The Opportunity to Export Chicory Seeds to Nepal

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INTRODUCTION

Chicory seeds are an excellent product for Canada to produce and export to Nepal. Canadians can benefit by the increased business in seed production and distribution, providing employment opportunities and new financial ventures. Nepal, would receive nutritional benefits the plant provides as well as income from the mass production and sale of the plant. A window of opportunity opens with the trade of chicory seeds between the nations of Nepal and Canada to continue to expand their trade relationship. A critical analysis of potential benefits and limitations to both countries is required to determine if this export/import business could be a feasible option.

PART 1 - PRODUCT INFORMATION AND BENEFITS TO CANADA

Chicory seeds are a small, easy to transport seed, making it a suitable product to deliver to Nepal (de Proft, 2003). When planted, chicory is a fast maturing plant with multiple harvests; the species focused on Cichorium foliosum, family Asteraceae . Production of chicory seeds involves four main steps; pollination, seed production, harvesting in pods and drying (de Proft, 2003).

i) Chicory Seed Production

Cichorium species require insect pollinators (Cornell, 2015). Since varieties of the same species (e.g. chicory, endive, radicchio) will cross-pollinate with each other, producers of chicory seeds need to ensure plants are isolated distances of at least half a mile between the different varieties (Rashid and Singh, 2000). Cross-pollination occurs naturally by insects. Many plants from the Cichorium family are biennials, which take two seasons to produce seed and require a cooler temperature to flower.

Chicory seeds are mulched in late-fall to ensure winter survival. In the spring plants, must be thinned to 18" spacing. Another way to save plants for planting the next year is by harvesting the best roots in the fall. Clipping the tops of the plants to 2" and store between 35-40° F store in a humid location for up to 3 months then replant in early spring with 18" spacing to allow the highest chance of survival in plants (International Seed Saving Institute, 2005). Some specific varieties are annual and can flower and produce seeds the same year. Seed pods are harvested when the plants are fully mature although a small number of seeds can be harvested the first year. When the pods begin to dry and change colour to a light brown, seeds can be harvested. Take special care, not to allow the seed pods to become to brittle and dry completely in the field, with the risk of shattering. Mature plants are harvested and allowed to dry completely in mesh or cloth bags which allow good ventilation for the seed pods. Obtaining high quality seeds and higher yields, means continued selection of healthy, strong strains of the seed, sourcing seeds from reliable sources, nutrition of the soil and seed crops, insect, pest and disease control, cross pollination between plants of the correct variety, along with appropriate storage and drying of seeds (International Seed Saving Institute, 2005).

ii) Producers and Distributors in Canada

There are a large number of small vegetable seed producers and distributors from the east to west coasts of Canada (Seeds Of Diversity, 2015). The companies focused on in this report are Stokes Seeds Limited in Thorold, Ontario (296 Collier Road South, L2V 5B5) as well as Halifax Seed Company in Halifax, Nova Scotia (5860

Figure 1: Chicory Seeds (http://www.americanmeadows.com/wildflower-seeds/wildflower-species/chicory-seeds)

e St) both of which are well- respected companies which benefit from exporting chicory to Nepal. The Halifax Seed company was established in 1866 remained Canada's oldest continuously operating seed company, with just over 60 employees, seeds of the natacha chicory root variety would be distributed in packages of 190 seeds approx. each package costing only $2 CAD (J. O'Hanlon, personal communication, October 19th 2016). Stokes Seeds Limited was established in 1928, and employs 175 people, Stokes is one of the largest distributors of garden seeds in North America, with sale revenues between $10 and $25 million annually (Industry Canada, 2015 and L. Jones, Personal communication, November 23rd 2016). Stokes seeds offer different purchasing options for the seeds, whether bought in a packet similar to the Halifax seed company, costing $3 CAD approx. with about 1000 seeds per packet or purchasing by the pound at $67.85 CAD (equivalent to about 25,000 seeds)(Stokes Seeds Limited, 2016). Chicory seeds are one of their lesser known seeds and they distribute 6 different varieties many of which are useful for different types of growing conditions (Stoke Seeds Limited, 2016). Specifically, Stokes Limited has experience exporting seeds to various areas in the United States, but does not export to other countries (Stoke Seeds Limited, 2016). Selling chicory seeds to Nepal creates a new market for both companies. Using the seeds provided by these two companies would help to increase yields, and diversity in the genes of the plant. Many of the chicory varieties, grow well under cooler conditions, which would be ideal for certain geographical areas in Nepal (Halifax Seed Company, 2016). Having Halifax Seed Company or Stokes Seeds Limited export chicory seeds to Nepal would allow for increased chicory seed production and distribution, which in turn provides a greater number of Canadian jobs, increases the sales and profits of their companies. Two limitations for this to happen were discovered upon further research. The chicory seeds are produced in the United States for Stokes Seeds Limited, and then distributed by the company in Thorold (L. Jones, personal communication, November 23rd, 2016) as well as with the Halifax Seed company which has their seeds produced in the United Kingdom (J. O'Hanlon, personal communication, October 19th 2016). A second problem that arose was, Halifax Seed company is not looking to export seeds outside of their province (J. O'Hanlon, personal communication, October 19th 2016)

and the distribution rights of these seeds were only for North America sales (L. Jones, personal communication, November 23rd, 2016). These are two constraints which would need addressing if Halifax Seed Company or Stoke Seeds Limited pursues the export of chicory seeds to Nepal. Seeds International is another company that sells chicory seeds (Alibaba, 2016). The Alibaba website has only one chicory variety, which also is produced in the United States. The seeds are packaged in poly bags and these bags are placed in a larger bag for storage over time, this holding about 5,000 seeds. Alibaba was established in 1999, and employs 5 to 10 people and with approximately $1 million (CAN) in sales. It appears as well to only be a distributor of vegetable seeds. They do distribute seeds in North and South America, Eastern Europe and Southeast Asia (Alibaba, 2016). This company has export experience and would be able to meet the distribution needs required to send seeds to Nepal, however, it would not be benefitting Canada.

iii) Transportation of Chicory Seed

Being a dry product the seeds will be easier to transport. Shipping involves the seeds being picked up by FedEx to be transported onto a plane then delivered in the capital of Nepal where the seeds could be distributed to clerks to sell at seed coops or given directly to farmers to use in their fields. It would cost about $170 (CAN) to transport 100,000 seeds to Nepal through FedEx, although the more packages added to the order the greater a decrease to ship (FedEx Shipping Rates, 2016). The product would then be transported either by rail or truck to be distributed throughout Nepal. Importing chicory seeds into Nepal requires an import permit and a phytosanitary certificate (International Finance Corporation, 2016). The phytosanitary certificate is issued in Canada prior to shipment (CFIA, 2016). The transportation cost for Canada is feasible when one considers the potential financial return from chicory seed sales in Nepal. Transporting the seeds to Nepal would include obtaining proper identification for products through Canada includes a seed analysis test form 1113 through the Canadian Food Inspection Agency (CFIA), once completed documentation of the test in a tag/label from the CFIA must be affixed to the package.

iv) Competition

Canada would be competing with other major seed producers from China, India, United States and Japan (Agriquest, 2016). Companies based in China and India would be the greatest competitors due to their ability to have low cost labour (e.g. India's average wage for unskilled labour is $7.10 (CAN) per day compare that to Canada at $11.25 CAN per hour, and as it borders Nepal the cost of transportation is significantly lower (India Labour Department, 2016). Recent data indicates that India, Thailand, China, Japan and Korea are the major counties that export vegetable seeds to Nepal (GON, 2012).

Receiving government grants to help with costs could create the possibility of offsetting the costs Stoke Seeds Limited and Halifax Seed company may encounter. By receiving government grants to aid in expanding trade relationships, and developing marketing tools that expand export capabilities. The Canadian Government gives grants through my different streams of business, agriculture and export development (Export Development Canada, 2016). Funding to get this product off the ground could come in forms of grants from the Government of Canada and Nepal, there is $3000 offered to a Canadian-based Entrepreneur if undertaking in activities which support and promote export opportunities for Canada (Government of Canada, Business, 2016). The chicory seeds are a great product for this grant because, of the low cost to purchase and transport the seeds. Transportation costs are low because the weight of the seeds is so small, meaning more can be exported to grow the market larger. A second funding option includes the Market Development and Diversification Program, which aims to encourage the development of target export markets (Government of Canada, Business, 2016). Using a small business grant tool there is possible funding of upwards of $3 million dollars, was calculated (Small Business Grants Canada 2015).

PART 2- CRITICAL ANALYSIS OF POTENTIAL BENEFITS TO NEPAL

i) Facts About Nepal

Understanding the country Canada wishes to promote trade agreements with is extremely important to better analyse the possibility of exporting chicory seeds to Nepal. Nepal is a land locked country situated between India and China (CIA, 2016). The country is approximately 1/5 the size of Ontario. It has a population close to 28 million people (CIA, 2016). One quarter of the population are living below the poverty line (World Bank, 2016). Most of the farming is looked after by women and children known as subsistence farming, where the food produced is consumed by the family and what is left is sold for profits for the family. This is slowly changing and a steadily growing trend is for vegetables such as chicory to be used as a crop, that can increase family income (Kathmandu Post, 2016). In 2015 a devastating earthquake destroyed fields, crops, damaged seeds, reduced irrigation and threatening agricultural production in Nepal (FAO, 2016). The estimated effects of the earthquake included a decrease in Nepal's projected Gross Domestic Product (GDP) by 1.5% (GON, 2016). GDP is a total price of all of the goods and services produced by a country annually (Conference Board of Canada, 2016). The World Bank stated in 2015 that, Nepals' GDP for 2014 was $19.64 billion (US). With a decrease in GDP, Nepalese need assistance from Canada to ensure their GDP does not decrease much lower. This is motivation to create a new export product such as chicory seeds to help the Nepalese people. Specific features of the geography and climate of Nepal favour the growing of chicory (Chapagain, 2016). The three Nepal geographical regions are the Himalayas comprised of mountains, mid hills and terai regions (CIA, 2015).

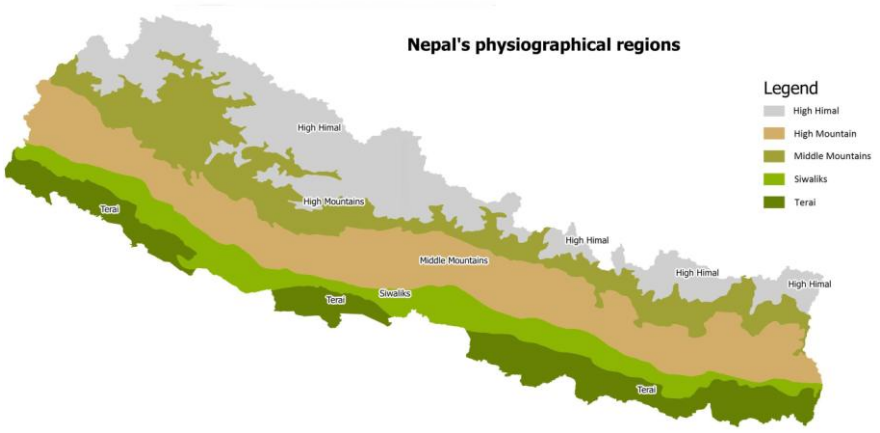

Figure 2: Map of Regions in Nepal (http://lt.umn.edu/earthducation/expedition6/climate/)

The mountain regions have small areas that can grow vegetables (Sharma, 2001). The hilly region is less densely populated and cut by a series of valleys, often terraced for extensive localized agriculture. The topography of the hilly region results in different microclimates which are well suited to specific crops, chicory being one of these (Chapagain, 2016). Chicory is a cool weather crop that requires 58 to 90 days of cool temperatures to grow from seed to maturity (International Seed Preservation, 2005). Many areas of Nepal have cool growing seasons (Chapagain, 2016). The terai are warmer, more fertile land where much of agricultural activity occurs. Overall 29% of land in Nepal is used for agriculture. Agriculture accounts for 70% of the GDP and represents 75% of Nepal's exports.

ii) Chicory Nutrition

There is no question, Nepal would notice benefits from chicory seeds as an imported food source from Canada, with financial benefits as well, such that, production aspects of chicory worked out. Chicory is a highly nutritious food. One serving, 29 grams of whole chicory contains 1.2 grams of fibre, 33% of the daily value of vitamin A, 12% of the daily value of vitamin C and 108% of the daily value of vitamin K (Health Canada, 2016). Recently the chicory root has been linked to having numerous health benefits within the diabetes, allergic or infective diseases, chronic liver disease, inflammation, coronary heart disease and even cancer (Komes, D., Busic, A., Vojvodic, A., Belscak-cvitanovic, A., & Hruskar, M. 2015). Proanthocyanidins, a specific type of antioxidants which has been proven to have numerous health benefits

has also been discovered in this unusual plant (Wang and Cui, 2009). This highly nutritious vegetable would help improve the overall health of the Nepalese people, women and children who are especially at risk of poor nutritional status would benefit well from this plant (FAO, 2010). In Nepal, food shortages are common due to seasonality of when vegetable are ready to eat continually brings up the ongoing issue of malnutrition (FAO, 2010). This is another reason chicory seeds are such can be such a beneficial export opportunity for Nepal, since chicory grows well in the cooler temperatures when other vegetables are not available (FAO, 2010).

iii) Crop Diversification in Nepal

The Nepal Department of Agriculture has put into place a 20-year strategy to use crop diversification to decrease poverty by 35% and increase the rate of growth of agriculture GDP by 5% from the existing 3% (Sharma, 2001). This was intended to help with growth of the economy and would help to increase the jobs opportunities in Nepal. Chicory is a vegetable that fits well with this plan. Small farms have seen excellent profits from new/different types of vegetables as a cash crop (Kathmandu Post 2015). Farmers in the hill region can make a net profit of good profit due to how inexpensive the crop is to grow. Crops like corn for example, give lower returns to hill farmers due to the complexity of growing it in the hills, subsequently these farmers shift to vegetable crops (Kathmandu Post 2015). High quality imports Canadian seeds would ensure chicory would grow well in Nepal's geographical areas while helping to maintain good yields.

iv) History of Seed Distribution in Nepal

Seed production and distribution in Nepal allows Canada to recognize there are many new and exciting export market opportunities. Nepal shows a productivity rate of 12.2 metric tons per hectare compared to other countries with a productivity rate of 30 metric tonnes per hectare (GON, 2011). Reasons for low productivity include, inadequate supplies of high yielding seeds. Canadian chicory seed could help change this situation. The commercialization of vegetable seeds in Nepal started in with radish seeds in

1974 (GON, 2011). The major vegetable seeds produced in Nepal include: radishes, cabbage, onion, mustard, bean, swiss chard and squash. Vegetable seed production has been highly concentrated within four very different areas of Nepal that have suitable climates for growing these crops. Vegetable seed production in Nepal has continued to grow with a steady climb from 1974 to 2016 (GON, 2016). A demand for vegetable seeds has grown rapidly and an increase in demand for new crops and vegetables by Nepalese households, the agro-processing industry and tourists which visit the country. Vegetable seed production has grown to 2,010 metric tonnes in the last 6 years (GON, 2011). Even though Nepal could have its own ability to acquire and produce chicory seeds, Nepal would greatly benefit from importing chicory seeds as they would be unable to produce enough of their own without the resources to get them started.

v) Current Seed Production and Distribution in Nepal

The government of Nepal plays a major role in how the domestic seed market is run and its efficiency. The government of Nepal, initiates the production and supply of seeds. Seed producer groups and farmers also prepare seeds for commercial sale and use. Where the distribution channel does not exist, seeds are supplied from farmer to farmer, commonly done through bartering, for different varieties. This farmer to farmer supply chain is limited and growing smaller as more commercial vegetable farming evolving (GON, 2011). Seed Entrepreneurs' Association of Nepal (SEAN) is the leading organization among seed entrepreneurs that is a private seed firm (GON, 2011), it has more than 180 members who try to improve seed marketing strategies and production/distribution of seeds. Private seed firms also import seeds from other countries and are distributed through the same channels. Fifty percent of the domestic demands for vegetable seeds are met through imports, but for chicory this could be a useful market for integrating chicory into Nepal (GON, 2011). Nepal has 1,400 seed traders that have permission by the Nepalese government to sell seeds which abide by the regulations of the country (GON, 2015). These agents are the source of

vegetable seeds to the market. Most of dealers also sell fertilizers, chemicals, seeds and equipment, which can be very useful in helping the farmers with their specific needs, most are one person companies or family owned. There are a small number of companies that are larger which would act as regional wholesalers or distributors (GON, 2011). One potential company in Nepal that could be a partner in importing chicory seeds is Mega-Agrotech Co. Pvt. Limited. The head office is in Kathmandu with one onsite office and many farm fields which are scattered in the different climate zones of Nepal, this would be useful as Chicory would be delivered to Kathmandu, when arriving in Nepal and Mega-Agrotech would be able to distribute seeds (Business Portals, 2015).

CRITICAL SUMMARY AND RECOMMENDATIONS

Overall the concept of exporting chicory seeds from Canada to Nepal has many potential benefits for both countries involved. To get this idea/proposal brought to life leaders of both countries must take the next step to further the trade relationship Canada and Nepal have built. Nepal needs chicory seeds to consume as well as a crop that could be sold to the public for profit. It would seem logical that the neighbouring countries of India and Asian countries such as China, would be the more likely exporters to Nepal because of their proximity and lower labour cost. Although with further analysis and research into grants Canadian seeds would be able to keep up with demands. The following cost analysis shows potential sales upon which Canadian companies could capitalize. The number of seeds required will be dependant on the number of hectares with averaging around 300 or 1,000 seeds per ha (Stokes Seeds, 2016). Stokes Seeds Limited has a range of prices for seeds from $3 (CAN) to $68 (CAN) (Stokes Seed Limited, 2015). Further research and cost analysis would need to be done to see what portion of the total chicory market could be gained by a Canadian company. The following points further would allow a more complete evaluation of this potential export product.

1) The potential of producing chicory seeds in Canada since most of the seeds distributed by Canadian suppliers have been grown in the United States or

United Kingdom. We need to determine where in Canada the climate could accommodate this crop best to assess chicory production feasibility.

2) Investigation into the potential of either buying an existing US farm or starting one to produce chicory seeds and determine whether available Canadian grants are able to be used.

3) Investigate the potential value of Canadian hybrids to increase seed quality and yields in Nepal.

4) Determine the potential size of the chicory seed market that a Canadian supplier could obtain realistically.

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