Rethinking Sustainability

Human Rights & Biofuel Policy

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Acknowledgments

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Rethinking Sustainability: Human Rights and Biofuel Policy

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Task Force Report 2010

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Preface

The students and professor who participated in this project traveled to Guatemala to conduct primary research studying the effects of the biofuel industry on human rights. Students conducted preliminary research in Seattle from December 2009 to March 2010 and spent a week conducting intensive firsthand research in Guatemala between January 31, 2010 and February 7, 2010. This research included personal interviews with officials in the Guatemalan government, industry leaders, diverse human rights organizations, and affected communities. Additional research incorporated phone interviews conducted before and after the trip to Guatemala. For a full list of on-site and phone interviews, please consult page 85 of this report.

This particular Task Force incorporated an interdisciplinary group of students, including undergraduate and graduate students. The undergraduates were responsible for writing this report, but the entire research process was a collective effort. Two Ph.D. students in engineering, Ken Faires and Kurt Spies, contributed their expertise on the technical aspects of biofuel production, as well as scientific analysis of the problems associated with particular crops and processing. They also helped analyze samples of contaminated water sources in Guatemalan communities. In addition, an MA student in International Studies, Phil Neff, also provided invaluable advice based on his experience working in Guatemala with the Network in Solidarity with the People of Guatemala (NISGUA) as an accompanier to human rights activists and his previous human rights work. Neff authored *Appendix B*, which documents the case studies of the communities of Aldea Pajales and Ocós.

Introduction

In the context of growing concerns about energy dependence and climate change, biofuels have emerged as an attractive alternative to petroleum. The United States has implemented policies to promote biofuel usage, increasing the demand for these energy sources. Developing countries, with optimal climates and available labor, are positioning themselves to enter the biofuel market. However, the biofuel industry in these developing countries has increasingly been linked to a variety of human rights abuses. Although these abuses occur in the agricultural sector as a whole, this paper examines how the biofuel supply chain exacerbates abuses.

While the report addresses the global issue of biofuels and human rights, it uses Guatemala as a central case study. Guatemala produces large amounts of two primary biofuel crops, sugarcane and African palm. Guatemala is currently the fifth largest sugar producer in the world and is quickly expanding its palm industry. The biofuel industry in Guatemala is nascent, but is expected to grow as larger markets for biofuels emerge. Additionally, Guatemala has a history of serious human rights abuses. The types of human rights abuses associated with the industry are also present in other biofuel-exporting countries such as Indonesia and Colombia. This report examines the particulars of a single country in order to illuminate important aspects of the industry as a whole.

Although our investigation found no evidence of U.S. imports of biofuels from Guatemala, recent trends in U.S. energy policy suggest that this may change in the near future. For this reason, it is imperative to begin formulating energy policies that take into account human rights concerns. The Renewable Fuel Standard, the main U.S. biofuel legislation, continues to evolve, creating an opportunity for the promotion of responsible biofuel production. Setting standards for U.S. imports of biofuels from developing countries will ensure that as demand for foreign biofuels increases, policy can attempt to discourage human rights abuses by putting economic pressure on perpetrators—or at least not create additional incentives for ongoing abuses. By broadening the U.S.'s current political conceptions of "sustainability" and "renewable," this paper encourages an expansion of policy in a way that promotes environmental *and* social rights—domestically and abroad.

This report will begin with a brief overview of biofuels and the industry as it relates to the U.S., followed by a discussion of the human rights abuses associated with biofuel production in developing countries, and Guatemala in particular. Next, it will analyze existing and emerging reforms within the private sector, including corporate social responsibility programs and private certification schemes related to biofuels. Finally, this report will examine current U.S. policy regarding biofuel production standards and the approach taken by the E.U.

Taking into consideration the various factors that appear to allow human rights abuses to occur, the report concludes with a policy recommendation to modify U.S. energy policy and private initiatives so as to promote positive human rights standards and outcomes.

While this report examines how policy can create incentives for socially responsible biofuel production, it does not assess the long-term sustainability and viability of biofuels from an environmental perspective. The alleged benefits of many biofuels in lowering greenhouse gas emissions are the subject of significant controversy within the scientific community, but this report does not address that discussion.

CHAPTER 1

Biofuels and the United States

What are Biofuels?

Biofuels are biomass-based liquid fuels typically used for transportation.[1] The two most common biofuels are bioethanol (referred to throughout this paper as ethanol) and biodiesel. Ethanol is an alcohol made by fermenting sugar and starch crops like corn and sugarcane.[2] While ethanol can be used as fuel in its pure form, it is most often blended with gasoline in order to increase the octane rating.[3] Biodiesel, on the other hand, can be made from vegetable oils, animal fats, and recycled greases, and is converted into a fuel through the processes of transesterification.[4] Like ethanol, biodiesel can be used in its pure form, but is most often combined with diesel in order to decrease levels of carbon monoxide and sulfur emissions.[5] Most biodiesel in the United States is made from soybean oil and recycled cooking oil, but in other parts of the world African palm and rapeseed oil are major biodiesel crops.[6]

An alternate source of biofuels are so-called "second generation" or "advanced biofuels" such as cellulosic ethanol[i]. Although second generation fuels have many benefits, including the fact that they do not compete with food production, most experts believe their full-scale production and use are anywhere from 10 to 15 years away, noting that their production cost at this time is prohibitive.[7] Because cellulosic and "advanced biofuels" are not currently being produced at significant levels, they are not discussed in this report.

Biofuel Industry Overview

Today's international biofuel market has its roots in the 1973 OPEC oil embargo, which forced many Western countries to reconsider their dependence on foreign oil and saw the beginnings of the first biofuel programs in Brazil and the United States.[8] Today, biofuels have expanded to a truly international market, and global production is expected to quadruple in the next 15-20 years.[9] Worldwide, ethanol encompasses about 80% of the biofuel market, with biodiesel covering the other 20%.[10] The largest producers of ethanol are the U.S., followed by Brazil, the E.U., and China.[11] The largest producers of biodiesel are the E.U., followed by the U.S., Australia, and China.[12]

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i. Cellulosic ethanol is ethanol derived from more complex sugars, including agricultural byproducts, municipal solid-waste, and quick-growing trees and grasses.

Biofuels have become an integral part of efforts to fight climate change and promote energy independence. Many countries including the U.S., the E.U., Brazil, and Japan have instituted blending and/or purchase mandates, which require that renewable fuels be blended with gasoline, and make up a certain percentage of overall fuel usage.[13] These mandates and environmental protection laws further drive demand, and provide assured markets for biofuel producers. In the United States, ethanol also received a boost when methyl tert-butyl ether (MTBE) was outlawed as a gasoline oxygenate, forcing producers to quickly switch to ethanol as a replacement.[14] Based on blending mandates, UNCTAD predicts that the countries with the largest potential demand for ethanol in the coming years are the U.S., the E.U., China and Japan, whereas the countries with the largest potential demand for biodiesel are the U.S., the E.U., China and Brazil.[15]

U.S. Biofuel Policy

The United States' support of renewable fuels has been codified in local, state, and federal legislation over the past few decades, mandating the production, blending, and consumption of ethanol and biodiesels in hopes of providing an alternative source of energy. The legislation aims at curbing greenhouse gas emissions and limiting the United States' dependence on imported foreign oil. The legislation includes federal subsidies and major tax credits for producers, distributors, and consumers, as well as mandated levels of renewable fuel consumption.

The most influential government support is the Renewable Fuel Standard (RFS), which was created in the *Energy Policy Act of 2005* to mandate the minimum use of a certain amount of renewable fuel every year.[16] The amounts and fuel specifics were later changed in the *Energy Independence and Security Act of 2007*, and again in a 2010 update by the Environmental Protection Agency.[17] The latest numbers require the use of 36 billion gallons of renewable fuel by 2022 (*See Appendix A for a breakdown of the mandate categories*).[18] Of the required 36 billion gallons, 15 billion are to be "renewable biofuel" (regular

> "We must increase the supply of alternative fuels, by setting a mandatory fuels standard to require 35 billion gallons of renewable and alternative fuels in 2017—and that is nearly five times the current target. At the same time, we need to reform and modernize fuel economy standards for cars the way we did for light trucks—and conserve up to 8.5 billion more gallons of gasoline by 2017."
>
> President George W. Bush
> 2007 State of the Union Address, January 23, 2007
>
> *Source:* President George W. Bush. State of the Union Address. 2007. http://georgewbush-whitehouse.archives.gov/news/releases/2007/01/20070123-2.html

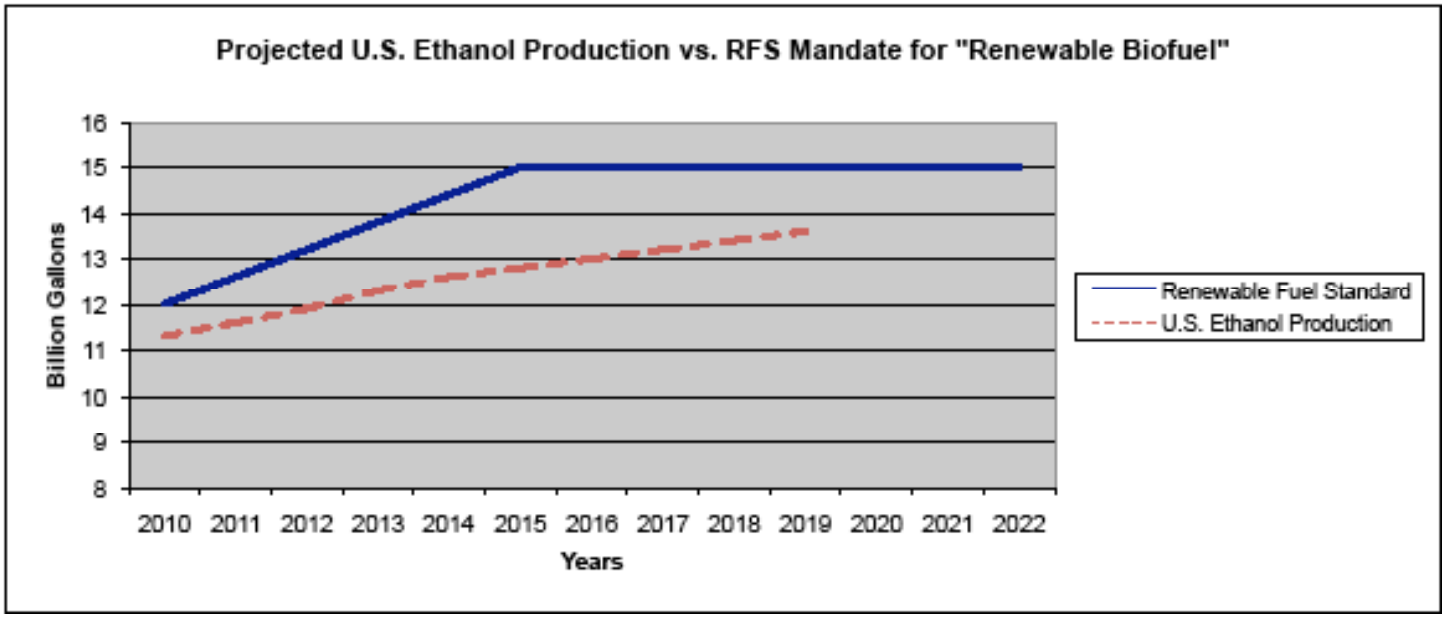
corn-based ethanol) and 21 billion are required to be "advanced biofuels," of which 16 billion would come from cellulosic ethanol, at least 1 billion from biodiesel, and another 4 billion from other sources (including sugarcane ethanol) which meet the greenhouse gas reduction target.[19]

In order to promote compliance with the RFS mandates, the government created various financial incentives, including the Volumetric Ethanol Excise Tax Credit (VEETC), established under the *American Jobs Creation Act of 2004* to provide a USD$0.51 tax credit for every gallon of ethanol blended with gasoline. The VEETC represents the single largest subsidy for ethanol available in the U.S. While the *Food, Conservation, and Energy Act of 2008* (known as the Farm Bill) reduced the tax credit for ethanol blends to USD$0.45 per gallon, the VEETC cost U.S. taxpayers an estimated USD$2.2 billion per year between 2006 and 2010, according to the Joint Committee on Taxation.[20] Alongside tax credits, Congress has allocated funds for loans and grant programs to stimulate U.S. domestic production of renewable fuels. To protect domestic production markets, the U.S. currently maintains an import tariff of USD$0.54 per gallon for imported fuel ethanol, plus an *ad valorem* tax of 2.5%.[21] This tariff discourages the importation of ethanol, and makes Europe a more attractive market for ethanol exporting countries.

The government has strongly promoted domestic ethanol production and is currently focusing on the production of "advanced biofuels"—setting ambitious mandate levels and designating more than USD$85 million for their research and development in the *American Recovery and Reinvestment Act of 2009*.[22] However, it is still unclear whether many of the "advanced" crops specifically mandated in the RFS will become commercially viable in time to meet the mandates. However, it is clear based on USDA long-term crop projections that the United States cannot produce enough ethanol to meet the 15 billion gallons of "renewable biofuels" that are required by 2022 (*see figure 1.1*).[23] In addition, the U.S. cannot produce the 1 billion gallons of biodiesel specifically mandated under the "advanced" category, as this is almost double the current USDA projected production levels (*see figure 1.2*).[24]

Therefore, in order to meet the levels mandated by the RFS for 2010, the United States has recently significantly increased biofuel imports. Between 2002 and 2008, ethanol imports alone increased 1,000 percent.[25] This evidence leads us to believe that imports will increase in the short-term in order to meet the RFS mandates. Additionally, if "advanced biofuels" do not become commercially viable in the next 10 to 15 years, imports may need to drastically increase in order to meet the higher RFS mandates.

Figure 1.1: Ethanol Production Chart

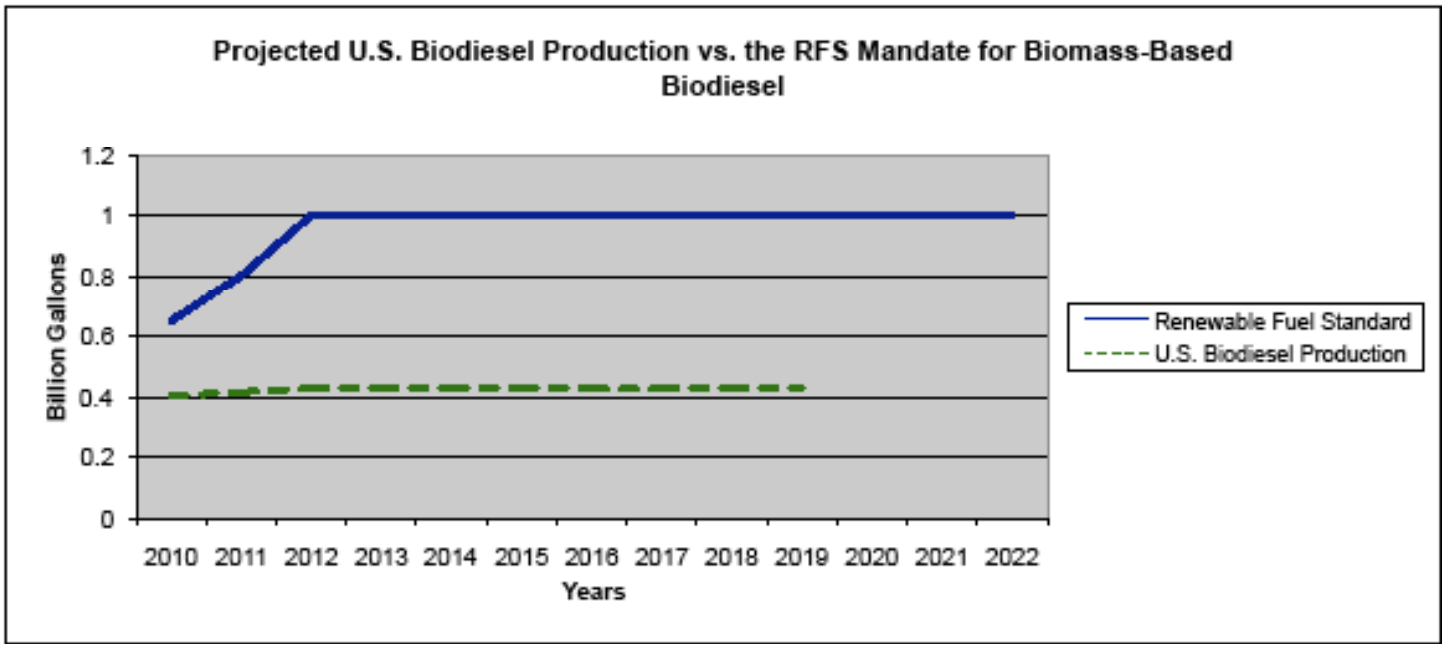


Source: U.S. Department of Agriculture. USDA Agricultural Projections to 2018. 2009:33. <http://www.usda.gov/oce/commodity/archive_projections/USDAAgriculturalProjections2018.pdf>

Statistics" Renewable Fuels Association. <http://www.ethanolrfa.org/industry/statistics/#F> (accessed February 20, 2010).

"Biofuel Conversion Factors" Food and Agricultural Policy Research Institute. 2006 <http://www.fapri.missouri.edu/outreach/publications/2006/biofuelconversions.pdf>

Figure 1.2: Biodiesel Production Chart



Source: U.S. Department of Agriculture. USDA Agricultural Projections to 2018. 2009: 38. <http://www.usda.gov/oce/commodity/archive_projections/USDAAgriculturalProjections2018.pdf>

U.S. Environmental Protection Agency. EPA Finalizes Regulations for the National Renewable Fuel Standard Program for 2010 and Beyond. Feb 2010: 3. <http://www.epa.gov/oms/renewablefuels/420f10007.pdf>

"Biofuel Conversion Factors" Food and Agricultural Policy Research Institute. 2006 <http://www.fapri.missouri.edu/outreach/publications/2006/biofuelconversions.pdf>

Why Look Abroad?

Given the assumption that the United States must rely on imports to satisfy the RFS, environmental and social impacts of producing these fuels in other countries must be taken into account. By trying to understand the social impacts of biofuels, this report will focus on the production of ethanol from sugarcane and biodiesel from African palm. These crops were chosen because they represent two of the highest-yielding biofuel crops and because they have seen huge increases in production. In Guatemala alone, palm cultivation increased 100% between 2003 and 2007[26], while sugarcane increased by 40% in the same time period.[27] In addition, African palm and sugarcane are important because they represent some of the primary crops used for biofuel production in Guatemala and around the world.

Production of sugarcane and African palm is centered in the developing world.[28] Because these countries are the center of major biofuel crop production, they are also those most affected by the United States' demand for biofuels, and, economically, could have the most to gain from an increase in imports. Guatemala especially, as a signatory of the Dominican Republic-Central America Free Trade Agreement (DR-CAFTA)[i], could gain from an increase in imports due to its preferential access to the U.S. biofuel market. However, the fact that production is concentrated in the developing world also means that biofuel crops are often grown in countries that lack strong environmental and social regulations, and, consequently, where there is a higher risk of human rights abuses.

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i. The United States signed the U.S.-Dominican Republic-Central American Free Trade Agreement (DR-CAFTA) in 2004. Through DR-CAFTA, imports and exports between the U.S., the Dominican Republic, and Central American countries are not subject to import tariffs or duties. All other countries must pay an import tariff of USD$0.54 per gallon plus an *ad valorem* tax of 2.5%. For further information regarding the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR), please see the CAFTA-DR report prepared by Congressional Research Service under Hornbeck 2008.

CHAPTER 2

Human Rights Impacts

Due to the global trend of increasing biofuel usage, developing countries such as Guatemala, Brazil, Thailand, India, Argentina, Paraguay, the Philippines, Colombia and Malaysia have begun producing biofuels.[29] However, the structural inequities characteristic of mass production agricultural plantations and the overall lack of regulation in the majority of developing countries contribute to environmental, land, and labor rights violations that marginalize primarily poor rural communities.

The problem is not unique to the biofuel industry, but is inherent in the large-scale agricultural production model which some call "agrarian capitalism".[30] These industrial-scale farms concentrate agricultural production by "emphasizing high volume and profit with minimal safeguards for human health, food safety...and the rural economy."[31] Furthermore, the agricultural industry has been associated with environmental degradation due to deforestation (in order to make room for new crop land), contamination of soil and water from heavy use of agrochemicals (fertilizers and pesticides), air pollution from slash-and-burn agriculture and flash burns in preparation for cane harvesting, and slave-like working conditions, all resulting in many health issues for the rural poor. Increasing demands for biofuel feedstocks may exacerbate these problems in Guatemala and the rest of the developing world.

Social Impacts in Guatemala

Guatemala has an extensive history of land conflicts between peasant communities and powerful elites who benefit from export-oriented agriculture and the exploitation of cheap labor forces. Land distribution in Guatemala is one of the most unequal worldwide, and is the second-most inequitable in Latin America; about 2% of the population owns 70% of all productive farmland.[32] This structure dates back to the period following Spanish colonization, when the indigenous labor force was forced to work on large sugar and cacao plantations.[33] These crops were later supplanted by coffee. As the plantation-based export economy grew, rural indigenous communities were forcefully relocated to less productive highland areas, and communal patterns of land tenure were eroded.[34] The most significant legal attempt to reverse these patterns of land concentration was the *Agrarian Reform Law*, enacted by Guatemalan President Jacobo Árbenz in 1952, which called for land redistribution. However, because such measures threatened the profitability of powerful foreign companies and

landowners such as the U.S.-based United Fruit Company,[35] a CIA-orchestrated coup ousted democratically elected Árbenz and led to the reversal of the land reform process. A civil war and genocide subsequently followed, and the areas in which the greatest resistance occurred, experienced the most severe massacres.[36]

In 1996, the Guatemalan Peace Accords were signed between opposition groups and the government, ending the fighting. However, the marginalization of peasant populations at the behest of the agricultural industry continues today. The recent expansion of sugarcane and African palm monoculture plantations has further concentrated land holdings and aggravated land loss among peasant communities.[37]

Land Rights Disputes

Global

Around the world, states frequently fail to recognize the rights of indigenous and peasant peoples by implementing discriminatory laws and policies, failing to enforce existing laws, or expropriating lands in the name of rural development.[38] The expansion of biofuel production often applies pressure on these marginalized groups as agribusinesses look to acquire more land.

For example, Afro-Colombian communities in Colombia have been forced from their land in order to make space for palm plantations. The United States Agency for International Development (USAID) and the Inter-American Development Bank (IDB) promote African palm as an alternative crop to illicit narcotics.[39] However, evidence suggests that paramilitary groups connected to both the Colombian government and palm companies have violently displaced Afro-Colombian communities. Methods of coercion used to remove the communities included killings, torture, looting, burning of crops and houses, arbitrary detention, forced sale and death. Once the Afro-Colombian populations were removed, the abandoned land was converted to large-scale African palm plantations.[40] In 2005, the Colombian Rural Development Institute (INCODER) confirmed that 93 percent of the land planted with African palm trees (3,800 hectares) belonged to displaced Afro-Colombian communities.[41]

Guatemala

In a similar fashion, Guatemala's history of weak land rights protection has made it easy for large agribusinesses to take advantage of poor peasant communities, many of whom are indigenous. A case study conducted by ActionAid in the Sayaxché municipality in Petén reports the results of a government grant of land titles to 2,113 families between 1999 and 2001. Immediately after the deeds were delivered, an aggressive

process of land speculation began. Community members allege that in many cases, representatives from palm companies were present at the events where deeds were delivered to beneficiaries, offering people cash in exchange for their land.[42] According to another report by ActionAid, if faced with apprehensive sellers, the agribusiness representatives often force individuals to sell their land using threats, coercion, and violence.[43] However, families that retained their land were often unable to profit from it, as they lacked the technical assistance or other public support needed to cultivate the land. As a result, many chose to sell their deeds for quick cash. By June 2008, about 60 percent of community members had sold their land, often at prices lower than local market values.[44] This purchasing of land from small farmers by big agribusiness has been described as "inconvenient but legal" by the Guatemalan government.[45] Speaking to this point, Luisa Fernández from the Guatemalan Ministry of Environment and Natural Resources expressed her disapproval of the practices of a specific palm company, Palmas del Ixcán, stating that they forcefully bought up land, displacing indigenous populations.[46]

Most peasants in Guatemala are unable to purchase land without assistance. To this end, the Guatemalan government created the land fund FONTIERRAS[i] to provide low-income citizens (particularly women) access to credit, enabling them to acquire land for agricultural production.[47] However, corruption and overall system inefficiencies[ii] throughout FONTIERRAS make it difficult for peasants to obtain land through the agency, even though its mission is to help them do so.[48] These systemic inequalities affecting indigenous and peasant communities' access to land illustrate the complexity of land rights issues in many developing countries; situations may be exacerbated by increased pressure on land created by the expansion of agribusinesses involved in the biofuel industry.

Increased Water Scarcity

Global

Biofuels contribute to water scarcity problems in many countries. Globally, approximately 7 million cubic meters of water are used for food; this number is expected to reach 11 million by 2050.[49] Projections indicate

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i. Fondo de Tierras (FONTIERRAS) was formed by Guatemala's 1996 Peace Accords as an autonomous decentralized state body.

ii. Two central problems exist with FONTIERRAS. The first is it does not reserve land for peasants while their requests are pending. Because the average time for an application to be processed is approximately 2.5 years, agribusinesses are often able to purchase the available land upfront before peasants can purchase it through FONTIERRAS. The second related issue is the unfair practice of expediting the approval process for farmers connected to agribusinesses. Laura Hurtado of ActionAid Guatemala claims that in Fray Bartolomé Las Casas, the manager of FONTIERRAS ordered the regional office to prioritize parcels for small farmers working with palm company Palmas de Ixcán. If associated with Palmas de Ixcán, the 2.5-year process is expedited to six months. For further information on FONTIERRAS, please see Garoz 2002 and Hurtado 2008

that the amount of water needed for biofuel production will increase by the same amount, requiring 20-30 million cubic meters of water by 2050, which constitutes more freshwater than is available worldwide.[50] This high water usage is due in part to the fact that, aside from water needed to grow feedstocks, ethanol distillation requires 10 liters of water for every liter of ethanol produced.[51] A study conducted by the FAO predicted that by 2017 the amount of water used for biofuel production would increase by 74 percent if current practices continue.[52]

Guatemala

In Guatemala, the land used for sugarcane cultivation is predominantly in the Southern coastal region of the country, where water supply is limited.[53] As a result, sugarcane and palm plantations often divert rivers for irrigation, depriving communities downstream of water. At least eight different rivers in the region have been drained for sugarcane production.[54] The communities of Ocós, visited as part of this research, are examples of this process (*See Appendix B*).

> "During the dry season there is very little water, and we are forced to do laundry in puddles."
>
> Testimony of community member, Aldea Pajales

According to Guatemalan agricultural and environmental authorities, there are no regulations containing provisions to penalize water quantity usage practices.[55] River flow diversions in Guatemala do not take into account downstream users.[56] As a result of river diversions and drainages, during the dry season communities often do not have enough water to conduct simple activities such as washing clothes. In addition, during rainy seasons the irrigation canals used to supply water to the sugarcane and palm plantations carry water inland, flooding villages, destroying homes, and ruining local subsistence crop production (*See Appendix B*).[57]

Water Pollution

Global

In addition to increasing water scarcity, the cultivation of biofuel feedstocks and the production of biofuels pollute water sources with agrochemical runoff (fertilizers and pesticides) and the dumping of untreated toxic byproducts into freshwater sources. Production of palm and sugarcane creates hazardous byproducts that require careful disposal. Because treating production effluent is expensive, some mills discharge it into open waters. In Indonesia, toxic effluent from palm oil mills is routinely dumped into rivers, killing fish and poisoning drinking water for the local inhabitants.[58]

Vinasse, a toxic byproduct of sugarcane production, is often disposed of improperly. In Sao Paulo, Brazil, in 2003, a spill of vinasse killed all of the fish along a 95 mile stretch of the Rio Grande River.[59] Improper vinasse disposal has the potential to be incredibly harmful. For every liter of ethanol fermented and distilled, 10 liters of vinasse are created;[60] that means if 20 billion liters of ethanol are produced, 200 billion liters of vinasse will need to be reused as fertilizer, treated or dumped.

Guatemala

In Guatemala, there is a tendency to simply dump biofuel production waste, since no laws penalize corporations for causing diminished water quality and access to water. More than 20 bills were presented to Congress regarding water regulation over the last 25 years, but none have passed.[61] Therefore, it is easy for biofuel producers to ignore the detrimental effects of dumping waste into waterways.[62]

In the municipality of San Andrés Villa Seca, a containment pond at the nearby sugar mill Ingenio El Pilar broke, flooding a local community with polluted water, contaminating their water sources, destroying homes, and killing crops. Many people moved due to the contamination, both because it reduced the fertility of the soil and because of the polluted water's stench.[63] While whole communities are affected by water pollution, women are particularly at risk, as they spend significant time in the river washing their family's clothes and gathering water for household use. Additionally, children have developed skin afflictions and illnesses due to bathing in polluted water, as our visits with communities confirmed (*See Appendix B*).[64]

> "When the reservoir broke, I was swept away along with my house and all my belongings."
>
> Testimony of community member, Aldea Pajales

The destruction of wetlands aggravates water quality problems. Wetlands act as a natural filtration system for water, removing toxic substances before it reaches communities downstream.[65] In the communities of Ocós, huge wetlands upriver were destroyed in preparation for cultivation of palm by plantations (*See Appendix B*).[66]

Labor Rights

Global

A number studies link the cultivation of biofuel feedstocks like sugarcane and palm oil with unfair working conditions, occupational health and safety hazards, child labor and forced labor.[67] The lack of regulations and accountability on the part of the mills and refineries allow them to disregard national labor laws

designed to protect the workers and local communities. Low-skilled season agricultural workers, many of whom are migrants, often settle for poorly paid jobs with harsh working conditions.[68]

According to a study done by the Guatemalan labor rights monitoring organization COVERCO and the International Labor Rights Fund, almost three-quarters of all cane cutters in the interviewed sugar plantations report accidents at work, while only a little over half wear some form of personal protective 'equipment,' consisting primarily of a long-sleeve shirt and boots.[69] These injuries are considerable in both number and severity. Most are sustained with a machete, while others occurred in the form of burns from processing or welding of machinery.[70] The study further mentions that "despite the common occurrence of injuries, often there are no precautionary measures taken by the refineries and training is not provided regarding the use of protective equipment necessary for work in the mills."[71] Even upon sustaining an injury, immediate access to medical attention is often inadequate. First aid kits in the field are rare, transportation to local clinics or public hospitals is often discouraged or delayed, and payment for treatment is sometimes deducted directly from workers' pay.[72] Long-term health impacts also as a result from excessive exposure to pesticides and fungicides (including ones banned in the United States) due to lack of protective equipment.[73] Furthermore, sugarcane contains tiny fibers similar to asbestos that are released during harvesting. Long-term exposure to these fibers may result in dire health consequences.[74]

Guatemala

In Guatemala, agribusinesses are not held accountable to labor standards under the Guatemala labor code. Workers on sugarcane and palm plantations are often either not given contracts or the terms of the contracts are unclear, leaving workers uninformed of their legal rights.[75] Many workers are not aware that there are legal limits on work hours, and can end up working shifts that last between 24 and 36 hours, without realizing they have legal recourse to refuse.[76] Cane cutters are most often paid approximately Q1200-1400 (USD$120-150) per month, which is well below the minimum wage of Q1680 (USD$210) and less than the cost of basic food needs in Guatemala (*See Figure 2.1*). Furthermore, sugarcane workers are often exploited by middlemen who weigh cane by the ton to determine payment. These middlemen have been known to cheat the scales, not fully compensating the cane workers for their harvest.

Workers are left without protection against unfair hour and wage requirements. Though present in Guatemala's national labor codes, unions are rare, leaving workers little recourse for demanding improved work conditions.[77] In the communities we visited, no unions exist for cane and palm employees and protesting

Figure 2.1: Wages vs. Basic Food & Needs Costs

	Quetzales per month	USD* per month
Cane Cutter Documented Earnings	Q1200-1400	$150-$180
Guatemala Minimum Wage**	Q1680	$209.35
Estimated Basic Food Costs***	Q1416.66	$176.53
Estimated Basic Food and Basic Needs Costs****	Q2585.15	$322.15

*As of February 28, 2010, the exchange rate from the Guatemalan Quetzal (GTQ) to the US Dollar (USD) is 0.12461 to 1, according to www.exchangerates.org/currentRates.

**Guatemala's Ministry of Work and Social Prevision. (accessed 28 February 2010). http://www.mintrabajo.gob.gt/org/preguntas-frecuentes/bfcual-es-el-salario-minimo-en-guatemala; COVERCO and International Labor Rights Fund, Labor Conditions in the Guatemalan Sugar Industry, (Guatemala, May 2005).

***Guatemalan National Institute of Statistics 2005. Basic Food Basket for a family of five.

****Guatemalan National Institute of Statistics 2005. Basic Needs Basket for a family of five (including food, clothing, education, transportation needs, health, and other basic requirements).

is dangerous. According to testimony from Pajales, communities organized protests against the local sugarcane refinery Ingenio El Pilar 25 to 30 years ago, but their leaders received death threats. Other occasions of community organization and protests have similarly been met with threats (*See Appendix B for more details on this case*).

Female workers are particularly vulnerable to labor rights violations in the biofuel industry. Reliable data on the proportion of waged female agricultural workers is difficult to obtain, given the prevalence of informal labor arrangements; most contracts are done verbally or though third party contractors.[78] There is evidence, however, that women now account for 20-30 percent of waged agricultural workers worldwide.[79] Some women are not employed directly, but instead assist male family members. Additionally, most women working in the field who do receive pay, receive less than minimum wage and less than what men earn.[80] Legally mandated maternity benefits are most often presented verbally rather than in written contracts and are seldom honored. If a woman becomes pregnant while employed at a plantation, she may be forced to resign from her job.[81] Sexual harassment is also an issue. Several women interviewed by COVERCO asserted that field managers had sexually harassed them, while one woman affirmed that she had been raped.[82] Silence about such issues is the norm due to fear of dismissal.

Children suffer similar labor inequities. Though Guatemalan labor codes forbid the employment of minors under 18 years of age in physically harmful work, child labor is frequent.[83] The investigation in both the Pajales and Ocós communities found children as young as 8 working on the plantations.[84] Despite a legal limit for minors of no more than 7 hours of work a day, most children interviewed by COVERCO worked 12 or more hours per day, seven days a week. Many mentioned being pressured into working overtime by field managers to finish cutting a specific area before being allowed to leave.[85] Unequal pay for minors is also reported.

Though present agricultural labor conditions are poor, proposed legislation within Guatemala has potential to further aggravate the situation. According to the local indigenous and agricultural workers' rights organization CUC, the current Guatemalan Congress is considering the "flexibilization" of the labor law, which would deregulate minimum wage and work hours.[86]

Food Security

Global

The International Monetary Fund (IMF) and the Food and Agricultural Organization (FAO), consider the increased production of biofuels a contributor to the rise of global food prices.[87, 88] High food prices reduce food security, applying pressure to the world's poor. According to the OPEC Fund for International Development, between 2002 and 2007, global food prices rose by 140%, due in part to demand for biofuel feedstocks and rising agricultural fuel and fertilizer prices.[89] From 2006 to 2007, global expenditures for importing foodstuffs rose by approximately 29%.[90] Rising global food prices lead to a number of adverse consequences worldwide.

On a national level, many developing countries who have entered the biofuel production market have undergone land conversion processes, diminishing space for subsistence farming and requiring farmers to buy what they once grew. As noted by the United Nations, World Bank, and the IMF, increasing the proportion of agriculture dedicated to growing biofuel feedstock places pressure on global supplies of edible crops, which heightens the risk of food insecurity.[91, 92]

Increasing prices reduce food consumption and increase malnourishment in developing countries as food becomes too expensive and less accessible.[93, 94] According to the FAO, food purchases for the poorest households typically accounts for at least half of their total expenditure.[95] Economists at the World Bank note that "caloric consumption among the world's poor declines by about half of one percent whenever the average prices of all major food staples increase by one percent. When one staple becomes more expensive, people try to replace it with a cheaper one, but if prices of all staples go up, they are left with no alternative."[96] At risk are more than 800 million food-insecure people (mostly in rural areas and dependent on agriculture for incomes) who live on less than USD$1 per day and spend the majority of their incomes on food.[97, 98]An additional 2-2.5 billion people living on USD$1 to USD$2 per day are also at risk, as rising commodity prices could pull them swiftly into a food-insecure state.[99] As a result, the poor disproportionately suffer long-term health consequences.[100, 101]

Guatemala

The reorientation of Guatemala's agricultural industry toward the global biofuel markets has been linked to food insecurity.[102] Land previously used for subsistence farming is being purchased by agro-industrial companies for the production of sugarcane and African palm.[103] Particularly in the South coast, land is being concentrated and re-concentrated into sugarcane plantations without regard for domestic production of edible crops.[104] Other reports highlight similar trends in the Polochic valley and Petén area, where cane and palm production has expanded in recent years.[105]

The shift in Guatemala from subsistence farming to agricultural production for export has increased Guatemala's reliance on food imports. Domestic production of basic foodstuffs, including wheat, beans, rice, and corn, has decreased.[106] Meanwhile, Guatemala's grain imports increased 10% since 1990, exceeding domestic production of grain by 55% in 2006.[107] This import dependence leaves the country vulnerable to international market price fluctuations.[108, 109]

Moving from Human Rights Violations to Solutions

The human rights abuses outlined above present the predicament of increased production of biofuel crops in developing countries. While many of these issues are a byproduct of the lack of enforcement by local governments, industrialized nations are implicated through their demand for renewable fuels. This reports aims to find a way to couple this demand with policy that creates incentives for socially responsible biofuel production. To gauge the prospects for policy changes toward this end, this report now turns to an analysis of the biofuel industry and its responses to allegations of abuse.

CHAPTER 3

Private Industry and Voluntary Certification

This chapter introduces relevant industry and regulatory actors, critiquing the current regulatory shortcomings in corporate social responsibility (CSR) programs and international financial institution (IFI) standards with case studies of three Guatemalan firms. From there, private certification models are analyzed to determine how they address human rights concerns, whether their standards are credible based on past attempts, and how they should change to be more effective and enforceable.

Actors

The key actors in the global biofuel industry include private companies, IFIs and international private certification schemes. Generally weak governmental regulation in countries of the developing world allows corporations to violate local or international laws with little interference. As discussed earlier, this is facilitated by huge wealth and power inequalities prevalent throughout developing countries cultivating biofuel crops. In response to accusations of corporate complicity in rights abuses, some industry actors have participated in the creation of individual CSR models and, more recently, international private certification schemes.

Within Guatemala, sugar producers include Pantaleón Sugar Holdings, the largest sugar producer in Central America, along with other companies that comprised the Guatemalan Sugar Board, ASAZGUA.[110] Palm producers include Palmas del Ixcán and Grupo HAME, who have, among others, recently formed the Palm Growers' Association (GREPALMA) to combat the negative press surrounding the palm industry.[111, 112]

The private sector receives a significant amount of financial support from the World Bank's International Finance Corporation (IFC) and Inter-American Development Bank (IDB), in theory acting within the regulations of the Guatemalan government, specifically the Ministry of the Environment and Natural Resources (MARN) and the Ministry of Energy and Mines (MEM). In practice, however, this regulation is often ineffective, as government representatives acknowledged.[113, 114]

The strength of the biofuel industry depends on national blending mandates in consuming countries and the price of oil on the international market. Due to the decline in the price of oil, for the past two years companies producing palm oil and sugar have been less focused on biofuels as a market for their products. As discussed earlier, this focus is likely to change when market conditions improve for biofuels due to blending

mandates.

International voluntary certification schemes certify a production process, supply chain, or product. Two main certification bodies apply to biofuels. The first is the Roundtable on Sustainable Biofuels (RSB), a new certification scheme currently in pilot-scale field-testing. Despite its short history, the RSB is poised to become the preeminent international biofuels certifier and includes any crop processed into biofuel (including biodiesel and ethanol). The second is the Roundtable on Sustainable Palm Oil (RSPO), which monitors the African palm crop, regardless of whether the oil becomes biodiesel. This chapter analyzes the effectiveness of these schemes.

What Are Certification Schemes?

Multinational certification schemes are private, voluntary initiatives that aim to increase industry standards, while rewarding certified producers with specialized market access. Within this system, the producer must comply with a set of standards organized under principles measured by a set of minimum criteria. A third party operating with a standardized set of assessment procedures evaluates production methods. Producers are held accountable for the continuous implementation of these standards through a process of periodic assessments.

As mentioned above, the RSB addresses certification from a *product*-based, rather than a *crop*-based, perspective. Accordingly, all of its members are currently engaged or projecting to be engaged in the biofuel industry, including farmers and growers of biofuel feedstocks, industrial biofuel producers, retailers/blenders, financial institutions/investors, governmental organizations, and a broad spectrum of NGOs.[115] The RSB's model is largely based on that of the Forest Stewardship Council[i].[116]

In contract, the RSPO targets palm production specifically. The RSPO's current members produce about 40% of the world's palm oil and consume more than 20%, although all of their mills and supply chains are not yet certified.[117] RSPO certification can take multiple forms. Its main certification system for mills mandates that all oil being processed is in compliance with RSPO principles. While most often the RSPO applies a universal standard, some countries are developing slightly tailored "national interpretations" of the same standard. In addition, rather than recruiting stakeholders from each separate stage of the supply chain, RSPO implements a supply chain certification by which certified palm oil can be traced from producer to end user.[118] The RSPO

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i. The Forestry Stewardship Council, established in 1993, is, "an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests". See FSC website: http://www.fsc.org/about-fsc.html.

is mainly comprised of African palm industry representatives including multinational giants such as Cargill and smaller companies like Palmas del Ixcán in Guatemala. Other members include civil society organizations concerned with implementation of human rights and environmental standards.[119]

While the broad membership base of the RSPO and the success of the model the RSB is following suggest that these schemes are feasible from an industry perspective, the current downturn in the biofuel market creates a hesitation among producers to add additional burdens like certification to their production cost. This market decline presents a significant obstacle for the RSB's recruitment of members. The divergence in stakeholder recruitment between the RSPO and the RSB can be explained in two ways. First, the RSPO is older and better established. Second, the RSPO defines itself around palm as a crop rather than biofuel as a product. A positive aspect of the RSB's product-based scheme is that it allows for specific concerns relating to the product itself to be addressed. However, the RSB's exclusive association with biofuels presents a problem for its current stakeholder recruitment goals, as companies are not actively identifying as biofuel producers (they continue to identify by crop, regardless of the final product). Despite this, in the long run, this report projects that the biofuel market will grow significantly, ensuring a place for the RSB. This Task Force focuses on the RSB because our policy agenda is centered on biofuels as a product rather than one crop.

Biofuel certification schemes are being integrated into policy. As Chapter 4 discusses, the E.U. has initiated the process of linking multinational certification bodies to the Renewable Energy Directive (RED) by opening the application process for multinational certification schemes to be recognized by the RED standard. By becoming accredited, imported certified fuels could count toward RED blending mandates automatically.[120]

Incorporating Social Standards: CSR Models and International Finance Institutions

Currently, individual CSR models and international lending policies are the primary "regulatory" frameworks guiding production of African palm and sugarcane in Guatemala, as well as much of the developing world. This is the case for the following reasons:

- Weak legal systems and corrupt enforcement mechanisms are common throughout producing countries
- Consuming countries do not apply systematic, rigorous standards to imports
- A lack of transparency in the supply chain, making consumer pressure for high standards of

production unlikely

- Private certification schemes are not yet widespread

Consequently, despite their purported intentions, CSR models and lending policies are possibly allowing for the human rights abuses detailed in Chapter 2.

Corporate Social Responsibility (CSR) Models

The increasing internationalization of global trade has been paralleled by increasing attention on the part of private actors to raise CSR standards. This section argues that private, self-regulatory CSR models are an ineffective solution to human rights abuses because they rely on enforcement by the very actors who commit the abuses. Private certification schemes have greater potential to hold companies accountable for respecting human rights because of third party verification.

The following two case studies demonstrate the causal relationship between internationalization and attention to CSR models, using interviews we conducted in Guatemala. Multiple sources, including industry representatives and human rights advocates, asserted in interviews that plantations owned by large export-focused companies have higher CSRs than smaller companies that are focused on the domestic market.[121] This difference suggests that external pressure is an effective way to influence the promotion of more rigorous standards of human rights protection within export-focused companies.

Case Study: Pantaleón Sugar Holdings

The case of Pantaleón holds valuable information for the future of the industry, in Guatemala and elsewhere. Pantaleón is the largest sugar producer in Central America, with its headquarters, several plantations, and two sugar mills in Guatemala. Pantaleón processes a total of 42,760 metric tons of sugarcane per day throughout a five and a half month harvest season from its two mills in Guatemala and a third in Nicaragua.[122] The IFC financed the company's joint venture with a Brazilian sugarcane and ethanol producer, and the company recently built an ethanol export station on the West coast of Guatemala.[123] Pantaleón is not representative of the majority of Guatemalan sugar producers, since it is by far the largest and most connected to the international market. Nevertheless, Pantaleón is important because it influences a large portion of the Guatemalan sugar industry, both financially and by setting an example for other companies to follow. [124]

Although the company is not currently pursuing RSB certification, Ing. Salvador Biguria, Pantaleón's Director of New Businesses, indicated that certification is the direction in which he sees the E.U. market and his company heading.[125] Biguria further noted that this eventual shift toward certification would be easy because

Pantaleón has already increased its CSR in order to comply with certain IFC standards.[126] The company claims to be a leader in the Guatemalan sugar industry and is encouraging its suppliers to raise their standards as well.[127] This shift suggests that higher standards have indirect impacts that go beyond the principal company. According to Biguria, the recent shifts in Pantaleón's standards contrast with midsize Guatemalan sugar companies who are not as connected to the pressures from the international market and have consequently not changed their standards.[128]

Pantaleón does not currently export to the U.S. because U.S. corn subsidies provide little room for ethanol imports, making Europe a more attractive export market. However, when one or both of these barriers changes, as this paper predicts they will, Pantaleón may find it in the company's economic interest to export to the U.S. Biguria confirmed this in an interview, indicating that the company considers itself ideally situated to supply markets in California.[129] As a result, U.S. policy has the potential to influence the company's business practices.

Case Study: Palmas del Ixcán

Palmas del Ixcán is an export-focused company and a subsidiary of the U.S. biodiesel-producing company Green Earth Fuels, LLC; its relationship with the U.S. is underlined by the fact that both the U.S. Ambassador to Guatemala as well as the president of Green Earth Fuels attended the plantation's ground breaking.[130] Early development of the company was directed at biodiesel production for Green Earth Fuels; however, in an interview, Palmas' CEO Ing. Enrique Arriola affirmed that all current production goes toward food products, soaps, and beauty products for domestic and regional markets – including Mexico, El Salvador, and Guatemala. Although the company does not currently export any of the palm oil that it produces, these decisions are completely price driven. Thus, they would look to the U.S. and Europe as future export markets if conditions improve.[131]

Though public image is important to Palmas, the company has been at the center of a maelstrom of criticism from local Guatemalan NGOs as well as the Guatemalan Ministry of Agriculture and Natural Resources. Critics allege that palm oil producers in Guatemala, including Palmas, are responsible for draining wetlands, forcibly displacing indigenous groups, and encroaching on protected lands, as Chapter 2 discusses.

These criticisms of Palmas del Ixcán have contributed to the company's mounting attention to CSR initiatives. International attention, as well as the company's internationally-oriented business model, encouraged the establishment of social and environmental sustainability initiatives that may not have existed otherwise. In

response to complaints, the company sold land holdings abutting against protected areas to signal that it does not intend to expand onto those lands. Additionally, Palmas del Ixcán has been very active in pursuing RSPO certification, and the company tailored its extraction process to meet certification requirements.[132]

The case studies of Pantaleón and Palmas del Ixcán illustrate how standards such as those presented by the IFC and multinational certification bodies, as well as the positive public images these standards provide, create incentives for internationally-oriented biofuel producers to alter their business practices. However, verifying that producers are altering their business practices requires further research.

International Financial Institutions (IFIs)

Emerging private certification schemes must be understood in the context of existing private regulatory initiatives. In recent years, the World Bank and the Inter-American Development Bank (IDB) have paid increasing attention to CSR in their lending practices. In 2005, expanding on previous policies that acknowledged indigenous groups require special protections, the World Bank and the IDB outlined conditions for borrowers to carry out a social impact assessment with each project proposal. In addition, both banks stipulate that affected communities must be consulted about adverse effects relating to these projects through a process of free, prior, and informed consent.[133]

Although IFI standards improve upon the previous lack of sensitivity regarding negative social impacts, the standards still inadequately address the basic rights of communities affected by IFI funded projects. Another problem is that in practice there is an obvious lack of enforcement of these standards. Overall, the World Bank and IDB's allowance for companies to largely self-regulate presents a significant conflict of interest, while it also challenges the proper role of government in protecting affected communities.

Case Study: Glamis Gold

The controversial case of the Marlin Mine in San Marcos, Guatemala, demonstrates the failure of companies to adequately implement impact assessment and consultation standards on the ground. This particular case examines the Marlin mine project carried out by a Canadian company (now owned by the Vancouver-based Goldcorp), which was funded in part by a USD$45 million loan from the International Finance Corporation (IFC).[134] Although the project was touted as a rural development opportunity, the company met overwhelming public opposition from the local communities. Water issues were of particular concern as the project was in close proximity to water sources utilized in local agricultural production. Despite local opposition, the development of the project continued in such a way that local communities resorted to

public protests, resulting in the death of at least one protester.[135]

A World Bank Compliance Advisor/Ombudsman (CAO) review of Marlin's handling of the consultation and impact assessment process confirms that these efforts were not satisfactory, citing that residents of Sipacapa—a community in close proximity to the project—were neglected in the consultation process. The report noted critically that, of the consultations that were done, there was a "lack of clarity about whether and how potential impacts of the project were conveyed to local people, as opposed to more general discussions on project benefits."[136]

Out of concern that the Environmental and Social Impact Assessment (ESIA) conducted for the Marlin project did not sufficiently reflect the dangers that the mining project posed to local communities, the local NGO MadreSelva facilitated an independent review of the document. The review[i] found the ESIA conducted for the Marlin project to be generally poor in quality, concluding that it discussed only minor impacts of the project in overly optimistic ways, failing to realistically assess the "truly significant and costly potential environmental impacts that frequently result at similar, modern mining projects." Moran stated that the ESIA "[failed] to discuss … the most fundamental issues that concern the public, issues which must be generally understood by both citizens and government regulators prior to approving such a project."[137] Furthermore, the assessment of cyanide contamination was blatantly inaccurate.[138]

When water contamination is addressed by ESIAs, the standards used to assess it are low. For example, the IFC guidelines allow for up to 20 times the arsenic in mine effluent as allowed under Canadian environmental regulations. Even these low standards are not always followed, as testing mandates in IFC guidelines were never made public in the ESIA (though it was supposed to be), so it is difficult to determine if testing is conducted.[139]

In addition, Moran comments that the ESIA released was purposefully confusing, citing crucial information in a series of annexes that were all given the same name.[140] As Moran states in the review, the clear bias of the assessment is symptomatic of an inherent conflict of interest that arises when the party conducting the ESIA is not financially independent from the project.[141]

The tragic outcome of this situation was not due solely to lack of standards. Borrowers are contractually bound to IFC policies, including consultation and impact assessment.[142] In fact, the Marlin project was the first major mining project to receive IFC funding after the release of a review of the World Bank's oversight

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i. The review was conducted by Robert Moran, PhD, who served on the advisory board of the Extraction Industry Review for the World Bank

of investments in the extractive industries sector.[143] The Extractive Industries Review (EIR), which focused critically of the IFC's handling of consultation with communities, makes the Marlin case emblematic of the severe disconnect between the standards and their implementation.[144]

The poor quality of the impact assessment, in addition to the failed attempts to gain community consent, point to a lack of oversight on the part of the IFC to ensure implementation of their policies. Additionally, the comparison of water standards lends the conclusion that many of these standards themselves may simply be too lax.

Private Certification Schemes: A Critical Analysis of Human Rights Standards

It is significant to note that private certification schemes are not complete analogs of the World Bank and IDB standards discussed above. They address the problem of direct self-regulation by providing a degree of separation—in the form of a certification scheme—that sets a standard through a multi-stakeholder process.[i] Therefore, it is important to critically consider whether the RSB standards that derive from many of the IDB standards—such as free, prior, and informed consent and the process of impact assessments—improve upon their predecessors in any meaningful way.

The promise of multinational certification bodies is that they use third party certification instead of self-assessment and have more progressive criteria than current U.S. policy initiatives such as the Renewable Fuel Standard, which focuses on life cycle analysis (*See Chapter 4 for more details*). Certification schemes go beyond this life cycle analysis to include direct environmental and social impacts. They incorporate environmental issues such as conservation, soil degradation, water quality and quantity, air pollution, and waste management. Social concerns addressed by certification schemes include labor rights, social and economic rights, food security, and water and land rights. See *Appendix C* and *Appendix D* for relevant principles and their discussed criteria corresponding to each certification body.

This report identifies two overarching areas of concern within biofuel regulation: the creation of inadequate standards and the subsequent implementation of those standards. Recognizing that there are often disparities between government standards and those drafted by private industry actors, the RSB appropriately states that the more rigorous of the two should apply. However, in the absence of clearly defined national law,

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i. Although private certification schemes often advertise themselves to be multi-stakeholder processes, we found that there exists a hesitation on the part of stakeholders like NGOs to participate for fear that although their participation will be heavily advertised, their actual influence in the certification scheme itself will be minimal.

the potential for the RSB standard to be either undefined or weak seems to exist. Addressing the disconnect between creating and implementing standards is critical before certification schemes can be incorporated into policy. Analysis of past standards leads to questions about the oversight of implementation. The following section calls attention to a broader issue in private certification, drawing from specific examples of standard-setting and oversight issues.

Impact Assessments

The procedures for carrying out impact assessments and consultations are similar between the RSB and the RSPO. Within the RSB, the process of consultation is embedded in Principle 2, which states that "sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA)." The ESIA is conducted as a participatory process using "interviews and workshops with government officials and representatives, local leaders, local residents, teachers, health workers, agricultural extension officers, NGO/CBO workers and business persons." Furthermore, the ESIA addresses economic benefits and losses, resettlement (either physical or economic), food insecurity, community displacement, population growth and concentration, social conflicts, disturbance and loss of cultural heritage sites and resources, health and welfare, and governance impacts. It is the task of the ESIA practitioner "to [ensure] that the recommendations of the ESIA are the outcome of a consensus-driven stakeholder engagement process."[145]

As the Glamis Gold case demonstrated, the financial independence of the party conducting the ESIA is critical to ensure that the assessment is unbiased. Although the accreditation process for IFC approved certification bodies is unclear, the case demonstrates that the mechanism the IFC uses to ensure the credibility of these bodies is insufficient. The certification scheme (like the RSB) sets the standard, trains a certification body in the standard, and that certification body goes out into the field and carries out ESIAs. Whether this training is sufficient to ensure the impartiality of the ESIA will likely be addressed as the RSB moves through its pilot phase. However, the private certification model does not address the issue of financial independence, as the companies themselves pay for certification bodies to carry out the ESIAs.[146] Therefore, there is still significant potential for destructive cases like Glamis Gold to be replicated within the certification system.

Free, Prior, and Informed Consent

As private certification bodies aim to reduce direct negative impacts on communities, it is critical to consider the method in which they engage with and respond to affected communities. Both the RSB and

RSPO rely on the idea of free, prior, and informed consent (FPIC), a concept that has also been adopted in transnational lending policies. Given that the RSB is still in pilot phase, this section examines FPIC's efficacy by identifying past barriers to implementation of community consultation in the Forest Stewardship Council (FSC)—after which the RSB is modeled.

Consultation with affected stakeholders is a standard included in both the RSPO and the RSB. The purpose of this principle is to "ensure that potential impacts, both negative and positive, of biofuel projects are understood by stakeholders, that any negative impacts are mitigated against, and that positive impacts are maximized, through a process of consultation with stakeholders that results in concrete remedial action."[147] However, as previous examples demonstrate, companies often view this process not as a problem solving mechanism, but rather as a public relations tools with which they can maintain an appearance of social responsibility.[148]

Certification and lending institutions base their discussion of consultations and FPIC on the International Labor Organization (ILO) Convention 169 concerning Indigenous and Tribal Peoples. One concern relating to FPIC is that the convention itself does not offer a detailed definition of appropriate consultation. Accordingly, these consultations have lacked meaningful consideration of indigenous community input in many cases. In fact, ILO 169 does not even give indigenous and tribal communities the power to veto a proposed project. Rather, the convention merely awards communities the power to "give reasons why there should be no extraction or exploration" and "use their rights as bargaining tools in negotiations with the company."[149] Consequently, it is important that certification bodies define consensus such that communities are in fact "actively [engaged]…to ensure that [their] concerns and interests…are included in the development and implementation of biofuel projects."[150]

The use of FPIC as this basis for community interactions is advertised frequently throughout the RSB standard. The definition of what qualifies as consensus, along with guidelines for attaining consensus, are outlined in the ESIA guidelines. According to this document consensus is defined as the "absence of sustained opposition," but the RSB recognizes that a unanimous decision is not always possible and will go forward with projects if it has achieved at least 90% agreement, as long as all other standards are met. [151] Although this standard seems reasonable, past examples such as the Glamis Gold case have shown that consensus has been managed poorly in the past. Consistent with analysis of other standards, lack of adequate implementation renders a good standard meaningless. Therefore, the RSB needs to demonstrate that this standard can be

achieved and reproduced on the ground.

Another specific and very serious concern relates to the fact that the producer is given a significant amount of responsibility in overseeing the consultation process. The RSB's summary of the discussion on Principle 2 – consultation states, "the producer is responsible for ensuring that stakeholders are communicated with in an appropriate and enabling way."[152] In addition, RSB Coordinator for the Americas, Matt Rudolf, commented that small producers could carry out the consultations themselves.[153] This raises an immediate concern regarding a possible conflict of interest in the consultation process, such as that which occurred in the Glamis Gold case.[i]

The FSC has received similar negative feedback and constructive criticism about company-led consultations on its certified products, including some sources in Thailand, Brazil, and Indonesia, particularly from the Forest Peoples Programme.[154] In response to what they have documented as blatant disregard for meaningful compliance with FPIC on the part of certified companies, the Forest Peoples Programme has drafted recommendations (*See Appendix E*). The main recommendations were that local governments should coordinate a multi-stakeholder body to mediate and facilitate conflict resolution and that in order to reduce protracted conflict, local communities should be involved in the planning process.[155]

Transparency

Transparency reinforces social standards and provides tools for affected communities, human rights advocates and consumers to document and combat current and potential abuses. Transparency is therefore a necessary prerequisite to implementation of any credible or effective social standards, whether in policy or by a private certification model. There are three aspects of transparency that require attention: transparency of current business relationships, transparency of assessments, and transparency of supply chain certification.

Current business relationships, including ownership of plantations and current supply chain regardless of certifications status, are not at all transparent. This information alone would provide valuable information for plantation and mill workers, affected communities, human rights advocates, researchers, policy makers, and concerned consumers.

Consistent with previous lending policies, the RSB requires that assessments are made public. This stipulation does not go far enough, however, because companies may evade this requirement, as the Glamis Gold

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i. Although there has been controversy over ILO 169 because it requires that member states implement national legislation in order to comply with the ILO 169 standard that governments conduct consultation, this does not prevent the RSB itself from defining the local government as the appropriate party to conduct community consultations. For further information, see Fulmer et al. 2008.

case study depicted. The standard should instead make specific requirements regarding publication date and coordination such that local government agencies are able to schedule public readings and the distribution of the ESIA with ample time before consultation efforts are made.

In order to address its transparency, the RSPO supply chain certification contains three mechanisms through which a certified batch of palm oil can be traded: "fully segregated", "mass balance", and "book and claim" (*See Appendix F for the full RSPO definitions*). Both "fully segregated" and "mass balance" provide a traceability mechanism from the plantation to the certified end product and were field tested in a study conducted by the RSPO in 2004.[156] The companies now pursuing supply chain certification are almost evenly split between "fully segregated" and "mass balance".[157] Of the three, "fully segregated" is considered to be the most credible, since the connection between certification and the physical material being certified is maintained throughout the supply chain. Nonetheless, full segregation poses practical problems for small producers, as they must have two sets of infrastructure in place if they are processing both certified and non-certified palm oil.[158] The third supply chain certification option, "book and claim", does not address transparency and, if applied, could mislead consumers. Supply chain certification, like other certification, will require verification by an accredited third party certifier as of April 2010.[159] Supply chain certification under the RSPO's model could be applied to other biofuel crops, such as sugarcane.

Fully Segregated: All certified palm oil is kept separate from all non-certified from producer to final consumer.

Mass Balance: If half the oil going in to processing is certified, half of the product can be certified although no material link is maintained.

Book and Claim: The title "RSPO certified" may be traded to uncertified producers separately from physical product; the supply chain is not traced.

Water

Human rights abuses concerning water are addressed similarly by the two schemes. RSPO Criterion 4.4, which corresponds to Principle 9 in the RSB's standards, relates to maintaining the quality and availability of water. The criterion addresses the main human rights abuses that we observed on the ground in Guatemala: drastic changes to water supply including its rerouting and contamination (*See Appendix B*). However, the standards used are not high enough. The RSB lists none of its own numbers for acceptable levels of water contamination; however, half of the citations for their standards used for water are from the IFC. As the Glamis Gold case study illustrated, the IFC standards are far below what would be considered acceptable in the U.S. or Canada.

Land

Land rights disputes, such as the expansion of land for African palm and sugarcane as discussed in Chapter 2, are addressed by Criteria 2.1-2.3 in RSPO, which deal with local, national, and international law and regulations. This clause corresponds to Criterion 12a in the RSB, which states that "existing land rights and land use rights, both formal and informal, shall be assessed, documented, and established" before the right to use land for biofuel operations is established. Both certification bodies base all negotiations on land acquisition on free, prior, and informed consent (FPIC).

An important area of concern with regard to land rights issues is how they are defined by certification schemes. As Matt Rudolf of the RSB commented, any land right dispute must be "legitimate," further asserting that a court dispute may not suffice. The RSB's rejection the authority of local government to identify the legality of land claims in this regard is troubling since the RSB's first criterion explicitly mentions that national laws must be respected.

Labor

As Chapter 2 of this report discusses, many labor abuses afflict the biofuel industry. Labor abuses are addressed by RSPO 4.7, 4.8 and RSB Criteria 4f, which concern sufficient training and health protections for workers. RSPO Principle 6 and RSB Principle 4 focus on labor standards on plantations and in mills, including the right to unionize, the payment of a living wage, and forbidding child and slave labor as well as discrimination. The private certification models base their labor standards in ILO standards and in national law.

Private certification models should learn from the experiences international lending institutions have had in implementing labor standards. The IFC has incorporated ILO labor standards into its lending practices, but there have been some serious oversight issues. In late 2004, the IFC lent USD USD$60 million to a company whose suppliers used slave labor.[160] Although, in theory, the bank's standards were well positioned, they did not have the oversight mechanisms necessary to enforce the standards. As private certification schemes face similar issues confronting the implementation of their standards, oversight should be a top priority.

Food Security

The issues surrounding food security are addressed in a substantially different manner by the two respective certification schemes. Food security is addressed explicitly in Principle 6 of RSB's standard. RSB Criteria 6a and 6b state that food security risks shall be assessed and mitigated and that, in places with food insecurity, operations shall "enhance the local food security of the directly affected stakeholders." The RSPO

does not address food security in its standard.

Overall

Currently, private certification schemes address the four main areas of human rights abuses outlined in this report, but their standards must be revised to truly accomplish their goals. Conceptually, consultation and assessment should be more clearly defined in certification so that industry is actually held accountable to the communities they affect. It is also necessary to consider how private consultation schemes relate to local national governments and avoid undermining them. This opinion was strongly expressed to us by researcher Alberto Alonso Fradejas of CONGCOOP and is reflected in the reactions to IFC and FSC standards discussed above.[161] Having adequate standards is necessary to avoid perpetuating human rights abuses by falsely giving a stamp of approval to companies employing practices that are in direct violation of international and national law, and human rights standards. Additionally, as several of the above examples have shown, the coupling of adequate oversight to enable faithful implementation of these standards is absolutely crucial to the success of this model.

Conclusions

The biofuel industry—which is allowing for and sometimes exacerbating human rights abuses in countries like Guatemala—is currently regulated by largely ineffective corporate social responsibility programs. However, as the Pantaleón and Palmas del Ixcán case studies demonstrate, international pressure can drive positive changes in production standards. This relationship suggests that there is an opportunity for international private certification schemes to make a positive impact on industry standards by capitalizing on producers' desires to gain international recognition of improved production methods. Our research shows that private certification models go beyond current CSR models and lending policies to begin reducing human rights abuses in the biofuel industry, but some significant changes need to be made. These changes include strengthening standards by enhancing regulation of current human rights abuses, improving the implementation of the standards themselves, as well as consultation and assessment, and mandating transparency through supply chain certification. More credible consultation and implementation of FPIC helps communities voice their priorities, bringing pressure to raise standards. Currently, within the RSPO, Supply Chain Certification is separate from and not required by the more general Producer Certification; it should become a necessary part of certification by the RSPO under Principle 1, as well as by the RSB.

These conceptual improvements concerning consultation, assessment, and transparency would help to

further human rights goals. A summary of these changes will be presented in the Recommendations section of this paper. Private certification schemes such as the RSPO and RSB are an important start, but there are significant changes that need to be made for them to truly embody their claims of social and environmental "sustainability".

CHAPTER 4

U.S. Policy and the E.U. Model

Shortcomings of Current U.S. Policy and Legislation

The current U.S. policy on renewable energy, outlined by the Renewable Fuel Standard (RFS), lacks sufficient social and environmental criteria. The RFS evaluates renewable fuels simply by measuring greenhouse gas emissions.[162] According to the latest RFS guidelines, "in order to qualify for these new volume categories, fuels must demonstrate that they meet certain minimum greenhouse gas reduction standards, based on a life cycle assessment, in comparison to the petroleum fuels they displace" (*See Appendix G*).[163] These criteria do not address the social implications of biofuel production.

In addition to lacking social sustainability standards, the RFS also lacks supply chain transparency. The RFS currently attaches Renewable Identification Numbers (RINs) to track biofuels produced or imported into the U.S. RINs are assigned to fuel before it is blended, and travel with the renewable fuel up until it is obtained by "an obligated party or actually blended into a motor vehicle fuel."[164] The purpose of the RIN program is to track amounts of biofuels generated by producers and used by blenders in order to determine whether the nation's mandates have been met and to assign tax credits. It does not track where the fuel's feedstocks were grown or how it arrived in the United States, making it extremely difficult to track biofuel imports to their source. Enabling complete supply chain transparency would increase consumer awareness, as well as accurate assessment of whether standards are being met, which would greatly contribute to the promotion of responsible biofuel production, domestically and abroad.

A number of tax incentives enacted in the past decade will expire between 2010 and 2012, creating a space for revisions to legislation on alternative energy sources. Future policy should include the requirement and implementation of greater transparency and certification assessment to ensure that social impacts in biofuel production are considered. While future U.S. legislation remains open to debate, the European Union provides an example of policy that includes biofuel legislation containing social standards.

European Union Policies

The European Union (E.U.) is one of the primary markets for biofuels, and has taken a step toward regulating its production through the Renewable Energy Directive (RED), which was passed in the E.U.

summit in December 2008.[165] The RED, like the RFS, sets minimum blending mandates for fuels from renewable sources.[166] The RED places an overall E.U. target of 20% renewable energy to be used, and a target for individual member states to deliver 10% renewable energy in transport. Therefore, by 2020, every E.U. Member State must draw 10% of its transport fuel supply from biofuels.[167]

Domestically, the E.U. produces a large supply of biofuels, particularly biodiesel, generating 7,755,000 tons of biodiesel in 2008.[168] While it is technically possible for the E.U. to meet its biofuel needs solely from domestic production, production is supplemented by imports from other countries to avoid deforestation and food security issues within the E.U.[169, 170]

Recognizing the complexities associated with creating biofuel demand, the RED plans to reassess the 10% target, depending on available supply, and revise the percentage if it cannot be met.[171] The language used to define what factors affect "available supply" is vague, but notes dependencies on the economic viability of second generation biofuels and the ability for producers, particularly those in the developing world, to meet sustainability criteria laid out by the directive. When reassessed, biofuel production that applies to the 10% target will exclude those that fail to meet the social and environmental sustainability criteria.[172]

Articles 15, 17, 19, 22 and 23 of the RED define environmental and social criteria, along with providing a framework for the monitoring and reporting of whether the criteria are being met (*See Appendix H*). The RED created a commission to carry out monitoring and reporting of standards; its first report will be submitted to the E.U. Council in 2012. Article 17 outlines specific environmental considerations, such as the effects on wetlands[i], undisturbed forests, and land with high levels of biodiversity. It also states that the RED commission will report on "social sustainability" standards, including land use rights, food price increases caused by biofuel production, and labor laws, particularly in developing countries.[173] Article 22 addresses the impact of biofuel production on water resources and water quality, referencing Article 17's monitoring to ensure biofuels are not exacerbating water scarcity.[174] Article 23 addresses the impact of biofuel production on displacement, both on land use in the community and the main supplying countries outside of the E.U.[175] The articles also address the specifics of monitoring and reporting of biofuel production, guarantees of origin, and the impact of production on land in the E.U. and internationally. Monitoring and reporting criteria are particularly important to achieve accountability for producers and to ensure that human rights abuses do not continue or go unnoticed.

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i. It is important to address the effects that biofuel production has on the environment, as these effects often translate into social effects on the living conditions of the surrounding communities (*See Appendix B*).

E.U. mandates have formed a competitive market for producers in developing countries looking to export, and has created incentives for the incorporation of sustainability standards in biofuel production. As Chapter 3 mentions, interviews with Ing. Salvador Biguria, Director of New Businesses for Pantaleón Sugar Holdings, and Ing. Enrique Arriola, CEO of Palmas de Ixcán, confirmed that they were responding to the heightened sustainability requirements enumerated by the RED to enable their exports to the E.U.[176, 177]

Shortcomings of the Renewable Energies Directive Sustainability Criteria

The RED's criteria are a solid step toward ensuring the social sustainability of biofuels, but they require refinement before they can be considered comprehensive. The current language of the RED defers to its reporting commission to monitor the impact of biofuels consumed by the E.U. on human rights with regard to water regulation, land use, food security, and labor. The RED states that the E.U. will assess the sustainability impact of biofuels and "take action, if necessary, to address shortcomings." However, beyond this statement, the directive does not offer any specific mechanisms for discouraging biofuels that do not meet sustainability standards.[178]

As Chapter 3 outlines, the specifics of how social criteria are monitored are extremely important to ensure proper implementation. Regarding land-use disputes, this report's discussion of free, prior, and informed consent (FPIC) demonstrates that improper community consultation can ignore community demands, escalating conflicts. In contrast, the RED states its intent to monitor labor rights by ensuring that countries have "ratified and implemented" specific conventions of the International Labor Organization, such as those regarding the right to organize and the elimination of child labor.[179] As the experience of Guatemala clearly illustrates, the mere fact that a country has ratified international agreements is insufficient to ensure that rights are truly respected within its borders. Similarly, the RED notes that water-intensive crops should be monitored to avoid "excessive water consumption in areas where water is scarce," yet the directive provides no explanation as to what constitutes excessive consumption.[180] Food security is considered in multiple articles, showing that it is a particular concern in developing nations, but the RED does not expand implementation details.

When the E.U. begins enforcing the criteria, critics have argued that the E.U. may risk retaliation from developing countries regarding import agreements of the World Trade Organization (WTO).[181] Certain articles of WTO legislation (such as articles I and III of the GATT) prohibit discrimination against like products from different countries, or treating imported goods less favorably than domestically produced goods.[182] Social and

environmental sustainability criteria that limit imports from countries when requirements are not met can be viewed as a violation of the GATT articles prohibiting discriminatory treatment. However, this is a gray area, as policies deemed to be in violation of these GATT articles could potentially be justified as exceptions, so long as they fall into one of ten categories, including those necessary to protect the following: public morals; human, animal or plant life; and health.[183] While WTO compliance is important to consider, potential conflicts should not stop the inclusion of social sustainability criteria into biofuel policy.

According to Matt Rudolf, the RSB's Coordinator of the Americas, the E.U. is looking to certification bodies with either equivalent or more extensive environmental and social standards than the RED. These bodies will pass through an intensive assessment before being permitted to act as an E.U. certifier.[184] Though many details are unknown about the relationship third party certification bodies will have with the E.U., it is likely that certifiers, such as the RSB, will become a trusted accountability mechanism for the RED commission reporting on biofuel impacts. Thus, products certified by the RSB and similar bodies would be accepted as socially responsible and environmentally sustainable. It is the opinion of this report, as is discussed in Chapter 3, that the RSB will need to ensure that its criteria take into account a variety of concerns before it can fully address social sustainability. If third party certifiers do not incorporate these concerns, the E.U. risks approving certifiers with insufficient standards.

The criteria included in the RED are beneficial, particularly for ensuring that E.U. member states are accountable for knowing the origin of the products they import and the effect of those products human rights concerns. As the RED progresses, it will be vital to strengthen the assessment of social criteria to ensure that the E.U. is not complicit in human rights abuses beyond its borders.

Implementing E.U. Policies in the U.S.

By only including life cycle analysis in the RFS sustainability criteria, the U.S. cannot effectively promote responsible biofuel production, and threatens to consume biofuels that have negative human rights impacts. The RED sets a precedent within the biofuel market, but it must be expanded to be comprehensive.

The RFS standard should incorporate monitoring and reporting mechanisms such as those required by the E.U. While, unlike the RED, the U.S. does not have a commission already in place, a commission should be created for this purpose to ensure that reporting is done in a timely and accurate manner. Making use of third party certifiers should also be explored, though any certifier must take into account the considerations laid out

in Chapter 3. Third party certifiers could lower policy implementation costs for the U.S. government as well as compliance costs for companies looking to export to both the E.U. and U.S. A certification scheme that satisfies the criteria of both bodies will be invaluable to export-oriented biofuel producers.

Conclusions and Recommendations

Conclusions

Current regulations of the biofuel industry should be revised in order to avoid perpetuating human rights abuses. The human rights abuses documented in Chapter 2 demonstrate that current standards for regulating the industry are insufficient. This paper illustrates mechanisms by which market access, industry profitability, and government incentives have the potential to create spaces for reform and discourage the abuses that have been prevalent in the biofuel industry in places such as Guatemala.

While U.S. policy advertises domestically produced biofuels as an environmentally and politically improved alternative to fossil fuels, this paper challenges the viability of domestic production meeting the levels mandated by the recently revised Renewable Fuel Standard (RFS). To date, the U.S. has no social criteria built into its renewable energy policy, primarily because the U.S. produces most of its own ethanol from domestic corn crops. However, U.S. policy should incorporate social criteria in order to promote responsible biofuel production. Without enacting such changes, the U.S. risks being implicated in the abuses discussed throughout this report, particularly in the event that biofuel imports significantly increase.

The biofuel industry currently operates with little regulation, corporate social responsibility (CSR) has existed mostly on a superficial level, and corporations at all levels of the supply chain use their own discretion to ignore or undermine critical human rights. Emerging private certification schemes like the RSB have tried to hold companies accountable for respecting environmental and social rights. While the RSB makes some improvements, as demonstrated in Chapter 3, similar initiatives have been known to act as social equivalents to "green washing," having more in common with loose CSR schemes than independent accountability mechanisms. In a sense, without making certain crucial changes, the RSB could act as a stamp of approval for companies without necessarily improving the social problems that its certification aims to remedy.

Although this report did not examine the environmental viability of the industry in depth, we recognize that more research is necessary to assess this aspect of the industry and how it might require more rigorous RFS standards. We also feel strongly that truly sustainable energy policy must incorporate concerted efforts to reduce demand.

Based on the analysis of our research, this report makes a two-tiered set of recommendations, first to the RSB and then to U.S. policymakers.

Recommendations: Reforming Private Certification and U.S. Policy

Recommendation for the RSB:

As the RSB's principles are still in a pilot stage, there is still time for the incorporation of important modifications that will significantly improve the social sustainability of the biofuel industry prior to its launch. We refer to this modified certification scheme as the RSB-Plus. The RSB should consider amendments in the following areas:

- **Traceability:** Create a mechanism for complete traceability of a biofuel product throughout the entire supply chain. In order to accomplish a more comprehensive traceability mechanism, the RSB-Plus should utilize the RSPO's "Fully-Segregated" method discussed in Chapter 3, where supply chain tracing begins with the crop.
- **Impact Assessments:** Mandate that an independent party accredited by the RSB-Plus (and financially independent from any company it assesses) conducts its environmental and social impact assessments (ESIAs) needed to determine whether communities will be negatively affected. These ESIAs should dedicate particular consideration to indigenous groups, women, and communities with low purchasing power.
- **Free, Prior, and Informed Consent:** Consultation applying the letter and spirit of free, prior, and informed consent (FPIC) must occur for every project. The RSB-Plus must instead allow local officials and courts to carry out consultations.
- **Creating More Rigorous Standards:** The standards used throughout the RSB's Principles and Criteria lack specific quantifications of measurable criteria, such as water contamination levels. Standards for which no national law currently exists require the development and/or revision of standards to incorporate that specification. Further research is necessary to identify specific standards warranting revision and what such revision should entail.
- **Oversight:** We have identified potentially serious oversight problems in the RSB standards. It is not yet clear to how best to remedy concerns about oversight of implementation. These concerns should be somewhat ameliorated by the other recommended revisions—such as greater transparency, traceability, and changes to assessments and consultations—but ought to be revisited.

Recommendations for U.S. Policymakers:

The Environmental Protection Agency should revise the RFS to incorporate social criteria. In order to access the renewable fuel market and be considered a "renewable" producer, blenders and importers of blended fuels should be required to meet new social standards. These new standards would draw upon the RSB-Plus outlined above.

By 2022[i], we recommend that blending companies as well as companies that import blended fuel that wish to be considered "renewable" under the RFS need to have at least 25% of their biofuels meeting the revised standards. These new standards would hold the blenders/importers accountable for compliance at all levels of the supply chain, from producers down through growers. The RFS would continue to apply its standards at the blending stage of the supply chain, but would hold blenders responsible for meeting the standards at every stage of biofuel production. Additionally, companies would need to demonstrate that they are working toward an eventual 100% compliance[ii] with these standards. To incentivize these changes, expiring tax credits should be revised to promote socially responsible renewable energy production in a way that offsets additional costs.

The revised RFS standards would need to include the following revisions, which we have broken down into several steps that could occur simultaneously:

Step 1

- Provide financial incentives for meeting RSB-Plus standards within the U.S. biofuel market by:
  - Revising and renewing expiring tax credits to include incentives for meeting revised social sustainability standards
  - Creating a graduated deduction scale of the current USD$0.54 per gallon renewable fuel import tariff, where companies would be subject to decreased tariffs as their levels of renewable fuels incorporating RSB-Plus standards increase.

Step 2

- Make the industry transparent with:
  - Full disclosure of the entire supply chain, including financers
  - Full disclosure of the intended uses of particular imported commodities (such as

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i. This is projected year by which the RFS mandates domestic consumption of biofuel needs to meet 36 billion gallons. As projections beyond this date are not set, the RFS will likely need to be revised by this year, and thus would be able to incorporate our recommendations.

ii. 100% compliance is this report's ideal recommendation, though we recognize that in its current state, it may not be economically feasible for the biofuel industry to reach 100% certification, and doing so will depend on the industry's progression.

sugar and palm oil) so as to identify the origin of biofuel feedstocks, if they are known.

- Enhanced Traceability – The RFS already has a tracking method using Renewable Identification Numbers (RINs) outlined in Chapter 4, but this method does not enable traceability from producer to final consumer. Employing the "Fully Segregated" model outlined in Chapter 3's discussion of the RSPO and the RSB-Plus recommendation would solve this issue. The transparency advocated in this recommendation requires that every aspect of a biofuel, from crop cultivation to blending, is publicly accessible information to enable consumer awareness.

Step 3

- Apply the standards of the RSB-Plus to biofuels produced domestically and abroad. If (and only if) the RSB or similarly constructed private certification schemes are able to integrate their standards with the standards outlined above, then the RFS commission would be able to consider whether certification by third party roundtables such as the RSB-Plus would be a sufficient alternative to that of a government agency ensuring companies have met the revised standards. Designating the RSB-Plus an official certifier under the RFS would expand RSB-Plus-certified companies' access to the U.S. market.

APPENDIX A

The Renewable Fuel Standard Mandates with 2010 Updates[1]

Renewable Fuel Standard Overview (billion gallons)

Year	Advanced Biofuel	Renewable Biofuel	**Total Renewable Fuel**
2010	0.95	12	**12.95**
2011	1.35	12.6	**13.95**
2012	2	13.2	**15.2**
2013	2.75	13.8	**16.55**
2014	3.75	14.4	**18.15**
2015	5.5	15	**20.5**
2016	7.25	15	**22.25**
2017	9	15	**24**
2018	11	15	**26**
2019	13	15	**28**
2020	15	15	**30**
2021	18	15	**33**
2022	21	15	**36**

Specific Advanced Biofuel Requirements (billion gallons)

Year	Cellulosic Ethanol	Biomass-Based Diesel	Other Non-Specified	Total Advanced Biofuel
2010	0.1	0.65	0.2	0.95
2011	0.25	0.8	0.3	1.35
2012	0.5	1	0.5	2
2013	1	X*	0.75	2.75
2014	1.75	X	1	3.75
2015	3	X	1.5	5.5
2016	4.75	X	1.5	7.25
2017	5.5	X	2.5	9
2018	7	X	3	11
2019	8.5	X	3.5	13
2020	10.5	X	3.5	15
2021	13.5	X	3.5	18
2022	16	X	4	21

*Exact number to be determined by the EPA, no less than 1 Billion.

APPENDIX B

Case Studies of Aldea Pajales and Ocós: Documentation of Human Rights and Environmental Impacts of Agro-industry

I. Environmental and Human Rights Impacts of the Guatemalan Sugar Industry: The Case of Aldea Pajales

On February 4, 2010, students from the University of Washington interdisciplinary Task Force on Biofuels and Human Rights in Guatemala met with community members of Aldea Pajales and surrounding villages in the municipality of San Andrés Villa Seca, department of Retalhuleu, Guatemala, to hear their collective testimony regarding environmental and social harms caused by agro industrial production of sugarcane. The delegation of students was led by Professor Angelina Snodgrass Godoy and accompanied by representatives of the Guatemalan environmental and legal rights non-governmental organization CALAS (*Centro de Acción Legal Ambiental y Social*, Center for Environmental and Social Legal Action).

The village of Aldea Pajales is made up of more than 3000 inhabitants, the majority of whom are indigenous Maya of the K'iche' and Kaqchikel ethno-linguistic groups. The main economic activities of the region are the cultivation of crops such as maize, vegetables, and fruits for subsistence and sale by smallholders, and wage labor for sugarcane and rubber plantations. The communities are surrounded by the sugarcane fields and mill facilities of Ingenio El Pilar and Ingenio Tululá.

Collective Testimony of Environmental and Human Rights Impacts

The primary complaint raised by community members in their testimony was the contamination of water sources by the sugar mill Ingenio El Pilar, located upstream to the north of the community, affecting the rivers Oc, Sis, and Ixpacabal. Ingenio Tululá is located downstream to the south. Community members indicated that Ingenio El Pilar consistently ejects large volumes of contaminated water into these rivers during the rainy season, causing pollution and flooding, while water sources dry up during the dry season due to overuse of water for irrigation of sugarcane plantations and for use

> "As women, we suffer having to wash clothes in this water. [The owners of the sugar mill] should take us into account as human beings."
>
> Testimony of community member

in refinement by both mills. Industrial contamination of the river Ixpacabal, which flows through the center of Aldea Pajales, was visible to members of the delegation, with a high level of turbidity, dark coloration, and a distinct and overwhelming odor of fermented sugar (*See Figures 1 and 2*). Community members also stated that they have experienced catastrophic flooding caused by the breach of water containment tanks on the property of Ingenio El Pilar, with an event in March of 2005 causing inhabited areas of the community to be inundated with contaminated water, which polluted village water sources, destroyed homes, and displaced of a number of families. The conditions of contamination and drought experienced by the community were documented in a 2007 article in the national newspaper *Prensa Libre*, which refers to the collapse of an Ingenio El Pilar waste water tank, as well as the death of a 12 year old boy in an accident during the construction of an artisanal well.[2]

Community members indicated that the effects of pollution of water sources and scarcity of potable water were harshest for women, who are forced to wash clothes and household items and to bathe children in contaminated water, or to walk for more than an hour each way to cleaner water sources while carrying heavy burdens. Bathing and wearing clothes washed in unclean water has resulted in skin conditions and other health impacts such as diarrhea, especially for children and the elderly. While some families have access to cleaner water via artisanal wells or plumbing systems, many households have no access to clean water, and have to pay to purchase water from neighbors or in bottled form. According to community members, households that have access to plumbing often receive water for only thirty minutes each day.

Testimony by community members also related damages to food crops caused by aerial fumigation of cane fields, describing effects consistent with foliage desiccants or defoliants, with crops including maize and citrus trees "drying up" and dropping leaves. The use of defoliant chemicals in the sugarcane industry is well-documented. While further research is needed to determine the long-term public health impacts of their usage, community members cite a high incidence of eyesight problems in young children.

Legal Claim by Community Against Sugar Mill *Ingenio El Pilar*

Community members of Aldea Pajales initiated a legal claim against Ingenio El Pilar in 2002, for which CALAS currently serves as public prosecutor (*querellante adhesivo*). According to CALAS director Dr. Yuri Melini, the case proceeded normally until 2004, when investigators from the Public Ministry (*Ministerio Público*) were ordered off the case through the intervention of the administration of President Oscar Berger (2004-2008).[3] The ex-President is closely connected to the sugar industry through his wife Wendy Widdman de Berger, of the influential sugar-growing Widdman family, owners of the Chabil Utzaj sugar operation in the

Polochic valley region of the department of Alta Verapaz, and former owners of the mill Ingenio Guadalupe in the department of Escuintla.[4] Public Ministry officials denied a request by CALAS that investigators accompany the delegation to hear community testimony in Aldea Pajales on February 4, 2010. Since 2008, CALAS has sought to have the general manager of Ingenio El Pilar declare in a penal case against the mill for the crime of industrial pollution.[5] However, according to Dr. Melini, the sugar company has used the figure of *amparo* under Guatemalan law to lodge spurious appeals which have halted advancement of the case, with the company filing five separate *amparo* motions in 2009 alone.[6] Community members also indicated that local leaders of the legal effort have been subjected to threats related to their actions in the case.

Corporate Actors

Ingenio El Pilar is owned by the Weissemberg/Campollo capital group, producing 224,082 metric tons of sugar in the 2006-2007 season, making it the fourth largest of Guatemala's sugar mills. The mill does not currently have ethanol distillation capacity but is positioning to invest in this area, according to CALAS staff. Ingenio Tululá is owned by a consortium of investors including members of the Bouscayrol and Botrán families, the latter heavily associated with the sugar and alcohol industries nationwide, owning the Santa Ana sugar mill and the ethanol-producing distillery *Destiladora de Alcoholes y Rones S.A.* (DARSA)/*Industria Licorera Nacional.* Ingenio Tululá is a smaller operation, producing 80,419 tons of sugar in 2006-2007.[7] A 2008 article in the Guatemalan newspaper *El Periodico* refers the purchase of Ingenio Tululá and other small mills during the 2000s by another sugar producing company,[8] evidence of a larger process of re-concentration of plantation properties by larger agro industrial companies which is occurring throughout the traditional sugar-producing regions of Guatemala's south coast. In 2008, Ingenio Tululá was reported to have installed a USD$75 million alcohol distillery in association with DARSA, producing drinking and perfume alcohol for brands including Botrán, Zacapa, Smirnoff, and Avon; as well as intending to enter agro ethanol production.[9]

Water Project

Through an agreement between the Community Development Council (COCODE) of Aldea Pajales, the municipal government of San Andrés Villa Seca, the Departmental Development Council (CODEDE) of Retalhuleu, and Ingenio El Pilar, a project was initiated to install a mechanical pump and plumbing system to deliver potable water to households in the community. According to press reports in *Prensa Libre*, the budget for the project was between Q1,079,000 and Q3,000,000 (approximately USD$138,000 to USD$384,000); the specific amount of financing by the different stakeholders is unclear. In January of 2009 a report in *Prensa*

Libre announced an agreement between the community and Ingenio El Pilar for the installation of a potable water project in exchange for the mill continuing to use the Ixpacabal River for dumping of waste.[10] In July of 2009, *Prensa Libre* published a press release style announcement of completion of the project, credited to the newspaper's editorial staff, claiming that a newly installed water distribution network had delivered potable water to 500 families in the communities of Pajales Central, Pajales Sector Sis, and Pajales Sector Los Chunes. This article also credits the sugar industry corporate social responsibility foundation FUDAZUCAR for involvement in the project.[11] Communities served by the project report contributing Q200 (approximately USD$25) per family and providing volunteer labor for the construction of the project.

In collective testimony on February 4, 2010, however, community members indicated that homes in community which have functioning potable water only receive it intermittently, often only half an hour daily, due to failure to complete the project through installation of an elevated water tank and full distribution network. Many households continue not to have any access to potable water except from hand-dug wells. However, according to CALAS staff, municipal mayor Joel Moscoso García has recently written to the Public Ministry declaring that all the communities of Aldea Pajales have access to water. Community members dispute the project financing figures cited by local government officials and Ingenio El Pilar, and CALAS intends to use the Law for Free Access to Information (*Ley de Libre Acceso a la Información, Decreto 57-2008*) to determine the actual amounts of financing contributed to the project.

A corporate social responsibility project financed by FUNDAZUCAR and USAID, the "Better Families Program" (*Programa Mejores Familias*) has been implemented in the community, with signage advertising the program with the phrase "Promoting Nutritional and Food Security" (*"Promoviendo la Seguridad Alimentaria Nutricional"*; *See Figure 3*). A woman community member who had participated in the program reported that it consisted of workshops promoting basic hygiene, such as washing hands before cooking, but that it had not addressed issues of water quality or access.

Sugar Plantation Labor Rights Abuses

Community members also gave evidence of ongoing abusive labor practices in the sugar industry, which offer a snapshot view of local working conditions for sugarcane workers. Shifts for sugarcane harvesters and planters may be as long as twelve or more hours per day, with men primarily employed in the harvest and men and women employed in planting. Workers cutting cane typically earn Q10 (USD$1.25) per ton of harvested cane, selling their production to contracted middlemen rather than directly to the purchasing sugar mill.

Community members reported that some of these middlemen tamper with their scales and systematically cheat workers of their wages. At typical rates, workers may earn Q1200-1400 (approximately USD$150 – 180) per month, below the daily minimum wage of Q52 (USD$6.66) (increased to Q56 in 2010). Child labor is also typical of the industry, with community members reporting that boys start working in the cane fields at the age of 15 or 16. In their visit to the community, students observed youths returning from the fields at the end of the work day. Under Guatemalan law, children under the age of 16 are prohibited from "unhealthy or dangerous" work, conditions which arguably apply to the sugarcane industry. For comprehensive documentation of labor rights issues related to the Guatemalan sugar industry, see a 2005 report by the Guatemalan NGO COVERCO and the International Labor Rights Fund, which consistently identifies the El Pilar and Tululá mills as having the longest and most dangerous shifts among Guatemalan sugar producers.[12]

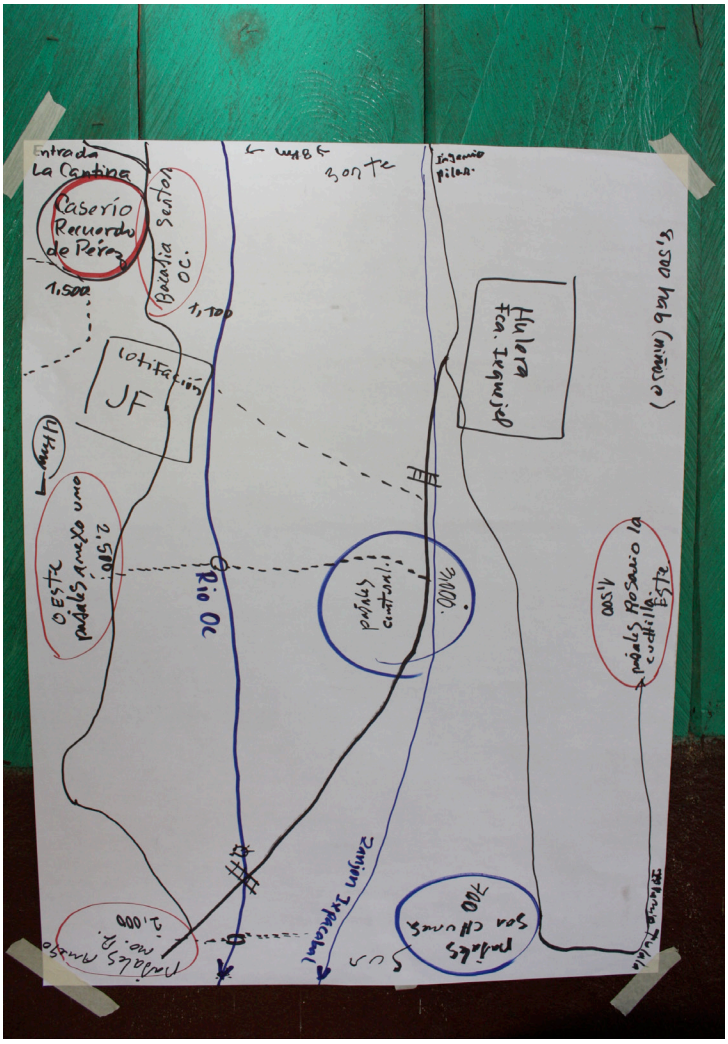
Photos

Figure 1: Contamination of Río Ixpacabal, Pajales Central, Aldea Pajales. (Photo: Geoffrey Morgan)

Figure 2: Community member extracts water sample from Rio Ixpacabal. (Photo: Geoffrey Morgan)

Figure 3: Signage for FUNDAZUCAR and USAID financed public health program. (Photo: Geoffrey Morgan)

Figure 4: Map of Aldea Pajales depicting water sources in relation to population centers, elaborated by community members. Note location of Ingenio El Pilar (top center, corresponding to North/upstream) and Río Ixpacabal, flowing from sugar mill property through population center of Pajales Central. (Photo: Geoffrey Morgan)



II. Environmental and Human Rights Impacts of the Guatemalan African Palm and Banana Industries: The Case of Seven Communities of Ocós

On February 5, 2010, students from the University of Washington interdisciplinary Task Force on Biofuels and Human Rights in Guatemala met with leaders of the *Comité Pro-Perdidas del Río Pacayá* (Committee on Behalf of Losses of the Pacayá River), which represents seven communities in the municipality of Ocós, department of San Marcos, Guatemala, to witness evidence and hear testimony regarding the environmental and social harms caused by agro-industrial production of African palm and bananas. The delegation of students was led by Professor Angelina Snodgrass Godoy and accompanied by representatives

of the research unit of the *Pastoral Social de La Tierra de San Marcos* (San Marcos Pastoral Mission for Land), which has published its own documentation and investigation of the case.[13]

The seven communities organized in the *Comité Pro-Perdidads del Río Pacayá* are Carrizales, Izotal, Las Morenas, Palmar I, Palmar II, Madronales, and Chiquirines, representing 750 families. The environmental and human rights impacts associated with agro-industry in the region also affect communities in the municipalities of Coatepeque, department of Quetzaltenango, and the municipality of Retalhuleu, according to documentation by the international food rights NGO FIAN and the Guatemalan indigenous and *campesino* organization CUC.[14] In 2009, a human rights documentation mission led by FIAN reported that environmental changes have adversely affected 21 communities in the watershed of the Ocosito River, encompassing the Pacayá, Talpope, Mopa and Talticú rivers. The main agro-industrial corporations operating plantations in the region are Grupo HAME (African palm) and BANASA (banana).

Environmental and Human Rights Impacts

The central concern of the *Comité Pro-Perdidas* is increased seasonal flooding caused by environmental changes related to agro-industrial cultivation of banana and African palm monocultures in the region: the rechanneling and deepening of the Pacayá river, and the raising of riverbanks bordering plantation lands, which have had the effect of creating an artificial floodplain on lands inhabited and cultivated by local communities. The University of Washington delegation observed and collected photographic documentation of river banks bordering African palm plantations raised by earthen dikes with a height of approximately 5-7 meters, while the side of the river opposite the plantations was left with natural low banks (*See Figure 5*).

> "They improved their lands, harming us."
>
> Testimony of community member

Community representatives report that major environmental changes became evident in 2005, with flooding following the first rains in the month of May causing damages to crops and homes. This flood pattern has been repeated during subsequent years, with early flooding as well as inundations during the September-October rainy season. These environmental changes have dramatically altered food security in the region, with community representatives indicating that while they historically have harvested maize twice annually, since 2005 the majority of farmers have lost their second crop to flood damage.

Community representatives also report that the expansion of African palm and banana monocultures has been accompanied by the destruction of wetlands. The University of Washington delegation observed a large

extension of razed land which community representatives identified as having been covered by wetlands before being drained and cleared by local agro-industrial producers (*See Figure 6*). Heavy machinery and work crews were visible in the area, engaged in building earthen dikes and clearing vegetation. Representatives of the *Comité Pro-Perdidas* estimated that more than 500 hectares of wetland in the region have been cleared since 2004. The destruction of wetlands likely also contributes to worsening of flood risks and river pollution, diminishing the natural flood control and filtration properties of the ecosystem. Water quality in the region is affected by upstream urban concentrations and livestock production; community representatives also claim that local agro industrial operations have contaminated water sources with fertilizers and pesticides.

On African palm plantations owned by the corporation Grupo HAME, the delegation observed drainage and irrigation canals, which are used to supply pumps for irrigation during the dry season and to channel excessive rainfall off cultivated land during the rainy season. Community representatives maintained that excess water drained from plantation lands is directed into inhabited areas of local communities, while the use of water for irrigation has created water shortages during the dry season. It was evident that the canals were built close to inhabited areas, and the delegation observed local residents using the canals for bathing and washing clothing.

In addition to impacting water access and food security, community representatives fear that these environmental changes have made them more vulnerable to natural disasters, such as Hurricane Stan, which caused major damage in the region during October of 2005. Members of the *Comité Pro-Perdidas* believe that the destruction of wetlands and alterations to the river worsened the effects of Hurricane Stan. This situation is characterized by the NGO FIAN as "constituting an imminent threat to [the population of the communities'] right to housing and right to life."[15]

Civil Resistance and Legal Claim by *Comité Pro-Perdidas del Río Pacayá*[16]

Following flooding in May of 2005, members of seven affected communities established the *Comité Pro-Perdidas* as a legally recognized organization and attempted to enter negotiations with representatives of the local agro-industry corporations, requesting reparations for flood damages. Following the rejection of their attempt to open negotiations, some 400 members of the affected communities staged a roadblock protest in front of BANASA facilities during July 12-13, 2005 to demand payment for lost crops; remediation of changes to the river course; and long-term access to zero-interest loans as a means to achieve economic recovery. The company offered no response to the protestors' demands, and police threatened to disperse the protest before the

community members agreed to mediation by the Departmental Governor and the Human Rights Procurator (*Procuradoría de los Derechos Humanos*), mediation which the state institutions did not provide, according to *Pastoral Social de la Tierra*.

On July 28, 2005, *Comité Pro-Perdidas* initiated a legal claim before the Public Prosecutor for Crimes Against the Environment (*Fiscalía de Delitos Contra el Ambiente*) for the crime of "usurpation of water".[17] The case has been presented to a number of government institutions, which has slowed progress of the legal process. Investigations by the National Coordination for Reduction of Disasters (*Coordinadora Nacional para la Reducción de Desastres*, CONRED), National Water Commission (*Comisión Nacional de Agua*, CONAGUA), and the Ministry of Environment and Natural Resources (*Ministerio de Ambiente y Recursos Naturales*, MARN) concluded that the flooding was "produced by natural causes and the result of global climate change";[18] the Secretary of Agrarian Matters (*Secretaria de Asuntos Agrarios*) and Sub-Secretary of Conflict Resolution (*Sub-Secretaria de Resolución de Conflictos*) reported not finding damages to local agriculture in investigations carried out in June of 2007 and also suggested global climate change and rising ocean levels as the cause of flooding. In response, the *Pastoral Social de la Tierra* refers to an independent technical investigation performed in February 2006, which identified the raising of the banks of the River Pacayá as the direct cause of the May 2005 flooding.[19] In 2008, the communities also initiated a separate claim regarding environmental damages through MARN.[20]

In protest of a continued lack of advancement of their legal case, members of *Comité Pro-Perdidas* carried out direct action to pressure the government to treat their case seriously, blocking a border crossing with the Mexican state of Chiapas for two days on June 20-21, 2009. On July 30, 2009, an agreement was made between the Presidential Human Rights Commission COPREDEH, the Secretary for Human Rights and Peace, and the peasant and indigenous coalition *Plataforma Agraria* (Agrarian Platform) to consider the communities' demands for reparations.[21]

Corporate Actors

The Guatemala based multi-national corporation Grupo HAME S.A. owns large extensions of African palm monocultures in the municipality of Ocós, as well as in the neighboring municipalities of Coatepeque and Retalhuleu. Grupo HAME is owned by Hugo Armando Molina Espinoza and the Molina-Botrán capital group, which has been a longstanding and powerful player in the Guatemalan agro export sector and is the largest landholder in the country. Formerly amongst the largest cotton producers in the world, Grupo HAME

has become the number one Guatemalan producer of African palm and palm oil, also owning plantations in the northern departments of El Petén and Alta Verapaz under the subsidiary company Reforestadora de Palmas del Petén, S.A. (REPSA). The company commercializes edible palm oil under the brand name Olmeca in Guatemala and Mexico. The company has no known current biodiesel production. Grupo HAME is diversified in a number of industries under the conglomerate Industrias de Grasas y Aceites Suprema, S.A., and is the largest independent banana producer in Central America, with banana and pineapple production in Guatemala and Costa Rica.[22] Private security forces employed by Grupo HAME have been accused of acts of repression against communities in the municipality of Coatepeque by the organization CUC.[23]

Representatives of *Comité Pro-Perdidas* and *Pastoral Social de la Tierra* report that the largest local corporate owner of banana plantations is Bananera Nacional S.A., BANASA. According to BANASA's corporate website, it was sold by founder Fernando Bolaños, who passed away in 2009. Its current owners are not identified. BANASA sells fruit to Dole and Agrofruit, which commercialize through Wal-Mart. The company has acquired at least 15 plantation properties since 1994. BANASA's website also advertises a portfolio of corporate social responsibility (CSR) projects, as well as ISO 14001 and Global GAP certifications.[24]

Photos

Figure 5: Raised bank of Río Pacayá bordering African palm plantation, right. (Photo: Geoffrey Morgan)

Figure 6: Cleared land bordering African palm plantation, identified by community representatives as former wetland. (Photo: Geoffrey Morgan)

Figure 7: Equipment on African palm plantation, bearing Group HAME insignia. (Photo: Geoffrey Morgan)

APPENDIX C

Roundtable on Sustainable Palm Oil Principles

1. Commitment to transparency

- *Criterion 1.1* Oil palm growers and millers provide adequate information to other stakeholders on environmental, social and legal issues relevant to RSPO Criteria, in appropriate languages & forms to allow for effective participation in decision-making.
- *Criterion 1.2* Management documents are publicly available, except where this is prevented by commercial confidentiality or where disclosure of information would result in negative environmental or social outcomes.

2. Compliance with applicable laws and regulations

- *Criterion 2.1* There is compliance with all applicable local, national and ratified international laws and regulations.
- *Criterion 2.2* The right to use the land can be demonstrated, and is not legitimately contested by local communities with demonstrable rights.
- *Criterion 2.3* Use of the land for oil palm does not diminish the legal rights, or customary rights, of other users, without their free, prior and informed consent.

3. Commitment to long-term economic and financial viability

4. Use of appropriate best practices by growers and millers

- *Criterion 4.4* Practices maintain the quality and availability of surface and ground water.
- *Criterion 4.7* An occupational health and safety plan is documented, effectively communicated and implemented.
- *Criterion 4.8* All staff, workers, smallholders and contractors are appropriately trained.

5. Environmental responsibility and conservation of natural resources and biodiversity

6. Responsible consideration of all employees and of all individuals and communities affected by growers and mills

- *Criterion 6.1* Aspects of plantation and mill management, including replanting, that have social impacts are identified in a participatory way, and plans to mitigate the negative impacts and

promote the positive ones are made, implemented and monitored, to demonstrate continuous improvement.

- *Criterion 6.2* There are open and transparent methods for communication and consultation between growers and/or millers, local communities and other affected or interested parties.
- *Criterion 6.3* There is a mutually agreed and documented system for dealing with complaints and grievances, which is implemented and accepted by all parties.
- *Criterion 6.4* Any negotiations concerning compensation for loss of legal or customary rights are dealt with through a documented system that enables indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.
- *Criterion 6.5* Pay and conditions for employees and for employees of contractors always meet at least legal or industry minimum standards and are sufficient to provide decent living wages.
- *Criterion 6.6* The employer respects the right of all personnel to form and join trade unions of their choice and to bargain collectively. Where the right to freedom of association and collective bargaining are restricted under law, the employer facilitates parallel means of independent and free association and bargaining for all such personnel.
- *Criterion 6.7* Children are not employed or exploited. Work by children is acceptable on family farms, under adult supervision, and when not interfering with education programmes. Children are not exposed to hazardous working conditions.
- *Criterion 6.8* Any form of discrimination based on race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, or age, is prohibited.
- *Criterion 6.9* A policy to prevent sexual harassment and all other forms of violence against women and to protect their reproductive rights is developed and applied.
- *Criterion 6.10* Growers and mills deal fairly and transparently with smallholders and other local businesses.
- *Criterion 6.11* Growers and millers contribute to local sustainable development wherever appropriate.

7. Responsible development of new plantings

- *Criterion 7.1* A comprehensive and participatory independent social and environmental impact

assessment is undertaken prior to establishing new plantings or operations, or expanding existing ones, and the results incorporated into planning, management and operations.

- *Criterion 7.5* No new plantings are established on local peoples' land without their free, prior and informed consent, dealt with through a documented system that enable indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.
- *Criterion 7.6* Local people are compensated for any agreed land acquisitions and relinquishment of rights, subject to their free, prior and informed consent and negotiated agreements.

8. Commitment to continuous improvement in key areas of activity[25]

APPENDIX D

Roundtable on Sustainable Biofuels Principles & Criteria for Certification[26]

Principle	Criterion	Operators who must comply
1: Legality Biofuel operations shall follow all applicable laws and regulations.	C1. Biofuel operations shall comply with all applicable law and regulations of the country in which the operation occurs and with relevant international laws and agreements.	Feedstock Producer, Feedstock Processor, Biofuel Producer.
2: Planning, Monitoring and Continuous Improvement Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA) and an economic viability analysis.	2a. Biofuel operations shall undertake an Environmental and Social Impact Assessment (ESIA) to assess impacts and risks and ensure sustainability through the development of effective and efficient implementation, mitigation, monitoring and evaluation plans. 2b. Free, Prior & Informed Consent (FPIC) shall form the basis for the process to be followed during all stakeholder consultation, which shall be gender sensitive and result in consensus-driven negotiated agreements. 2c. Biofuel operators shall implement a business plan that reflects a commitment to long-term economic viability.	2a-c. Feedstock Producer, Feedstock Processor and Biofuel Producer.
3: Greenhouse Gas Emissions Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.	3a. In geographic areas with legislative biofuel policy or regulations in force, in which biofuel must meet GHG reduction requirements across its lifecycle to comply with such policy or regulations and/or to qualify for certain incentives, biofuel operations subject to such policy or regulations shall comply with such policy and regulations and/or qualify for the applicable incentives. 3b. Lifecycle GHG emissions of biofuel shall be calculated using the RSB lifecycle GHG emission calculation methodology, which incorporates methodological elements and input data from authoritative sources; is based on sound and accepted science; is updated periodically as new data become available; has system boundaries from Well to Wheel; includes GHG emissions from land use change, including, but not limited to above- and below-ground carbon stock changes; and incentivizes the use of co-products, residues and waste in such a way that the lifecycle GHG emissions of the biofuel are reduced. 3c. Biofuel shall have lower lifecycle	3a-b. Feedstock Producer, Feedstock Processor, Biofuel Producer, and Biofuel Blender. 3c. Biofuel Blender.

3: Greenhouse Gas Emissions Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.	3a. In geographic areas with legislative biofuel policy or regulations in force, in which biofuel must meet GHG reduction requirements across its lifecycle to comply with such policy or regulations and/or to qualify for certain incentives, biofuel operations subject to such policy or regulations shall comply with such policy and regulations and/or qualify for the applicable incentives. 3b. Lifecycle GHG emissions of biofuel shall be calculated using the RSB lifecycle GHG emission calculation methodology, which incorporates methodological elements and input data from authoritative sources; is based on sound and accepted science; is updated periodically as new data become available; has system boundaries from Well to Wheel; includes GHG emissions from land use change, including, but not limited to above- and below-ground carbon stock changes; and incentivizes the use of co-products, residues and waste in such a way that the lifecycle GHG emissions of the biofuel are reduced. 3c. Biofuel shall have lower lifecycle GHG emissions than the fossil fuel baseline and shall contribute to the minimization of overall GHG emissions.	3a-b. Feedstock Producer, Feedstock Processor, Biofuel Producer, and Biofuel Blender. 3c. Biofuel Blender.
4: Human and Labor Rights Biofuel operations shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.	4a. Workers shall enjoy freedom of association, the right to organize, and the right to collectively bargain. 4b. No slave labor or forced labor shall occur. 4c. No child labor shall occur, except on family farms and then only when work does not interfere with the child's schooling and does not put his or her health at risk. 4d. Workers shall be free of discrimination of any kind, whether in employment or opportunity, with respect to gender, wages, working conditions, and social benefits. 4e. Workers' wages and working conditions shall respect all applicable laws and international conventions, as well as all relevant collective agreements. Where a government-regulated minimum wage is in place in	4a-g. Feedstock Producer, Feedstock Processor, and Biofuel Producer.

5: Rural and Social Development In regions of poverty, biofuel operations shall contribute to the social and economic development of local, rural and indigenous people and communities.	5a. In regions of poverty, the socioeconomic status of local stakeholders impacted by biofuel operations shall be improved. 5b. In regions of poverty, special measures that benefit and encourage the participation of women, youth, indigenous communities and the vulnerable in biofuel operations shall be designed and implemented.	5a-b. Feedstock Producer, Feedstock Processor and Biofuel Producer.
6: Local Food Security Biofuel operations shall ensure the human right to adequate food and improve food security in food insecure regions.	6a. Biofuel operations shall assess risks to food security in the region and locality and shall mitigate any negative impacts that result from biofuel operations. 6b. In food insecure regions, biofuel operations shall enhance the local food security of the directly affected stakeholders.	6a. Feedstock Producer, Feedstock Processor and Biofuel Producer. 6b. Feedstock Producer, Feedstock Processor and Biofuel Producer; small- scale operators are exempt.
7: Conservation Biofuel operations shall avoid negative impacts on biodiversity, ecosystems, and other conservation values.	7a. Conservation values within the potential or existing area of operations shall be identified through a land-use planning process. Conservation values of local, regional or global importance within the potential or existing area of operation shall be maintained or enhanced. 7b. Ecosystem functions and services that are directly affected by biofuel operations shall be maintained or enhanced. 7c. Biofuel operations shall protect, restore or create buffer zones. 7d. Ecological corridors shall be protected, restored or created to minimize fragmentation of habitats. 7e. Biofuel operations shall prevent invasive species from invading areas outside the operation site.	7a-c. Feedstock Producer, Feedstock Processor and Biofuel Producer. 7d. Feedstock Producer, Feedstock Processor and Biofuel Producer. 7e. Feedstock Producer and Feedstock Processor.
8: Soil Biofuel operations shall implement practices that seek to reverse soil degradation and/or maintain soil health.	8a. Operators shall implement a soil management plan designed to maintain or enhance soil physical, chemical, and biological conditions.	8a. Feedstock Producer.
9: Water Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary	9a. Biofuel operations shall respect the existing water rights of local and indigenous communities. 9b. Biofuel operations shall include a water management plan which aims to use water efficiently and to maintain or enhance the quality of the water resources that are used for	9a-d. Feedstock Producer, Feedstock Processor and Biofuel Producer.

10: Air Air pollution from biofuel operations shall be minimized along the supply chain.	10a. Air pollution emission sources from biofuel operations shall be identified, and air pollutant emissions minimized through an air management plan. 10b. Biofuel operations shall avoid and, where possible, eliminate open-air burning of residues, wastes or by-products.	10a1-2. Feedstock Producer, Feedstock Processor and Biofuel Producer.
11: Use of Technology, Inputs, and Management of Waste The use of technologies in biofuel operations shall seek to maximize production efficiency and social and environmental performance, and minimize the risk of damages to the environment and people.	11a. Information on the use of technologies in biofuel operations shall be fully available, unless limited by national law or international agreements on intellectual property. 11b. The technologies used in biofuel operations including genetically modified: plants, micro-organisms, and algae, shall minimize the risk of damages to environment and people, and improve environmental and/or social performance over the long term. 11c. Micro-organisms used in biofuel operations which may represent a risk to the environment or people shall be adequately contained to prevent release into the environment. 11d. Good practices shall be implemented for the storage, handling, use, and disposal of biofuels and chemicals. 11e. Residues, wastes and byproducts from feedstock processing and biofuel production units shall be managed such that soil, water and air physical, chemical, and biological conditions are not damaged.	11a-b,d. Feedstock Producer, Feedstock Processor and Biofuel Producer. 11c. Biofuel Processor and Biofuel Producer. 11e. Feedstock Processor and Biofuel Producer.
12: Land Rights Biofuel operations shall respect land rights and land use rights.	12a. Existing land rights and land use rights, both formal and informal, shall be assessed, documented, and established. The right to use land for biofuel operations shall be established only when these rights are determined. 12b. Free, Prior, and Informed Consent shall form the basis for all negotiated agreements for any compensation, acquisition, or voluntary relinquishment of rights by land users or owners for biofuel operations.	12a. Feedstock Producer and Feedstock Processor. 12b. Feedstock Producer, Feedstock Processor and Biofuel Producer.

APPENDIX E

Forest Peoples Programme Suggestions

1. Expression of good faith: At the beginning of the process, the company should approach the community leaders to announce their wish to work in the area. This intention should then be presented in a village meeting which would also be an opportunity for the community to officially welcome the outsiders as their guests.

2. Joint planning: Local people must be involved in the planning because they are the ones who know which part of their land can be used for logging and which area is used by the community or needs to be protected and must not be felled.

3. Selection of logging area: Even if the company has already received a permit by the government this does not mean that it can start work immediately. In order to avoid future conflicts, all elements of the community and the company should jointly determine the area of operations.

4. Other agreements: Prior to any activity the community and the company need to agree on other important issues such as environmental issues, compensation payments, local workers, health issues, etc.

5. Forest management operations should be discussed and agreed with the communities.

6. Monitoring and evaluation: In order to prevent future conflict, an appropriate monitoring and evaluation system must be in place to ensure that both parties abide by their mutual commitments and fully implement their agreements.

According to the local people, hardly any of the HPH operating in the area has proof of a true agreement with the communities affected by their logging operations, particularly regarding their customary rights. The customary rights and other management rights of the local communities must be clearly recognized and the local communities must be involved in any process affecting their customary land and their environment.[27]

Recommendations:

1. The rights of indigenous people who have lived in the area for generations must be recognized and respected

2. Social aspects must be a central element of all forest policies in order to avoid protracted conflict.

3. Policies affecting the livelihoods of indigenous peoples must be developed/revised with their participation.

4. For FPIC-based decision-making to work as it should, participatory discussions must involve the government, companies, and local communities and cover the following steps: Expression of good faith, Joint planning, Selection of logging area, Other agreements, Forest management operations, Monitoring and evaluation.

5. A multi-stakeholder body coordinated by the local government (Pemerintah Daerah) should be in charge of mediating and facilitating the conflict resolution process between the local communities and the companies already operating on their customary land.[28]

APPENDIX F

Roundtable on Sustainable Palm Oil Supply Chain Certification Models

Segregation

The segregation approach involves keeping material from RSPO plantations separate from material from non-RSPO plantations at every stage of production, processing, refining and manufacturing throughout the supply chain.[29]

Mass Balance

"The mass balance approach does not try to segregate RSPO and non-RSPO material but instead is based on ensuring that the total quantity of RSPO product produced at any stage in the supply chain is proportional to the quantity of RSPO raw material used. Thus, if half the raw material used is RSPO, then half the product is RSPO. In this approach, although the amount of RSPO material reaching the end user reflects the amount of RSPO oil produced by RSPO plantations, no direct physical link is maintained between the plantations and the final product. 'RSPO' material may, in fact, have come from any source.[30]

Book and Claim

In the 'book and claim' approach, instead of trying to trace RSPO material through the supply chain from plantation to end-user, the 'RSPO' element of the oil is traded separately from the oil itself. This is done by issuing some form of credit or tradable certificate to producers implementing the RSPO criteria, which can then be sold to users wanting to use RSPO for their products. The actual oil enters the normal supply chain and is traded without any claim attached.[31]

APPENDIX G

Greenhouse Gas Reduction Thresholds[32]

EISA established new renewable fuel categories and eligibility requirements, including setting the first mandatory GHG reduction thresholds for the various categories of fuels. A significant aspect of the RFS2 program is the requirement that the lifecycle GHG emissions of a qualifying renewable fuel must be less than the lifecycle GHG emissions of the 2005 baseline average gasoline or diesel fuel that it replaces. Four different levels of reductions are required for the four different renewable fuel standards. These lifecycle performance improvement thresholds are listed in the table below:

Lifecycle GHG Thresholds Specified in EISA (percent reduction from 2005 baseline)	
Renewable fuel*	20%
Advanced biofuel	50%
Biomass-based diesel	50%
Cellulosic biofuel	60%

*The 20% criterion generally applies to renewable fuel from new facilities that commenced construction after December 19, 2007.

Compliance with each threshold requires a comprehensive evaluation of renewable fuels, as well as the baseline for gasoline and diesel, on the basis of their lifecycle emissions. As mandated by EISA, the greenhouse gas emissions assessments must evaluate the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes) related to the full lifecycle, including all stages of fuel and feedstock production, distribution and use by the ultimate consumer.

EPA's lifecycle methodology required breaking new scientific ground and using analytical tools in new ways. Throughout the development of EPA's lifecycle analysis, the Agency employed a collaborative, transparent, and science-based approach. EPA recognizes that as the state of scientific knowledge continues to evolve in this area, the lifecycle GHG assessments for a variety of fuel pathways are likely to be updated.

Therefore, while EPA is using its current lifecycle assessments to inform the regulatory determinations for fuel pathways in this final rule, as required by the statute, the Agency is also committing to further reassess these determinations and lifecycle estimates.

Based on the Agency's current modeling of specific fuel pathways, which incorporated comments received through the third-party peer review process, and data and information from new studies and public comments, EPA has determined that:

- Ethanol produced from corn starch at a new (or expanded capacity from an existing) natural gas-fired facility using advanced efficient technologies that we expect will be most typical of new production facilities complies with the 20% GHG emission reduction threshold
- Biobutanol from corn starch complies with the 20% GHG threshold
- Ethanol produced from sugarcane complies with the applicable 50% GHG reduction threshold for the advanced fuel category
- Biodiesel from soy oil and renewable diesel from waste oils, fats, and greases complies with the 50% GHG threshold for the biomass-based diesel category
- Diesel produced from algal oils complies with the 50% GHG threshold for the biomass-based diesel category
- Cellulosic ethanol and cellulosic diesel (based on currently modeled pathways) comply with the 60% GHG reduction threshold applicable to cellulosic biofuels

In addition to finalizing a threshold compliance determination for those pathways shown above that we specifically modeled, our technical judgment indicates certain other pathways are likely to be similar enough to modeled pathways that we are also assured these similar pathways qualify. Further, for other fuels we are establishing a process whereby a biofuel producer can petition the Agency to consider whether their product would be eligible for use in complying with an EISA standard. For additional information on the lifecycle GHG emissions methodology and results for renewable fuel pathways, and details on the petition process, please refer to the Lifecycle GHG Analysis Fact Sheet, EPA420-F-10-006 or the RFS2 preamble.

APPENDIX H

E.U. Renewable Energy Directive[33]

Article 15: Guarantees of origin of electricity, heating and cooling produced from renewable energy sources

1. For the purposes of proving to final customers the share or quantity of energy from renewable sources in an energy supplier's energy mix in accordance with Article 3(6) of Directive 2003/54/EC, Member States shall ensure that the origin of electricity produced from renewable energy sources can be guaranteed as such within the meaning of this Directive, in accordance with objective, transparent and non-discriminatory criteria.

9. Member States shall recognise guarantees of origin issued by other Member States in accordance with this Directive exclusively as proof of the elements referred to in paragraph 1 and paragraph 6(a) to (f). A Member State may refuse to recognise a guarantee of origin only when it has well-founded doubts about its accuracy, reliability or veracity. The Member State shall notify the Commission of such a refusal and its justification.

10. If the Commission finds that a refusal to recognise a guarantee of origin is unfounded, the Commission may adopt a decision requiring the Member State in question to recognise it.

11. A Member State may introduce, in conformity with Community law, objective, transparent and non-discriminatory criteria for the use of guarantees of origin in complying with the obligations laid down in Article 3(6) of Directive 2003/54/EC.

12. Where energy suppliers market energy from renewable sources to consumers with a reference to environmental or other benefits of energy from renewable sources, Member States may require those energy suppliers to make available, in summary form, information on the amount or share of energy from renewable sources that comes from installations or increased capacity that became operational after 25 June 2009.

Article 17: Sustainability criteria for biofuels and bioliquids

1. Irrespective of whether the raw materials were cultivated inside or outside the territory of the Community, energy from biofuels and bioliquids shall be taken into account for the purposes referred to in points (a), (b) and

(c) only if they fulfill the sustainability criteria set out in paragraphs 2 to 6:

3. Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall not be made from raw material obtained from land with high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:

(a) primary forest and other wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed;

(b) areas designated:

(i) by law or by the relevant competent authority for nature protection purposes; or

(ii) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4); unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

(c) highly biodiverse grassland that is:

(i) natural, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or

(ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.

4. Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall not be made from raw material obtained from land with high carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status:

(a) wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year;

(b) continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ;

(c) land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in part C of Annex V is applied, the conditions laid down in paragraph 2 of this Article would be fulfilled.

7. The Commission shall, every two years, report to the European Parliament and the Council, in respect of both third countries and Member States that are a significant source of biofuels or of raw material for biofuels consumed within the Community, on national measures taken to respect the sustainability criteria set out in paragraphs 2 to 5 and for soil, water and air protection. The first report shall be submitted in 2012.

The Commission shall, every two years, report to the European Parliament and the Council on the impact on social sustainability in the Community and in third countries of increased demand for biofuel, on the impact of Community biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues. Reports shall address the respect of land-use rights. They shall state, both for third countries and Member States that are a significant source of raw material for biofuel consumed within the Community, whether the country has ratified and implemented each of the following Conventions of the International Labour Organisation:

- Convention concerning Forced or Compulsory Labour (No 29),
- Convention concerning Freedom of Association and Protection of the Right to Organise (No 87),
- Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively (No 98),
- Convention concerning Equal Remuneration of Men and Women Workers for Work of Equal Value (No 100),
- Convention concerning the Abolition of Forced Labour (No 105),
- Convention concerning Discrimination in Respect of Employment and Occupation (No 111),
- Convention concerning Minimum Age for Admission to Employment (No 138),

- Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (No 182).

Those reports shall state, both for third countries and Member States that are a significant source of raw material for biofuel consumed within the Community, whether the country has ratified and implemented:

- The Cartagena Protocol on Biosafety,
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The first report shall be submitted in 2012. The Commission shall, if appropriate, propose corrective action, in particular if evidence shows that biofuel production has a significant impact on food prices.

Article 19: Calculation of the greenhouse gas impact of biofuels and bioliquids

3. The default values in part A of Annex V for biofuels, and the disaggregated default values for cultivation in part D of Annex V for biofuels and bioliquids, may be used only when their raw materials are:

(a) cultivated outside the Community;

(b) cultivated in the Community in areas included in the lists referred to in paragraph 2; or

(c) waste or residues other than agricultural, aquaculture and fisheries residues.

For biofuels and bioliquids not falling under points (a), (b) or (c), actual values for cultivation shall be used.

Article 22: Reporting by the Member States

1. Each Member State shall submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every two years thereafter. The sixth report, to be submitted by 31 December 2021, shall be the last report required.

The report shall detail, in particular:

(j) the estimated impact of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within the Member State;

(k) the estimated net greenhouse gas emission saving due to the use of energy from renewable sources;

(l) the estimated excess production of energy from renewable sources compared to the indicative trajectory which could be transferred to other Member States, as well as the estimated potential for joint projects, until 2020;

(m) the estimated demand for energy from renewable sources to be satisfied by means other than domestic production until 2020; and

Article 23: Monitoring and reporting by the Commission

1. The Commission shall monitor the origin of biofuels and bioliquids consumed in the Community and the impact of their production, including impact as a result of displacement, on land use in the Community and the main third countries of supply. Such monitoring shall be based on Member States' reports, submitted pursuant to Article 22(1), and those of relevant third countries, intergovernmental organisations, scientific studies and any other relevant pieces of information. The Commission shall also monitor the commodity price changes associated with the use of biomass for energy and any associated positive and negative effects on food security. The Commission shall monitor all installations to which Article 19(6) applies.

2. The Commission shall maintain a dialogue and exchange information with third countries and biofuel producers, consumer organisations and civil society concerning the general within that framework, pay particular attention to the impact biofuel production may have on food prices.

5. In its reports, the Commission shall, in particular, analyse:

(a) the relative environmental benefits and costs of different biofuels, the effects of the Community's import policies thereon, the security of supply implications and the ways of achieving a balanced approach between domestic production and imports;

(b) the impact of increased demand for biofuel on sustainability in the Community and in third countries, considering economic and environmental impacts, including impacts on biodiversity;

(f) indirect land-use changes in relation to all production pathways.

APPENDIX I

Development and Biofuels

This section was initially its own chapter in the preceding report. When we began our research on the topic of biofuels and human rights, we believed that US-funded development projects were implicated in the issue, either as rights promoters or potentially as abusers. However, after visiting with various U.S. public aid offices responsible for promoting development through biofuels in Guatemala, we determined that we did not have enough information to make any concrete assumptions about development's role in abusing or promoting human rights. While we maintain that development is undoubtedly connected to the problems with the industry—and that in particular, development projects' de facto partnership with the private sector is highly problematic—it did not fit with the general sentiments of the report. Thus, we felt the information would be best suited for an appendix.

Introduction

U.S. and international development agencies have promoted the biofuel industry as a potentially sustainable, eco-friendly way for developing countries to become energy independent and to increase international exports simultaneously. To this end, international financial institution funding has largely been directed at promoting transnational operations of large agro-industry corporations, particularly in sugar to be refined into ethanol. Current U.S. development assistance funding appears to be limited and focuses primarily on small-scale development strategies. For these past two years, the United States Agency for International Development (USAID) have been funding a "small-scale" jatropha production project, which is a plant that bears oil-producing seeds that can be processed into biodiesel. This development program is a component of income-generating alternatives administered by U.S.-based non-governmental organization TechnoServe. The United States Department of Agriculture (USDA) is currently supervising another project with Texas A&M University to produce oil from jatropha.

U.S. Policy Initiatives for Development Funding

Under the U.S. Energy Independence and Security Act of 2007 (EISA 2007), the U.S. encourages clean energy programs abroad, authorizing funding assistance to promote clean and efficient energy technologies in foreign countries. A yearly sum of USD$200,000,000 for USAID is earmarked in the legislation for such projects.[34] Under EISA 2007, the multi-agency Task Force on International Cooperation for Clean and

Efficient Energy has been formed to oversee the development, demonstration, and deployment of clean and efficient energy technologies on an international basis and analyze policy. In addition, the International Clean Energy Foundation was established to fund projects outside of the U.S. that serve as models to reduce emissions. However, both of these agencies play a limited role in furthering the US's development agenda in the clean energy sector. Funding efforts are supposed to be accompanied by USAID reports, but the availability of such reports to the public is restricted. This lack of transparency in government aid agencies makes oversight difficult, undermining efforts to ensure sustainable and socially responsible development initiatives.

Large-Scale Versus Small-Scale Development Initiatives

Competing visions for development have led to different approaches by various actors in the sector. International lending agencies tend to fund large-scale agro-industrial production while small-scale projects, like those funded by USAID/TechnoServe, emphasize rural development. The following discussion investigates the potential impacts of biofuel production on human rights associated with these two development methods.

Large-Scale Biofuel projects

A number of studies by the FAO[35] and the USDA[36] point to the benefits of supporting large-scale production for rural areas, including higher employment rates, increased wages, reduction in rural poverty, and rising overall revenues for agricultural households. According to a report by the UK Department for International Development (DFID), economies of scale are critical in biofuels production because small-scale producers are unable to effectively access international markets. The report reads:

"The implication is that, in general, biofuels production is better suited to larger commercial farms and plantations. Small scale farmers face obstacles in trying to access supply chains—they trade off high transportation costs getting crops to processing plants with selling through middlemen. … small producers are price-takers."[37]

This large-scale agro-industrial model is the development approach taken by several international financial institutions (IFIs). The International Finance Corporation (IFC), a World Bank group member initially founded by the US, provides investments and advisory services to improve the agricultural infrastructure in developing countries.

Since the 1990s, the IFC has provided funding to Pantaleón Sugar Holdings, the largest sugarcane

producer in Central America, alongside a Colombian partner firm and a joint venture with Vale do Parana in Brazil for a number of projects to expand the sugarcane and ethanol industry.[38, 39, 40] Under the financial support of the IFC, Pantaleón's sugar plantations in Guatemala and Nicaragua have received technological assistance with both sugar and ethanol production capacity, new mills and processing plants have been built, and the expansion of electricity co-generation capacity has begun.[41, 42] An estimated USD$100-130 million in loans from IFC to Pantaleón are projected to finance the continued development of such operations in Guatemala and Nicaragua.[43] Half of Pantaleón's sugarcane production is to be used for producing ethanol and the other half for raw sugar.[44]

However, IFC loans play a more significant role in improving Pantaleón's reputation as a successful and legitimate development project model than as a financial contributor. When interviewed, Ing. Salvador Biguria, Pantaleón's Director of New Businesses, stated that the IFC funds were only 3-5 percent of project costs and that they were not as valuable in monetary terms as they were in symbolic terms, conferring legitimacy on the company.[45] By partnering with and financially supporting private corporations like Pantaleón, development institutions like the IFC risk appearing to provide a stamp of approval to large-scale biofuel production companies who are sometimes associated with many human rights violations. In this manner, IFC's development funds potentially contribute to the same negative social impacts linked to the operations of many private corporations.

Small-Scale Biofuel Projects

TechnoServe Project

In contrast to the large-scale bioenergy development projects are the small-scale aid practices that have been implemented in Guatemala. TechnoServe, a US-based nonprofit organization that conducts a variety of small-scale development projects, promotes business solutions and opportunities to poor rural people around the world.[46] In Guatemala, its projects range from helping women grow mushrooms to sell to local supermarkets, to community biofuel programs. TechnoServe's goal is to work with the communities to help them develop their own businesses.[47, 48]

In an effort to help farmers capitalize on the new biofuels market, TechnoServe is running a pilot project in six Guatemalan communities (located in Retalhuleu, Suchitepequez, Cuyotenango, and Chiquimula). The

project is designed to develop the whole supply chain by helping small-scale farmers grow jatropha plants on pre-cleared land that is unsuitable for food crops, then showing them how to process it in local facilities. The biodiesel produced from the project will be used locally to fuel generators and other farm equipment. The land that is being used only produces 1,500 lbs of corn/hectare/year compared to yields on quality soils of 8,500 lbs/hectare/year. Jatropha can be intercropped with corn in these arid regions to increase the productivity of the land. When intercropped, the amount of available surface area for corn production may decrease. However, overall productivity of corn crops may increase due the fertilizing and nitrogen-fixing properties of jatropha and the ability of the crop to raise the water-table. To initiate the project, TechnoServe received USD$250,000 from USAID and another USD$250,000 from corporate investors such as Jatroil and Bayer. The project is only in its second year and it is not expected to be ready for biofuel production for at least another year, ultimately reaching full production capacity after five. Currently, the seeds are being sold for oil extraction, but no biodiesel is being produced. Once the plant has matured each seed should produce 25-35% its weight worth of oil. However, if it only produces 10%, due to insufficient water input, it is not economically viable to continue cultivation. According to TechnoServe, using jatropha on a one hectare plot of marginal land can bring in an additional USD$1,265 to each farmer per year.[49]

Analysis of the project revealed a severe lack of follow-up. When asked if TechnoServe used set criteria to evaluate the effectiveness of the project to address social/human rights effects, the reply was that there were none.[50] Additionally, USAID never conducted an in depth study to see how their money was being spent and how it was affecting the communities.[51] The project continues without USAID funding, leaving little incentive for public oversight to monitor spending. Furthermore, when speaking with a representative from TechnoServe, she recounted that sometimes the villagers were not very receptive to the idea of cultivating jatropha but would rather start other business ventures.[52] To this end, villagers had to be taught that growing jatropha was "more advantageous" to them, from TechnoServe's perspective. In this case, TechnoServe pressed their own agenda rather than allowing villagers to determine what was in their best interest.

A study on small-scale bioenergy initiatives conducted by a consulting firm financed by the Food and Agriculture Organization (FAO) and Policy Innovation Systems for Clean Energy Security (PISCES) evaluated the effectiveness of the TechnoServe initiative two years into the five year project. The study concluded that thus far the project was successful.[53] However, the report was based on future hypothetical results predicted by TechnoServe. It will take further studies, once the five years for maturation of the jatropha occurs, to adequately

evaluate its effects on the community.

USDA

The USDA in partnership with Texas A&M University is funding a biodiesel project in Escuintla, Guatemala. The university built two jatropha processing facilities with an end goal of producing biodiesel for use with agricultural equipment on sugar plantations. Presently, the facilities are not operating in full capacity because not enough jatropha is being harvested to make biodiesel production worthwhile.[54] Currently the facility only processes seeds into oil. For this project, the USDA has described their role as a "hands-offs middleman" transferring technology and funds where necessary but not monitoring the consequences of their funding. Thus far no studies have been conducted to determine the effects this project has had on the communities.[55]

Conclusion

This investigation as a whole yielded few conclusive results either confirming or denying the negative impacts of U.S. biofuel funding efforts on human rights. As with all development projects funded by the US, clean energy projects must be responsibly evaluated for social impact and implemented in a transparent manner that involves local communities. Minimal social and human rights criteria guide funding priorities by USAID, USDA, and other international aid agencies, potentially contributing financial support to ultimately harmful development projects. A lack of transparency and local involvement by both communities and local organizations creates difficulties in the monitoring and evaluation of either development model. Current methods of follow-up are ineffective at best. Additionally, follow-up evaluations of development initiatives by independent third parties are virtually nonexistent. The existence of an objective third party evaluator would encourage accountability and transparency in development project activity, providing a standard by which organizations can measure their methodologies.

List of Interviews

United States Agency for International Development (USAID)

Rick Garland
Director, Business Trade and Environment
United States Agency for International Development (USAID) – Guatemala

Jennifer Tikka
Deputy Director, Business, Trade and Environment
United States Agency for International Development (USAID) - Guatemala

Gabriela Paíz
Business, Trade and Environment
United States Agency for International Development (USAID) - Guatemala

Ana Vilma Pocasangre
Business, Trade and Environment
United States Agency for International Development (USAID) – Guatemala

United States Department of Agriculture (USDA)

Karla Tay
Agriculturalist Specialist
United States Department of Agriculture (USDA)

Guatemala Ministry of Energy and Mines (MEM)

Carlos Echeverría
Director of General Hydrocarbons.
Guatemala Ministry of Energy and Mines (MEM)

Guatemala Ministry of the Environment and Natural Resources (MARN)

María Eugenia Castro Modenessi
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Luisa Fernández
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Guatemala Ministry of the Environment and Natural Resources (MARN)

Madre Selva

Estuardo Mendoza
Activist
Madre Selva

Eugenia Paredes Marin
Activist
Madre Selva

SAVIA

Rodolfo Mencos
Activist
SAVIA

Center for Environmental and Social Legal Action (CALAS)

Rafael Maldonado
Legal Director
Center for Environmental and Social Legal Action (CALAS)

Dr. Yuri Melini
Executive Director
Center for Environmental and Social Legal Action (CALAS)

Coordination of NGOs and Cooperatives (CONGCOOP)
Institute of Rural and Agricultural Studies (IDEAR)

Alberto Alonso Fradejas
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Coordination of NGOs and Cooperatives (CONGCOOP)

Association of Renewable Fuels (ACR) – Guatemala

Ing. Aida Lorenzo
Executive Director
Association of Renewable Fuels (ACR) – Guatemala

Pantaleón Sugar Holdings

Salvador Biguria
Director of New Businesses
Pantaleón Sugar Holdings

TechnoServe

Michelle Palacios
Community Development, Agricultural, Environmental Activist
TechnoServe

Committee of Campesino Unity (CUC)

Daniel Pascual Hernández
Coordinator
Committee of Campesino Unity (CUC)

Carlos Bamento
General Secretar
Committee of Campesino Unity (CUC)

Palmas de Ixcan

Enrique Arriola
Chief Executive Officer
Palmas de Ixcan

Guatemala Palm Oil Association (GREPAGUA)

Jorge Raúl Cruz
Executive Director
Guatemala Palm Oil Association (GREPAGUA)

Community Interviews

Communities of Pajales
Pajales, San Andrés Villa Seca, Guatemala

Communities of Ocós.
Ocós, San Marcos, Guatemala

Pastoral Social de la Tierra – Dioceses of San Marcos

Delmi Arriaza
Researcher
Pastoral Social de la Tierra - Diocese of San Marcos

As Green as It Gets

Franklin Voorhes
Activist
As Green As It Gets

Roundtable on Sustainable Biofuels

Matt Rudolf
Coordinator for the Americas
Roundtable on Sustainable Biofuels

ONE

Emily Alpert
Senior Policy Manager for Agriculture
ONE

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