The detailed consideration of potential exportation need of Canadian oil press machine for processing rapeseed and canola in Nepal

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Introduction

This report includes detailed analysis about potentialneed in exporting oil press machine to Nepal. The work states valuable examples and reasons for oil press need,including that report includes the consideration Nepal's economy, population's and country's needs in improvement particular niche in agriculture like oil production, showing the real outcomes and advantages. The report includes alternative oil press producersand the comparison of their oil press models, stating real facts and advantages why the Canadian-produced machine is able to reach the highest potential among other oil presses represented on global oil press market. The work includes detailed functions, costs and values of the machine and detailed transportation from Canada to Nepal in order to show that current idea is worth economically providing for both countries.

Product information

Canola is a non-industrial, modified variety of rapeseed crop that contains low erucic acid and low glucosinolates levels which plays significant role in oil production and livestock feed, especially in Canada (Smith, 2015). The harvested crop goes through the oil extraction process with a use of industrial oil press machine, leaving oilseed cake as a waste that can be used as livestock feed. The canola seeds contain 44% of oil, which is the highest oil consistency among other crops like soybeans, including that canola oil was found as the healthiest vegetable oil having the least amount of saturated fats (Canolacouncil, 2016). An oilseed cake of the crop is most frequently used as a livestock feed due to highest consistency of protein among other crops since protein intake is essential in animal diet that results in higher animal's production potential, thus, protein consumption accounts for 15% to 33% of total animal diet (Miller, 2002).

Canola was defined one the healthiest crops for oil production due to its rich consistence of essential nutrients that are determined as "beneficial" for people's health after it was been modified from industrial rapeseed that consists of high levels of erucic acid and glucosinolates that cause heart problems and was a result of crop's bitter taste (Gunnars, 2013). According to the Table 1, it has the highest consistency of "healthy" oil (i.e omega-3,6,9 fatty acids) and least saturated fat, only 7% of

total amount of fat. The high level of saturated fats in food is one of main reasons of increase in cholesterol levels which eventually causes heart problems (Frost, 2015). Omega fatty acids, on another hand, are beneficial for people, reducing the risk of cardiovascular disease (Frost, 2015), helping people in depression treatment, provide baby development, especially in infants and act as a treatment for Alzheimer's disease (Kiefer, 2015), which is significant problem in Nepal and accounted for approximately 35 million of people in Nepal in 2013 (Shanker and Gautam, 2013).

Among the benefits and advantages the canola plant provides to people as a "final" product for consumption (i.e oil, livestock feed), it is also determined to benefit the yield and production through crop rotation after growing canola crop (PCC, 2014). The crop rotation after canola increased the

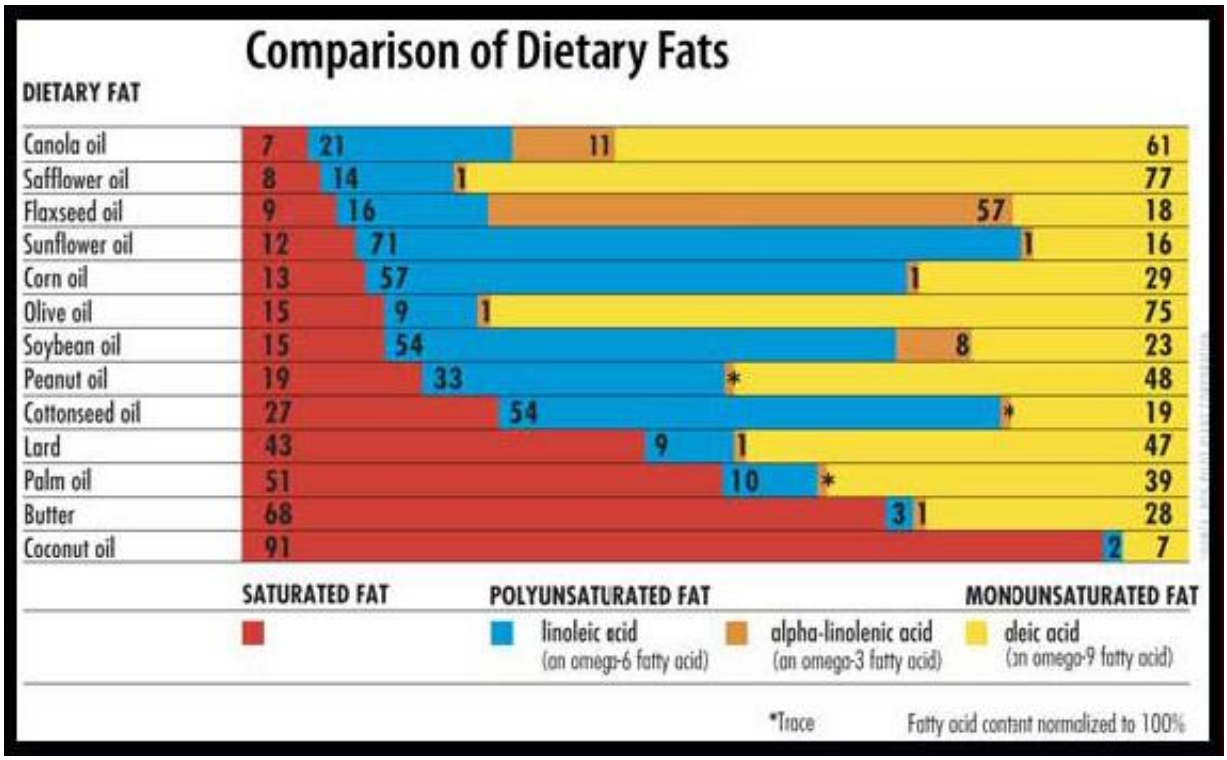


Table 1: Canola and Other Oilseed Crops Nutritional Value (Retrieved from http://www.idiva.com/news-ifood/10-lesser-known-facts-about-canola-oil/15080577)

potential production of some crops, especially the cereal crops by its positive influence on crop's tolerance todiseases and fewer weeds growth (Norton et.al., 1999). The characteristic of soil structure was also improved due to canola's benefit that provided better functioning taproot system by

increasing the rate of infiltration. The crop yield and protein is triggered by higher water consumption by plant and higher nitrogen (N) intake which trigger photosynthesis rate, increasing and accelerating plant's growth (Norton et.al., 1999).

The extraction of oil provides huge amount of money and variety of production machines because oil manufactures involvea large amount of different machines that lead to the best quality oil extraction and product appearance since the oil can be usually purchased only in the big stores. Besides the industrial production, there are some alternative methods for extraction oil at home which are mechanical and involve handwork.Due to presence of weed seeds or stems, a seed must be cleaned before it will be processed for oil extraction (Canolacouncil, 2016). First, a seed is heated up to prevent shuttering and further flicked by roller mills in order to obtain desirable size of seed that provides maximum oil extraction, avoiding the risk of seed damage and lose of oil its oil content (Canolacouncil, 2016). Further, a seed is cooked under different steam functions and processed either with an oil expeller or a screw press (Figure 1), obtaining oil and a seed cake as the final products (Canolacouncil, 2016).

Figure 1: Komet S120F Oil Seed Expeller Machine (Retrieved from http://www.biofuels.coop/technologies/monforts/s120f)

Since oil pressing is not totally efficient in oil extraction, the processed seed goes through the methods such as solvent extraction to obtain 18%-20% oil that was left after oil press in seed cake (Canolacouncil, 2016). Finally, the obtained oil goes through different oil refining methods that involve water precipitation or interaction of organic acids with water that remove waste fatty acids and phospholipids, making the product more healthy for people (Canolacouncil, 2016).

Canadian oil press machine

The Canadian oil press market is only represented by one company that manufactures oil press machines and additional parts for further oil processing that provide a variety of options for oil use such as oil conversion into biodiesel (Energrow, 2016). The company presents Canadian market its model ES3750B oil pressing machine, which is shown in Figure 2.Energrow (2016) states, the entire machine and every single part of it is produced in Canada, specifically in Listowel, Ontario.

The oil press is very compact due to its small size which is 15.75 m^3 (2.5m x 3.0m x 2.1m) (Energrow, 2016), thus the machine does not require the large area for its placement and therefore provides the opportunity to keep the machine inside any building. The machine consists of engine that has 5 horsepower, also includes the oil container with the special sedimentation system which includes different valves that pump oil and drains sediment (Energrow, 2016). The machine is absolutely automatic and requires no need in labor force due to the presence of touch screen that provides the variety of options such as option to set the most desirable time period for oilseed processing.

The main reason for applying exactly Energrow's product is due to unique features that it has if compared to other oil presses produced by other companies. The main unique feature of the machine is the production of the oilseed cake while oil is extracted from the seed (Energrow, 2016), which is very significant for Nepal. The production data states that "Double system" version of the machine processes 1,200 kg to 2,400 kg of oilseeds per day, producing maximum of 500 liters rapeseed oil and the seed cake production is counted by subtracting the amount of oil been produced from the amount of oilseeds that what processed, meaning that maximum production of seed cake is 1,900 kg per day (i.e. 2,400 kg of seeds – 500 liters of produced oil) (Energrow, 2016).

Figure 2: Energrow ES3750B Seed Oil Press Machine (Energrow, 2016)

The machine is spread within Canada through the number of dealers which is about 20 in Canada, the largest numbers of which are located in Ontario province, including the main distributor is located in Listowel, and few dealers in some north provinces of USA (Energrow, 2016).

Oil press of Energrow and other oil press producers

The unique advantages of the machine provide competitiveness with another oil press producers that lack of these essential features to provide for Nepal.The competitive position on the world oil market is provided to the oil presses manufactured in Europe and in Asia. Anton-Fries is the German company that manufactures oil press model P240R (Anton-Fries, 2016) and Gemco is the company that manufactures its model YZS-80 (Gemco, 2013). Both machines have very high oil extraction rate of the final products which is 38% for P240R and 45% for YZS-80 (Gemco, 2013) which is higher by 10% than the production rate of Energrow machine. The system of the machinesallows processingfor the large variety of seed plants that can be used for oil extraction(Anton-Fries, 2016).

Table 2: Comparison of Energrow Oil press Model with alternative Machines on the Global Oil Market

Energrow ES3750B Price: $55,000 CAD	Canada	- Cold oil extraction system - 5 hp engine, functioning touch screen panel - 2.5m x 3.0m x 2.1m - 500 L/day is maximum oil production - Processed product is converted into feed pellets(approximately 80% of initial product is finally converted into feed pellets)
Anton-Fries P240R Price: not retrieved	Germany	- Cold oil extraction system - Screw expeller structure - 0.83m x 0.52m x 0.44m - 12-30 kg/hour oil production

		(~290-720 L/day) - Processed product is left as a seed cake
Gemco YZS-80 Price: $5,400 CAD	China	- Cold oil extraction system - Screw expeller structure - 8hp engine - 1.54m x 0.54m x 0.62m - 2-3 tones/day seed processing ~24-35 kg/hour oil production (~560-840 L/day) - Processed product is left as a seed cake

According to the Table 2, P240R and YZS-80 are considered as small versions of oil press machines compared to ES3750B due to presence of simpler screw expeller structure which includes less functioning parts, lack of some essential parts for oil extraction and therefore smaller dimensions, thus, the machines are only developed with a purpose to provide the production for highest amount of seeds per day having less efficiency due to the reason that final product is not "totally" processed.

Figure 3: Anton-Fries P240R Seed Oil Press Machine (Anton-Fries, 2016)

Figure 4: Gemco YZS-80 Seed Oil Press Machine (Anyang, 2013)

The machines were developed as oil expellers rather than the automated oil press machine like Energrow, they lack of additional techniques and functionsthat ES3750B providesthat increase the final oil extraction rate since the seed cake is left as a "waste" significant amount of oil remaining (i.e 7-8%) (Anyang, 2013) and the main idea among the Anton-Fries and Gemco machines is to reach the highest capacity of oilseed that must be processed during a day, neglecting with development of new techniques and functions that Energrow oil press machines provide which would be more efficient and useful not only by providing the additional help to people but also increasing the range of opportunities that would eventually trigger the changes in country's economy like Nepal.

Table 3 represents the information about companies that sell oil press machines that are listed above, including detailed contact information and each company location.

Table 3: Contact information of Energrow and other Oil Press Machines manufacturers

Company Name	Country of Origin	Manufacturer Location	Contact Information
Energrow	Canada	Listowel, Ontario 510 Rocher Rd, N4W 0B2	Tel.: +1 844-363-7476 Fax: +1 888-959-6589 Email: info@energrow.ca www.energrow.ca
Anton-Fries	Germany	Herbertshofen, Meitingen, Deutzring 6bD-86405	Tel.: +49 (0) 8271 41137 Fax: +49 (0) 8271 41241 Email: anton.fries@t-online.de www.anton-fries.de
Anyang Gemco Energy Machinery Co.,LTD	China	Anyang, Henan Chaoyue Electromechanic Park - New High-Tech Industry Clustering Area, 455000	Phone: (86)372 5965148 Fax: (86)372 5951936 Email: info@gemco-machine.com www.gemco-machine.com

Information in this table was (Retrieved from Energrow (2016), Anton-Fries (2016) and Anyang (2013)) for each company

Nepal: Information about country

Nepal is a country located in south part of Asia that borders with China and India (CIA, 2016). The country does not have maritime region and is not surrounded by any sea or ocean, it is landlocked and therefore everything what is imported into the country either by air planes or by cargo transport like trucks and trains from another countries. The population is approximately 29 million people and, according to CIA (2016), Nepal is a country that struggles with number of jobs provided to population that accounts for its unemployment rate of 46% (i.e data from 2008). According to the CIA (2016), the population of the country strongly relies on the agriculture because the largest number of labor force is involved in this industry (i.e accounts for 69%).

Due to the reason that cold climate dominates in north part of Nepal and warm climate dominates in south, the climate of the country varies with cool summers and severe winters in north and warm summer and mild winters in the south (CIA, 2016). According to the Figure 5, Nepal has three ecological zones, which is Terai that accounts for 17% of total area (Caltech, 2004), Hills region that accounts for 48% of total area and approximately 35% is covered with Mountains zone (Pande, 2009). Terai is the most productive region in Nepal due to its warm climate including, therefore agriculture and specifically crop production is most developed in this area (Caltech, 2004).

The oilseed production in Nepal was followed slightly increasing trend resulting in approximately 180 thousands of tones in 2014, having slight rise from 176 thousands of tones in 2011 (FAO,2016). The data based on recorded yield of oilseed in the country is presented in Graph 1, taking into consideration the yield change from 2010 up to 2014. Another data was recorded based on area of oilseed been harvested is presented in Graph 2. According to the graph, the large increase in oilseed production was found between 2010 and 2011 that was followed by negligible increase from 149,625 tons to 176,186 tones in oilseed yield up to 2014; also, the ratio of crop yield compared to crop production per hectare represents slight increase from 0.83 to almost 0.88 between 2013 and 2014.

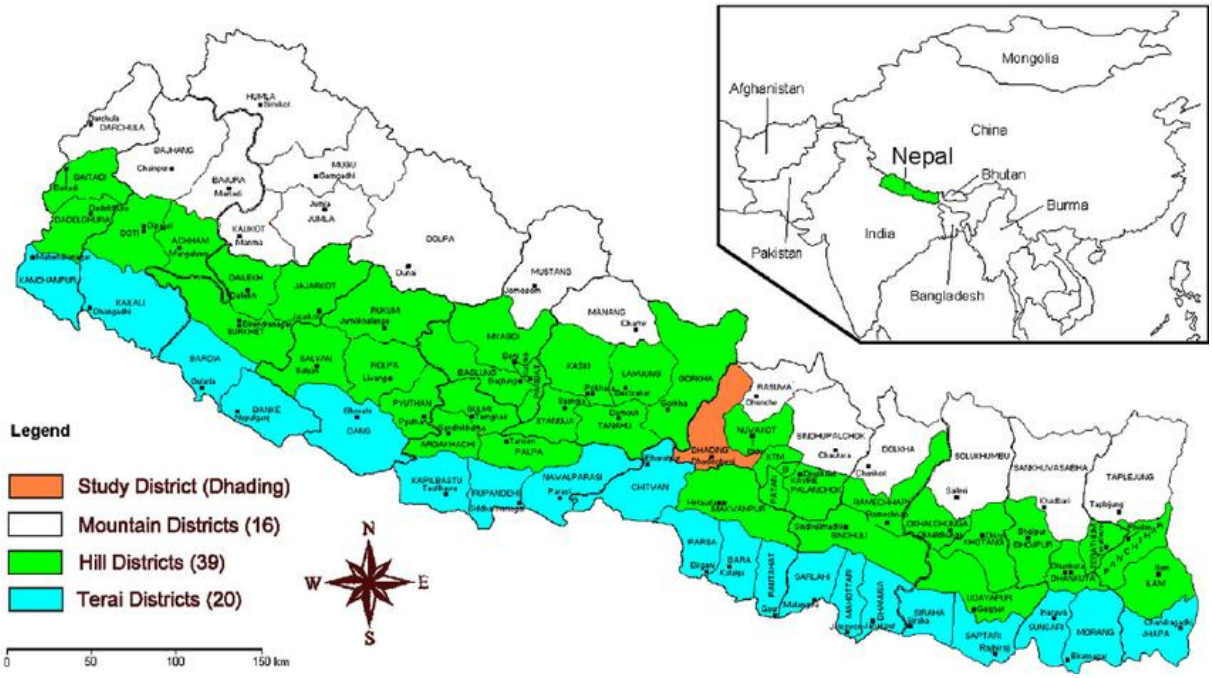
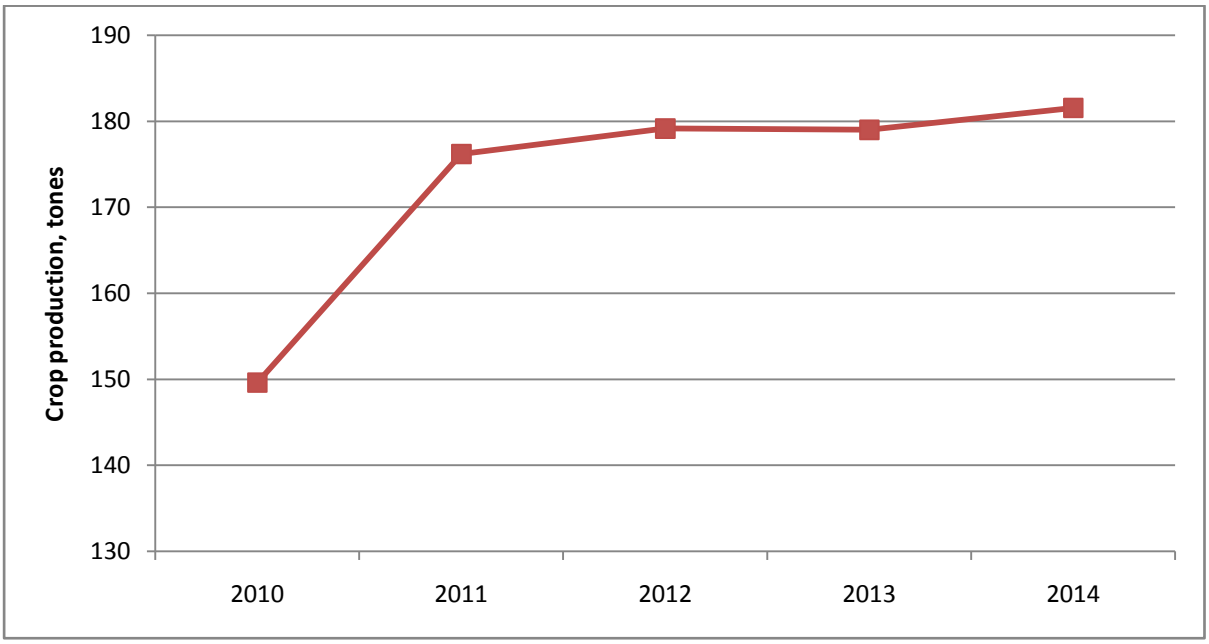


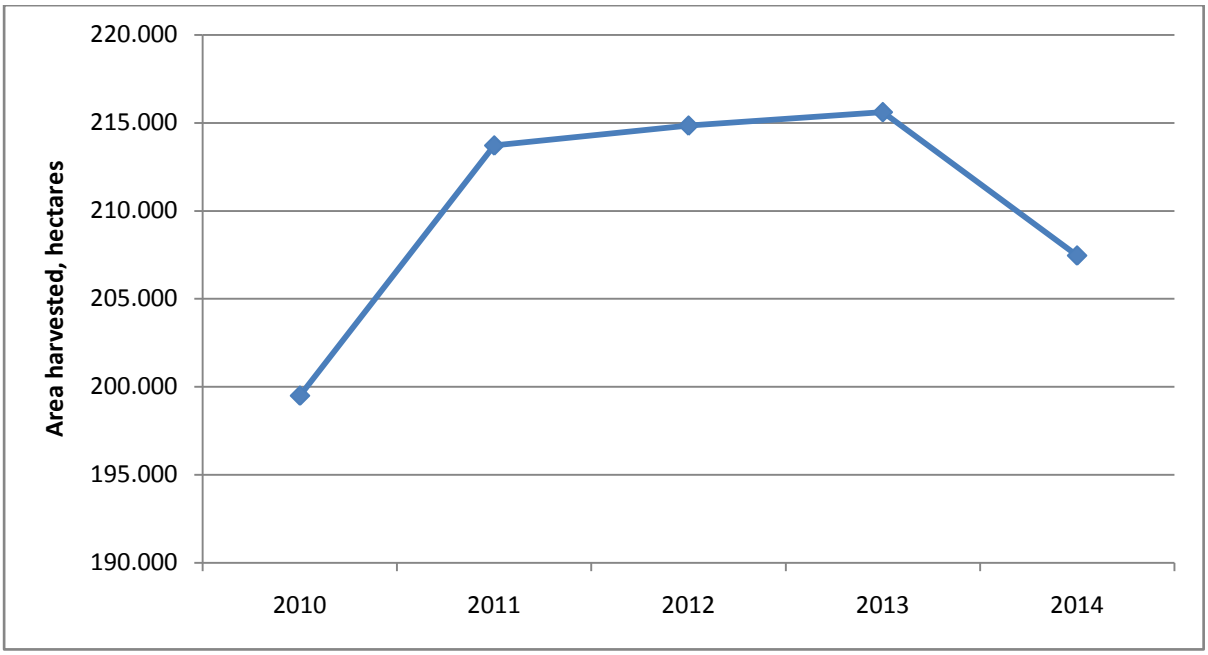
Figure 5: The Arrangement of Ecological Zones on Nepal Map

(Retrieved from http://www.lahistoriaconmapas.com/atlas/country-map10/nepal-ecological-zone-map.htm)



Graph 1: Rapeseed Crop Production in Nepal during 5 year period from 2010 to 2014

(FAO, 2016**)**



Graph 2: Area harvested with Rapeseed Crop in Nepal during 5 year period from 2010 to 2014

(FAO, 2016**)**

Analyzing and comparing the graphs for area been harvested and oilseed production shows the development of crop techniques that were applied for crop growth. According to Bhandari (2015), Nepalese use the more accessible method for oil extraction which involves mechanical oil press and handiwork which can maximum provide up to 35% of oil extraction from oilseed plants. Furthermore, according to FAO (2016), the rapeseed is not the crop that is preferred by Nepalese to be used for oil extraction, for example, as much as a mustard seed from the same *Brassica* family. The neglect of rapeseed crop use for oil extraction can be one of the reasons why Nepal did not reach successful point in oil production yet because the rapeseed has highest oil consistency that is even twice as much as soybean oil consistency (Canolacouncil, 2016).

Neil (1992) investigated that average oil consumption by citizen of Nepal is 2.3kg per year which is lower than minimum required oil consumption to maintain adequate diet. Nepal has lack of oil production and therefore it relies on oil imports from countries like India and Singaporewhich in long term can lead to discouragement of oil production by Nepal (Neil, 1992).The total amount of

vegetable oil that is imported to Nepal is 6,000 tones and comes mainly from Singapore (Neil, 1992). The provided data based on oil production and imports in Nepal emphasize significant high demand in development of oil production that would be positively triggered by the abundance of unique functions that only oil press which is manufactured in Canada can provide the highest potential among any oil press machines and techniques that are developed and can be available for Nepal nowadays.

Main benefits provided by Energrow oil press

The oil production is the main benefit that will trigger other benefits for the population of Nepal.According to Coleman (2013), the oil consumption is essential in humans' diet in order to stay healthy that provide large amount of good fats. The fat consumption comes for 20% to 35% of daily calorie intake due to reason that fats have the highest amount of calories among other macronutrients such as protein and carbohydrates (Coleman, 2013). The major advantage of oil is the one of products that provides the highest amount of healthy fats (i.e unsaturated fats), which is essential due to number of observations that were conducted proving that unhealthy fat consumption can trigger heart problems (Coleman, 2013). Therefore, providing the higher oil production not only triggers the stabilizing of daily diet due to higher intake of calories that will become as a treatment for humans' health but also reduce the starvation and benefit the health of people reducingthe probability for treatment need. Besides that, according to the Table 1 above canola is considered the healthiest oil with lowest composition of saturated fats among other products (i.e only 7%/100%). The rest of the oil composition is shared between essential omega 3, 6, 9 fatty acids, which were determined to be beneficial in depression treatment, reducing cholesterol level in blood and cardio-vascular issues (Kiefer, 2015). Finally, the higher oil consumption in Nepal will benefit overall population health and become useful ingredient in the kitchen that minimizes cooking time (Dening, 2016).

The important feature that makes oil press of Energrow unique is the production of seed cake that is immediately converted to the livestock feed as feed pellets (Energrow, 2016). According to Sacate (2015), the feed pallets is the best alternative instead of feeding the livestock with hay since the expenses and need in the plant like grass is replaced.

AMINO ACID COMPARISON

Amino Acid (% CP)	Solvent Meal	Expeller Meal
Methionine	1.98	1.94
Cystine	2.44	2.36
M+C	4.43	4.33
Lysine	5.59	5.46
Threonine	4.25	4.23
Tryptophan	1.37	1.37
Arginine	6.09	5.98
Isoleucine	3.92	3.87
Leucine	6.88	6.85
Valine	5.08	5.03
Histidine	2.68	2.67
Phenylalanine	3.99	3.95

BASIS	DM	AS FED
Dry Matter %	100.0	93.0
Crude Protein %	33.9	31.7

Table 4: Nutritional Value of Feed Pellets Produced by ES3750B Oil Press (Energrow, 2016)

Furthermore, the producers of the feed pellets include its nutritional value in order an owner of livestock or herdsman could manage the right amount of feed pellets needs to be provided to reach the desirable diet goals of livestock (Sacate, 2015), which is hard to accomplish when managing the amount of hay or another dry matter due to different nutritional needs by every single animal.According to the Table 4, the produced product by the oil press of Energrow has high protein composition and the nutritional data of the product shows that the nutritional stats of final product is very similar to the nutritional value of the feed pellets that are produced by companies whose activity is based on feed pellets production for animal. Therefore, the final product becomes very good alternative as animal feed, maintaining the diet and protein consumption at high level that results in increased animal production and also significantly reducing overall livestock expenses.

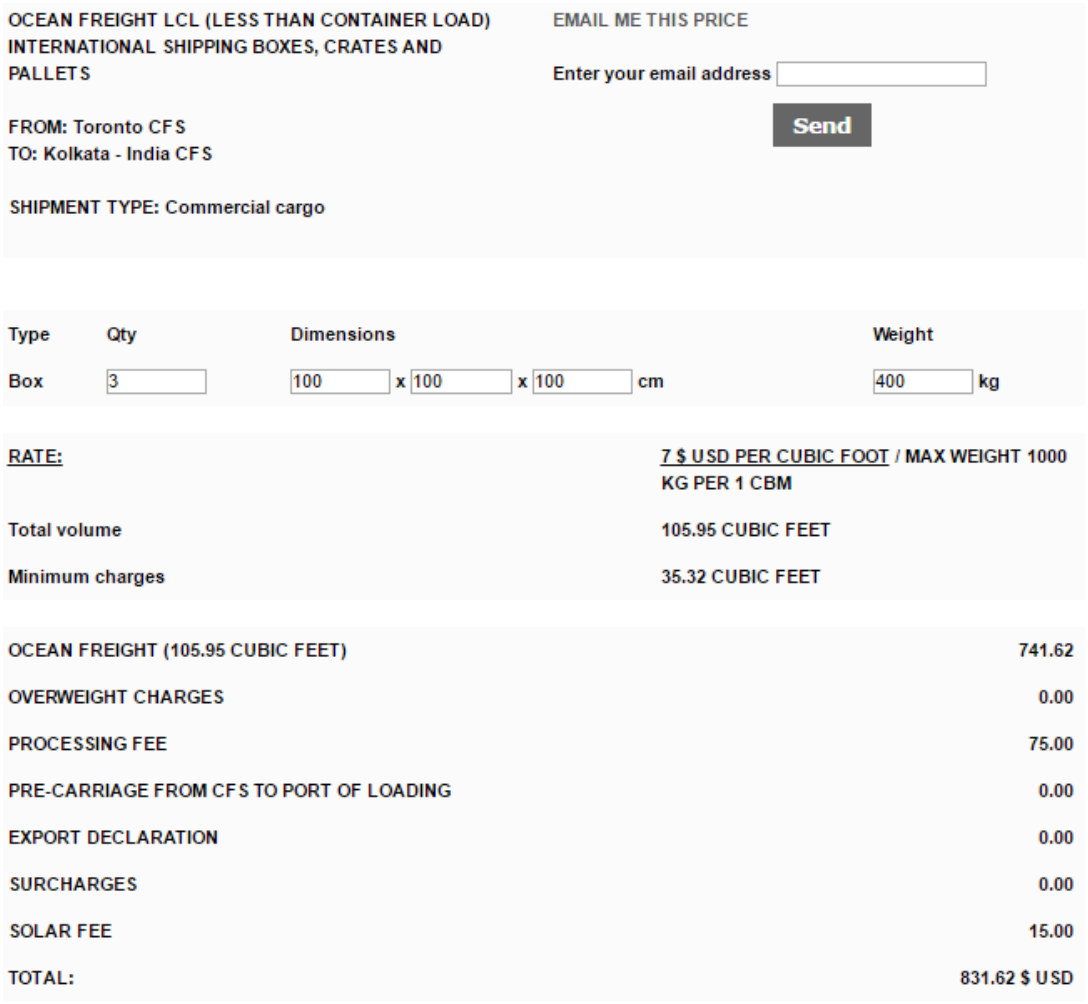
The use of oil press machine will trigger Nepal's oil production and with that the amount of used cooking oil will increase too. According to Decker (2009), the oil and also "waste" oil can have

anotheressential application and can be not only the feed for people but also the “feed” for their cars. Decker (2009) states that oil can be converted into biodiesel if the appropriate techniques are applied. Helmenstine (2016) discovered the method that would eventually convert the oil into biodiesel and its main idea is to decompose the oil composition by heating it up to certain temperature (i.e 70°C) in order to apply the sodium hydroxide and methanol as the solvents that result in producing two layers, glycerin and biodiesel which is top layer of final mixture, which further provides the opportunity to use the final product as fuel for the trucks and other industrial transport, furthermore reducing car expenses, country’s diesel imports and possibly developing biodiesel industry in Nepal which can eventually support its economy as it does in another countries like USA (LMC, 2013). According to Guerrero et. al (2011), the efficiency of diesel production compared to amount of oil use can be 100% once the proper method and operation conditions are applied.

Overall, the exportation of oil press machine and its expenses can be soon payed off because it provides oil production that decreases probability of population need in treatment through health benefits, reduce costs and increase livestock production through feed pellets production and develop biodiesel industry that provides variety of opportunities that will trigger country’s economy and people’s lives.

Machine transportation to Nepal

Due to reason that Canada and Nepal are located at different continents, the product can be delivered either by ship or plane. The model ES3750B requires to be shipped by a cargo company since its weight is 400 kg (Energrow, 2016), thus, the only option to transport it is freight companies that have a policy to ship commercial products. A1 freight forwarding company is the best choice since company provides shipment to the products like oil press and provides shipment to Nepal. The freight by ship will be better economical option since freight by plane is more expensive.



OCEAN FREIGHT LCL (LESS THAN CONTAINER LOAD)
INTERNATIONAL SHIPPING BOXES, CRATES AND PALLETS

FROM: Toronto CFS
TO: Kolkata - India CFS

SHIPMENT TYPE: Commercial cargo

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Send

Type	Qty	Dimensions	Weight
Box	3	100 x 100 x 100 cm	400 kg

RATE:	7 $ USD PER CUBIC FOOT / MAX WEIGHT 1000 KG PER 1 CBM
Total volume	105.95 CUBIC FEET
Minimum charges	35.32 CUBIC FEET

OCEAN FREIGHT (105.95 CUBIC FEET)	741.62
OVERWEIGHT CHARGES	0.00
PROCESSING FEE	75.00
PRE-CARRIAGE FROM CFS TO PORT OF LOADING	0.00
EXPORT DECLARATION	0.00
SURCHARGES	0.00
SOLAR FEE	15.00
TOTAL:	831.62 $ USD

Figure 6: Ship Freight Quote A1 Freight Forwarding for ES3750B Oil Press from Toronto, Canada to Kolkata, India (A1 Freight Forwarding, 2016**)**

Therefore, the shipment of the machine will be processed through its initial freight to India, Kolkata by ship and further delivery by the truck. According to Figure 6, the shipment to Kolkata costs $831.62 USD (approximately $1,125 CAD) where it will be picked up by truck and delivered to Kathmandu, the capital of Nepal for 29820 Nepalese rupees (approximately $590 CAD) by TruckBhada truck delivery company (Truck Bhada, 2016). The total transportation expenses are $1,715 CAD including ship and truck freight for delivery of one oil press unit. The total expense of one oil press and its delivery is $56,715 CAD (i.e $55,000 CAD + $1,715 CAD). Since couple of oil press machines will be exported to Nepal, there are no offers that freight companies provide to decrease any possible expenses. Despite large total expenses for machine, taking into consideration the

potential that will be provided to Nepal, the expenses would be payed off very soon due to significant advantages that machine can provide to Nepal.

Benefits to Canada

The oil press exportation to Nepal has a lot of advantages not only for Canadian company but for Canadian economy too. The higher demand for product will trigger the demand in higher capacity of customer services and manufacturing staff that results in increasing employment rate for Canada. The customer service might require the additional staff who could communicate with people of Nepal in order to provide the equal support for its every citizen. Furthermore, the higher demand can increase the rating of the machine on oil press global market and provide the opportunity to expand the number of dealers not only within Canada but even within other continents like Europe where rapeseed is popular crop (Soyatech, 2016).

Overall, the machine exportation will make closer business relationships between two countries that could be beneficial for both of them, including the change for further creation of trade agreement between two countries that could increase the opportunities and advantages for business between Nepal and Canada.

Conclusion

The report shows that oil press has large potential to Nepal taking into consideration the lacks and needs it has in oil industry, therefore the machine could only provide positive advantages that will trigger positive changes and outcomes not only in the country's economy but also change life of population. As the work shows, the machine dominates by abundance of features it provides to Nepal when compared to another oil press producers. The option of seed cake immediate conversion into livestock feed pellets can be described as "economic aid" to population which is not provided by other machine producers, making ES3750B model of Energrow irreplaceable on the oil global market, emphasizing its uniqueness.Despite Energrow (2016) states that their oil press with its cold oil extraction system can process and extract oil using soybean or canola seeds that are considered most productive for oil extraction due to its high oil consistency (Canolacouncil, 2016), the machine can be

applied for any kind of oilseed plant since every plant that contains oil can be processed through any oil press machine that has cold-press system (Quinnsnacks, 2016).

Due to the reason that every citizen of Nepal lacks of oil consumption and oil production (Neil, 1992), the machine should be provided for public use. The optional way to obtain its full potential by using it can be triggered by providing the machine "proportionally" throughout Nepal, meaning that it should be provided to the particular places that could let all the people provide the opportunity to use it. Taking into consideration the population density throughout Nepal presented in Figure 6, the certain places for oil press machine placement can be determined. The alternative places for machine placement were marked in Figure 6, taking into account the various densities among the country and country separation into ecological zones (i.e Terai, Hills, Mountains) including that they have different development in agriculture industry (Caltech, 2004)to provide maximum machine accessibility to people.

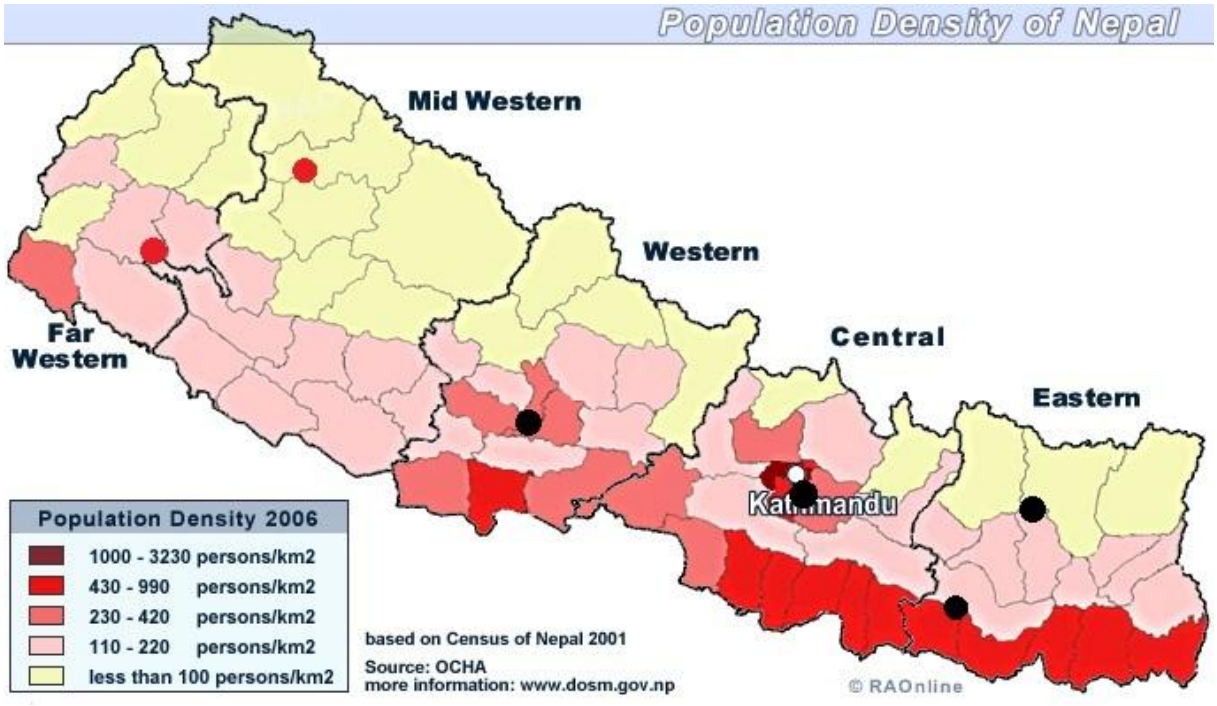

Figure 6: Nepal Population Density and Optional Locations for Oil Press Placement(Retrieved from http://www.raonline.ch/pages/np/npmaps01g.html)

The machines can be placed into some kind of collective farms, so-called “voluntary production associations” or socialistic enterprises that are owned by government and provide full access of the machines and techniques that it has for public use (Academic, 2016) that were popular in USSR in past (Vitalij, 2015). The government can provide workers for these places who could keep track ofmachine safe use by people and track the oil production which can be further provided to the government for evaluation of Nepal’s oil industry development.

Due to possible presence of some doubts about product’s efficiency and importance to Nepal, the current oil industry of Nepal including oil imports and oil expenses were compared to the production data of the ES3750B model in Table 4 (including the information from Figure 7) to show the so-called “return on investment” once oil press could be purchased and provided to Nepal.

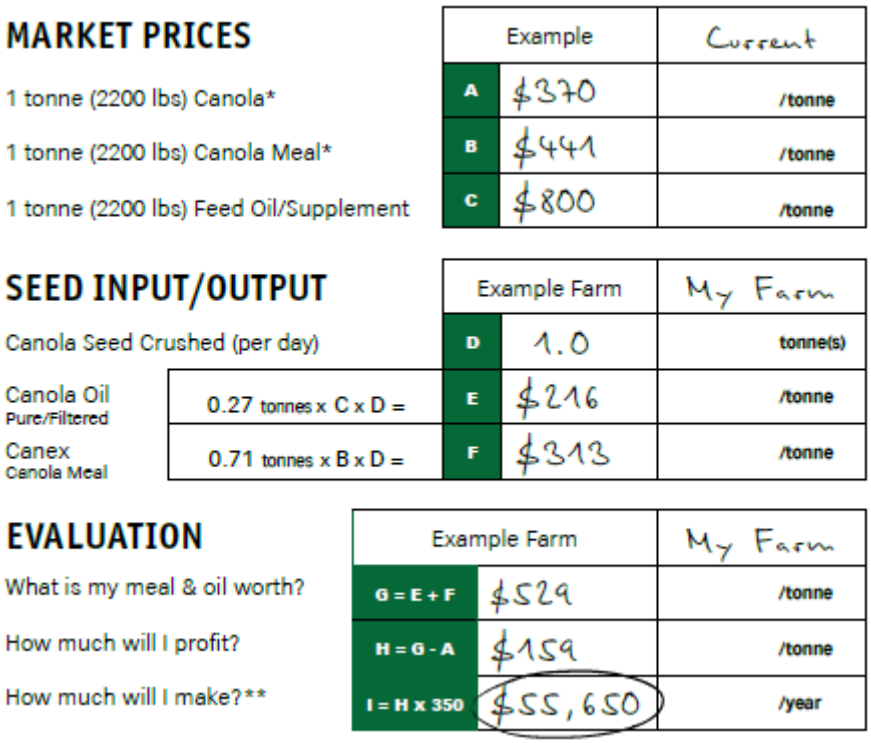

Figure 7: Income Data provided by ES3750B from Energrow(Energrow, 2016)

Table 4: "Return on Investment"Table for Nepal

Current oil industry of Nepal	**Real profits provided by using ES3750B oil press machine (one unit)**
Oil production in Nepal: 60,000 tons annually Total oil imports: 6,000 tonsannually Price per 1 liter(imported oil): 75-80 NPR ($0.917-$0.978 CAD) (Zauba, 2016) Price per 1 liter(average store oil price):238.00NPR ($2.909CAD) (Pathak, 2012) Total expenses per year:199 million NPR ($2.433 million CAD)	Oil production per year: ~180,000 L Oil production per day: 500 L Daily oil production worth considering store oil price: ~$1452.5 CAD (~118,806 NPR) **Annual income value** of oil production: ~$520,000 CAD (42.53 million NPR)
Also	
Price for oil meal in Nepal: 7 NRP/kg, not popular because it is underutilized (Neil, 1992) Average feed pellets consumption by single cow:4 kg daily (Manitoba, 2016)	Maximum production of feed pellets per day: ~1,900 kg Average price of feed pellets: $105 USD/1 tone (UoM, 2016) Maximum daily value of feed pellets production:$199.5 USD (~$268 CAD or 21900 NRP) Real number of cows that are provided with feed pellets: 475 cows daily Approximate gain in cow milk production: ≥1.5 L per day (Halachmi et.al, 2007) Milk price in Nepal: 71 NRP/1 liter ($0.88 CAD)

<table>
<tr><td></td><td>(Expatistan, 2016)
Approximate increased milk production (all fed cows with feed pellets): ≥700L per day
Daily milk production worth: ≥49700 NRP per day (~$605 CAD)
Annual worth of increased milk production: ~$220,800 CAD (18.06 million NRP)</td></tr>
<tr><td>Diesel price in Nepal: $0.67 USD/liter (~$0.90 CAD) (GPP, 2016)
Diesel price of global market:0.85$ USD/liter (~$1.04 CAD) (GPP,2016)</td><td>Maximum possible daily production: 500L
Price for produced biodiesel daily: $450 CAD (36,807 NRP, if considered diesel price in Nepal)
Biodiesel efficiency (compared to diesel): 90-98% (CR, 2014)
Maximum income annually: ~$164,000 CAD (13.414 million NRP)</td></tr>
<tr><td colspan="2">Total value income per year
- ~$520,000 CAD (42.533 million NPR)
- ~$220,800 CAD (18.060 million NRP)
- ~$164,000 CAD (13.414 million NRP)
= $904,800 CAD (74.007 million NRP) maximum real annual income

Net income/year (one oil press unit)= $904,800 CAD - $55,000 CAD (oil press value)
=$849,800 CAD</td></tr>
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According to the Table 4, the exportation of Energrow oil press machine provides very valuable advantages which results in annual income worth of approximately $850,000 CAD per year that include significant reduction in population expenses for livestock and development of Nepal's oil

industry that not only could be beneficial by using the production functionality of the oil press but also be beneficialfor the country and even impact Nepal's exportation system of oil industry that can be further developed, providing large benefits to Nepal's economy and population that will impact the country by providing it with higher position on global market and providing overall higher quality life of population.

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