

**Canada to Nepal Final Paper**  
**Exporting Canola to Benefit Both Countries**

**Justin Kwan Heng Fung**

## **Product Information**

### **Product Description and Processing**

Canola is a type of crop grown for the oil in its seeds. Part of the *Brassica* genus of the Mustard family, its botanical family includes other crops such as cabbage and cauliflower (CCC (*What is Canola?*), [date unknown]). Grown mainly around the prairie lands of mid and west Canada in the provinces Saskatchewan, Manitoba, and Alberta, the canola industry makes up for over 13.8 billion dollars in Canada's economy, with more than 52,000 farmers growing and selling canola for business (MCGA, [date unknown]).

Canola is mainly grown in the early summer and spring seasons of Canada, as the temperatures then are not too cold or hot resulting in decreased yields (OMAFRA, 2009). The temperatures best suited for canola growth is around 20-25C, even though canola is adapted to grow at many varying temperatures. Pest prevention is important when growing canola, resulting in the use of prevention methods such as crop rotation and uniformity being used. Good soil base is also required, with uniform and moist soil that easily absorbs water to help the germination process. Different temperatures and climates affect the time to maturity (from seeds to swathing). In Canada, the time to maturity is different in each province and area, but overall in Canada it takes canola around 60-110 days to mature, depending on the region's temperatures and climates.

The processing procedure of canola from seed to oil/meal has many steps, including seed cleaning, pre-conditioning and flaking, cooking, pressing, solvent extraction, desolventizing and toasting, and oil processing (CCC (*Steps in Oil and Meal Processing*), [date unknown]).

In the seed cleaning process, materials are removed from the plant before the processing begins. Pre-conditioning and flaking involves preheating the seeds to prevent shattering in the flaking unit. The flaking unit's objective is to rupture as

many cell walls in the seed coats via roller mills without damaging the quality of the oil. After pre-conditioning and flaking, the cooking process has many objectives, including rupturing oil cells that had not ruptured in the flaking process, increasing diffusion rates, reducing oil viscosity, and other intentions. The pressing process basically presses the seeds to remove the oil inside. Solvent extraction removes whatever oil there is left in the seeds after the pressing process, as the pressing process is only capable of removing approximately 50-60% of the oil in the seeds. Desolventizing, toasting and oil processing basically involves heating the meal and removing excessive solvent to ensure stability of the oil on shelves (CCC (*Steps in Oil and Meal Processing*), [date unknown]).

### **Labor Required**

In Canada, canola is grown mainly in the spring and early summer seasons when temperatures are relatively warmer (CCC (*Growth Stages*), [date unknown]). Yields tend to be better when the temperature isn't too hot as well as having a warm soil base. As Canada grows canola mainly on flatlands and farms with large acres of land to do so, manual labor is difficult. But with the help of machines such as tractors to help with the seeding and extraction of canola, it makes manual labor decrease. There are external costs, however, that make up for decrease in manual labor. For example, costs for gasoline and herbicide or pesticides to keep pests and diseases at bay.

### **Machinery Required**

Growing canola does not necessarily require a lot of technology. As Canada is a rich country with canola as one of its main industries, the use of tractors and other farming vehicles and machines is necessary here. In Nepal, the farmland on hills does not give the Nepalese such comforts, but growing canola without the use of

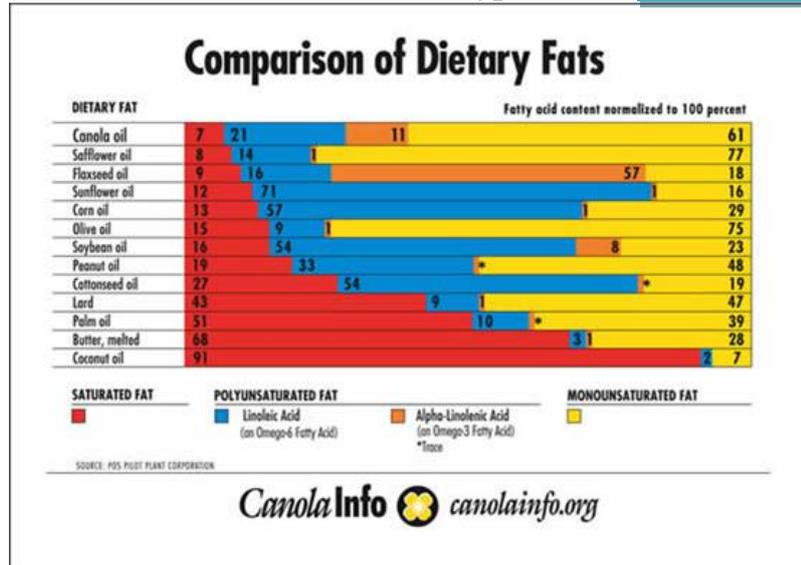
technology is still possible. Grinding seeds into oil, heating, and extracting solvents could all be done without the use of fancy machineries; it'll just requires more time and manual labor. A grinder would help speed up the process, as well as a filter to help filter the unwanted solvents in canola seeds.

## Health Benefits

Canola has been tested to be one of the healthiest oil types, with low levels of saturated fat, yet balanced levels of polyunsaturated and monosaturated fats, as

Nutrition information in various types of oil.

Figure 1



<http://greattastesmb.ca/local-foods/canola/>

shown in Figure 1 (CCC (*Health Benefits*), [date unknown]). The oil is used mainly for cooking, yet canola meal is also used as feed for livestock. Because of its properties and health benefits, canola is a product growing in demand around the world.

Canola meal, a co-product from the process of making canola oil, is also a popular feed for livestock animals (Bell, 1993). Canola meal has been shown to increase gross energy and have higher digestibility in energy in livestock.

Biodiesel is another product of canola (CRFA, [date unknown]). Biodiesel is a renewable, clean, and biodegradable form of fuel made from various types of oils including oil from oilseeds, recycled cooking oils and grease. It is an extremely environment-friendly source of energy for vehicles rather than gasoline or diesel, as it reduces the amount of greenhouse gases emissions into the atmosphere (CRFA, [date

unknown]).

### **Benefit to Canada**

As demand for canola grows, this further increases Canada's canola industry. This will build up the need for more canola, as Canada is one of the world's top producers in canola (shown in **Figure 2**). Exporting to Nepal would require more jobs in different branches of the canola industry, such as jobs for new farmers or more workers needed to process and export the canola goods.

Research in the canola industry will also increase. For example, testing of how different climates will affect the yields of canola, as Canada's climate and temperatures differ quite a bit from that of Nepal's. Another example is the research of pests. Nepal's climate is much moister than Canada's, as in the summer it could rain from 300-800mm of rain, depending on the region in Nepal (WelcomeNepal (*Climate*), [date unknown]. Mixed with warm temperatures of around 20-25C in the summer allows for easy growth of fungi and insects, which may cause concern for crops. Pesticides and its effects may also be a field of research that would open up more jobs. Research has shown that pesticides have influenced the soil of Nepal and that farmers are extremely dependent on exported goods from other countries on their agriculture (Atreya, 2007). The downside to this is that now their soil has been influenced to the extent that native plants cannot grow in the soil. This may spark research into canola and if growing canola in Nepalese soil will influence soil pH and other aspects of the Nepalese agriculture system (Atreya, 2007).

Relations between the two countries will also improve, as Canada exporting Nepal is providing a service to benefit Nepal. In return, Canada will gain profit from this course of action, further expanding the canola industry and Canadian economy.

## **Environmental Sustainability**

Growing canola in Canada is quite sustainable. Dating back to 1974 when canola was first grown in Canada, the industry has only continued to grow. Farmers and producers continue to develop new ways to improve quality and yields as well as discover new ways to resist diseases. In 1979, more than 8.4 million acres of canola were seeded and the canola industry plans to seed 52 bushels per acre by 2015.

This shows that the canola industry is still growing rather profusely. Caution is needed however, as farming the land continuously would result in erosion.

## **Export Potential to Nepal**

### **Introduction to Nepal**

Nepal is a small country which borders China to the north and India to the south (WelcomeNepal, [date unknown]). All along the north of Nepal are the Himalaya mountains. Its total land mass is 147,181 square kilometers. The three regions of Nepal include the Himalayan, mid hill, and Terai region. Nepal is the poorest country in South Asia, with an approximate 42% unemployment rate. With a population of around 26.6 million people, agriculture is Nepal's main source of income, contributing to over 40% of the country's GDP (WelcomeNepal, [date unknown]). Nepal's currency is in Nepalese rupees, with 1 Canadian dollar equal to around 19 Nepalese rupees.

### **Transportation Logistics**

As Nepal is cut off to trade from the open sea, shipping goods to Nepal is difficult, timely, and expensive. The Nepalese people would need to drive over the border to ports of nearby countries such as India to obtain their goods. So the best option to export canola to Nepal would be via plane. After landing, the canola goods

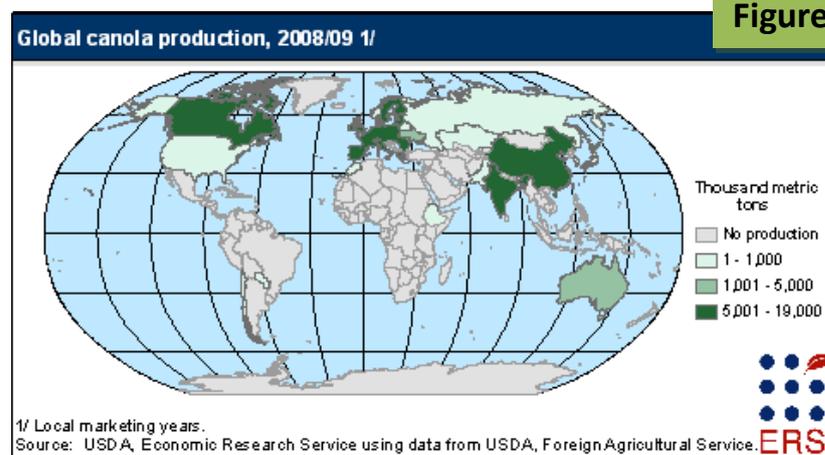
would be put on trucks that'll deliver them straight to supermarkets of Nepal, such as the supermarket Bhat-Bhateni (Bhat-Bhateni, [date unknown]). From there, products, including canola seed and oil, could be sold on the shelves.

## Cost Analysis

The cost of canola should not be too expensive. As Canada mass produces canola, canola does not cost too much. Exporting canola would be a little more pricy, as extra cost would include shipping fees.

To start out, we can first put a price for around 3-4 Canadian dollars for a bottle of canola oil when it's first put on shelves in supermarkets. This already promotes it to buyers as it is cheaper than Nepal's mustard oil, which has increased to 145 Nepalese rupees (7.6 CAD) as of 2010 (CommodityOnline, 2010). After a while, maybe around 2-3 weeks, prices could go up more as products cannot always remain discounted, maybe to 3.5-4.5 Canadian dollars. Lower cost and healthier than mustard oil would keep customers interested in canola products.

## Trade/Subsidy Barriers



**Global Canola Production**

<http://www.ers.usda.gov/topics/crops/soybeans-oil-crops/canola.aspx>

Some trade/subsidy barriers for exporting canola lie in the geography between Canada and Nepal. Figure 2 shows that along with Canada, China and India are also

major producers of canola. This may cause a disadvantage in trade, as exporting from Canada will surely take more time and money to get canola products to Nepal, whereas exporting from a country such as India and China to Nepal would be much faster, cheaper, and efficient. Another barrier would be good export laws, such as exporting seeds. Nepal's export customs may be concerned with exporting live organisms, even in seeds. For example, there may be concern that there's diseases in canola seeds that would hinder Nepal's agriculture once grown. So in order to prove that the seeds are clean, further research and tests would need to be conducted to make sure the seeds and other aspects of canola are disease-free and healthy.

### **Strategies to Sell**

As canola is not grown in Nepal, an introduction could be included in exported canola products. For example, when canola oil is on shelves in supermarkets, discounts could be made when products first hit shelves. Packaging on the product could show the nutrient levels of canola oil with a clear description. The discount of the product when it initially goes on shelves will strike interest in buyers.

Another strategy is sending canola producers to farmlands in Nepal. Having producers there to introduce the Nepalese farmers on canola seeds and its uses is a perfect start to gain the Nepalese's interest in buying canola from producers. Teaching the Nepalese farmers how to grow the plants, giving live demonstrations on what the seed could be used for (as meal to livestock or planting) as well as talking about its health benefits over other kinds of oil will help build up interest.

### **Benefits to Nepal**

With canola products being imported to Nepal in the form of seeds or oil, there are many benefits to the country. Canola could be used as a new crop grown there. As

canola grows in varying climates and temperatures, farmers may have a new cash crop. As Nepalese reuse seeds from plants they've grown from the past, buying new seeds would not occur regularly, unless seeds of plants of previous years were diseased.

With a new cash crop, research in Nepal could also increase. For example, it gives more job opportunities for farmers to grow canola and further develop new methods to plant and grow canola their own ways. As Canada's farmland, situated mostly on flat prairielands is very different from Nepal's farmland carved along the sides of mountains and hills, the Nepalese farmers can experiment with canola seeds and see how they grow in their environment.

Also, once the canola has grown, seeds can be extracted from them and either stored for next season/year's harvest or used to produce canola oil that the farmers could use for themselves. This would save them money and reduce the need to use money and buy oil at stores and markets.

### **Producers and Organizations**

Canada has many organizations in the canola industry (CCC (*Industry Contacts*), [date unknown]). Many organizations in the industry are specific in what they sell. For example, in the seed exporting branch, there are companies such as CWB, Paterson Grain, Richardson International Limited, and many more. Canola Oil exporters have organizations including Cargrill Limited, Bunge Oils, ADM Agri-Industries Ltd and so on. Some companies sell almost all canola products, such as Viterra Inc., TRT-ETGO, and Richardson Limited (CCC (*Industry Contacts*), [date unknown]).

As Canada does not currently export canola to Nepal, this would be a good start to do so (CGC, 2012). I have two plans to start out with. Plan A would be starting out

with a company that exports all canola products, such as Viterra Inc. This plan would introduce the Nepalese people about canola, the different states canola is used for and allow them to try it out themselves. Plan B would be take a rather slow introduction, perhaps introducing the Nepalese people to one product of canola at a time, such as canola oil for starters. If statistics show that the Nepalese are buying canola oil more and more after export, perhaps another canola product could be introduced then, such as canola seeds for meal or growing. To export only seeds, I would choose the company Monsanto.

### **Getting Started**

To get this whole operation started, the Canadian government would be required to ask the Nepalese government for permission to export canola goods to Nepal. No doubt the Nepalese would ask why and how would canola benefit their country. Canada would then need to give many detailed reports of what canola is, its many uses, its health benefits, how exporting would benefit both countries, and so on.

Once all has been agreed to terms and export grants are permitted, the Canadian government may need to grant loans to canola producer companies to allow them to export to a new country.

### **Regional and Global Competition**

Figure 2 shows that Canada, along with India and China are the world's major producers in canola. This provides competition, as India and China are right next to Nepal. Having such a close proximity between Nepal to India and China would cost less to export, as it eliminates the need to ship overseas.

However, China may not be too much of a problem. Although China is a main producer of canola, the country also accepts imports from Canada (CCC, 2010).

China is the number one vegetable oil consumer in the world and canola imports there have risen dramatically over the past decade. In 2012, Canada imported 3 million tons of canola seeds, 1 million tons of canola oil, and 303,200 tons of canola meal (CCC, 2010). With a population of over 1.3 billion, China's canola exports to other countries may not be high, as most of its product is probably given to its people.

### **Future Research**

There are many things we still don't know about how canola would influence Nepal's agriculture, for good or ill. There is still much research needed to be done on the matter. Research needs to be done on the agricultural effect, the social effect, and the economical effect.

The agricultural effect canola may have could be "How will canola yields in Nepal differ than canola yields in Canada?" or "Will growing canola influence the pH of soil or can canola even grow in Nepal?" Doing more research allows for more funding in the scientific branch of the canola industry. Also, it could open new jobs for the need for more researchers.

The social effect applies to research done on the Nepalese people. This should be done before exporting. Sending a group of people to Nepalese farms and asking how they'd feel towards a new crop used for various purposes should suffice. Maybe the Nepalese would not feel the need for canola and would not buy it, resulting in a waste of money and resources if exported prior.

The economical effect speaks of how exporting and selling canola in Nepal would influence its economy. It would be nice to export canola to Nepal with a good cause in mind, but it would be bad if by doing so other oils and businesses in Nepal were put out of business. Also, the price must be managed well; putting canola at a cost too cheap would be put other oil companies out of business, but raising the price

too much would not attract the Nepalese's attention. So a fixed and maintained price must be obtained where it won't put other out of business, it meets the buyer's expectations, and the amount of canola product is maintained.

## **Conclusion**

In conclusion, canola is a very good product idea to export to Nepal. As Canada has a mass production of it, it benefits both countries to export to Nepal. To Canada, exporting canola will gain the canola industry more profit, as well as improve relations with the Nepalese. To Nepal, canola could be a new form of cash crop used as cooking oil, meal for livestock, or biodiesel in Nepalese farmers' trucks. New jobs could also be created as well. In Canada, new research might need to be conducted, opening up new job offers in various research branches for canola. In Nepal, there could be new jobs in the canola process from seed to product, such as jobs in converting seeds to oil or jobs in meal or diesel production.

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