Agriculture (Potato) Productivity & Profitability Analysis

A Thesis

By

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Student No. E 130501098

1st Batch, Semester-v

Major in Accounting & Information Systems

HSTU, Dinajpur

MASTER OF BUSINESS ADMINISTRATION (EVENING)

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ABSTRACT

Bangladesh is predominantly an agricultural country. Agriculture is the indispensable culture of Bangladesh. Agriculture has a enceinte contribution to the Gross Domestic Product (GDP) of the country. Earlier more than 50% of GDP came from this sector. Various types of crops are produced in this country. These crops might have been categorized into two-food crops and cash crops. Potato is one of the food-stuff of the most people of the world as well as Bangladesh. Potato crop is being treated as foremost crop. This study was conducted to approximation the cost of production and profitability of potato producers at Dinajpur district. Data collected from 20 farmers using simple random sampling technique. Most of the respondents used cardinal variety of potato seed and sell their output at home. Farmers who sell potato in the market were more profitable than others. The study also designates that the large farmers were most profitable compared to others. Major problem faced by the potato farmers were lower price of potato during harvesting period, price fluctuation , shortage of capital, high charge of cold storage, lack of good quality seed, perish ability of potato, poor storage facility, higher price of inputs and lack of marketing facility etc. Proper steps should be postulated by Government to puzzle out this problem. The determinations of the study will generate basic economic data on the production practices of potato. At long last it will be helpful to the planners and policy makers in contriving micro or macro level policy for the enlargement of potato production in the country.

INTRODUCTION

Bangladesh is mainly an agricultural based country dominated by crop production. Agriculture is the main stay of the economy of Bangladesh. Bangladesh enjoys generally a sub-tropical monsoon climate. Bangladesh has been famous for growing large variety of tropical crops particularly rice, wheat, potato, jute, pulses, oilseeds, sugarcane etc. Potato is one of the most important food crops grown in more than 100 countries in the world .Over one billion people consume potato worldwide and it is the staple diet of half a billion people in developing countries. Potato ranks fourth in the world (325.30 million tons) and third in Bangladesh (8.0 million tons) with respect to food production. Because of the dry matter, edible energy and edible protein content, potato is considered nutritionally a superior vegetable as well as a versatile food item not only in our country but also throughout the world. Potato was introduced in this subcontinent in the sixteenth century. It was grown then in small plots as a vegetable. Potatoes have been grown in Bangladesh since at least the 19^{th} century. By the 1920s, the first commercial production of the crop was established in the country

Although Bangladesh is on course for Middle Income Country status by 2021, agriculture remains the largest employer in the country by far; and 47.5% of the population is directly employed in agriculture and around 70% depends on agriculture in one form or another for their livelihood. Agriculture is the source of food for people through crops, livestock, fisheries; the source of raw materials for industry, of timber for construction; and a generator of foreign exchange for the country through the export of agricultural commodities, whether raw or processed. It is the motor of the development of the agro-industrial sector including food

processing, input production and marketing, and related services. As main source of economic linkages in rural areas, it plays a fundamental role in reducing poverty, which remains a predominantly rural phenomenon. The role of agriculture is also fundamental in promoting nutritious diets, especially in the countryside where production and consumption patterns are closely linked. According to the HIES (2010) 35.2% and 21.1% of the population in rural areas lives below upper and lower poverty line respectively. It also plays a fundamental role in the sustainable valorization and preservation of natural resources and in preserving and promoting the resilience to natural calamities and climate change of rural communities and agro ecological systems. However, as Bangladesh develops, and other sectors grow (such as readymade garments), the share of agriculture in Gross Domestic Product (GDP) has naturally declined. During the fiscal year 2013-2014, the broad agriculture sector1 contributed 16.77% to the total GDP. The contributions of crop, fishery, livestock and forestry subsectors in GDP were 9.49%, 3.68%, 1.84% and 1.76% respectively. The provisional estimates show that contribution of the broad agriculture sector to GDP in 2015-2016 would be 16.33% (BER 2016). Nearly three fifth of the agricultural GDP comes from the crop sub-sector; the other contributors in order of magnitude are fishery, livestock and forestry.

IMPORTANCE OF POTATO IN THE ECONOMY OF BANGLADESH

Potato is an important cash crop and a multipurpose food crop of Bangladesh . It is used not only in human diet but also in other purposes. Besides it is used as food and vegetable, it is highly used in industry for various purposes. It is used for making gum, starch for adhesives and other purposes, in textile and paper industries, for processing ink, dyes, toys, soap and for leather processing. Glucose and dextrose are prepared from potato for use in medical treatment. Lactic acid, alcohol and some other chemicals are now being produced from potato. In terms of nutritional potential, it ranks first among the 10 major food crops in calories production per unit area of land. It is also considered as an excellent source of vitamin B and C. The role of potato in relieving food shortage in the country deserves special attention. In Bangladesh potato is still considered merely as a vegetable, i.e. as a complementary food with rice and wheat but not as a staple food it is regarded as one of the world's leading food crop. It is now well recognized that to meet the demand for food for increased population, dependence on rice and wheat has to be reduced and the food habit of the masses have to be diversified. The food problem is one of the most critical aspects of Bangladesh struggle to achieve economic growth, rate of inflation, poverty and nutrition, the trade balance and the Government's fiscal position.

Food grains are a main consumption item in Bangladesh accounting for about 35 percent of total consumption expenditure and provide more than 80 percent of the total calorie intake. Bangladesh has long been striving to achieve food self-sufficiency by setting production targets through the successive five year plan. Virtually, cereal production stood at

approximately 30.7 million tons in 2015-2016 and the country attained self-sufficiency in the recent past. Potato has been perceived to play an important role in improving this situation by providing more balanced diets to increase nutritional quality of food. The world per hectare yield of potato is about eight times that of rice and wheat and it can also produce over twice as much as dry matter and calories on a unit area of land in shorter period of time compared to rice and wheat. Besides, due to the scarcity of cultivable land, it is not possible to increase the area of any crop without affecting other crops. This means that the additional food requirement for a growing population has to come from vertical expansion. Potato has a good prospect on food expansion program depending on the strategy adopted to increase food supply of the country . Increased potato production will provide more low-priced calories food for human consumption. The adoption of potato as wheat flour substitute for bread would be beneficial to the Bangladesh economy particularly in its nutritional value. It will increase supply availability for starch and processed food. It can replace important cereals such as rice and wheat thereby reducing the foreign exchange requirements. It can contribute to create rural employment opportunities through the development and expansion of potato industry.

OBJECTIVES

- Agriculture Productivity & Profitability Analysis.
- Focus in Potato sector.
- To describe the socio-economic characteristics of potato producers in the study area across farm size.
- To describe the profitability of potato production across farm size.
- To suggest policy implications for improvement of potato production in Bangladesh.

METHODOLOGY

The survey method is the most widely used formal method obtaining farm management data. This chapter discusses about the selection of the study area, period of the study, sampling technique and sample size, data processing and analysis.

Selection of the area*:* Dinajpur district was selected purposively as a study area because this district is one of the leading potatoes producing area of Bangladesh. A preliminary survey was conducted in some villages of Dinajpur district at Biral Upzilla to gather primary knowledge about the potato production, productivity and efficiency of the potato growers. After preliminary visit five village's namely Mostafabad, Mutukpur, Norshingpara, Laximpur & Nehalgram were selected randomly as the study area. Most of the farmers in these villages used to produce high yielding varieties of potato and sell their product to different middlemen. The main criteria behind the selection of the Biral Upzilla were as follows: the selected Biral Upzilla was a good vegetable producing area; the researcher is familiar with the language, living, beliefs, and other socio-economic characteristics of the villages of this Biral Upzilla; previously such type of study was not conducted in this area.

Period of the study*:* Data for the study were collected from winter and summer season of 2015-2016.

Selection of the sample and sampling techniques*:* A random sampling technique was applied for selecting sample. Through random sampling 20 farmers were selected for the study. Among the 20 farmers, 4 were small,5 were medium and 11 were large. Farm size was arbitrarily

classified on the basis of their land where they produce potato and other crops. Farmers having 0.01-0.5 acre considered as small, 0.75-1.00 acre as medium farmers while those having above 1.00 acre as large farmers.

Sources of Data*:* The study is involved in collection of data both from the primary and secondary sources. Different types of data and their sources are discussed under the following heads:

Primary Data: Primary data were collected by the researcher themselves through personal interview with the respondents. To attain accuracy and reliability of data, care and caution were taken in data collection. The researcher's took all possible effort to establish a congenial relationship with the respondents do not feel hesitation or hostile to furnish correct data. Before interviewing, the aims and objectives of the study were explained to each and every owner of the potato growers. As a result, they were convinced that the study was purely an academic one and was not likely to have an adverse effect on their business. During data collection an attention was also paid to the mood of the owners of the potato growers.

Processing and analysis of data*:* Collected data were scrutinized and summarized for the purpose of tabulation. Two techniques of analysis were used in this study, tabular and statistical. Analysis by tabular technique included socio- economic characteristics of potato farmers, classification of size of potato land, production practices, inputs used and returns of potato farmers. Statistical analysis was used to show the effect of inputs used and other related factors of potato cultivation. Enterprise costing and gross margin analysis technique was used for calculating costs and returns for potato cultivation

FINDINGS

All data conducted an economic study on potatoes production in some selected areas of Dinajpur district of Bangladesh. They estimated the average production of potato per acres 280.58 and the average net profit without rented per acres at TK. 62359.1837 and with rented per acres at TK. 47588.4058. On the other hand the average total expenditure (1201500/17.25) = 69652.1739 and average total sales (2022400/17.25) = 117240.58.

All data conducted a survey on potato production in some selected areas of Bangladesh. This study showed that potato production is highly profitable and it could be provide cash money to farmers. In terms of profitability, potato production was more attractive than any other winter vegetables. Per unit yield and gross return of potato were found higher than other competitive crops.

CONCLUSIONS

Bangladesh is the fourth largest potato producer in Asia and is among the top 15 of the potato producing countries of the world. It ranks third in area acreage after rice and wheat and is cultivated in almost all agro ecological regions of Bangladesh. In addition, potato ranks second after rice in production in Bangladesh. In the last five years, Bangladesh produced, on an average 7 million MT of potato each year. The findings of the study that net profit without rented per acres at TK. 62359.1837 and with rented per acres at TK. 47588.4058.. This research shows medium farmers cultivate more land but net profit is highest for large farmers. Because most of the large farmer sell potato in the market. Therefore, it can be said that net profit largely depends on marketing. Farmers get higher price at market than selling potato at Home. Transportation facilities should be improved to facilitate the marketing process. Priority should be given to the development of such roads which link villages to the main roads and markets. Most of the farmers are illiterate. Dissemination of market information should be increased so that farmers can get fair price of the potato. Potato farming is assuming a greater dimension, however bringing pressure on the government to expand its use as alternative food in the domestic sector while looking for greater export markets in overseas trade.

Agricultural Productivity & Profitability Analysis (Potato)																				
Questionnaire from Farmers																				
How much Land do you		Acres of land(Potato)		Rented land	Produce (mound)	Observed	Revenues	Expenditure										Cold Cost	Percentage	Expected
Own	Lease In	Own land	Rented					Machinery	Labor cost	Seeds and plants	Fertilizers	Herbicides	Harvest	Energy	Rent	Total expenditure	Net profit		5%	
1	0.5	0.5	0.5	6000	260	400	104000	4500	2400	28000	18000	8000	2800	1600	6000	71300	32700	5500	5%	800
1.5		0.5			145	400	58000	2500	1250	14000	9000	3500	1250	1000		32500	25500	2750	5%	
1	1	0.5	0.5	6000	290	400	116000	5000	2500	28000	18000	8000	2500	1600	6000	71600	44400	5500	5%	
0.5		0.5			140	480	67200	2500	1200	14000	9000	3500	1400	800		32400	34800			
2		1			245	480	117600	4000	2000	25000	26000	6000	2800	800		66600	51000	5000	5%	800
1		0.5			140	440	61600	2500	1200	14000	10000	4000	1400	1000		34100	27500	2750	5%	
	0.5		0.5	6000	150	440	66000	2500	1200	14000	9000	4000	1400	800	6000	38900	27100	5500	5%	
0.5			0.25		60	440	26400	1200	650	7000	5000	1700	650	400		16600	9800			
2	1	0.5	1	12000	420	400	168000	7500	3750	42000	27000	11000	3750	2400	12000	109400	58600	8250	5%	
0.5	1		0.5	6000	140	400	56000	2500	1250	14000	9000	3500	1250	800	6000	38300	17700	2750	5%	
2	0.5	1	0.5	6000	420	400	168000	7500	3600	42000	27000	11000	3600	2500	6000	103200	64800	8250	5%	
3		1.5			420	400	168000	7500	3600	42000	27000	11000	3600	2500		97200	70800	8250	5%	
2	1	0.5	0.5	6000	260	400	104000	5000	2500	28000	17000	7000	2500	2000	6000	70000	34000	5500	5%	
5		1			280	400	112000	5000	2500	30000	20000	7000	2500	2000		69000	43000			
4		0.5			130	400	52000	2500	1250	14000	9000	3500	1400	800		32450	19550			
2		1			300	440	132000	5000	2500	30000	22000	8000	2500	2000		72000	60000			
1		0.5			140	440	61600	2500	1200	14000	9000	3500	1400	800		32400	29200			
3		2			600	440	264000	10000	5000	60000	40000	14000	6000	4000		139000	125000			
0.25	0.25		0.25	3000	75	400	30000	1250	1000	7000	4000	1800	1000	800	3000	19850	10150			
1.25	0.5	0.25	0.5	6000	225	400	90000	3750	1875	21000	13000	6000	1875	1200	6000	54700	35300			
33.5	6.25	12.25	5	57000	4840	8400	2022400	84700	42425	488000	328000	126000	45575	29800	57000	1201500	820900	60000		1600

Total= 17.25

Average Produced(Per Acres)= 4840/17.25=280.58; Total Profit= 2022400-1201500=820900; Average rent (Per Acres)= 57000/5=11400; Average Profit with rented (Per Acres)= 820900/17.25=47588.4058; Average Profit without rented (Per Acres)= {820900-57000=763900/12.25}=62359.1837; Average total expenditure =(1201500/17.25)=69652.1739; Average total sales =(2022400/17.25)=117240.58