



Sugarcane Ethanol Production in Colombia: Assessing the Potential of Bonsucro Certification for Addressing Land and Water “Grabs”

By: Theresa Selfa, Carmen Bain
and Renata Moreno

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1. Introduction

Colombia has emerged as one of the larger producers of agrofuels in Latin America, and currently is producing both oil palm biodiesel and sugarcane ethanol. Biofuels have been promoted by the Colombian state with a narrative similar to that heard in many countries: to reduce carbon emissions, to reach energy self-sufficiency and to boost agricultural and industrial diversification. In addition, the growth of agrofuels in Colombia is in response to increasing demand from countries in the global north (US and EU) to assist in meeting their renewable energy mandates by importing biofuels.

The context for the growth of the Colombian biofuels industry makes the case study interesting as well. First is the history of armed conflict in regions now promoting biofuels as alternative rural development strategies. Second, biofuels are being grown in regions with entrenched unequal land distribution patterns and a long history of sugarcane production and exports. Third, the recent expansion of neoliberal policies and initiatives, such as passage in 2011 of Free Trade pact between Colombia and the US, and the Colombian sugarcane industry’s recent entry into Bonsucro, the multi-stakeholder initiative to develop a standard and certification system for sustainable sugarcane, shape the place of biofuels within national and international agendas.

The growth of agrofuels in Colombia has not followed a “land grab” model, in that it has proceeded with strong support of national policy mandates, has been largely controlled by national agroindustries, and is reinforcing existing patterns of land ownership and land concentration in the country. Agrofuels in Colombia follows what Borras et al (2011) call the “flex crop” model in that the use of palm oil and sugarcane as food or feed depends on the particular configuration of government mandates, incentives, international markets, at a given time. In this paper, we examine the forces and recent drivers of the shift from long standing food crops into fuel crops in Colombia.

The paper draws on in-depth exploratory interviews with stakeholders in the sugarcane and ethanol industry in the Valle del Cauca region in southwest Colombia between June and August 2012. Stakeholders included farmers, union activists, local government officials, officials from sugar industry associations (producers and refineries), sugar refineries, and research agronomists. The interviews focused on understanding the role of sugar and ethanol industries in the Valle del Cauca, impacts of these industries on social and environmental conditions and on the prospects and limitations for multi-stakeholder governance initiatives like Bonsucro to mitigate impacts.

To frame our discussion, we draw on the theory of access (Ribot and Peluso 2003) to investigate the key mechanisms, such as public policy, institutions, discursive strategies, and technology, that actors use to benefit from the development of the biofuel sector. The Colombian government is promoting biofuels as a rural development strategy intended, in part, to ameliorate the poverty and marginalization faced by rural peasants and communities. Yet, our interviews reveal that public policy, together with norms and conventions between local government officials and landowners, are strengthening the ability of large-scale sugarcane producers to

intensify and extend their control over land and water resources, in order to benefit from biofuels development. We argue that large-scale sugar mills and processors are now turning to Bonsucro certification to deepen this control while providing assurances to local communities that their actions are socially and environmentally responsible. With Bonsucro certification, which is necessary to meet European demand for biofuels, the intensification of inequitable land distribution and access to water is being accomplished under the discursive and symbolic guise of sustainable development.

The next section describes the theoretical starting point that frames our investigation of the case of the emergence of Colombian agrofuels. Following that, we describe the historical development of agriculture in the Valle del Cauca region in Colombia, and how sugarcane ethanol industry has emerged in this context. We then draw on data from our interviews to illustrate how sugar industry is framing their participation in Bonsucro, and the effects of the increasing intensification of sugarcane for ethanol production on land and water access for communities.

2. Biofuels, Land and Water Grabs, and Prospects for Sustainable Certification

The past half decade has witnessed a dramatic increase in the production of biomass in the global south to meet the growing demand for renewable energy in the global north. Despite the prevalence of neoliberal ideology and practice, government policies have played a major role in the development and expansion of the biofuels industry globally over the last decade. Many governments have instituted mandates for the production and use of biofuels, but far fewer have set standards for greenhouse gas (GHG) emissions reduction or socio-economic criteria for biofuel use (German and Schoneveld, 2011). As of 2009, biofuel mandates were in place in 24 nations spanning advanced industrialized (US, Canada, Germany) middle income (Chile and China) and developing country (Peru, Colombia and Dominican Republic) contexts (Bailis and Baka, 2011). In general, government mandates have privileged corporate ownership and control of energy resources over local biofuels development that could enhance local “energy sovereignty” (Borras et al. 2010, 578).

In the early and mid-2000s, strong political support for renewable energy in the US led to a suite of government policies, which in turn fueled the dramatic expansion in US biofuel production (for specific details on these policies see Lehrer, 2010; Wallender et. al. 2011). Of particular significance was the 2005 Renewable Fuel Standard (RFS1) that established a guaranteed market for ethanol by requiring the blending of at least 4.7 billion gallons per year (bgy) of corn ethanol with petroleum. This mandate was expanded with the 2007 Energy Independence and Security Act (EISA) that required the blending of 15 bgy of corn ethanol by 2015 and an additional 16 bgy of advanced biofuels by 2022. The US government has developed some modest mandates for GHG emission reductions for biofuels relative to petroleum. For example, the 2009 Renewable Fuels Standard (RFS2) mandates a 20 percent reduction of GHG emissions for conventional biofuel and a 50-60 percent reduction for advanced or cellulosic biofuels (National Research Council, 2011).

In 2009, the European Union (EU) established the Renewable Energy Directive (RED), which mandates that 20 percent of transportation fuels will come from renewable sources by 2020, and requires that an initial 35 percent GHG reduction will increase to 50 percent by 2017. There are additional environmental sustainability criteria in the RED (German and Schoneveld, 2011 Bailis and Baka, 2011). These government mandates have driven the expansion of

voluntary standards and certification schemes designed to ensure that biofuels exported to the EU meet the RED sustainability rules. In 2011, seven such schemes for biofuels were approved by member states (German and Schoneveld, 2011). Most of these schemes are being developed and implemented by private-sector actors (e.g. Abengoa, the multi-national corporation of Spain) or multi-stakeholder initiatives that bring together social movement organizations (SMO) and corporations (e.g. the Roundtable on Sustainable Biofuels) (German and Schoneveld, 2011).

Sugarcane ethanol is particularly valued by the global north because it is considered an “advanced biofuel” under the US RFS2 and the EU RED, both of which privilege GHG emission reductions as an environmental good. EU RED certification is a legal requirement for imports of biofuels into the EU. Therefore, sugarcane ethanol is targeted by importing nations like the US and EU.

The dramatic expansion in biofuel production has led to intense debates within the scientific and policy-making communities regarding the degree to which the production of biomass for ethanol produces net carbon benefits thereby reducing GHG emissions (Searchinger et al. 2008; Fargione et al. 2008; van der Horst and Evans 2010). Less attention has been paid to the significant local level socio-economic and environmental impacts that the production of biomass for biofuels has the potential to have, especially in relation to water quality and quantity, as well as land use change and its concomitant effects on biodiversity, food security and property rights (Mol, Scarlat and Dallemand 2011).

In addition, the expansion in biofuel production in the global south is helping to drive “land grabs,” characterized by large scale acquisition of land by foreign investors (cite). Borras et al (2011:5) argue that land grabbing in Latin America and the Caribbean does have distinctive features, including: “the significance of private lands transacted; the critical role played by domestic elites as key investors; the significance of intra-regional companies (TLCs) alongside conventional transnational companies (TNCs); it is occurring in countries that do not fit the usual profile of a ‘fragile’ or ‘weak’ state.”

Concerns about the sustainability impacts of biofuels, together with the EU RED mandate that biofuels must reduce life-cycle GHG emissions relative to fossil fuels, are driving the development of multi-stakeholder initiatives (MSI) designed to address these issues. The primary initiative in relation to sugarcane production and ethanol is Bonsucro, which was launched in 2005 with the goal of developing standards for the sugar industry. Bonsucro’s membership includes NGOs (e.g. WWF and Solidaridad), producers and production companies, and end-user companies and it became an Associate Member of ISEAL since 2008. In 2010, the brand, Bonsucro, was launched and in June 2011, certification began. Bonsucro Certification System and Standards are being considered for recognition as a voluntary standard within the European Union Renewable Energy Directive (EU RED) and Fuel Quality Directive (EU FQD). This will allow companies wishing to produce or trade biofuels for import into the EU to be Bonsucro EU Certified. Bonsucro’s Standard provides single certification auditing of both sugar and ethanol streams, which allows a mill to switch between the two. The Standard focuses on five key areas related to the social and environmental impacts of sugarcane production, which are: legal compliance, biodiversity and ecosystem impacts, human rights, production and processing, and continuous improvements.

Similar to other MSI standards and systems of independent auditing, Bonsucro relies on scientific practices and a discourse of objectivity and value neutrality that makes it broadly

appealing and difficult to challenge. The organization explains that its distinguishing feature is that it is the first sustainability standard to develop a metric based standard designed to measure the impact of the sustainable production of sugar cane

(<http://www.bonsucro.com/standard/index.html>). The Bonsucro website explains that “Metric standards have an advantage over other practice defined approaches standards, inasmuch as they are non-prescriptive and do not presume to instruct growers and processors how to manage their businesses, on the one hand and on the other, foster regional impact reductions rather than simply reduction by individual farm units” (2009 Newsletter). The editor of Sugaronline, a website for the sugar and ethanol industry, explained that Bonsucro’s value comes from its basis in metrics: “Cold, hard facts and numbers that are hard to dispute.... No reliance on academic theory or development ideals of what should be or could be, no gray areas. Sustainable sugar or not: this is how you achieve it and this is how you get better” (Sapp 2011).

Central to the discourse of objectivity is the ideal of political independence and a core value of Bonsucro, as with most MSI, is that they are organized intentionally to exclude government (Ponte 2008; Cheyns 2011). To illustrate, Bonsucro explains that it has worked to expand its membership base, including “core Oil and Bio Fuel members BP, Shell and Greenergy,” whose financial support was important for ensuring their “continuing independence from government or other institutional sponsorship” (2009 Newsletter).

MSI presume that, free from government interference, their standards and audits will rise above localized, political-economic contexts for the good of the “global commons” (Ponte 2008). Yet research has shown that efforts to transcend local and national power relationships and socio-economic and environmental conflicts are largely a myth. In her research, Reynolds (2012) has developed a “social regulation approach” to illustrate how systems of certification, such as Fair Trade, do not operate independently but instead are embedded within economies shaped by social, political and economic institutions. Moreover, the local context can produce both anticipated and unanticipated effects (Bartley 2010). For example, Ponte (2008) shows how Marine Stewardship Certification (MSC) certification in South Africa was appropriated by white-owned fishing groups to maintain market control and exclude black-owned companies. From this perspective, certification does not occur within a political-economic void but instead is influenced and reshaped by configurations of power and political-economic interests at various scales (Manning, Boons et al. 2011; Bartley 2010; Ponte 2008; Reynolds 2012).

Our goal in this paper is to illustrate how the local context shapes prospects for sustainably certified biofuel production. To accomplish this, we draw on Ribot and Peluso’s (2003) theory of access. While traditional views of power focus on property, Ribot and Peluso (2003) argue that power is also derived from the ability to access things, such as natural resources. In other words, while property is concerned with the *right* to benefit from something, access is concerned about the *ability* to benefit from something. Rather than focusing on the state as the sole locus of power, this framework recognizes that an actor’s ability to gain, control and maintain access to resources is embodied in a range of “structural and relational mechanisms” or “bundle of powers” (Ribot and Peluso 2003:164). These mechanisms can include government policies and regulations but also institutions, material objects such as technology, social and economic relations, market access, discursive strategies, and symbols (Ribot and Peluso 2003). In particular, the theory is concerned with investigating the material, cultural, political or economic strands of powers that are not always readily apparent, such as corruption or theft, that are deployed to gain access. In sum, this framework is a tool for identifying the range of mechanisms

that can affect the distribution of resources, which has important implications for well-being, justice, equity and sustainability.

Using this theory, our objective is to map empirically who, and who does not, benefit from the expansion in the production of biofuels in Colombia. Critical to this process is an actor's ability to access markets as well as natural resources such as land and water. Drawing on this framework, Marin et al. (2011) argue that the expansion of biofuels in Colombia has to be situated in a context whereby access and use of resources necessary to the industry, such as land, water or labor, are rooted in historical agrarian structures, social arrangements, contractual arrangements, and national policies that privilege certain interests, as well as illegal mechanisms such as the use of violence. State laws and policies intended to expand the biofuel industry are a key mechanism that has facilitated the ability of the sugarcane-industry to benefit from resources, such as land and water, at the expense of other actors, such as peasants, indigenous and Afro-Colombians (Marin et al. 2011).

In this paper, we extend the work of Marin et al. (2011) by considering the means through which large-scale sugarcane plantation and mill owners are working to benefit from new biofuels incentives by expanding their access to land, solidifying control over water resources and technologies, and gaining entry to foreign markets. Within this context, we argue that Bonsucro certification will strengthen the ability of elites to benefit from biofuels by providing them with the institutional mechanism—EU RED approved certification— necessary to gain entrance into the valuable EU market. In addition, the institutional, discursive and symbolic value of sustainable certification will likely provide legitimacy to a process of intensified sugarcane production (what elsewhere is being celebrated as “sustainable intensification”) (FAO, 2010) and land and water grabs by the elites. Considering how Bonsucro certification might play out with the specific political economy of Colombia is therefore important for understanding its relevance in terms of addressing issues of land and water rights, food security, and community benefits.

3. Expanding Biofuels in Colombia

The Colombian government has played a central role in the development of the agrofuels sector. Government support for agro-fuels began with the Uribe administration (2002-10), who defined agro-fuel production as one of the major strategies for rural development. The goal was to establish a biofuel industry by extending and adapting the existing industries of sugar and palm oil. Government incentives included mandatory blends, tax exemptions, access to land and special loans. A 2012 national government decree (#4892) declared a biofuels blend level required in vehicles of 10%, with a range of 8% to 13% for ethanol and 10% for biodiesel. For 2013, the levels can be changed by the government in consultation with Biofuels Commission if the targets cannot be met (USDA FAS, 2012). Currently, in the ethanol producing Southwest region of the country, a 10% ethanol blend is mandated and in the rest of the country 8%. Biodiesel has reached 10% in the western part of the country and 7% in rest, including in Bogota, but the percent blended is expected to rise more quickly than ethanol because of the rapid expansion of palm oil plantations for biodiesel (USDA FAS 2012).

The expansion of biofuels was assisted by international cooperation and funding, mainly from the U.S, with support for palm planting as a strategy to consolidate territorial control and fight against illicit crops as well as to promote alternative development projects. In the departments (regions) of Bolivar, Meta and Sucre, biofuel projects aim to employ demobilized

members of paramilitary groups as well as people displaced by violence. Those efforts have been coordinated by the USAID (United States Agency for International Development) (Mejia, 2011). These efforts meant that by 2012, approximately 40,741 hectares of sugarcane were dedicated to bioethanol production and 168,200 hectares of palm oil for biodiesel (Fedebiocombustibles, 2012a, 2012b). With the dramatic expansion of palm oil, Colombia has emerged as the largest producer of both palm oil and biodiesel in Latin America and the second largest producer of ethanol, after Brazil (Min Agriculture, 2012).¹

Despite this expansion, Colombia has not yet met its national blend mandates, let alone its goal of becoming an exporter of ethanol and biodiesel. In response to the shortfalls, the government modified its target downward for both ethanol and biodiesel (USFA FAS, 2012). Colombia's international competitiveness is constrained because its existing infrastructure and current business model used for the production of biodiesel and ethanol is not cost competitive with its most immediate competitors (Brazil in ethanol and Malaysia in biodiesel) (Kojima, 2011). In order to address these constraints, efforts are being made to increase production levels by expanding the area under cultivation, improving international competitiveness by reducing costs, and orienting its business model towards international markets, which includes adopting international sustainability standards. Support for these efforts is also coming from foreign governments, including Japan, as well as the Inter-American Development Bank, which has financed projects aiming at finding and correcting bottlenecks in biofuels production (Toasa 2009). With these combined efforts, Jorge Bendeck, executive president of Fedebiocombustibles, the national association of biofuels, optimistically projects that the country's ethanol output will double between 2012 and 2014 (Recorder Report, 2012).

Implementing Bonsucro Certification

Within this context, the industry recognizes that to access international markets, especially the EU, it must adopt standards that assure its buyers that it is being produced in a sustainable manner. The participation of the Colombian Sugarcane Growers Association (Asocaña)² in Bonsucro was preceded by the industry's involvement in international initiatives promoting sustainability, especially the Global Pact. Bonsucro certification was perceived by the sugar industry in Colombia as a unique opportunity to standardize the disparate and isolated environmental projects that were being undertaken by some sugar mills and cane growers since 2007 into a more coordinated effort toward sustainable practices encompassing the industry as a whole. Our interviewees explained that Bonsucro certification will allow the sugar industry to accomplish important international and national objectives: to access European markets and to demonstrate "social responsibility" to local communities where biofuel production is taking place. As one industry participant explained:

Our intention [with certification] goes beyond opening new markets; it is more about social responsibility through a standard that allows us to have a better produced cane.

[Certification] makes it easy for us to show that the sugar sector is actually committed to sustainability.

¹ Nevertheless, it is important to point out that its production levels are dwarfed by Brazil in terms of ethanol and Brazil and Argentina in terms of biodiesel produced by soybeans.

² Asocaña represents 14 sugar mills and 5 ethanol plants; its mission is to promote the development of the industry. (Toasa 2009).

The first steps toward certification were taken in 2009 when Asocaña took the initiative to become informed about Bonsucro. In 2010, pre-audits were carried out in eight sugar mills by the certification firm CERT-ID. The recommendations from these pre-audits were that for the sugar industry to achieve certification it needed to improve its management and control of sugarcane suppliers as well as its management of protective forest strips and wetlands. In 2011, Asocaña trained 40 internal auditors to facilitate the certification process, with the goal of 40% of the total area planted with sugar cane to be certified by 2013. According to our interviews, Asocaña believes that the industry is now complying with most of the requirements of the standard and that it does not need to do many further changes or adaptations in terms of technical procedures. It is important to note that Bonsucro certification requires an 80% compliance with the principles of the initiative, which leaves a substantial margin of error in terms of aspects that may be harder to implement.

In addition to the cost of the pre-audits, the sugar mills have incurred some costs related to the investments needed to restructure their labor obligations in certain areas as well as to implement databases on environmental information and regulations. Asocaña directly manages over 45- 50% of the area planted with sugar cane, while the other 50% is managed by private growers who supply the industry. One of the problems identified by an industry participant is their challenge getting sugar cane suppliers to adopt this standard, especially since it requires investments to make changes in their land and water management, among others, to meet the standard. An industry leader explained to us that one significant change is that the sugar mills have to amend their contracts with their sugarcane suppliers, to ensure that their suppliers abide by the law and provide for employee benefits. To help them implement these changes, Asocaña decided to affiliate with the Colombian Association of Sugarcane Cultivators and Suppliers (Procaña)³ and they accepted Bonsucro's invitation that their President, Guido Mauricio López, become a member of Bonsucro's board of directors.

Since 2008, Procaña began to slowly investigate what sustainability is, which entities are working on it, and they also began to have regular meetings with Bonsucro. In an interview, one of Procaña's spokespersons explained that Bonsucro offers a mechanism to implement more environmentally friendly practices, which is especially urgent in order to prevent the industry from facing future conflicts with local communities, international organizations and business partners, especially related to water shortages and community health impacts from water contamination and burning. Procaña also hired people to advise them in how to include sustainability issues and how to raise the awareness of farmers. Procaña representatives explained to us that one of the main difficulties they face is a cultural one: "To break those structures of 50 years of doing the same process with the same technological package is not easy." To date, Procaña has not undertaken any pre-audits, as Asocaña did, as it is still in the first phase, working to devise a long-term permanent training process with the farmers. In order to do this they are seeking to create a sustainability fund and they expect Bonsucro and international NGOs to support them in these costly training efforts.

³ "Procaña groups small sugarcane producers, and its goal is to advise them in signing contracts to sell cane and in obtaining loans" (Toasa, 2009: 8)

Land Ownership, Land Grabs and the Limits of Bonsucro Certification

To benefit from government incentives for biofuels and new market opportunities for exports, access to land is critical. At the same time, *who* gets to access land is at the heart of concerns related to poverty, inequality and sustainable development. A World Bank (2004) study on land policy in Colombia found that much of the land is highly ‘underutilized’ for agricultural purposes due to the unfair concentration of land ownership⁴ (Smith and Vivekananda 2008). Approximately, 1.15% of the population owns 52% of the land and 54% of rural families (1.3 million) have no land (Smith and Vivekananda 2008; Padgett, 2012). The inequitable distribution of land perpetuates high levels of inequality and poverty in Colombia, where 45% of the population lives in poverty and 12% live in extreme poverty (Smith and Vivekananda 2008).

Inequitable land distribution is the product of government policies and fiscal incentives that have favored large-scale agribusiness and plantation agriculture. State policies in relation to biofuel production have the potential to deepen land inequities in two ways. First, demand for ethanol is reinforcing *existing* patterns of land ownership and land concentration by large scale agribusiness producers and landowners who can take advantage of their preferential access to capital, technology, agricultural inputs, and systems of irrigation and drainage (Mejía 2011). Second, efforts by the Colombian government to *expand* the agricultural frontier and facilitate land transfers for flex crops privileges the agro-industrial model and access by agribusiness and large-scale landowners and while weakening access for small-scale and indigenous farmers, peasants, Afro-Colombians (Mejía 2011).

INSERT FIGURE 1

Reinforcing existing patterns of land ownership

Sugarcane production is concentrated in the Valle del Cauca, located in the southwestern part of country, where it has been produced for more than 140 years (see Figure 1). Other sugarcane regions include Cauca, Caldas, and Risaralda and the new region of Meta. In addition the regions of Antioquia, Santander, Boyacá, Quindío and Tolima produce sugarcane for panela (Mejía 2011). In the Valle del Cauca, 5.1% of the registered landowners are in possession of 60.9% of the land (De Roux et al, 2008 cited by Marin et al, 2011). The shift from more diverse, small-scale farming production systems to large-scale, monocropped sugarcane production systems occurred over several decades and intensified during the market liberalization period of the mid-1990s as noted by several interviewees. In one interview, a grower and head of an organization focused on technical assistance for agriculture, explained how through neoliberal policies and market conditions, sugarcane came to completely dominate the landscape in Valle del Cauca:

Since the late nineteenth century there have been sugar and panela mills. There was some balance between lands dedicated to sugar cane and lands planted with soy, corn, beans, vegetables, cotton. This balance lasted until 1992 when the famous liberalization of markets (*apertura economica*) was launched during the Gaviria’s government. During this time, the market was flooded with cheap products from other countries, especially Brazil...

⁴ It is important to note that the World Bank report used the same terminology of “underutilized land” that is now being used to justify land grabs

Prices declined about 60%, so local growers couldn't sell their products. These are annual crops; so you sell them, prepare the soils, and sow again, this is the cycle. If the sale was delayed, if you didn't get paid in time, if the price crashed, plus the uncertainty of what was going to happen next growing season, all of [these factors] stopped farming in Valle del Cauca. There were no alternatives; sugar cane was the only successful crop in this process. So, [we] ended up shifting to sugar cane...the sugar mills lent the growers money for this conversion.

Government policies and legal instruments supporting the development of the biofuels industry are reinforcing and intensifying the historical inequitable distribution of land by favoring a dominant capitalist agriculture over small farmer agriculture (Marin et al, 2011). Between 2001 and 2011, land planted with sugarcane in the Valle del Cauca grew by 20% from 186.500 hectares to 223.905 hectares (Marin et al, 2011 and Fedecombustibles, 2012a). In just a one year period (2008-2009), the area planted with other food and cash crops, such as cotton, rice, beans, corn, soy, decreased 11.62% (5,292 hectares), largely replaced by sugar cane (Anuario Estadístico del Valle, 2008-2009). This concentration was reflected in comments by interviewees. When we asked one small farmer if he was making any changes to his production practices in order to gain Bonsucro certification for his sugar he commented:

No, because maybe they are implementing those practices with big growers. ... basically the sugar cane business is one of big landowners, there are people who have a lot of hectares.

These sentiments also applied to other organizations tasked with offering assistance to farmers but who in fact concentrate their efforts to benefit large farmers. One small farmer interviewee remarked on the sugar producer association:

Procaña is just a producer association that has a board of directors comprised of large producers. I am not a member of Procaña, they negotiate looking out for their own benefits.... The large farmers prevail because of their large extensions of land and their easy access to loans.

The policies and legal instruments supporting the development of the biofuels industry are also reinforcing the high degree of concentration of ownership of sugar mills within the Valle del Cauca. The production of ethanol is concentrated among just five of the 13 sugar mill companies who have the necessary capital (Mejía 2011). Ardila Lulle, which is one of the largest conglomerates in Colombia, owns the sugar mill Incauca, and holds 52% of Providencia mill and at least 35% of El Ingenio Risaralda mill. Together, these three mills account for 65% of ethanol production in Colombia. Just two mills account for the remaining ethanol production: Manuelita (20%) and Mayaguez (15%) (Pérez and Álvarez, 2009).

The intensification of sugarcane production must be situated within the long history of struggles for land by communities of indigenous, peasants, and Afro-Colombians in Valle del Cauca and the contiguous region of Cauca (See Figure 1). (Alvarez 2007b, Mondragón 2007a; Marin et al. 2011). Until the 19th century, Northern Cauca was a territory dominated by few haciendas, their owners managed them from Popayan and employed slaves to work on agriculture, mining and cattle raising. Inside the territory of the haciendas, which had imprecise borders, or at the margins of them, black settlers constituted kinds of Palenques. Thus, a unique situation of internal colonization on flat lands was created, with an indigenous population

looking for the ownership of land as well as for their freedom from slavery (Aprile, 1994:212). In the second half of 19th century and until mid 20th century, two kinds of ownership developed in Northern Cauca. On the one hand, black small landholders flourished on the basis of their inclusion into the cash crop market or other goods, especially in Cali. On the other hand, many big haciendas were bought by foreigners or traders from Cali and became oriented toward the market, especially those devoted to rice and sugar cane crops. In the second half of 20th century, the sugar industry expanded steeply at the expenses of peasant ownership and economy. Between 1950 and 1990, many towns like Puerto Tejada became surrounded by intensive sugar cane cultures. From having slave haciendas, the territory passed to have haciendas and peasant landholders involved in local markets and from them to host an industrial economy based on the sugar cane culture. With this process came social struggles around land, freedom and the construction of citizenship.

In contrast, the black peasant economy evolved around the production of cacao. The decline of this crop after 1950 coincided with the sugar cane boom. Many believe that the decline of the cacao economy was connected to the effects of chemical spraying on rice crops and then on sugar cane crops.

In the Cauca region, a high proportion of the cane is grown directly by the sugar mills, mostly on their own lands. These lands were bought from livestock haciendas and from peasants, but the concentration of land was also obtained through displacement of peasant population. Between 1950 and 1958, there was a reduction of lands owned by peasants of around 11,000 hectares (Mina, 1975: 107). The subsequent peasant decomposition and proletarianization came along with an increasingly dependence on the jobs generated by the sugar industry: “The sugar expansion transformed the Northern villages from good markets to workers’ camps, with evidence of impoverishment for the dwellers of the region” (De Roux, 1991: 11). The loss of the land and the new work linkage through a precarious and unstable wage had consequences for the identity, representation and autonomy of the new workers: “The loss of autonomy for the peasants and their involvement in economic dependency schemes also meant the loss of control over their own decisions” (De Roux, 1991: 11).

The current strengthening of the sugarcane agro-industrial complex for biofuels will likely impede efforts at government land reform and land restitution efforts. In the Cauca region, which has the largest proportion of indigenous peoples in the country, the government had made a commitment to compensate indigenous communities for the loss of their land and for La Massacre del Nilo, a massacre that was perpetuated by paramilitaries against their peoples in 1991 to clear land for livestock production. Yet, according to human rights groups these communities now face an up-hill battle to access these lands because the land has now been leased by the government to large-scale producers in the sugarcane industry to expand the cultivation of sugarcane for ethanol (Mondragón 2007b; Revista Semana, 2008a; Marin et al. 2011).

In considering the ability of ethanol producers to access land to expand production, it is important to recognize that there are limited opportunities to expand sugarcane production in the Valle del Cauca. Any hope of meeting ethanol mandates and rising export demand will require sugarcane producers and agribusiness to establish new production centers elsewhere in the country (Mejía 2011). “This is an issue that the Colombian sugar cane industry is very well aware of, and we are searching in other parts of the country” for areas to plant sugarcane for ethanol, said Alvaro Amaya Estevez, director of the Colombian Sugarcane Research Center

(Cenicaña), which was founded by Asocaña (Gronewold 2011). The issue is where and how producers will access this land.

Land grabs? Expanding the agricultural frontier for biofuels

Borras (2012) argues that states play a crucial role in “land grab” initiatives by identifying, defining, reclassifying and quantifying land as available, thus facilitating investment in lands. In Colombia, studies carried out by the Ministry of Mines and Energy have identified around 4 million hectares and 4.9 million hectares for the possible expansion of palm oil and sugarcane respectively (Minminas 2012). Similarly, Cenicaña has identified 494,000 acres⁵ as possible sugarcane-growing areas in the northwest provinces of Sucre, Bolívar and Córdoba⁶ and the provinces of Vaupes, Guainia, Vichada, Meta, Auraca, Casanare and Guaviare in the east in what is currently a cattle production region (Toasa 2009).

The primary narrative among proponents of expansion of sugarcane production for ethanol is that the targeted land is “underutilized”, “marginal”, or “unoccupied.” According to Asocaña and Cenicaña, the sugarcane industry should consider expanding into land in the Northwest and East that they argue is unused or unproductive pasture land used for low-density livestock production (Toasa 2009; Recorder Report 2012). The Ministry of Agriculture claims that efficiencies in cattle ranching could be achieved through land consolidation and the introduction of feedlots (Gronewold 2011). Similarly, Jorge Bendeck, executive president of FedeBiocombustibles, argues that “There are 43 million hectares (106 million acres) being used for ranching, this could be reduced by half by increasing the number of cattle per hectare” to allow for the expansion of sugarcane production (Recorder Report 2012). The Minister of Agriculture and Rural Development, Juan Camilo Restrepo, explained that one of his strategic priorities is to provide the technology and scientific knowledge necessary to transform this vast Colombian territory (known as “Media Colombia because it occupies half the country) into a productive agricultural region, just as Brazil has done with its Cerrados region.

Several major petroleum and agro-industrial firms are already pursuing this expansion. For example, Ecopetrol, the state owned and largest petroleum company in Colombia, launched its project Bioenergy in the municipalities of Puerto López and Puerto Gaitán in the eastern part of the country (Meta and Los Llanos), and it has planted 6,000 hectares of sugarcane (El País 2012a). In 2012, the Valle del Cauca based agribusiness company, Rio Paila-Castilla, which has a 2.1% stake in sugar production, planted 2,000 hectares of palm oil in the municipality of Santa Rosalia in the eastern part of the country (Vichada, Los Llanos)⁷ (El Pais, 2011). Although Colombian agrofuels production to date has been largely controlled by national companies, there is increasing interest from investors from other Latin American countries (especially Brazil) and beyond (Borras et al, 2011).

⁵ This is equivalent to about the same amount of land used for sugarcane in the Valle del Cauca “and five times that used for sugarcane in ethanol production” (Toasa 2009). “CENICAÑA expects that yields in the northwestern and eastern regions will not be as high as those in the Cauca Valley but will be high enough to make ethanol production profitable” (Toasa 2009).

⁶ It is expected that about half of the 494,000 acres would be used to produce sugarcane-based ethanol, mostly for exports (Toasa 2009).

⁷ http://www.securities.com/Public/company-profile/CO/Riopaila_Castilla_SA_en_2584751.html

Proponents argue that this expansion will not be at the expense of crop production and will not affect food security (Toasa 2009), thereby making it politically palatable. Cenicaña Director, Amaya, explained that there is “a big area here that can be planted with sugar cane with no conflict with other food crops.” This stance is supported by FAO Director General Graziano da Silva (2012), who explained that the FAO found that Colombia could expand biofuel production without affecting food security (Scherer 2012).

Land Grabs and Prospects for Sustainable Biofuel Production

A key question is the role that Bonsucro certification may play in facilitating or limiting land grabs by large-scale sugarcane producers and processors to produce biofuels. In relation to land issues, Bonsucro’s key principle is “Principle 1: Obey the law” (see Figure 2) (Bonsucro 2011:5). Under this principle there are two standards that apply to both ethanol and sugarcane producers and must be independently verified. First, producers must comply with all national laws and international conventions “governing land tenure and land-use rights” (Bonsucro 2011:5). The relevant international convention listed is the ILO Convention 169 on indigenous and tribal peoples (Article 13-19), which “Respect and safeguard rights to lands and natural resources traditionally occupied and used; respect for customs of inheritance; no forced removals; compensation for loss and industry” (Bonsucro 2011:21). Second, producers must demonstrate that they hold clear title to their land “in accordance with national practice and law” (Bonsucro 2011:5) and that their right to own, lease or use the land is “not legitimately contested by local communities with demonstrable rights”⁸ (Bonsucro 2011:5).

INSERT FIGURE 2

Bonsucro certification is intentionally ahistorical and apolitical, instead the objective is a universalist set of standards that are measurable. In terms of land issues, the metric is whether a producer is complying or not complying with national laws and international conventions and whether he or she can demonstrate that they hold clear title to their land;⁹ Clear-cut, value-neutral, objective standards that can be universally applied are nominally highly valued by the industry. As mentioned above, the editor of Sugaronline celebrated Bonsucro’s emphasis on “Cold, hard facts and numbers” rather than normative ideals regarding what sustainable biofuel development can or should be (Sapp 2011: npn).

Yet the discussion above demonstrates that the process —and likely outcomes— of biofuel expansion in Colombia is neither apolitical nor value-neutral. Our interviews suggest that near absolute control over land has enabled the sugar industry to exert a great deal of influence over local and national politics, increasing their ability to benefit from national biofuels policies while limiting the ability of peasant organizations to propose alternative development patterns. Yet, Bonsucro’s legalistic focus ignores the Colombian state’s complicity in perpetuating, through its laws and policies, a system where most of the land is controlled by a small elite and the majority

⁸ “Those rights can be related either to legal ownership or lease of the land or to customary rights” Bonsucro (2011). Bonsucro Production Standard Including Bonsucro EU Production Standard. United Kingdom, Bonsucro. Version 3.0.

⁹ Validating whether land is being used legally and is not legitimately contested by local communities is beyond the bounds of this paper.

of rural families have no access to land. Bonsucro standards may in fact provide discursive and symbolic legitimacy to this system, which will be certified as legal, valid and sustainable.

The expansion of the biofuels industry raises legitimate concerns that land for ethanol production will come from displacing marginalized populations, such as rural campesinos, indigenous, and Afro-Colombians, or hindering their ability to return to land they consider their own (Witte-Lebhar 2011). In the Valle del Cauca, there is a long history of struggles for land by communities of indigenous, peasants, and Afro-Colombians (Alvarez 2007b, Mondragón 2007a; Marin et al. 2011).

Bonsucro's standard requires that land used for biofuel production is not legitimately contested by local communities. To address the problem of disputed land claims, producers are required to abide by laws intended to safeguard land rights or by international conventions in situations where national statutes are weak or absent. Yet, these requirements seem particularly naïve in a country where human rights groups argue that the issue of land ownership is extremely problematic. There is a long history of rural peasants displaced from their land through the use of threats and violence by any number of powerful interest groups, including government security forces, paramilitary forces, narco-traffickers, guerrillas, and large-scale farmers (Witte-Lebhar 2011), which now include those associated with biofuel production. The violent expulsion of peasants from the land is possible in many rural areas, especially those ridden with conflict, because state institutions and the rule of law are weak or absent (Smith and Vivekananda 2008; Semillas, 2009). Furthermore, land title and customary land use rights are often unclear and cadastral records are often inadequate or outdated (Smith and Vivekananda 2008).

For example, it has been noted that the expansion of sugarcane and oil palm is related to money laundering from drug interests into agricultural land and that some of these lands were obtained by the forced displacement of vulnerable populations (Semillas 2009). The expansion of oil palm crops has worsened land conflicts by encroaching into territories dominated by ethnic minorities. Companies such as Salamanca and Palmeiras, for example, were sued for illegally occupying 2,800 hectares of collectively managed territory from Afro-Colombian communities in the Choco region. In these areas armed groups were operating, which hindered efforts by these communities to recover their territory (Semillas 2009).

Bonsucro's standards seem unlikely to limit the sugarcane industry's ability to expand their agricultural frontier into Los Llanos. This is largely because most of these land transactions are voluntary agreements between buyers and sellers and have occurred legally, a process that is occurring in much of Latin America (Borras et. al., 2007; Borras et al 2011; German 2011). Therefore, Bonsucro's call to "obey the law" would seem redundant. Yet, legal does not imply that these transactions are either just or equitable and therefore it is important that this process be scrutinized in terms of its social, economic and environmental implications. For example, the process of biofuel expansion into low-density cattle ranching areas will most likely lead to the replacement of cattle barons with large-scale plantation owners and agri-businesses.¹⁰ Unfortunately, perpetuating this inequitable land distribution is not inconsequential. Without legal access to land, poor and landless farmers have contributed to environmental degradation by moving into marginal lands and cutting down rainforest in national parks to cultivate food crops

¹⁰ In addition, the EU Renewable Energy Directive requirement to reduce carbon emissions encourages producers to target areas with low carbon stock densities" German, L., et al. (2011). "Local Social and Environmental Impacts of Biofuels: Global Comparative Assessment and Implications for Governance." *Ecology and Society* 16(4).

(Smith and Vivekananda 2008). Yet these consequences are unlikely to be identified or addressed through certification since Bonsucro standards do not address indirect land use change (iLUC).¹¹

Water Grabs

Sugarcane and related agrofuel industries have been accused of producing an “ecological debt” in the Valle del Cauca. Sugar mills have appropriated and depleted water from rivers as well as from underground reservoirs and more than 3,000 km³ of potable water are used per year from more than 600 underground wells to irrigate the cane plantations.¹² Currently this flat zone has salinization and drainage problems, and water contamination related to agriculture is a serious problem (Perez et al 2011). The municipalities of Palmira, Candelaria and Cerrito are the three main areas planted with sugar cane in the Valle del Cauca, and those are the places with the highest rates of environmental conflict (Cortés, 2010). In part, these conflicts are related to water issues, especially the contamination of water sources and water shortages for small scale producers and household use.

The CVC, the Cauca Valley Corporation, is the agency in the region tasked with environmental management including water management. The CVC was founded in the 1950s as a regional development authority with the objective of promoting regional economic development through big infrastructure projects, such as irrigation, drainage and hydroelectric projects, that would prevent flooding and facilitate large scale agriculture in the Valle del Cauca. It was initially created by initiative of the elites of the region with the support of the outside finance from World Bank and experts from U.S.A. In 1993, Law 99 passed which altered the mandate of the CVC to become a regional environmental authority with functions of natural resources and environmental management. This change opened the door for local politicians to take control of administrative positions within the entity. This dovetailed with neoliberal policy changes throughout Colombia in the mid 1990s, through which much of the environmental legislation was weakened to preference private interests (Londoño 2008).

A recent study conducted on the use of water by sugarcane and ethanol industries in Valle del Cauca provided an overview of the extent of water quality and quantity problems in the region, and how water use has been supported through government policies and the CVC (Perez et al 2011). Five critical issues related to water use by sugarcane and ethanol producers were identified in the study: 1) An increase of 23 % in the amount of water used by agriculture in the Valle del Cauca over the period 1980-2009, most of which is attributed to the increase in sugarcane production. 2) The unequal distribution of water concession in the Valle del Cauca in 2009, as sugarcane production had 64 % of concessions for surface water compared to 26% for other human uses; 7% for other agriculture; 2% for industry; and 1% for other uses. Even more dramatic, 88% of water concessions for underground water went to sugarcane compared to 2% for human uses, 2% for other agriculture, 6% for industrial and 2% for other uses. 3) Lower rates

¹¹ This is probably because “unlike dLUC, which is attributable to the biofuel producer, the outcomes associated with iLUC cannot be linked to a specific set of actors” Bailis, R. and J. Baka (2011). "Constructing sustainable biofuels: Governance of the emerging biofuel economy." *Annals of the Association of American Geographers* **101**(4): 827-838.

¹²Accion Colectiva Popular. Information available at:

<http://www.corpodice.cocogum.org/Archivos/Accion%20Colectiva%20Popular/Accion%20Colectiva%20Popular.html>

for water were paid by the sugarcane industry relative to other users. With the exception of water for human uses, the sugarcane industry paid the lowest rate for surface water relative to other agriculture, industry, and other users. The low rates for water are especially problematic in terms of promoting water conservation and in terms of generating sufficient revenue to maintain water systems. 4) The sugar and ethanol industries are responsible for high rates of water contamination, especially pesticides, herbicides and fertilizers. In addition, the sharp rise in the production of ethanol in the last few years has led to a steep increase in the production of the vinasse as a byproduct. While small amounts of vinasse can be effectively integrated as a fertilizer into crop production, at high rates of concentrations it is leading to contamination of soil and surface water, especially with heavy metals. 5) The overall level of pollution of the Cauca river with nutrients, especially nitrogen and phosphorous, are quite high. Estimates of the contribution of pesticides, nitrogen and phosphorous from municipal versus sugarcane sources shows that 76% are coming from sugarcane with 24% from municipal sources. A 2009 study of the contaminants in the Cauca River showed concentration of herbicides, insecticides, heavy metals well above safe limits (cited in Perez et al, 2011). Both the disproportionate use of water and the contribution to contamination of water by the sugar and ethanol industries are clearly shown. While sugarcane production has been contributing to most of these water quality and quantity problems for decades, the shift into ethanol production, stimulated by government policies and facilitated by CVC, have led to a dramatic increase in water use and contamination, especially vinasse, since 2006.

Perez et al (2011) suggest that price of water needs to be increased to stimulate conservation but also that programs to improve agricultural practices in Valle del Cauca should be implemented and monitored to make sure they are being enforced. For example, they suggest using agroecology, precision agriculture and restoring natural buffer strips. However, none of these options appears viable in a context like the Valle del Cauca, in which the environmental management authority, the CVC, has been “captured” by sugar interests. In the next section we discuss how Bonsucro’s requirements might affect the environmental performance of sugarcane and ethanol in Colombia.

Environmental issues related to sugarcane production and processing are addressed in two Bonsucro principles: “Principle 4: Actively manage biodiversity and ecosystem services” and “Principle 5: Continuously improve key areas of business.” The first of these environmental criteria is designed to assess the impact of sugarcane on biodiversity and ecosystems services, which are specified through the following indicators: ensuring sugarcane production does not infringe upon areas of high conservation/biodiversity value, including wetlands and riparian areas; ensuring the quality of runoff water from sugarcane production is sufficient to support aquatic life. In addition, other criteria are limits to the amount of nitrogen and phosphorous fertilizers and pesticides applied to sugarcane, quantified as phosphate equivalent. However phosphate equivalents are used as a proxy of “risk” of eutrophication, and are not actually required to be measured in downstream water to assess contamination, which obviously is problematic. This indirect measure of water quality puts the burden on producer who would be applying the fertilizer to measure rather than requiring action from the mills. Moreover, in light of the study by Perez et al (2011), it seems apparent that application of inputs to sugarcane is not regulated or monitored and has already led to water contamination.

The criteria for “continuous improvement in key areas of business” include a number of environmental components as well, such as continuously improving soil and water resources,

reducing emissions and effluents, and energy efficiency in production of sugarcane ethanol. Here we will focus on how the improvement of water resources are proposed to be evaluated through specific indicators, namely: net water consumed through unit of product, which is defined as water captured or borrowed for use in irrigation and in processing, the amount of water used less water returned from mill to water source.¹³

The Bonsucro standards for water use for the production of sugarcane ethanol are designed to be applied to all parts of the commodity chain, from field to sugar to ethanol and to be applied equally across producing nations. In interviews with producers and representative from industry associations, we heard repeatedly that the requirements for water are problematic for Colombian sugarcane and ethanol producers and that they are looking for ways to modify the requirements to fit their own situation. In addition, interviewees also commented on how the development of technology for water use and greater efficiency for large producers has been a key area where the Colombian state has invested for their benefit. Large agricultural interests have been privileged over small producers and households who have increasingly lacked a sufficient quantity of water for agriculture and adequate quality of potable water for community and household use. We found that the state is not investing in ensuring water quantity and quality for other water users in the Valle del Cauca.

A representative from Asocaña explained some of the challenges the Colombia sugar industry faces with Bonsucro certification with respect to water use. He argued that the sugar industry is very diverse globally in terms of environmental endowments, which makes it challenging for Colombia to conform to requirements of Bonsucro. He explained:

the world sugar industry is very diverse. It is not the same the conditions in India than the conditions in Brazil or Colombia. The water requirements are different. Different from others we (in Colombia) produce during the whole year, and the standard falls short in accounting for those differences. This is one of the difficulties we have had in relation to the maximum limits that the standard establishes for some variables... We have had a hard time trying to adapt to this.

Asocaña decided to appeal to Bonsucro for modification of the standard to account for differences among countries, arguing that because Colombia needs to irrigate sugarcane and because they produce all year, the allocation of allowable water use needs to be adjusted.

We have submitted to Bonsucro some letters asking them to consider the possibility that in the new version of the standard they can take into account more of the specificity of each industry. What they tried was to take the experiences of the whole industry and to issue a standard for everyone, but it is very difficult some time to compare Colombia with India, for example in water consumption... To try to unify a standard for both of us is very difficult. This is one of the biggest problems we have faced, to try to fulfill a standard that doesn't apply to my specificity.

¹³ The standard set is 20 kg of water per kg of sugar in the sugar mill, and for ethanol, 30 kg per kg of ethanol and < 130 kg per kg of cane (Bonsucro, 2011).

While MSI like Bonsucro stake their credibility on objectivity and the equal application of standards across location, space and time, clearly this is not the case. We see how politics and local conditions intervene and can shape how standards may be applied and perhaps even modified to suit local demands.

In addition, the industry association representative made reference to the multiple byproducts and other environmental benefits derived from sugarcane ethanol as a way to compensate for some of the shortcomings related to water use. All of these byproducts were brought to light as a way to offset negatives and allow for Colombia to be certified under Bonsucro's standard.

We in the Colombian industry extract the most out of the cane, we do everything with the cane, we sell CO₂ to the soda industry, we sell bagasse for making paper, we sell energy. We want to include all this products in the accounting for the standard.

He continued to explain how Colombian sugar industry was assisted by the regional environmental authority, CVC, to manage their water resources most effectively for the industry because they all realize that water is essential to every aspect of sugarcane and ethanol production. An interview with a sugarcane grower confirmed that the CVC regulates the depth of wells, but does not impose restrictions on amount of water used. Many interviewees stressed how expert knowledge and substantial financial investment gave the sugar sector access to water and also was facilitating the efforts to apply it in a precise manner. The discourse of apolitical and impartial use of expert knowledge and water monitoring belies the collusion between the CVC and sugar sector which has facilitated disproportionate use of water by the industry relative to other users and overlooked the contamination of water, a public good, by large landowners.

As he explained:

...we monitor all the time and we have data to demonstrate that we are complying. ...What happens is that as a sugar industry we have a very good management of the hydric resource because we are intense in the use of the resource. We invest a lot of money in taking care of watersheds and water tables.... Our business is in the water, if we run out of water, everything will get complicated for us, our business would get ruined. ... We also have a Round table of Water which convenes all the experts and the heads of the water management areas of all the sugar mills to create guidelines and strategies to better use the resource.

Representatives from both Asocaña and Procaña explained how the industry was using metering and specialized irrigation systems that are able to detect soil moisture with such precision that they are able to reduce water use by 50%. Financing for this research and for the irrigation system came from the Colombian government and the CVC has also facilitated water use for the benefit of sugar sector. The producers benefitted from the research and argued the government should devote more resources to this research.

..each sugar mill is assigned a maximum flowrate, they have to pay a usage fee, the CVC is stimulating the use of meters (medidores) so the sugar mills are charged just for the water they actually use and not the maximum flowrate as it is done at the present.

We have asked for some resources from national government so that this watering system which is more costly than others. The government two years ago gave us some resources for

this purpose. In this moment those resources are almost out, that are an incentive for rural capitalization. But we have officially requested from the ministry that they study the possibility of by doing this they benefit does not just this accrue to the farmers but to the entire community. So that they study the possibility of augmenting the resources exclusively for this watering system to be implemented in areas where it does not exist. We recognize that it is a big package, but it already has concrete results.

An interview with an agricultural researcher who was critical of the sugarcane industry and land tenure arrangements provided a completely opposite analysis of water use and the social and environmental profile of the industry. He was critical of excessive water use by the sugar industry and of the resulting water pollution that affected potable water for surrounding communities. He indicated that while there are ostensibly restrictions on water use, they are not enforced by CVC.

The municipalities which depend on underground water suffer in the dry seasons from shortages in the water supply because the water is being robbed by the sugar industry, and with license of CVC. Candelaria, Pradera, many towns are affected by the lack of water during El Niño. The wells are very expensive to pump, so they prefer to use superficial waters, but there is not enough water for them and for the surrounding populations. 2004 and 2008 were very serious years in terms of lack of water. ... There are [restrictions on water use] but ... all the water management in Valle del Cauca is corrupt, CVC is coopted by the sugar mills, nobody knows what is happening.

While he criticized the CVC about their lack of transparency about water use, he stated that: “I have the impression that ethanol was necessary to justify the pumping because it is very expensive. In Brazil 95% of sugar cane is produced using rain water not irrigation.

We also interviewed some other residents in rural communities in Valle del Cauca who were driven out of small scale farming by land concentration and by expansion of the sugar industry. They described the difficulties they now face in accessing water for household use because of a lack of potable water from surface waters or from wells. These residents stated that they are forced to buy water for household use. They suggested that as the sugarcane growers have taken advantage of irrigation systems to maximize efficiency of water use, they are diverting water away from other community users.

Clearly, the case of sugarcane and ethanol production in the Valle of Cauca provides some interesting challenges for the application of Bonsucro as a way to improve sustainability. Both principles of “ensuring the quality of runoff water can support aquatic life” and “improving soil and water resources” are nominally positive in terms of improving environmental conditions. However, these principles seem limited in their application within a long standing entrenched system of unequal distribution of water and land resources supported by government policies.

4. Conclusion

Examining efforts to set standards for sustainable biofuel production adds an important new dimension to the expanding literature on agrifood standards and certification. Most studies of private agrifood standards and certification have focused on their implications for governing buyer-driven global value chains. In contrast, the development of biofuels has largely been driven by government mandates and regulatory efforts, and certification efforts have to be

understood within this context. Our concern here then is to understand how the historical and socio-political context of biofuels development within Colombia shapes the possibilities for Bonsucro certification to open or close spaces for advancing sustainable agriculture.

Multi-stakeholder certification initiatives achieve their legitimacy and authority from their assumed ability to transcend localized political-economic contexts. Proponents argue that such systems are superior to government regulation because they are crafted as scientific, non-political, and value neutral. Bonsucro, in particular, advances this narrative by emphasizing its metric based standards and excluding government participation in its standards development. Yet, the literature on sustainability standards demonstrates that standards—as with all norms, rules, convention—unfold within specific political economies and power relations.

In Colombia, large-scale landowners have long benefited from agrarian structures, government policies, and recent neoliberal market reforms that have privileged their interests by ensuring continued access to the land and water resources necessary for success. This historical development has contributed to a state of highly unequal land distribution and the figures stated above are worth reiterating: just one percent of landowners own half the land and half of all rural families own no land. Within this context, the Colombian government's efforts to develop biofuels are proposed as a way to accelerate rural development help redress the poverty and marginalization faced by landless rural peasants, indigenous and Afro-Colombians.

Yet, our study suggests that rather than ameliorate this situation, mandates by the Colombian state and the EU for biofuels will act to reinforce inequitable systems of land ownership and land concentration and even accelerate this process. Within the Valle del Cauca, a new market for sugarcane favors the historical structure of agriculture within the region dominated by large-scale landowners and the intensive, monocropped, water intensive production of sugarcane. With no more land to access within the valley, the sugarcane industry is now seeking—with the aid of the Colombian state—to expand their sugarcane frontier into new “underutilized” regions of the country. The value from this expansion, however, only comes if the industry can access international markets, principally the EU, and to accomplish this it must implement Bonsucro certification. From the industry's perspective, certification is necessary to ensure access to the valuable European market, while reassuring local communities in Colombia that production is taking place in a social and environmentally responsible manner. Participating in Bonsucro has given legitimacy to the topic of sustainability within the sugarcane industry in Colombia and requires producers and processors to implement changes to conform with more sustainable practices and discourses.

Yet, we find that rather than transcending socio-economic conflicts, power struggles, and governance failures, the prospects for Bonsucro standards in Colombia are deeply influenced by configurations of power and interests at the local, national, and transnational levels. While certification holds the possibility for modest reforms in terms of landowners complying with the law concerning land tenure and water use, the evidence suggests otherwise.

Within the context of Colombia, efforts such as Bonsucro are revealed as deeply flawed. “Independent”, “multi-stakeholder,” “scientific” standards and certification systems provide a veil of legitimacy and authority to a system that is premised on deeply entrenched historical patterns of inequitable land ownership patterns and access to natural resources. Here, Bonsucro standards may simply act to reinforce the paradigm of commodity agrofuel production and its concomitant inequities rather than moving towards an alternative model of agrofuel production

that would enhance agricultural sustainability and provide broader societal benefits in terms of poverty alleviation, food security and equitable access to natural resources.

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Figure 1: Main sugarcane-growing region in Colombia (Toasa 2009)

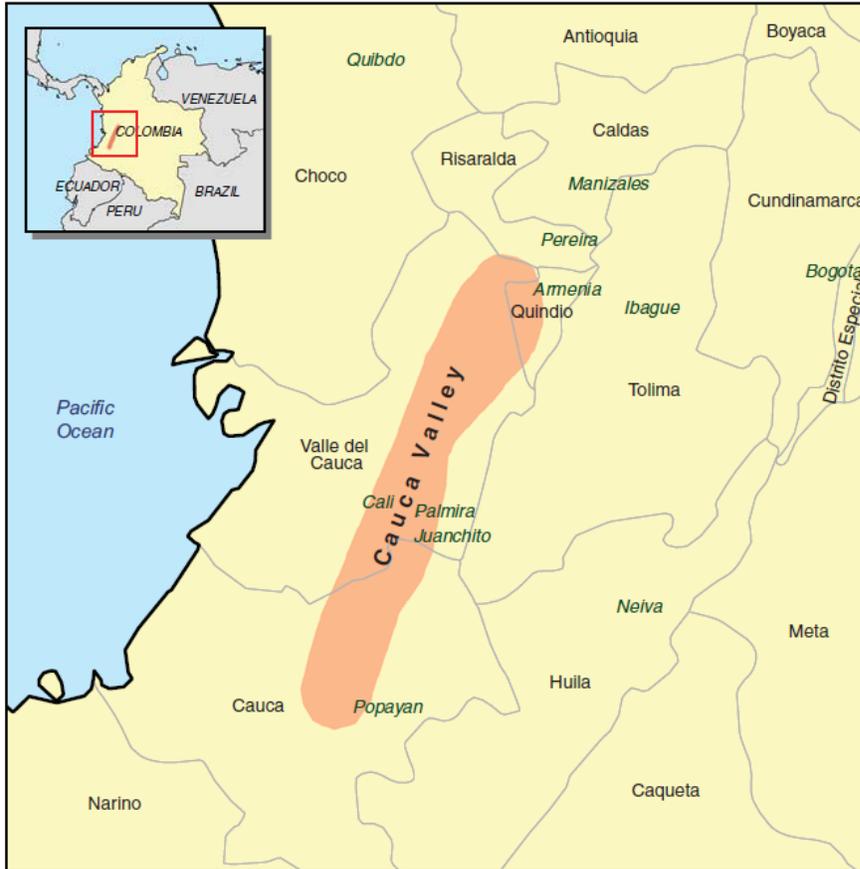


Figure 2: Bonsucro standards related to land

CRITERIA	INDICATOR	Processing & Milling	Agriculture	Verifier	Standard	NOTES
1.1 To comply with relevant applicable laws.	Relevant national laws and international conventions complied with .	*	*	Yes/No	Yes	Relevant legislation includes laws and international conventions, but is not limited to: regulations governing land tenure and land-use rights, labour, agricultural practices, environment, transportation and processing practices, acting with integrity. A list of relevant international conventions is included in Appendix 2. The more strict regulation or convention ratified by the country - national or international - should prevail unless otherwise specified. The principles and criteria in this standard provide some guidance for defining the relevant laws.
1.2 To demonstrate clear title to land in accordance with national practice and law.	The right to use the land can be demonstrated and is not legitimately contested by local communities with demonstrable rights.	*	*	Yes/No	Yes	Those rights can be related either to legal ownership or lease of the land or to customary rights. Legal ownership shall be the official title in the country (e.g. notary, government agency or other). Guidance for customary rights is provided in ILO conventions 169 and 117. See also Criterion on participation and Criterion on Environmental and Social Impact Assessment 5.7.
KEY TO INDICATORS:						
• Symbol indicates to whom it applies						