

Inventory challenge for Agro products (Potato) in Bangladesh and how to overcome it

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Abstract: A plenty of potato are spoiled and damaged every year due to lack of inefficient inventory. Supply chain process is also not much effective on this sector in Bangladesh. The study assessed the handling of inventory system and finding key solution to overcome the post-harvest losses which occurs due to lack of proper forecasting of demand of potato in Bangladesh. The study will discuss how to overcome from this problem and recommend some solutions which could ensure proper price to the farmers so that farmers would be motivated to cultivate this agro product.

Keywords: Storage system, Inventory, Potato diversification.

Introduction: The production of potato is increasing in Bangladesh, but excess production is creating havoc due to a glut in the market. Although, Bangladesh is the eighth largest potato producer in the world and third biggest in Asia, potato is consumed as a vegetable here, where in many countries it is a staple food. According to Bangladesh Bureau of Statistic, over 10 million tons of potato was produced in 2017, and 5.3 million tons was kept in 390 cold storages across the country to maintain a sustainable supply all the yearlong("Scope for Potato Processing Industry in Bangladesh", 2018). At present every year two-thirds of the total produce do not find any space in the cold storage and a part of which is consumed shortly after harvest and the rest is kept in traditional storage at home under room temperature and humidity at farm level. In most cases the excess production goes to waste. The growers have to sell major part of their produces immediately after harvesting at a very low price due to lack of storage facilities and cash need of the growers. Sometimes, ignorance of the growers about the prospect of future marketing of their produce becomes responsible for such type of selling. The growers are the most sufferers due to the existing storage problems of potato in Bangladesh and once they do not get enough economic gain, they may not retain much enthusiasm to go for potato cultivation for the following season. Therefore, it may legitimately be claimed that cold storage plants have a positive impact in augmenting potato production in the country and its emergence as a major cash crop has imperative impact on the national economy. The trend to increase production of potato in Bangladesh is retarded mainly by post-harvest problems among which

storage is an important one. Potato production is directly proportional to its preservation space. Therefore, the emergence of the development of proper storage facilities ie inventory for potato in Bangladesh is evident. Accordingly, the present study has been undertaken. The present study is designed to provide valuable information regarding comparative losses of potato stored under cold storage. The various results of the study will act as a basis for further studies on such problems and also will help as a guideline in the formation of future policies by public decision making authorities regarding the development of storage facilities in Bangladesh. The present study was undertaken with the specific objectives of examining the present inventory system.

Literature review: Inventories in agriculture assume particular features with respect to industrial inventories or incomplete services products. Agricultural products are even constrained to natural events, to their physiological characteristics and some products have a short life cycle. These characteristics influence the producer behaviors who has to face the problem and the costs of storage with the risk of deterioration or damage of products. Furthermore, in the last decade the speculative behaviors in the global market of agriculture materials, in particular the cereals market, is influencing significantly prices of and size of agricultural inventories.

Methodology: Data were collected from secondary sources. Secondary sources are government and non-government organizations, such as Bangladesh Bureau of Statistics (BBS), Bangladesh Agricultural Research Institute (BARI), Department of Agricultural Extension (DAE) and article from different newspaper etc. So the research methodology that is followed is quantitative in nature.

Findings and Discussion: As mentioned earlier every year huge amount of potato is produced in our country, but 25-30% of it can be stored in cold storage. So during the harvesting season of potato there occurs a chaotic situation in the potato industry. Potato is stored in the cold storage to meet the demand of potato over the year. In recent years the amount of potato produced in our country is much more than the demand of the country. So this over production creates uncertainty in the market and as a result in most case the farmers is affected as because they do not get enough price for their produced potato. Currently about 10 million tons of potato produces every year in our country and 5.3 million potato can be stored in the cold storage. The rate of cold storage charge currently is [Tk.400/sack (84 kg.)] and the overall cost of storing potato is Tk. 1400/per sack. But farmers can sell this potato only at Tk.700/800 per sack. So there is a straight loss of Tk.500/600 per sack ("Potato farmers hard done by", 2017). If this situation continues farmers will be discouraged to produce potato in the coming years.

In Bangladesh most of the potatoes consumed is unprocessed. Only 2% of the potatoes are processed mainly in the form of chips and crackers. Bangladesh Agriculture Research Institute (BARI) has so far developed 44 potato varieties. But the majority of Bangladesh's potato production is used for direct consumption. The varieties used for table potatoes are not

appropriate for processing (the dry matter content is too low) or export (foreign consumers have different tastes). According to Bangladesh Bureau of Statistic, the revenue generated from exporting potato was \$33.8 million in 2013-2014 financial year whereas the amount came down to \$13 million in 2016-2017 ("Scope for Potato Processing Industry in Bangladesh", 2018).

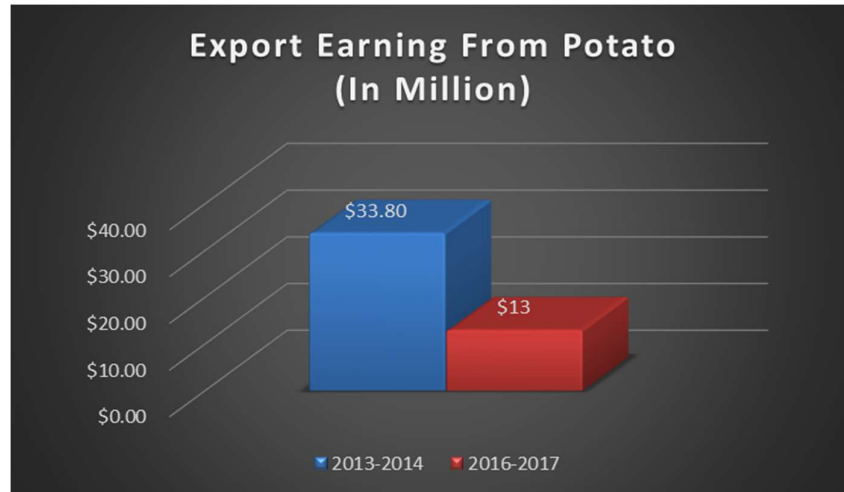


Figure: Showing decline trend of Potato export in recent years.

Currently, there are only a few, around 8-10 established private companies that export fresh or processed potatoes, mostly to Singapore, Malaysia and the UAE and very recently to Russia, Vietnam and Sri Lanka.

Currently, overproduction of potato is seen as a burden from the viewpoint of the farmers. We are concerned about the matter as the poor farmers in Bangladesh work hard to produce the crop but get only financial distress at the end of the day instead of making profit. On the other hand, contribution of this sector to the GDP is dwindling though it has a potential to contribute to the economy.

So how we can overcome from this situation, our main aim is to overcome from the inventory crisis of potato industry. Potato growers, traders and cold-storage owners have to incur losses worth around Tk. 12,515 crore due to the unsold stock of 15 lakh tonnes of potato and low prices in the year 2017. Farmers have produced about one crore tonnes of potato against the demand 80 lakh tonnes("Bumper potato yield turns into a curse", 2017). So it is evident that not only farmers but also the cold storage owners are also facing loss. About 33 cold storage have been closed due to loss.

How to overcome this inventory challenge?

We believe overproduction of potato is not a threat, rather it could be turned into an opportunity by utilising the resources in the processing industry. The following measures can be taken to overcome from this situation

- The increasing demand for processed food products may drive the proper utilisation of the excess potato which can lead to product diversification. In recent years it is evident in Bangladesh that people are more addicted to processed food. Potato is processed to produce some delicious items like potato chips, French fries, potato flakes etc. The

market for processed potato as chips is widely increasing and this product is acceptable among the young and old people of our country.

- Companies should consider making much diversified potato items in our daily food items such as potato soup, hash brown, mashed potato. Besides this research should be done whether potato variety could be invented which people could eat as salad.
- Government should take initiative to bring some of the renowned potato chips making companies in the world to build manufacturing factories in our country as raw material i.e potato is produced much in our country.
- Suitable variety for exporting should be invented and government should look forward to export more potato and find new markets.
- Natural cold storage for potato preservation need to be invented across the country to avoid the problems with the current cold storage system. Wageningen University, the Netherlands has invented a unique method to store potato using natural cold storage system which is a combination of technology and nature("Natural cold storage for potato preservation", 2017). By using the method potato crops could be preserved for six months. Natural wind and light is basically the key to the success where automation is only a means to manage. Moisture and ventilation is maintained through computer programmes. Government should urgently look forward to bring this system in our country.
- Frequent undue price fluctuations create uncertainty about the market price and enhance risks in potato production as well as potato business. For stabilising potato prices, forecasting of potato prices and target production should be made in time before sowing, so that the farmers can adjust potato acreage accordingly. With successful operation of a buffer stock, price instability may be reduced.
- Potato is consumed as a vegetable in Bangladesh. Per capita consumption of potato in Bangladesh is 24kg where as in other countries it is much higher, if percentage of potato consumption is increased pressure on rice would reduce. Hence potato can play an important role in the food security of Bangladesh. The per unit consumption of some other countries compared to Bangladesh is given below in the graph.

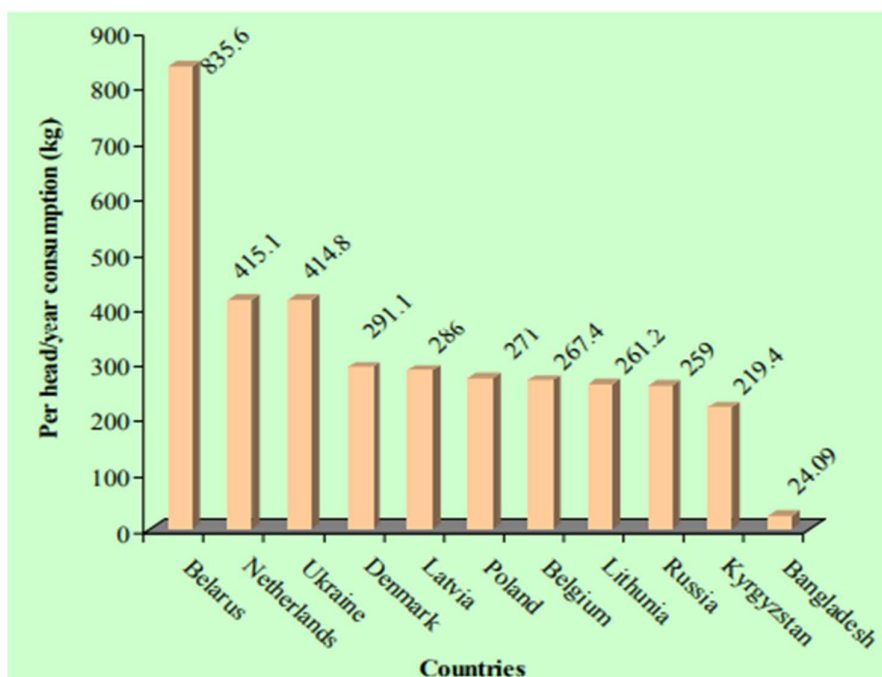


Figure: Per head per year consumption of potato in Bangladesh (24.09 kg) compared to some other countries of the world ("Potato Value Chain in Bangladesh, information and Knowledge gaps of smallholders", 2011).

Conclusion:

In Asia basically in the Indian sub-continent the potato is an important vegetable in diet and it is used in almost every dishes. The potato in these countries fills a role in diet diversification and improved nutrition. Potato has a great prospect in Bangladesh, it can be one of the foreign currency earning vegetable if government takes proper initiative to develop the variety and increase fund to establish new cold storage. However, it is a matter of great regret that our farmers fail to get back even their production cost. Cost of productions is higher, but the price of potato is very much lower at the time of harvest. So, farmers become the ultimate loser. Most of the potato farmers have failed to get back even 30 percent of their investment in recent years, which has created a shocking situation for them and many farmers turned their face from this crop. Behind all these problems, inventory crisis is playing a vital role. Why we are lagging behind from initiating the natural cold storage in our own country is a now a great concern for us. The main challenge behind producing potato is the preservation of it. In Bangladesh, to save farmers from wastage of their produce, public-private partnership and funding would make it easier to build such platforms. This is not a costly venture and through this we can save a lot of farmers and a lot of produce. We have to be sure about the security of our crops as well as of our farmers. The sooner we look into this, better the result will be.

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