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## The sustainability of sugarcane-ethanol systems in Guatemala: Land, labour and law

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### ABSTRACT

Since 2010, Guatemala has been exporting ethanol, principally to European markets. This means that Guatemalan biofuel has been certified sustainable, although this is deeply contested with NGO reports drawing attention to the negative impacts of 'agrofuels', particularly for marginalised communities. Guatemala therefore provides an excellent case study for examining not only the impacts of increased global demand for biofuels, but also whether sustainability, as conceptualised by the European Union's Renewable Energy Directive, can capture those issues that are salient to the Guatemalan context. Drawing on more than eighty qualitative, in-depth interviews, this paper finds that the bloc's governance framework for biofuels fails to capture many of the issues that matter most to local people in Guatemala, namely land access, trade unions and compliance with the law. This paper argues that the current framework therefore runs the risk of exacerbating the plight of Guatemala's already marginalised rural communities.

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### 1. Introduction

Since the turn of the century, biofuels have been promoted as a sustainable alternative to hydrocarbon transport fuels. The most commonly cited drivers are climate change mitigation and energy security, although the potential benefits of biofuels for rural development have also provided important motivations [1]. It is argued that biofuels offer a technological solution which leads to 'win-win' outcomes for environment and economy [2]. Biofuels therefore provide an example of a politically-instituted market [3], in which both the demand and the institutional frameworks that govern their use have to be created. Many governments, both in the Global North and Global South, have established policy frameworks to promote the production and consumption of biofuels [4,5]. In particular, many governments have legislated demand for biofuels through mandated markets, which require transport fuel suppliers to blend a minimum amount of biofuels in their products. In effect, this guarantees the biofuel industry and fuel suppliers a market of minimum size [3]. However, many countries and regions that have established domestic mandates for biofuels are unable to meet their biofuel commitments through domestic production alone. This production deficit offers the potential for increased trade with

producer countries, offering potential benefits to both parties: new markets for producer countries and diversified energy supply for importing countries [6].

The European Union (EU) has been a key player in the promotion of biofuels. The bloc has created one of the biggest global markets for biofuels and is one of the few markets to address the sustainability impacts of biofuels. Originally promoted as an option for decarbonising the transport sector, and having apparent benefits for agriculture and energy security, the policy framework supporting biofuels has strengthened over time. In 2009, the EU Renewable Energy Directive (RED) established a mandatory 10% renewable fuels target by 2020 for the transport sector. However, even as the EU legislated mandatory demand for biofuels, doubts about the purported benefits of biofuels were growing, even within European institutions. In order to address these growing concerns about the negative environmental and social impacts of biofuels, the EU RED also established mandatory sustainability criteria [7]. Only biofuels that meet the sustainability criteria count towards the 10% target and are eligible for financial support. While these criteria represent an important innovation in the governance of biofuels, they have not, as some might have wished, provided the assurances necessary to stem further controversy. The debate is no longer about creating the 'right' framework for biofuels, but rather about whether these fuels should be promoted in the first place.

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Between 2008 and 2010, around 80% of the biofuels consumed within the EU were produced by EU Member States [8,9]. However, it is the remaining 20% which has caused the most controversy; much of this biofuel has been sourced from the Global South, where many of the unintended environmental, social and livelihood impacts have been documented [1,10,11]. While the role of imports to the EU has shifted as the policy framework has evolved, an autarkic approach to meeting demand was never regarded as either possible or feasible [12]. Guatemala is one country that has responded to European demand for biofuels. Since 2006, the production of biofuels, has increased from almost nil to more than 250 million litres in 2011/12; ethanol from sugarcane accounts for more than 90% of the biofuel produced. There is no domestic market for biofuels in Guatemala nor is there legislation to promote its use, despite previous attempts to establish a biofuels mandate. Therefore, virtually all of the ethanol produced in Guatemala is exported, principally to EU markets. Although ethanol produced in Guatemala has been certified sustainable, this is deeply contested, illustrated by NGO reports which highlight the negative impacts of ‘agrofuels’, particularly for marginalised communities [13–16]. This makes Guatemala an excellent case study for examining not only the impacts of increased global demand for biofuels, but also whether sustainability, as conceptualised by the EU RED, can capture those issues that are salient to the Guatemalan context. Drawing on qualitative, in-depth interviews, this paper shows that the EU’s governance framework for biofuels fails to capture many of the issues that matter most to local people within Guatemala, namely land access, trade unions and law enforcement. This paper therefore concludes that the hybrid governance approach adopted by the EU runs the risk of exacerbating the plight of Guatemala’s already marginalised rural communities.

## 2. Governing biofuels across borders: standards and certification

Globalisation means that supply chains increasingly traverse national boundaries. Products may cross multiple boundaries before reaching the site of consumption, making it increasingly difficult for nation states to unilaterally regulate production processes. Within the globalising marketplace, regulations need to be multinational in both scope and applicability if they are to be effective [17,18]. Standards – or the requirements against which products and processes are evaluated – have emerged as a market-based response to concerns about the sustainability of production and reflect a broader shift from public to polycentric governance. These requirements are typically formulated as principles and indicators that are developed through multi-stakeholder processes. Stakeholder participation is therefore critical to the legitimacy and long-term acceptance of standards, yet many still lack meaningful participation from civil society and local stakeholders.

As global demand for biofuels has grown, so there has been a proliferation of (voluntary) standards, meta-standards and codes of conduct which aim to minimise the negative impacts of biofuels across space and time. These range from standards that address a single technical issue to more comprehensive meta-standards that incorporate multiple environmental and social issues [19]. Standards, labels and certification systems communicate to consumers, often via product labels, that a product has been produced using sustainably managed raw materials. Certification carries meaning across national borders, allowing consumers to differentiate between products and in the process construct ‘alternative spheres of production, trade and consumption’ [20:77]. Compliance with a standard is assured through certification, which is typically carried out by an independent auditor against the criteria set in the standard and according to a set certification process. The audit process

involves the use of clear quantitative indicators to avoid the incursion of any ‘subjective’ understandings and value judgements; in other words, the outcomes of an audit should be similar even if carried out by different auditing teams [21].

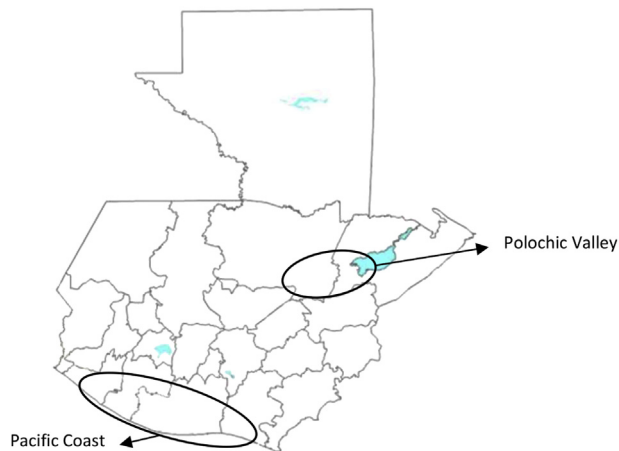
The EU is the only region where the climate objective has been the dominant driver. The bloc has responded to increasing evidence of the negative sustainability outcomes of biofuels by developing mandatory sustainability criteria to guide suppliers of biofuels [7,22]. The first criterion relates to the GHG reduction requirements of biofuels. Article 17(2) states that biofuels must deliver GHG savings of at least 35% compared to fossil fuels. This proportion rises to 50% in 2017 and to 60% from 2018 for biofuels produced in new installations. Other sustainability criteria place restrictions on the types of land that may be used to grow the raw material for biofuels and bioliquids (from January 2008). In particular, biofuel feedstocks cannot be produced from land with high biodiversity value or from land with high carbon stock, which includes wetlands, continuously forested areas, and peatland. With regard to the social impacts of biofuels, the RED only places biennial reporting requirements on the Commission to monitor the social impacts (Art. 17(7)), specifically the effects on food production and local prosperity (Para. 78).

It is widely acknowledged that the RED sustainability criteria are not comprehensive. However, other criteria were excluded because of concerns about compliance with international law and the feasibility of linking impacts specifically to biofuel demand [23]. There was also concern that the inclusion of other criteria, for example on air, water and soil, would lead to a shift in focus away from the European Commission’s key concerns about biofuels – namely GHG emissions and direct land use change (DG Environment, interview, September 20 2011, Brussels). The reliance on multi-stakeholder certification schemes to monitor compliance with the sustainability criteria enables the EU to extend its regulatory arm and to incorporate other sustainability issues. This has created a hybrid mode of governance that relies on both state and non-state actors. Since 2011, a total of 17 sustainability schemes have been approved by the European Commission [24]. The most widely applied scheme is the International Sustainability and Carbon Certification (ISCC), a scheme which is globally applicable to all biofuel feedstocks and the scheme implemented in Guatemala. In order to comply with the EU RED, all schemes must meet the legal minimum sustainability requirements. Most schemes exceed the minimum standards set by the EU and also include biodiversity conservation, air, water and soil impacts; not all schemes, however, include social criteria [21,23,25–27]. The first certification schemes were only recognised in 2011, and there is still little literature on how they work in practice, and whether producers adopt more sustainable production processes as a result of compliance with these schemes. This paper represents a contribution to this important research gap.

## 3. Material and methods

This paper utilises a nested case study approach to analyse the global, particularly European, policy context, as well as the national and local contexts that condition the outcomes of the sugarcane-ethanol system in Guatemala. The word ‘outcome’ rather than ‘impact’ is used deliberately here, since the aim of this research was not to assess, to measure or to quantify the impacts on local communities. Rather, the research aimed to capture local people’s perceptions of the changes in their livelihoods that were underway and to situate these qualitative findings within a broader political economic context.

Within Guatemala, sugarcane is cultivated in two regions, the Pacific Coast and Polochic Valley (see Fig. 1); this paper focuses on



**Fig. 1.** Map of Guatemala indicating the two areas of sugarcane production, the Pacific Coast and the Pochich Valley. Source: adapted from [42].

the Pacific Coast as the principal site of sugarcane cultivation and the only region where ethanol distilleries are located.

This paper draws on empirical data generated from nearly eighty semi-structured and unstructured expert interviews, which were carried out between November 2010 and July 2013 in Brussels, Guatemala and London. Document analysis, field visits and personal observations provide supporting evidence. The sample of participants was purposive, rather than random, and actors were selected on the basis of their relevance to the research topic. In order to understand the multiple perspectives of those involved both directly and indirectly in Guatemala's sugarcane-ethanol system, a wide range of actors were interviewed which included an ex-Minister of Energy and Mines, human rights activists, the manager of a sugar mill, and peasant farmers. Group interviews were also held with residents of six communities on the Pacific Coast affected by the expansion of sugarcane cultivation. Twelve interviews were also carried out with civil servants, NGOs and private sector representatives in Brussels and London to provide insights into the historical development and current issues with the EU RED. Interviews were recorded and transcribed, and an inductive and immersive approach used to identify key themes. These themes therefore emerged from the empirical data itself, rather than being defined a priori. Specific to this paper, topics emerged relating to land access, trade unions, and the legal framework; quotes have been selected that are particularly illustrative of these themes.

#### 4. Guatemala's sugarcane-ethanol system

Guatemala has been identified as the strongest potential leader in Central America for the production, trade and consumption of ethanol due to its high yields of sugarcane [28,29]. Yet this straightforward assessment of the country's technical potential overlooks its complex agrarian history, one which is characterised by massive inequalities. The last agricultural census, taken in 2003, shows that just 2% of agricultural producers (with an average of 194 ha) controlled 57% of arable land, while 87% of producers (with an average of 1.2 ha) occupied just 16% of arable land [30]. Guatemala's sugar mills are owned by the major landowning families who constitute some of the country's political and economic elites [31,32].

##### 4.1. Sugarcane cultivation

Sugarcane cultivation has historically been located along

Guatemala's Pacific Coast. The region has a long history of export agriculture, one in which the country's landowning elites have taken advantage of the fertile volcanic soils, stable climate and plentiful water resources. The region is home to 14% of Guatemala's population of whom around half live in poverty, while 10% live in extreme poverty [33]. The population increases during the six months of *la zafra* (harvest) as people migrate from the Guatemalan highlands in search of temporary employment on the coastal estates. Most of the region's urban centres are located along the highway, which runs along the coast from Mexico to El Salvador. Away from the highway, many communities subsist in isolated places; economic activities consist of artisanal fishing and subsistence and small-scale farming, typically on land rented from large landowners. Lacking basic services, such as roads, schools and health centres, economic opportunities in these communities are scarce and many people have left to find work in Guatemala City or other urban centres.

Guatemala is the fourth largest exporter of sugarcane products globally, representing 3% of total world exports, and the second largest in Latin America, after Brazil [34]. The sugarcane sector is important to the national economy, with sugarcane products accounting for 21% of agricultural exports, or 8% of total exports, and 3% of national GDP [35]. The sector is also an important employer with 60,000 permanent employees, and a further 350,000 employed either directly or indirectly; during *la zafra*, which runs from November to May, the sector employs around 32,000 cutters [34].

The sugar sector is vertically integrated and highly concentrated. It forms a cluster at the cultivation, processing and export stages of the value chain, with all but one of Guatemala's thirteen sugar mills located along Guatemala's Pacific Coast. Sugarcane cultivation has increased from 78,000 ha in 1980/81 to 263,056 ha in 2012/13 [36]. Competition for land on the Pacific Coast's fertile volcanic soils is fierce, both within the sugar sector i.e. amongst the mills, and with other agricultural sectors, including African palm, banana and rubber. As will be discussed below, growing competition for land has meant that subsistence farmers were increasingly unable to rent land on which to produce basic grains. The sugar sector had responded in two ways to this competition, via intensification and through relocation. Interviewees pointed to CEN-GICAÑA, a private research institute funded by the sugar mills, as a key factor in increasing sugar yields, which are the highest in Central America. In terms of relocation, one mill had moved to the Pochich Valley in the east of Guatemala (with major consequences for local communities [13,15]), while others had invested in mills elsewhere in Central and South America.

The mills directly managed around 80% of all sugarcane estates on the Pacific Coast; of this, some of the land was owned outright and some leased from private landowners. The remaining 20% was accounted for by independent producers of sugarcane, most of whom were large landowners themselves [31,32]. Thus, there was little, if any, small-scale cultivation of sugarcane in Guatemala. The absence of opportunities for smallholders to be involved in sugarcane cultivation is a consequence of the country's land history and the concentration of land in the hands of a small minority.

##### 4.2. From sugar mills to biorefineries

The mills were not just producers of sugar. Interviews with representatives of the sugar industry revealed a sectoral trend towards biorefineries i.e. the production of multiple bio-based products; as one interviewee who worked for the sugarcane association explained:

'The sugarcane plant is very blessed in the sense that it has many by-products ... We produce sugar and alcohol, from the wastes

we cogenerate electricity, the vinasse serves as fertilisers in zones that are low in phosphorous ... There are a lot of by-products that allow the mills to spread the costs and diversify risk. We're of the idea that a mill that wants to survive in the next few years is going to have to be able to produce alcohol, sugar and energy, because it's through this diversity that market opportunities lie.' (Association of Guatemalan Sugar Producers, December 12 2011, Guatemala).

Seven sugar mills co-generated electricity from bagasse (a by-product of the milling process), and during the *zafra* the electricity used by the mills and the surplus sold to the national grid. For those in the industry, another potential value-added product was ethanol. While the sector had been producing ethanol from molasses on a small-scale for twenty years, large-scale distilleries had only been in operation since 2006. Five of the thirteen mills were producing ethanol, and those working in the industry explained that, while the significant investment required to construct the plant had so far proved prohibitive, they expected other mills to add alcohol distilleries in the future. Not all of the ethanol produced in Guatemala was used for fuel i.e. was dehydrated ethanol. Indeed, only two sugar mills had capacity to produce dehydrated ethanol and one had only added dehydration plant because the price of potable ethanol had fallen, leading its owners to seek new markets. Of the 237 million litres of ethanol produced in 2011/12 less than 25% was for fuel, with the remainder used in the industrial and beverage industries. The ethanol produced in Guatemala primarily used molasses as an ethanol feedstock, rather than cane juices as in Brazil. Molasses was originally considered a low value by-product, one which was either used locally as an additive to animal feed or exported. However, the addition of fermentation and distillation capacity had meant that some mills had to purchase molasses from other mills, creating competition for this by-product. Several interviewees commented on the availability of molasses being a potential barrier to the production of greater quantities of ethanol.

Powerful economic drivers were therefore behind the sugar industry's interest in ethanol. Those in the sector described an increasing emphasis on 'closing the circle', wherein wastes would become inputs for new products and processes thus creating an economically sustainable industrial system. For the sugar mill owners, the opening up of international biofuel markets had offered a means of diversifying production, enabling them to enhance profit margins without affecting the quantities of sugar produced. Ethanol was therefore a secondary product and, for the time being at least, the industry focus remained on the production of sugar.

#### 4.3. Certifying ethanol

There was no domestic biofuels market in Guatemala and the research revealed little prospect that one would be developed in the short to medium term. As a result, all of the fuel ethanol produced in Guatemala was exported, mainly to the EU, which meant it was subject to compliance with the EU RED sustainability criteria. While the national legal framework set the conditions within which the sugar sector operated, this meant that the EU RED and its associated certification schemes determined what 'sustainable' meant in a Guatemalan context.

Since 2011, the two mills in Guatemala that produced fuel ethanol had been certified by the ISCC, the most commonly used certification scheme in the EU. Originally perceived as a protectionist measure, one designed to protect EU producers, interviewees explained that the EU's sustainability requirements had

since found acceptance within the mills producing biofuel. That the two mills which had been certified by the ISCC encountered 'little difficulty' (Sugar mill employee, February 7 2012, Guatemala) in meeting the requirements of the scheme surely had much to do with this shift in acceptance. Further, there was the expectation that the cost of compliance would be recouped through the greater efficiencies of improved practices (Sugar mill employee, March 7 2012, Guatemala). The mills were also seeking compliance with the U.S. Renewable Fuel Standard 2, which would provide an additional market for the biofuel. Being able to supply both European and U.S. markets would enable the mills to obtain the best price for their product.

The mills had opted for the ISCC rather than Bonsucro or the Roundtable on Sustainable Biomaterials, other schemes accepted by the EU and applicable to sugarcane-based ethanol. When asked why they had chosen the ISCC, interviewees explained that it was the scheme requested by the mills' clients. The ISCC has six principles, each broken down into a number of criteria which are further categorised into 'major' and 'minor' musts. According to the ISCC guidance, all major musts and at least 60% of minor musts have to be met for a successful audit [37]. However, one interviewee also argued that it was easier to demonstrate compliance with the ISCC, since it had fewer indicators and did not require the mills to quantify various aspects of production. Interviewees described how compliance with the ISCC had been facilitated by the mills' previous experience with other standards, including ISO 9001 and the Hazard Analysis and Critical Control Point (HACCP), which meant that the EU's sustainability requirements required just an 'extension' of existing policies (Sugar mill employee, February 7 2012, Guatemala; also, Sugar mill employee, March 8 2012, Guatemala). Indeed, both mills were able to comply with the ISCC within just six months.

For some respondents, that the sector had encountered few difficulties in meeting the 'toughest standards in the world' was proof of its environmental and social sustainability (Organisation of American States, April 4 2013, telephone interview). Yet others, typically NGOs and residents of local communities, were far more critical of both the sector's impacts and the capacity of the EU's governance framework to capture such impacts. One respondent, for example, argued that standards and certification schemes served only the needs of industry, providing window dressing for highly unsustainable social and environmental practices (Environmental NGO, March 16 2012, Guatemala). Moreover, argued another critic, sustainability schemes were founded on developed world experiences of the state, and hugely underestimated institutional capacity in countries like Guatemala; as a result, they failed to account for Guatemalan realities (Development NGO, March 26 2012, Guatemala). Three issues emerged from interviews as critical to the Guatemalan context – land access, trade unions and the legal framework. In the following section, each of these themes is discussed in relation to the requirements of both the sustainability criteria of the EU RED and the principles and criteria of the ISCC.

## 5. Land access, trade unions and national law

### 5.1. Land access

One of the most contentious aspects of increasing global demand for biofuels has been the socio-economic impacts of land use change. This debate encompasses land and resource rights, as well as food security and other livelihood impacts. As discussed, the EU RED has no mandatory social criteria, but there is a requirement to monitor the impacts of biomass production on social sustainability, which includes land use rights ((7) Art. 17(7)). Two of the ISCC principles relate to land rights: Principle 4, which states that

'biomass production shall not violate human rights, labour rights or land rights'; and Principle 5, which states that 'biomass production shall take place in compliance with all applicable regional and national laws and shall follow relevant international treaties' (37). Of relevance here are Criterion 4.8 ('all impacts for surrounding areas, communities, users and land owners taken into account and sufficiently compensated for'), which is a minor must, and Criterion 5.1 ('the producer can proof[sic] that the land is used legitimately and that traditional land rights have been secured'), a major must.

Guatemala's history of land inequality meant that land was concentrated in the hands of a few, leaving the majority to subsist on small plots of land. On the Pacific Coast, communities had traditionally relied on leasing land from landowners to produce basic grains; however, increasing competition from sugarcane and other agribusiness had effectively forced subsistence and small-scale farmers out of the land rental market. As one local resident complained:

'Before I worked on the sugarcane plantations, I worked on the land, on my own harvest. I rented perhaps three *manzanas* [2.1 ha] and I grew maize and all sorts of vegetables. But the company has taken all the land, there's no longer land available [to rent], but there's a lot of sugarcane'.

This sentiment was echoed by many others interviewed during this research. This loss of land access has resulted in a reduced ability to maintain adequate livelihoods, with the result that farmers and their families were increasingly dependent on monetary income. This often meant seeking employment on the very sugarcane estates that they felt had deprived them of land. In the communities visited by the author, interviewees explained that this had affected food security, and had led to changes in diets as they and their families became more dependent on processed goods. Biofuel proponents, however, argued that food security was not as issue for Guatemala since biofuels were not produced from staple crops, such as maize. This highlights how different interpretations of an impact, in this instance food security, can affect whether or not it is perceived to be a concern.

The argument that the cultivation of sugarcane had reached its limit on the Pacific Coast was also made by those in the sugarcane sector; these actors argued that, if there was expansion, it was because farms had shifted from pasture and cattle ranching to sugarcane cultivation. However, the testimonies of those living in the Pacific Coast indicated otherwise; for these communities, the ongoing expansion of sugarcane had resulted in a concurrent reduction in land to rent to cultivate basic grains, affecting food security and livelihoods. The concentration of land that is underway throughout Guatemala has also been documented by several NGOs [13,16,38].

With regard to the ISCC, the scheme requires biofuel producers to show documents that demonstrate 'legal ownership or lease, history of land tenure and actual legal use' [37]. However, a consequence of Guatemala's highly unequal land distribution system has been that on the Pacific Coast, communities did not have legal ownership of the land that they farmed, but rather rented it from private landowners. These landowners lived not in the communities, or even nearby, but in the capital city or in Miami; attracted by the higher rents offered by the mills and other agribusinesses, they increasingly opted not to rent their land to local communities. As a result, rural households found themselves unable to access land, serving to further marginalise these rural communities. Therefore, while the sugar mills were able to demonstrate compliance with the requirements on land access, the complex changes in land use that were underway in Guatemala were not captured by the ISCC.

## 5.2. Trade unions

The labour requirements of the EU RED require the producer country to have ratified and implemented key International Labour Organisation (ILO) Conventions. These relate to forced or compulsory labour (No. 29), freedom of association (Nos. 87 and 98), equal remuneration for men and women (No. 100), the abolition of forced labour (No. 105), discrimination (No. 111), and child labour (Nos. 138 and 182). The ISCC lists 22 criteria under Principle 4, which are drawn from these ILO Conventions. With specific regard to trade unions of relevance are: Criterion 4.5, a major must ('workers have the freedom to join labour organisations or organise themselves to perform collective bargaining'); and two minor musts, Criterion 4.9 ('the management does hold regular two-way communication meetings with their employees where issues ... can be discussed openly') and Criterion 4.10 ('there is at least one worker or a workers' council elected freely and democratically who represent the interest of the staff to the management') [7,37].

Following the signing of the Peace Accords in 1996, which signalled the formal end to the country's 36 year civil war, Guatemala ratified various ILO Conventions. By law, therefore, all workers have the right to form trade unions, yet only one sugar mill in Guatemala had a union [39] – and neither of those certified by the ISCC were unionised. Some interviewees who worked in the sugar sector argued that labour reforms had meant that, since the 1980s, trade unions had steadily lost their power and influence. However, alternative rationales for the absence of unions in the sugarcane sector and in particular strong anti-union sentiment within Guatemala also emerged from interviews. Interviewees frequently referred to strikes held against mill owners during the 1980s which brought sugar exports to a standstill and succeeded in raising the minimum agricultural wage. This rare victory for the union movement was, however, followed by the brutal repression of community leaders and trade unionists. Since the strikes, mill owners have sought to eliminate union influence by shifting from a permanent workforce to a reliance on seasonal, non-unionised labourers [32].

Today, Guatemala is the second most dangerous place in the world to be a trade unionist after Colombia. Since 2007, 64 trade unionists have been murdered, trade union leaders routinely face harassment and threats, and blacklisting is common [40]. The criminalisation of activists was often referred to by respondents, especially those who belonged to or who worked with local communities. On the Pacific Coast, many of the residents interviewed had themselves been targeted, or had relatives who had been disappeared or killed, by the military following the strikes of the early 1980s. Many were still affected by the repression and violence of the civil conflict, and some spoke of the fear that those in their community had of organising. Further, the limited employment opportunities on the Pacific Coast meant that many needed to work on the plantations and were unwilling to run the risk of being blacklisted. In addition, one interviewee argued that the temporary nature of employment on sugarcane plantations provided a disincentive to unionise.

The freedom to join labour organisations and to perform collective bargaining is one of the requirements of the ISCC standard. However, this was highlighted by one employee of a sugar mill who had worked on compliance with the ISCC as a key challenge. She explained that:

'Here, trade union [*un sindicato*] is a bad word. We encountered a lot of resistance from upstairs [i.e. the mill owners] – their initial reaction was 'you're crazy!' But we did some research, we benchmarked against other companies with similar standards and we came across a coffee company certified by the Rainforest

Alliance. We established that they would hold meetings with their employees and that each week they would choose a representative and that person would represent his colleagues and bring suggestions for improvements to each meeting. We've tried to replicate that model here and it's called a 'moment for dialogue'. Every week, or fortnight, or month – they [the workers] decide how often – they [the workers] choose a representative and he represents others at these dialogues. And they [the ISCC] accepted our suggestion' (sugar mill employee, February 7 2012, Guatemala).

Given the sugar sector's history and anti-union sentiment, it is doubtful whether employees would feel able to express their discontent with working conditions in such a setting. Yet, in this way, this mill was able to effectively bypass the right to unionise. This denial of commonly accepted workers' rights runs the risk of the EU being seen as supportive of labour practices that would not be accepted within EU Member States and that break the laws of producer countries. Rather than providing a benchmark to which biofuel producers should conform, the ISCC's sustainability certification effectively rubber stamped questionable labour practices.

### 5.3. National legal frameworks

Under Art. 17(7) of the EU RED, the Commission is required to report on whether countries that are a significant source of biofuel feedstocks have ratified and implemented key international protocols, including those of the ILO (discussed above), as well as the Cartagena Protocol and the Convention on International Trade in Endangered Species. Paragraph 69 also refers to compliance with national nature protection laws. Principle 6 of the ISCC requires that biomass production takes place '*in compliance with all applicable regional and national laws and shall follow relevant international treaties*'. In addition to the requirement that land has been used legitimately (Criterion 5.1; major must), producers must also demonstrate awareness and compliance with relevant laws and international treaties (Criterion 5.2; major must) [37].

Guatemala had ratified the key international treaties listed in the EU RED and required by the ISCC. However, as alluded to above, the rights and responsibilities that these treaties conferred were rarely vindicated. As one public sector interviewee explained there was 'no shortage of laws', rather the issue was one of institutional capacity to implement, enforce and monitor compliance (Ministry of Agriculture, Livestock and Food, March 30 2012, Guatemala). An academic agreed, arguing that that the government bodies responsible for overseeing the protection of local habitats, including forests, lacked the resources to be able to fulfil their official mandates. Speaking of the ministry in charge of protecting natural areas, he asked:

'How are they supposed to take care of a few trees when they don't know how they're going to pay next month's salaries?' (Environmental scientist, April 12 2012, Guatemala).

Law enforcement was a major concern across many different policy issues – not just agriculture and forestry. The ability to prove compliance with national laws therefore meant little in a country with a deteriorating rule of law.

Irrespective of whether they were from the private or public sector, NGO or local community, a common issue to emerge from interviews was the mistrust of, and almost a disregard for, the Guatemalan state. For example, independence from the state was a source of pride for some interviewees who worked for the sugar sector, with one respondent highlighting the absence of state

subsidies ('the government doesn't really help us with anything, thank goodness!' (Association of Guatemalan Sugar Producers, December 12 2011, Guatemala). Indeed, in many of the sector's zones of influence – specifically, the Pacific Coast and the highlands where many temporary workers reside – there had been a transfer of state responsibilities to the sugar mills. Through FUNDAZUCAR, the sugar sector's social foundation, the mills had provided schools, health centres and infrastructure, such as roads, to local communities. Several interviewees argued that the services provided were as good, if not better, quality as those that would have been provided by the state; however, as Oglesby [31] argues this transfer contributes to an already weakened state and creates a public sector dependent on private sources of credit. Many respondents drew attention to the wedded nature of the Guatemalan state and the domestic private sector and other research has revealed the close relationship between agro-industrial activities and financial capital within Guatemala [32,41]. This, combined with the importance of the sugar industry to the national economy, meant that the sector was able to wield significant political and economic influence. In the absence of the state, the EU's sustainability requirements – and its associated certification schemes – took on additional importance as they became the de facto standards that the sugar sector had to meet.

## 6. Discussion and conclusions

This paper has considered the extent to which the hybrid governance approach adopted by the EU RED is able to capture the issues that are salient to the Guatemalan context. This is critical given the limited empirical research on the performance of sustainability standards to date, particularly on their ability to address the social and livelihood issues associated with biofuels. Focusing on three issues – land access, trade unions, and law – this analysis reveals that the hybrid approach of the EU fails to capture key sustainability outcomes associated with biofuels in Guatemala. Biofuels are, however, a relatively new phenomenon in Guatemala and it is apparent that the sustainability concerns raised during interviews extend far beyond just biofuel production. Rather, they are intimately connected to the wider agricultural systems within which biofuels are embedded. Global demand for biofuels is highly unlikely to have driven the issues discussed above since ethanol is just one product of many produced by the sugar sector. The issues raised relate to the political economy of sugar in Guatemala, and its chequered environmental and social history, and raises three areas of concern for the EU's governance framework.

Firstly, is the role of the state. Hunsberger et al. [27] observe that national laws, for instance on environmental protection, indigenous rights and labour practices, are better placed to influence practice than voluntary measures specific to biofuels. However, this paper has drawn attention to the weakness of the Guatemalan state and its capture by domestic elites. While the legal framework ostensibly safeguards the social and environmental sustainability of the sugar sector, in practice the lack of institutional capacity means that law enforcement is inadequate. As a result, it is the EU market that sets the sustainability requirements with which biofuels produced in Guatemala should comply. Under such circumstances, certification schemes are likely to assume additional importance yet, as this paper has shown, may be blind to the political economic realities within which biofuels are produced.

Secondly, and related, the perception that the EU market requires biofuel producers to comply with the 'highest sustainability standards' (Renewable Fuels Association, December 13 2011, Guatemala) runs the risk of legitimising unsustainable practices [23]. The EU RED and its associated certification schemes address just one relatively minor component of a complex agricultural

system, yet the ability to demonstrate compliance with sustainability schemes effectively rubber stamps the agricultural and social practices of the sugar sector.

Finally, the EU's governance framework for biofuels fails to capture many of the issues that matter to local people and their communities, namely land access, trade unions, and compliance with the law. This is problematic as it raises questions about the ability of the EU's governance framework to drive more sustainable practices in producer countries. While sustainability standards had driven some positive changes in Guatemala, they had also endorsed highly questionable practices.

To conclude, by negating the concerns of those affected by agricultural production, the EU's governance system runs the risk that it will strengthen the position of more powerful actors while further marginalising already vulnerable people and their communities.

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