Promoting Trade Between Canada and Nepal Through the Agriculture Sector

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PART I

Introduction

Agriculture in Nepal is very important, as approximately one third of all exports are a result of agriculture and 70% of individuals are employed through this sector (Devkota, 2013). Subsistence farming is the most common type of agriculture in Nepal, with families growing enough to meet their needs (Joshi et al, 2001). Astonishingly, a large portion of these farms have inadequate amounts of land that do not allow them to meet these needs, in fact, 75% of households have less than one acre of arable land (Devkota, 2013). A variety of foods are grown on family farms to ensure that all food requirements are met; these foods often include: rice, maize, potatoes and a variety vegetables and fruit (Atreya, 2012).

In addition to many small farms, Nepal also has large farms and research institutions within the country (Joshi et al, 2001). Research institutions are a center of plant breeding in Nepal, which is very important as breeds are being researched by a variety of research teams to improve yields, cold tolerance and resistance to pathogens (Joshi et al, 2001). Universities and local communities within Nepal are also studying methods of cross breeding (M. Raizada, personal communication, November 17, 2014). There are many ideas that can be introduced in Nepal that will help to improve their farming practices and more specifically, plant breeding. One of these ideas is the labeling of different breeds of crops in a research area. To do this, a label maker and garden markers can be used. This label maker would help to label various breeds of crops during research processes and keep projects much more organized.

Product/Technology Description

Labels can be used to identify where diverse varieties of crops are planted to ensure organization within research stations. Garden label markers can be used, as well as a label maker to print labels that can be applied to the garden markers. Firstly, Lee Valley is a Canadian company that produces garden labels. These labels are made of high quality hardwood and are brightly coloured, which makes them easy to identify ("Coloured Garden Markers", 2014). Lee Valley's garden markers are also flat and smooth on both sides, which allows labels to be placed on either one or two sides. ("Coloured Garden Markers", 2014). All markers have a non-toxic coating applied to them, which makes for weather resistant products ("Coloured Garden Markers", 2014).

Brother Canada is the Canadian chapter of this company that makes technological equipment; this includes the production of label makers. There are two label maker machines that can help research institutions, universities and communities within Nepal. To begin, one specific label machine that Brother produces is titled the PT-P700PC PC-Compatible Labeller. Research institutions and universities would benefit from this product, as they are more likely to have a computer. This machine produces labels that are printed on "TZ Tape", which is an all-purpose, weather resistant tape with a sticky adhesive back ("PT-P700PC", 2014). Being computer compatible, this machine can easily adapt to any PC computer and no software installation is needed. Labels can be created on the computer and are then printed exactly the way that they appear on the screen ("PT-P700PC", 2014). This machine comes with lifetime toll-free technical support and a

one-year limited express exchange warranty (“PT-P700PC”, 2014). In addition, Brother also produces the PT-D200 Easy-To-Use Label Maker. Local community groups would benefit from this machine because it is smaller, is very easy to operate and does not need to be plugged into an outlet (“PT-D200”, 2014). The PT-D200 is a hand held device that has digital display, which shows what the label will look like when it is printed (“PT-D200”, 2014). This machine can print one or two lines of text on split-back tape which makes it easy to peel and stick labels on to garden markers (“PT-D200”, 2014). Similarly to Brothers PT-P700PC model, this one also uses TZ tape, which is weather and water resistant (“PT-D200”, 2014). In conclusion, these label makers and garden markers will ultimately help to organize different breeds of crops in many different areas within Nepal.

Benefits to Canada

Canada would benefit from trading these materials with Nepal. There are many companies and individuals who would earn money for the selling and transportation of these products. This benefiting begins with the individuals that produce the products. With more products being sold, more products will need to be made. This results in more job opportunities for those who work within the companies and individuals would begin to make more money. Next, Brother Canada and Lee Valley will also increase their income when they sell more products. Trading label makers and garden markers will enable them to increase their sales and therefore make more money. Also, the transportation of these products will increase income for individuals and companies. Those who work for these

companies will have more jobs to perform, resulting in more money. These jobs include picking up parcels from the distributor, bringing them to the airport, organizing the products when they get to the airport and also ensuring that the load is organized and goes on the right plane. Similarly to Brother Canada and Lee Valley, the shipping company A1 Freight Forwarding will increase their sales and therefore their revenue will increase. Ultimately Canada's economy will benefit from these trading practices. When the company's sales increase, Canada receives a portion of these values through taxes, which then helps in bettering their economy (Melville, 1963). Also, exports are a leading sector of may countries economy, especially Canada's, and economic development is focused around the diversification of export materials (Melville, 1963). Exporting and trading these products with Nepal will benefit Canada's economy because many individuals and companies will also benefit, which leads to Canada's success. Also, a diversity of products will be exported from Canada.

PART II

Transportation Logistics

There are many steps that must be followed in order to have these label makers and garden markers exported from Canada and delivered to Nepal. These steps are outlined in Figure 1. Firstly, items needs to be picked up from Brother Canada and Lee Valley distributing locations. FedEx is a company in Canada that picks up and delivers parcels. Brother has a location in Toronto where the label makers could be picked up from and delivered to Toronto Pearson International Airport. It would cost approximately $50.00 to ship 100lbs of label machines, which would be approximately five of the larger PC-Compatible machines or around 15 of the smaller machines ("Rates and Transit Times", 2014). Next, it will be around $12.00 to ship garden markers from Lee Valley in London, Ontario to the Toronto airport ("Rates and Transit Times", 2014). Then, A1 Freight Forwarding will deal with the products until they reach Kathmandu, Nepal. The total cost of air shipment through this company is $354.45 ("Air Freight Quotes", 2014). When the products arrive at the airport they need to be moved from the unloading dock to an area where the products can be tallied and put in cargo boxes. A1 Freight Forwarding is the company that will need to move these products to their designated areas as they are in charge of tallying and loading them. Once the label makers and garden markers are packaged and ready to be sent to Nepal, they will be put on to a plane. The plane will travel either directly to Nepal, or have a layover at a country in Europe and then to Nepal. Once the products have arrived in Nepal, A1 Freight Forwarding will ensure that the products arrive safely and will make sure that they

are then delivered to the next company in the chain, UPS. Lastly, it will cost approximately $45.00 to transfer the products from the Tribhuvan International Airport in Kathmandu, the capital city of Nepal to a research station in Bharatpur, Nepal from the UPS Company ("Calculate Time and Cost", 2014).

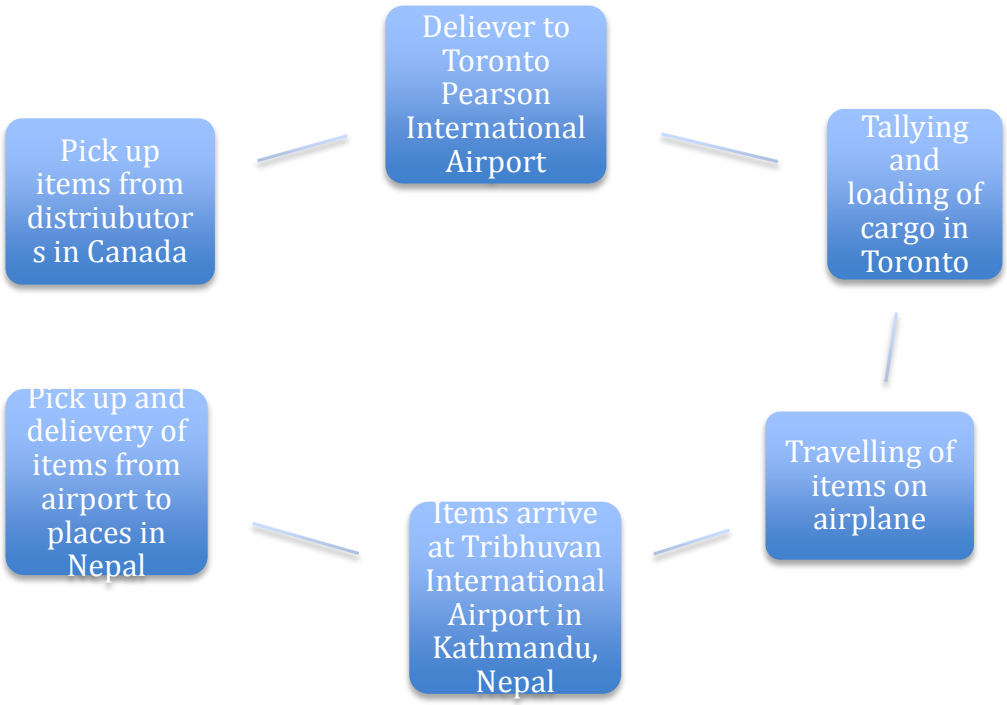

Figure 1

Alternate Options and Cost Analysis

There are many alternative products that can be used in Nepal that could work for this project. From observing Figure 2 it is clear to see that a few of these items are made and sold in Canada, but there are also some from China. The first three products listed in Figure 2 are items that have been previously discussed and the next consecutive three are the alternate options. To begin, the DYMO 1733011 LetraTag Handheld Personal Label Maker is currently being sold on EBay. It is

produced in China and costs $40.21 in Canadian dollars (“DYMO 1733011”, 2014). This machine has a display screen that shows what the label will appear like when printed and allows for two lines of text to be written (“DYMO 1733011”, 2014). The labels are printed on plastic, but they are not weatherproof guaranteed. Four AA batteries are needed to operate this machine and they are not included with the product (“DYMO 1733011”, 2014). Next, Plant Pot Markers come in packages of 100 and are being sold on EBay for $2.99 (“Plant Pot Markers”, 2014). These markers are produced in China, are plastic and white (“Plant Pot Markers”, 2014).. They have a large flat surface where labels could be attached on the front and back. These labels are not as sturdy when compared to the Coloured Garden Markers that are made in Canada by Lee Valley. Lee Valley’s garden markers are made out of hardwood and are coated with weather resistant spray and the Plant Pot Markers from EBay are made out of flimsy plastic that are not guaranteed to be weather resistant. In addition, another option to label different breeds of crops in Nepal is labeling the garden markers with Sharpie markers. Instead of using a label maker these markers could be used to write the desired title directly onto each label. Sharpie markers are sold at Staples, a business depot store in Canada. Markers sell in packages of 12 for a total cost of $10.45 (“Sharpie Fine Permanent Markers”, 2014). The labels from these markers would be sure to stay on the garden markers as their ink is waterproof, smear proof and fade proof (“Coloured Garden Markers”, 2014). There are many options of products to use in Nepal in order to help farmers label their breeds of crops.

Product	Amount	Where Product is Made and Sold
PT-P700PC PC-Compatible Labeller	$99.99	Canada
PT-D200 Easy-To-Use Labeller	$59.99	Canada
Coloured Garden Markers (50)	$16.50	Canada
DYMO 1733011 LetraTag	$40.21	China
Plant Pot Markers (100)	$2.99	China
Sharpie Markers (12)	$10.45	Canada

Figure 2

Application and Benefits in Nepal

There are many uses for labeling breeds of crops in Nepal. New crop varieties are being produced in Nepal and all around the world to improve yields, cold tolerance and resistance to various pathogens (Joshi et al, 2001). The benefit to labeling different breeds of crops derives from the fact that farmers will be able to recognize where each crop is planted and they could be planted in an organized manner. There are many different groups and organizations that could use labels and labeling machines in Nepal, this includes small community groups, university research groups, the International Rice Research Institution (IRRI) and Anamolbiu, a seed company in Nepal.

There are an abundance of small community groups that are working amongst themselves to produce better yielding crops for their families in Nepal (M. Raizada, personal communication, November 17, 2014). These communities combine plots of land to plant the different breeds of crops that they create through

cross breeding. Labeling these varieties would allow the farmers to know what crop is planted where and they could then determine which plant is growing to it's optimal potential to use for their successive years crop.

Universities are a very common station of research for crop breeding in Nepal (M. Raizada, personal communication, November 17, 2014). One negative result of doing research at universities is that unlike in Canada, universities in Nepal to not have high amounts of government funding (M. Raizada, personal communication, November 17, 2014). This results in many school's being unable to spend money on a variety of useful pieces of equipment for research. Universities are in need of labels to label their breeds of crops and if a cheap product is introduced to them they could buy these items to further organize their research.

The International Rice Research Institute is a specific research group that studies an abundance of diverse varieties of rice breeds in Nepal. They are working to produce rice that can grow at high altitudes, which involves genetically modifying and cross breeding many different strains of crops (Joshi et al, 2001). Rice is the most important crop in Nepal agriculture and being able to grow it at different elevations is very critical to the increasing production of this product (Joshi et al, 2001). The International Rice Research Institute would benefit from a label maker in their large research labs. This company is likely to already have labeling of plants in place within their station, but if not than this label machine could be used. These labels would identify the specific crosses of each rice plant and where they are planted within the plots.

Anamolbiu is a seed company located in Nepal. This company works with the government and not for profit organizations to work towards improving food quality and security to disadvantaged communities in Nepal ("Research and Development", 2014). Anamolbiu produces seeds of a variety of different foods, including: vegetables, cereals, pulses and potatoes ("Seed Stock", 2014). This company is very well established in Nepal and similarly to the International Rice Research Institution they are likely to have a labeling practice in place at their research stations. This company could better their practices of labeling through the list of ideas provided in this paper. Or, if they did not have a labeling process that is practiced in their institute than they could begin to organize their crops with these labels.

It is clear to see that there are many areas of Nepal that would benefit from the labeling of breeds of crops. Starting off in small Nepal communities and increasing to universities and research companies shows that these labels can be used with a variety of experience levels.

Action Plan

I believe that there are many different options to implement the labeling of crop varieties within Nepal while not only benefiting those in Nepal, but also other countries, specifically Canada. To begin, small communities in Nepal may not be able to afford a label machine from Canada, they could consider buying Sharpie markers from Canada and instead of purchasing the Lee Valley garden label markers they could purchase cheaper labels off of EBay from China. Purchasing

these labels from China would also reduce the price to pay for shipping. Next, since universities are not funded well by the government of Nepal they could purchase the cheaper labels from China and then either invest in sharpie markers, the PT-D200 label machine from Canada or the DYMO 1733011 model from China. The International Rice Research Institution and the Anamolbiu seed company have very similar solutions to introducing label makers in their companies. This is because they are both given grants from the government and therefore would be able to purchase expensive products. These companies could consider the most expensive label maker from Brother Canada, which is the PT-P700PC PC-Compatible Labeller machine. They would benefit from this machine because they are most likely to have computers that would allow them to work with this product. Also, they could purchase the Coloured Garden Markers and they would be assured great quality products. In all of these situations Canada would be benefited in some way as the products are being purchased from various cities in the nation.

Furthermore, Brother Canada was contacted and they are more than willing to donate a label machine and an abundance of tape to this project. Brother works hard to protect our environment and is a very giving company as they have many organizations within their company working to better our planet (Brother Canada, 2014). Donating a label maker to this project would still benefit their company because Brother in interested in sharing this story on social media, which would show positive advertisement for their company. Also, if one farm breeding company realizes the potential of the label machine, other companies in Nepal will be interested in the product and then they could purchase the machine from this

Canadian company. In addition, I believe that sustainability does not begin with the handing out of products. If Brother Canada were to donate a machine to this project I would ensure that it was not given to a group that would not use it to its full potential and it would only be given if a group or company was determined that they believed having this machine would help them. I also believe it would be detrimental to have someone be in charge of the labeling machine so that there would always be one person to rely on for the machine.

Ultimately, I believe that the idea of labeling machines in Nepal would be of great benefit to many people, but there are some catches. To begin, the price of shipping these products is very high. Also, replenishing these machines with tape and batteries (if needed) can become very costly, which is not realistic. Therefore, I think that there are alternative options that can be made to have this idea implemented in Nepal. One of these options that were highlighted earlier in the paper includes buying products from other countries closer in proximity to Nepal. It is clear to see that there is still a lot of research to in order to ensure that this project is run successfully in Nepal.

Conclusion

There are a variety of ways that Nepal and Canada can both benefit form the trading of materials between these two countries. Nepal will benefit from the improvement of their agriculture. This is very important to this country because agriculture is their main source of income (Devkota, 2013). Also, Canada will benefit from this project because there is the option for products to be purchased in

Canada, which would help with their economy. Nepal is a country that is very skilled in the area of agriculture, but there are many new innovative ideas that can only improve this sector for them.

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