



THE NEPAL PROJECT

Export Idea: Earthway Precision Seeder



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Part 1 Production

Product Description

The product I would like to export to Nepal is the Earthway precision Push Seeder (figure 1). This Product is used for small scale planting here in North America. Typically it can be used for larger gardens or smaller scale farms. This product I had the chance to first see at Bryson



Figure 1 (Earthway 2015)

Farms in Shawville Quebec. This was an organic farm that used the product to plant majority of their seeds. They explain to the tour that product was very useful and accurate way of planting that they had used it as a money saving way. It required more labour then a tractor method but they found it cheaper to put the labour in then to purchase a tractor for their small area of land.

The product has a seed hopper that is to be filled and then seeds fall into the plates which plant the seed at the desired density and depth. (Earthway 2015) The plates can be purchased for specific crops or can be a blank seed plate, which can be customized by the farmer. (Earthway 2015). The product is placed on already tilled land and then pushed through the soil dispensing seeds as it makes its way along in a straight line. This product can work similar to how a tractor and planter would work but for a much smaller scale farm that may not be able to afford the big machinery and tools.

Product Location

The Earthway Company is located in north central Indian, where they manufacture their high quality products in Bristol Factory (Earthway 2015). The products from Earthway are shipped out to the Canadian dealer known as Acklands Grainger which has many local branches across

Canada. The product would be purchased out of the branch 4352 which is near Vancouver, British Columbia. (Ackland 2015)

The Cost

This Product runs on the market for 196.10 dollars CDN. (Earthway 2015) this is 15636.77 in Nepalese Rupees. The other cost associated with this product would be the transportation which will be coming from A1 Freight out Vancouver. It will be coming from the Vancouver dock due to the fact that the Ackland Grainger Dealership will be close by. The cost for shipping one unit across to Kolkata India and then transporting it to Kathmandu Nepal is 63.35 dollars CDN (A1 Freight 2015) this is based upon if there was 1000 units sold or brought over for sale. This would bring the total price for the people of Nepal to come to 20675.55 in Nepalese Rupees.

Market Opportunity

The definition of a niche product is a small product that is able to be sold to a small and specialized market. (Dictionary 2015) This product is far from being a niche product as it focus in on all aspects of agriculture not just specific groups within agriculture. In Nepal currently over 65 percent (MoAD 2001) of the population is involved in agriculture work sector. Also in Nepal, 28.7 percent of the land there is used for agriculture (Data Worldbank 2015), meaning that of the 147 000 km² (California Tech University 2015) 42 200 km² is being used for agriculture purposes.

After looking at how many people and how much land in Nepal there is currently it is not hard to see that this product could be easily sold to a good majority of the population. It is a useful tool that the population can be able to use time after time again and will be able to put

agriculture in Nepal in the right direction. With the numbers looking like this it should be no trouble to sell the goal of 1000 pieces of equipment to Nepal. That is one machine 42.2 Km² in Nepal.

Benefits to Canada

This product has much potential to be an excellent product for the people of Nepal but it is also can help benefit us as Canadians. The first way would be by shipping and selling the product from the dealer here in Canada. As mentioned before we could be sending the product from Ackland Grainger branch 4352. This first of all make sense because the products are being manufactured in North Central Indian which is nowhere near a port for the products to leave from. The shipping cost would increase due to the fact that you would have to airfreight the product. The increase in shipping cost from Bristol would be 203.57 USD (UPS 2015) per product compared to 47.80 USD to ship the product across form Vancouver. The second reason this would make sense to the Canadians more specifically is that it would help keep people in Ackland Grainger employed. This would bring an influx of business to the company. Anytime the people in Nepal are in need of new parts for the product they would go back to their contact in Canada and order from us. This influx would first bring money to the company but as well able the company to hire more people.

Another way this product will be the fact that Earthway gets a few of their parts globally and not from the United States. After emailing Earthway asking where they got their raw material from for the precision seeder product I got a response via email from the North American Sales Manager. He stated that the product was sourced mainly in the USA but they source their fasteners and pneumatic tires globally (Bob Petrungaro 2015). This creates export opportunities

for Canadian Companies. For example Leland Industries. This Company is a leading North American manufacture of fasteners. (Leland Industries 2015) They would be able to export the fasteners for the product without a worry. It would make sense for the company to import from here in Canada because shipping would be cost less for the products.

A final way this can help the Canadian economy is that it will build relationships with the Nepalese government and the Canadian government. Building this trade relationship could make way for more business for Canadian Agriculture Specifically. Nepal is currently looking for more exports to improve agriculture. According to WFP 4.5 million people in Nepal are undernourished. (WFP 2015) The people in Nepal are having trouble getting enough food on the table and Canada may be able to offer good solutions. This solution would encourage the Nepal people to come back for more help.

Part ii Export Potential to Nepal

Nepal Background

In order to understand how this product can be helpful to the people of Nepal we first need to understand Nepal overall. Nepal is a landlocked country in between China and India (figure 2). It has a population of 26 million (MoAD 2011) of which 17 million or 65 percent (MoAD 2011) are involved in agriculture. Canada has 25 million people living in it (statscan 2006) and of that 2.2 percent or 55 thousand are involved in agriculture (stats Can 2006). These number are very important to look and compare because we can see that Nepal is clearly not doing something right. Canada is able to maintain agriculture on the backs of 55 thousand where Nepal is requiring 17 million. Nepal needs to become more productive when working their land. Though

they are smaller than Canada land wise they still have the same amount of people to feed. This product will be able to help out the country of Nepal immensely.

The Consumer

All products require a specific consumer or group of people to

focus on selling this product too. In Nepal 15.1% of the land is arable land. (CIA 2015). Looking at figure 2 we see a map of Nepal with the yellow areas representing the agricultural area. These agricultural areas are mainly in the Taria region of Nepal. There is also small areas in the hill regions where agricultural land can be found. For this reason the focus consumers will be coming from these areas of Nepal. The average head of a household in Nepal is a constant of 44.7 years old in all geographic areas. (FAO 2015). After looking at these stats the products consumer will be 35-50 year olds with established land within the Taria and Hill regions of Nepal. These stats will affect things such as marketing methods

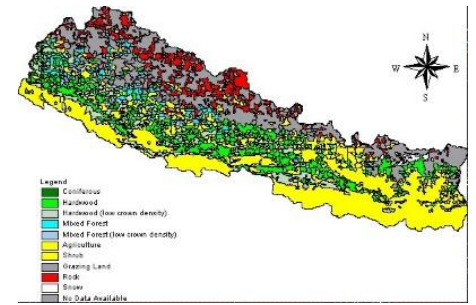


Figure 2 (Environmental Software Service. 2015)

Transport

The transportation company being used as mentioned above will be A1 Freight forwarding. They

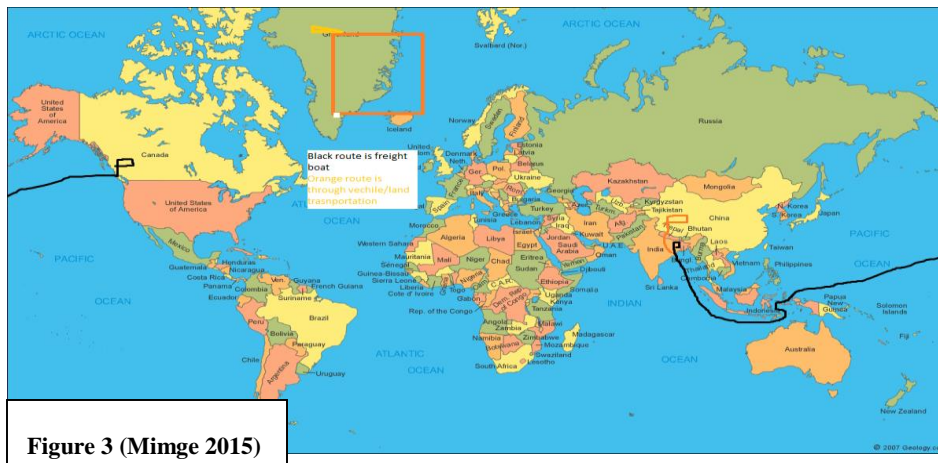


Figure 3 (Mimge 2015)

are a Canadian freighting company that is based out of Toronto. They ship products here from Canada worldwide

through plane or boat transportation. As mentioned earlier it is very expensive to Transport through air freight so it will be shipped using a freight boat instead. Since Nepal is in fact a land locked country and there is no boating ports directly to Nepal. The products instead will be sent to the coast of Kolkata, India (figure 3). Once the products arrive on the docks they will then be sent on transport trucks to the city of Kathmandu (Figure 3). In Kathmandu the products will be brought to the local market and sold to the framers who have come from the Taria and Hill regions of Nepal to purchase new products.

Though after a few months on market in Kathmandu the idea would be to transport this product around to small farm communities around Nepal. The primary method for this form of transport in Nepal right now would be to perform this using animals with carts of product being pulled behind. This may be the only option to get these products out to these farm communities especially those in the hill region. The roads are not developed enough outside of the city for other forms of transportation to work.

Achieving Profitability

This product is capable of paying for itself once the Nepal farmer put it to use. One key word in cash crop to be profitable is high yield. To put it simply, if you do not produce enough crops you will not be able to have financial gain and possible not enough food to go around the family table.



Figure 4 (IRRI 2015)

The first way the product is able increase yield would be the method of farming it is introducing to the farmers of Nepal. To plant seeds there is a method known as broadcasting (figure 4). It is a much less labour intensive method of planting seeds that involves the action of the farmer tossing seeds on to the soil in hopes that they will grow. There is also a method known as drilling/line planting. This method is what would be happening when the push seeder plants that seeds. The method is once again fairly basic with

the planter creating a hole in the ground for the seed to dispensed into a covered up to allow growth. This done in straight lines to help create rows of plants that are hopefully evenly dispersed. Comparing these two methods in research was done by the Canadian journal of plant methods. The experiment took the two methods and applied them too different plots. Then at random they

selected 10 plants from each plot to observe yield components. The Plants planted in drill system showed to be superior with having a yield of 1900 seeds compared to broadcasting plants seed yield of 1600. (Canadian Journal of Plant Methods). In other research done by IRRI shows that plants planted with uniformity will have an increase yield of 25-40% (IRRI 2015). If we take these statics and applied them to Nepal’s average crop yields (Figure 5) we can observe how much extra Nepal could be making. In rice paddy production was at 4 600 000 tons in 2015 where if the method of uniform and drill planting would have been applied we could estimate that there would have been a possible increase in yield between 1 150 000-1 840 000 tonnes. These extra tons could have related to extra Rupees. Rice paddies sell on average at farm gate price for 37 500 per ton. (Index Mundi 2015) this could mean possible increase of 4.3×10^{10} -

Figure 5 (FAO 2015)

Nepal				
Cereal production				
	2010-2014 average	2014	2015 forecast	change 2015/2014
	000 tonnes			percent
Rice (paddy)	4 774	4 789	4 600	-4
Maize	2 135	2 145	2 000	-7
Wheat	1 802	1 976	1 890	-4
Others	369	488	494	1
Total	9 081	9 398	8 984	-4

Note: percentage change calculated from unrounded data.
Source: FAO/GIEWS Country Cereal Balance Sheets

6.9x10¹⁰ Nepalese Rupees in one year. Of course these results would only remain possible if the people of Nepal consider purchasing this product but realistically who wouldn't go for the chance to increase their profit.

The push seeder are currently not only achieving profitability from enforcing the uniform planting method but as well their ability to be accurate while planting. Planting seeds is a science worth perfecting. In the previous paragraph the focus was the method of planting. Furthermore then uniform planting yield can be increased by getting the correct plant depth. Studies performed by the FAO, have shown that each crop has an optimal seeding depth. The trail

examined seeds at the depth of 50 mm and 100 mm. When comparing the yield results of the 50 mm to 100mm planting depth, the 50 mm has a constant advantage to the 100 mm as seen in figure 5. (FAO 2015) The precision seeder ensures that every plant is planted at the correct depth, not to deep or to shallow either. Taking the

results from the research we can see that planting at the correct depth increased the yield by around 12 percent (FAO 2015). Currently in Nepal without the technology to ensure every plant is planted at the correct depth their maize crop produced 2 000 000 tonnes in 2015 (figure 5). Nepal could possibly be getting an extra 240 000 tonnes of maize each year if they planted their seeds at optimal depth. Currently the price of maize in Nepalese Rupees is 17 850 per ton (Index Mundi 2015). This could mean a possible increase of profit of 4.3 billion Nepalese Rupees.

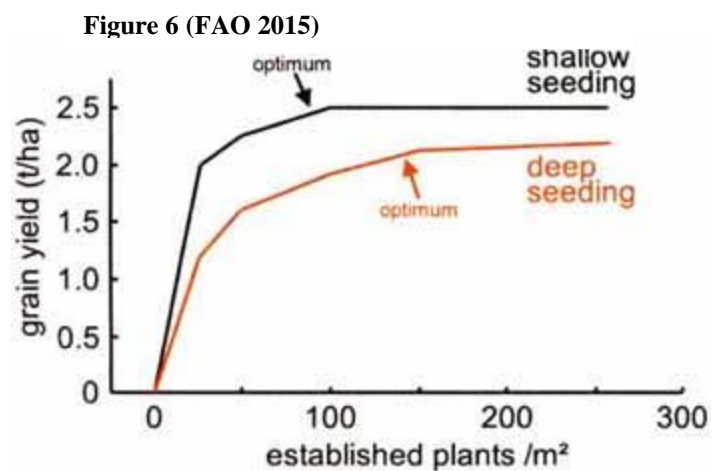
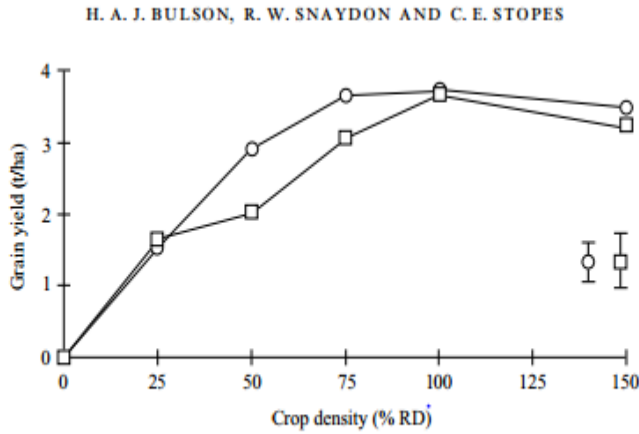


Figure 7 (BULSON H, SNAYDON R, STOPEs C. 1997)



Grain yield (t/ha) of sole-cropped wheat (○) and beans (□), as affected by crop density expressed as a percentage of the recommended sole crop density (%RD). $\hat{\sigma}$ = s.e. of wheat, $\hat{\sigma}$ = s.e. of beans.

Another method increasing is yield having the correct density of seeds when planting.

Research done by Bulson, Snaydon and Stopes has shown that there is an optimal plant density for the yield. This can be observed in figure 7 where their finding from experiment were put into a graph (H.A.J Bulson, R.W Snaydon and C.E Stopes, 1997). Looking at the graph we

can see peaks for each plant observed. The wheat trails it hits peak density at around 75% and then begins a slow decrease. In the beans trail it hits its peak around 100% and begins a slow decrease as well. The earthway precision seeder can be adjusted to create the specific planting densities. Based on top yield results the farmers in Nepal would be able to once again using this tool to help increase yield and profitability.

Finally this product will be able to allow all the farmers a faster method of planting their crops for the year. Everyone has an energy budget to which they have to spend wisely. If you run out of energy and there is still much work to be done then the people relying on the work will suffer. The Nepalese are relying on their farmers to produce enough food. If farmers continue to produce food their profit will go up because there is always people to purchase the food in their population. By giving the farmers a tool that can help them conserve energy in their budget it is helping create a farmer who is more profitable for themselves because they can do more work and create more income for their families. These farmers with more energy are able to input it into planting more crops.

Marketing strategy

Marketing this product to the Nepalese could create a barrier due to the fact that their primary and most common languages spoken in Nepal are Nepali, Maithili and Magar (UNDP 2015). The suggestion for the language barrier would be to have educational brochure distributed to throughout the small communities before the product is marketed in Nepal.

Each brochure would explain the statistical advantages of the product to the consumer using the consumer native tongue and lots of diagrams and pictures for those who are illiterate. As well, they would have information about the purchasing options available to the farmer. Hopefully after receiving these the small scale farms, which this product is focus on helping, would be more prepared to spend the cost required to purchase the precision seeder. At the end of the brochure ideally there would be a tear off piece of paper that the farmer could return to the sales reps indicating their interest in the product. This would all be done in the months prior to shipping over the product in order to ensure that the amount sent over has the market set up to purchase the product.

This marketing strategy would be costly due to hiring of sales reps and the printing of the brochures but this would help spread the word clearly about the product and hopefully explain fully to the purchaser the benefits of the product. Buyers require proper information about something before they buy it and also need to feel trust with in the seller which I believe the contact with a sales rep would help bring this. The success of every product is not always based on its quality and ability to help the consumer. It also is based on the consumer's knowledge of the product.

Competition

The major competition against the Earth way version of this product would be the Anoncn seeder. This product comes from China, the company is called Anon. They are capable of making this product at cheaper prices and they are located in closer proximity to Nepal (Anoncn). The product cost on Alibaba between 25-40 USD (Alibaba 2015). Though these are key factors in deciding which product to go with, the Earthway product defeats them both with quality and ability to work well. The ways that it has been highlighted to increase yield and profit would not really work with Anon's product. The Anons product is used only for corn and doesn't adjust different seeding depth and seed spacing. (Anoncn 2015) The only way this product helps the increase yield is by creating straight rows and increasing the speed of planting the seeds.

The way to deal with competition and allow the Nepal people to see that the Earthway product is superior to the Anoncn would be done through using the marketing strategy. The marketing strategy is a way to help the Nepalese understand the benefits of the product. In this brochure, it could possibly include mention to the other products and explanations on why the cost is increased with the Earthway product compared to the Anoncn. The brochure would strongly emphasize the fact that Anoncn is not compatible with the seeds other than corn. Meaning that major increase mentioned before would not be present with this product.

More than financial benefits

In previous sections profitability of the product was examined. Profitability is not the only thing the precision seeder will bring to the people of Nepal though. Currently the food is becoming scarce, the average household is being forced to spend 59% (UNDP 2011) of their bills on the purchase of food. Food prices go up in correlation with when there is not enough food to go around. People in Nepal have been in search of food for a long time and with the annual

population growth of 2.5% (UNDP 2011), there will be less and less of it to go around. By helping the farmers of Nepal, the food market will begin to grow better. With more products coming into the marketplace each week they may begin to show drop in prices to ensure that everything gets purchased. As those smaller communities that are relying on feeding themselves with their crops will not have to worry as much about empty stomachs in the winter time. They will have hopefully created enough crop for themselves to last into the winter. Looking at the big picture I would venture out to say that realistically, though profitability does matter, the real reason this product needs to export to Nepal is to help improve their quality of life there.

Final words to Canadians and Nepalese

After looking at this product it has been quite clear that it will be a very helpful product for the people of Nepal. It has shown an ability to increase the yields a great deal and create a faster method of planting. It seems to be a solution for the Nepalese if the price is right.

For Canada this product may be difficult to compete with the AnonCNs' version. The fact that the price point of it to the average Nepalese farmer will be much more affordable it will be hard. The most difficult part of it all is Canada does not control the production of the product. They only control the distribution and production of some the raw materials. This makes it harder for us to reduce the price for the manufacturing of this product. Right now the price point is lowest we can possibly make it. This is why the brochure marketing strategy will have to be strongly implemented when bringing this product over. It can be hard to create a true connection with the farmers and people of Nepal form an office in Vancouver. We need to go and explain the best we can just what the product is capable of doing for them. Showing that we care and are

hopefully of helping them may just be enough for their communities to come together and buy a predict that could create a huge profit for the people in Nepal currently. The road may be slightly bumpy but worth bringing this product down to the great people of Nepal.

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