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The International Sugar Trade and Sustainable Development: Curtailing the Sugar Rush

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Nadia B. Ahmad†

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I. Introduction

*"You can't expect both ends of a sugar cane are as sweet." –
Chinese Proverb*

This ancient Chinese proverb holds true for not only the varying degrees of sweetness at the ends of a sugar cane, but also for the realities of the international sugar trade. This Article will examine the international sugar trade industry and the implementation of sustainable development practices to improve labor standards, establish fair trade, and enhance energy efficiency, as well as explore the impetus for corporate social responsibility. The international sugar trade is a colossal industry that has been operating for centuries.¹ Sugar as a commodity is a major player in the agricultural sector, and the price of sugar impacts international markets from Europe to Asia and down into Latin America.² Feeding the sugar high is a matter of satisfying the sweet tooth, while deploying corporate best practices.

If the international sugar trade industry were to alter its farming, labor, and business practices, tremendous improvement of social, economic, and environmental conditions would be possible. Despite the volatility of the price of sugar, innovation in agricultural and corporate techniques in the international sugar trade would serve as the launching pad for new and sustainable development practices. The 2012 United Nations conference on Sustainable Development in Rio de Janeiro, Brazil (Rio +20), left expectations high for countries themselves to implement Corporate Social Responsibility (CSR) and sustainable development practices.³ The sugar producing states and companies can benefit by understanding and implementing

¹ See generally VLADIMIR P. TIMOSHENKO & BORIS C. SWERLING, *THE WORLD'S SUGAR: PROGRESS AND POLICY* (Stanford Univ. Press 1957) (detailing a historical account of the sugar cane industry); J.H. GALLOWAY, *THE SUGAR CANE INDUSTRY: AN HISTORICAL GEOGRAPHY FROM ITS ORIGINS TO 1914* (Cambridge Univ. Press 1989).

² See TIMOSHENKO & SWERLING, *supra* note 1, at 3-38 (describing the intercommodity competition and relationships among sugar trading nations).

³ See United Nations Conference on Sustainable Development, Rio de Janeiro, Brazil June 20-22, 2012 at 8, 78, 83-85, 92 (indicating via roundtable discussions that the expectation for countries to implement their own CSR and sustainable development goals was high).

sustainable development practices and monitoring CSR trends for the sugar trade industry.

This Article will briefly examine the history of the international sugar trade and discuss the current status of the sugar industry in world markets, specifically in Brazil, India, and the United States. The international sugar trade industry should consider instituting sustainable development practices not only for the public good, but also to enhance its bottom line. As “one of the most highly distorted agricultural commodity markets,”⁴ the international sugar market is an ideal environment to implement sustainable development practices and begin change with respect to CSR through “guaranteed minimum payments to producers, production and marketing controls (quotas), state-regulated retail prices, tariffs, import quotas and export subsidies.”⁵ The United Nations Food and Agriculture Organization (FAO) reports that “[a]lthough current world sugar prices have largely retreated from the 25-year highs reached in February 2006, the market remains particularly susceptible to large demand swings and price volatility.”⁶ Generally, as traditional sugar producing countries have increased production, mostly due to domestic subsidies, international sugar prices have decreased.⁷

A. Brief History of the International Sugar Trade

Ellen Deborah Ellis explains that “[t]o trace the geographical spread of the cultivation of the sugar cane is to follow its advance through many environments from southern Asia to South America.”⁸ From its original habitat in India, sugar spread to the Tigris River Valley and flourished under the rule of the Persians and Muslims.⁹ This westward trend continued into Egypt,

⁴ See Jennifer Nyberg, *Competitive Commercial Agriculture in Sub-Saharan Africa (CCAA) Study: Sugar, International Market Profile*, FOOD AND AGRIC. ORG. OF THE U.N. 2, available at <http://www.cambridge.org/us/books/kiple/sugar.htm>.

⁵ *Id.*

⁶ *Id.*

⁷ *See id.*

⁸ Ellen Deborah Ellis, *An Introduction to the History of Sugar as a Commodity*, in BRYN MAWR COLLEGE MONOGRAPHS, A DISSERTATION 1, 3 (John C. Winston Co. 1905).

⁹ *See id.* at 4.

northern Africa, Syria, Palestine, the Mediterranean islands, and Spain.¹⁰ In 1100 A.D., sugar emerged in Britain by the hands of returning Crusaders.¹¹ Sugar journeyed southward during the exploration age of the New World across the Atlantic to the Spanish West Indies, Mexico, and Brazil and beyond.¹²

Sugar was transformed into a commodity as a result of the refinement process and its use in international trade.¹³ It was not until the early fourteenth century that sugar began "arriving in sufficient quantities to be widely available."¹⁴ After Christopher Columbus' second transoceanic voyage in 1493, sugar flourished all across the Caribbean.¹⁵ However, the refinement and trade of sugar was a labor-intensive process, which was typically performed by West African slaves.¹⁶ In *The International Sugar Trade*, a book published in association with the International Sugar Organization (ISO), the authors indicate that technology was more advanced in Cuba than in Europe, suggesting a correlation with the fact that slavery was abolished later in Cuba than in Europe.¹⁷ The authors opine that without riots and rebellions among slave populations, "progress might easily have been considerably greater" and "[t]he emancipation of slaves throughout the region presented further challenges to producers in the nineteenth century."¹⁸ Given the harsh realities associated with the African slave trade and tremendous physical strain and psychological toil of backbreaking labor practices in the early

¹⁰ See *id.*

¹¹ A.C. HANNAH & DONALD SPENCE, *THE INTERNATIONAL SUGAR TRADE* 4 (1996).

¹² See Ellis, *supra* note 8, at 67-69 (describing the sugar industry around the time of the early sixteenth century).

¹³ See *id.* at 5 ("Until sugar was refined it could not figure in commerce, for in its raw state it is unfit to be transported or preserved.").

¹⁴ HANNAH & SPENCE, *supra* note 11, at 4.

¹⁵ See *id.*

¹⁶ See *id.* at 4-5. A group of abolitionists, specifically, the Quakers, started to develop beet sugar as an alternative to the sugar cane industry, which relied heavily on slavery, but the beet sugar producers could not compete with colonial suppliers. *Id.* at 6.

¹⁷ See *id.* at 8. But see *id.* at 7 (indicating that Cuba also possessed the "first steam engine in a cane sugar factory").

¹⁸ HANNAH & SPENCE, *supra* note 11, at 8.

sugar farming and production facilities,¹⁹ the authors seem to indicate that there exists a systemic perception among industry insiders that antislavery efforts were harmful to sugar as a commodity.²⁰ Also troubling is that the slaves were viewed as commodities instead of laborers,²¹ a perception that further dehumanized and degraded slave populations. This trend has sadly continued today, as labor violations in the sugar industry are the norm rather than an anomaly.²² Historian Richard Sheridan suggests that “Britain’s leadership in the Atlantic slave trade was not gained quickly or without effort or design.”²³

B. Current Status of the Sugar Industry in World Markets

Although world sugar consumption almost quadrupled from

¹⁹ ELIZABETH M. HALCROW, *CANES AND CHAINS: A STUDY OF SUGAR AND SLAVERY* 74 (1982) (describing the harsh conditions in sugar plantations around the 1770s when, “[s]laves worked eighteen or even twenty hours a day during the grinding season”). “Some reports mention that four hours’ sleep was considered sufficient for a slave, and that a twenty-hour day for five to seven months of the year was normal.” *Id.*

²⁰ See HANNAH & SPENCE, *supra* note 11, at 6 (indicating that the Quakers could not compete with colonial suppliers who relied on slaves); *id.* at 8 (indicating that Cuba gained a competitive advantage over other producers because it abolished slavery later than its competitors).

²¹ See Jean M. West, *Sugar and Slavery: Molasses to Rum to Slaves*, SLAVERY IN AMERICA, www.slave-studies.net/history/hs_lp_sugar.html (last visited Oct. 10, 2013) (explaining a disturbing lesson plan to study the slave trade in America, in which students play a slave-trader who must consider the economic relationships between rum, sugar, and slaves).

²² See *Importing Slavery*, FOOD EMPOWERMENT PROJECT, <http://www.foodispower.org/importing-slavery/> (last visited Oct. 10, 2013) (explaining that, unfortunately, many poor regions reliant on a select few agricultural crops to sustain their economy engage in modern-day slavery to stay competitive). Sadly, “[w]orkers have reported being beaten by their supervisors, housed in unsanitary shacks, sexually assaulted, chained to prevent them from escaping and have even received death threats, all while receiving little or no pay.” *Id.*

²³ RICHARD SHERIDAN, *SUGAR AND SLAVERY: AN ECONOMIC HISTORY OF THE BRITISH WEST INDIES 1623-1775*, 249-50 (2000) (“Contributing to the growth of the British slave trade in the 18th century were such developments as the opening of the trade to independent traders after 1697, the Neutrality Treaty of 1704, the Asiento of 1713, the rise of British seapower, and Britain’s growing ability to supply manufactures more cheaply, grant liberal credit, and devise cost-saving innovations in methods of trade, shipping, and finance.”).

1950 to 1994,²⁴ “world trends mask the dynamics of world consumption,”²⁵ and the growth rate actually slowed.²⁶ Market liberalization was a major premise of the General Agreement on Tariffs and Trade (GATT) of 1947,²⁷ which concerned trade in all goods, including agriculture.²⁸ The overarching ideal was “to abolish various trade barriers, and allow producers with a comparative advantage to expand their market share, giving consumers access to a wider range of more competitively priced products.”²⁹ Agriculture was given exceptional treatment in the GATT because of the value placed on a “secure and safe food supply” and “stable and reasonable food prices.”³⁰ Through the GATT, “governments were looking to improve global coherence in policy-making, but only between the WTO, the World Bank and the International Monetary Fund. Organizations with responsibilities in the area of the environment, labour standards or other social norms were certainly not part of the package.”³¹

Meanwhile, the priority of food security in developed nations has declined due to fluctuations in food prices.³² Based on these changes, “newer versions of agricultural exceptionalism emerged that emphasized the public goods provided by the agricultural sector” including “care of farmed landscapes, maintenance of biodiversity, flood control, and the viability of rural communities that preserve the country’s cultural heritage.”³³

²⁴ HANNAH & SPENCE, *supra* note 11, at 73 (“[F]rom 1950 to 1994 world sugar consumption grew at an annual rate of 3.1% almost quadrupling from 29791 million tonnes to the 113798 million tonnes.”).

²⁵ SHERIDAN, *supra* note 23, 249-50.

²⁶ *See id.*

²⁷ General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

²⁸ Carsten Daugbjerg & Alan Swinbank, *Curbing Agricultural Exceptionalism: The EU’s Response to External Challenge*, 31 THE WORLD ECONOMY 593, 632-34 (2008).

²⁹ *Id.* at 632.

³⁰ *Id.* at 633.

³¹ GARY P. SAMPSON, THE WTO AND SUSTAINABLE DEVELOPMENT 21 (2005).

³² Daugbjerg & Swinbank, *supra* note 28, at 633.

³³ *Id.*

II. Examination of National Sustainable Development Practices

This section examines sustainable development practices related to the production and trade of sugar cane in the United States, Brazil, and India. Sustainable development, is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”³⁴ Sustainable development encompasses two principles: (1) “the concept of needs, in particular the essential needs of the world’s poor, to which overriding priority should be given;” and (2) “the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.”³⁵

The sugar trade, like most enormous agricultural enterprises, is a complex enterprise. Agricultural subsidies, trade tariffs, child and slave labor, unsustainable business practices, and genetic engineering of food products all factor into the sugar used to sweeten tea, coffee, cakes, and any other food product used to satisfy sugar cravings.³⁶ Food price inflation becomes evident as soon as agricultural products enter the international market and can have a “detrimental impact on the income, nutrition, and health of poor consumers.”³⁷ The primary sugar cane producers are Brazil, India, China, Thailand, Pakistan, and Mexico.³⁸ As global demand for sugar production increases, the bulk of additional sugar production will come from developing countries,

³⁴ Rep. of the World Comm’n on Env’t and Dev.: Our Common Future, Ch. 2, ¶ 1, U.N. Doc. 1/42/427 (June 1987), <http://www.un-documents.net/our-common-future.pdf>.

³⁵ *What is Sustainable Development? Environmental, Economic and Social Well-being for Today and Tomorrow*, INT’L INST. FOR SUSTAINABLE DEV., <http://www.iisd.org/sd/#one> (last visited Oct. 10, 2013).

³⁶ See, e.g., HANNAH & SPENCE, *supra* note 11.

³⁷ See *Rising Food Prices, Economic Policy in Latin America & the Caribbean*, World Bank, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/EXTLACREGTOPECOPOL/0,,contentMDK:21841733~pagePK:34004173~piPK:34003707~theSitePK:832499,00.html>.

³⁸ *Top Production-Sugar Cane-2011*, FOOD AND AGRIC. ORG. OF THE U.S., FAO STAT, <http://faostat.fao.org/site/339/default.aspx> (last visited Oct. 14, 2013) (select “Countries by Commodity” on the left; select “Sugar cane” from the dropdown menu; select “2011” from the dropdown menu; select “Quantity” from the dropdown menu).

with the main burden of growth resting on Brazil.³⁹

A. The United States

1. Best Management Practices to Limit Phosphorus Discharge in Florida Everglades

Local and state mandates have prompted a sugar producer in Florida to employ water management and best practices. In partnership with the University of Florida's Institute for Food and Agricultural Sciences, the United States Sugar Corporation (U.S. Sugar Corp.) implemented a unique land and water management system, known as Best Management Practices (BMPs) to reduce phosphorus runoff from fertilizers.⁴⁰ The U.S. Sugar Corp. boasts that since 1995 it has attained more than the 25% phosphorus reduction required by the Everglades Forever Act throughout farmlands in the Everglades Agricultural Area (EAA).⁴¹ As a result of BMPs, the 2010 monitoring period indicated a 41% phosphorus reduction in the 470,000-acre EAA farming region south of Lake Okeechobee.⁴² The C-139 Basin is the second largest tributary of phosphorus to the Everglades Protection Area (EPA).⁴³ The BMP program was successful in reducing phosphorus discharges to below historic levels in the C-139 Basin.⁴⁴

U.S. Sugar Corp. asserts that the soil in the farming area of the

³⁹ See *OECD-FAO Agricultural Outlook 2011-2020*, ORG. FOR ECON. COOP. AND DEV./FOOD AND AGRIC. ORG. OF THE U.S. 123, <http://www.oecd.org/site/oecd-faoagriculturaloutlook/48184295.pdf>.

⁴⁰ *Best Management Practices (BMP)s*, U.S. SUGAR CORP., http://www.ussugar.com/environment/env_bmp.html (last visited Oct. 10, 2013).

⁴¹ See *id.*

⁴² See *id.* This data is reported by the South Florida Water Management District. According to the U.S. Sugar Corp., over the past fifteen years, "sugar farmers have reduced phosphorus runoff by an average of 50%." *Id.*

⁴³ *News Release: EAA, C-139 Basin Each Better Everglades Water Quality Requirements*, SOUTH FLORIDA WATER MGMT. DIST. (July 15, 2010), http://www.ussugar.com/downloads/2010_0715_phosphorus_reduction.pdf (last visited Oct. 12, 2013).

⁴⁴ The target load for 2010 was 53.6 metric tons. During that time, data show the actual mass of phosphorus discharged from the basin was 41.9 metric tons. This was nearly 22% less than the target. *Id.*

Everglades region tends to contain extremely high levels of phosphorus due to sedimentation caused by Lake Okeechobee spilling over its banks.⁴⁵ Still, U.S. Sugar Corp. has used BMP techniques to limit phosphorus run-off through the following means: (1) removal of phosphorus-containing sediment from canals and ditches before the water exits company property, (2) application of refined fertilizer, (3) use of precise storm water pumping practices, and (4) erosion controls—such as laser leveling fields to reduce or stop wind erosion.⁴⁶ In concert with the BMPs, the South Florida Water Management District (SFWMD) provides additional water treatment in one of its Stormwater Treatment Areas (STAs) as the water leaves the EAA and before it enters the Everglades.⁴⁷

These historic reductions in phosphorus are due to the U.S. Sugar Corp. recognizing how vital CSR is to its corporate identity. U.S. Sugar Corp. survived former Florida Governor Charlie Crist's attempted \$1.75 billion purchase of the company and all its assets, including 187,000 acres of land.⁴⁸ Crist's attempt to buy out U.S. Sugar Corp. may have been well-intentioned,⁴⁹ but it suffered from the short-sightedness of not understanding the complexity of such a massive land purchase. Politicians and policymakers seeking to please the environmentally-minded constituents are hard-pressed to deliver on their lofty reclamation

⁴⁵ *Best Management Practices (BMP)s*, *supra* note 40.

⁴⁶ *See id.*

⁴⁷ *News Release*, *supra* note 43 (“These SFWMD-constructed wetlands are filled with native vegetation and use ‘green’ technology to further reduce phosphorus levels.”).

⁴⁸ Damien Cave, *For the Everglades, A Dream Loses Much of its Grandeur*, N.Y. TIMES, Aug. 12, 2010, <http://www.nytimes.com/2010/08/13/us/13everglades.html?ref=unitedstatessugarcorporation>. Instead, the deal closed with the State acquiring about “27,000 acres of U.S. Sugar property (primarily citrus land) as part of its *River of Grass* restoration initiative to provide additional water treatment and water storage. *See* Press Release, U.S. Sugar Corporation, U.S. Sugar Celebrates 80th Anniversary, (Apr. 29, 2011), *available at* http://www.ussugar.com/press_room/releases/80th_anniversary.html.

⁴⁹ Don Van Natta, Jr. & Damien Cave, *Deal to Save Everglades May Help Sugar Firm*, N.Y. TIMES (Mar. 7, 2010), <http://www.nytimes.com/2010/03/08/us/08everglades.html?pagewanted=all> (quoting Mr. Crist as saying, “I can envision no better gift to the Everglades, the people of Florida and the People of America—as well as our planet—than to place in public ownership this missing link that represents the key to true restoration”).

and conservation projects when they do not understand or appreciate CSR as an idea and a means to an end. With companies willing to take the initiative on their own and prodded on by government regulation, this approach may be the more ideal way to further environmental reclamation and conservation efforts.

2. *U.S. Subsidies Create High Prices*

The U.S. sugar program⁵⁰ relies on nonrecourse loans as its primary price support mechanism.⁵¹ Any sugar imports would lower the domestic price down toward the world price and might encourage U.S. producers to forfeit their crops to the Commodity Credit Corporation (CCC)⁵² “in lieu of repaying their nonrecourse price support loans.”⁵³ The federal government is required, by law, to “operate the sugar program at no cost to itself by preventing the accumulation of sugar acquired by the CCC.”⁵⁴ The United States “relied on strict quantitative import quotas for sugar” for “decades.”⁵⁵ In 1989, an international panel determined that the import quota in the United States was a quantitative trade restriction prohibited under Article XI of the GATT.⁵⁶ Article XI, labeled *General Elimination of Quantitative Restrictions*, provides:

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or

⁵⁰ See generally Katherine E. Monahan, *U.S. Sugar Policy: Domestic and International Repercussions of Sour Law*, 15 HASTINGS INTL. & COMP. L. REV. 325, 338-40 (1992) (describing the federal sugar program in detail).

⁵¹ Jim Chen, *Of Agriculture's First Disobedience and Its Fruit*, 48 VAND. L. REV. 1261, 1283-86 (1995).

⁵² Farm Service Agency, *About the Commodity Credit Corporation*, U.S. DEP'T OF AGRIC. (Aug. 08, 2008, 9:20 AM), <http://www.fsa.usda.gov/FSA/webapp?area=about&subject=landing&topic=sao-cc>. (“The Commodity Credit Corporation (CCC) is a Government-owned and operated entity that was created to stabilize, support, and protect farm income and prices. CCC also helps maintain balanced and adequate supplies of agricultural commodities and aids in their orderly distribution.”).

⁵³ Chen, *supra* note 51, at 1283.

⁵⁴ See *id.* (citing Pub. L. No. 99-198, § 902, as amended, Pub. L. No. 101-624, tits. IX, XI, §§ 903, 1161(c), 104 Stat. 3488, 3521 (1990) (set forth as a note to 7 U.S.C. § 1446g (1994))).

⁵⁵ Chen, *supra* note 51, at 1283.

⁵⁶ See *id.* at 1284.

export licenses [sic] or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.⁵⁷

The United States responded by creating a “two-tiered tariff on sugar imports.”⁵⁸

B. Brazil

1. Bagasse-based Ethanol

As the number one producer and exporter of sugar in the world,⁵⁹ Brazil’s water-rich environment is another promising national setting to initiate a radical change that could positively impact the sugar industry.⁶⁰ Using ethanol from sugar cane is recognized to decrease greenhouse gas emissions and improve air quality.⁶¹ By 2004, ethanol in Brazil was priced competitively with gasoline,⁶² so biofuel based on sugar cane was more cost effective than other crops, including corn, wheat, and sugar beet.⁶³

Even though a majority of new renewable energy sources are under development,⁶⁴ Brazil’s sugar-based biofuel is “a global energy commodity that is fully competitive with motor gasoline

⁵⁷ GATT, *supra* note 27, art. XI.

⁵⁸ Chen, *supra* note 51, at 1283-84 (explaining that the new Tariff Rate Quota imposed a relatively modest tariff of 625 cents a pound on the first 2.315 million tons of sugar imported into the United States each year).

⁵⁹ Juan de Onis, *Brazil’s Big Moment – A South American Giant Wakes Up*, 87 FOREIGN AFFAIRS 110, 114 (2008).

⁶⁰ *See id.* at 113-14 (“And as the world’s largest sugar exporter, Brazil supplies sweet-toothed consumers across the globe. . . . No other country has such a large untapped reserve of . . . water.”).

⁶¹ José Goldemberg, *The Brazilian Biofuels Industry*, in BIOTECHNOLOGY FOR BIOFUELS 1 (May 1, 2008), <http://www.biotechnologyforbiofuels.com/content/pdf/1754-6834-1-6.pdf>.

⁶² *See id.* at 2-3 (comparing the prices of ethanol and gasoline).

⁶³ *See id.*

⁶⁴ *See* José Goldemberg, *Ethanol for a Sustainable Energy Future*, in SCIENCE MAGAZINE’S STATE OF THE PLANET 2008-2009 21, 21 (Donald Kennedy et al. eds., 2008) (“Most of the ‘new renewable energy sources’ are still undergoing large-scale commercial development.”).

and appropriate for replication in many countries.”⁶⁵ Brazil has taken the biofuel production process one step further by using the sugar cane plant’s cellulose-rich bagasse and straw, which allows all of the plant’s biomass to be used in the biofuel production process.⁶⁶ Yet because this process uses more water and creates more polluting byproducts, doubts persist as to the economic viability of using all of the sugar cane plant in biofuel production.⁶⁷ However, “Brazil is offering its expertise to nations worldwide, especially developing countries that could produce biofuels but still depend on oil.”⁶⁸ Technological innovations and improvements in the agricultural and industrial phases of the production process can lead to greater efficiency.⁶⁹ Improvements in both sugar cane yield and a high index of total recoverable sugar (TRS) lead to “high yield of ethanol per unit of planted area.”⁷⁰ The industry must also battle the fermentation of sugars from cellulosic feedstock, because sugar bagasse consists of 2/3 carbohydrates with the remainder comprising other materials, including lignin.⁷¹ During the cellulosic conversion process, a loss of carbohydrates signals a lower ethanol yield.⁷² Novozymes is a research and development company that is working to develop

⁶⁵ *Id.*

⁶⁶ Carla Almeida, *Sugarcane Ethanol: Brazil’s Biofuel Success*, SCIENCE AND DEVELOPMENT NETWORK, Dec. 6, 2007, <http://www.scidev.net/en/features/sugarcane-ethanol-brazils-biofuel-success.html> (“One tonne of bagasse can produce 186 litres of ethanol.”).

⁶⁷ *See id.* (“But there are doubts over the economic viability of the process, which requires more water and produces more polluting byproducts like the vinasse.”).

⁶⁸ *Id.*

⁶⁹ Goldemberg, *supra* note 61, at 5.

⁷⁰ *See id.* (“The increase of TRS from sugarcane has been very significant: 1.5% per year in the period 1977–2004, resulting in an increase from 95 to 140 kg/ha. Sugar extraction from sugar cane has also increased in the period 1977–2003. The average annual improvement was 0.3%; some mills have already reached extraction efficiencies of 98% . . .”).

⁷¹ Cynthia Bryant & William Y. Yassumoto, *Bagasse-Based Ethanol from Brazil Gearing Up for Export Market*, NOVOZYMES NORTH AMERICA INC., <http://bioenergy.novozymes.com/en/learn-more/publications/Documents/Biogasse.pdf>.

⁷² *See id.* at 2 (stating that the pretreatment of feedstock is beneficial for accessibility, but can “result in carbohydrate loss, which potentially means a lower ethanol yield”).

enzymes to increase the ethanol yield.⁷³ The development of these new technologies is critical to the ongoing success of sugar as a fuel source.

The use of sugar-based biofuels raises concerns about food security, especially when poverty level conditions exist in Brazil and throughout South America.⁷⁴ By using the husks of the sugar cane plant and the plant's excess biomass for biofuel, sugar companies in Brazil will be utilizing all of the sugar cane and will have an opportunity to diversify their business and maximize their profits.⁷⁵ The longevity of the sugar industry rests, like all companies, in secure and low cost sources for water and energy.⁷⁶ The biofuel that is generated by sugar can be used across in the agriculture sector and shared with other companies and the nation's peoples.

2. *Working Conditions of Sugar Workers in Brazil*

The State of São Paulo places a high priority on the production and export of sugar-based biofuel, so when concerns arose about the labor conditions of sugar workers, the industry noticed.⁷⁷ When sugar was exported as a commodity, little heed was given to labor issues, but as Brazil became the world's second-largest exporter of sugar-based ethanol, the discontent among the workforce could no longer be ignored.⁷⁸ EU countries, which

⁷³ See *id.* at 3 ("Novozymes is putting a lot of effort into making cost-effective lignocellulosic ethanol a reality.").

⁷⁴ See Siwa Msangi, *Biofuel Revolution Threatens Food Security for the Poor*, SCIENCE AND DEV. NETWORK, Dec. 6, 2007, <http://www.scidev.net/global/forestry/opinion/biofuel-revolution-threatens-food-security-for-the.html> ("[B]iofuel production poses new food security risks and challenges for poor people. Higher food prices, subsidies for biofuels, and environmental degradation will all be felt disproportionately by the developing world.").

⁷⁵ See Goldemberg, *supra* note 61, at 5 (discussing the surplus of electricity supplied through the entire refinement process when burning excess waste, namely remaining bagasse); see also Macalister, *infra* note 78 (discussing Brazil's sugar industry's claims of improved "mechanized systems" that will "be able to harvest more of the crop").

⁷⁶ See de Onis, *supra* note 59, at 113 (indicating a connection between Brazil's habitat, which is full of fresh water and other sources of energy, to its modern and diverse industrial prowess).

⁷⁷ See Goldemberg, *supra* note 61, at 2, 5 (detailing the productivity of São Paulo's factories').

⁷⁸ Terry Macalister, *Biofuel Bonanza Not So Sweet for Brazil's Sugar*

import sugar-based ethanol, led the charge to expose inhumane working conditions in Brazil.⁷⁹ In major EU importing countries such as Sweden and Britain, the government required 2.5% of all petrol to come from biofuels.⁸⁰ These critics have attempted to shame Brazil's sugar industry by decrying child labor practices, high accident rates, and low wages of \$1.35 (67p) per hour as well as poor environmental practices associated with crop wastage and the burning of biomass.⁸¹ The Brazilian sugar industry is attempting to now self-regulate. The Brazilian Sugar Cane Industry Association (UNICA)⁸² started in 1997, once the government deregulated the sugar and ethanol industries.⁸³ UNICA is the result of the "consolidation process involving regional organizations in the State of São Paulo."⁸⁴ Its members are producers that generate over fifty percent of all ethanol, and sixty percent of all sugar, in Brazil.⁸⁵ UNICA recognizes that mechanized systems will increase crop yield and enable the country to use more biomass for generating electricity.⁸⁶

C. India

1. Sugar Cooperatives

Even though India was the birthplace of sugar,⁸⁷ India's entry

Cane Cutters, THE GUARDIAN, June 4, 2008, <http://www.guardian.co.uk/environment/2008/jun/04/biofuels.oil>.

⁷⁹ See *id.* (citing Sweden and possibly Britain as countries involved in the demands).

⁸⁰ See *id.*

⁸¹ See *id.*

⁸² *About Us – Mission*, BRAZILIAN SUGARCANE INDUSTRY ASSOCIATION (UNICA), <http://english.unica.com.br/quemSomos/texto/show.asp?txtCode={A888C6A1-9315-4050-B6B9-FC40D6320DF1}> (last visited Oct. 12, 2013) ("[UNICA] is the largest organization in Brazil representing sugar, ethanol and bioelectricity producers.").

⁸³ See *id.*

⁸⁴ *Id.*

⁸⁵ See *id.*

⁸⁶ Macalister, *supra* note 78.

⁸⁷ See J.H. GALLOWAY, *supra* note 1; see also Nyberg, *supra* note 4. But see HANNAH & SPENCE, *supra* note 11, at 3 (claiming that sugar originated in the South Pacific Polynesian Islands as early as 200 B.C.).

into the international sugar trade came late.⁸⁸ It was not until 1923 that India began to produce sugar,⁸⁹ but it caught up quickly, “expanding rapidly to reach the 1 million tonne level in only 12 years.”⁹⁰ World War II did not impact its production, which “reached 3 million tonnes by 1963 and 13.8 million in 1992.”⁹¹ In the Northern Indian states of UP and Bihar, private, wealthy industrialists built a majority of the new mills.⁹² These businesspersons owned sugar cane farms and bought “cane from small farmers – who were at the mercy of such mill owners.”⁹³

The state government took several measures in response to “[t]he exploitation of small farmers by sugar mills” in the form of land reforms, whereby a ceiling was placed on the holdings of an individual and/or entity, which also included a sugar company.⁹⁴ This reform led to disinterest in private sugar mills, but the growing demand for sugar and sugar cane led to a government-backed Cane Growers Programme in which growers developed cooperatives.⁹⁵ The western Indian state of Maharashtra was the first place to implement sugar cooperatives.⁹⁶ Fifty years later, this sector produced more than half of the country’s sugar, and this accomplishment was accredited to the stable cooperation among cane growers of all sizes, as well as the partner mills.⁹⁷ While the system of sugar cooperatives has worked, it has also generated concentrated wealth among only a small group of cooperatives.⁹⁸

⁸⁸ HANNAH & SPENCE, *supra* note 11, at 8. *But see* Lynda N. Shaffer, *Southernization*, in *AGRICULTURAL AND PASTORAL SOCIETIES IN ANCIENT AND CLASSICAL HISTORY* 308, 311 (Michael Adas ed., 2001) (discussing Indian sailors trading sugar and clarified butter in the years following 350 C.E.).

⁸⁹ HANNAH & SPENCE, *supra* note 11, at 8.

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² Satish Kansal, *Factors Determining Indian Sugar Production and Its Comparative Advantage*, in *PROCEEDINGS OF THE FIJI/FAO 1997 ASIA PACIFIC SUGAR CONFERENCE*, FOOD AND AGRIC. ORG. OF THE U.N., <http://www.fao.org/docrep/005/x0513e/x0513e16.htm> (last visited Oct. 10, 2013).

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *See id.*

⁹⁶ *See id.*

⁹⁷ *See id.*

Currently, the Indian government seeks to attract foreign investment and develop the sugar industry.⁹⁹

The lack of sizeable government subsidies to domestic sugar producers in India accounts for the stagnant status of the industry there.¹⁰⁰ While Indian sugar producers are major players in the global market,¹⁰¹ there is potential for tremendous growth, if India can learn from the water management practices implemented in the United States¹⁰² and the innovation and technology undertaken in Brazil.¹⁰³ In India, government corruption and bribery is more apparent.¹⁰⁴ These issues will have to be addressed for the Indian sugar industry to become more competitive globally. The Indian Supreme Court and Indian government have recognized the concept of sustainable development “as a basis for balancing imperatives with developmental goals.”¹⁰⁵

2. *India's Attempt at Deregulation*

Suresh Gawali asserted in 2003 that, because of “a cyclical up and down in production and prices,” the industry cannot rely

⁹⁸ See A. Seechurn, *Co-operative Movement: A Global as well as National Asset*, LE MAURICIEN, July 5, 2013, <http://www.lemauricien.com/article/co-operative-movement-global-well-national-asset> (indicating that one of the effects of the co-operative movement of the Industrial Revolution was “wealth in the hands of a few well-to-do”).

⁹⁹ See Kansal, *supra* note 92 (suggesting that, over time, the government of India has liberalized imports and exports, and “new technology has come in supported by direct foreign investments”).

¹⁰⁰ See Suresh Gawali, *Distortions in World Sugar Trade*, 38 ECONOMIC AND POLITICAL WEEKLY 43, 4515 (Oct. 25, 2003) (suggesting that the support of government is “very limited” in India and providing examples of government interventions in other developed and developing countries).

¹⁰¹ HANNAH & SPENCE, *supra* note 11, at 80.

¹⁰² See *supra* Section II.a.

¹⁰³ See generally André Tosi Furtado et al., *The Brazilian Sugarcane Innovation System*, 39 ENERGY POLICY 156, 156-66 (2011) (discussing the main features of the innovative approaches and technologies of the Brazilian sugarcane industry).

¹⁰⁴ See NAU NIHAL SINGH, *THE WORLD OF BRIBERY AND CORRUPTION* 186 (1998) (noting that “India has acquired the unenviable reputation of being among the most corrupt countries in the world”).

¹⁰⁵ SHYAM DIVAN & ARMIN ROSENCRAZ, *ENVIRONMENTAL LAW AND POLICY IN INDIA: CASES, MATERIAL AND STATUTES* 585 (2nd ed. 2002).

“entirely on the basis of market forces.”¹⁰⁶ Gawali argues that subsidies are integral for the success of the Indian sugar industry: “[t]he present policy of the Indian government is aiming at the withdrawal of support and to let market forces play their own role. This will be suicidal for the Indian sugar industry.”¹⁰⁷

The montage of market liberalization is driving deregulation,¹⁰⁸ but developing countries—as in India’s case, a rising superpower—cannot embrace market liberalization as carelessly as their developed counterparts.¹⁰⁹ Developing nations must rely more on subsidies to enter the global sugar trade because of the lack of other incentive. In a 2010 presentation regarding the deregulation of sugar to Prime Minister Manmohan Singh, Union Food Minister Sharad Power recommended sugar mills “share revenues from sugar and by-products like bagasse and molasses with farmers, which will be over and above the government-fixed sugar cane price.”¹¹⁰ Power recognized that India has “low sugarcane [sic] yields and fluctuating sugar prices” and sought to alleviate this disparity by deregulation with the hopes of attracting foreign investment.¹¹¹

III. Subsidies Pushing Down World Prices, Placing Poorer Sugar Producing Countries at a Disadvantage

These innovative technologies and government politics must be congruent with WTO rules that impact the sugar industry. While issues related to sugar subsidies and dumping practices are complex, they are noted here briefly because sugar subsidies drive the industry and create an intricate web of trade and commerce concerns.¹¹² When the WTO ruled against the EU for dumping

¹⁰⁶ Gawali, *supra* note 100, at 4513-15.

¹⁰⁷ *Id.*

¹⁰⁸ See Kansal, *supra* note 92 (noting that liberalization has resulted in the deregulation of exports and imports).

¹⁰⁹ See *id.* (suggesting that, because India has such a large consumer base, some regulations “are necessary to maintain adequate availability” of volumes).

¹¹⁰ Ajay Modi, *Sugar Subsidy Plan is Sweet News*, BUSINESS STANDARD, Sept. 14, 2010, <http://www.business-standard.com/india/news/sugar-subsidy-plan-is-sweet-news/408019/>.

¹¹¹ *Id.*

¹¹² See generally GEORGE C. ABBOTT, SUGAR 1, 126-41 (1990) (describing the mechanics of the world sugar market and the multi-layered complexity

issues in August 2005,¹¹³ critics at the time argued that the “subsidies push down world prices, making it hard for poorer sugar producers to compete.”¹¹⁴ With Brazil leading the charge against the EU policy on sugar subsidies,¹¹⁵ some aid agencies praised the decision as a “victory for developing countries” because “the WTO agreed with Brazil that about half the EU’s annual 5 million tonnes of sugar exports breached world trade rules.”¹¹⁶ Meanwhile, some campaigners remain skeptical because they argue that the decision will “make little difference to the flood of cheap exported sugar from Europe.”¹¹⁷

Both the WTO and international norms favor competition and liberalization of international trade,¹¹⁸ so the WTO decision, as some campaigners indicated, will have little, if any, impact.¹¹⁹ Seven years after the 2004 WTO ruling against the EU,¹²⁰ the cost of sugar still remains relatively low in international markets.¹²¹ Yet the WTO decision may have been intended more as a symbolic ruling that served to further policy change within the WTO. The burden rests on the sugar corporations and the nations themselves to self-regulate and implement business practices that

involved in its trade).

¹¹³ Dispute Settlement, *European Communities – Export Subsidies on Sugar*, WT/DS266 (May 19, 2005).

¹¹⁴ *WTO Sugar Ruling Sparks Appeal*, BBC NEWS, Oct. 15, 2004, <http://news.bbc.co.uk/2/hi/business/3747416.stm>.

¹¹⁵ See *id.*

¹¹⁶ *Id.* (“Brazil, which played a leading role in creating the G22 lobby of developing nations within the WTO, has brought successful WTO cases against US cotton subsidies as well as the EU’s sugar regime.”).

¹¹⁷ *Id.*

¹¹⁸ JUDITH GOLDSTEIN & LISA L. MARTIN, *Legalization, Trade Liberalization, and Domestic Politics: A Cautionary Note*, in *LEGALIZATION AND WORLD POLITICS* (Goldstein ed. 2001).

¹¹⁹ *WTO Sugar Ruling Sparks Appeal*, *supra* note 114.

¹²⁰ See GREAT BRITAIN: PARLIAMENT: HOUSE OF COMMONS: ENVIRONMENT, FOOD AND RURAL AFFAIRS COMMITTEE, *REFORM OF THE EU SUGAR REGIME* 49 (2005) (indicating WTO’s initial ruling against EU in 2004).

¹²¹ See Naveem Mathur, *Sugar Prices to Remain Stable*, THE ECONOMIC TIMES, June 3, 2013, http://articles.economictimes.indiatimes.com/2013-06-03/news/39714832_1_sugar-prices-international-sugar-organisation-levy-quota (suggesting that the domestic market prices of sugar have declined during the past few months as a result of “excessive supplies, higher levy quota and weak exports” caused by low world prices).

incorporate CSR.¹²² Brazil is the number one sugar producing country in the world,¹²³ and it has constantly been improving its agricultural, shipping, and trading technologies to keep pace with the growing demand for sugar.¹²⁴ Meanwhile, the WTO and the laws of various sugar producing countries continue to tout free trade and market competition.¹²⁵ As a general principle, the law supports competition, because it offers lower prices for goods, affords new opportunities for new producers to enter the market, encourages efficiency, and makes credit cycle swings shorter and less burdensome..¹²⁶

IV. Examination of Motivating Factors for the International Sugar Trade to Apply Sustainable Development Principles

Sustainable development has been a buzz phrase in the sugar industry for at least the past decade,¹²⁷ but the focus has been more on improvements in agricultural technology, shipping and distribution efficiency, and the generation of sugar-based bioenergy.¹²⁸ Labor and environmental standards and trade

¹²² See Oxfam Briefing Note, *An End to EU Sugar Dumping?*, OXFAM INT'L, 4 (Aug. 6, 2004), http://www.oxfam.org/sites/www.oxfam.org/files/dumping_0.pdf (suggesting that failure to implement WTO rulings in good faith will likely result in trade sanctions).

¹²³ See DEVRY S. BOUGHNER, U.S. INT'L TRADE COMM'N, INDUSTRY & TRADE SUMMARY: SUGAR 54, USITC Pub. 3405 (Mar. 2001) (noting that "Brazil is the largest producer and exporter . . . of sugar in the world").

¹²⁴ See *id.* at 55 (noting that the expansion of Brazil's sugar market can be attributed to the "increases in cane quality, inexpensive labor costs, low land prices, partial mechanization of harvesting, and the indirect subsidization of the fuel alcohol industry").

¹²⁵ See Oxfam Briefing Paper, *Dumping on the World: How EU Sugar Policies Hurt Poor Countries*, Oxfam Int'l, (Mar. 2004), http://www.oxfam.org/sites/www.oxfam.org/files/bp61_sugar_dumping_0.pdf.

¹²⁶ James Lawrence Fly, *Observations on the Anti-Trust Laws, Economic Theory and the Sugar Institute Decisions: I*, 45 YALE L.J. 1339, 1340 (1936) ("Monopoly is regarded as an ancient and familiar evil, not only in that it allows one part of the community to exact tribute from another, but because it reduces the total of production and interposes a real barrier in the way of expansion.").

¹²⁷ As early as 2004, governments were promoting sustainable sugar industry practices with the addition of bioenergy at least by 2008. See, e.g., *Sugar Industry: A Sustainable Livelihoods Approach to Industry Challenge*, WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEV., http://www.sinetinfo.com/pdf/Sugar%20PDF/sugar_industry_sustainable%20approach.pdf.

¹²⁸ See, e.g., *id.*; see also *The Strategic Vision for a Commercially Vibrant*

practices have not taken a high priority.¹²⁹ For sugar to continue to grow successfully as an industry, the sugar producing companies and nations must tie together social, economic, and environmental factors, because, like all natural resources, sugar is a diminishing commodity even if future prospects appear lucrative.

In October 2002, the government of Mozambique, jointly organized by the Ministry of Agriculture and Rural Development and the FAO and supported by the ISO and the Associação dos Produtores de Açúcar de Moçambique (APAMO), hosted a conference, *Sugar and Development in Africa and the World: Sustainability, Diversification and Trade*.¹³⁰ Conference presenters examined issues of sustainability, trade, privatization and diversification strategies, the long term competitiveness of sugar production, and development.¹³¹

"[A]ttracting investment depends on how well communities understand the decision process and subsequently do what is required to both meet the needs and anticipate the needs of business, positioning themselves accordingly to influence decision makers."¹³² One way to achieve success is through the use of trade missions. To see how other international sugar producers conduct their operations is not only helpful to further market liberalization and improve existing technologies, but it also serves to enhance

Sustainable and Self-Reliant Industry in Australia, Sugar Industry Oversight Group (Feb. 9, 2006), http://www.daff.gov.au/_data/assets/pdf_file/0011/183449/final_sugar_vision.pdf; F. Yambia et al., *Bioenergy for Sustainable Development and Global Competitiveness: the Case of Sugar Cane in Southern Africa*, Cane Resources Network for Southern Africa (CARENSA) (Nov. 2008), http://www.carensa.com/CARENSA_TR3_Markets.pdf.

¹²⁹ See generally Robert Howse, *The World Trade Organization and the Protection of Workers' Rights*, 3 J. SMALL & EMERGING BUS. L. 131 (1999), available at, http://graduateinstitute.ch/files/live/sites/iheid/files/shared/executive_education/summer_international-affairs_faculty-IA_professors/howseworkers%255B1%255D.pdf.

¹³⁰ See FAO/Mozambique International Sugar Conference, *Sugar and Development in Africa and the World: Sustainability, Diversification and Trade*, FOOD AND AGRIC. ORG. OF THE U.N., (Oct. 10-12, 2002), <http://www.fao.org/economic/est/est-commodities/sugar/sugar-meetings/faomozambique-international-sugar-conference-sugar-and-development-in-africa-and-the-world-sustainability-diversification-and-trade-maputo-mozambique-10-12-october-2002/en/>.

¹³¹ See *id.*

¹³² Don C. Schjeldahl, *Cities: Competition for Inward Investment*, 30 CAN.-U.S. L.J. 51, 58 (2004).

sustainable development and refine its conventionality. Communities have the capacity to influence global decision-making and must work together if they aspire to compete in the global markets in a sustainable manner. All the while, the role of business must be recognized. “[S]implistic calls for ‘democratizing’ the WTO will not provide the answer.”¹³³ Product innovation and market liberalization will lead the way for bringing about transformative business practices within the international sugar industry, but regulation and the cooperation of countries and multinationals will be essential.¹³⁴

Yet, the role of small-scale farmers in the equation of the international sugar trade should not be overlooked. Property rights issues and government support relating to small-scale farmers are integral for the long-term sustainability of the international sugar market. United Nations Special Rapporteur on the Right to Food, Olivier De Schutter, opines:

Unless small-scale farmers receive support sufficiently strong to ensure that independent farming will be viable, there is a high risk that titling schemes, leading to the creation of a market for land rights, will result in the concentration of land in the hands of well-financed entrepreneurs that will prioritize large-scale

¹³³ Gregory C. Shaffer, *The World Trade Organization Under Challenge: Democracy and the Law and Politics of the WTO's Treatment of Trade and Environment Matters*, 25 HARV. ENVTL. L. REV. 1, 93 (2001) (“While the creation of a World Environment Organization could serve to somewhat shield the WTO from criticism, and although it could help channel resources from northern states and stakeholder groups to confront southern environmental problems, it would not eliminate trade-environment conflicts. Ultimately, these conflicts are grounded in differing environmental and developmental values and priorities and differing financial stakes.”).

¹³⁴ Frederick M. Rowe, *Price Differentials and Product Differentiation: The Issues Under the Robinson-Patman Act*, 66 YALE L.J. 1, 30 (1956) (“[C]urrent legal doctrines can frustrate the dynamics of product innovation and thereby deprive the economy of the fruits of a creative form of competition. In markets attuned to the consuming public, product differentiation is a rich ingredient of economic progress. Whereas in the production and sale of standardized staples, such as cement, salt, or sugar, price and delivery terms are the focal attraction to the industrial buyer, the ‘merchandising’ of consumer-oriented goods must display additional and multifold appeals. In catering to the needs of specialized segments of the potential market, products performing basically identical functions will thus become differentiated in properties and components.”).

projects for export markets.¹³⁵

De Schutter warns that “[o]nly by improving the background conditions against which negotiations are conducted between local land users and investors can such negotiations become truly fair.”¹³⁶

Industry insiders are best situated to inspire sustainable development practices among the corporation. The Better Sugar Cane Initiative (BSI) is a worldwide, multi-stakeholder, non-profit initiative aimed at reducing the environmental and social impacts of sugar cane production and primary processing.¹³⁷ The BSI standards account for local conditions, promote measurable improvements, work to develop a certification standard, and transition for continuous improvement in production efficiency and sustainability.¹³⁸ Another initiative for the sugar industry is the Bonsucro Production Standard, which is the first ever, metric-based standard that measures the impact of the sustainable production of sugar cane.¹³⁹ In 2008, the Bonsucro established three Technical Working Groups from the sugar cane producing areas that reflect a balance of interest groups and global representation.¹⁴⁰

If the sugar industry does not self-regulate, adopt standards, and undergo certification schemes, sugar producing companies will find themselves subjected to lawsuits.¹⁴¹ For example, Nicaragua Sugar Estates Limited, the owner of an agro-energy complex northwest of Managua, operated an IFC-financed project

¹³⁵ Olivier De Schutter, *The Green Rush: The Global Race for Farmland and the Rights of Land Users*, 52 HARV. INT'L L.J. 503, 559 (2011).

¹³⁶ See *id.*

¹³⁷ WORLD WILDLIFE FUND, *Better Sugarcane Initiative (BSI)*, WWF.PANDA.ORG, http://wwf.panda.org/what_we_do/footprint/agriculture/sugar_cane/better_sugarcane_initiative/ (last visited Oct. 5, 2013).

¹³⁸ See *id.* (maintaining an establishment of dynamic and ever improving benchmarks and baselines is the overall objective).

¹³⁹ *Fact Sheets*, BONSUCRO, <http://bonsucro.com/site/fact-sheets/> (last visited Oct. 5, 2013).

¹⁴⁰ *History of Bonsucro*, BONSUCRO, <http://bonsucro.com/site/fact-sheets/> (last visited Oct. 5, 2013).

¹⁴¹ See, e.g., Lisa Sharma et al., *The Food Industry and Self-Regulation: Standards to Promote Success and to Avoid Public Health Failures*, 100 AM. J. PUBLIC HEALTH 240, 240-46 (2010), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2804645/pdf/240.pdf>.

in order to expand the company's production and processing of sugar, but became embroiled in a contentious legal battle with the local community.¹⁴² Because of the frequent sugar cane burning, the local communities alleged adverse health conditions, including Chronic Kidney Disease and respiratory problems.¹⁴³ Issues also arose as to labor conditions, unfair land acquisition from indigenous populations, and negative environmental impacts, such as air pollution, water contamination, and pesticide effluence.¹⁴⁴ What is even more troubling is that the allegations also included failure to comply with IFC performance standards, policies, and procedures.¹⁴⁵

V. Sustainable Development Practices Obtainable Through International Regulation and Corporate Social Responsibility

The achievement of more sustainable agricultural and trade practices is obtainable. For example, the Cuban slave trade ended in the 1860's as sugar prices dropped and trade and regulatory measures were introduced against slavery.¹⁴⁶ Arguably, though, the nineteenth century abolition laws did not end slavery globally. Modern day slavery persists in the agricultural sector but current trade practices veil this trend.¹⁴⁷ To have a sustainable

¹⁴² See Compliance Advisor Ombudsman, *Nicaragua / Nicaragua Sugar Estates Limited-01/León and Chinandega*, CAO-OMBUDSMAN.ORG, http://www.cao-ombudsman.org/cases/case_detail.aspx?id=82 (last visited Oct. 5, 2013).

¹⁴³ See *id.*

¹⁴⁴ See *id.*

¹⁴⁵ See *id.*

¹⁴⁶ Jenny S. Martinez, *Antislavery Courts and the Dawn of International Human Rights Law*, 117 YALE L.J. 550, 628 (2008) ("Other factors in Cuba—including changes in attitudes, the increased domestic enforcement of anti-slave trade laws, a decline in sugar prices and a concomitant drop in the value of slaves, and the perception that the institution of slavery itself might be doomed—also played a significant role in the final suppression of the Cuban slave trade in the 1860s.").

¹⁴⁷ See Coalition of Immokalee Workers, *Anti-Slavery Campaign*, CIW-ONLINE.ORG, <http://www.ciw-online.org/slavery> (last visited Oct. 5 2013); National Economic and Social Rights Initiative, *Modern Day Slavery in U.S. Agriculture: Legal Failure and Corporate Complicity*, NESRI.ORG, <http://www.nesri.org/sites/default/files/issue%20bf%20ciw%20FINAL.pdf> (last visited Oct. 5 2013); Annie Kelly, *Modern Day Slavery: An Explainer*, THE

international sugar trade, multinational sugar corporations must learn to self-regulate and work to sign and ratify international treaties and conventions to ensure more humane and socially responsible labor practices. Globalization has raised this awareness in some respects, but the perpetual reliance on cheap labor to keep food prices low to maintain global edge, created the problem to begin with.¹⁴⁸

To improve sustainable development practices, the international sugar industry must seek alternative sources of irrigation, pesticide, transport, shipping, harvesting, and energy. Modern energy services “can revolutionize agriculture by improving the production and storage of crops, and providing more efficient and quicker transport to markets.”¹⁴⁹ Improvements in agriculture can alter international norms due to “increased productivity and a corresponding reduction in the pressure to increase the amount of cultivated land available and the consequent adverse impact on ecosystems and biodiversity.”¹⁵⁰ The international sugar trade industry should implement sustainable development practices, not only for purposes of the public good, but to maintain its bottom line. The opening of global markets themselves will not make the international sugar trade a sustainable industry. Regulation on the international, national, regional, state, and municipal levels is also necessary for fair trade.

VI. Conclusion

Given the history of poor labor practices, harmful agricultural techniques, and illegal trade stratagems, the time for change for the international sugar trade is overdue. While skepticism and

GUARDIAN, (Apr. 3, 2013, 4:43 PM), <http://www.theguardian.com/global-development/2013/apr/03/modern-day-slavery-explainer>.

¹⁴⁸ Food Empowerment Project, *Importing Slavery*, FOODISPOWER.ORG, <http://www.foodispower.org/importing-slavery/> (“[S]ugar from Latin America [is] becoming increasingly competitive on the global market . . . [h]owever[,] the reality is that competitive pricing is often the result of exploitive labor practices.”) (last visited Oct. 5 2013).

¹⁴⁹ Adrian J. Bradbrook, Judith G. Gardam & Monique Cormier, *A Human Dimension to the Energy Debate: Access to Modern Energy Services*, 26 No. 4 J. ENERGY & NAT. RESOURCES L. 526, 528 (2008).

¹⁵⁰ See *id.*

pessimism in the industry is natural, the international sugar trade is an optimal place to start the conversation about sustainable development and improving agricultural practices. For example, in India, once the government stepped in and introduced land reforms, locally operated sugar mills emerged as group-run cooperatives.¹⁵¹ In Brazil, the sugar cane producers are utilizing the husks of the sugar cane plant to produce biofuel.¹⁵² The sugar industry in Florida is working to reduce phosphorus run-off from fertilizers, even beating the government mandates by over 25%.¹⁵³ This is a start. The major sugar producing nations should take the lead on implementing sustainable development practices and agree as nation-states to accept accountability to drive CSR on a global scale.

¹⁵¹ Vijay M. Kumbhar, *Crisis in Sugar Cooperatives in Maharashtra*, Academia.edu (Sept. 14, 2009), http://www.academia.edu/1459885/Crisis_in_Sugar_Cooperatives_in_Maharashtra (last visited Oct. 5, 2013) (“The socio-economic life of agriculturists has undergone a complete change since the installation of sugar co-operatives in rural areas.”).

¹⁵² Eduard Gismatullin, *Shell Shifts Biofuel Technology Focus to Brazil Sugar-Cane Waste*, BLOOMBERG.COM (Apr. 8, 2011), <http://www.bloomberg.com/news/2011-04-08/shell-iogen-shifting-biofuel-technology-focus-to-brazil-sugar-cane-waste.html>.

¹⁵³ See *supra* notes 40-41 and accompanying text.