

Exporting Milk Bars to Nepal
Erica Sayles

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Across the globe there is a dramatic difference from country to country when comparing things such as government, land, economy, and industries. Some countries have parts that are thriving and other still developing. In addition, some countries work very closely together and are very similar such as the United States and Canada. Other hardly interact at all and have large differences between them such as Nepal and Canada. Nepal, a small and developing country struggling to regain its footing after an earthquake. With an increasing population and demand for products, farmers across the nation are desperately searching for ways to advance their own farming techniques to fill the supply and demand orders. Canada, a large country with a stable economy and concrete plans for the future. The agricultural industry here is known across the globe for its highly efficient, advanced, and productive methods. Why not share the Canadian knowledge, tools, and techniques with others to help them back on their feet and headed in the right direction. This paper will review, and asses the possibility of exporting the technology of Milk Bar Nursers to Nepal in efforts to help dairy farmers in Nepal take better care of their calves and increase their herds production. This will allow them to better meet the needs of dairy products in their country, as well as create a greater profit for themselves and their families. Sending Milk Bar Nursers to Nepal is just one of many ways the Canadian industry can aid Nepal.

Part I: Milk Bar Nurers:

Milk Bar Nurers, originally invented in New Zealand are now manufactured and distributed by The Coburn Company and are an innovative way to feed calves (young dairy cattle) and kids (young goats) in group housing. These nurers are designed and sold for use with

Figure 1: Calf Milk Bar



Source:
<http://www.coburn.com/milk-bar-6-for-calves-w-ez-lock-265-2106>

all dairy animals; cattle as well as goats, and are sized appropriately. They have been used, and provided improvements in the United States, Canada, New Zealand, Australia, and across Europe. In these countries they are set up to feed calves and kids living in group housing conditions, here they not only benefit from the use of the Milk Bars, but also because the social setting the livestock are in causes them to be happier and healthier.

Figure 2: Goat Milk Bar



Source:
<http://www.coburn.com/milk-bar-7-for-lambs-265-3007>

As the Milk Bar Nurers are made of plastic and rubber, they are both light weight, at only seven pounds per calf unit or six and a half per kid unit, and very durable (The Coburn Company, 2014). This quality allows them to be easily cleaned between feedings with soap and water to reduce disease transfer in livestock, and makes them transportable to be used in other pens. The milk bar can be easily hooked onto any pen siding whether it be wood or metal, then filled with whole milk or milk replacer. This versatility makes it highly suitable for many different farming styles and nutrition plans on farms. The calf Milk Bar sells for \$156.06, and the kid Milk Bar for \$111.15 and is a very long lasting product view for many as an investment for their farm (The Coburn Company, 2015).

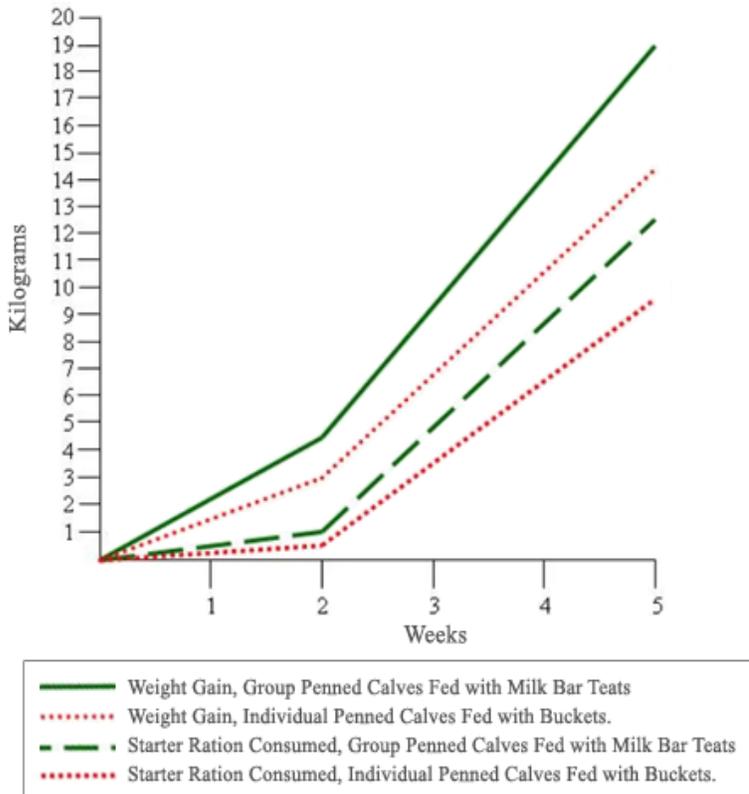
Benefits of Milk Bars to calves and kids:

The milk bar provides many benefits to the animals using it. When a calf is naturally suckling on its mother's teat, it is forced to drink slowly and produce a lot of saliva which aids in the calf's digestion causing the milk to curdle in the calf's stomach as well as aid in the digestion of fat. The saliva produced also has many antibacterial properties which helps keep the animal healthy and prevent scours (Milk Bar, 2015). When a calf does not produce enough saliva it causes it feel hungry and continue sucking on things such as other calves ears, tails, and udders. The Milk Bar nipples are designed like a real teat forcing the calf to slow its suckling and produce the proper amount of saliva (Milk Bar, 2015).

Since the milk bar encourages this salivation in calves or kids with slower suckling, and aids in proper digestion of the milk, it has been shown to decrease cross-suckling rates as well as scours in young calves (Milk Bar, 2014). Cross suckling is reduced by the speed of drinking from the milk bar so the calf or kid is not deprived of its sucking stimulus, and amount the calf is receiving at each feeding is filling its stomach with no need for it to continue eating (Jensen, 2003). Cross sucking can lead to mastitis, infections in the quarter, and even the possible loss of a quarter on the animal, meaning that one of their quarters can not produce milk (Sleegers, 2015). Mastitis is the inflammation of the udder caused by bacteria, and can often be seen in a specific quarter of the cow (Edmondson, 2004). In turn, Milk Bars are shown to reduce mastitis in young cows as their udders have not been damaged. Cross suckling and mastitis not usually a problem in goats as their teats are too small (Franken, 2015).

Furthermore, the increase in proper digestion caused by saliva produced from using the Milk Bar obviously leads to an increase in the growth of calves. The graph seen here (figure 3), displays the results of a trial done in the United states where there were 48 calves placed in

Figure 3: Calf growth based on feed



different scenarios and their growth was tested based on what they were consuming. Five pens were filled with five calves each (group housing), then the other 23 calves were put in their own individual pens. As seen in figure 3, the calves fed with the milk bar in group pens not only gained more weight and grew faster, they also consumed more of the calf starter provided leading to a more successful weaning of the calves. Overall the Milk Bar helps a producer grow healthier and stronger calves in less time.

Source:
<http://info.milkbar.co.nz/milkbar/r>

Benefits to Canada:

The export of this product to Nepal would have many direct, and indirect benefits to Canada and its economy. These benefits will be found mainly in Canada’s oil industry, but will also be seen in the transportation and shipping sector as it will be able to create more jobs for Canadians. Although these milk bars are manufactured in the United States, they are primarily made of plastic and rubber. From a manufacturing perspective, plastic is made in the states from oil, and Canada is a main exporter of oil to the United States. It is known that the US imports

50% of their oil, and 37% of that gap is filled by Canadian oil (EIA, 2014). In 2014 the 37% of Canadian oil translated to 2882 thousand barrels per day of crude oil going from Canada to the US (EIA, 2014). It is also known that Canada exports 89% of our resins to the United States for rubber and plastic manufacturing (Industry Canada, 2011). Both of these will be used to build the Milk Bar Nursers and so the demand for the raw Canadian products can be expected to go up. As both of these things are already exported to the United States, the platform for trade is there and has room to increase. In addition, an increased need for transportation from the place of manufacturing, to the place of shipment would be needed creating Canadian trucking jobs as well as jobs to send the Milk Bars to Nepal. Through this export, Canada's economy would grow and be left stronger.

Part II: *Nepal*

Nepal is a small agriculturally based country located between India and China and separated into three regions; Terai, Hills, and Mountains (Cockburn, 2002). With a population of 29, 210, 448 people, it is a densely populated country with an ever growing need for food production (Country Meters, 2015). Approximately 70% of this population is employed in some aspect of the agricultural industry which translates to it accounting for 38% of Nepal's GDP (gross domestic product) (US Aid, 2015). This illustrates how heavily the people of Nepal depend on the production of crops and livestock to keep their economy afloat. However, farmers in Nepal find themselves struggling to meet the needs of their population as they have limited access to different farming technologies and are struggling to increase their production without greatly expanding their farms (US Aid, 2015).

Nepal's dairy industry:

The dairy industry in Nepal had never fully developed until 1952 when the first organized activity happened in regards to dairy processing which was a cheese processing plant (FAO, 2010). The dairy business in Nepal holds great importance as cows are considered sacred to most of the population based on their religious beliefs and practices, and the cows are strictly only used for milk production. Since the real beginning, many boards have assisted in the creation of various five, and ten year plans to help with everything from supply schemes for the milk markets to ensure the farmers get a fair price for their product, to developing better management and nutrition plans for producers (FAO, 2010).

Currently Nepalese farmers are looking for ways to help improve their animal husbandry practices in order to raise production on their farms (NARC, 2007). Right now, the average heifer is bred around 3 years of age in Nepal due to slow growing rates (Meena et al., 2007). The average cow, after calving only produces 438L of milk in its lifetime (FAO, 2010). In most other countries, the typically breeding time for a new heifer is 13-15 months, or just over a year (Slegers, 2015). This allows the heifer to not only reach puberty, but also to put on enough weight so that it can sustain a growing calf. The late breeding age as seen in Nepal, is shown to lead having approximately 4% more calving difficulty than animals breed sooner (Lin et. al, 1988). When heifers are bred, and a calve at an earlier age they are also shown to have a longer production life, and typically produce 1000kg's more in the long run (Lin et. al, 1988).

Benefits of Milk Bar Nursers to Nepal:

This product would be of great benefit to all dairy farmers in Nepal as it will help calves and kids grow faster, breed earlier, and therefore have a more productive lifetime leading to more efficient and profitable farms. Their growth, as shown in figure 3 would dramatically increase once put on the Milk Bar Nursers. Following that, they would put weight on in a more

efficient manner as they would be encouraged to consume more feed from an earlier age. This would in turn cause a large advancement in the breeding, and calving for the cow and therefore extend the production lifetime that each cow in Nepal currently has. Although the Milk Bar may not provide a benefit to the current generation of cows being farmed, the value and payoff will be seen in the future generations of cattle that will pass through the farm. Moreover, the Milk Bar Nursers are long lasting, easy to manage and work, and can work with many different sized farms. Farmers would only need one to feed all their calves as opposed to multiple individual bottles, and it would be there to help benefit their herd for many years after being purchased. With minimal upkeep and no need for a constant water or electricity supply, they are very practical for the average Nepalese dairy producer.

The Milk Bars, once transported to Nepal could be sold in any number of local hardware and farm supply stores. Farmers would not have a need go back to town often to purchase parts once it is bought, and due to it having handles and being light weight it would be relatively easy for the farmer to transport back to their farm. These would be sold mainly in the Hill and Terai regions as that is where majority of the dairy production farms are located. Although it may be a large investment for the farmers financially, they will see the payoff in their profit after the production of their livestock increases. It will also provide priceless relief to the farmers, saving them all the back breaking labor of feeding each calf by hand for long periods of time. Likewise, it will free up the producer's time to dedicate themselves more to their crops or lactating animals.

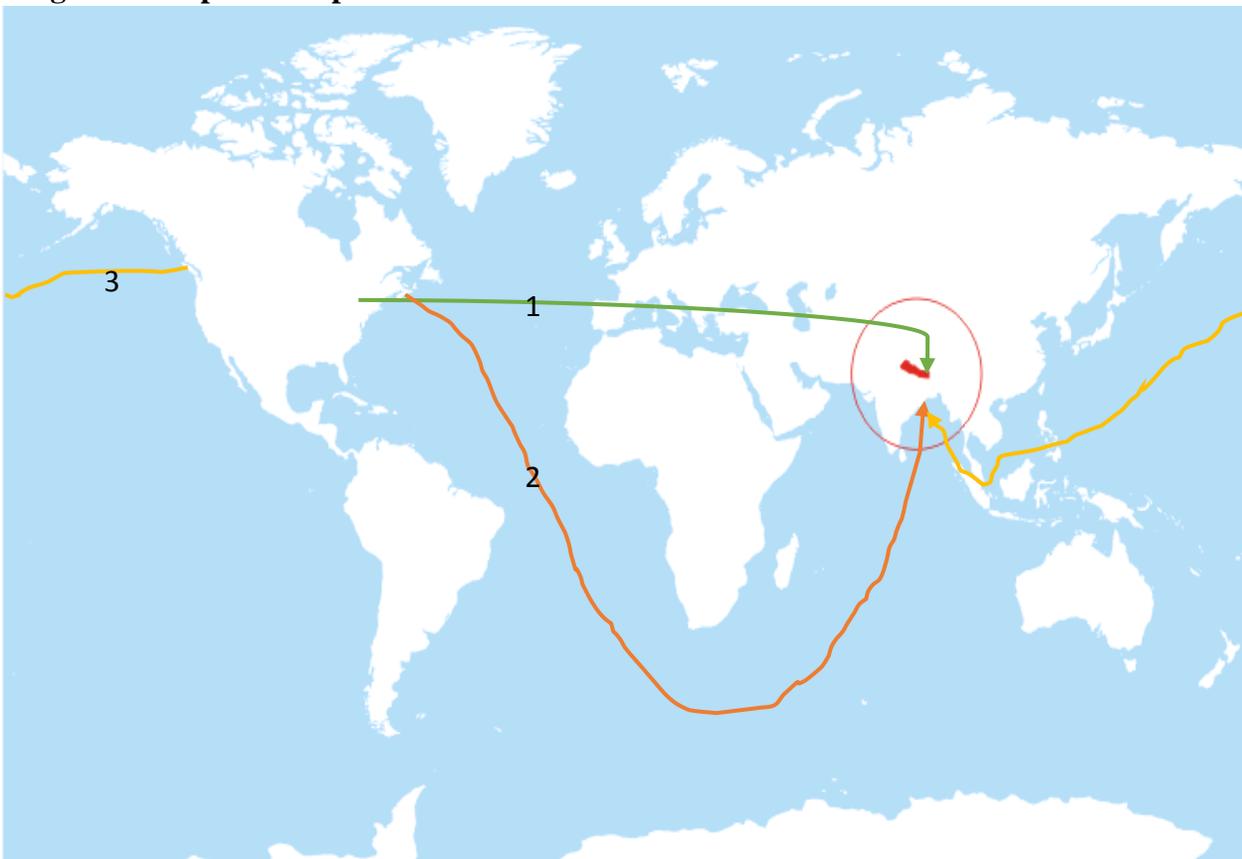
As well, sending Milk Bar Nursers to Nepal would provide many off farm jobs for people there. From the processing of milk into many dairy products such as cheese, ice cream, and yogurt, to hardware store clerks, and working in the transportation sector. It is known that 40% of house hold incomes in Nepal are filled by non-farm jobs (Seddon et. al, 2002). The idea of

working off farm is becoming increasingly popular as the cost of living is going up. This is also due to the farmers minimizing the impact on their financial situation should a tragedy strike their farm such as floods, earthquakes, diseases and many other unavoidable disasters that could ruin their farms, or kill off their animals. The export of the Milk Bars to Nepal is not only creating these job opportunities for the farmer's peace of mind but also as a boost to Nepal's economy.

Transportation of Milk Bars to Nepal:

Transportation of the Milk Bars to Nepal from Canada in the first place has a few options; by plane, or by bulk ship. Another variable to take into account would be the location it leaves Canada from; Toronto, Halifax, or Vancouver. The following routes as illustrated in figure 4 are

Figure 4: Map of transport routes



Source: <http://www.freeworldmaps.net/asia/nepal/location.gif>

based on sending 10 units each weighing 7lbs, with the following dimensions: 32x36x34 inches.

The fastest, more direct, but most expensive route would be route 1, by plane from Toronto, Ontario to Kathmandu, Nepal costing approximately \$3650.15 CAD (A1 Freight Forwarding, 2015). The second option holding a smaller amount of land travel from the manufacturing plant to the place of departure in North America would be route 2, by freight ship from Halifax, Nova Scotia to Kolkata, India costing \$3038.66 CAD (A1 Freight Forwarding, 2015). The last option is the least expensive, route 3, from Vancouver, British Columbia to Kolkata, India by freight ship costing \$2223.09 CAD (A1 Freight Forwarding, 2015). This route would be the most correct course to go with as it has the shortest travelling distance and would make the most economical sense. Both route 2 and 3 would require additional transport from the manufacturing plant to the coast, and then from Kolkata to the stores in Nepal by either truck or train which would have an additional cost of approximately \$300-\$500 depending on the method used.

Overall, Milk Bar Nursers are an innovative way to feed both calves and kids that would greatly aid dairy producers in Nepal by increasing their production, as well as benefit Canadian industries. The Milk Bar Nursers could be effectively transported to Nepal by freight ship from Vancouver, BC to Kolkata, India, then brought into Nepal by train or truck. At this point the export of them has provided both Canada and Nepal with employment in the transportation sector as well giving the Canadian oil industry a greater profit in our trade with the United States. Once in Nepal they can be sold in hardware stores and other farm supply stores across the country close to the farmers themselves, mainly in the Terai and Hill regions thus proving off farm job opportunities increase household income of Nepal families. From there the farm can invest in their own Milk Bar and easily carry it back to their farm, beginning to implement changes right away. Following that they will notice increased growth in calves with less manual labor, then proceed to breed them earlier as they will reach puberty sooner. Their heifers will

calve out at a younger age with less complications, lower counts of mastitis and lame quarters and producing more milk. Finally, the farmer will ship out increase quantities of milk to be processed proving them with more income and again creating more jobs in the off farm production of dairy products.

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