

Canadian Export of Rotary Tiller

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Introduction

This paper was created to analyse the possible benefits and or conflicts that may be presented by introducing a North American made rotary tilling equipment to Nepal. The product information and the potential of the product in Nepal are outlined in two parts of this paper to fully examine all aspects of the export plan. A list of potential competitors and additional charges such a shipping costs are also included. The paper presents an idea and a plan of action to improve farming Nepal by exporting the rototiller. Recommendations based on the products overall projected success or failure are also made to provide the best options for the farmers of Nepal and the exporters in North America.

Part I: Product Information

Product Introduction

Rotary tillers are a type of product used in small agricultural settings to work up a selected plot or field. This product will be analyzed on the potential benefits of exporting the product from Canada to Nepal. These rotary tillers (rototillers) are available with different options such as engine size or overall pass width to meet the demands of different types of soil or land sizes. This selection of products will move farmers of Nepal forward by eliminating conventional, less efficient, methods. This report will discuss the benefits and the faults that are presented in the plan to export this product to Nepal. The details on how and where this product is produced will be addressed along with any competition and logistic conflicts that may occur in the exportation process.

Company Description

The company that manufactures and distributes this product is Yard Machines, a branch of MTD Products Limited, owned by MTD Products Inc. The head office is located in Kitchener Ontario, approximately 30 minutes west of the University of Guelph. MTD was created when they bought Sehl Engineering in 1962 (MTD, 2016). MTD sells product under 10 different related brands across North America, South America, Europe and Australia (MTD, 2016). After

the products are manufactured, they're taken to Quebec distribution center where the products are shipped. Table 1 displays the total revenue for the company during history.

Table #1: displays the total revenue for MTD Products Inc

Income Statement (Mil)	
Revenue	\$2,373.916

Product Description

MTD Products Limited has a large network of brands that all work under their control. Yard Machines, one of their brands, is the producer of the rototiller units up for discussion in this paper. Yard Machines offers many different variants and specially designed products to best fit the need of the operator. With different models or options equipped these tilling units cost approximately \$300 - \$1100 CAD (Home Hardware, 2016).

The most basic model comes with a relatively small engine at 25cc and a tilling width of 10"; this unit costs \$329 CAD (MTD, 2016). A larger option that can cover more ground is the 208cc model. This product has an adjustable tilling width from 13" – 24" and is the most popular seller (MTD, 2016). The last relevant model that has a different approach is the 190cc model. This model is equipped with a higher quality Honda OHV engine and reverse tine rotation; this model sells for \$1'069 making it the most expensive (MTD, 2016). Between these 3 most popular models, there are many options available.

Each product has a designated purpose and ground type and field size would have to be evaluated to meet the Nepalese farmer's requirements. These needs can be compared to the options and models available, presented in Table #2. All the products are simply operated and allow for increased productivity with less strenuous labour. Unfortunately, these products cannot be bought in bulk as they're sold through a retailer such as Home Hardware. For this export idea to be successful, and prices to be competitive, bulk sales from the producer would have to occur.

Table #2: displays each available product accompanied by relevant specs, features and price (CAD)

Yard Machines Tillers		
		
25cc engine 10" tilling width \$329	208cc engine 13"-24" tilling width \$699	190cc Honda engine 18" tilling width \$1'069

Product Inputs & Costs

In addition to the price of the product, there are other costs that will add up on top over time depending on the number of hours on the machine. One of the most basic costs for this machine is the fuel. Each of these rototillers in Table #2 require unmixed gasoline as their source of energy. Gasoline sells for approximately 97 Nepal rupees (\$1.92 CAD) in Nepal. (Nepal Oil, 2016). Another unavoidable cost is the repairs and parts. Parts can be ordered toll free via MTD's authorised part ordering number, 1-844-683-7278 (MTD, 2016). Since the product is a simple design most repairs could be made by the farmer or by a mechanic in Nepal even with limited knowledge on the product. There are many options to keep the product in operating condition with little costs or hassle.

Uses in Canada

These products are used slightly differently in Canada compared to the projected purpose in Nepal. Typically, in Canada, these rototillers would not be used in fields by farmers. More

often they're used in smaller residential plots such as gardens. It would be unrealistic to use this product in a Canadian farmer's fields since they're hundreds of acres in size. This would take a huge amount of time and effort compared to the large equipment that is offered and more commonly used compared to Nepal.

Manufacturing Details

Since MTD is based in North America, most of the products that are sold there are manufactured and assembled there as well (MTD Support, 2015). There are also other parts of the rototillers that are produced in other countries or bought from other countries depending on the situation (MTD Support, 2015). Unfortunately for this project, most of the manufacturing and assembly plants are in the United States of America rather than Canada; resulting in fewer Canadian jobs being created by the exportation of these products to Nepal.

Benefits to Canada

It goes without saying that if enough of these rototillers are exported to Nepal it could result in more jobs. Although most manufacturing jobs for MTD are in the USA, an increase in sales could result in expansion to Canada in the long term. Canada lost approximately 322 thousand manufacturing jobs from 2004 – 2008 and the number of manufacturing jobs has been on the decline since (Stats Canada, 2009). By exporting this product to Nepal there would be an increased market potential to other developing countries which could result in even more sales. With a distribution center already in Quebec, it would be logical to assume a factory could be built near this facility. The process of manufacturing these products in Canada could trickle to secondary markets such as steel mines, manufactures and retailers, shipping companies and more head office jobs. In the long run, the increase in production would increase the amount of manufacturing jobs in Canada along with strengthening the economy.

Part II: Export Potential to Nepal

Description of Nepal

Nepal is a small landlocked country located in Southern Asia sandwiched between India and China (CIA, 2016). The country of Nepal covers about 150 square kilometers of land; this is 94th in world rankings (CIA, 2016). Nepal is most known for mount Everest and their capital city

Kathmandu. Of the 150-sq. km of land, 28.8% is used for agricultural uses (CIA, 2016). The temperature, altitude and landscape varies greatly across the country; therefore, the land is divided into 3 physical regions. Figure #1 displays a map of Nepal that illustrates the physical divisions. The mountains, hills and terai make up the different regions that are farmed in Nepal (Shrestha, 1982). The main source for jobs and in Nepal is dominated by the agriculture industry. 90% of all jobs are related to agriculture over 69% of all production is agriculture based (Belbase and Grabowski, 1985). The mountain regions take up about 25% of the country but very little farming occurs there; 3.4% of all cultivated land is in the mountains (Shrestha, 1982). Most people live in the hill region which covers 47% of Nepal. In the hills, there is a bit more farming happening; 22.3% of the land that is cultivated comes from the hill region. (Shrestha, 1982). The last land region is the terai, this is where the most fertile soil and ideal growing conditions occur. The terai makes up 28% percent of the country and accounts for the largest section of cultivated land with 72% (Shrestha, 1982).

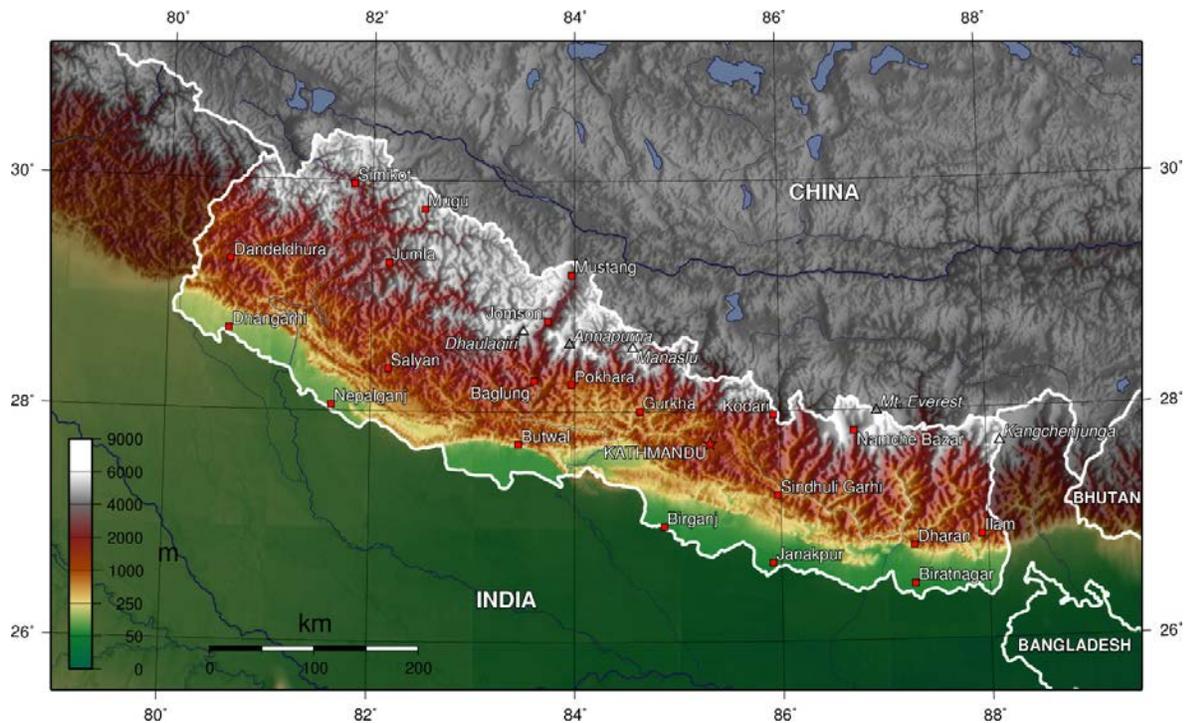


Figure #1: altitude map of Nepal displaying the 3 physical regions

Benefits to Nepal

In the hills and mountains there is an alternate method of farming rather than the conventional methods in the terai. Terrace farming, shown in Figure #2, allows farmers to plant crops on a flat surface even in the hills and mountains. Creating terraces lets a farmer take advantage of different elevations and rain patterns where some crops may grow better than others; most fruit and vegetables are grown in the hills and mountain regions (Rodriguez, 2016).



Figure #2: An example of terrace farming methods in Nepal

The problem with these regions of Nepal is the quality and types of soil that is native to the area. In the mountain region, the soil ranges from rocky to sandy loam and in the hills, clay loam to sandy loam (Chapagain, 2016). The heavier and rocky soil can create a problem when the farmers need to cultivate their land for the next crop. Many of the farmers in Nepal are women and children, as the men leave to work other jobs (Raizada, 2016). Cultivating is done either by animals and a plow or a with a hand plow; which is much more difficult (Raizada, 2016). The Rototiller would be an alternative method to hand plows and animals. In the mountain and hill regions there is much less space available for large, heavy equipment. Since these tilling units come in a variety of sizes the right choice would be made based on the person and the amount of land they own. These units require much less of an input cost compared to an animal and machinery, while also reducing the amount of strenuous labour that results from a hand plow. These rototillers provide an intermediate in the progression of agriculture technology in Nepal since most of the residents cannot afford tractors and other larger equipment.

Transportation

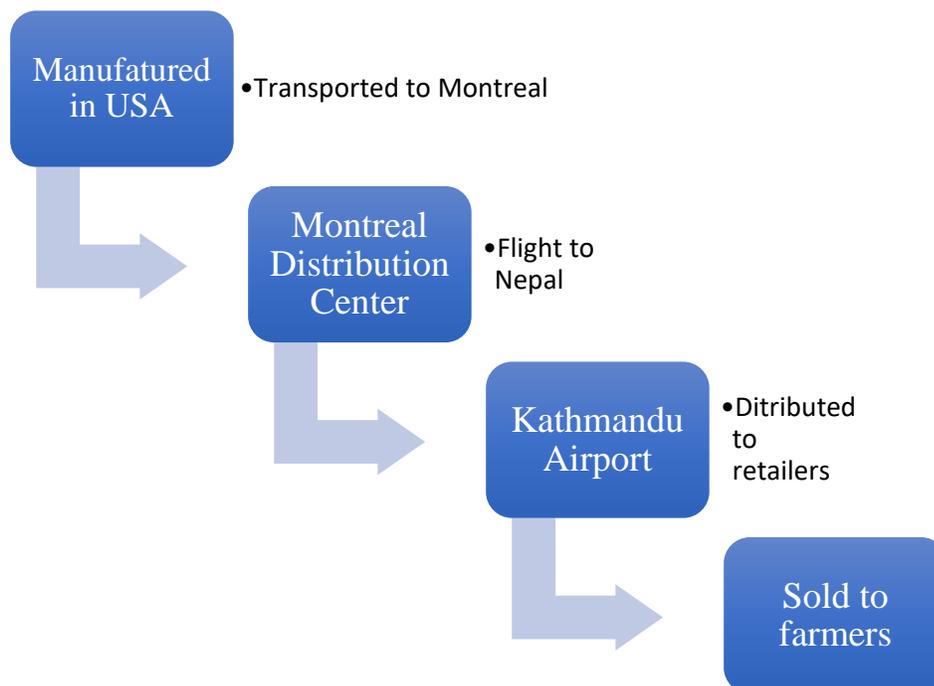


Figure #3: Displays route for the product to travel to Nepalese farmers

Figure #3 outlines a route that the products must take to reach Nepal. Since most of the products made by MTD are made in the USA the pathway starts there. There is no exact location of where the products are made so the whole USA is the starting point. The products will be shipped by the company to the Montreal distribution center by the company; therefore, cost is unknown. To fly 10 products to Nepal via UPS Air Freight Consolidated it will cost about \$2'500 CAD (UPS, 2016). At about \$250 a unit and the price of the rototillers ranging from \$300 - \$1000 CAD the shipping fee increases the price significantly. From the Kathmandu airport, the products would have to be shipped to a retailer or dealer by truck in which cost would vary depending on location; This would further increase the prices per unit

Marketing the Product

In the process of marketing this product to the Nepalese farmers, some obstacles and conflicts may become apparent. Since MTD is largely based in North America it would be hard to present the product and gain attention of farmers in Nepal. Most of the people this product would be targeting in Nepal wouldn't have access to common media outputs such as a television

or billboards to display an ad. The best way to reach out to Nepalese farmers is by sending a representative from the company over to the target region to spread the companies message. One approach to introducing this product to the farmers of Nepalese would be to provide demos. An employee from MTD could allow farmers to try the product for free while also teaching them how to operate the equipment. By introducing the product to some people the word could eventually spread through the villages.

Competition

Although MTD is a leader in small equipment in North America, there are also many other companies that offer similar products. There are many other options other than the rototiller that are available such as continuing with current animal powered machinery or small tractors to pull a plow of larger size. The same retailers that sell MTD products also offer many different brands that do the same thing. Surrounding Nepal is China and India, 2 very large markets that offer products locally. Companies that are closer to Nepal would also have an easier time marketing their products to the farmers. By producing the products locally, the large shipping cost that is associated with the MTD unit would be eliminated. This creates a problem because extra marketing tools would have to be exploited such as those listed above.

Conclusion

In conclusion, this paper outlined the pros and cons and a plan to bring this product to the farmers of Nepal. This product would solve some of the problems that Nepal is faced with currently. It would be best served for the people in the hills and mountain region where terrace farming is utilized. They would be advancing the technology currently available to the Nepalese farming and therefore increasing efficiency. Although there will be many benefits to exporting these products to Nepal there are some issues that make me believe it doesn't make sense for the company or the people of Nepal. Due to the expensive cost of the product and the shipping fees it would be hard for the Nepalese farmers to justify the worth of the product. Another problem is that fuel for the machine is only available in the developed parts of the country; away from most of the farmland. Unless this product could be produced in Nepal or a neighboring country, it wouldn't make sense for the Nepalese to purchase it. For these reasons, I don't recommend exporting this product to Nepal.

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