

(De)Constructing a “Sustainable” “Biofuel”

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This synthesis highlights the analytical perspective and main points to be made.

The paper begins with an account of recent agrofuels trends over recent years, during which it has increasingly been recognized that these technologies, once thought of as having the potential to be a saving grace for our global mobility and energy consumption, present a truly complex web not only of possible benefits but also threats to the environment and human livelihoods. The paper illustrates that although many of these issues had been raised decades before the current agrofuels boom had begun (see Göricke and Reimann [1982] who raised the food vs. fuel issue in the Brazilian context, and Berton [2010], who raised questions about *every* issue being debated on agrofuels today, in 1982), by the time these concerns had been widely recognized politically, in large part due to a suddenly enraged group of civil society actors, billions of dollars of public and private resources had already been invested in their production in the very countries whose constituencies were most concerned about these issues.

The paper then moves on to outline aspects of neo-Gramscian political economic theory useful in illustrating the genesis understandings of sustainability in the agrofuels case over time and space. The neo-Gramscian theory is premised upon an explanation of how a group or idea might gain and retain power without forcefully seizing it, and is especially helpful in understanding how powerful

ideas and actors strategically interact with resistance over time (van der Pijl 2009).

In particular, the neo-Gramscian perspective offers a theoretical framework broad enough to encompass a wide range of actors and structures, i.e. subjects and objects. Its ontological and epistemological frameworks are subjective and contingent, avoiding both the bias towards the individual of subject dominated perspectives which give away all structural importance, and the over-determinism of object-based theories that bind actors' actions tightly within a set of controlling systems. It attempts to overcome this dichotomy by addressing individual agency as significant, but restricted by the historically determined conditions within which it is being exercised (Bieler and Morton 2001; van der Pijl 2009). In this sense, “truth” and “knowledge” are presented as discursive functions of a specific subject's position in space and time, and must be understood as contingent upon changes in any of these variables. Specifically the following key aspects of neo-Gramscian analysis are employed:

- its unique understanding of hegemony as a combination of coercion and consent used to advance a political and class project;
- the dual character of civil society (the “extended state”) and intellectuals as at once supportive components of hegemony and sources of dissent;
- the resultant understanding that any hegemony is not only contingent upon the particular constellation of material and ideational (discursive) forces working for and against its maintenance, but upon chance as well;

The paper then moves on to briefly introduce the history of agrofuels production and use in the three case studies of Brazil, the EU, and USA.

Although used for more than one hundred years in varying capacities as fuel additives or fuel in its own right, the modern market for plant based ethanol and diesel was essentially created as a response to the oil shocks of the late 20th century beginning with 1973 oil crisis, which brought fuel ethanol to the forefront of energy politics of the Americas (Keeney 2009, Leopold and Aguilar 2009). The paper moves on to introduce the large private interests involved in

this government controlled market and introduce its status today as a “national champion” industry which although regulated by the government, is very much in control of how and when this regulation takes place.

As alternatives were sought to dependency on OPEC countries for energy needs, the Brazilian government began its National Alcohol Program (Programa Nacional do Álcool) popularly called Pró-Álcool in 1975, with sugarcane ethanol being developed as a key domestic source of fuel. The program provided the initial drivers for the development of the industry: guaranteed purchases from the government owned oil concern Petrobras, attractive loans for agro-industrial ethanol producers and processors, and state set, fixed gasoline and, much lower, ethanol prices (Lovins, 2005). Whereas in Brazil, the main agent forming the energy security storyline within agrofuels discourse was the state, in the U.S., this was primarily formed by a single economic actor, agricultural giant Archer Daniels Midland (ADM), which began heavily lobbying the U.S. government with the same argument that corn ethanol should be developed as a fuel source to safeguard against future shocks (Berton et al 2010). As a result, the Energy Tax Act of 1978 set the stage for decades of state assistance to the industry which continues to today (Keeney 2009). Although focus remains on ADM, the discussion moves to wider

Development of European agrofuels began much later, with national and regional policies first appearing in earnest in the mid to late 1990s with European motives differing from of the U.S. and Brazil. France, Germany, Spain and Sweden created successful agrofuel support programs mostly through long-term tax incentives during this time, aiming marginally on the one side at improving rural economic situations, but primarily at boosting the environmental friendliness of their fuel consumption (van Thuijl, E. and Deurwaarder, E.P. 2006). Other countries, such as The Netherlands and the U.K. remained more reluctant and, citing economic and environmental concerns about agrofuels, did not begin promoting them in earnest until 2002 and 2003 respectively; and even then, both countries were and have remained extremely mindful of the type of agrofuels they promote (ibid).

In 2000, an EU level Green Paper ‘Towards a European strategy for the security of energy supply’ began a more comprehensive regional policy, culminating in the EU ‘Directive on the promotion of the use of biofuels or other renewable fuels for transport’ in 2003, mandating a 2% agrofuels target for 2005 and a 5% target for 2010 as part of Europe’s efforts to meet its Kyoto protocol commitments (EC 2003), which served as a major impetus for countries lagging behind to begin promoting agrofuel production and consumption domestically. It follows then, with the alternative green (but nonetheless state-led) storyline framing the discourse in Europe, that support of the industry would be based on fundamentally different criteria than agrofuel production in the Americas, which at the time was essentially only concerned with quantity, whereas Europe, at the beginning, was officially looking more at quality.

After these brief introductions the paper moves into the heart of the paper in the form of a deeper, more neo-Gramscian political economic analysis of the food vs. fuel crisis of 2007-2008 as the primary catalyst the global debate over the sustainability of agrofuels.

Until the mid-2000s, almost zero public debate took place regarding agrofuels. Academic and international organizations published some mildly critical papers (IEA and OECD 2004), but there was generally a lack of critical discussion of biofuels until early 2006. Just after environmental and social questions began being asked by civil society in reaction to increasing political interest in increasing production on both sides of the Atlantic (Biofuelwatch 2007), the beginnings of what would become the food vs. fuel crisis struck. The commodity price spike of 2007-08 temporarily saw agrofuels as the (assumed) primary driver of the more than 40% increase in the FAO’s price index in 2007 as well as the doubling of global rice prices in five months in 2008 (Baffes and Hanjotis 2010), the combination of which directly caused food riots in over 30 nations and is attributed with toppling Haitian Prime Minister Jacques-Édouard Alexis in April of 2008 (AFP 2008). As a result of these events, agrofuels related industries and the governments which had been heavily supporting them for decades were

put on the defensive. This situation proved to be an “exceptional moment” (Hay 2001) in agrofuels history, in which discursive control of the growing contradictions and crises presented by agrofuels left the hands of the hegemonic historic bloc of state and industrial interests which had previously kept dissent and critique in check, and was put into the hands of a critical group of primarily civil society actors for more open, public debate. This point is used to discuss the highly contingent nature of hegemony, and the role of the extended state and intellectuals in building resistance and attempting to develop a new type of historic bloc based on a different set of ideals.

In this vein, the paper moves on to discuss how this new space for critical debate resulted in a deluge of research papers from academic journals, NGOs, industry, governments, international organizations proceeded to create an “excess of objectivity” (Sarewitz 2004, p389) in which actors all sides of the agrofuels debate were increasingly able to point towards “facts” supporting their contrasting normative perspectives regarding agrofuel sustainability. Industry and governmental reports from producing nations are used to illustrate their efforts to convince critics through a combination of science, increased research funding and promises of policy reevaluations, that agrofuels were not the true culprit and that safeguards would be introduced to prevent the possibility of negative effects of agrofuels production in the future. Civil society, academics and non-agrofuel producing governments disagreed that these hopes were justifiable, finding significant issues related to continued agrofuels production, specifically that:

- initial estimates that agrofuels caused up to 70% of commodity price increases seen in 2007-08 (Mitchell 2008);
- evidence showed the true energy balance of many agrofuels is actually negative (The Royal Society 2008);
- in many countries agrofuels were not economically viable without government assistance (Doornbosche and Steenblik 2007, CBO 2009);
- heavy use of genetically modified plants was planned in order to improve economic viability of agrofuels (Shattuck 2009); and finally

- agrofuels directly and indirectly lead to environmental destruction due to land-use changes (Fargione 2008, Searchinger et al. 2008).

Exemplifying the “excess of objectivity” argument is a 2010 report from the government of the United Kingdom compiling twelve scientific estimations of the role of agrofuels in commodity price increases. The results of these reports vary so widely that no real conclusions can be drawn: while six of the studies examined either refused to quantify the impact due to insufficient knowledge or methodologies, others respectively found corn based agrofuels’ impact to have increased prices by: 70%; 12%; between 28-47%; and 20% (DEFRA 2010 Annex 5, pp32-33). Essentially, one of the only certainties about agrofuels’ contribution to the food crises of 2007-08, has been found to be significant uncertainty remains.

The paper then begins an analysis and discussion of how *little* the food vs. fuel debate has had on biofuels policies, where agro-industrial actors have held a decades long advantage over their critics through long-standing political capture through campaign contributions and the historical “revolving door” of political and agro-industrial actors and interests. On the private-governance front however, things seem to be developing differently given the fact these are institutions which began their development in reaction to the food vs. fuel crisis and do not have the institutional legacies of structural and institutional power present in national capitols. The neo-Gramscian ideas of hegemonic concession and co-optation frame a discussion of these issues in both the public and private governance spheres.

On the sidelining of social issues in public policy arenas, major tactics seen in all case studies was to shift the official rationale for promoting agrofuel production away from improving environmental footprints, and towards domestic economic growth and energy security arguments, although this has been seen more in Brazil and the US than in the EU. That being said, although national control of agrofuel support remains just that, national, the most prominent international regulatory initiative to regulate agrofuel production and consumption, is the

voluntary Roundtable on Sustainable Biofuels (RSB); a private-governance initiative that is an amalgamation of national and multinational companies such as the Brazilian Sugarcane Industry, BP, Bunge, the Federation of Swiss Oil Companies, Petrobras, and Shell Oil, and large civil society organizations such as the International Union for the Conservation of Nature, the Natural Resources Defense Council, and the World Wildlife Fund. The goal of the RSB is to create a third party certification system similar to those in other industries such as the Forest Stewardship Council (FSC) or Fair Trade coffee. Importantly, its set of draft standards, Version Zero, were drafted with heavy stakeholder involvement, are very comprehensive, and address many social issues including human and labor rights, food security and rural development. That being said, most RSB standards remain weaker than their FSC forbearers, others seem more or less unfeasible, and the lack of methods for delivery (and therefore of realization) of these goals represents a rather large stumbling block for the time being. A final issue that has received heightened attention in recent months, that of the indirect effects of the industry on other sectors and areas of production and consumption, is one that RSB does not address and indeed it is not yet understood how a system like RSB's could deal with these complex issues as of yet since the *indirect* nature of these issues generally preclude certification schemes from associating these types of changes to any particular producer or other actor (Shattuck 2009).

This disclaimer notwithstanding, despite vociferous industry lobbying and even letters from the scientific community to prevent its inclusion,¹ beginning in 2011, California's new Low Carbon Fuel Standard mandates the use of indirect land use change calculations in its requirement for fuel producers to lower the carbon intensity of their products by 10 percent by 2020. The controversy around this issue has not yet come to a close and it will be interesting to see how it plays out discursively in combination with Obama's announced, but not yet mapped out, green agenda since California's move globally represents the first effort to lower the carbon content of the fuels it consumes. Both the Environmental Protection Agency in the US and DG TREN in the EU are

¹ http://www.arb.ca.gov/lists/lcfs-general-ws/28-phd_lcfs_mar09.pdf

investigating methodologies for measuring indirect land use change as well, but both are still in the information gathering phase and it is not planned to integrate these calculations into green house gas balance estimates before the end of 2010 in either case.

Coming back to certification, at the moment, support for certification initiatives is far from universal, with governments largely supportive of sustainability certification efforts as are most large industrial players- they want to be seen as green and to have a standard set of rules by which they are to do business globally. Civil society however is again divided, with only some NGOs supporting sustainability criteria and certification in principle, such as those involved in the RSB, whereas more critical groups are highly critical of these efforts, such as GRAIN and Friends of the Earth who have called for moratoriums on agrofuels production.² Shattuck (2009) summarizing both sides of the primary arguments, stating:

Looking at existing models such as the FSC... suggests that sustainability initiatives for biofuels are highly unlikely to stop the destruction wrought by the agrofuels industry... In the best case scenario, the RSB will create islands of sustainability in the midst of a largely destructive sea... (but) Regardless, the RSB will provide a veneer of sustainability to an industry that desperately needs it. (p130)

In addition to concerns over regulating the agrofuels we have already today, most NGOs feel just as critically about the supposed benefits of those a few years off: the second generation agrofuels. Second generation agrofuels have long been touted as the saving grace of the agrofuels industry, just as the agrofuel industry was once touted as the saving grace of modern Western mobility. Promoters, including the governments of EU member states, the U.S. and Brazil, the industry itself, and a large academic following, claim that second generation fuels will, as listed by Smolker and Tokar (2009, p102):

² . www.natureandpoverty.net has created a database of NGO position papers, policy notes and advocacy letters on agrofuels that lists over 56 documents, including updated positions from some NGOs as their new information forced them to update their views.

- 1) be available very soon, and
- 2) not compete with food production because they will
- 3) utilize abundantly available, inedible plant material, including wastes and residues and energy crops that can be
- 4) grown on widely available "marginal" and "idle" lands,
- 5) providing opportunities for the poor, and
- 6) achieve improved energy and greenhouse gas balances.

Detractors of second generation agrofuels have used very similar storylines to those used against present technologies because they hold that these new fuels will present many of the same problems as those we are dealing with today. They will require new land unless we produce less of something else- leading to either higher commodity prices in other sectors or the clearing of land to make room for new agrofuel crops.³ The technology required to produce them is complicated and expensive, precluding smallholders, and most developing countries in general, from realistically seeing much benefit from this new technology. Above all however, is the claim that, in the case of the U.S., it is illogical to be currently placing 75% of renewable energy funding in such controversial technologies while other safer, more widely accepted technologies such as wind, solar, geo-thermal, etc. receive a mere pittance (Shattuck 2009).

Due to the enormous amounts of longstanding public and private funding already dedicated to the development of these technologies however, and together with the backing of dominant discourse coalitions, the concerns voiced by civil society have done little to stymie the enthusiasm of politicians and scientists thus far. Indeed, support for this next technocratic solution has been growing, with start-up companies over the U.S. and Europe vying to be the first to come up with a marketable method and feedstock for the next "green" fuel.

The paper begins to conclude by discussing the consequential emptiness of the normally globally applied "sustainability" term, emphasizing the importance

³ As the Gaia Foundation (2008, p3) explains, "These marginal lands do not exist on the scale people think. In Africa, most of the lands in question are actively managed by pastoralists, hunter-gatherers and sometimes dryland farmers."

of economic and energy security used to marginalize sustainability arguments in some context. Indeed, it appears that as valid as environmental and social concerns over agrofuels may have been and remain to be, they alone have not yet been enough to convince governments to rescind the significant financial and political support that had been bestowed upon the agrofuels industry to date. This is discussed in relation to the historic bloc of agro-industrial interests which have continued to hold hegemonic dominance over agrofuels production and consumption despite the significant discursive concessions on the environmental front which have been given up in recent years.

That being said, building upon the socio-environmental momentum of climate change, and despite the continued enthusiasm seen for the development of second generation agrofuels, the social aspect of the agrofuels debate has created an air of caution regarding apparent quick fixes to environmental problems, especially when said fix lies not with a microchip or solar cell, but with part of the natural environment. One hurdle that to date has not been adequately dealt with however, is the level of international public and private cooperation required to begin an earnest attempt at certifying environmentally sustainable production and consumption of these fuels, which is of different type than the cooperation required for environmental issues of the past, such as illegal logging or acid rain. Cooperation must be socio-political, and will be challenging economically as an entire supply chain will have to be monitored: it will not be enough to simply establish at the plantation that a crop was grown with minimal effects on the local environment, the certification of agrofuels will have to take place, repeatedly over the entire production process, as carbon and energy balances can be shifted into the negative through shoddy processing or inefficient distribution as well (Shattuck 2009).

Despite the lack of major changes seen in the big producer and consumer countries to date, the food vs. fuel debate did indeed create a discursive Pandora's box for agrofuels politics in many ways. Although environmental questions and critiques had actually arisen first, they had not alone built up enough momentum to move the fortress of confidence and support already surrounding this technology. The introduction of the food vs. fuel however,

required actors across the board (political, industrial, civil society) to suddenly take positions and make statements on this issue. It was nearly impossible to do this however, without also addressing other criticisms of these fuels as well, such as land use change, carbon and energy balances, biodiversity loss, water consumption, etc. Indeed, the food vs. fuel debate served an important role by proving the political space to open a critical dialogue amongst politicians, and between politicians and other actors, for the reassessment of the agrofuels industry that did previously exist.

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