

Potential Export of Canadian Optivia Milk Replacer

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The purpose of this assignment is to evaluate the plausible benefits of the exportation of the product Optivia - Milk Replacer from the Canadian company Shur Gain. The two main topics that will be evaluated during this reading are a product description and how this product could benefit the Nepalese dairy farmers. In addition to the benefits of the product, the challenges that will be faced through the export process will be addressed by speaking about other competitive products on the market, the shipping obstacles and finally, the price of the product. The last point of discussion will be on the ideas of how this product is applicable in other developing and neighbouring countries.

Part 1: Information on Optivia – Milk Replacer

Product Details:

Optivia – Milk Replacer is a partially acidified milk replacer that has many benefits to young growing dairy calves. The first advantage this milk replacer product has is the partially acidified quality's (Nutreco). The added acid in the milk replacer lowers the pH of the mixed replacer to a pH around 5.2-5.6 (Tarr). The lower pH allows the milk replacer to be left for one to two days longer than conventional milk replacers, as well as, whole milk, because the pH level of the replacer does not promote high bacteria growth when the product is not being refrigerated (Tarr). This is useful when calves are drinking from pails or buckets that hold the liquid milk replacer because the calves will be able to access milk all day long without causing harm. The lower pH of the partially acidified replacer not only creates an environment that prohibits bacterial growth, but also destroys many bacteria that could later cause digestive problems in a dairy calf. This allows for the development of a healthier calf that will be less likely to need

medical attention or care, thereby maximizing the efficiency of the product (Source 1). Another benefit to this replacer is its acidic taste that prevents the calf from drinking too much milk per feeding, and in turn, causes the calf to feed more often. Frequent, small feedings allow the calf to obtain more nutrients throughout the day and develops a healthier calf.

Other nutrients offered in this replacer are the added amino acid which will increase the average daily weight gain of the calf, and also improves feed performance by up to 15% (Nutreco). Following the appropriate feeding program for Shur Gain’s Optivia milk replacer, shown in figure one, will optimize a calf’s growth as compared to traditional milk replacers or the whole milk of the calf’s mother.

Figure 1

Age	Milk Replacer Powder	Milk Replacer Solution
	grams/day	(powder + liquid)
Birth (0-2 hours)	colostrum	3-4 litres
6-12 hours	colostrum	2-4 litres
Day 2-3	Transition Milk	4-5 litres
Day 4-5	600-750 g	4-5 litres
Day 6-7	750-900 g	5-6 litres
Week 2	900 g	6 litres
Week 3-5	900 g	6 litres
Week 6-8	450 g	3 litres

(Nutreco)

Manufacturer Details – Find Out Where Optivia is Produced:

Optivia is produced and distributed under the name brand of Shur Gain, a division of the global company, Nutreco. Nutreco’s world-wide office is based in the Netherlands, with their Canadian head office in Guelph, Ontario (Nutreco, 2015). Nutreco Canada employs over 1200 people in Canada and the United States and specializes in research and product development to produce and deliver quality feed products that yield maximum animal performance (Nutreco, 2015).

Machinery Required to Deliver the Optivia Product - Cost:

The Optivia product is very simple and easy to use. The equipment needed to mix the replacer accurately and efficiently would be a scale, a measuring cup, a bucket to mix it in, a stir stick, a thermometer and hot water (Costello, 2014). Most farmers are already equipped with a bucket and some type of an object to mix the initial powder and water mixture and agitate it throughout the day, so this could be eliminated from the list of equipment needs. The scale and thermometer could also be eliminated from the list of required materials. The reason being is that with some simple hands on learning from a professional farmer, the weights and temperatures of the mixture can be determined through experience and without the use of these instruments (D. Berg , personal communication, November 16, 2016). This technique for mixing the replacer is typically taught through the generations down the line. Although Nepal is a poor country, an assumption would be made that they would have the main required tools of a bucket, stirring object and some method to heat water, thus there is no need to factor these into the cost of the product. Overall Optivia does not require any materials that would add to the cost of the product, and is very simple to prepare.



Figure 3. Example of measuring cup. (Costello, 2014)



Figure 2. Example of scale. (Costello, 2014)

Labour and Cost of the Optivia Product:

The manual labour involved in the making of this product on site is very limited and will not add extra stress or time to the farmer when being prepared, delivered and managed. Mixing the product would only take about five minutes, with additional time for agitating the mixture throughout the day (D. Matheson, personal communication, November 16, 2016). Overall the product will not require any physical demanding labour or be time consuming for the farmer.

The majority of the costs for the use of Optivia are for the cost of the product milk replacer itself. The retail price of one twenty-five kilogram bag of Optivia milk replacer is around sixty-four dollars in Canadian currency, priced from Yantzi's Feed and Seed Limited in Tavistock, Ontario. (Yantzi's Feed & Seed Ltd, personal communication, October 13, 2016). This equals about 5200 Nepalese Rupees (Bank of Canada). Compared to other milk replacers on the market, Optivia is marginally more expensive than its market comparators. The value of the Optivia milk replacer is superior to other products as it offers more nutritional value with each feed and it has a knowledgeable staff who stand behind their product.

Target Market:

This product fits into a very niche market in Nepal, as well as, in other countries in the rest of the world. The niche market is that of the dairy cattle industry. Selling this product to a subsistence farmer in Nepal would just not be feasible due to the cost. It is better to target the use of the Optivia product by the larger operations for dairy cattle that produce milk to be sold for consumption. Another option for this product would be for use by a village, who could come together to purchase the product to feed the calves, leaving more milk for consumption by the village people and potentially selling any surplus whole milk to consumers outside of the village (Explained in **Part Two: Marketing Strategy**).

Before reaching the farmers hands the Optivia product would have to be sold in a farm supply store in Nepal. Nepal has thirty-six district Milk Producers' Cooperative Unions whom have resources, funds, knowledge and plans to expand the dairy industry in Nepal (FAO, 2010). The larger institutions like these could potentially support the larger scale farmers by helping to manage the cost of the product, and possibly even purchase the milk replacer for smaller villages or villagers to help them begin to expand their dairy operations.

Benefits to Canada:

Exporting Optivia to the Nepalese farmers will benefit Canada by expanding the distribution of the product, which will create more jobs in order to match the demand for an increase in production. To further the benefit to Canadians, the product could be handled through smaller feed stores, such as Yantzi's Feed and Seed Limited. Based in Tavistock Ontario (Yantzi's Feed & Seed Ltd.) Yantzi's Feed and Seed Limited employs around thirty people between their two feed stores and one grain elevator site (R.Yantzi, personal communication, November 28, 2016)

This expansion in production will have an additional benefit to the Canadian export companies who will be handling and shipping of the product to Nepal for Shur Gain. Although the impact would not be much it would still generate some economic impact for Canadians.

Part Two: Export Potential to Nepal

Nepal Information:

Nepal is a country that is located on the continent of Asia in between two major world leaders, China and India making it a land locked country (World Atlas 2016). Nepal has a population size of twenty-eight million people, which is similar in population to that of Canada with a land mass that is much smaller, covering an area of 147,141 kilometers squared (Chapagain, 2016). Nepal is a very poor country with a gross domestic product per capita of around eight hundred eighty-seven Canadian dollars (Trading Economics, 2015), or around seventy-one thousand eight hundred sixty-nine Nepalese rupees (Bank of Canada).

Thirty-eight percent of the aforementioned gross domestic product per capita comes from the agriculture sector of Nepal. This industry employs over seventy percent of the population making this industry the most important in Nepal (Chapagain, 2016).

As seen in figure four Nepal is divided geographically into three main regions (Info Nepal, 2011).

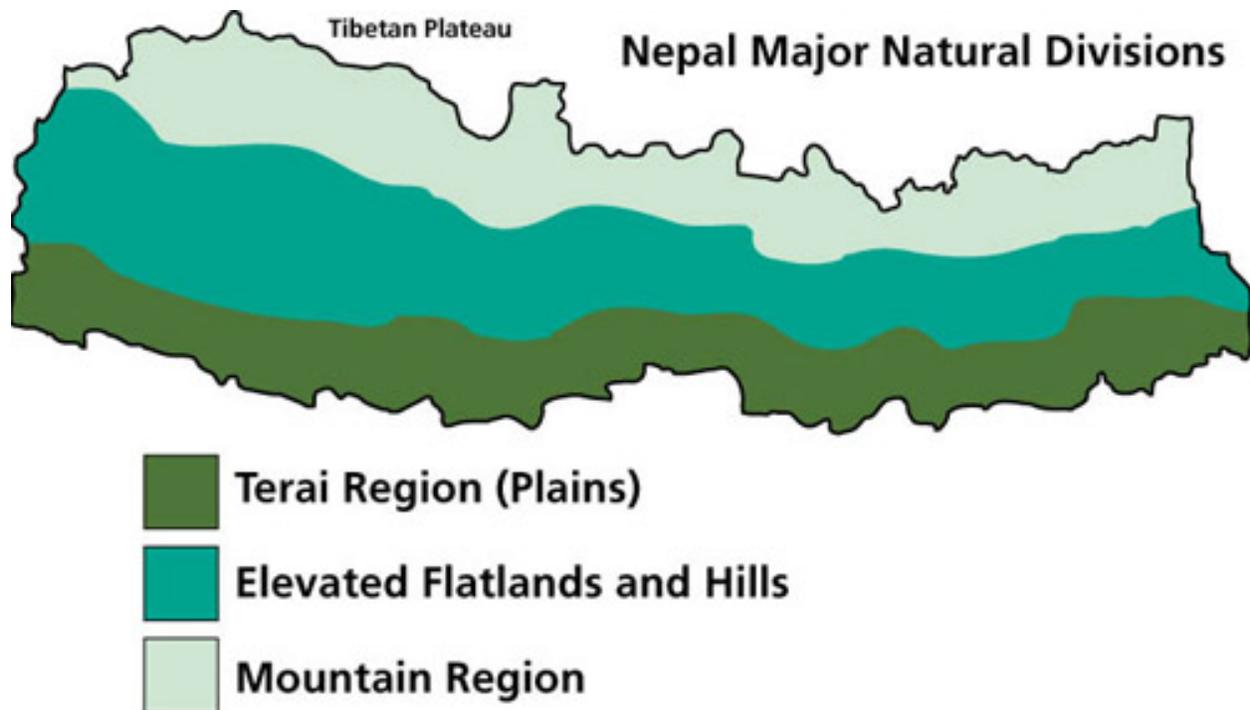


Figure 4: Three Main Regions in Nepal (Info Nepal, 2011)

The first region of Nepal is the mountain region which contributes to about thirty-five percent of Nepal's land mass (Chapagain, 2016). The main purpose or use of this region is for agriculture related reasons and is mostly comprised of cattle and small animal grazing during the summer months (US Aid, 2016). These cattle are moved to the lower grass plains in the winter months (Chapagain, 2016). The reason that there is minimal crop development is that the growing season is short due to the cold temperatures and the soil of this region is mostly comprised of rocks and sand. (Nations Encyclopedia, 2010).

Next region located in the middle of the trapezoidal shaped country is the flatlands and hills region. Growing crops in this region is challenging though due to the terrain, which is

comprised of very steep slopes (US Aid, 2016). To combat the steep slopes of the land the local farmers have made terraces, on which they grow crops such as maize and millet are grown (US Library of Congress).



Example of Terraces in Nepal (Biodiversity International, 2014)

Other crops grown in this area are fruits such as apples, as well as, coffee and some select vegetables (Chapagain, 2016). Many varieties of crops are grown here due to its warmer sub-tropical climate (US Aid, 2016). The Flatlands and Hills region also supports the production of cattle and goats because of the larger grazing areas which are available all year round (Nations Encyclopedia, 2010). These livestock are often used for milk production, working the land and for the consumption of meat (Chapagain, 2016).

The last and lowest region in Nepal would be the Terai region. The soil type in this region is a highly abundant in nutrient value due to the fine granular properties brought by the water in the flood plains (Chapagain, 2016). This region is home to very flat land that is good for larger scale rice production with the use of mechanized equipment (Info Nepal, 2011). This land also grows a variety of tropical fruits and fresh vegetables. The tropical climate in this region is

not very good for grazing livestock, so animals are fed the leftover organic matter from crops (Chapagain, 2016).

From the information given above, Nepal is a very poor and food deficient country and would benefit greatly from products that would increase yields, while also maintaining a low cost for the production. For this project I will be focusing on a large industry of dairy cattle farming in Nepal, which annually produces around one million six hundred twenty-two thousand (1,622,000) metric tons of milk (FAO, 2010).

Need for Optivia Milk Replacer:

Nepalese farms with dairy cattle as their primary producers are often producing milk for self-sustenance of the herd and for personal use. The goal of introducing Optivia milk replacer to dairy farming in Nepal would in general to improve the health and longevity of the cattle, as well as, to increase the production of milk for personal use and a surplus of product for market sales for public consumption.

With the average twenty-five kilogram bag of Optivia milk replacer feeding one calf until being weaned, or until eight weeks (D. Matheson, personal communications, November 18, 2016)), this would add fifty-two hundred Nepalese rupees to the cost of raising one calf. The addition of this product would allow the farmer to add almost eight weeks of milk production for processing or sales as opposed to allowing the calf to nurse off the mother (G. Matheson, personal communication, November 18, 2016).

The average milk production of a Nepalese dairy cow is around one thousand two hundred fifty-five litres per lactation (FAO, 2010) and the average price per litre of milk in Nepal being sixty-seven rupees (Numbeo, 2016). The addition of the eight weeks of milk that

could be processed and sold would amount to approximately fifteen thousand four hundred thirty-eight rupees. Subtract the fifty-two hundred rupees for the milk replacer and the farmer has the potential to profit around ten thousand rupees to their income per cow being milked. As stated above in the earlier paragraph **Labour and Cost of Product** there is almost no added cost that come after purchasing the product, but also not a lot is added to labour of the farmer's busy schedule.

Benefits:

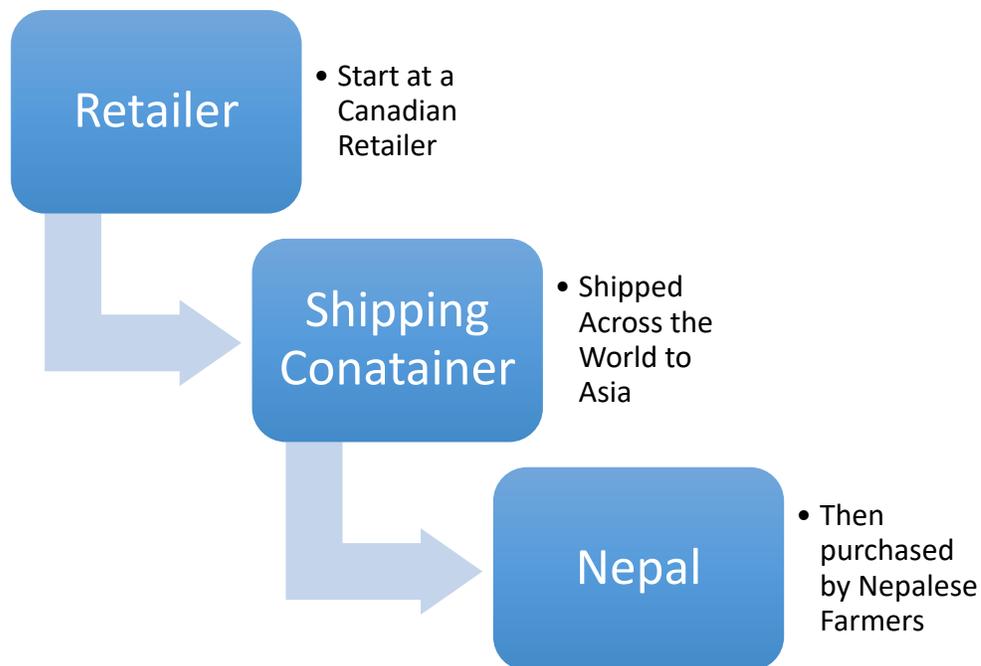
For a small scale subsistence farmer, the added income of using this product would benefit in them in many ways. Not only would they benefit the farmer's dairy operations, but the farmer would also be able to share the benefits with his family with the additional income from the sale of the surplus milk. The extra money could be used to pay off any farming or personal debts, pay for medical supplies and even send kids to school to become further educated, which they could then bring back their knowledge to assist with further development of the farm.

For the larger scale commercial dairy farmers in Nepal the extra income would allow them to keep expanding their business. In turn, more and more income would be generated by the farmer as the farm expands. With expansion of the farm more employees would be needed to manage the dairy and cattle, thereby helping to decrease the forty-six percent unemployment rate (United Nations, 2008). Overall this product would have many direct and also indirect positive benefits to the Nepalese people.

Logistics:

The transportation of this of Optivia milk replacer is very challenging. As mentioned in the previous section **Nepal Information** it is a land locked country (Chapagain, 2016) meaning

there is no direct route from Canadian ports to Nepal. The product would start its journey at one of the Canadian Nutreco plants or a retail store mentioned previously, Yantzi's Feed and Seed



Limited in Southwestern Ontario. From this location it would be shipped by truck to the Vancouver port, the cost of this would be around twelve hundred Canadian dollars (Brian Kurtz Trucking Ltd, personal communication, November 27, 2016). The next step is to ship the product to Asia in a forty-foot shipping container, by boat, to the port of Haldia, India. The price of this journey would be around eight hundred Canadian dollars (Government of Canada, 2010). From Haldia the product would be shipped across the country to Nepal to its final destination in the capital city of Kathmandu. The milk replacer may be distributed from there to local retailer farmers' cooperative or directly to the farmers. The entire cost of this process would add around ninety Nepalese rupees to cost of one bag of Optivia milk replacer based on two thousand bags being shipped in each container.

Competitors:

Optivia milk replacer with its acid quality's allows the farmer to have the convenience of allowing the milk to not be refrigerated for longer than normal times (Tarr). If a Nepalese farmer liked the fact of the convince of this product another option would be to add citric acid to whole milk to achieve a lower pH. This option would be substantially cheaper for a poor dairy farmer in Nepal. The cost of one twenty-five kilo bag of citric acid is around eighty-two Canadian dollars (Suffire Blue, 2016) or, 6700 Nepalese rupees. This would only have to be added to milk in minute amounts (D. Berg, personal communication, November 16, 2016).

But in only using citric acid to adjust the pH of the whole milk is that you would still need the milk from the cow. This would be counterproductive from using Optivia milk replacer because the milk would not be able to be processed and handled to be sold commercially.

Conclusion:

In conclusion, the use of Optivia milk replacer would benefit the Nepalese farmer in many ways. The most relevant is how this product would add around eight weeks of whole milk to be processed and sold from that cow. As well as this, the product supplies a lot of beneficial nutrients (Nutreco) to the calves as well.

With the positives of this product come many down falls as well. Not specifically with the product but all the costs and obstacles facing it. From the description of Nepal, you can tell that it is a very remote country, and also a very long distance from Canada. This adds a substantial amount on top of the price of the product considering the average income in Nepal is around two American dollars a day (Trading Economics, 2015).

Overall I do not believe that average subsistence Nepalese farmer would be interested in the product because of the initial cost of 5200 Nepalese rupees. However, with the help of

government assistance programs like Nepal Agriculture and Food Security-Country investment plan (Government of Nepal, 2010) and also Canadian programs such as Canadian Foodgrains bank (Canadian Foodgrains Bank) farmers could potentially afford the costs of this product that Canadian farmers take for granted). For the larger herds of cattle in Nepal and or larger communities I think the product would be manageable to afford especially after the excess income would be coming in.

Finally, further information would have to be done on more little things, like exact transportation costs and ways to get support for farmers.

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