

UBC Social Ecological Economic Development Studies (SEEDS) Student Report

**An Investigation into the Labour Practices of Sugarcane and Wheat Suppliers Comparing
TreeFrog's Suppliers with Alternatives For Long Term Use At UBC**

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University of British Columbia

APSC 262

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UNIVERSITY OF BRITISH COLUMBIA

An Investigation into the Labour Practices of Sugarcane and Wheat Suppliers

Comparing TreeFrog's Suppliers with Alternatives
For Long Term Use At UBC

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Abstract

This report investigates the labour and social aspects of sugarcane plantations throughout the world, focusing on plantations in Latin and Central America. These findings are then weighed against the labour policies of the Canadian Wheat Board (CWB) in preparing wheat paper. Additionally, the labour and social practices of India's largest sugarcane paper mill, as well as the world's three largest wheat producers, were analyzed to provide a base index to compare labour rights against. The goal is to produce a recommendation to UBC about investing in TreeZero sugarcane bagasse paper, made from sugarcane harvested in Colombia. For this, publications of major third party observers of the sugarcane industry, as well as the United Nations, were aggregated and analyzed in order to identify the issues that face workers in these nations, as well what policies the local governments have enacted to combat and mitigate these issues.

After investigating the issue, it became evident that Colombian workers, as well as workers in the region's most prolific sugarcane producing nations, are subjected to inhumane treatment, including, but not limited to, slavery, violence, insufficient wages, negative working conditions, human trafficking and child labour. Despite pledges to improve the situation, policies have led to hit and miss results, and their enforcement is marred with a lack of systematic application and corruption; no nation has produced a comprehensive set of laws and enforcement protocols that protect workers from abuse and mistreatment.

In the Canadian wheat sector, social sustainability is considered one of the top priorities of the CWB and Canada's Government. Even with the removal of CWB's monopsony, the CWB is now working as a voluntary system to partner with the Canadian Government to increase social sustainability for the farmers.

Our recommendation is therefore to continue with the wheat paper pilot program at UBC, and to specifically ask for Canadian made wheat paper. If sugarcane is to be used as a sustainable option, further investigation into the social sustainability of TreeFrog's supply chain needs to be conducted to ensure that all suppliers meet workplace standards, through third party observers such as Ethical Sugar and the AFL-CIO.

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Glossary

Bagasse	A fibrous by-product of the extraction of juices from sugar canes stalks. It is considered an agricultural waste product.
Least Developed Country	A classification assigned by the United Nations to to countries that are determined to have a substantial level of poverty, economic vulnerability to and extremely low standards of living. These nations have the lowest Human Development Indices in the world.
TreeFrog	A brand of sugarcane bagasse paper, offered to the University of British Columbia by Ricoh and TreeZero as a potential alternative to wood-fibre paper.
Monopsony	A market form in which one buyer faces many buyers.

List of Abbreviations

AFL CIO	(American Federation of Labour and Congress of Industrial Organizations),
CWB	Canadian Wheat Board
FAO	Food And Agriculture Organization of the United Nations
HRW	Human Rights Watch
ILO	Internation Labour Organization
LDC	Least Developed Country
OECD	Organization for Economic Co-operation and Development
TNPL	Tamilnadu Newsprint and Paper Limited
UN	United Nations
UBC	University of British Columbia

1.0 Introduction

Paper made from agricultural by-products has come to represent approximately 5-10% of all paper production in the world (Rainey, 2009) with sugarcane bagasse representing a significant portion of the sector. As the product of a yearly renewable crop, bagasse production is continuous, and the crop does not need to be cultivated for decades before use, in contrast to crops like softwood lumber. This sets up bagasse as a great source for sustainable paper production.

An important aspect of sustainable products is a sustainable supply chain, something that can only be achieved with fair worker compensation, humane working conditions and the protection of children's rights. This paper will examine the labour aspect of wheat paper and sugarcane sustainability by comparing the the current supplier of TreeFrog's bagasse in Colombia to potential alternatives in Latin and South America, as well as India. These will then be compared to the newly opened wheat paper processing plant in Manitoba, and the labour conditions in the Canadian wheat farms intended to be the main suppliers for this plant.

The goal of this report is to provide a recommendation to UBC about its current wheat paper pilot program, and whether the program should be expanded to sourcing sugarcane bagasse paper from TreeZero. To research this, the group collected articles detailing the labour rights of sugarcane plantations and wheat farms in numerous countries around the world, in order to compare the social state of affairs from TreeZero's (and UBC's) potential suppliers. The following discusses the findings from this research.

2.0 Sugar Cane

Sugar cane is one of the fastest growing crops in the world by area, and although it does not make up a large portion of the world's total cultivated lands (Fischer, Teixeira, Hizznyik, & van Velthuizen), it has had a large impact on driving social change in areas primed for harvesting the crop. Sugar cane is used primarily for sugar and ethanol fuel, both of which have risen in price steadily over the last decade (OECD-FAO). This has led to an increase in land grabbing by sugar cane leaders such as China, India and Brazil, as well as a host of LDC nations such as Mozambique, Uganda and Cambodia (Richardson, Anderson, Heath, Mostad, & Sivalingam, 2012), where sugarcane production has grown exponentially over the last decade.

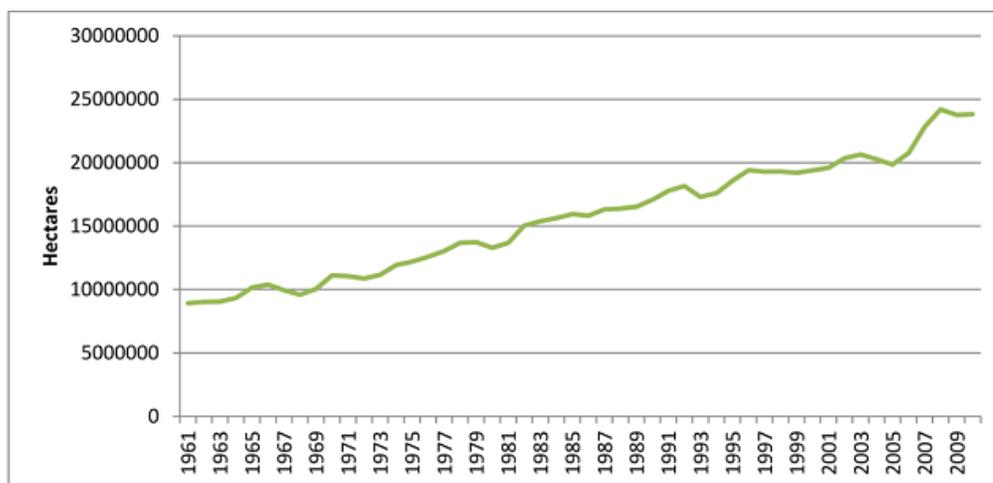


Figure 1. Land used for sugarcane in the world by year. Source: Sugarcane and the local land grab

Many of these land acquisitions have come at the expense of local farmers and indigenous populations (cite the Brazil Biofuels article). This has led to issues of land ownership, resulting in up to 90% of local populaces not owning deeds to lands where they work and live (Richardson, Anderson, Heath, Mostad, & Sivalingam, 2012). These land acquisitions are sometimes of dubious legal nature, such as the supposed acquisition of 60,000 hectares in Cambodia by a local Senator, far exceeding the government's land ownership limit of 10,000 hectares (ethical sugar, 11). Many of the subsequent evictions are forced, carried out by either the military or local security forces, leading to displacement of poor farmers from their lands, often with no local job alternatives.

Local indigenous populations have not escaped the land grabbing practices of multinational corporations. The Malind people of Indonesia as well as the Guarani-Kaiowá people of Brazil have had their lands taken over, without consent, by corporations seeking to expand the sugarcane industry (ten Kate, 2010). This has led to disputed property rights and cultural friction as workers from other areas begin to flood into these lands.

Another serious issue that plagues the region is child labour. Between 50% and 60% of the labourers involved in Bolivia's sugarcane harvest are in the 9-13 age category (Trebilcock, Zweegers, de Boer, & Marin, 2011). While most of these children are drawn to the work to help their parents, and are allocated less physically taxing work, roughly 10-20% of Bolivia's full time harvesters are minors. Older children are often tasked with cutting the sugarcane, which leads to numerous machete injuries. They are required to carry the cane, and are paid per kilogram, leading to overexertion in an effort to bring home more money. Younger children often help with spraying pesticides and pulling weeds. These children are forced into the industry mostly through economic reasons, with some stating that they need to take a job to support their family (Trebilcock, Zweegers, de Boer, & Marin, 2011). Since the harvest happens in September, kids often miss the first month of school, and many feel that they do not need to complete education after the primary grades.

Along with land grabbing have come a bevy of social changes that have not always been positive. The following sections outline some of the most egregious cases of social upheaval, but also which governments and industrial sectors are attempting to limit negative these impacts. It is important to note that the consequences described are meant to paint a general picture of the industry in an entire area, and are not limited to the country for which they are described. As the purpose of this report is to try and understand the potential worker conditions in Carvajal's plantations and explore potential alternatives, focus was put on Colombia and Central and South America to paint a picture of typical working conditions in the region.

2.1 South America

2.1.1 Brazil

Brazil is the largest producer of sugar cane in the world. In the past decade, the area dedicated to growing sugarcane in Brazil has nearly doubled (Biofuel Watch Center, 2008), and accounts for more than a third of the world's area dedicated to the crop. Many of these recent

plantation expansions have occurred in rural areas, which has led to difficulties in establishing proper governmental oversight in these regions. This, along with the 2008 global economic recession, has led to decreased regulation, reduced pay, worsening working conditions, and cases of slavery and human trafficking. Additionally, Brazil faces a serious issue with child labour, and the government's inefficacy at addressing the issue has earned the condemnation of other nations and neutral observers (Biofuel Watch Center, 2008).

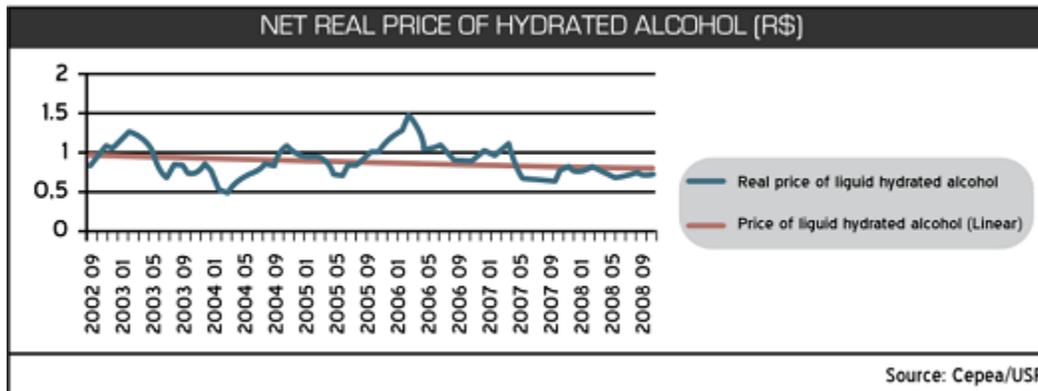


Figure 2. The price of hydrated alcohol. Source: Sugarcane and the local land grab

The 2008 recession led to many Brazilian sugarcane companies posting losses (cite Brazil of Biofuels) in a traditionally successful sector. Despite maintaining similar sales volume, the dropping price of liquid hydrated alcohol translated to losses of millions of reais for local giants such as COSAN. Although a trend of decreasing salaries has been present since 2000 (Mendonca, Pitta, & Xavier, 2012), this has contributed further to the cutback of salaries, which negatively impacts worker purchasing power. Consequently, this has had a significant effect on the livelihoods of cutters, who already earn up to 20% less than other workers in the sugarcane industry (Biofuel Watch Center, 2008). Many cutters have been forced into working longer hours to earn the same amount of pay. Over 80,000 on site accidents were recorded in 2008, most of them involving cutters, a dramatic increase over previous values.

A large contributor to the issue is the lack of regulation over the workforce. Even in the mid-south region, the largest producer of sugarcane in Brazil almost 30% of workers lacked formal working papers (Biofuel Watch Center, 2008). Workers in Brazil are often employed through middlemen agencies (World Organization Against Torture, 2008), who locate labourers, offer them money to move to a new area, and then hold their debt as contract, which is defined as

a form of contemporary slavery under the Brazil Penal Code (International Labour Organization, 2010). This lack of regulation has led to an abnormal number of slave labour cases. It should be said that Brazil is trying to rectify the situation by steps such as passing the Second National Plan for the Eradication of Slave Labour in 2008. The Brazil Penal code typifies what slave analogous labour is, and the position of labour inspector exists under the Ministry of Labour and Employment to police plantations and root out cases of contemporary slavery. Between 1995 and 2010, nearly 40,000 plantation workers were freed from contemporary slavery conditions by said inspectors, mostly from recent agricultural expansions, far away from major population centres. This has earned the praise of the Human Rights Council of the United Nations (International Labour Organization, 2010).

Per Industry - 2008	Cases recorded	%	Cases Inspected	%	Workers involved	%	Workers freed	%
DEFORESTING	7	2	7	3	99	1	83	2
CATTLE	137	48	85	40	1.74	25	1,026	20
REFORESTING	19	7	18	8	264	4	248	5
EXTRATIVISM	5	2	5	2	68	1	49	1
SUGARCANE	19	7	19	9	2,553	36	2,553	49
OTHER CROPS	35	12	30	14	876	12	720	14
CHARCOAL	48	17	38	18	1,252	18	410	8
OTHERS AND NON-INFORMED	14	5	12	6	201	3	155	3
TOTAL	284	100	214	100	7,053	100	5,244	100

Source: CPT

Figure 3. Slave Labour Cases - 2008 In Brazil. Source: Brazil of Biofuels

2.1.2 Tree Zero

UBC Supply Management was approached by TreeZero Paper, presenting a sample of their new product, TreeFrog Paper. TreeFrog Paper, made from bagasse fibre, is a premium copy paper that can be recycled with traditional paper and is both biodegradable and compostable. UBC Supply Management must consider the *Supplier Code of Conduct* when making purchases and ensure ethical performance expectations, social responsibility, and compliance with human and civil rights conditions from suppliers of goods (UBC Supply Management, 2008). TreeZero, based in Atlanta, GA, is a sales and marketing organization for Carvajal Pulp & Paper, the manufacturer of TreeFrog Paper.

2.1.2.1 Carvajal Pulp & Paper

Carvajal Pulp & Paper is a Colombia-based conglomerate, with operations spread throughout Latin America and with a small presence in the US and Spain. The company is also the majority owner of a paper company, Productora de Papeles S.A. (“Propal”), which has two bagasse-based pulp and paper mills in Colombia at Yumbo and Caloto (International Finance Corporation, 2004). Carvajal reassures their clients and stakeholders of their social responsibility by outlining their policies on the company website (Carvajal Pulpa Y Papel, 2011). Carvajal testifies to its policies and guidelines in the following categories: social responsibility, human resource management, occupational health and industrial security, and legal ethics and conduct.

The company also maintains a positive status and the appearance of social development through reception of awards and recognition for corporate social responsibility, as well as the development of Fundación Propal, a foundation engaged in the social development of the communities living in the areas of influence of the Yumbo, Valle and Guachené Cauca production plants. Carvajal guarantees the wellbeing and facilitation of workers directly employed by the company and of their families through several social support programs: social construction/housing, basic services, entrepreneurial development, education, health, arts and culture, and environmental & social management.

Though a belief in social responsibility and accountability is evident throughout the company’s website, this may not genuinely be the case in the areas from which Carvajal sources its resources and materials. An evaluation of Colombia’s labour conditions is conducted in accordance with UBC Supply Management *Supplier Code of Conduct*, to further verify Carvajal’s alleged standings and merits.

2.1.3 Colombia

The Republic of Colombia is one of the world’s biggest sugar cane producers, exporting an estimate of 38.5 million tons of sugar cane in 2009 (Food and Agriculture Organization of the United Nations, 2013). Sugar cane development is a thriving business in Colombia, especially in the Valle del Cauca, where nearly half its cultivated area is devoted to sugar cane production.

Though there are initiatives for better protection for workers' rights and high labour standards, the country still experiences conflict, unethical practices, and disregard for social responsibility.

Child labour has been considered exploitative and prohibited by many international organizations. The 2010 U.S. Department of Labor's "List of Goods Produced by Child Labor or Forced Labor" identifies Colombia as being involved with child labour and unethical labour practices in the sugar cane industry. Although this does not necessarily indict Carvajal Pulp & Paper as a direct user of child labour, sugarcane gathered and used in the mills is likely to employ child labour during the harvests. Recently, there have been movements between North America and Colombia to restrict child labour and pressure corporations to cooperate with labour laws. The U.S.-Colombia Trade Promotion Agreement outlines strong protection standards for worker's rights and includes an ambitious Action Plan to address labour concerns and reduce violence against those exercising labour rights. Canada has also implemented a response to Colombia's labour conditions by signing a Canada-Colombia Free Trade and Labour Cooperation Agreement, promoting and enforcing fundamental labour practices and rights (Human Resources and Skills Development Canada, 2012). This effort "aims to ensure that social progress goes hand in hand with economic development".

Despite the efforts made by North America and Colombia to promote social responsibility and ethical labour practices, there has been much resistance met by both parties. Colombia is the deadliest nation for individuals identified as supporting unions, labour rights movements, with 19 unionists being assassinated in 2012 alone (Colombian Sugarcane Worker, Trade Unionist, Murdered, 2013). Workers banding together to unionize are recognized as illegal armed groups by the government and persecuted by the state. "It's important to understand that there is a complete disregard for labour law in Colombia, and the vast majority of workers—around 80 percent—work on informal contracts and have no right to unionize," says Gustavo Triana, vice-president of the Central Union of Workers.

The reality of unethical treatment and labour practices is that it still exists and is being exploited in the Republic of Colombia. Though it is difficult to identify specific corporations associated with unethical labour practices, it is not inappropriate to suspect the transparency and accountability of organizations located in Colombia and local employment practices.

2.2 Central America

2.2.1 Cuba

According to the US Human Rights reports from 2010 and 2011, although Cuba tolerates children working on private family farms, there are no cases of children being forced into work for economic reasons, and no corporations were found to have used child labour (United States Department of State, 2012). Cuba also has had few incidents with unlawful arrests of trade union representatives, although recent changes to the laws have introduced loopholes that allow the Confederation of Workers of Cuba, the largest and only government union, to bypass collective bargaining of any smaller unions (Recommendations, Committee of Experts of the Application of Conventions and, 2008).

Regardless of the issues, or lack thereof, in Cuba's sugarcane industry, it is unlikely that TreeZero could use sugarcane from Cuba, as despite UN criticism (United Nations, 2013), the United States embargo against Cuba is still in effect.

2.2.2 El Salvador

El Salvador stands out as an example of combatting child labour, having decreased the amount of child labour in sugarcane plantations by 70% (Child Labor in Sugarcane Plantations in El Salvador Drops by 70%, 2009). In 2005, nearly a third of all sugarcane workers were children under 18, but by 2008 this number dropped to just under eight thousand children (cite Human Rights Watch). Despite this success, the ILO and HRW have urged El Salvador to continue working to eliminate child labour.

2.3 India

India is the second largest sugarcane producer in the world. It is home to the Tamilnadu Newsprint and Paper Limited Company (TNPL), which is owned by the government of Tamilnadu and is the largest bagasse-based paper production company in the world. With TNPL claiming social responsibilities as one of their highest concerns, this part of the report investigates whether these claims are true, and if TNPL is the right supplier for UBC.

TNPL's social responsibility claims include helping the communities in which it operates by investing in education, health, infrastructure, economic development and culture. TNPL also

purports to invest heavily in its own employees, believing that human resources is the most important resource available to a company. For example, the TNPL helps its own farmers by planting pulpwood plantations in pollution affected areas, which provides a steady stream of income for the farmers. In Figure 4, below it is shown that TNPL added 3,006 farmers and 15,2018 acres to this project. In regards to the education aspect of social responsibility, the company states that it runs its own school, providing education to approximately 2200 students, and has multiple scholarship programs for students. According to its website, TNPL invests a great deal of effort in contributing to villages neighbouring its mill. This includes the operation of multiple health clinics in the villages, the provision of basic health care, and help in managing and developing village infrastructure such as ensuring the availability of clean drinking water. In regards to economic development, TNPL helps unemployed youth in these nearby villages /develop skills to help them find jobs, and has created an industrial training centre to help develop a skilled workforce. Finally, in order to preserve culture and heritage, TNPL hosts various cultural programs for these villages, in which they promote local cultural artists. TNPL also helps the farms it buys from by educating them in the most recent growing techniques and emerging trends in farming. Altogether, TNPL spends approximately \$550,000 USD, or 3% of its after-tax profit, on social programs annually (Tamilnadu Newsprint and Papers Limited, 2011).

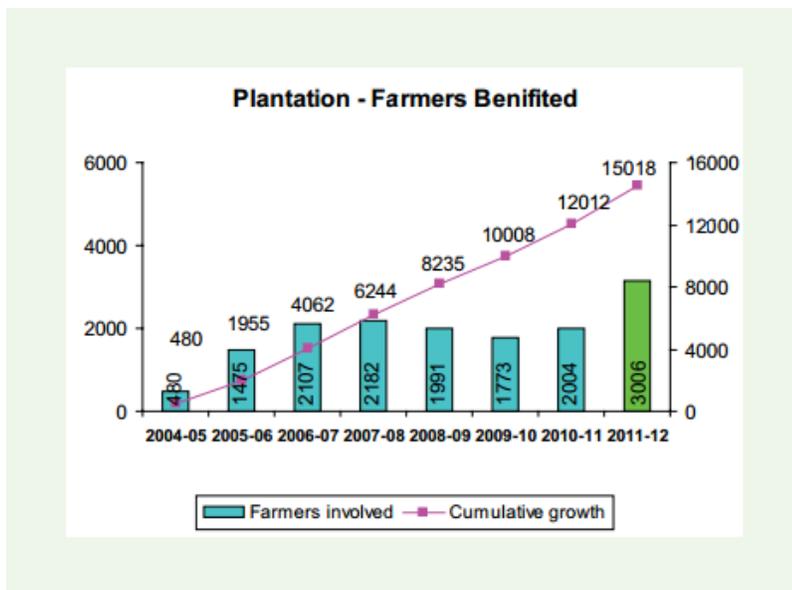


Figure 4. (Tamilnadu Newsprint and Papers Limited, 2012) Farmers added to TNPL’s land reclamation project.

However, TNPL has somewhat of a track record for harming nearby communities. For example TNPL reportedly contaminated drinking water by releasing effluents into the stream, as described in the following passage: “illegal and indiscriminate discharge of industrial effluents by the public sector undertaking Tamil Nadu Newsprint and Papers Limited (TNPL) from its Kagithapuram paper mill ... over the past several years have ravaged our lands” (Renganathan, 2012). Although the TNPL is becoming a socially responsible company, and “25% of the total production is exported to over forty countries” (Tamilnadu Newsprint and Paper Limited, 2012) including countries such as the United Kingdom, it does not export any of its products to the western hemisphere.

Although TNPL reports that it is making strides towards greater social sustainability, there exists little research from neutral observers into the labour practices used at the paper mill. If regional practices can be used to extrapolate, the conditions are most likely not as good as they claim. The Tamil Nadu region has witnessed occasional worker protests (Sujatha & Balasubramanian, 2010), mostly focusing on high unemployment and low wages. In the agricultural sector, which employs about two thirds of the Tamil Nadu population (Tamilnadu Social Development Report, 2000), the situation is quite troublesome; the low social status of farmers and lack of tenure security and union organization has led to unemployment for over half the year (Tamilnadu Social Development Report, 2000). Based on this, and the historical decisions of the Tamilnadu Paper Mill, it is hard to recommend them as a potential bagasse supplier.

3.0 Wheat

Internationally, three of the largest wheat supplier countries for wheat fiber paper are the European Union, China and India. In India especially, 14.5% of the gross domestic product comes from grain production, thus it plays a large role in the overall economy. There are issues present such as lower income, long hours, and hard working conditions. Nonetheless, the profit it brings to this developing economy is tremendous and provides employment for many of these local workers. It is important, however, to ensure all the safety conditions are met before further wheat paper productions occurs.

3.1 Canada

In 2011, Canada produced 25.3 million metric tons of wheat, ranking it the eighth largest wheat producer in the world (Wikipedia). Wheat is grown throughout Canada, but the majority is grown in the western Prairie regions, such as Saskatchewan and Alberta. In these regions, labour practice laws implemented by government regulations have allowed farmers to produce wheat in an effective and safe manner.

The CWB is a marketing board for wheat farms in Western Canada and is one of Canada's biggest exporters. The organization sells grain to more than 70 countries and returns all sales revenue, less marketing costs, to farmers (Glasscock, 2011). Its operation is governed by the CWB Act as a single-desk buyer for wheat in Alberta, Saskatchewan, Manitoba and a small part of British Columbia. Under the CWB's jurisdiction, a law was implemented making it illegal for any farmer to sell wheat through systems other than CWB's. Since the CWB is the only buyer of wheat, they are often called a monopsony.

A study in the mid-1990s found that farmers gained on an average a premium of \$13.35 a tonne on wheat as a result of the board's monopsony (Wikipedia) and that farmers receive higher payment for their grain than through other systems. In addition to farmers payment process, farmers receive an initial payment in the mid of the crop year and the final payment will be paid after the end of the crop year.

In 2012, CWB's monopsony was tabled by the Harper Government, officially ending on August 1 (Wikipedia). After the removal of CWB's monopsony, investment in the market

increased, encouraging innovation. It also led to the creation of more job opportunities, since the lack of a monopsony allowed farmers to sell their grain directly to a buyer without being forced to go through the CWB. Nevertheless, 62% of the farmers voted to keep the CWB (Paul Waldie, 2011) for its use in ensuring that they are paid more for the grain they sell. The Harper Government has stated that it is committed to retaining farmers' rights by providing farmers with choices in how they market their grain, including the choice to continue using marketing options provided by the CWB (Ritz, 2011). With this being said, farmers can now individually choose to either compete directly in a competitive global marketplace or through a voluntary CWB.

Another problem Canadian farmers must contend with is wheat disease. Among all the wheat diseases, both head blight and wheat leaf rust are a perennial production problem in Canada especially in Alberta, Saskatchewan and Manitoba (Barkley, 2003). These wheat diseases have severely affected Canada's crop growing, and the CWB is currently researching new ways and methods to prevent the disease from further spreading into urban areas. In addition, the Harper Government fund of \$850,000 (<http://news.gc.ca/web/article-eng.do?nid=712769>) helps wheat farmers to find new pest management solutions and make their crops more sustainable. This investment will help producers develop new seed varieties with improved disease resistance.

In sum, both the CWB and the Canadian Government have been helping wheat farmers to continue growing their business with sustainable and innovative systems such as enhancing soil health, better pest management, and disease resistance. Canadian wheat farmers are now supported with labour rights, higher wages and safety protection so they can adapt and remain competitive in a strong global marketplace.

3.2 Rest of the World

3.2.1 European Union

In 2011, the European Union was the prominent producer of wheat, producing 140 million tons of wheat. Labour practice laws implemented by government regulations have allowed farmers to produce in an effective and safe manner.

3.2.2 China

In 2011, China produced 110 million metric tons of wheat, making it the second largest wheat producer in the world. Due to the regional labour practices of wheat in that area, issues such as safety, wages, and rights arose for local agricultural farmers.

Pesticide poisoning is a common occurrence in China due to the large quantity of wheat production. Pesticide poisoning occurs when individuals use pesticides extensively without proper personal protection equipment. A study done by BMC Health in 2011 found that 8.8% of Chinese pesticide applicators suffered acute pesticide poisoning. This is due to the insufficient amounts of safety training, knowledge of application, and precautionary measurements.

Another problem faced by local wheat farmers are the low wages. While buying power has increased for many city dwellers, farmers have yet to see a increase to their wage. To make matters worse, living costs have increased dramatically in the past few years, with an inflation rate of as high as 8%/year. This occurrence may have been caused by the decrease in demand for agricultural goods both domestically and internationally.

Lastly, farmer incomes are not proportional to the amount of work that is required. As well, government taxes have begun to take 50% of the revenue that they receive. The government also tends to monopolize grain harvests, preventing farmers from selling their goods in the market.

3.2.3 India

Agriculture, being one of the most important strongholds of the Indian Economy, accounts for 14.6% of its gross domestic product. By producing 86.9 million metric tons, India has become the 3rd highest producer of wheat. Despite knowing the foreseeing remarkable growth in food production, the risks were exposed by food crisis in the recent years along with the demands in ways such as paper production and clean energy.

Because India is an agricultural country, over half of the region is used for agricultural purposes. As well, 70% of the total population are farmers. One of their major production foci is wheat.

One of the most common crises faced by Indian farmers are its infrastructure and money. The production method, being ancient, affects the production yield and the amount of work

required for a smaller amount of products. Poverty, ignorance, and inability to use modern farm machinery hinder their production capacity. Without purchasing power, they are unable to produce as effectively.

4.0 Conclusion and Recommendations

In this report, many different paper alternatives to UBC's current wheat waste fibre paper were discussed. These included sugar cane paper in Latin America, TreeFrog paper in Colombia, Sugarcane Paper in India, and wheat waste paper in Canada and the rest of the world. In Latin America there are too many labour issues to justify purchasing from there. These injustices include child labour, slave labour, violent land takeovers, and low wages and lack of benefits for workers. TreeFrog paper uses a supplier of sugarcane in Columbia known as Carvajal. In Colombia sugarcane field working conditions are ultimately similar to those found in the rest of Latin America with child labour, and unethical treatment of employees. In terms of wheat waste fibre paper in Canada, the Canadian wheat production system grants farmers the ability to choose whichever distributor they will sell to, and also they receive high benefits such as excellent labour rights, and wages. Also, since Canadian wheat farmers are local, their social aspects can be closely monitored. Wheat waste fibre paper production in the rest of the world is important especially in Asia, where it provides many social benefits to the farmers and workers. However, there are issues which cause international wheat paper especially in Asia to become a less attractive option. Moreover, sugarcane bagasse can be used for multiple other purposes, and is important to certain societies, whereas wheat waste fibres are currently considered no more than waste.

After comparing sugar cane paper in Latin America, Colombia (Tree Frog Paper), India with wheat waste paper in Canada and the rest of the world, it is recommended that UBC continue its pilot program and stick with wheat paper rather than switching to sugar-cane based paper.

Bibliography

(2000). *Tamilnadu Social Development Report*.

Child Labor in Sugarcane Plantations in El Salvador Drops by 70%. (2009, September 16). Retrieved from Human Rights Watch Web site: <http://www.hrw.org/news/2009/09/16/child-labor-sugarcane-plantations-el-salvador-drops-70>

Harper Government Helps Grain Farmers Grow Stronger. (2012, December 12). Retrieved from Agriculture and Agri-Food Canada: http://www.agr.gc.ca/cb/index_e.php?s1=n&s2=2012&page=n121218

Colombian Sugarcane Worker, Trade Unionist, Murdered. (2013, February 13). Retrieved from Solidarity Center Web site: <http://www.solidaritycenter.org/content.asp?contentid=1584>

Agriculture and Agri-Food Canada. (2011, October 17). Retrieved from Agriculture and Agri-Food Canada Web site: <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1320176240673>

American Federation of Labor and Congress of Industrial Organizations. (2012, July). *The Colombian Action Plan Related to Labor Rights: The View Through Workers' Eyes*. Retrieved March 28, 2013, from <http://www.aflcio.org/content/download/38251/594971/report+version+2+no+bug.pdf>

Barkley, S. (2003, December 8). *Diseases of Wheat - Fungal*. Retrieved from Alberta Agriculture and Rural Development Web site: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/prm7802](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm7802)

Biofuel Watch Center. (2008). *Brazil of Biofuels: Sugarcane*. Reporter Brasil.

Brazil Seeks Decent Working Conditions for Sugarcane Cutters. (n.d.). Retrieved from Latin American Herald Tribune: <http://www.laht.com/article.asp?CategoryId=14090&ArticleId=338026>

BUREAU OF DEMOCRACY, HUMAN RIGHTS, AND LABOR. (n.d.). *2010 Country Reports on Human Rights Practices*. BUREAU OF DEMOCRACY, HUMAN RIGHTS, AND LABOR.

Carvajal Pulpa Y Papel. (2011). *Sustainability: People and Society*. Retrieved March 28, 2013, from Carvajal Pulpa Y Papel: http://www.propal.com.co/index.php?option=com_content&view=article&id=56&Itemid=52&lang=en

Fischer, G., Teixeira, E., Hizsnyik, E., & van Velthuisen, H. (n.d.). *Land use dynamics and sugarcane production*.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. (2012). *Faostat*. Retrieved from Food and Agriculture Organization Web site: <http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#anchor>

- Food and Agriculture Organization of the United Nations. (2013, January 16). *Production: Crops*. Retrieved March 27, 2013, from FAOSTAT:
<http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor>
- Glasscock, K., & Fitzhenry, M. (Eds.). (n.d.). *Farmers fund grain-sector innovation at University of Saskatchewan*. Retrieved from University of Saskatchewan College of Agriculture and Bioresources Web site:
<http://agbio.usask.ca/index.php?mact=News,cntnt01,detail,0&cntnt01articleid=85&cntnt01returnid=2804>
- Hays, J. (2008). *Problems Faced By Farmers in China and Threats to Agriculture*. Retrieved from Facts And Details Web site: <http://factsanddetails.com/china.php?itemid=346>
- History of Wheat Production in India*. (n.d.). Retrieved from Department of Agriculture & Cooperation:
http://dwd.dacnet.nic.in/wheat_prod1/history.htm
- Human Resources and Skills Development Canada. (2012, 09 06). *Canada-Colombia Agreement on Labour Cooperation*. Retrieved April 01, 2013, from Labour.gc.ca:
http://www.hrsdc.gc.ca/eng/labour/labour_agreements/ccalc/index.shtml
- International Finance Corporation. (2004, April 16). *Environmental Review Summary: Carvajal II*. Retrieved March 20, 2013, from International Finance Corporation:
<http://www.ifc.org/ifcext/spiwebsite1.nsf/c9aba76ed1df1938852571c400727d66/e085c7318e19b74a852576ba000e2880?opendocument>
- International Labour Organization. (2010). *The Good Practices of Labour Inspection in Brazil: The Eradication of Labour Analogous to Slavery*. International Labour Office.
- Ibush. (2012, May 7). *General Secretary of Colombian Sugar Cane Cutters' union assassinated*. Retrieved from Canadian Foundation for Labour Rights Web site:
<http://www.labourrights.ca/news/2012-05-06/general-secretary-colombian-sugar-cane-cutters-union-assassinated>
- Mendonca, M. L., Pitta, F., & Xavier, C. V. (2012). *The Sugarcane Industry and the Global Economic Crisis*. Sao Paulo, Brazil: Rede Social de Justica e Direitos Humanos.
- Recommendations, Committee of Experts of the Application of Conventions and. (2008). *Application of International Labour Standards*.
- Renganathan, L. (2012, November 3). *Industrial pollution ravages green fields in Vangal Pugalur belt*. Retrieved from The Hindu Web site: <http://www.thehindu.com/>
- Richardson, B., Anderson, J., Heath, H., Mostad, I., & Sivalingam, V. (2012). *Sugarcane and the global land grab: A primer for producers and buyers*. Ethical-Sugar.
- Sujatha, S., & Balasubramanian, V. (2010, January 22). *Frequent labour unrest worry employers in Tamil Nadu*. Retrieved from The Economic Times Web site:

http://articles.economicstimes.indiatimes.com/2010-01-22/news/27588295_1_labour-unrest-cituchennai-trade-centre

Tamilnadu Newsprint & Papers Limited. (2011). *Corporate Social Responsibility*. Retrieved from Tamilnadu Newsprint Web site:
http://www.tnpl.com/DisplayPage.aspx?file=corporate_social_responsibility.htm

Tamilnadu Newsprint and Papers Limited. (2012). *32nd Annual Report 2011 -2012: On Winning Strides*.

ten Kate, A. (2010). *Royal Dutch Shell and its sustainability troubles : Background report to the Erratum of Shell's Annual Report 2010*. Milieudefensie.

Trebilcock, A., Zweegers, S., de Boer, J., & Marin, J. (2011). *Sugar Cane And Child Labour: Reality and Perspectives*. Ethical Sugar.

U.S. Department of Labor's Bureau of International Labor Affairs. (2010). *List of Goods Produced by Child Labor or Forced Labor*. Retrieved from U.S. Department of Labor:
<http://www.dol.gov/ilab/programs/ocft/pdf/2010TVPRA.pdf>

UBC Supply Management. (2008, July). Supplier Code of Conduct. University of British Columbia.

United Nations. (2013). *Resolution adopted by the General Assembly*.

United States Department of State. (2012). *2011 Country Reports on Human Rights Practices - Cuba*.

United States Trade Representative. (n.d.). *Labor in the U.S.-Colombia Trade Promotion Agreement*. Retrieved March 28, 2013, from <http://www.ustr.gov/uscolombiatpa/labor>

Waldie, P. (2011, September 12). *Prairie farmers vote to keep Canadian Wheat Board*. Retrieved from The Globe And Mail Web site: <http://www.theglobeandmail.com/report-on-business/prairie-farmers-vote-to-keep-canadian-wheat-board/article556370/>

World Organization Against Torture. (2008). *List of Issues arising from the Second Periodic Report of Brazil to the Committee on Economic, Social and Cultural Rights*.

Worst Forms of Child Labour Data. (n.d.). Retrieved from Global March Web site:
<http://beta.globalmarch.org/worstformsreport/world/cuba.html>