensive industry disappear, or slapping taxes on imports from poorer nations.

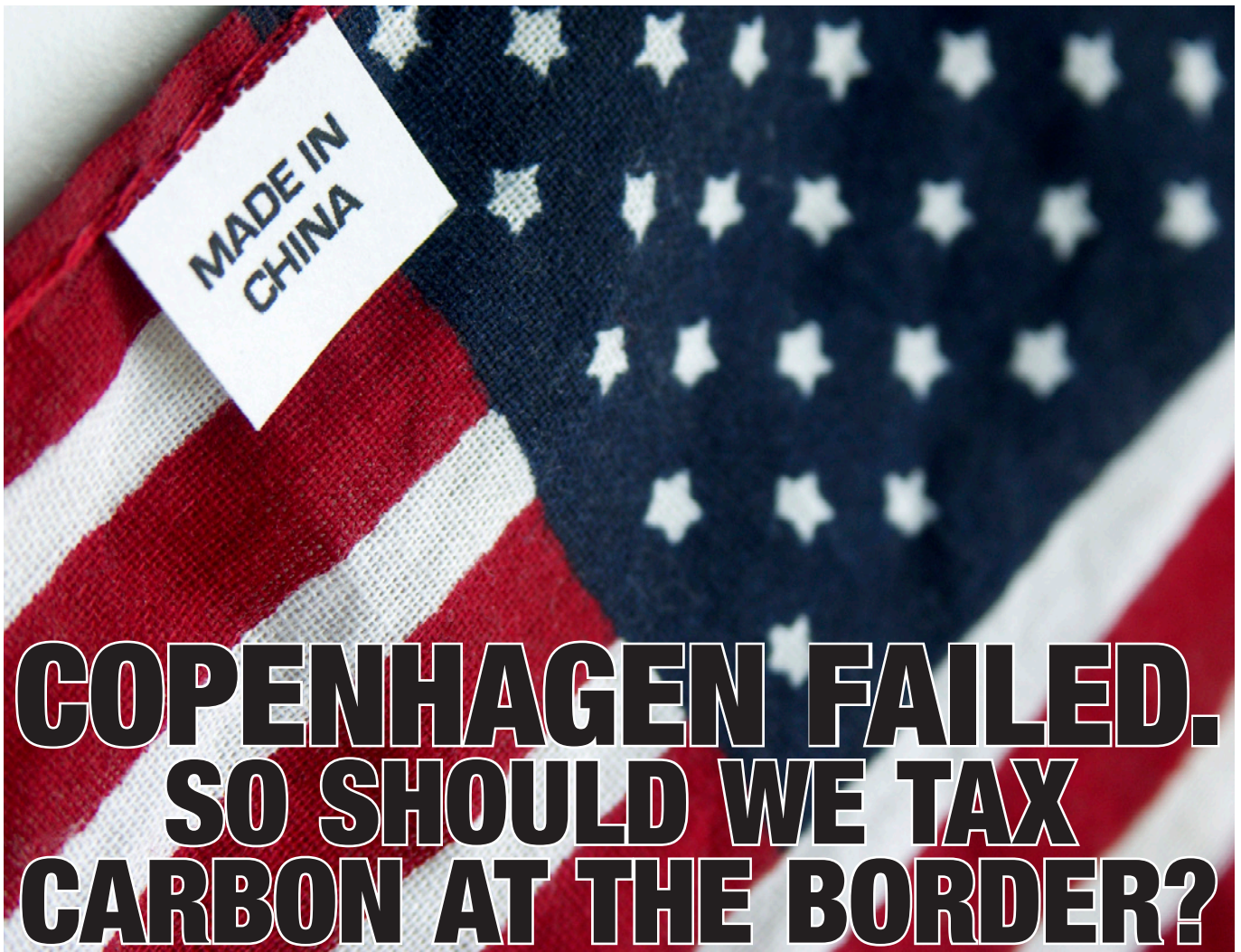
Our two-part, special investigation into the investment, farming and production of jatropha biofuels highlights another such dilemma. EU policy requiring a fixed amount of biofuels to be blended into all forecourt fuels seemed like a great way to shave some carbon from the transport sector. Unfortunately, it has led to a fuel-crop dash in the less-industrialised world, and even when more sustainable crops such as jatropha – the grow-anywhere 'wonderweed' – are put forward, there's still evidence to that they are being planted in the wrong places and contributing to food insecurity.

Andrew Hickman's shocking investigation into Bangladesh's ship-breaking industry underlines the impact that policies written at the desks of western bureaucrats can have in poorer parts of the world. Whilst rules on the condition in which ships may be sent for breaking are strict (and the costs of making them so high) in the industrialised world, UK companies are happy to exploit a loophole that allows them to send their ships, with still toxic payloads, to be torn apart on beaches in south-east Asia by men wearing only sunglasses and rags for protection from fumes and asbestos.

Finally, in an extract from their new book, Matt Lobley and Michael Winter point out that allowing our land-use policies to be governed exclusively by the need for 'productivity' – be that of fuel crops or food – will not necessarily give us the most valuable, or enjoyable, countryside.

The UK has much to be proud of, but no excuse to sweep problems under the global carpet.

*Mark Anslow, Editor*



The lack of agreement at Copenhagen has left some thinking that the only way to protect national economies is to tax imports from nations who don't pay a carbon price. By **Dan Box**

The letter landed on the desks of US Senate leaders Harry Reid and Mitch McConnell unannounced. Its authors were four of the country's biggest corporate lobbyists; powerful people, not used to being ignored.

'We write to express our deep concerns...' the letter began. Concerns about a proposed government bill, meant to reduce American greenhouse gas emissions and then – as now – being debated by the Senate.

Inside the bill's 1437 pages was a proposal for a 'border adjustment', a vague phrase meaning that, if the Senate did vote to cut US carbon emissions, a new tax could be imposed on imports from any other country that did not stop polluting in turn. China and India hated the idea, the letter's authors wrote. The situation could turn nasty, as indeed it did at December's climate summit in Copenhagen, where sniping over border taxes threatened

to escalate into something worse.

'Climate change is a global problem that calls for international cooperation, not unilateral ultimatums,' the letter said. 'These provisions ... could trigger a "green trade war".'

### **Tit-for-tat**

The thinking behind a carbon border tax is this: country A(merica) decides to cut its carbon emissions through a cap-and-trade system like that proposed in the US climate bill, while country C(hina) does not. Cap-and-trade works by making carbon emissions expensive, so businesses in country A will end up footing a bill that those in country C do not. To level things out, country A taxes imports from country C, a tax calculated to be equal to the amount C's businesses would pay if they were operating in A and had to pay for

their carbon emissions through cap-and-trade.

Seems complicated, but it boils down to saying, 'if I'm paying this, then I'm sure as hell making you do so too.' The world's first carbon border tax was announced in December 2009, not between countries but states. Minnesota decided to tax electricity imports from its coal-hungry neighbour, North Dakota. North Dakota responded by threatening to take Minnesota to court. Border taxes, it seems, cause conflict.

In fact, talk to anyone for long enough about carbon border taxes and you summon up the monster of a 'trade war'. EU trade commissioner-designate Karel de Gucht used the phrase when speaking to the European parliament in January this year. The monster also cast a shadow over Copenhagen, where the EU, US and Australia resisted calls from

developing nations to rule out such a tax. Jairam Ramesh, the chief negotiator for India, told reporters: 'We are totally against it, totally against it'. Border taxes were neither ruled in, nor out, in the summit's final accord.

Meanwhile, in London, the chairman of Government regulator the Financial Services Authority, Adair Turner, has repeatedly said he is open to the idea of a carbon border tax. Lord Turner also chairs the Government's influential Committee on Climate Change (CCC), whose chief executive, David Kennedy, says such a tax 'is an option that we should keep on the table'.

Indeed, the failure of Copenhagen to agree any viable, international alternative has increased the urgency of those pushing the idea. Its detractors argue that designing international carbon border taxes is difficult, but the question now is less whether such a tax is introduced, than at what cost. 'The main

### **'The modern weapons of choice are improvised devices: technical standards and procurement rules to 'Buy China' and 'Buy America''**

argument against border tax adjustments is not difficulty,' Kennedy says. 'It is more that some people are worried these could lead to a trade war.'

#### **What is it good for?**

Why go to war? Well, one reason is cost; the cost, on the one hand, of not introducing a carbon border tax. Research by the CCC suggests those British industries that will pay the highest cost for reducing our own carbon emissions account for only one per cent of the country's Gross Domestic Product. But that one per cent is about £3.5 billion.

The fear is that these industries may relocate to countries where it is cheaper to pollute. The CCC estimates these businesses provide just 0.5 per cent of British employment. But then again, that is about 144,000 people's jobs. A border tax would aim to prevent these companies moving, or losing out, by making it as expensive for manufacturers to pollute elsewhere and export their goods to Britain as it is for those manufacturers polluting within Britain itself.

On the other hand, the cost of imposing a border tax would hit some very hard indeed. World trade can crudely, but not entirely inaccurately, be summarised by saying that things are made in Asia and sold to the West. A US carbon border tax, says a report by authors from the World Bank and Peterson Institute, would cause China's manufacturing exports to decline by a whopping 21 per cent and India's by 16 per cent. From Beijing and New Delhi, the view is that this would be selfish, and unfair.

'All you need to start a trade war,' says Michael Levi, a climate expert at the US Council on Foreign Relations, 'is a perception of unfairness.'

#### **The weapons of a trade war**

Trade wars, like war itself, change with the times. The modern weapons of choice are improvised devices: technical standards that keep out imports; government procurement rules such as 'Buy China' and 'Buy America'; bail-outs for domestic companies, and 'countervailing duties' to negate the effect of subsidies abroad. Some call such devices 'protectionism', which makes them sound defensive. In reality, they are offensive, asymmetrical and mean. For example, in September 2009 the US imposed duties of up to 35 percent on tyre imports from China. China, riled up, threatened to target US chicken exports in return. As in a modern war,

collateral damage is wrought among those factory workers forced to go home and tell their husbands, wives and children they have lost their jobs because the company can't make a profit exporting its (suddenly more expensive) chickens and tyres.

There would also, as with the spat between Minnesota and North Dakota, be legal battles to be fought. Such disputes between countries would be likely to drag on for years, and involve lawyers who charge a large daily rate for their service. Either response then – guerilla warfare or 'I'll see you in court' – also carries a cost.

#### **Moral high ground?**

Oddly, as one climate negotiator who was at Copenhagen tells me, a border tax can be seen as a (high-handed) way to claim the moral high ground.

'A border adjustment is like saying "We are paying to sort out climate change"', he says, "'and so should you'". Odder still, according to other government officials, there is one way of thinking that suggests it might be to the mutual advantage of both sides – and to us all – if countries continued headlong down the seemingly selfish path of putting border taxes in place.

One major hurdle to the introduction of such a tax was cleared recently when the World Trade Organisation (WTO) signalled it might allow such a tax under its rules. But, under WTO rules, a country can only impose a border tax on imports if a) the country itself imposes a domestic cost to its own industry (say a carbon tax or cap-and-trade system) and b) those

imports come from countries that have no equivalent system in place.

In the US, the corporate lobbyists' letter has most likely failed to impress, and the new climate change legislation is only expected to pass – if it passes at all – if it includes a carbon border tax. A mutually agreed international programme of emissions cuts, such as that on the table at Copenhagen, was perhaps the last thing that could have stopped this taking place.

#### **The Copenhagen effect**

The failure of Copenhagen – and British diplomats now privately describe Copenhagen as 'a qualified failure' – thus presents developing countries with a stark choice: either accept the US border tax or impose national carbon taxes of their own.

By sidestepping the need to pay the US tax, these countries could prevent preventing trade warfare breaking out. There is also another, very good, reason to choose this second option. Last September, the Energy Research Institute (ERI) of the Chinese National Development and Reform Commission produced a report saying: 'If China does not levy a carbon tax, exported Chinese products will probably pay a carbon tax to foreign countries, but if it levies the tax itself, it could avoid the foreign taxes.'

Put simply, if China imposes a carbon tax on Chinese businesses, the tax revenue stays in China. If it does not, and Chinese businesses pay a tax levied on imports to the US, the money goes to Washington instead.

In fact, the ERI proposed a rate of 100 yuan (£9.1) per tonne to be imposed as early as next year, although analysts expect Beijing to levy a more cautious 10 yuan, and not for a few years at least. Whatever the figures, the effect of this would be twofold: firstly, China would be exempt from any border tax imposed by the US. Secondly, Chinese businesses will want to reduce their carbon emissions to avoid paying the Chinese tax.

In this outcome, neither the US nor China – the two biggest carbon polluters in the world – can really claim the moral high ground. Both are acting in their own selfish interests. But look at it another way and this really doesn't matter. The result of these countries following their own selfish interests would be less carbon produced by both.

After Copenhagen, with the UN already abandoning its first January deadline for countries to publicly state their emissions reductions targets, this act of mutual self-interest may be a genuine reason for hope.

*Dan Box is a freelance journalist and a regular columnist for the Ecologist*

Jatropha seedlings ready for planting

**Jatropha biofuels:**

# The True Cost to Tanzania

Billed as wonder crop, the establishment of jatropha plantations on the ground in Tanzania has been far from successful, or, in some cases, ethical. By **Thembi Mutch**

Biofuel investment and production in Tanzania is a highly contentious issue.

Biofuel investors have been doing business in Tanzania since 2000, but business stepped up a gear after 2006. To date there are 17 investor companies here, from UK, Germany, Sweden, the Netherlands and America - a small number compared to those in Brazil and Indonesia, but a number with clear motives.

With over four million hectares requested by investors for biofuels (but only 650,000 hectares currently allocated), this is a sizeable potential earner for Tanzania.

Or is it? Much of the hype and excitement surrounding biofuels - and surrounding the oil seed crop jatropha in particular - seems to be coming from international consultants and investors. Ministers, farmers, politicians and NGOs who are based here are unanimous in one thing: scepticism. Dr Felician Kilahama,

head of Tanzanian Beekeeping and Forestry and part of the task force overseeing jatropha cultivation in Tanzania puts it succinctly: 'How will jatropha benefit Tanzania? Well exactly. We have no answers. We want food first, not jatropha'.

Jo Anderson, a Tanzanian environmental consultant, feels similarly: 'There's a lot of theory about jatropha. Despite acres of scientific research, there's no evidence of it working on a large scale at all. It's driven by the industrialised countries and donors' need to find potential fuel to mitigate against environmental problems: it's sold as a plant that grows anywhere: on degraded land, as a hedgerow... Any poor farmer can just put it in, and get rich.

'But jatropha doesn't grow on the commercial industrial scale needed to run biodiesel plants: the transaction costs of large scale don't add up. On a small scale, say 500

villages, you could produce the oil for this village to cook on, but not enough to run it at the size the investors need.'

## A crop of questions

The arguments around jatropha fall into several distinct categories. First the land-use debate: can it actually be grown on marginal land? Should valuable land be used for food, or fuel? And how should land be partitioned, both nationally and at village level? What about the water and forests on that land: how does one calculate their actual economic, social, cultural, ecological and projected value, and to whom? Locals or investors?

And then come questions of benefit: will Tanzania actually profit from biofuels - can we use biofuels here rather than simply export to Europe and the US?

The UN Food and Agriculture Organisation

(FAO) claims that over 70 per cent of Tanzania is potentially available for agriculture, yet for this to be true valuable indigenous forest must be cut down. Dr Felician Kilahuma, Head of The Beekeeping and Forestry Ministry is worried: 'Thus far villagers who are desperately poor have sold off land at way below its market value to biofuel investors without fully understanding or thinking it through - they are selling off valuable investments. Plus of course, in Rufigi [an area in Southern Tanzania], one of the 25 allocated global hotspots - an area of 'outstanding natural biodiversity' - 81,000 hectares were given over to [bioenergy company] SEKAB for biofuels. This is valuable forest, where the rare hardwoods African blackwood and mpingo are grown.'

SEKAB was in the process of closing down its operations in Tanzania as this article was written and refused to comment: so far the future of this plantation is unclear.

### Land clearances

The story is not an isolated case. A report published by WWF Tanzania in March 2009, 'Biofuel Industry Study: An Assessment of the Current Situation', includes a very long list of endemic animals and plants (including rare orchids and the rarest bush baby in the world - Galago rondoensis) on the the redlist living in areas where Dutch firm BioShape has plantations.

Land has been cleared there, admits BioShape, but not by burning, and the company says it has paid compensation. Opponents say the land was not gained legally, and that it makes no sense to counter climate change through deforestation. The Makonde carvers flourish in this area, and the hardwoods are used to make woodwind instruments. And, as Fred Nelson, of the NGO Tanzania Natural Resources Forum points out, 'The World Bank says managed forests can potentially earn \$25-\$50 a month for villagers, from medicinal products, food, charcoal... we don't know what jatropha can earn for people yet.'

Mark Baker, of EI consultants based in Tanzania, is less equivocal: 'Recently, in Kilwa, the Dutch firm BioShape rejected land that is labelled barren, or idle, in favour of fertile forest, the Namatimbile, the largest coastal forest in East Africa. Why did they do that if jatropha can grow on weak land? And anyway, what exactly is 'barren' land if it is being used extensively by pastoralists?'

Like SEKAB, BioShape said that it has now completely ceased operations in Tanzania, for reasons that are unclear. No-one from the company was prepared to comment on its activities.

### Not indigenous

SEKAB and Bioshape are not alone: of the nine other major jatropha investors in Tanzania, 90 per cent are using at least some land that is not

considered 'marginal', according to WWF.

A key question is whether jatropha really is as hardy and durable as its supporters claim. Geoffrey Howard, of the International Union of Conservation of Nature in Kenya says: 'Because jatropha is used locally on graves by East Africans we assume it's indigenous. It's not. Jatropha is essentially an invasive species. It is thirsty, needs irrigation and in no studies has it met the expectations of projected yields, either in terms of fruit, or oil produced.'

### Jam tomorrow

Perhaps the least investigated side of the jatropha debate is the social and economic implications. It is hard for most people in the industrialised world to imagine the level of desperation that many Tanzanians experience. In the Rufigi Delta, where Swedish firm SEKAB has recently halted its work with jatropha, locals look set to be bitterly disappointed.

Mohamed Osman Makau, a resident of Nyamage village in Rufigi, who was unaware the project had completely stopped, told me: 'Overall my expectations for the future of the village are good and I am hopeful about the presence of the [biofuel] company here. If the company sticks to what they have agreed in their discussions with us, the income of our

**'Because jatropha is used on graves, we assume it's indigenous. It's not'**

village will grow and everyone will benefit from their presence.'

According to WWF's report, no compensation had been paid for land at the time of publication in March 2009, and no jobs created. The campaign group also alleged that glaring holes exist where labour relations, child labour and health and safety considerations should be: though Tanzanian law states these are necessary preconditions for investors, in practice they can't enforce these practices. At the time, SEKAB told WWF that it was still waiting for the land deeds, and that compensation will be paid when these are received. Now that the company has ceased operations in Tanzania, the likelihood of compensation being paid is unknown.

In a damning Oxfam report, 'Another Inconvenient Truth', a subsidiary of British firm Sun Biofuels plc was criticised for telling the press it was awarding compensation of over \$600,000 to villagers who allowed jatropha to be planted on their land, a figure that was later revealed to be twice the offered amount, and many times what actually seems to have been taken up by villagers who were uncertain on what to do with their claim forms.

In fact, WWF's research suggests that even where land was purchased, over half the biofuel investors did not carry out Environ-

mental Impact Assessments, and none consulted villagers or informed them of what they were doing, or offered villagers opportunities in farming management.

### A way forward?

There is clearly a big need for thorough and comprehensive minimum standards for jatropha investors, both before they arrive in Tanzania, and once they are here. Says Professor Pius Yanda at the Institute for Research on Environment at the University of Dar Es Salaam: 'At the moment there is a complete freeze on jatropha investors, as we assess what our options are for jatropha. Minimum guidelines need to include clear definitions of no-go areas for investors, and a policy for jatropha use here in Tanzania, so we run our own cars, buses and factories on jatropha. At present Fairtrade International is researching jatropha as a fair trade product. We shall see.'

But jatropha could yet be produced in an equitable and sustainable way. On the ground in Tanzania, firms were distinctly cagey about agreeing to let the *Ecologist* look at their projects, but one notable exception was Diligent Energy Systems. After two years, this small Dutch company has signed up 5000 farmers to grow jatropha.

What makes Diligent so interesting is that it owns no land. Effectively it 'outsources' the growing: villagers get the economic benefits of money for seeds and cultivation. Secondary benefits include oil for cooking stoves, lamps, oilseed cake (which Diligent is encouraging villagers to put into anaerobic digesters, producing biogas with which to cook), soap, and fertiliser for use on other crops.

There's no perceptible negative impact, though as Hayo De Feijter, general manager of Diligent, admits: 'It's not terribly profitable for farmers yet - 5kg of jatropha yields about 1 litre of oil, but potentially it's only positive. We aim to make money for local farmers, and for the company, and we avoid all the environmental problems or compensation issues: we pay there and then. If this model could be developed - outgrowing schemes - it's very hopeful.'

The farmers seem to agree with him. Mzee El Rahema, based in Makoa, in West Kilimanjaro says: 'I get 180 shillings per kilo (18 pence) of jatropha; I do farming as well, but the extra income means the kids get food, schooling, clothes. It absolutely, definitely does help me and our community, and I am delighted.'

*Thembi Mutch is a freelance journalist based in Tanzania*

UK fund managers are selling investments in jatropha plantations as a wallet-swelling, planet-saving financial bonanza. But the reality for poor farmers is very different. By **Andrew Wasley**

Raju Sona, a smallscale farmer, seen with his only jatropha tree at his home farm. Photo: Atul Loke/Panos Pictures/ActionAid



**Jatropha biofuels:**

# UK INVESTORS SELL CONTROVERSIAL CROP AS 'GREEN'

A number of UK-based investment companies are marketing a controversial biofuel crop as an 'ethical investment' despite it being linked to conflicts over land, food security and growing hunger in developing countries, the *Ecologist* has learned.

Onyx World, BluSky Investments, Viceroy Invest and Sustain Investments have been criticised by environmental and antipoverty campaigners for selling investments in jatropha because of increasing concerns over the crop's impact on poor communities.

## Miracle fuel?

Jatropha, a bushy shrub which grows in Africa, Latin America and south-east Asia, is

being touted as a 'miracle' biofuel because the plants' seeds contain a potentially valuable, non-edible, vegetable oil that can be used for biodiesel.

The investment companies are selling jatropha as the new 'green oil' and claim it has the potential to alleviate poverty and improve livelihoods in developing countries. One of the plants' biggest benefits, the companies claim, is that it thrives on low grade, marginal land, and in semi-arid areas with poor soils, thus not competing with food production.

But, according to campaigners, the supposed benefits of jatropha are largely unproven, and the experiences of many farmers encouraged to plant the crop do not

tally with the claims of the biofuel industry or its investors. Yields have fallen short of predictions, say farmers, and good agricultural land has been given over to jatropha, threatening food security. Promised incomes have also failed to materialise, it is claimed, because of poor demand for jatropha seeds.

## Get rich and save the planet

Onyx World Ltd, based in Colchester, offers investors returns of up to 93 per cent annually if they buy into jatropha. The company's investment brochure, titled 'Money really does grow on trees', claims that jatropha benefits local communities by improving farming practices, stimulating local econo-

mies, preserving family units and allowing the use of marginal land.

The environment benefits, Onyx World claims, because jatropha is a carbon neutral fuel source, a replacement for fossil fuels, reduces global warming and does not displace food crops.

Sustain Investments and BluSky make similar claims. Viceroy Invest says investors will be 'helping to eradicate third world poverty and creating employment, whilst also saving the planet from greenhouse gases'.

## Snake oil

The *Ecologist's* findings come as a new report by ActionAid links the expansion of industrial biofuels, derived from crops including jatropha, palm oil, soya and sugar cane, to rising food prices and increasing global hunger.

Meredith Alexander, head of trade and corporates at ActionAid, told the *Ecologist*: 'ActionAid deals with the harsh realities of a billion people going hungry now and the threat that climate change will make matters even worse. Like snake oil salesmen of old, propagandists for jatropha oil have a list of miraculous claims a mile long, but no matter what they say, jatropha is not a solution to climate change and actually makes hunger worse.'

Friends of the Earth's Kenneth Richter, said: 'The positive spin about jatropha made by investment companies doesn't marry up with the experiences of farmers growing the crop. This so-called biofuel wonder crop is failing farmers and failing the environment. Companies should stop investing in jatropha until they have properly assessed its social and environmental impact.'

Almuth Ernsting, from Biofuel Watch, said that the claims made by the investment companies were 'highly dubious' and conflicted with evidence collated by NGOs.

## Displacing food crops

Although there is no suggestion the investment companies are directly involved in bad practice or wrongdoing, campaigners say the speedy and unregulated nature of the 'jatropha rush' raises doubts that the crop is being grown in a sustainable or ethical manner.

ActionAid says that in Tanzania the crop is being targeted at areas with good rainfall, fertile soils and well developed infrastructure – ideal locations for food cultivation – rather than marginal land.

In Senegal and Swaziland the group says evidence suggests the plant will only survive with irrigation systems, contradicting industry claims that jatropha grows well with

limited water usage. A Friends of the Earth investigation in Swaziland raised similar concerns about jatropha's touted ability to grow on land with poor soil and without regular watering.

## Food security threatened

The Friends of the Earth study also highlighted allegations that farmers were encouraged to sign contracts they did not properly understand, and which couldn't be terminated for several years, locking the contractor into jatropha production regardless of the crop's productivity.

Charities say food security in many parts of Africa is being compromised because land for food is being used for crops destined for biofuels, and that this is linked to local rises in food prices:

'I and the community expected to increase our cash income and revenues by working on the plantation,' Mamadou Bah, a farmer from Senegal, told ActionAid researchers. 'Our food is insufficient because we gave away our land. We have to fight for our rights and find alternatives to fill the gap in food and livelihoods.'

A similar story was uncovered in Ghana, where shea trees, traditionally used to make shea butter that is used in cosmetics and soaps and for cooking, have been destroyed to plant jatropha. 'The shea nuts I am able to pick during the year help me to have my children in school, to buy cloth and also to supplement the household's food needs when the harvest from my husband's farm runs out,' Sanatu Yaw told researchers. 'But this year I could not get much because of the trees that have been cut. Now they have destroyed the trees so we have lost a good source of income forever, yet we have not been paid anything in compensation.'

## Uprooting jatropha plants

In Assam and Meghalaya in north-eastern India, where farmers have been encouraged to grow jatropha on a contract basis, many claim not to be receiving an adequate income, or no income at all – largely because of poor yields and a lack of demand for seeds:

'Until now we have had no income from the jatropha plantation,' farmer Parindra Gohain said. 'They told me it would be two years before we would have income, but it is already three years. People are a little down now because the whole project is already four years running and there is no income. I still hope that I will get profit otherwise I will pull up the plants.'

Raju Sona, another farmer said: 'No one will

buy jatropha. People said if you have a plantation then surely you have a good market, but we didn't see such a good market. When I got the message that there was no market, I got discouraged....I felt very bad. I expected profit. I threw [the seeds] away. They were no use to me. I destroyed the plants because of lack of market. The thing is that we have land, but if I use it for jatropha and I don't get good production after spending money, it will be a great loss for me.'

The Indian government plans to cultivate jatropha on millions of hectares of land as part of its intensive drive to generate energy. Critics say efforts should be focussed on tackling the country's chronic hunger problem.

## Early claims misleading

Onyx World and Viceroy Invest are both agents for Carbon Credited Farming (CCF) Plc, a London-based company specialising in developing renewable fuel and energy sources.

Although its focus is currently on jatropha, CCF has global interests in genetics, forestry, fertiliser and pesticides. The company says it is currently in the process of securing 70 years of genetics for oil palm which will increase the yields from most Asian oil palm plantations.

CCF states it is committed to best practices in its farming operations, engages in holistic agricultural techniques and permaculture, and is working to develop not-for-profit and charitable giving programmes.

Jeff Reeves, of CCF's global operations team, said that the company was aware of the criticisms of biofuels, including jatropha, and acknowledged that there have been problems associated with the crop in a number of regions, including India and several African nations.

He cited land evictions in India and people being forced to grow jatropha in Burma as particularly problematic. 'In many cases it is government policy and people that are to blame, rather than jatropha itself,' he told the *Ecologist*. 'Well managed, jatropha and other biofuel crops can work, but there have been countries where [poor management] has meant this is not the case.'

Reeves said that misleading claims about jatropha, made following early trials and describing it as a 'wonderweed.... able to grow in deserts', were to blame for a lot of the hostility the crop is now facing.

He said he would examine some of the claims being made by investment companies offering jatropha cultivated by CCF. Onyx World referred the *Ecologist's* enquiries to CCF. Viceroy Invest, Sustain Investments and BluSky declined to comment.

*Some names have been changed. Andrew Wasley is a journalist with investigative agency Ecostorm*

**'The positive spin about jatropha doesn't marry up with the experiences of farmers'**

Shipbreaking in progress in Bangladesh



# The shipping industry's dirty secret

Workers are dying in the ship-breaking yards of Bangladesh because the shipping industry is not taking responsibility for the disposal of ageing vessels. By **Andrew Hickman**

They are known as 'cutters': men who enter the tanks of huge ships, armed with a blowtorch, sunglasses and a rag to cover their mouths. Their job is to cut slabs from ships' hulls that are sent to steel mills for re-rolling.

The 50 or so cutters working in Bangladesh's ship-breaking industry who entered the 275 metre long Agate on a December morning last year had been told by their bosses that the ship was 'clean' - free from dangerous oil and gas residues.

But when sparks from their cutting equipment hit the bottom of a tank, there was a massive explosion.

'It was the main gas tank in the ship. Its size

was huge. I was to cut one side of the tank. Other workers also started cutting the tank. After some time the tank exploded with a tremendous bang and the tank burst into flames. I was knocked out and don't know what happened afterward,' said Noor Alam, one of the injured workers.

The Agate burned for eight hours, killing eight and leaving 13 others with horrific injuries. But for the 30,000 or so workers who make their living dismantling ships on the beaches north of Chittagong, the flames leaping from the ship were a familiar sight.

In southern Bangladesh's thriving ship-breaking industry, one worker dies a week

from explosions and falling steel plates. Many more are injured.

Charles Kernaghan of the National Labour Committee (NLC), an American NGO, has documented the working conditions in some of the shipyards. He described a 'hell on earth', where children handle asbestos with their bare hands and workers emerge from the darkness of ship tanks dizzy and spluttering, only to pass out on the beach.

At night, the beach is lit up with the neon glows of the blowtorches of workers on the second 12-hour shift. The only interruptions come when large accidents, such as the Agate, close the yard for a few days.

## 'You cannot dispose of things in one way in the UK and do things in a totally different way in Bangladesh'

### Soups of oils and asbestos

Bangladesh's 'ship-recycling' industry dates back to the mid-1960s, when a Greek ship, driven ashore by a tidal storm, was purchased and recycled by the Chittagong Steel House.

Gradually, a ship-breaking industry developed that was fuelled by Bangladesh's lack of steel and an availability of cheap labour to dismantle ships.

Once pristine beaches soon turned into oily soups. The 'low-cost' beaching of ships has led to large quantities of asbestos, polychlorinated biphenyls (PCBs), contaminated oil and arsenic seeping into coastal waters.

A study by the Marine Science Institute at the University of Chittagong found that, since the industry began, up to 21 species of fish and crustaceans have disappeared altogether, and 11 others are in a precarious position.

Large areas of mangrove swamps are being cleared to make way for new yards. Last year, the ATN Bangla News Channel reported that 15,000 trees were felled in three nights.

Coastal fishermen are leaving the area or joining the army of ship-breakers.

The dirty nature of the industry has not gone unnoticed. Rizwana Hasan, a Bangladeshi environmental lawyer who won the 2009 Goldman Prize, has campaigned against the shipbreaking industry since 2003.

In March 2009, she made a breakthrough when the country's Supreme Court ordered the closure of all 36 shipbreaking yards operating without clearance. So far the yards are still in operation, but Hasan says the tide is finally turning as public pressure has forced policy-makers to look at stricter regulation.

But it's not just Bangladesh that needs to clean up its act. International legal frameworks have proved disastrously inadequate at addressing the environmental and human rights violations associated with the industry.

The Basel Convention, which became European law in 2006, governs the export of hazardous waste. In theory, this means any ship containing hazardous substances cannot be sent for scrapping in a developing country without extensive pre-cleaning.

Unfortunately, the Convention is riddled with loopholes. Ships can be in international waters when their owners declare their intention to scrap the vessel, where the Convention does not apply. It can also be bypassed if ships fly flags of countries that are not party to the Convention. These so-called 'flags of convenience' can be purchased cheaply over the phone from shipping authorities from countries like Mongolia,

Tuvalu, Antigua and Barbuda.

Research by Ingvild Jenssen, of the NGO Ship Breaking Platform, shows that around two thirds of the world's large vessels are sailing under 'flags of convenience' belonging to small states that compete by promising to keep taxes, fees and regulation light for shipowners.

A source from Britain's Department for Environment, Farming and Rural Affairs (DEFRA) said that brokers were advising shipowners on how to get around the legislation and said it was 'almost impossible to hold shipowners to account'.

### 'Toothless' legislation

The Hong Kong Convention, which is intended to replace the Basel Convention by 2015, has attempted to take account of the commercial reality of the ship wrecking industry. But it's being called 'toothless' by the very people it hopes to regulate.

Yogesh Rehani of Global Mangement Systems, an American cashbuyer of ships which frequently sends vessels to Bangladesh, said the Hong Kong Convention gave no incentive for shipowners to clean ships of hazardous substances before sending them to developing countries.

Crucially, the Convention says that ship owners are required to have received either a 'Safe for Man Entry' certificate or a 'Safe for Hot Work' certificate before attempting to scrap a vessel.

'If it costs \$10,000 to clean a ship for man entry and \$200,000 to clean a ship for hot work, what incentive is there to clean it properly?' said Rehani.

He said that any requirement for certificates was hard to enforce anyway.

'Chemists obtain favours from agents, and issue these certificates and hope nothing happens,' he said.

In the case of the *Agate*, a reliable source has told the *Ecologist* that the ship was inspected by the Bangladesh Department of Explosives (DoE), and warnings given about the condition of six tanks on the ship.

However, according to workers' testimonies, the ship yard owner, Rahim Steel & Shipbreaking, ordered workers to go ahead and dismantle the vessel.

Such risk taking is a reflection of the lack of regulation and the demand for ship dismantling to be done quickly. The global downturn in commercial sea traffic and the phasing out of Europe's single-hull oil tankers means demand for ship scrapping is at a high.

The UK's Andrew Weir Shipping Limited is

one of a number of companies whose vessels have ended up on the beaches of Bangladesh in the past year.

The Boularibank, Mahinabank, Tikeibank and Gazellebank, all registered in Antigua and Barbuda, were Finnish-built icebreakers converted into cargo ships in the mid 1990s. When global demand for cargo vessels fell last year and Swire Shipping cancelled the ships' charter, Andrew Weir Ltd put them up for sale.

Sold for around \$330 per deadweight tonne to a Bangladeshi shipyard through a cash intermediary in China, the company is likely to have made over \$10 million from the sale.

### The 'Lucky Shipyard'

There is no implication that workers have been killed or injured dismantling Andrew Weir's ships in Bangladesh. But workers at the 'Lucky Shipyard', where the Boularibank is in the final stages of demolition, have described it as 'a place of punishment and death'.

When the NLC attempted to visit the yard, they found workers as young as 12 working seven-day weeks and being paid 27 cents per hour. Some of the workers described seeing a fellow worker killed in front of them in April when a steel plate fell from a ship.

When the *Ecologist* contacted Andrew Weir Ltd, the company refused to comment on the ethics of sending vessels to south Asia's perilous shipbreaking yards, and refused to confirm whether its ships had been cleaned of hazardous substances before arriving in Bangladesh. The company also refused to comment when asked if it knew it had breached European law to send ships for scrapping in non-OECD countries.

But a look at the company's history suggests it should be aware of the rules. Another of its ships, the *Forthbank*, was detained in Antwerp by Belgian authorities in 1999 and was only released when Andrew Weir Ltd gave assurances to the Antwerp prosecutor that it would not be sent for scrapping in south Asia.

Two years later, the *Forthbank* was beached and pulled apart on the same beaches in Bangladesh where its four other vessels are currently being dismantled.

It could be argued that companies like Andrew Weir are simply benefiting from poorly conceived – and even more poorly regulated – shipping laws. Identifying perpetrators in the murky world of international shipping might be difficult, but finding hypocrisy is not.

'You cannot dispose of things one way in the UK and do things in a totally different way in Bangladesh,' said Rizwana Hasan. 'The Western world is using Bangladesh as its dumping ground and using poverty as an excuse.'

*Andrew Hickman is a freelance journalist*

# What is the Pill doing to our bodies and planet?

It was the drug that fuelled the sexual liberation of the 1960s, but what price are we paying for our love of the contraceptive Pill? By **Yanar Alkayat**

Birth control is always a hot topic. The Government's latest campaign – 'Contraception: Worth Talking About' – encourages 18-24 year old women to choose hormonal contraception as the best way of avoiding unwanted pregnancies and abortions.

But the thickening soup of oestrogens in our water should mean that this advice is not doled out without caution.

## Transgender fish

For over 15 years, researchers in UK and North America have been watching the feminisation of male fish. After leaving the human body, oestrogen hormones – natural and synthetic – as well as oestrogen-like chemicals and hormone disruptors in the environment – also referred to as endocrine disrupting chemicals (EDCs) – are discharged into rivers through sewage effluent and cause disruption to the reproductive behaviours of fish.

Scientists observing the effects of oestrogen in wildlife have now begun to fear the worst: that those effects may also appear in humans.

Of course, fish are not people. But the similarities between the hormone systems, especially the sex hormones, of fish, birds, mammals and human beings is why scientists argue that our bodies might behave similarly if exposed to comparable concentrations of hormones.

'We just don't know what can happen in the long run,' says Charles Tyler, Professor of Ecotoxicology at the University of Exeter.

## Persistent and traceable

Our hormones are the chemical messengers released by glands to regulate almost every

cell, and function in the body – from metabolism, digestion and reproduction to moods, emotions and behaviour. This endocrine system is a finely tuned network that guides development in a similar way in both animals and humans.

Among the myriad compounds in fresh water, ethinylestrodiol – the main component of the contraceptive pill – is traceable and persistent even at very low

concentrations. This is because bacteria chew off part of the excreted hormone residues, which brings the compound back to life.

'In fact, almost as soon as the hormone hits the water in your toilet it can become active again,' says Tyler. The two big studies that Tyler and colleagues have undertaken with the UK Environment Agency involved sampling thousands of fish from 42 sites around the country. They established a definitive link between exposure to these chemicals [oestrogens] and the effects on the fish. 'Ethinylestrodiol is present in relatively low concentrations but it is extremely potent. I have little reservation that it is a player in feminising our fish,' says Tyler.

The latest research by Tyler and his team with colleagues at Brunel University (to be published later this year) goes a step further.



It shows this sexual disruption can reduce the capability of fish to breed. Removing males from the breeding population reduces genetic variation, lessens the ability of a population to adapt to changes in the environment, and may eventually cause its collapse.

Since the early 1990s, scientists have been warning us of damage to aquatic life. John Sumpter and Susie Jobling, Professors at Brunel University, made the early observations that male fish are producing female egg proteins and developing immature eggs in response to waterborne oestrogen residues. Their work was followed by Professor Karen Kidd at the University of New Brunswick in Canada, who discovered similar contaminants in Canadian rivers.

### The additive effect

For many years, the phenomenon of falling male sperm count and rising incidences of testicular disease has been the focus of scrutiny for both Danish-based endocrinologist Niels Skakkebaek and Richard Sharpe from the Medical Research Council in Edinburgh. In the 1990s, they found synthetic oestrogens commonly used in livestock farming and numerous chemicals used in everyday products with oestrogenic properties.

**'Once on the Pill, the liver has to work hard to break down the extra compounds, blamed for side effects'**

Bisphenol A (used in some plastic drinks bottles and the inner coatings of drink and food cans), phthalates (used in food wrapping and other plastics) and nonylphenols (a group of surfactants found in detergents) are just a few of the chemicals that mimic the effects of oestrogen. They received a lot of media attention during the 1990s – *Our Stolen Future* by Theo Colborn, Dianne Dumanoski and John Peterson Myers was a bestseller, highlighting the true nature of these chemicals on wildlife and humans. But scientists are still uncertain whether they are to blame for reproductive disorders in the breast, prostate, ovary and uterus.

### No single culprit

It is widely believed that around 100,000 chemicals or more are discharged into the environment each year and we are yet to screen them all for oestrogenic properties, so the culprits could still be out there. Sharpe admits, 'it's unlikely to be a single oestrogen compound that causes testicular disorders, but they could play a role as part of complex mixture effects'.

Sharpe also points to persistent contami-

nants such as dioxins - a group of compounds that are by-products of pesticide production, waste incineration and the paper manufacturing industry. They are also fat-soluble and can be ingested through meat and dairy products. It is the unknown cumulative effect when these chemicals combine that raises alarm bells, not the effects of any single one of them. Adding further to the complexity of the problem, lifestyle factors including changing diets and increased obesity are also likely to contribute to an increase in reproductive disorders.

### Saving our waters

The Environment Agency for England & Wales is fully aware that steroid oestrogens and other EDCs are entering rivers, and the water industry has invested heavily in cleaning up domestic wastewater. In addition, a national 'Endocrine Disruption Demonstration Programme' (undertaken by the water industry and the Environment Agency) has been assessing how effective sewage treatment processes are in removing steroid oestrogens. Sewage works vary in size and level of treatment but low concentrations of steroid oestrogens are present in all sewage effluents.

In terms of drinking water, the Drinking

reasons.

'The Pill induces a permanent state of infertility, and its impact isn't just limited to ovaries, uterus and cervix but alters at least 150 bodily functions and affects all of the organs,' say Pope and Bennett.

The synthetic oestrogen and progesterone dose in the Combined Oral Contraceptive (COC) Pill is approximately four times greater than the body's normal levels (at the peak of a normal cycle) and flattens the natural ebb and flow of hormones. This includes the rise in oestrogen around ovulation that makes a woman feel sexy. Not surprisingly, a lack of sex drive among Pill-users is a common complaint.

### Side effects

Once on the Pill, it's not always plain sailing. The liver has to work hard to break down the extra compounds, the byproducts of which have been suggested as the reason behind unwanted effects such as depression, nausea and moodiness. Women at risk of blood clots, smokers over the age of 35 and those at risk of breast or other cancers are advised to avoid it and a large study published in *Neurology* in 2006 concluded that headaches, particularly migraines, are more likely among women taking oral contraception containing oestrogen (the mini-Pill and IUD coil are progesterone-only).

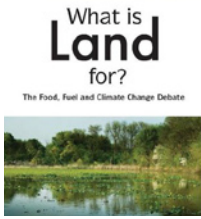
Too much oestrogen is potentially carcinogenic, and the fact the COC Pill has been classified as 'carcinogenic to humans' by the International Agency for Research of Cancer is rarely discussed by the medical profession (although studies have also shown that the COC Pill can protect against certain other types of cancer, notably ovarian cancer).

For most of the four million women in the UK who take oral contraception, the benefits of birth control outweigh the potential health risks; for others it's a form of internal (and external) pollution and they will seek non-hormonal alternatives. In any case, women, especially teenagers, should be fully informed of all the risks.

EU regulations are now in place to ensure companies screen their chemicals for oestrogenic properties before discharging them into rivers – a move Tyler says is long overdue.

'We need to be savvier and more informed about how abnormalities in wildlife and humans relate to the plethora of chemicals in our environment,' he says.

*Yanar Alkayat is a freelance journalist*



## ‘Old environmentalists’ are challenging an obsession with land productivity

Everyone has an opinion on how best to use land in the UK, but there’s a debate between those who want food and those who want more. **Matt Lobley and Michael Winter**

Land and food are at the forefront of the domestic policy agenda in the UK to an extent unprecedented since the 1950s. Climate change lies at the heart of the new debate and it was the climate change agenda that prompted the UK environment minister David Miliband to launch a national debate on land use in 2006.

‘Food security’, until very recently seen as the last refuge of a backward-looking agricultural fundamentalism, has reappeared in the political vocabulary. With scarcely a backward glance at the ‘old environmentalism’ of multifunctional agri-environments and its emphasis on biodiversity and landscapes, agricultural supply-chain interests have embraced the ‘new environmentalism’ of climate change with enthusiasm. They proudly proclaim the readiness of the industry to produce both food and bio-crops, and to do so with a neo-liberal confidence in markets to determine the balance between food and non-food crops in land use.

For instance, in his speech to the National Farmers Union (NFU) Centenary Conference in February 2008, Gordon Brown stressed the ‘core responsibility’ of British farmers to ‘grow and produce the majority of food consumed by the British people’, alongside a ‘front line’ role adapting and reacting to the challenges and opportunities of climate change, and exploiting the potential of farmers to become ‘energy exporters’. Farmers and their advisors have been quick to embrace the ‘new productivism’, with the agricultural consultants Andersons stating that the ‘PR battle is being won, and farmers, as producers of food and fuel in a dangerous world, are being valued once again.’

### Bullish

A recent collection of essays entitled *Feeding Britain*, with a foreword by the Government minister Hilary Benn, contains papers by representatives of the key sector development bodies, such as the Home Grown Cereals Authority (HGCA) and the Horticultural Development Company, and presents a bullish outlook.

For example, Jonathan Cowens, Chief Executive of the HGCA, is emboldened to suggest that environmental cross-compliance measures (modest though these may be in the eyes of most environmentalists) could lead market-orientated cereal farmers to forgo the Single Farm Payment so as to avoid the restrictions. In a SWOT analysis, he identifies ‘environmental use of land’ as one of the threats to the cereal sector, alongside ‘loss of pesticides due to legislation or resistance’.

### Lagging behind the market

But policy (and politics), characterised by incrementalism, has not necessarily caught up with these market- and industry-led changes, nor the changing risks associated with new circumstances. Agri-environment schemes, organic farming and sensitive river-catchment planning all continue to figure highly within European rural policy. Non-governmental organizations such as the Royal Society for the Protection of Birds (RSPB) initiate schemes to take land out of production to recreate wildlife-rich reserves. Local and slow food movements challenge the logic and ethics of global markets.

Moreover, the far-sightedness of the old environmentalists is beginning to challenge some of the assumptions of the new proponents of food security, particularly their inherent ‘productivism’. Is it axiomatic, they ask, that agriculture’s best contribution to tackling climate change is to grow bio-crops, or invest in anaerobic digesters, or make land over for wind farms? Might not there be an equally important role in maximising the carbon sequestration or water-

holding properties of biodiverse land? Some have even suggested that biodiverse-rich ecosystems allow for maximum carbon sequestration.

### Asking the right questions

Our new book does not set out to provide definitive answers to these questions. It is too soon to do that and much of the science is too immature. Rather we seek to establish and to explore the contours of the new debate. The book has three premises:

The first premise is that food and energy security issues now occupy centre stage in policy thinking about land use and this is likely to remain the case for some time to come.

The second is that this new emphasis on food and energy security will not mean an abandonment of a continued public policy emphasis on multifunctionality and ecosystem services. Indeed this emphasis is likely to continue to grow.

The third premise is that there will be ‘local’ trends that may on occasions seem counterintuitive in a global context.

These three premises need to inform decisions that society makes on how to pose the right questions, determine the right research priorities, collect the right data and conduct the right analysis. These will require normative judgements and will be subject to contestation. We hope that the chapters in our book will collectively help to make the case for putting food and energy security, ecosystem services and localism centre stage not only in the land debate but in the climate change debate too.

*This is an edited extract from the new book ‘What is Land Food?’, edited by Matt Lobley and Michael Winter, and published by Earthscan (hardback, £49.95)*

