

VALUE CHAIN AND SWOT ANALYSIS OF THE MANITOBA POTATO SECTOR.

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ABSTRACT

One of the mainstay of Manitoba's economy is her agricultural industry. The Potato sector within this industry provide over a thousand full-time jobs in the economy; thus it is a major avenue for economic growth. Its continued positive impact on the economy can be optimized by appraising the strengths and challenges of the sector. The Value chain analysis identified production, harvesting, processing and storage, transportation, and marketing, as the main subjects in value addition. Identifying the Strengths, Weaknesses, Opportunities and Threats (SWOT analysis) of the sector is a way of appraising and enhancing productivity in the sector. Large domestic and export market, abundant land for cultivation, and presence of multinational companies were the strengths identified in the study. Limited rainfall coupled with lack of access to irrigation facility were identified as the inherent weaknesses of potato sector in Manitoba. Processing of potato, increased market in South America were major opportunities for potato sector in the province. At the same time, overproduction leading to poor prices, non-availability of quality seed and shortage of field labour were the potential threats to sustain potato cultivation in the study area.

Keywords: Value-Addition, Potato, Processing, Strengths, Challenges, Opportunities

INTRODUCTION

Manitoba extends 761 miles (1,225 kilometers) from the U.S. border to the Northwest Territories with a total area of 160 million acres (64.8 million hectares). The land area is 135.3 million acres (54.8 million hectares), of which 36.2 million acres (14.6 million hectares) or 26.6% have some agricultural potential. Over 23.6 million acres (9.6 million hectares) of this area are non-organic soils and 13.5 million acres (5.5 million hectares) are suitable for sustained annual production of cultivated crops (Honey and Oleson, 2006). The rich soil of the province, coupled with energy availability and innovativeness of the people has positioned Manitoba as a major agricultural producer in Canada; the 2011 revenue from farm for the province is put at \$4.9 billion (MITC, 2012).

According to Saptana (2001), horticultural commodities, especially vegetables and fruits which include potato, have a lot of strategic roles, in that it serves as nutritious food source for the society that contains vitamin and minerals; gives an income and employment; industrial raw materials; potentially export commodities as a

source of foreign exchange; and market for the non-agricultural sector, particularly upstream industry. Potatoes commodity is a one of main agricultural commodity of a most farmers, It is cultivated on almost 20 million ha, producing 320 million tonnes in 2007 (FAO, 2010). Potato production is an important part of Manitoba's agricultural industry, with an annual market value of over \$195 million (2007) and associated economies estimated to approach three times that amount. MASC (2012), shows that Manitoba producers grow different varieties, which are consumed as fries, chips, and whole potatoes, and most production occurring south and west of Winnipeg. Manitoba's potato and other vegetable areas expanded in recent years. The province is the second-largest potato producer in Canada after P.E.I. The harvested area of potatoes and other vegetables peaked in 2003 at 101,500 acres and about 4,700 acres respectively. Production of potatoes was record-high in 2003 at 25 million cwt. with a value of \$163 million (Honey and Oleson, 2012). The aim of this study is to ascertain the strengths, weaknesses, opportunities, and threats of the sector which can be addressed to improve competitiveness. The value chain in approach has been adopted to examine the Potato industry in Manitoba so as to offer support services and suggest areas of improvement. A value chain will be developed to achieve the following:

- identify the main subjects in the value chain
- Identify the challenges and opportunities faced by value chain members
- Identify the Strengths, Weaknesses, Opportunities and Threats (SWOT analysis) of the sector.

Information used for this analysis are mostly secondary data, published literature and surveys. The value chain analysis for the Potato industry in Manitoba include:

Production:

Factors involved in potato production include heat and moisture regimes. The Heat distribution will determine the maturity period as well as the expected yields in the potato growing zones. Moisture regime will also have significant impact on potential yields (MAFR, 2001). The climate of Southern Manitoba is ideal for potato production. Being in a northern growing climate provides more hours of sunlight in the summer. Increased sunlight together with warm days and cooler nights provides an optimal growing condition. The soils of the region provide a good balance of the texture that is desired for potato production as well as good water retention (Southernpotato, 2012).

The soils and climate conditions especially in the southern and western part of Manitoba, makes it a suitable place for potato cultivation, this coupled with access to irrigation and the appreciable length of growing season positions the region as an ideal one for potatoes. Sandy loam soils are very suitable for potato production. Potato seed production require that its growers be isolated from other potato growers so as to maintain seed purity. The Manitoba's potato industry consists of over 120 producers producing potatoes for processing, 37 producing table varieties and 28 dedicated to seed potato. According to Province of Manitoba (2012), the province's expanding potato industry employs over a thousand farm workers.

One major issue at the production level of the value chain borders on the type

of potato to grow. This is a major decision which the farmer must make. However, this decision will be based on the kind of market the potato is meant for. The kind of potato variety required by such market and which generation of seed to plant. In most cases the buying companies e.g. McCains, will have a contract with the farmer on what they want the farmer to grow and the specifications. However, two major markets can be identified in the Potato value (supply) chain, viz: table market and processing market. The varieties for the table markets are predominantly the red types e.g. Norland, Ac Peregrine, Sangre, Norkotah, Burbank and Viking; while the processing (seed) market are mostly Russet Burbank, ranger. Government regulations require that any one growing more than 2 acres must use certified seed (Province of Manitoba, 2012).

In terms of equipment or machinery used in production, the equipment are specialized and sometimes customized for each farmer. The equipment are made to have capacity that will be just right for the acres of land to be planted by the grower. The planters must be properly calibrated to handle the planting material and for proper seeding in the field. The value/ quality of the harvested product are is dependent also on planting at the right spacing and right time (Sullivan and Waterer, 2004).

Harvesting and Storage

Potato harvest at the right time; under the right condition; impacts greatly on the economic value of the end product. Harvesting starts once the crop starts to senescence. Efforts should be made to avoid exposing the potato to frost; harvesting is to be done when the temperature is low so that the harvested crop is not heated up before going into storage. In storing the potato, it must have be sorted out i.e. no bruised one and not heated up or frozen. A few frozen potatoes or those with high temperature in storage can jeopardize the entire pile. The storage facility must have low temperature, insulated with regular ventilation and a separate grading and load out area. The potatoes must be handled carefully and curing is achieved at about 9 – 16 °C and high relative humidity. There is the need to keep the crop in good shape from harvest until sale in spring (Sullivan and Waterer, 2004).

Processing

Apart from being consumed fresh, potatoes are made into a variety of products. About 86 percent of Manitoba's potato crop is used for processed foods, such as frozen French fries and hash browns, mashed potatoes and potato chips. Exports by the three major and one smaller potato processing plants, which employed about 1,300 people, were over \$260 million in 2004 and 2005 (Honey and Oleson).

Through processing, products can be made into more highly priced products; value addition comes in through product transformation. Also, products can be separated on the basis of premium factors that command price such as geographical indicators, organic certification status, flexibility in accommodating customers' preferences; value can also be added through marketing and services. According to FAO (2010), value can be added by offering services such as quality assurance, innovativeness, or supply reliability.

According to Province of Manitoba (2012), there the 3 major potato processors

in Manitoba that are responsible for over 1,000 full-time positions, namely Midwest Food Products, Naleway Foods and McCain Foods. Potatoes are consumed fresh, and are also used in cooking as vegetables, food ingredients, animal feeds, industrial starch, and as seed stocks for next cropping season. The consumption of potato in form of food is gradually moving from fresh to value –added products. The value added products include French fries, used in most eateries. Dehydrated potato flakes have also found used in snacks, while potato flour is used as meat binders, and thickeners in gravies and soup.

Transportation

This includes transportation before and after processing. Transportation is private business matter in the industry. Timeliness of operation is crucial in adding value to the product. If potatoes are harvested and are not moved out from the field before the temperature goes beyond the threshold limit, then the farmer’s effort will just be in vain. The harvested products must be moved out of the farm as fast as possible within a time frame. Hence, the farmers need to be in control of transportation and this can only be achieved when he has his own fleet of operational trucks. Prompt delivery service of crops/ products to clients is a hallmark in business and it impacts greatly on the value of products. It is therefore important for the means to achieving prompt service delivery (transportation) be available.

Final consumption and Market structure.

One of the major outlets for the much value added product in the potato value chain is the quick service restaurants (QSRs). The major processors, who are key players in the sector, are the bridge between the consumer and the farm. This is why they give specifications to the farmers/ growers on the type of produce that is needed from their farms. The processed products would have had value added through packaging, marketing, branding, etc.

Potato is traded at every stage of the value chain. It is therefore imperative to understand the structure of the market at each stage, especially as it relates to the numbers of buyers and sellers, price determination. Also knowledge on what can be substitutes to potato or its alternative is required.

In Manitoba, the marketing of Potatoes is regulated, in which case certain orders and regulations are set in place to control the marketing of potatoes produced in Manitoba. This regulations serves to protect the producers, and also manage the issues related to surplus. Presently, Peak of the Market has agreed with the processing associations to act as agent to sell surplus potatoes destined for the processing market only.

From the foregoing therefore, the SWOT (strengths, weaknesses, opportunities, threats) analysis can be summarised in the Table 1 below. This hopefully will help in developing a strategic plan to make the sector remain competitive.

Table 1: SWOT Analysis of Potato Production in Manitoba

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> 1. The area has the soils and climate needed to grow Potato 2. Large domestic and international market 3. Low pest pressure, extreme climate limits pest 4. Abundant land for cultivation 5. Support of multinational companies e.g. McCain, McDonalds 	<ol style="list-style-type: none"> 1. Climate change / Flooding at spring 2. Short growing seasons 3. Limited local market 4. Frost risk 5. Limited rainfall and access to irrigation facility 6. Transportation 7. Limited local expertise and support 8. Poor marketing
OPPORTUNITIES	THREATS
<ol style="list-style-type: none"> 1. Processed potatoes popular in North America 2. Popularity of Canadian processed potatoes increasing in Asia 3. Increasing market in Mexico based on preference to trade with Canada 4. McCains, Midwest, Lamb Weston are all expanding their facilities hence need for more products/ seeds. 	<ol style="list-style-type: none"> 1. A shortage of potatoes, caused by poor weather conditions 2. Fuel prices 3. Poor prices due to overproduction and poor quality 4. Health concern and potato consumption 5. Field Labor shortages especially at harvest 6. Marketing and Finance 7. Maintain reputation for seed quality

Strenghts

The strenghts of the Manitoba potato lays in her conducive agro-climatic environment e.g.in terms of soils especially in the south which has sandy soils. The soil type makes it easy for root penetration. The temperature regime is not only favourable to the crop but also acts as a check on the high incidence of pest infestation. The relatively low operational cost for industries confers a comparative advantage on Manitoba, hence the citing of facilities of major processors like Midwest Foods and McCain Food in Manitoba. This is a boost to the potato value chain.

Weaknesses

In 2013 for example, the farmers in Manitoba were not able to produce enough potato for the major processors. Some of the processors have had to start making arrangement to get their potato from outside Manitoba. Less land area were cropped due to weather conditions and lack of access to irrigation due to finances. The occasional flood at the onset of spring is a major obstacle for most farmers in that they are delayed from going into the field, their tractors and planters cannot easily enter the farmland during this period. Lack of transportation also weakens the effort of some farmers at meeting market demands.

Opportunities

Opportunities abound for Manitoba to be the foremost potato producer in Canada because processed potatoes are now popular in Canada as well as an increasing market in Asia. The excellent quality of Manitoba potatoes makes it a choice product for the U.S. market. Mexico preference in trading with Canada opens up another market for the product. Companies like McCains and Midwest Foods are expanding their facilities for French fries processing in Manitoba. All these are great opportunities for the potato value chain to be strengthened.

Threats

The push towards strengthening the potato sector might likely be threatened by the climate change being experienced globally. This is likely to cause unreliable rainfall and thus lack of adequate moisture for good crop performance. Labor shortages especially during harvest is becoming a threat to the industry already, coupled with fluctuating fuel market.

CONCLUSION

In concluding, that Manitoba is endowed with natural, human and capital resources will be stating the obvious. Harnessing these great potentials for the development of the potato sector has been weakened by factors such as transportation, crop loss to drought, inadequate market planning. However, opportunities abound within the province to make the province a global factor in potato industry, provided that efforts are geared also to guide against threatening issues like climate and labour shortage, enlarging the domestic market. It is therefore pertinent that the issues raised by this analysis be addressed through concerted efforts in terms of research and development to address the issue of climate change as it relates to flooding; improvement of

irrigation systems, improved processing and storage systems. The development of a formidable R&D strategy, with consideration given to key drivers of the potato sector will not only improve competitiveness, but it will also support the production of quality seed and promote international marketing of the produce, in addition to improving marketing activities. Some other steps that can be taken to establish a more competitive and profitable potato industry is by creating a point of sale information about the nutrition and health status of potato produce. This will help to address the health concerns held by consumers.

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