

Evaluating Canadian Agri-Food Exports to Nepal: Orange Juice Press

Matthew Hyland

Part 1

Purpose

The purpose of this analysis is to determine the potential for exporting orange juicers from Canada to Nepal to improve the welfare of both countries. A specific product, economics, logistics, challenges, benefits to respective countries, and other elements will be identified and discussed.

Product Description

The Olympus Extra Large Commercial Juice Press (Item #97302) is an industrial juice press retailed by Juicerville Canada (Juicerville Canada, 2016)(Focus Food Service, 2016). The press is manufacture by an American company called Focus Food Service (Juicerville Canada, 2016). A simple, manual press was selected to eliminate the need for electricity and reduce the chance of break downs. A manual press was also selected to make this tool an affordable and realistic option to Nepali farmers. Juicerville Canada retails the Olympus Extra Large Commercial Juice Press for CAD \$219.00 (Rs 11,215). The 3 pinion design is intended to juice citrus fruits with maximum pressure delivered by minimal manual force (Focus Food Service, 2016). It has a wide base and wide opening under the press allowing for superior



Figure 1 - The Olympus Extra Large Commercial Juice Press (Juicerville Canada, 2016)

stability and the use of large containers for juice collection (Focus Food Service, 2016). The juicer's durable and ergonomically friendly design allows for easy operation by users and even allows it to be operated by children (Focus Food Service, 2016). The enamel finish on the cast iron frame prevents erosion from acidic citrus juices (Focus Food Service, 2016). Overall, this juicer was selected for its durability, ease of use, and price effectiveness.

The Ideal Farmer

Juicing oranges can be an effective way of increasing income on the farm but this system may not be right for all farmers. The most important restriction to introducing a juice press to a farm is the farmer's ability to market their juice. Farmers in isolated areas, away from larger populations, will have a harder time finding a place to sell their orange juice. Furthermore, big farmers who already market large quantities of oranges may not find it worthwhile to juice such a small portion of their crop. Ideally, the juicer would be best suited for a small to medium sized farmer from the mid hills who already regularly sells their produce at a farmers market. This way, they would simply be creating a new product to sell at the market. In addition, it may be beneficial if a farmer also grows fruits other than just oranges since the Olympus juicer can juice other fruits like limes, lemons, and pomegranates (Juicerville Canada, 2016). Although this analysis focuses on farmers, anyone who retails oranges in Nepal could gain from this press.

Benefits to Canada

Exporting a product to Nepal from Canada provides Canada with both direct and indirect benefits. Since the Olympus juicer is retailed by a Canadian company they will receive the benefit of additional sales. Juicerville Canada is privately owned and the two owners who run the company would receive direct financial benefit (Juicerville Canada, 2016). More importantly,

they would have the opportunity to make local contacts where they could look into the possibility of exporting some of their other products like large electric juicers, flour mills, dehydrators, or other food equipment they retail (Juicerville Canada, 2016). Exporting of this juicer could open up opportunities for Juicerville Canada to expand their business to Nepal. Furthermore, upon the success of this export, the company could look into exporting the Olympus Juicer to other countries with similar production systems.

Unfortunately, a juicer that is actually manufactured in Canada was not found. As a result, additional benefit to Canada from the sale of the juicer is limited. After contacting Focus Food Service, it was confirmed that even the raw materials (metal, rubber, and enamel finish) of this product are not sourced from Canada (Focus Food Service, Personal Communication, November 2016). Being a fairly low technology product, an established company could design a similar press relatively easy. Should an existing Canadian small-ware manufacturer wish to create more opportunity from this idea, they could design and manufacture their own high quality but lower cost press, specifically for farmers in developing countries. This would open up a huge new market for the company in citrus producing countries throughout South America, Africa, and Asia. In addition to increasing business it would create new Canadian jobs in sales, marketing, product development, and manufacturing. Although initially benefits to Canada may be limited due to the lack of Canadian manufacturers, exporting this press could open up opportunities for other Canadian companies.

Part 2

About Nepal

Nepal is a small land locked country in south Asia between China and India (ATNC, 2016). The population is about 29 million people (ATNC, 2016). A large portion of the population is unemployed and 69% of the people who are employed work in agriculture and rely

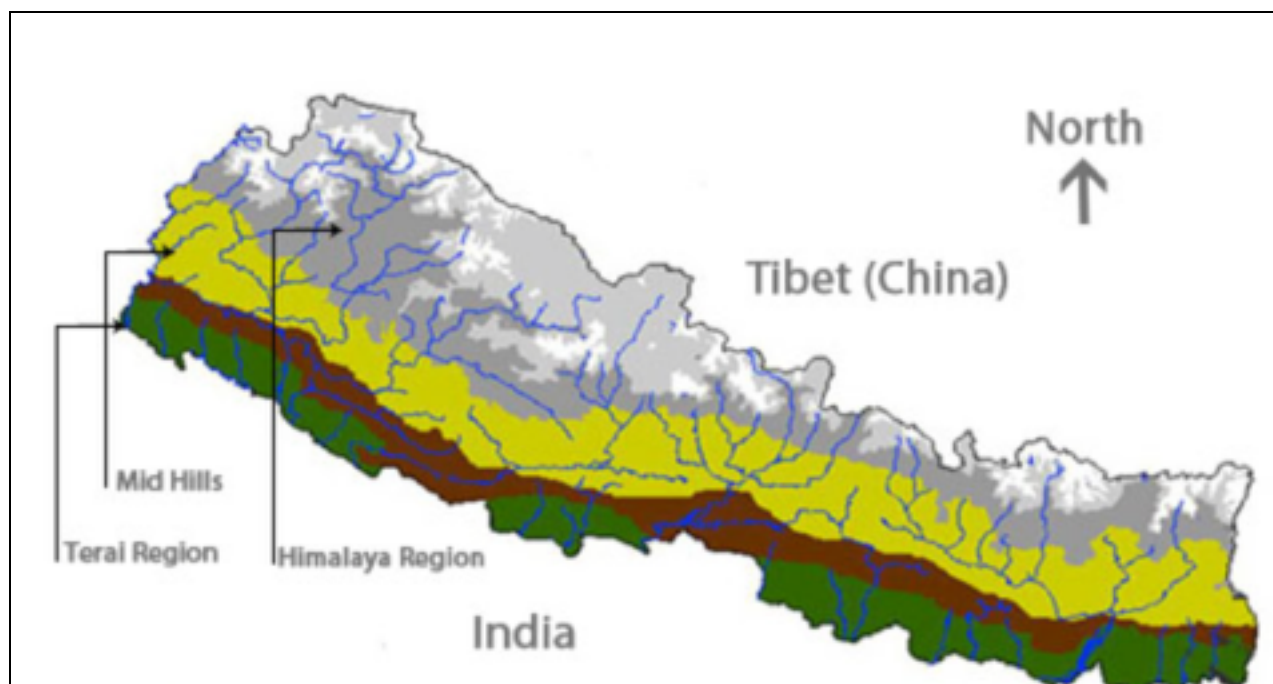


Figure 2 - Map of Nepal indicating the Terai (plains), Mid Hills, and Himalaya regions. Citrus fruit production takes place in the mid hills. Source: www.greatholidaysnepal.com/nepalfacts.html.

on subsistence farming (FAO, 2016). Approximately 16% of the population is under nourished and food security is a big issue (FAO, 2016). Citrus fruits are grown throughout the Mid Hills in Nepal in elevations of 800-1400 meters above sea level (Figure 1)(NARC, 2007). The government of Nepal regards mandarins, sweet oranges, limes, and lemons as having great potential to generate jobs, create additional income, and improve the livelihoods of the Nepali people who farm this marginal land (NARC, 2007). Currently about 34,000 ha are used to produce citrus fruits and average yields are 11.4 tonnes/ha which is lower than neighbouring countries (NARC, 2007). For this reason, the government of Nepal has been focusing on improving yields and capturing the full potential of citrus crops (NARC, 2007). Dated crop management practices, small production scale, poor infrastructure for marketing, and a lack of entrepreneurship are factors identified by the government as issues limiting the potential of these citrus crops (NARC, 2007) .

Cost Analysis

The average sized Nepali farmer harvests about 1.5 tonnes of oranges per year but only actually markets about 60% of them (0.9 tonnes) (FAO, n.d.). The 40% of oranges that are not marketed are either lost to disease or consumed on farm. The average price received for the oranges is about Rs 11,000 (CAD \$215) per tonne (FAO, n.d.). This means that without producing orange juice an average farmer earns Rs 9900 (CAD \$195) per year from producing oranges.

If a farmer were to juice all of their oranges, assuming that 50% of the mass is juice, they could produce about 450 L of juice (Clark, 2003). In Nepal, pasteurized orange juice sells for Rs 215-250/L which is about Rs 50-60 for 8oz (Mero, 2016). If Nepali farmers sold their juice in 8 oz portions they would likely be able to receive about Rs 70 for their fresher, higher quality juice. 8 oz bottles can be purchased online for about Rs 12 per but farmers could also sell juice in plastic cups which would likely be a cheaper option (General Bottle Supply, 2016). Assuming a Nepali farmer can sell their premium product for Rs 70/8 oz, they could potentially sell Rs 133,142 (CAD \$2599.96) worth of juice. This means they would be profiting an additional Rs 101,292 (CAD \$1,978) each year if they juiced all of their oranges. Under these assumptions, the average farmer could earn over 10 times as much from the oranges they already produce.

Ideally, this system would not require any more labour than is already on the farm. As discussed, the Olympus juicer is designed to require as little effort as possible to squeeze the maximum amount of juice (Focus Food Service, 2016). For this reason, the press would be able to be operated by the farmer and the farmers' children. There is a small opportunity cost in diverting labour to operating the press that could otherwise be generating other income on farm but the efficiency of this press helps to reduce that opportunity cost. Additionally, labour required to market orange juice in a local market would also be required. This is why this juicer

would be best suited for a farmer who already sells their produce at local market. For these reasons, labour will not be considered as a cost in this cost analysis.

In Nepal, harvest occurs from late September to early March (FAO, n.d.). It may not be realistic to assume that a farmer could juice and market all of their oranges in this condensed time period. However, with the above approximations, a farmer would be able to make back the cost of the press by selling 282 units of juice which equates to about 133 kg of oranges or just under 15% of their average yearly crop. Table 1 & 2 summarize the fixed and variable costs in producing orange juice.

Fixed Costs	Cost (\$ CAD)	Cost (Rs)
Olympus Press	\$219.00	11,215
Shipping (total)	\$74.47	3,810
California to India	\$41.07	2,100
India to Nepal	\$33.44	1,710
TOTAL	\$293.47	15,025

Table 1 - Summary of fixed costs in Canadian dollars and Indian Rupees.

Variable Costs	Cost (\$ CAD)	Cost (Rs)
Bottles (\$/8 oz unit)	\$0.23	12
Labour (\$/8 oz unit)	0	0
Juice (\$/8 oz unit)	\$0.10	5
Total Variable Cost (\$/8 oz unit)	\$0.33	17
Revenue (\$/8 oz unit)	\$1.37	70
Additional Profit from Juicing (\$/8 oz unit)	\$1.04	53.25

Table 2 - Summary of variable costs, revenue, and additional profit from juicing in Canadian dollars and Indian Rupees.

Transportation

Juicerville Canada sources their juice press from Focus Food Service (Juicerville Canada, 2016). Focus Food Service has their main warehouses in California where shipment has been arranged for individual presses to be shipped by air to Mumbai, India at a cost of Rs 2100 (CAD 41.07) per unit (Focus Food Service, Personal Communication, November 2016)). From Mumbai, India a number of companies can courier the press to any address in Nepal for Rs 1710 (CAD \$33.44) (Courier Force, 2016). Total shipping for one unit would therefore be Rs 3810 (CAD \$74.47) and total cost to a Nepali farmer would be Rs 15,025 (CAD \$293.47).

Benefits and Challenges of Juicing

The most obvious benefit of making orange juice is the extra value added to the product. As seen in the cost analysis, a juiced orange is worth about 10 times as much as an orange that has not been juiced. Another benefit to juicing oranges is that lower quality fruits can be processed instead of being wasted or sold at a discount. Often times when oranges are graded they will be rejected or docked because of blemishes, deformation, bruising, or imperfections on the skin (NHB, n.d.). This is part of the reason farmers only market 60% of their harvested crop (FAO, n.d.). These defects may pose no issues to the actual fruit but they are harder for the buyer to market. Since the fruit is still of good quality, the same quality of juice can be produced from these otherwise less valuable oranges. As a whole, juicing oranges gives Nepali farmers the opportunity to market more of their crop at a higher price.

While this may sound enticing there are a few challenges around orange juice. Storing unpasteurized orange juice can prove to be a major issue for farmers (Fellers, 1988). Shelf life is short, only lasting about 2 weeks for refrigerated orange juice in air-tight containers (Fellers, 1988). Without refrigeration or proper packaging, contamination issues can arise in as little as 1-3 days (Fellers, 1988). This means that juicing more than a few hours prior to sale is not

usually an option unless juice is properly bottled and refrigerated at 1.1 - 4.4.°C (Fellers, 1988). This may seem like a challenge, especially for farmers without refrigeration capabilities, but they would not likely sell large quantities every day in local markets anyway. Rather, they would be more likely to make a few dozen sales a day and could juice oranges as the demand fits. The short shelf life of unpasteurized orange juice limits a farmers flexibility to market larger quantities of juice at a time. For example, it would be difficult for a farmer to sell 50 bottles of juice to a retailer if the juice will only last 1-3 days. Shelf life can pose a real challenge to farmers but the benefit of marketing more fruit for higher prices means this challenge is worth taking on.

Competing Products

The Olympus juicer is a high quality product with pricing that follows suit. Similar products to the Olympus juicer exist on alibaba.com for CAD \$50 but they are of lower quality and require orders of at least 100 juicers (alibaba.com, 2016). In order for juicers like this to be a competing product, a retailer or co-operative would have to order 100 juicers and sell them individually (alibaba.com, 2016). This would take a considerable amount of risk and effort. The advantage with Olympus juicers is that a farmer anywhere in Nepal can order a juicer that can be delivered to any address. Some individual juicers are also for sale on alibaba.com but sellers have poor product reviews and can be unreliable (alibaba.com, 2016). These sellers, however, should not be ruled out completely as their products may be less efficient or reliable than the Olympus juicer but they could still be affective and more affordable juicers.

Future Studies

It has been determined that the Olympus juicer is a good potential candidate for export to Nepal, however, further research can help to refine the best possible plan for incorporating juicing on a Nepali farm. Since one was not found on alibaba.com or similar sites, future studies

should focus on finding a high quality juicer from a reliable manufacturer in India or China. This would likely half the cost of shipping and lower the cost of the product making it easier for farmers to enter the juicing market. An additional option is investigate the viability of designing and manufacturing a high quality, low cost juice press in Canada, this way Canada can capture more of the potential benefits of exporting juicers. Future studies should also investigate the local demand for juice and see how much juice a farmer could realistically sell in a year. Furthermore, specific farmers should be identified through local contacts to determine if they meet the characteristics of the ideal farmer to invest in a juicer. Additional bottle manufactures could be identified and contacted to arrange the most suitable and affordable bottle. Bottle labels could also be considered to increase the perceived value of the juice through branding and other marketing strategies. Improving shelf life of orange juice would be of major benefit to Napoli farmers. Research into methods of increasing shelf life would increase farmer flexibility and could allow for larger quantity sales of juice. More market research is needed to determine the optimum price at which the juice should be sold. While the Olympus juicer shows real potential, further research should determine if it is the most cost effective option. Other products like large electric juicers is an option that could be shared between farmers. This idea should also assessed and compared to manual juice presses before the export of the Olympus juicer.

Summary

The Olympus Extra Large Commercial Juice Press is an ideal juicer for juicing oranges efficiently. Exporting the press from Canada to Nepal directly benefits Juicerville Canada, but perhaps more importantly, opens opportunities for Juicerville Canada to expand their business into new markets. Furthermore, the success of this export, could help Canadian companies to realize the opportunity to developed and manufactured their own high quality, cost effective juicer.

In Nepal, the press can be a very effective way of increasing income on the farm and improving the quality of life of farmers. It is estimated that juicing oranges can earn a farmer up to 10 times the amount for the orange crop they already produce. Furthermore it allows the farmers to market more of the crop that would otherwise be unmarketable. Overall, it is determined that the export of orange juicers to Nepal is a viable option in improving the lives of both Canadians and the people of Nepal.

Word Count: 3,027

References

- AgTrade Nepal Canada. (2016). Introduction to Nepal. Retrived from <http://agtradenepalcan.weebly.com/get-started---learn-about-nepal.html>
- Alibaba.com. (2016, December). Manual Juice Press. Retrieved December 02, 2016, from [https://www.alibaba.com/trade/search?fsb=y&IndexArea=product_en&SearchText=manual juice press](https://www.alibaba.com/trade/search?fsb=y&IndexArea=product_en&SearchText=manual%20juice%20press)
- Clark, P. (2007, December). Orange Juice Processing. Institute of Food Technologists., 57, 12th ser. Retrieved from <http://www.ift.org/Food-Technology/Past-Issues/2003/December/Columns/PROCESSING.aspx>
- CourierForce.In. (2016). International Courier Services to Nepal | Cheap Parcel Delivery to Nepal. Retrieved December 01, 2016, from <https://www.courierforce.in/courier-to/nepal/>
- General information on Nepal. (n.d.). Retrieved December 02, 2016, from <http://www.greatholidaysnepal.com/nepalfacts.html>
- Focus Food Service. (2016, November 24). Olympus extra large juice presses [E-mail to the author].
- Food and Agriculture Organization of the United Nations. (2016). Nepal Food Security Country Brief. Retrieved from <http://www.fao.org/countryprofiles/index/en/?iso3=NPL&subject=3>
- Mero Shopping. Buy Online Fruit Juices in Nepal , Fruit Juices Price in Nepal. (2016, November). Retrieved December 01, 2016, from <https://www.meroshopping.com/fruit-juices>
- National Horticulture Board. (n.d.). ORANGE (MANDARIN). Retrieved December 1, 2016, from http://nhb.gov.in/report_files/orange/ORANGE.htm
- Olympus Extra Large and Jupiter Large Juice Presses. (n.d.). Retrieved November, 2016, from <http://focusfoodservice.com/products/smallwares/juicers-squeezers/olympus-extra-large-and-jupiter-large-juice-presses.html>
- Prahlad K. Thapa, Devendra Saraf, & Kamal R. Gaire (n.d.). Chapter - 16 COMMODITY CASE STUDY: FRUITS. Food and Agriculture Organization. Retrieved December 1, 2016, from <http://www.fao.org/3/a-ae896e/ae896e16.pdf>
- Water Bottles PET. (2016). Retrieved December 02, 2016, from <http://www.bottlesetc.com/plastic-containers/plastic-bottles/water-bottles.html>