

PROMOTING CANADIAN AGRIFOOD EXPORTS: **POTATO PEELER**

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I. INTRODUCTION

Potatoes are the 4th most widely grown crop in the world (FAO, 2008). A large portion of the world's population depend upon this crop as a main source of food and income (FAO, 2008). There are many tools that have been developed around the world to reduce the waste created when making potatoes into meals, such as the potato peeler (FAO, 2008). Potato peelers are widely used in North America as a way to remove the outer layer of skin without sacrificing the nutrient rich layer directly underneath (NARC, 2014). While there are hand held peelers that can be exported for use directly by Nepalese farmers, this paper will focus on larger scaled, mechanized peelers.

1. Introduction to Potatoes in Nepal

Nepal is a country with an estimated population of 30,986,975 people (CIA, 2014). It is located between the countries of India and China, and has a total area of 147,181 square kilometres (CIA, 2014). It is a relatively poor country with a 2013 estimated GDP purchasing power parity of \$42.06 billion (CIA, 2014). Nepal's main industries include tourism, textiles, and agriculture (CIA, 2014). Nepal ranks 205th in GDP per capita at \$1,500 per year and is viewed as a relatively poor country (CIA, 2014). This can be attributed to the fact that 83% of Nepal's population live in rural regions (CIA, 2014). Many of these farmers depend upon subsistence farming for most of their income (CIA, 2014).

When the potato spread from the Andean mountain range in the 16th century, it had major impacts as a food and of income source for farmers (Rhoades, 1965). The potato quickly spread to the continents of North America, Europe, and Asia, whose cooler climates favoured production (Rhoades, 1985). Nepal has grown potatoes as a food source for almost as long as Europe (Rhoades, 1985). When France was still debating on whether potatoes could be consumed by humans in 1793, potatoes were being imported into the Kathmandu Valley yearly (Rhoades, 1985).

Today, potatoes rank first in productivity (13.58 t/ha), second in production (25,170,696 tons) and fifth in area grown (185,342 ha) among the other staple foods grown in Nepal (NARC, 2014).

Potatoes are currently grown in all of the agro-ecological zones of Nepal (NARC, 2014). These zones range from the plains in the south, the northern mountains, and the high valleys of the Solu-Khumbu region at over 3,000 metres (Rhoades, 1985). Unfortunately, due to dependence on the Indian markets for price setting and lack of infrastructure, Nepali farmers do not value potatoes as an important commercial crop and rely on it mainly for personal consumption (NARC, 2014). More emphasis on investing in Nepali potato farmers would create an industry more dynamic and competitive than before (Rhoades, 1985). Also, bilateral trade with Canadian companies involved in food processing provides benefits for farmers. Products such as mechanized potato peelers would allow Nepali companies to buy a greater amount of potatoes, hopefully from Nepali farmers (OMCAN, 2014). This would create a stronger domestic market for potatoes in Nepal; benefitting Nepali farmers.

II. PRODUCT INFORMATION

It is important to investigate the products that would be exported. Questions such as the Canadian companies involved, product details, and the benefits to Canada will be inspected in order to judge if the product is realistic for trade.

1. Companies Involved - Canada

OMCAN is a Canadian company responsible for the supply and distribution of various food processing equipment (OMCAN, 2014). The following information has been provided by OMCAN catalogues, and personal contact with Craig Hirst, who is in charge of sales. OMCAN primarily provides two large scale potato peelers; the Model PP15SS which is made in China and the Model DB25HD which is made in Brazil (OMCAN, 2014). Both models are subsequently

shipped to Canada for distribution (OMCAN, 2014). The PP15SS model weighs 155 pounds and processes 1980 pounds an hour (OMCAN, 2014). However, the PP15SS only has a capacity of 33 pounds, and must be refilled as needed (Hirst, 2014). This makes the PP15SS best suited for hotels, or medium to large scale restaurants (Hirst, 2014). It costs \$3,085 for all of the required resources, materials, and labour (OMCAN, 2014). The DB25HD potato peeler weighs 136 pounds and processes up to 1100 pounds of potatoes an hour (OMCAN, 2014). This model is best suited for large scale potato processing operations (OMCAN, 2014). It costs \$6,800 dollars for all required inputs (OMCAN, 2014). These materials are made with various metals, mainly steel (Hirst, 2014). Neither of these products are particularly environmentally sustainable considering the inputs used (Hirst, 2014). The PP15SS and DB25HD are used widely across North America and Europe, are built to last and often come with a lifetime warranty (OMCAN, 2014). See **Figure 1**.

2. Benefits to Canada

Exporting these products would have direct and indirect benefits to Canada. Revenues would increase, benefitting both the company and its employees directly. Also, OMCAN does not currently export to Asia (Hirst, 2014). Doing so with Nepal opens up a large amount of potential markets in Asian countries as well as strengthening the contacts that would exist in Nepal with the opportunity of providing other products to them (Hirst, 2014). OMCAN is a supplier of a numerous amount of other food processing equipment (OMCAN, 2014). Initial trade of the PP15SS and DB25HD initiates what could be a long and prosperous relationship with Nepal and other Asian countries (Hirst, 2014).

III. EXPORT POTENTIAL TO NEPAL

It is necessary to evaluate the export potential of potato peelers provided by a company like OMCAN to gauge whether this trade scenario is realistic. Nepalese companies involved,

logistics, benefits and costs to Nepal, and other international products must all be researched in order to make an effective recommendation for trade.

1. Companies Involved - Nepal

There are a few potential Nepalese buyers that were contacted and could directly use this product. They are divided into two subgroups; snack foods and hotels/restaurants. Rasuwa Industrial Village, C.G. Foods Nepal, Margo Traders (977-01-9851037652), and Warsi Foods (977-01-522372) are potato snack companies with revenues of at least \$1,000,000 located in Kathmandu or surrounding areas. Shangri- La Hotel (977-01-4415754), Royal Singi Hotel (977-01-4424190), and the Hyatt Regency Kathmandu are all high-class, established hotels with kitchens that could support these types of potato peelers. Since this is a rather niche product, a low amount of peelers will be purchased per company (Hirst, 2014). Estimates range from one to five peelers per establishment (Hirst, 2014).

2. Logistics

The logistics required to transport these products to Nepal vary. There is potential for the PP15SS to be shipped directly from China into Nepal once manufacturing is complete to greatly reduce shipping costs (Hirst, 2014). However, due to lack of current communication between OMCAN and Nepal it is unsafe to say that this form of shipment is possible (Hirst, 2014). Alternatively, the products can be flown from Toronto into Kathmandu for the price of \$427 through the Canadian company A1 Freight Forwarding (Quote #77783).

Nepal has some of the lowest tariffs in the world at 10-15% for various items (CSD, 2014). This allows international companies easier access to export into Nepal (CSD, 2014). A duty tariff of 15% and value-added tax of 13% are applied to both potato peelers upon entry (CSD, 2014). After payment both products are allowed entry into Kathmandu and can be shipped directly to the

purchasing companies (CSD, 2014). There is no need for bulk purchasing because of the low amount required by each prospective company (OMCAN, 2014). There is no lowered cost associated with exporting into Nepal large amounts of these potato peelers (CSD, 2014). See **Figure 2**.

3. Benefits to Nepal

Farmers

These potato peelers would increase all of these companies' capacities to process potatoes, leading to increased revenues and an increase in demand for potatoes. When there is an increase in demand without a relative increase in supply, there is a shortage (Adomait, 2011). Shortages in supply result in an increase in price by market pressures (Adomait, 2011). Increased revenues for current potato farmers would result and would also provide an incentive for more potato farmers to enter the market (Adomait, 2011). This in turn would allow potato farmers to purchase useful equipment and technology that is needed to increase production and lower costs (Thapa, 2005). See **Figure 3**.

There are many current issues that face potato farmers that could be eliminated with proper technology (Rhoades, 1985). The need for effective herbicides and fertilizers would help increase yields (Rhoades, 1985). Also, for higher elevation farms, hail can be crippling (Rhoades, 1985). More money for farmers would allow investments into effective shelters for potatoes which would help increase the growing season (Rhoades, 1985). But the main issue that current Nepali potato farmers face is the need for physical labour (Rhoades, 1985).

While some tasks such as ploughing fields are done by men on Nepalese potato farms, the vast majority of labour intensive jobs are completed by women (Rhoades, 1985). Women on Nepali farms are responsible for most of the weeding, planting, and harvesting that occurs on site

(Rhoades, 1985). An increase in potato prices has the potential to directly benefit the women working on various potato farms (Rhoades, 1985). Greater revenues for farmers would allow them to invest in machines and tools that would lower the need for physical labour (SAWTEE, 2006). This would directly decrease the amount of time that women would need to spend on the farm and open up other opportunities (UN, 2012).

With every action there is an opportunity cost attached (Adomait, 2011). An opportunity cost is the benefit forgone that could have been received by taking an alternative action (Adomait, 2011). There is an extremely high opportunity cost in countries where women are confined to physical labour (UN, 2012). The benefits received by the time spent making sure a field is weeded and harvested would be greatly outweighed if that time had been used educating women (UN, 2012). Lowering the demand for physical labour is often seen as setting a foundation for empowering women (UN, 2012). Investing in woman through education and training has been seen around the world as an extremely effective tool of improving economic strength and security (UN, 2012). Often, it has been educating woman that have provided countries with the means to turn themselves from a developing into a developed country (UN, 2012). Greater revenues for potato farmers not only creates opportunities on the farm for technology and investments, but also opportunities for community improvement (Thapa, 2005).

Communities

A major concern in most rural communities in Nepal is the lack of physical infrastructure (FAO, 2011). Lack of sufficient roads, electricity, vehicles, telecommunications, and land are all indicative of an absence of infrastructure (Rhoades, 1985). This is holding many rural communities back from outward opportunities for trade (Rhoades, 1985). Because of the difficulty associated with buying products from these small rural farms, many large companies chose to forego

individual farms in favour of larger, more industrial establishments (Thapa, 2005). Trade with Canada would allow farmers to increase the amount of potatoes that they produce and generate a higher income (Thapa, 2005). It is in the community's best interest to further invest in itself through improved roads and vehicles so that trade can be facilitated with less effort. Lowered transportation costs would make buying potatoes from small communities more attractive to larger snack companies and restaurants (Rhoades, 1985). Increased infrastructure does not only facilitate trade easier, but directly benefits the community as well. See **Figure 4**.

Better infrastructure in communities would increase the standard of living for most Nepali in rural population centres (Rhoades, 1985). Investments could be made into education and rural centres could begin to diversify the professions available and begin to strengthen their communities' economy. This would allow the Nepali people to better compete with other domestic and international markets through lower prices and a diverse workforce (UN, 2012). The benefits from trade also extend to large cities and even Nepal as a country.

Urban Centres/ Nepal

The main companies that would purchase these potato peelers are larger scaled, and thus can have large positive impacts on the Nepal's economy. Firstly, the DB25HD would increase the amount of products produced by participating snack companies (Hirst, 2014). While the initial cost of the DB25HD is high, the benefits could be seen immediately through lowered costs of production (Hirst, 2014). This would allow them to compete not only in their own domestic markets, but allow them to expand outwards internationally in Southeast Asia. Currently the South Asian market is dominated by cheaper snack food companies located in India and China (Rhoades, 1985). Nepal has a potential opportunity to enter this international market to some degree with

better processing equipment; processing that the DB25HD model could provide. Also, the PP15SS has the potential to benefit Nepali restaurants in urban centres.

The PP15SS model is specifically designed for larger scaled restaurants and hotels (Hirst, 2014). Placing the PP15SS into high quality hotels in Kathmandu would increase their ability to incorporate potatoes into high-quality meals (Hirst, 2014). It would also increase their capacity to create food with the high amount of processing associated with these products (Hirst, 2014). The tourism industry in Nepal could potentially be strengthened through improved restaurants and hotels. Another important point is the reduction in waste that both the DB25HD and PP15SS would provide to participating Nepali companies.

Potato peelers are used to remove only the outer layer of skin without sacrificing the nutrient rich layer directly underneath (NCRP, 2014). When potato peelers are used they lessen the time that is required to remove the skin of the potato whilst also reducing the amount of potato that is wasted (FAO, 2012). If companies were to use the various peelers that OMCAN provides, they could see a potential large reduction in waste which would also lower costs and increase production (Hirst, 2014). A reduction in waste could benefit Nepal as a country through increased environmental sustainability (NCRP, 2014). However, there are prospective costs accompanying any action.

4. Potential Costs to Nepal

With any trade agreement, there are benefits and costs. Unfortunately, there is a chance that these products would negatively impact small farm holders. Large potato processing operations could choose to forego small farms in favour of large potato farms. This is mainly due to ease of access, with larger potato farms already having the infrastructure needed to facilitate trade (FAO, 2012). If the larger firms were to collaborate only with each other, a greater inequality

in the distribution of wealth could occur (NCRP, 2014). Nepali farmers would find it even harder to compete with larger operations and could slip even deeper into poverty. However, Nepal's government could mitigate the risk with proper implementation of policies focused on small farm holder investments (SAWTEE, 2006). An example of this can be seen in the government policies used to strengthen the small farmers ability to compete in the CTC tea industry (SAWTEE, 2006).

5. International Competition

There are many companies around the world that also specialize in mechanized potato peelers (Alibaba, 2014). Since the market for mechanized potato peelers is a highly niche market with relatively few companies around the world, comparisons can be made between the various products that are offered. See **Figure 5**.

Canadian products compete quite well with other international companies. This can be attributed to partnerships that OMCAN has internationally in Europe and Asia which helps keeps their products competitive (OMCAN, 2014). It should be noted however, that even larger scaled potato peelers are provided by other companies for similar prices (Alibaba, 2014). Products such as the MTSP-1000 produced in China, and the SY-30 which is located in India represent this (Alibaba, 2014). These companies also have a comparative advantage in shipping costs because of their close proximity to Nepal. There are various assistance programs available to Canadian companies like OMCAN interested in international trade as well as Nepalese companies to help facilitate exchange (EDC, 2014).

III. ASSISTANCE PROGRAMS AND FUTURE CONSIDERATIONS

1. Export Development Canada (EDC)

There are many assistance programs available through EDC to facilitate trade between Canada and other countries (EDC, 2014). Both foreign investment financing as well as foreign buyer financing are available (EDC, 2014).

Foreign Investment Financing

The EDC will consider investment in markets against foreign assets to assist in Canadian expansion (EDC, 2014). The main method of supporting Canadian businesses is financed through a structured loan (EDC, 2014). This is done in two ways. The first method is by financing a loan directly to the Canadian company involved to support its foreign investment (EDC, 2014). The second is to make a loan available to the foreign partner (EDC, 2014). Usually only loans of over \$1,000,000 are done through this method (EDC, 2014). Smaller loans are available through bonding or insurance programs (EDC, 2014). This information is useful should OMCAN require investments to lower costs in order compete with international prices (Hirst, 2014).

Foreign Buyer Financing

EDC also offers loans and lines of credit to foreign buyers interested in trading with Canadian companies (EDC, 2014). These loans are provided to foreign companies over at least two years and can range in size (EDC, 2014). Also, EDC is partnered with the Indian ICICI bank and offers lines of credit of up to US \$50,000,000 (EDC, 2014). While these large lines of credit are not especially realistic for the prospective Nepali businesses interested in buying OMCANs products, it is information worth noting.

2. Future Considerations

It still remains relatively unclear as to how these products will be marketed to these companies in Nepal. Some companies may also be interested in a processing amount that OMCAN does not have a product for. Conversations will need to be undertaken into prospective future associates that would allow an expansion of OMCAN's peeler products. Also, more research should be undertaken into possible government policies that would strengthen the exchange of potatoes between businesses and farmers. This would ensure a bright future for Nepali potato farmers.

3. Recommendations

Both Canada and Nepal would benefit from bilateral trade. This product has the potential to improve the standard of living for Nepali farmers whilst also benefitting Canadian employees. Both Nepal and Canada should be encouraged to investigate opportunities through EDC. Also, OMCAN should begin to amass new associates opening the door to new products. These new products could include smaller scaled potato peelers that could be used by smaller Nepali restaurants who do not have the infrastructure to support the PP15SS or DB25HD model. Also, OMCAN could outsource manufacturing future products to Asian countries in an effort to lower costs.

V: CONCLUSIONS

It will not be this one product that will give Nepal the resources needed to make it into a developed country. However, it is through increased awareness about the benefits of bilateral trade that can hopefully lead to further opportunities between Nepal and countries around the world. Trade will benefit all countries involved. Furthermore, it will give the investments needed to individual farmers, small rural communities, and Nepal as a whole to begin laying the framework for a prosperous economy.

VI. INDEX

Figure 1: Outline of prices and further information on PP15SS and DB25HD (OMCAN, 2014)

	PP15SS	DB25HD
Item #	21870	20637
Manufactured	China	Brazil
Dimensions	18.5" x 18" x 31"	26 3/8" x 21 5/8" x 45.50"
Packaging Dimensions	24" x 19" x 31"	31" x 49" x 52"
Weight	67 lbs	99 lbs
Packaging Weight	147.4 lbs	136 lbs
Processes	33 lbs/ min	1110 lbs/ hr
Best Suited	Hotels, Medium-Scaled Restaurants	Large-Scale Potato Processing Operations
Costs	\$3,085	\$6,800

Figure 2: Outline of costs associated with shipment of peelers (CSD, 2014).

	PP15SS	DB25HD
Initial Cost (All material, Labour, etc.)	\$3,085.00	\$6,800.00
Transportation (Toronto → Kathmandu)	\$427.00	\$427.00
Duty (15 %)	\$462.75	\$1020.00
VAT (Value-Added Tax, 13%)	\$401.05	\$884.00
Total Cost	\$4,375.80	\$9,131.00

Figure 3: Chart showing change in demand with purchase of useful technology (Adomait, 2011).

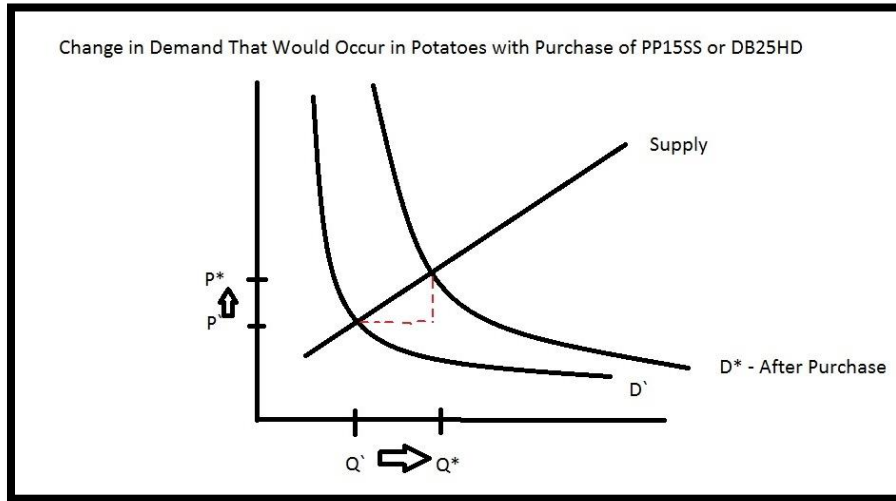


Figure 4: positive feedback loop created by Nepali companies > ability to process potatoes.

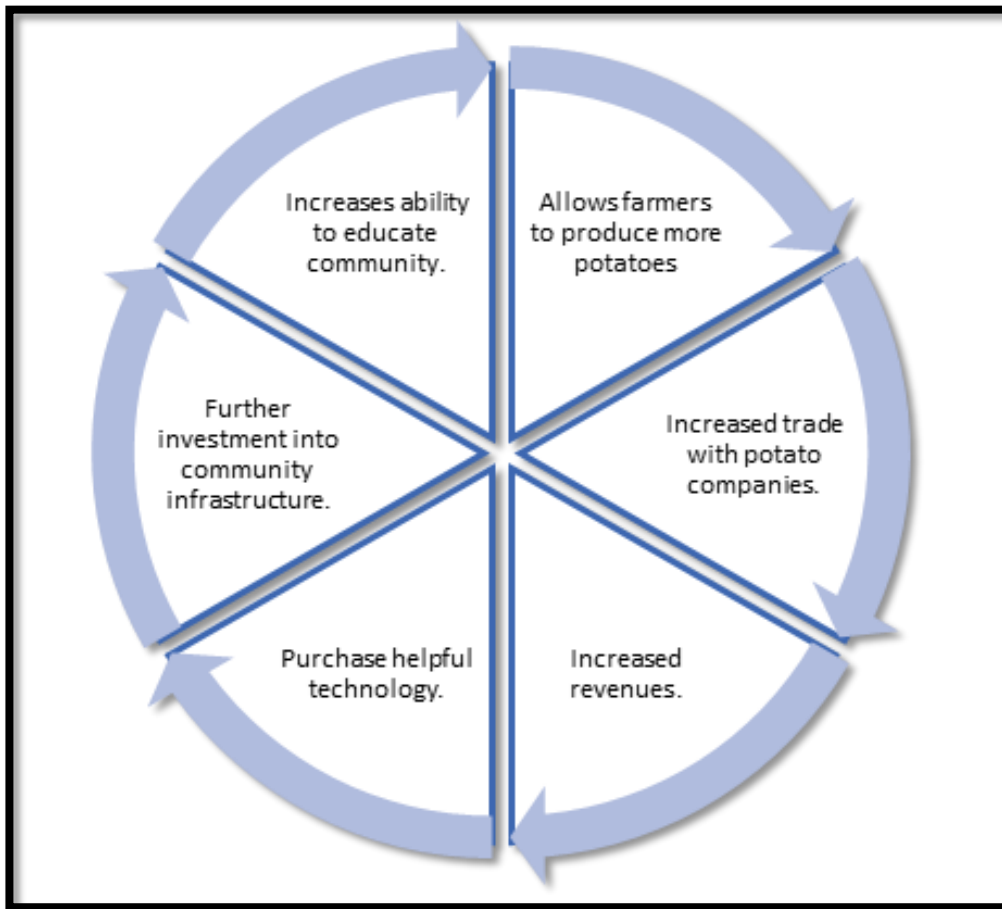


Figure 5: Comparison chart between various potato peelers around the world (Alibaba, 2014).

	PP15SS	DB25HD	MTSP-1000	XCJ-11G-170	DS40	KP-1800	SY -30
Company	OMCAN	OMCAN	ZFFMCL	SAIXIN	NKI	DOFRA	IKLIM
Comp. Location	Canada	Canada	China	China	S. Korea	Netherlands	India
Manuf.	China	Brazil	China	China	S. Korea	Netherlands	India
Dimen.	470 x 457 x 787mm	670 x 549 x 1153mm	2280x 1000x 1200mm	8000x 800x 900mm	600x 600x 1200mm	2410x 1780x 2410 mm	590 x 590 x 1020 mm
Pack. Dimen.	610 x 483 x 787mm	787 x 1245 x 1321mm	NA	NA	NA	NA	NA
Weight	30.4 kg	44.9 kg	500kg	800kg	50kg	1850kg	87kg
Pack. Weight	66.8 kg	61.7 kg	NA	NA	NA	NA	NA
Process	15 kg/ min	504 kg/ hr	1000kg/hr	300kg/ hr	200kg/ hr	1800kg/ hr	1080kg/ hr
Best Suited	Hotels	Potato Process.	Snack Food	Ind. Oper.	Ind. Oper.	Ind. Oper.	Ind. Oper.
Cost	\$3,085	\$6,800	\$7,000	\$10,000	\$8,000	\$14,000	\$8,500

WORD COUNT: 3766

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