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Global Governance:
Experimentalism,
Markets, and Biofuel
Regulation**

The University of Warwick

James Brassett, Ben
Richardson, William Smith



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Abstract

The paper provides an experimentalist critique of EU attempts to regulate biofuels according to sustainability criteria. The framework of experimentalist governance embodies a certain type of normative value, which we associate with deliberative polyarchy, stakeholder participation, and democratic destabilization. Taken together these dimensions enable experimentalism to embody the values of epistemic-cognitive problem-solving, inclusion, pressure for public justification, and accountability (e.g. through peer review). Biofuels are an interesting test case of experimentalism because regulation has emerged in precisely the unpredictable, multi-actor fashion that might favour pluralist social learning. Normative uncertainty – and therefore the potential for democratic debate – appears to be a core feature of biofuels regulation whereby the goal of sustainability is inferred by their status as renewable, low-carbon energy. However, through our case study, we suggest that the governance of biofuels has suffered from a pronounced disagreement over the attractiveness of biofuels, a lack of effective central sanction (even within the more ambitious EU-oriented fora), and highly variegated forms of peer review. Taken together, we argue that enthusiasm for the democratization of economic and environmental activity within the ambit of biofuel regulation should be tempered by the fact that this regulation was itself established as part of a market-making project. In developing this experimentalist critique of biofuel regulation, however, we also seek to envisage some pragmatic ways forward for governance. Indeed, we identify certain *democratic pathways*, including the critical reform of existing practices to better locate and defend marginal voices; to ‘join up’ experimentalist governance across issue areas; and to, more generally, respond to the complex problem of achieving the normative goal of sustainability at the global level. In this sense, we emphasise the critical potential of experimentalism to envisage new experiments in sustainability.

Keywords: Biofuels; EU Governance; Experimentalism; Roundtables; Civil Society

...establishing new forms of accountability at the global level will – because of the way that global administration connects with national rulemaking – reshape national politics, perhaps helping to reinvigorate democracy thereby opening areas of domestic rulemaking to a wider range of information, experience, and argument...[...]...those same accountability-enhancing measures have the potential to democratize emergent global administration itself, not by creating institutions of electoral accountability for a global government, but, in the first instance, by forming the people and public sphere that lie at the heart of democracy (Cohen and Sabel 2005: 766).

Introduction

Experimentalist governance has made several inroads into enhancing our understanding of the practical dynamics of bureaucratic expansion, change and contest under conditions of globalisation. In particular, experimentalists have shown how apparently apolitical and/or technocratic governance forms can be understood and engaged via a political logic that takes normative uncertainty, peer group surveillance, and regulatory revision as a productive arena for ‘democratic destabilisation’. This preference for democratisation forms an important component in the realisation of the critical dimensions of experimentalism. By this we mean to suggest that experimentalism holds potential for reworking global governance, in particular by questioning how experimental problem-solving practices within a critical public sphere might encourage plural and democratic transnational regulatory forms to emerge. Our aim is not to read experimentalism into existing governance arrangements, but to *use* experimentalist techniques to invigorate democracy within them.

Section 1 defines experimentalism and identifies a range of critical questions that are important to address when thinking about its deployment on a global scale. Drawing from previous work we suggest that experimentalist governance is typified by a concern with deliberative polyarchy, stakeholder inclusion, and democratic destabilization (Brassett et al. 2012). For us, an important normative concern is to question how, if at all, *democratic pathways* can be identified that lead towards more robust forms of

experimentalist governance. The challenge of this task can be illustrated in relation to our case study on bio-fuel regulation. The rapid growth of dispersed sites of biofuel production, typically driven by state-sponsored capitalists interested in private accumulation rather than any wider 'global public' goal means that the democratic dimension of experimentalism faces an uphill struggle. Of course, experimentalism is not blind to such challenges. Indeed, such dilemmas are often seen as important precursors to the imagination of new forms of governance:

Experimentalist governance [...] *depends on strategic uncertainty*, a situation in which actors do not know their precise goals or how best to achieve them *ex ante* but must discover both in the course of problem-solving, as well as on a multi-polar distribution of power, where no single actor can enforce a unilateral solution. Thus under conditions of polyarchy and disagreement among the parties, where standard international relations theory sees bleak prospects for creating a unified, effective multilateral regime, experimentalism discerns instead the possibility of building a new type of transnational regime with a different governance architecture (Overdevest and Zeitlin, 2014: 66. Emphasis added).

Section 2 therefore delves deeper into these critical questions via a case study of the transnational regulation of biofuels. Biofuels are an interesting test case of experimentalism because regulation has emerged in precisely the unpredictable, 'experimental' fashion that might favour pluralist learning.

Normative uncertainty appears to be a core feature of biofuels regulation whereby the (incredibly open) goal of sustainability is inferred by their status as renewable, low-carbon energy. However, to date, the architecture of biofuels regulation has suffered from pronounced disagreement over the normative attractiveness of biofuels, a lack of effective central sanction (even within the more ambitious EU-oriented fora), and highly variegated forms of peer review. Furthermore, the very contestation and corrigibility of policy, particularly in the EU context, has been seen by some as an impediment to investment, slowing the shift away from oil dependency and high levels of greenhouse gas emissions (Harvey and Pilgrim 2013: 384).

Taken together, we argue that enthusiasm for the democratization of economic and environmental activity within the ambit of biofuel regulation should be tempered by the fact that this regulation was itself established as

part of a market-making project. Where democratic destabilization leads to market destabilization, threatening the ability of companies in this nascent capitalist sphere to turn a profit, the very rationale for governance attenuates. Put simply, you cannot regulate what does not exist. So, while there have been notable achievements in terms of civil society inclusion and stricter surveillance of transnational commodity chains, in line with experimentalist objectives, the capacity for forum shopping has combined with the structural power of capital to license biofuel industry actors to behave in ways which have stretched the goal of sustainability to breaking point.

In Section 3, we draw these points together in order to revisit the critical potential of experimentalism both to expose democratic fragilities and provide pragmatic reflections on global governance. Our argument is that, to date, the regulation of biofuels has gone hand in glove with the process of market making on a global scale. Often well-reasoned normative agendas for building sustainability goals of reduced carbon emissions have entailed (unintended) knock-on effects such as spikes in food prices, covert (and sometimes overt) practices of land-grabbing, and a generalised narrowing of policy objectives.

While there are important distinctions from the governance of fossil fuels to be had – including the absence of major sovereign rivalries, and, related to this, a higher degree of institutional innovation than in the oil-energy ‘regime complex’ (see Colgan *et al.* 2012) – we suggest that opportunities in the biofuels sector have been restricted by an ineffective locus of formal sanction and, more problematically, a clear set of normative ends. As well as making this experimentalist critique of biofuel regulation we also conclude by outlining some potential ways forward. Democratic pathways, we argue, might emphasise the critical reform of existing practices to better locate and defend marginal voices; to ‘join up’ experimentalist governance across issue areas; and to, more generally, respond to the complex problem of achieving the normative goal of sustainability at the global level. In this sense, we emphasise the critical potential of experimentalism to envisage new experiments in sustainability.

1. Experimentalist Governance: An Ongoing Engagement

Experimentalism has developed as a theoretical framework for analysing innovative forms of rule-making in national, transnational, and global contexts. The framework defends a complex governance architecture, which can be realised through a number of organisational forms (Cohen and Sabel 1997).

There are several elements of experimentalist governance, here we focus on three core tenets that best illustrate its normative value: deliberative polyarchy, stakeholder inclusion, and democratic destabilization. These properties are treated as emergent, but by no means fully realized, properties of a number of regulatory regimes in global contexts (Brassett et al 2012). This fact that extant regimes tend to not fully realise experimentalism opens up an important research agenda that underlines both the challenges that might frustrate experimentalism and the scope for critical engagement and reform. The concept of *democratic pathways* is proposed here as a framing device for pursuing this research agenda.

Deliberative polyarchy: For experimentalists, a key feature of modern governance is that rule-makers only have access to loosely specified goals, such that ‘actors have to learn what problems they are solving and what solutions they are seeking through the very process of problem solving’ (Cohen and Sabel 2006: 774). The idea of ‘deliberative polyarchy’ is therefore presented as a means of *discovering* collective goals and monitoring their realization (Cohen and Sabel 1997). It is ‘deliberative’ in the sense that ‘questions are decided by argument about the best ways to address problems, not simply exertions of power, expressions of interest, or bargaining from power positions on the basis of interests’ (Cohen and Sabel 2006: 779). It is a ‘polyarchy’ because of ‘its use of situated deliberation within decision-making units and deliberative comparisons across those units to enable them to engage in a mutually disciplined and responsive exploration of their particular variant of common problems’ (Cohen and Sabel 2006: 780).

The governance architecture recommended by deliberative polyarchy involves ‘central’ and ‘local’ units setting provisional goals and methods to achieve these goals. The local units are given a significant degree of discretion to pursue these goals, but should undergo an ongoing process of peer review, performance auditing, and comparison with agents pursuing similar goals. The goals and methods are then revised in the light of the

outcomes of this review process (Sabel and Zeitlin 2011: 1). The pooling of information between units facilitates a process of *social learning*.

Stakeholder inclusion: The participation of stakeholders contributes to processes of social learning through the sharing of relevant information and the weighing of competing arguments. In terms of the democratic dimensions of experimentalism, inclusion signals that participation is a possible and important component of governance. The participation of stakeholders with local interests contributes to anticipated end that decentralised units will take the lead in implementing policy goals.

According to Joshua Cohen and Charles Sabel 'direct participation helps because participants can be assumed to possess relevant information about the local contours of the problem and can relatively easily detect both deception by others and unintended consequences of past decisions' (Cohen and Sabel 1997: 326). The participation of stakeholders with specific and fragmented interests can also provide some protection against the danger that experimentalist regimes are hijacked by powerful actors. This strategy can only succeed if central and local units guarantee more-or-less equal opportunities for agenda setting and policy evaluation. Thus, the institutional design of experimentalism should aim for 'a multi-polar distribution of power [such] that no single actor can impose her own preferred solution without taking into account the views of others' (Sabel and Zeitlin 2011: 1). In part, this multi-polarity has a capacity to foster democratic destabilisation.

Democratic destabilization: The process of peer review establishes a contest between competing sources of technocratic authority that undercuts the threat of rule by policy elites. The establishment of new administrative units also has the democratizing effect of triggering inclusive processes of reason giving between and within affected publics (Cohen and Sabel 2006: 780). Importantly, this process can be driven by external actors who publicize or engage with emerging governance structures.

The long-term impacts of these destabilizing dynamics can be dramatic. Cohen and Sabel suggest that a progressive deepening of global administration across an expansive policy agenda – including trade, security, environment, health and education – can contribute to the emergence of a 'global public' (Cohen and Sabel 2006: 795). Indeed, it is argued that a

growing awareness of, and participation in, this administrative structure on the part of affected publics might even mean that ‘dispersed peoples might come to share a new identity as common members of an organized global populace’ (Cohen and Sabel 2006: 796).

Evaluating experimentalism

Deliberative polyarchy, stakeholder participation, and democratic destabilization add up to an experimentalist architecture that has been associated with the pragmatist philosophy of John Dewey and his emphasis on social learning (Ansell 2011: 5-7). The theory describes an ‘ideal type’ of governance, which means that ‘actual instances of governance may approximate to the ideal type even while none of them fully exemplifies it’ (de Búrca et al 2013: 727). The experimentalist dimensions of governance must therefore be seen as a ‘latent potential’ that is only imperfectly realized, or achieved only to certain degrees (Gerstenberg 1997: 355-8).

The realisation of experimentalist governance is complicated by certain dynamic tensions. First, consider the issue of ethical or political disagreement. The experimentalist ideal emerges in contexts where there is broad stakeholder agreement over governance goals, but considerable disagreement (or uncertainty) about the best means to pursue those goals. An excess of disagreement would stymie efforts to get stakeholders to collaborate on problem-solving, whereas an excess of agreement among decision-makers would stymie efforts to broaden stakeholder participation and collective learning. The upshot is that ‘experimentalist governance progresses in the “Goldilocks Zone”—where there is neither too much nor too little agreement, and the balance, like the temperature of Goldilocks’ porridge, is “just right”’ (de Búrca et al 2013: 781-2). Second, in a similar vein, consider again the process of democratic de-stabilization. This process is necessary in order to open up governance networks to democratic scrutiny, thus undercutting the threat of rule by bureaucrats. However, there are limits to the extent that the process of de-stabilization can be taken. An emergent governance regime might be placed under considerable strain, insofar as criticism from external actors cannot be fed back into ongoing social learning without antagonizing other stakeholders.

Both of these tensions can be read through our case study biofuel regulation in Section 2 where disagreement among actors over regulation and the very term sustainability means that the balance between democracy and governance is hard to strike. However, the analysis of cases that represent greater difficulties for experimentalism, or cases where the experimentalist architecture is emerging but the outcome is as yet uncertain, is necessary for deepening our understanding of whether and how these tensions can be negotiated.

The concept of democratic pathways has been introduced in recent experimentalist literature as a means of identifying mechanisms through which democratic destabilizations can be translated into improvements in partially-experimentalist modes of governance. For example, Christine Overdevest and Jonathan Zeitlin have argued that, through various experimentalist techniques, private regimes can interact with public ones to form a kind of 'regulatory assemblage'. This is illustrated through the interactions between the Forest Stewardship Council and the EU Forest Law Enforcement Governance and Trade legislation. These regimes are said to have combined to such an extent that they now contribute to 'the de facto emergence of a joined-up transnational experimentalist regime for sustainable forestry and control of illegal logging, which blurs and may ultimately efface standard distinctions between public and private regulation' (Overdevest and Zeitlin 2014: 29).

Whereas some scholars have sought to identify situations in which states or international organizations pursue policy objectives at arms-length by 'orchestrating' novel governance schemes (see Abbott and Snidal 2009; Bell and Hindmoor 2011), the focus on democratic pathways reverses this causality, asking instead how the activities of experimentalist governance might expand the openness and accountability of states or international organizations (see Bernstein and Cashore 2012). This implies an element of indirect influence should be included in the *ex post facto* evaluation of experimentalism, since its value might be realised in part via its contribution to improving or advancing broader governance arrangements. The concept of democratic pathways can thus be mobilized to turn experimentalist governance into a pragmatic resource for social criticism, in so far as it can be used as a framework to propose reforms to failing governance regimes.

2. European Union Transnational Biofuels Regulation

This section reviews the emergence of transnational biofuels regulation and identifies certain experimentalist elements within it, namely: an open ended normative goal of sustainability, plural (and largely inclusive) forms of Roundtable governance (i.e. multi-stakeholder monitoring, central and local units, and ‘imperfect’ systems of peer review), and some attempt to destabilise the process along democratic lines. Our case is chiefly based upon EU initiatives, which, by virtue of the EU’s large import volumes and formalised commitment to sustainability, extends further into the territories of other sovereign states when compared to other bodies of biofuel regulation. While experimentalist elements can be discerned, substantive dilemmas over normative content – on sustainability and democracy – means that experimentalist commitments necessitate a critique of this emerging form of governance.

Biofuels in the EU: Fertile Ground for Experimentalism?

Biofuels are not a new class of commodities. The use of vegetable oils (processed into biodiesel) or grains and sugar (into ethanol) to power internal combustion engines was explored by Henry Ford as far back as the early twentieth century. Later, in the 1970s and in the economic context of debt crisis and oil price spikes, Brazil developed a national programme for petroleum substitution, establishing the agro-industrial basis and energy-transport infrastructure for what is now the ‘greenest’ vehicle fleet in the world in terms of renewable energy use.

What has made this commodity of increasing interest to scholars of *global* regulatory governance is the adoption of biofuel programmes in the EU and US, each of which have expanded the production of biofuels and had sizeable cross-border impacts.

In both cases government mandates for the use of biofuel have spurred domestic consumption such that, by 2009-2011, the share of biofuel in the EU’s transport system was 2.7% of petrol usage and 5.1% of diesel usage, and for the USA, 21.9% of petrol and 1.9% of diesel. Collectively, the USA and the EU thus accounted for 48% of world ethanol consumption and 71% of

world biodiesel consumption during 2009-2011 (FAO 2012). In two of the biggest energy markets in the world, then, there has been an orchestrated attempt to supplement oil, or fossilised carbon, with biofuel, or living carbon. What differentiates the EU and makes it particularly apposite as a case study of transnational experimentalism is: (1) its import dependence; (2) its sustainability requirements on biofuel; and (3) its regulatory architecture that mixes public and private governance.

Biofuels were introduced to the EU policy debate as a measure to help meet the emission-reduction goals of the Kyoto Protocol. In a 1997 white paper on energy, the European Commission noted how the transport sector contributed around a fifth of all greenhouse gas emissions in the EU and suggested that renewable fuel consumption should be doubled to try and reduce this (CEC 1997). With support from a coalition of farmers and crop processors, biotech and oil companies, and initially Green parties and NGOs as well, a range of EU-wide policies followed in the early 2000s. These included billions of Euros for research funding into green technologies, tax breaks for companies that sold renewable fuels, indicative targets set for biofuel consumption and border tariffs erected to help European-based producers. When it became clear in the mid-2000s that the EU as a whole would not reach this target, the Commission began to promote the idea of having increased *mandatory* targets. This was realised in the 2009 EU Renewable Energy Directive that stipulated 10% of transport energy must come from renewable sources by 2020.

Importantly, this policy was born of a concerted effort to create a market for biofuels; industrial policy for the green economy if you will. The sustainability of biofuel in the economic sense, meaning the ability of the (EU-based) industry to continue in the absence of state support, has never been far from policy-makers minds (see CEC 2006: 14).¹ That said, for practical and legal reasons – i.e. limits on the availability of European crops and the opportunity for protectionism under international trade law – it was always anticipated that some biofuel feedstock would be imported. In the event, in 2010 over one third of the crops ultimately sold as biofuel within the EU were grown beyond its borders, accounting for an extra-European ‘land holding’ estimated at 2.4 million hectares and thus a direct commercial link to the

¹ The Commission quote here is: “Given the rising demand for biofuels, the Commission is seeking the

consequences of biofuel production in countries including Argentina, Indonesia, Brazil, the USA, Canada and Ukraine (CEC 2013: 11; Ecofys 2012).² As shown below, the EU is the biggest net importer of biofuels in the world, and so EU public policy around biofuels has been inextricably international.

Net biofuel trade of major importing and exporting countries, 2013

	Ethanol, used as petrol substitute (million litres)	Biodiesel, used as diesel substitute (million litres)	Total net trade (million litres)
EU-27	-1668	-2328	-3996
USA	-1813	36	-1777
Japan	-934	N/A	-934
Canada	-575	-151	-726
China	-158	N/A	-158
Brazil	4605	8	4613
Argentina	-85	1614	1529
Indonesia	15	948	963
South Africa	159	N/A	159
Malaysia	-1	58	57

Source: OECD

Another distinctive aspect of the EU case has been the rhetorical attachment to the concept of 'sustainability'. More so than in Brazil and the

² Countries are cited here in descending order of importance.

USA, the justification for biofuels was tethered to the need to 'green' European energy production and meet carbon emissions targets under the UN Kyoto Protocol, as opposed to quickly cutting the oil import bill, boosting agro-industrial profits, or providing energy security (CEC 1997; Harvey and Pilgrim 2013: 373). Thus, without discounting the commercial interests of groups like oil companies, vehicle manufacturers and rapeseed farmers, debates in the EU about the legitimacy of biofuels have tended to be framed in terms of their sustainability in respect of greenhouse gas emissions as opposed to 'energy security'.

While such trends might be read as an unambiguous positive: reduce reliance on oil and carbon emissions, reduce the threat of global warming, the record is more mixed. As the production of biofuels grew, so did concern about their 'true' socio-ecological impact (Bastos Lima and Gupta 2013).

Two lines of argument stood. One focused on increased food prices and how these had aggravated hunger and food riots amongst the global poor (Oxfam International 2008). Another focused on changes in land-use caused by biofuels production, as rainforest or grassland was converted to farmland in order to fill the agricultural supply gaps. Added to the fossil fuel energy used in their very production, it was argued that many biofuels were actually *harming* the environment, both in terms of biodiversity loss and increased greenhouse gas emissions (Fargione *et al.* 2008).

To quell growing opposition, public authorities recognised the need to better define and monitor sustainable biofuel production (see UK Renewable Fuels Agency 2008). Thus, in the 2009 Renewable Energy Directive, alongside mandatory targets the EU also required that all biofuels sold in the EU, including those imported from outside the bloc, meet high environmental standards. These were that biofuels must provide at least 35% greenhouse gas emission savings compared to fossil fuels and *not* come from crops cultivated on land with a high biodiversity value or high carbon stock. A failure to meet these criteria did not mean that biofuel could not be sold in the EU, only that it would not count against Member States' binding energy targets nor qualify for tax relief. Nevertheless, as long as these remain big enough incentives, the legislation would effectively constitute a *de facto* market access requirement.

The final differentiating characteristic of the EU relates to its innovative governance architecture. This architecture follows the experimentalist logic of a central agent establishing a common framework to guide the pursuit of a shared policy goal, while delegating to local units the responsibility to pursue that goal. Anticipating the problem of weak regulatory enforcement – a concern in many spheres of commodity trade – the European Commission licensed a variety of non-state schemes to certify that biofuel traded in the EU met the necessary criteria. At the same time, the local units in this scheme were required to follow requirements set by the central unit and to report back on their progress. The license was thus contingent on the scheme's own standard meeting the EU's 'meta-standard' and proof that they had robust systems in place to prevent lax monitoring. Biofuel would be certified at source (by any licensed scheme) and then tracked right through the supply-chain to prevent double-counting, all of which would be paid for by the businesses involved.

This system contrasted with the more statist approach taken in the USA, which relied on inspections carried out by national public agencies, and more closely resembled the 'transnational experimentalist regime' described by Overdevest and Zeitlin in relation to forestry.³ In this vein, scholars such as Jolene Lin (2011) noted that since this 'regulatory outsourcing' applied to biofuel produced inside and outside the EU, it represented a blurring of both the public-private divide *and* the national-international divide (Lin 2011). Reflecting on the unprecedented level of scrutiny this applied to the *production* of a primary commodity, the European Commission exuberantly declared its transnational biofuel governance to be *'the most comprehensive and advanced binding sustainability scheme of its kind anywhere in the world'* (CEC 2010: 1. Emphasis added; see comparison with the USA below).

Sustainability criteria for biofuels in the EU's 2009 Renewable Energy Directive

³ Although the EU RED also requires that Member States set up a national system through which companies can show that they comply with the sustainability requirements for biofuels, non-state certification has been preferred. Companies can thus choose to follow national systems or certification schemes, but since national standards can differ between Member States and each national system is normally only valid in the Member State where it was set up, certification schemes have the advantage of being 'trade-enabled'.

Carbon Criteria	Environmental Criteria	Social Criteria
Biofuels must save 35% greenhouse gas emissions compared to fossil fuels, rising to 50% by 2017, and, for those installations built after this date, 60%	Biofuel shall not be made from raw material obtained from land that from January 2008 had high biodiversity value – including primary forest, protected areas and highly biodiverse grassland	No compulsory criteria
	Biofuel shall not be made from raw material obtained from land that from January 2008 had high carbon stock – including wetlands and continuously forested areas	
	Biofuel shall not be made from raw material obtained from land that from January 2008 was peatland	

Source: European Parliament and the Council of the European Union 2009: Article 17.

Sustainability criteria for biofuels in the USA’s 2010 Renewable Fuels Standard 2

Carbon Criteria	Environmental Criteria	Social Criteria
Conventional biofuels* must save 20% greenhouse gas emissions compared to fossil fuels, advanced biofuels and bio-diesel 50% and cellulosic biofuels 60% (each category has its own volume requirement). *Except those from facilities that existed or commenced construction prior to December 2007.	Biofuel shall not be made from raw material obtained from virgin agricultural land cleared or cultivated after December 2007, as well as tree crops, tree residues, and other biomass materials obtained from federal lands.	No compulsory criteria

Source: Congressional Research Service (2013) *Renewable Fuel Standard Civil Society Criticism of Biofuel Governance*

Two major concerns have been raised with the efficacy of this innovative governance system. The first relates to the levelling down of more ambitious sustainability standards to the benchmark set by the Commission, and the second to the absence of control. Levelling down applied to both standards set by Member States as well as standards set by the non-state certification schemes. The more ambitious of these had already been established by 'Roundtables' or 'multi-stakeholder initiatives' comprised of mainly businesses and NGOs, that were seeking to promote best practices in commodity sectors such as palm oil, soybean, sugar cane and biofuels. As a result of their particular constituency and mandate, their sustainability standards were much wider and more transparent in how they were managed.

In comparison, the 'industry-led' and 'government-led' sustainability standards that sprang up in response to the Commission's Renewable Energy Directive were less ambitious. Indeed, the Europe-wide Biograce scheme coordinated by the Dutch Ministry of Economic Affairs does not even mention land-use change, and it is unclear from the Commission's official approval whether the scheme has to be used in conjunction with another which does check this criterion has been met. These were developed primarily by businesses and/or government environmental agencies and were designed to meet - rather than exceed - minimum EU requirements. Further, while the Roundtables' certification is based upon more rigorous auditing practices such as on-site field visits, the industry-led schemes make extensive use of company self-declaration and desk audits based on paper trails (Schleifer 2013: 9).

This uneven rigor of different certification schemes and their respective standards has created an incentive for 'forum shopping' (or even 'forum creation') as biofuel producers with contentious land claims or highly polluting levels of pesticide use, for instance, would be able to opt for certification schemes with weaker standards. Indeed, the dilemma that this creates for the Roundtables has been openly recognised by the Roundtable on Sustainable Biomaterials:

How do we make compliance with RSB standards practical and cost-effective for companies while addressing complex issues such as biodiversity, food security or land rights? In other words, how can the RSB cope with fierce competition from a number of emerging schemes

offering cheap and simple alternatives, while at the same time remaining true to its aspirations of comprehensively addressing sustainability? (RSB, 2012a: 1)

This trade-off is reflected in the number of certificates issued by approved EU schemes detailed below where the ISCC dominates the regulatory marketplace.

EU Licensed Certification Schemes as of December 2013

Institutional Design	Certification System	Geographical focus	Certificates Issued
Industry-led	Abengoa RED Bioenergy Sustainability Assurance (RBSA)	Spain	76
	Biomass Biofuels Sustainability voluntary scheme (2BSvs)	France	665
	Ensus	UK	Unknown
	Greenenergy	Brazil	Unknown
	NTA 8080	Netherlands	0
	REDcert	Germany	1904 (of which 757 are RED compliant)
	Red Tractor	UK	Unknown
	Scottish Quality Farm Assured Combinable Crops (SQC)	Scotland	Unknown
Government-led	Biograce GHG Calculation Tool	International	Unknown
Roundtable or multi-stakeholder	Bonsucro*	Brazil	33 (of which 30 are RED compliant)
	International Sustainability & Carbon Certification (ISCC)	International	4,401
* Featured WWF as a founder member	Roundtable on Responsible Soy (RTRS)*	Argentina, Brazil	32
	Roundtable on Sustainable Biomaterials (RSB)*	International	10 (all RED compliant)
	Roundtable for Sustainable Palm Oil (RSPO)*	Indonesia, Malaysia	621 (of which 1 is RED compliant)

Source: Certification scheme websites.

Note 1: not all certificates are issued for farms and processors; most are for intermediaries.

Note 2: many schemes offer a RED-version of their standard, which brings their existing standard into line with the requirements on GHG savings and land-use set by the EU.

Reaction to the problem of levelling down varied among civil society groups. Unsurprisingly, as a founder member of most of the Roundtables, the WWF (2013: 8) called for the EU to require a multi-stakeholder approach for all approved schemes, make voluntary reporting requirements around the other socio-ecological impacts of biofuel production mandatory, and implement a monitoring system to assess whether certification schemes are themselves doing an effective monitoring job. Meanwhile, in light of the mounting evidence that EU biofuel policy was leading to practices of 'land grabbing' in developing countries, Oxfam called for social sustainability criteria for biofuels to be added to the RED such that they have to actually be met in practice and not just reported on (Oxfam 2011). NGOs with a more antagonistic relationship to the biofuels industry actually took the Commission to court for failing to provide information on why particular schemes had managed to gain approval (ClientEarth 2011).⁴ Moreover, some NGOs argued that Roundtable certification systems were ineffective tools of governance. Friends of the Earth argued that such schemes are:

Unable to solve indirect issues such as rising commodity prices or displacement effects [i.e. indirect land-use change]...The new plantation could be certified as 'sustainable' but if it has simply pushed other farming activities into sensitive areas then this makes a mockery of any certification scheme. This is a major failing that is unlikely to ever be solved by certification schemes (Bebb, cited in ICTSD 2008).

For instance, it is no coincidence that as more of the European rapeseed crop has been diverted into the biodiesel market, increased amounts of palm oil has been imported from Indonesia for use in the vegetable oil market (ICCT 2013). For these critics, then, debates over the formation and implementation of sustainability standards distracted from the bigger point: the fact that the most egregious impacts of biofuels could not be governed in this manner at all (World Rainforest Movement 2008). From this more radical position, the

⁴ Experience in regulating carbon offset projects through independent audits suggests that scepticism is warranted. The Executive Board of the UN's Clean Development Mechanism have recently suspended two of the leading auditing firms involved for failure to properly assess that a minimum amount of GHG emissions are being saved (Scott 2011).

important thing was to abandon ‘food-based biofuels’ altogether and tackle climate change imperatives in the transport system through energy efficiency policies and vehicles that run on renewable electricity (Transport and Environment *et al.* 2012).

So, notwithstanding the sustainability criteria and monitoring mechanisms introduced in the Renewable Energy Directive, opposition was still being directed toward EU biofuel policy. To this end, in 2012 the Commission proposed that just 5% of its 10% renewable energy target should be met with biofuels from food-crops, with the remainder supplied by so-called ‘second generation’ biofuels produced from non-food sources like grass and straw (CEC 2012). However, despite pressure from environmental NGOs to factor in indirect land-use change to the calculation of how much greenhouse gas biofuels saved – which would likely mean that most biodiesel, including European rapeseed, would fail to meet the 35% minimum⁵ – this was only added as a non-binding reporting requirement.⁶ This fudging left few satisfied. The European biofuels industry complained that this constituted ‘a wholesale withdrawal of political support from the Commission’ and would deter investment in the sector; NGOs countered that even with a lowered production ceiling in place, conventional biofuels would continue to cause upward pressure on food prices and land conversion (Nelson 2012).⁷

Despite the great effort that had gone into constructing a regime to regulate the EU’s transnational biofuel economy, disagreement could not be contained at the administrative level. European states, both supranational and to a lesser extent national, remained crucial sites of contestation, with state

⁵ Annex II of the Commission’s RED amendment proposal and Annex V of the Fuel Quality Directive set additional emissions values linked to indirect land-use change. They were 12g CO₂ equivalent per MJ for cereal-based biofuel, 13g for sugar cane/beet-based biofuel, and 55g for oilseed-based biofuel. These values were based on four studies requested by the Commission from the International Food Policy Research Institute and its own Joint Research Centre; they were immediately contested by the European Biodiesel Board.

⁶ This decision was taken by the European Parliament, which debated the Commission’s proposals in 2013. The Parliament did make emissions from indirect land-use change binding in the context of the Fuel Quality Directive – which requires a 6% reduction in lifecycle greenhouse gas emissions for all fuels by 2020 – but this is arguably less relevant to the regulation of biofuels *per se*. The Parliament also voted to increase the contribution of food-based biofuels to 6% of the 10% target.

⁷ Perhaps the one interest group that was left happy were the biotechnology companies involved in the development of biofuels from non-food sources, and which benefit from the shifting of incentives from first- to second-generation biofuels.

policy-makers caught between the 'rock' of accumulation and the 'hard place' of legitimacy.

3. Critical Issues to Face, Experimental Pathways to Explore

There are strong indications that elements of an experimentalist agenda are at work in the governance of biofuels, namely via the decentralised and (partially) participatory non-state organisations charged with monitoring regulation. Interestingly, this form of experimentation has also led to a close interaction with public opinion (both for and against), meaning that regulation has been imbued with a normative component that goes beyond the goal of sustainability and incorporates values such as inclusion, deliberation, and transparency. However, there are equally strong indications that the democratic substance arising from this normative component has led to market instability, wherein government support for this 'politically instituted' industry has wavered and the investment climate worsened (Harvey and Pilgrim 2013).

Perhaps this is no bad thing? We would certainly not want to discount democratisation of the economy simply on the basis that it threatens unalloyed accumulation. But there is more that can be said – and done – from an experimentalist standpoint. This is important not just because biofuel production is likely to continue in some form or other, but also because the tension between market creation and democratic control will arguably accompany *any* organised attempt to replace and reduce the consumption of fossil-fuel energy, from wind turbines to electric vehicles. The need for innovative regulatory architecture is only likely to grow as climate change and the rising cost of non-renewable energy increasingly influences the political economy.

Critical Issues

Is bio-fuels governance actually working? The case of bio-fuels regulation has raised a question over the effectiveness of sanctions. Numerous examples of successful experimentalist governance depend upon the possibility of sanctions or 'penalty defaults'. In our case study, this is put in question. Many Member States have simply not transposed the EU Renewable Energy

Directive fully into national legislation, meaning that there have been inadequate checks in place to ensure its sustainability (CEC 2013: 11).⁸ Indeed, just 57% of total biofuel consumption in the EU was certified as sustainable in 2012 (EurObserver'ER 2013). The major incentive for Member States to certify biofuels is so that they will count against their target for renewable fuel use,⁹ although the resolve of the Commission to actually punish Member States who fail to meet the 10% target by 2020 remains untested. In relation to nation-states outside the EU, meanwhile, there is the spectre of WTO action. Argentina, Indonesia and Malaysia continue to register their concern that their biofuel exports are unfairly discriminated against by the Renewable Energy Directive (see WTO 2013).

Moreover, even if bio-fuels governance did become binding, a pressing question remains over how to address significant disagreement on the fundamental normative goal. As the radical NGO critique of biofuels regulation has highlighted, when addressing issues of environmental politics, it is hard to reduce the larger concern for sustainability to a single issue, since practices of development and co-ordination are so complex and inter-related. From an experimental point of view, such differences are potentially productive insofar as they provoke healthy dialogue between and inclusion of different perspectives. However, while experimentalist governance can/should incorporate uncertainty and multiple views, it is unclear how to interpret *fundamental disagreement* between stakeholders, especially in circumstances where it questions the very existence of the market activity that it is established to regulate.

For some, the very idea of regulating biofuel markets can act to legitimise (and encourage) practices that would otherwise be seen as antithetical to sustainability. In terms of biofuels this is most obvious in terms the pressure placed on land bio-diversity and the concentration of agricultural production/trade on certain cash crops. While it might make sense to connect

⁸ Nineteen Member States have been asked to respond to the Commission on how they are implementing the Renewable Energy Directive, with the threat that, if they do not respond in a timely and adequate manner, the Commission has the option of taking them to the Court of Justice. However, it remains to be seen whether this will indeed happen.

⁹ A range of incentives can be provided at the national level – including tax breaks, quotas, fines, etc. – independently of the EU, although the decision to do this may be influenced by the need to meet the EU target.

up ideas about environmental governance in such terms, indeed it can enrich the quality of discussion in the public sphere by exposing problems and ambiguities that were not previously countenanced, there is less scope for governance auspices to expand.

Such contingencies and paradoxes suggest that the kind of recursive learning that is required on a global scale is both far more intense and far more likely to be the subject of disagreement than is perhaps the case with national or regional structures. It should be noted that this is not a critique of experimentalism, *per se*, so much as a critical question, the answering of which will form an important part of its orientation to global governance. In particular, and as we shall now demonstrate, the prospects for realising global experimentalist governance depends to a considerable degree on the identification of pathways that lead away from degenerating governance regimes such as those that preside over biofuels production.

Experimental Pathways

The role and function of a critical public sphere is important in a manner that might actually be developed. The establishment of new, formalised deliberative spaces could actually be an important vehicle for experimentalist governance. This could include automatic public enquiries into instances of human rights abuses or environmental degradation directly connected to the EU biofuel market, regular comparative assessments of biofuel carbon accounting across nation-states (given their evident politicisation), and annual EU committee hearings on the extent to which biofuels are indeed moving the transport sector in a low-carbon direction – surely *the* pressing question for industry to answer (especially given the absolute increase in fossil fuel consumption).¹⁰ Financial support for marginalised voices and intellectual scrutiny of mainstream ones would lend these efforts further credibility.

Indeed, the capacity to respond to the unintended consequences of bio-fuel governance requires sensitivity to the challenges of scale, issue

¹⁰ For example, in 2000, the EU road transport sector used the equivalent of 279 million tonnes of oil; in 2010 this had increased by a further 20 million tonnes, of which 13 million tonnes came from biofuel (EU 2012; EurObserver'ER 2013). In other words, regardless of the greenhouse gas savings of biofuels used in the EU, total fossil fuel usage continues to rise, and with this, it seems sensible to assume, total greenhouse gas emissions too.

overlap and moral disagreement that are not captured within the existing (relatively weak) processes of peer review. One course of action might be to formalise and strengthen such processes, for example, by ‘roundtabling’ certification schemes via NGO participation, benchmarking different standards, promoting national interpretation,¹¹ and divulging biofuel certification audits for public scrutiny (*pace* WWF 2013). More ambitiously, attention might be given to the potential for joined-up forms of governance, perhaps across organization bodies or – more critically – across issue-areas. For example, a political compromise might be sought by civil society campaign groups in the EU insofar as biofuels continue to be produced, but that its governance arrangements *be extended* to other policy arenas pertinent to transport energy and agricultural production, namely the fuel trade and the food trade.

In other words, we might advocate the extension of the requirements on greenhouse gas emissions and land-use change to oil from shale/tar sands and vegetable oil from deforested plantations as well.¹² Mandatory reporting for these and other key elements of a ‘sustainable’ primary commodity sector could be introduced, and, along with data on subsidies, allowing the ‘true cost’ of petrol, diesel, animal feed and other ‘invisible’ food ingredients to be more transparently assessed vis-à-vis biofuel. To this end, it is notable that both the Roundtable on Sustainable Biomaterials (formerly Roundtable on Sustainable *Biofuel*) and the ISCC have widened their schemes to allow them to certify food, feed, and chemical products as well as biofuel.

Another dimension might be to join across scale. For example, various sets of indicators for sustainable biofuels have been developed at the global level – most notably by the G8-sponsored Global Bioenergy Partnership (GBEP), an organization launched in 2005 encompassing national governments, international organizations and industry associations – although these remain guidelines only, constricted in part by the international community’s experience of long-standing stalemate in climate change treaty negotiations (Lin 2013). The experience of the EU shows that transnational

¹¹ The Round Table on Responsible Soy and Roundtable on Sustainable Palm Oil both provide for national interpretations of their standards based on the inputs from civil society and commercial groups who convene to agree on country-specific criteria and indicators.

¹² Fuel-specific GHG reporting has been proposed by the Commission in the Fuel Quality Directive, although not yet implemented due to resistance from the oil industry and the Canadian government.

regulatory architecture can be erected without excessively antagonising national sovereignty, suggesting that forums such as GBEP could, and should, move beyond common standards to collective enforcement (the USA or California¹³ being obvious targets for regulatory assembly in the first instance).¹⁴

Finally, one possibility might involve democracy at the international organisation-level, particularly among development banks and their intermediaries financing biofuel projects. Again there have been some sporadic efforts to respond to civil society pressure for better lending practices. For example, in the 2000s the Inter-American Development Bank developed a Biofuels Sustainability Scorecard to inform project investments based on what was then the Roundtable of Sustainable Biofuels, while the Equator Principles were negotiated by nine international banks in conjunction with the World Bank's International Finance Corporation to ensure large-scale projects meet specified social and environmental requirements.

However, external accountability remains constrained by their limited disclosure requirements and tendency to focus on client interests rather than stakeholder complaints (Goetz 2013). This might be engaged with experimentally if those same international organisations were to advocate consultation with representatives of affected agrarian communities ahead of biofuel project investments – e.g. those NGOs and peasant organisations recognised by the United Nations in its Committee on World Food Security – as well as sponsor more transparent, peer-review mechanisms of project 'success' vis-à-vis the lenders' own sustainability standards. Conversely, were that biofuel to end up in the EU, certification schemes could be tasked with requesting project financiers' documentation relating to due diligence, thus encouraging at least a little more openness within these so-often opaque arrangements.

¹³ California enacted its own Low Carbon Fuel Standard in 2007. Like the EU's Fuel Quality Directive, it requires fuel distributors to deliver reductions in the lifecycle greenhouse gas emissions of fuel, with an expectation that these will come from biofuel. Indeed, California has been the destination for much Brazilian biofuel imported into the USA.

¹⁴ Indeed, pilot tests of the GBEP criteria in Colombia, which were thwarted by the reluctance of industry actors to provide politically-sensitive data on water use, have already highlighted the limits of sustainability assessments in the absence of business buy-in (Selfa *et al.* 2014, 174).

Conclusion

This chapter has studied the democratic promise of experimentalist governance through a case study of global biofuel regulation. This emerging governance structure is too imperfect to be treated as a functioning experimentalist regime, but our analysis has diagnosed its failings *and* suggested democratic pathways towards a more effective, reflective, and inclusive governance system. There are many difficult issues confronting stakeholders responsible for constructing enhanced regulatory regimes for biofuel production and consumption. Not least of these is the fundamental concern, raised by radical civil society critics, that the pursuing sustainability through biofuels, rather than more far-reaching social and economic transformations, is counter-productive. The kind of suggestions canvassed towards the end of our discussion do not resolve such deep-seated challenges, but nonetheless offer reflections for moving beyond the current impasse in global regulation.

This approach illustrates a critical dimension of experimentalist governance that should not be downplayed. Experimentalist governance is a theory that both diagnoses and explains empirical developments in public administration. But there is also a normative dimension, which defends a certain vision of how opaque forms of governance can be opened up through the democratizing values of inclusion, deliberation, and accountability. This tradition, as Charles Sabel has recently argued in his insightful discussion of Dewey, rests upon a conception of democratic ideals as expressions of possibilities that are already latent in the world (Sabel 2012: 51). The reform of global governance, we believe, must similarly proceed through diagnosing and realising the democratic potential that is already implicit within it. Acknowledging the genuine ambiguities of the normative goal of sustainability might allow for a process of social learning that leads to new experiments in joined up governance across issue areas.

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