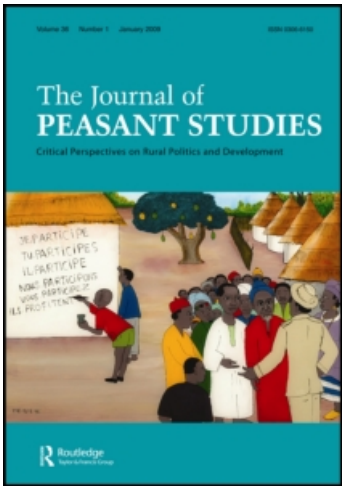

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Agrofuels capitalism: a view from political economy

Ben White and Anirban Dasgupta

This article considers the global expansion of agrofuels feedstock production from a political economy perspective. It considers and dismisses the environmental and pro-poor developmental justifications attached to agrofuels. To local populations and direct producers, the specific destination of the crop as fuel, food, cosmetics or other final uses in faraway places is probably of less interest than the forms of (direct or indirect) appropriation of their land and the forms of their insertion or exclusion as producers in global commodity chains. Global demand for both agrofuels and food is stimulating new forms (or the resurgence of old forms) of corporate land grabbing and expropriation, and of incorporation of smallholders in contracted production. Drawing both on recent studies on agrofuels expansion and on the political economy literature on agrarian transition and capitalism in agriculture, this article raises the question whether 'agrofuels capitalism' is in any way essentially different from other forms of capitalist agrarian monocrop production, and in turn whether the agrarian transitions involved require new tools of analysis.

Keywords: agrofuels; biofuels; agrarian political economy

Introduction

A few years ago, all the favourable conditions for rapid expansion of agrofuels as an alternative energy source and motor of rural development seemed to be in place. Suitable crops for first-generation agrofuels feedstock had been identified (oil palm, sugarcane, maize and *Jatropha*), and there was talk of new, more efficient second-generation technologies. There was an assured market for the products; many companies, both domestic and foreign, were eager to invest in agrofuels projects and many of them already had experience in organising the production of the crops to be used as agrofuels feedstocks. It was claimed that tens of millions of hectares of 'unused' land were available in many countries of Africa, Asia and Latin America, and projected that up to one-fifth of the world's agricultural land would be planted in agrofuels feedstock by 2050. Agrofuels projects promised employment and incomes for tens of millions of rural workers, whether as smallholder farmers producing on contract, waged workers on large plantations, or workers in the upstream and downstream agro-industries. And besides revitalising stagnating rural economies, the expanding agrofuels sector would provide clean, green energy on a large scale, replacing fossil fuels and helping to stem the tide of global warming.

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Although currently only about 14 million ha (one to two percent of the world's arable land) is devoted to agrofuels, this is expected to increase to four percent by 2030 and 20 percent by 2050 (according to one projection, Liversage 2010). The global expansion of agrofuels ventures raises many questions about agrarian transitions and futures. There has been a rapid expansion of literature and debate on agrofuels, from many institutional and disciplinary perspectives. Publications from the corporate sector, as we might expect, are generally positive;[1] those from inter-governmental organizations such as the Food and Agriculture Organization (FAO), and from independent research institutes, are often ambivalent, recognising the potential of agrofuels but also raising serious concerns about their impact on people, food security and environments (FAO 2008); and those from the non-government organisation (NGO) sector, and especially from environmental justice NGOs, are generally negative (Oxfam 2008). Academic work on these issues is being done from various disciplinary perspectives, ranging from technical fields like energy, environmental and plant sciences, to agricultural economics, social and political science and even subjects like agricultural ethics.[2] The arguments and debates in this emerging literature focus mainly on two areas of concern: ecological and sustainability concerns, and 'food vs. fuel' concerns about competition between agrofuels and sustainable food production and its impact on food security for growing populations.

In this literature, studies based on an explicit agrarian political economy framework are relatively absent (exceptions include Dauvergne and Neville 2009 and McMichael 2009). How would the current push for agrofuel expansion look when approached in a political economy perspective? And when seen in this perspective, is there anything new or special about agrofuels feedstocks that makes them different from other forms of export monocrop production? Global demand for both fuels and food is stimulating new forms (or the resurgence of old forms) of corporate land acquisition and expropriation, and of incorporation of smallholders in contracted production. To local populations and direct producers, the specific destination of the crop (oil palm, sugarcane, maize, *Jatropha*) as fuel, food, cosmetics or other final uses in faraway places is probably of less interest than the forms of (direct or indirect) appropriation of their land and the forms of their insertion or exclusion as producers in global commodity chains. This raises the question whether 'agrofuels capitalism' is in any way essentially different from other forms of capitalist agrarian monocrop production, and in turn whether the transitions involved require new tools of analysis.[3]

In this article we bypass the important geopolitical aspects of the rush to agrofuels, and focus on the agrarian implications of the new agrofuels-based meeting of corporate capital with rural populations. We start with some reflections on the paradox of the 'green' packaging of a form of corporate agribusiness expansion that probably exacerbates global environmental problems rather than solving them, and

[1]For example, the material on Sime Darby's corporate website http://plantation.simedarby.com/Biodiesel, or Borgman (2007) writing for John Deere.

[2]E.g. Thompson (2008)

[3]We should note that the arguments made in this paper do not apply to (potential) models of agrofuels production in which large-scale capital might not be involved at all: small-scale, environmentally friendly agrofuels production primarily for local use, embedded in sustainable mixed-farming systems (for example, those discussed in Oxfam 2008, 34–5). This is a separate, and important, topic for research.

the role of the persistent agrarian questions confronting many third world states in their ready acceptance of agrofuels expansion. We then explore the political economy of non-food, monocrop agrarian commodities, moving finally to two more specific aspects of the corporate penetration of agricultural and rural spaces, the ways in which land is acquired and converted to agrofuels schemes, and the conditions of labour in agrofuels production.

Power and profit painted green?[4] Paradoxes of current agro-fuels expansion

The basic idea behind agrofuels is very simple. Plants capture the energy of the sun and produce substances – sugars, starches, oils, cellulose – that can be harvested and converted into sources of energy for us to use. The conversion of plant materials to fuel is supposed to be more ecologically sound because 'in contrast to oil and gasoline that pump new carbon dioxide into the atmosphere when burned – when agrofuel energy is used the carbon dioxide that returns to the atmosphere is simply that which had recently been removed by plants' (Magdoff 2008, 35).

However, recent research suggests that (first-generation) agrofuels actually have greater aggregate environmental costs than fossil fuels (Scharlemann and Laurance 2008, Fargione *et al.* 2008) and yield less energy than they consume in production (Shattuck 2009, 93). 'Most liquid agrofuel production, distribution and use leads to as much and sometimes more greenhouse gas emissions than the use of fossil fuel, when both the direct and indirect consequences are taken into account' (Eide 2008, 4). Many authors therefore are now claiming that 'Far from helping to reduce global warming, [the frenzied rush into agrofuels] is leading to a big increase in global carbon emissions' (Ernsting 2007, 25).

First-generation agrofuel feedstocks are highly inefficient sources of fuel energy, requiring huge expanses of land to make any significant contribution to global energy supply. As an FAO study claims, 'agrofuel production cannot in any significant degree improve the energy security of developed countries – to do so would require so vast allocation of land that it would become impossible' (Eide 2008, 4–5). It is also argued, with some justification, that first-generation agrofuels are simply (yet) another way of passing the environmental costs of the excessive energy consumption of rich countries (and of elites in all countries) on to lower-income countries, and to the poor.

> The current policy on agrofuel is simply replacing one problem with another. It's passing the middle class burden onto the poor. The fuel needs of the middle class with their consumerism – and rising demand for energy – is going to be met by further marginalising the poor people. (Jagdeesh Rao, in *New Agriculturist* 2008)

The nightmare scenario, then, is one in which increasing global energy demand fuels the corporate thirst for land on which to grow these land-intensive crops, until all remaining forests and other cultivable spaces are taken up with monocrop plantations and/or contracted smallholder monocrop farms – mile after mile of rows of oil palms or *Jatropha* bushes, with nothing else growing or living there except impoverished plantation workers or contract farmers, and millions of rats. And all this in service of the project of maintaining current excessive patterns of energy consumption, rather than dealing with the real imperative of learning to use less

[4]This phrase is borrowed from Annie Shattuck (2009, 94).

energy from whatever source. As Magdoff (2008, 49) observes, 'in the long run more profound changes are needed in all aspects of human life'. The best way of saving energy around the world in terms of climate change is simply to use less of it (Martin Wolfe, in *New Agriculturist* 2008) by shifting to socially sustainable patterns of non-growth or de-growth (Martinez-Alier 2009).

Some authors argue that first-generation feedstocks (such as oil palm, sugarcane, maize and *Jatropha*) are so inefficient that they will be replaced by other technologies within a decade or two. 'Despite the heavy investment, the biofuel industry does not see palm oil as more than a transitional fuel source, which should be replaced by more efficient cellulose ethanol within 15 years' (Ernsting 2007, 30). If this indeed happens, current large-scale feedstock ventures then have something in common with the footloose, low-wage manufacturing industries which moved in the space of a few decades, in the search for lower wages and other costs, from Japan to Taiwan and South Korea and from there, as wages rose, to countries like Thailand, the Philippines, Indonesia and Vietnam and finally to China. When contexts and conditions change, capital abandons its less profitable ventures and moves on, regardless of what problems are left behind.

Agrofuels expansion is thus full of paradoxes. Agrofuels feedstock production, at least in its first-generation form, is accelerating rather than slowing down global warming. Even when expanded to cover all available land on the globe it would make only a small contribution to global energy needs at current levels of consumption. Moreover, if indeed there are going to be major shifts from first- to second- and third-generation technologies in the next two decades, many countries will be saddled with huge tracts of surplus oil palm and *Jatropha* after a few years of production, trees which are difficult and costly to destroy and which leave the land in a poor state for a return to sustainable mixed-crop cultivation or reforestation.

If the agrofuels boom embodies all these problems and does not contribute significantly to the solution of global environmental problems, why is it happening at all? To understand this paradox requires that we consider both the global and the national and local forces behind the rush to agrofuels. Agrofuel expansion currently is not driven by environmental concerns or the needs of local populations, but by the need for developed country governments to find a 'quick fix' to their energy and environmental security needs,[5] the attempts of developing country governments to find new ways to revive rural and agrarian development, and the search of corporate capital for (relatively) short-term profit. In the logics of geopolitics of security and capitalist accumulation, the problems we have mentioned are simply not problems.

Agrarian questions and state responses in the global south

> With new consumer countries willing to accept products without sustainability guarantees, governments unable or unwilling to enforce environmental regulations, and corporate interests becoming further entrenched, agrofuels seem poised to lead to even more degradation of vulnerable ecosystems in some of the world's poorest places. (Dauvergne and Neville 2009, 1100)

In considering the possibilities of socially and environmentally benign arrangements linking local populations and agrofuels capitalism, the basic question is whether

[5]As mentioned before the geopolitics of agrofuel production requires a separate analysis and is not discussed here.

efforts to promote 'corporate social responsibility', in the form of bodies like the Round Table on Sustainable Oil Palm, are realistic. Can we expect capitalist corporations to act on a basis of 'social responsibility'? Can regulatory governance, backed by pressure from civil society, persuade (transnational) corporate capital that promoting the reduction of poverty and inequality and promoting environmental sustainability are consistent with the pursuit of profit and corporate legitimacy (O'Laughlin 2008, 949)?

To answer this question it is necessary to analyse how and why developing country governments, which would need to play a major role in directing corporations towards more socially and environmentally responsible behaviour, have been taking a pro-agrofuels stance.

Smallholder agriculture has been going through a major crisis in the last decade all over the developing world, and governments have been unable or unwilling to provide the necessary resources to revitalise it. The major share of persistent world poverty is still based in rural areas. Whether it is the impact of neoliberal trade regimes on markets for smallholder crops, farmer suicides in parts of India, stagnant productivity in African agriculture or the increasing shift of 'de-agrarianising' peasant households to non-farm activities, the indications of this crisis are manifold and not hard to identify. The standardised policy package prescribed for the global South since the 1980s, reposing 'bottomless faith in the market', has resulted in costly failures and stagnant land and labour productivities (Rao 2009, 1279–80). The response to this crisis on the part of national governments has been piecemeal at best and non-existent in many cases. For the last decade or so, developing country states have been withdrawing more and more from their role of supporting small farmers, and rural development generally. Subsidies have sharply declined; public investments in technology dissemination, irrigation and other production inputs have not kept up with the needs of smallholder production. These, combined with the long-term decline in real commodity prices, have compounded the crisis in agriculture and have increasingly rendered smallholder farming unviable.

The prognoses of multilateral organisations like the World Bank are not encouraging. According to the 2008 World Development Report on agriculture, the more 'enterprising' peasant farmers are expected to upgrade themselves technologically to be able to integrate into niche markets of high value production through the fast developing global agri-supply chains. Those who can't make it to this high end of the market will have to find a way out of agriculture to the rural non-farm sector or migrate to the urban sector (see World Bank 2008). Other recent reports from global agencies may arrive at different policy conclusions, but share the view that agriculture and the rural sector are in crisis (Gulay 2008, Rao 2009, IAASTD 2009). The claim that bio-fuels have the potential to revive peasant agriculture and stimulate rural development, which has been made time and again in popular as well as academic writings (Diouf 2007, Peskett *et al*. 2007, Clancy 2008) should be examined against this backdrop of persistent agrarian underdevelopment (or uneven development).

Given the persistent government neglect of agricultural and rural development imperatives, it is not surprising to see governments welcoming the embrace of foreign and, in some cases, domestic corporate capital offering to make large-scale investments in agro-fuels production, as well as the infrastructure provision that goes with it, in exchange for secure and long-term access to large tracts of land.

Some have argued that the production conditions for agrofuels feedstock, which is both labour and land intensive, imply a comparative advantage for the developing countries that are in general land and labour abundant (Diouf 2007); agro-fuels yields of tropical crops per hectare of land are much higher than those of temperate crops (Clancy 2008). While it is true that most developing economies have ample supply of labour to be absorbed in the face of increased demand, land is hardly an abundant resource in most places; as we will discuss in more detail below, even in regions where land is often taken as a non-scarce resource, the situation is volatile, with land-related conflicts often erupting in response to the growing demand for agricultural and grazing land from large scale producers (Cotula *et al.* 2008). The advantage in terms of agro-climatic conditions that many developing counties may enjoy for agrofuel production may also be limited to the first-generation agrofuels only. The second-generation agrofuels are more technology intensive (Clancy 2008) and therefore the developed economies, especially the European Union, may continue to dominate their production for some time to come before the technology is transferred to the South. Even in the case of first-generation fuels, a select few countries like the USA and Brazil, which has a long history of producing ethanol, for example, would be more favourably placed in the supply chain due to their 'first mover's advantage'. Altogether, the factors detailed above along with discretionary trade policies may well lead to a highly oligopolistic global production landscape with a few leading players.

The millions of citizens in these countries who are still dependent on agriculture and a key element in the electorate are another factor promoting the national embrace of corporate investment as a cure-all for the problems that plague agrarian and rural development. Although the linkages between agro-fuels expansion and agrarian revival in the South are tenuous at best, it is not difficult to see why many Southern governments have jumped on the bandwagon of agro-fuels in the hope that they will make the crisis in agriculture – their unresolved agrarian questions – go away. From this point of view, however, it is not agro-fuels as such but any large-scale external investment in land-based production that governments find attractive, and this is indeed what is happening.

Political economy of non-food agricultural commodities

As Pingali *et al.* (2008) remind us, there is nothing new about the use of agriculture for production of non-food crops, in both small-scale and corporate agriculture. Cotton, flax, hemp and many other kinds of fibres, rubber, and wood for timber and fuel are only a few examples of crops that have been historically grown and traded in large quantities. The list becomes even longer if we include crops destined for human consumption but not as 'food' (lacking nutritional content), such as coffee, tobacco, opium, coca, cosmetics and many kinds of medicinal crops. The use of biological materials as fuels also has a long history. Wood, crop residues and animal dung have been used as fuels for centuries and still are used in many countries (Magdoff 2008, 34–5). Coconut, castor and *Jatropha curcas* oils were used for lamp oil in much of Southeast Asia during the Japanese occupation in the 1940s (Jhamtani and Dano 2007, 1). Growing non-food crops, or using agricultural land for fuel production, *in itself* does not necessarily threaten the food security of individuals or communities.

What then is new – if there is anything new – about agrofuel crops, in the sense that we may need new ways of framing problems, new concepts and approaches to

study them? Agrofuels are produced on a large industrial scale, and thus need to be approached with the same tools of critical analysis that agrarian studies has applied to historical episodes of rapid expansion of large-scale, industrialised, capitalist, monocrop agriculture, in both its plantation and outgrower/contract-farming forms. As argued by Dauvergne and Neville, at the global level,

> While agrofuels are integrating agricultural and energy industries and opening new roles for some countries in the global economy, the global political dynamics that they reveal are less novel. [. . .] The dynamics that we see with agrofuels appear likely to mimic the patterns that others have observed in the palm oil industry, with the emerging economies of the South integrating their economies with Northern countries and MNCs [multinational companies], in complex relationships that blur the lines between donors and recipients of aid, and producers and consumers of goods. (Dauvergne and Neville 2009, 1097–8)

The same argument can be extended from the global level to national, regional and local levels. The dynamics that we see there in agrofuels expansion – in the way that corporate capital interacts with local government, local elites and local cultivators and workers – may not be something new, but simply a repetition of well-known dynamics in the expansion of the world's major agrarian commodities, whether in the colonial period or more recently. The dynamics of this expansion, and the typical agrarian structures and labour regimes which emerge with it, are quite well known in the large body of literature on plantation agriculture, contract farming and global commodity chains, from Beckford's classic work on underdevelopment in plantation economies to numerous more recent works on contract farming and agro-export commodity chains appearing in the last three decades (Beckford 1972, Little and Watts 1994, Bernstein and Campling 2006a, 2006b).

One possibly significant aspect is the (potentially) enormous scale and speed of expansion of this branch of agriculture, which may be more rapid than previous agro-commodity booms in colonial or post-colonial history, with correspondingly greater impact:

> It has been pointed out that many of the negative consequences of feedstock production are similar to those arising from other forms of agricultural intensification and land concentration. There is some similarity, but the agrofuel production is likely to have a much more drastic impact than other forms of intensive agriculture. Economy of scale is a key to profitable agrofuel production, which implies that it will mostly be carried out on large-scale plantations. Smallholders are likely to have a minor space in this production, which requires an integrated industrial/agricultural organization of production, factory processing, transport and distribution. (Eide 2008, 17)

Another aspect possibly distinguishing agro-fuels from most forms of export production is their convenient green packaging, which perhaps makes corporate land acquisition, forest conversion and the introduction of contested biotechnologies more publicly acceptable: 'the sunny glow of alternative fuels helps lend biotech the public credibility it has lacked since its market debut' (Shattuck 2009, 89).

But none of these features, in our view, make agro-fuels capitalism essentially different from other forms of capitalist monocrop production or require agrarian scholars to develop new tools, concepts and frameworks to understand them. In our view they can be approached with the familiar tools of agrarian political economy.

It is critical therefore to analyse the social relations of production and reproduction and the structures of accumulation or (dis)accumulation that they generate. Also important is the change in agrarian structures and the accompanying processes of social differentiation and class formation that may result from massive agrofuel production. Henry Bernstein neatly summarises the research objectives of an agrarian political economy approach in terms of questions such as, 'who owns what? who does what? who gets what? what do they do with it?' (Bernstein 1992, 24). To these questions we should add, 'what do they do to each other?', to capture the relational and political side of property and labour regimes, labour processes and structures of accumulation. A 'modern' and flexible agrarian political economy also incorporates, in its exploration of these questions, dimensions that were relatively neglected in classical agrarian studies such as the dynamics of gender, ethnicity, livelihoods diversity, mobility, rural-urban links and environment.

Translating the concerns of the political economy approach elaborated before for our present context, we end up with three fundamental questions: where will the land for agrofuels feedstock production come from, how will production be organised, and for whose benefit? We will consider these questions in turn.

Agrofuels and the corporate penetration of rural spaces

> Production of feedstock for agrofuel is by its very nature best suited for large holdings, and it is to an extreme degree a monoculture production, with all its negative implications. It opens up [opportunities] for foreign and outside investors on an unprecedented scale. Traditional, small-scale agriculture in developing countries is not attractive for investors, but agrofuel is – as long as there is a guaranteed market. The implication of this is ominous. It may lead to a process of marginalisation or eviction of smallholders to an unprecedented degree. (Eide 2008, 17)

The last enclosure? Agrofuels and primitive accumulation

In many countries, the projected agrofuels expansion is planned to be based in the large areas of land which are not (yet) covered by the laws governing private property relations but have the status of 'public' or 'state' lands. These lands provide livelihoods to millions of cultivators and forest users under a wide variety of unofficial and semi-official or 'customary', individual or collective, tenurial relationships (e.g. Peluso 1992, Sato 2000). These institutions and relationships have been studied by scholars on legal pluralism (von Benda-Beckman 2001; see also Roquas 2002), environmental and forestry studies (Li 1996, Leach *et al.* 1999, Doornbos *et al.* 2000), natural resource management (e.g. Ostrom 2001), and gender studies (e.g. Agarwal 2003, Razavi 2003). Land reform literature, however, has typically ignored the need and possibilities for tenure reform in public lands, although such lands exist to greater or lesser extent in all countries (Christodoulou 1990, 20).

Recently, there has been an increasing interest in the status and future of public lands; it is widely accepted that what happens to these public lands will have profound impact on poverty and rural livelihoods. On the one hand, the fact that large expanses of land area are not (yet) held in private ownership title provides ground for optimism. On the other hand, the informal and insecure tenure under which many cultivators and forest users operate on such lands makes for vulnerability in contexts of globalisation and transnational or domestic corporate

land-grabbing, which in turn has prompted calls for greater security of tenure, both by peasant activists and external organisations.

In many countries where agrofuel projects are expanding, there is widespread concern about serious abuses of both customary and formal land rights and human rights, with many irregularities in the ways lands have been acquired and held by companies and in the ways smallholders are treated by companies.

> Several governments have taken steps to identify 'idle' land and to allocate it for commercial agrofuel production. [...] Yet growing evidence raises doubts about the concept of 'idle' land. In many cases, lands perceived to be 'idle', 'under-utilized', 'marginal' or 'abandoned' by government and large private operators provide a vital basis for the livelihoods of poor and vulnerable groups [...] The tenure status of such lands may also be complex, with governments asserting land ownership but exercising little control at local level, and local groups claiming resource rights based on local ('customary') tenure systems that may lack legally enforceable status. (Cotula *et al.* 2008, 22–23, citing Dufey *et al.* 2007)

There are many questions to ask about the ways land is acquired and labour is incorporated in the process of production. We need to ask (as a recent authoritative report on land acquisition for palm oil in Indonesia has done),

> Where is the land for this [crop] expansion to come from? Who are the present owners, users and occupiers of the land? Are their rights and interests being respected? What is the legal process by which lands for new plantings are acquired? Are these laws being observed? Do they offer adequate protection for communities? What are the implications of this massive expansion [...] for indigenous peoples and local communities? (Colchester *et al.* 2006, 18)

Bakari Nyari of the NGO RAINS describes how a Norwegian agrofuel company[6] took advantage of northern Ghana's traditional system of communal land ownership in an attempt to claim and deforest large tracts of land with the intention of creating 'the largest *Jatropha* plantation in the world'. While seen in exaggerated form in this case – the company and co-opted government officials persuaded an illiterate local chief to sign away 38,000 ha with his thumb print – the company's strategy will be familiar to those with experience of agrofuels expansion in other parts of the world. To obtain the temporary support of local communities, developers raised local hopes of jobs and income, which did not materialise. As forests were cleared, local people lost their income from forest products; local leaders (chiefs) were made to appear anti-development when they opposed the project; and national and district authorities were co-opted into supporting the project. RAINS led the opposition and (participatory) fact-finding, and was able to use Ghana's Environmental Assessment Regulations to get the forest destruction stopped, but not before 2,300 ha of forests had been stripped.

Local women were the most vocal in opposition. One woman, in a meeting with the company, looked at Mr. Finn Byberg (Agrofuel Africa Chairman) in the face and asked him,

> Look at all the sheanut trees you have cut down already and consider the fact that the nuts I collect in a year give me cloth for the year and also a little capital. I can invest my

[6]Agrofuel Africa, a subsidiary of Bio Fuel Norway (www.agrofuel.no).

> petty income in the form of a ram, and sometimes in a good year I can buy a cow. Now you have destroyed the trees and you are promising me something you do not want to commit yourself to. Where then do you want me to go? What do you want me to do? (Nyari 2008, 6)[7]

We may compare this with the similar experience of local cultivators with oil-palm expansion in West Kalimantan, an Indonesian province which plans to expand oil palm plantations by five million hectares in the coming years. Typically, indigenous cultivators with customary tenure are expected to surrender their customary holdings, of which about one-quarter will be returned to them with formal title and with many costs attached, while the rest is appropriated by the nucleus corporation for its own use. Martua Sirait describes how in this process indigenous peoples practising mixed-farming and gardening, and their land, are 'converted' for oil palm cultivation:

> The usual *Plasma* scheme in West Kalimantan requires every individual (man or woman) who joins the *Plasma* to provide 7.5 hectares of land. The company will receive a lease over 5.5 hectares as *Inti*, which will be converted from community management to state land. The remaining two hectares will be certified through individual land titling (SHM) in the name of individual owner, and will be charged by credit loan for the land clearing, planting materials, maintenance, road construction, and land certification. (Sirait 2009, 31)

The idea that taking away 7.5 ha of sustainably cultivated land from local cultivators and returning only 2.0 ha planted with a single low-value monocrop, with many costs attached, represents progress for indigenous cultivators is a remarkable construction to justify the process of expropriation. Schemes (or scams) of this type of this type appear to be the norm, and are often planned on a massive scale. The British firm Sun Agrofuels' acquisition of land for agrofuels production in Ethiopia, Tanzania and Madagascar includes deals made for whole groups of villages. In Tanzania, the villagers were not aware of any decision to hand their lands over to Sun Agrofuels; lands had been cleared and marked off without even consulting the village elders, and 'the land grabs and forced relocations are stirring ugly memories of colonialist exploitation' (Bassey 2009). Bassey also notes the case of the Korean MNC Daewoo Logistics' negotiation of a US$6 billion, 99-year lease on one million ha of land in Madagascar for the production of corn and palm oil, apparently 'the biggest land deal of its kind in the world'[8] (Bassey 2009, 3).

While some of these grandiose schemes may not materialise, they link the political economy of agrofuels to broader international concerns on the current acceleration of large-scale transnational (and in some countries) corporate land deals.[9] While journalistic accounts tend to focus on the involvement of states (like China, Saudi Arabia, or South Korea) in such deals (for example Mahr 2009, Rice 2009) and governments do facilitate such deals, 'the lead actors in today's global land grab … are not countries or governments but corporations', and it is private

[7]Unusually, Byberg expressed his regrets and a promise not to repeat the mistake.
[8]The deal is now reported to be cancelled after the change in government in early 2009 (BBC World Service News, 19 March 2009).
[9]GRAIN (2009, and other reports accessible at www.grain.org) provides useful compilations and updates about such land deals.

companies who are getting hold of the land, often without even paying rent (GRAIN 2009).

Agrofuels and labour regimes: horizontal and vertical integration and the quest for profit

Agrofuels feedstocks such as oil palm, sugarcane and *Jatropha* are typically land-intensive, low-value crops. Profits derived from such crops are usually made not in field production but from control of the value-added in the post-harvest conversion and production stages, as well as in the provision of inputs. For this reason, those studies that see rural development potentials in agrofuels tend also to temper their optimism with cautionary remarks questioning how much local communities are likely to benefit from agrofuels expansion:

> In common with other bulk commodities, the rural development opportunities of agrofuels will be realized through control over the value-added parts of the production chain and its economic multiplier effects. The potential for value to be created and retained in rural areas depends strongly on whether agrofuels are being developed for local and sub-regional markets with small-scale production, or for large-scale commercial production for national or global markets, and also on the pattern of ownership. (Dufey *et al.* 2007, 15)

> [The pattern of corporate interest] points to the possibility that still larger companies may enter the rural economy to put the squeeze on farm incomes. If so, the real profits are likely to go not to those who can produce large quantities of biomass feedstock, but to those with the proprietary technology that can ply this feedstock into fuels and products. (Worldwatch Institute 2007, 135)

We should remember that agrofuels expansion is 'cementing control over large areas of land of industrial groups that are amongst the most ruthless in the world in terms of environmental destruction, labour conditions and human rights abuses' (Ernsting 2007, 25). For this reason it is important for critical researchers, besides raising issues of land tenure, to ask further questions about the kinds of structures and labour regimes under which agrofuels production is organised. Under what conditions (whether smallholder farming or large plantations using wage labour) are the crops grown and processed? Who among the various actors involved benefits from the added value generated in field production and the various stages of processing? And what measures, if any, are in place to ensure that smallholder producers, or wage workers, benefit from their involvement?

This links to broader questions that have long been discussed in agrarian studies: why are large-scale plantations and areas where smallholder contract-farming is practised typically not zones of prosperity for ordinary people, but zones of poverty (Beckford 1972, Little and Watts 1994)? As Dufey *et al.*'s report for the Common Fund for Commodities has noted, based on various sources, there are grounds for serious concern about the quality of employment in agrofuel production, both for plantation wage-workers and contracted outgrowers:

> Problems include the history of poor working conditions in agricultural plantations, notably in the sugar cane and palm oil industries, a lack of agreed or enforceable working standards in many countries, and lack of labour representation. [. . .] there will be constant pressure on both large-scale operations and small-scale farmers to reduce

> labour costs, employing people at lower wages under less fair conditions. (Dufey *et al.* 2007, 15, citing Worldwatch Institute 2007 and Peskett *et al.* 2007)

Annie Shattuck, based on research in the Americas, provides a chilling vision of the potential for agrofuels expansion to function as a 'Trojan Horse' for the introduction of contested biotechnologies, in which smallholders will fall completely under the control of the giant corporations which monopolise the new technologies: 'agrofuels are the perfect Trojan Horse, promising not only whole new markets for biotech products, but the irreversible entrenchment of genetically modified crops throughout the world' (Shattuck 2009, 89). Both Monsanto and Syngenta, she notes, have recently come out with GM maize varieties specifically for processing into ethanol. Monsanto and Cargill recently launched a new corporation, Renessen, a joint venture (initial investment $450 million) which will be the sole provider of 'Mavera High-Value Corn', a GM dedicated energy crop 'stacked with foreign genetic material coding for increased oil content and production of the amino acid lysine, along with Monsanto's standard Bt pesticide and its Roundup ready gene' (Shattuck 2009, 92). Farmers will have to sell their product to a Renessen-owned processing plant to recoup the 'higher value' of the crop; Renessen sells the waste as high-priced cattle feed. Thus, 'Renessen has achieved for Monsanto and Cargill nearly perfect vertical integration. Renessen sets the price of seed, Monsanto sells the chemical inputs, Renessen sets the price at which to buy back the finished crop, Renessen sells the fuel, and farmers are left to absorb the risk' (Shattuck 2009, 93).

Some studies, while aware of these dangers, still see the possibility for agrofuels production to be organised in more beneficial ways:

> This structural transformation of landholdings and production may not be an absolutely necessary consequence of extensive agrofuel production. With the necessary political will and ability of governments to withstand this trend, it is not impossible that patterns of small-scale, profitable feedstock production for agrofuel can emerge among smallholders in developing countries ... [but while] smallholder production might emerge as an appendix to large plantations, it probably cannot be an alternative to it. (Eide 2008, 17)

Cotula *et al.* (2008, 52), considering the implications of the agrofuels boom for poor people's access to land, explore the experience of various alternative business models in which small-scale and large-scale enterprises co-exist, in particular contract farming: 'In general, contract farming schemes offer price stability and technical support to farmers, but have the disadvantage of locking both sides into arrangements that may be perceived as less fair and advantageous as market conditions progress over time'.

Joint ventures are a variety of contract farming that potentially strengthens smallholder's tenure rights and bargaining position. Cotula *et al.* provide examples of Joint Namibia's Kavango Agrofuel Project, in which 40 percent of the company shares are owned by the Kanango Jatropha Farmers' Association, and of three-way joint ventures in Sarawak in which companies, government and customary landowners all share a stake. In such schemes, while the financial returns may be good, local landowners express concerns about the lack of real choice in whether to participate, the relatively little say they have in negotiating the terms of agreement, and uncertainty over land access once the standard

60-year agreement comes to an end (Cotula *et al*. 2008, 53, citing Vermeulen and Goad 2006).

Conclusions

We have argued in this paper that classic concepts and questions embedded in a political economy approach are sufficient to analyse the phenomenon of agrofuel production in today's world. This approach instructs us not to fall into the trap of blaming a crop (or the uses to which a crop is put); it all depends on the manner in which these crops are grown, under which forms of ownership and labour regimes and in what kinds of commodity chains. Thus we should go beyond a technical analysis of the transformation of agro-products into fuels and other commodities to identify and analyse the actors involved and the added value in different points in the agrofuels commodity chain, the power positions and relations of the various actors, and the role of external agencies, including government, in their support or control. While we feel the developments related to fast expanding agrofuels production do not need a new analytical framework, the studies we have cited have demonstrated that it can have (and is already having) a devastating impact on local cultures, livelihoods and ecologies, which may be unprecedented in contemporary capitalism.

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