

Thesis Paper On

Agriculture (Potato) productivity and profitability



Submitted To

Md. Reiazul Haque

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Submitted By

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This thesis report submitted to the faculty of business studies Hajee Mohammad Danesh Science and Technology University, Dinajpur, in partial fulfillment of the requirements for degree of MBA (Evening).

Faculty of Business Studies

Hajee Mohammad Danesh Science and Technology University,

Dinajpur-5200

Letter of Transmittal

Date: 09.05.2016

To,
Md. Reiazul Haque
Assistant professor
Department of Accounting
Faculty of Business Studies
HSTU, Dinajpur.

Subject: **Submission of Thesis Paper.**

Dear Sir,

It was a privilege and great pleasure for me to submit my Thesis paper titled “**Agriculture (potato) productivity and profitability**” that has been prepared as an essential part of my degree requirement.

As you know, I had completed my Thesis in Dinajpur District which I got the chance to prepare my Thesis paper on the above topic. While preparing this report I went through broad literature assessment and discussed with local farmers. Surely ahead of any doubt it improves my understanding and also builds up my learning skill.

I hope to meet your expectation from this paper. I would be obliged to receive your propositions and remarks regarding this.

Sincerely Yours

.....

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STUDENT'S DECLARATION

I, Bebi Naznin, student of Masters Business Administration (Evening), HSTU University, hereby state that the report offered in the name “**Agriculture (potato) productivity and profitability**” Dinajpur District, Dinajpur, has been prepared and carried by me under the supervision of Md. Reiazul Haque , Assistant professor Department of Accounting ,Faculty of Business Studies, HSTU, Dinajpur. I also state that no part of this report has been or is being submitted elsewhere for the award of any degree.

.....

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Supervisors Declaration

I hereby declare that the concerned thesis report entitled “**Agriculture (potato) productivity and profitability**” Of Dinajpur District, Dinajpur , is submitted by Bebi Naznin, Student ID:E-130502102, MBA (Evening) ,Major in finance, Batch 2nd , Semester-V, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, completed his thesis paper under my supervisor and submitted from the partial fulfillment of the requirement of the degree of Masters of Business Administration (MBA evening) at HSTU, Dinajpur.

I wish her every success in life.

.....

Md. Reiazul Haque

Assistant professor

Department of Accounting

Faculty of Business Studies

HSTU, Dinajpur

Co-Supervisors Declaration

I hereby declare that the concerned thesis report entitled “**Agriculture (potato) productivity and profitability**” Of Dinajpur District, Dinajpur , is submitted by Bebi Naznin Student ID:E-130502102, MBA (Evening) ,Major in finance, Batch 2nd , Semester-V, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, completed his thesis paper under my co-supervisor and submitted from the partial fulfillment of the requirement of the degree of Masters of Business Administration (MBA evening) at HSTU, Dinajpur.

I wish her every success in life.

.....
Shahnaz parvin
(Thesis Co-Supervisor)
Assistant Professor
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First, I remember Almighty Allah for helping me to successfully prepare this report. I am thankful to the every farmer that has assisted me by giving efficient preferred information from their portal. I shall have to put my heart rendering respect and appreciation for the consideration and co-operation which is given to complete my project work assigned report on the topic “**Agriculture (potato) productivity and profitability**”.

I express my profound thanks to Md. Reiazul Haque , HSTU, for being a co operative and very accommodating advisor and providing me appropriate direction in carrying out my Thesis Paper, as a part of the obligatory prerequisite for the Masters of Business Administration (Evening) Program.

Finally, I would like to humble thanks to all of my family members who gave me physical, psychological and economical supports to complete my MBA (Evening) Program.

.....

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Agriculture (Potato) productivity and profitability

Abstract

Potato is one of the important food crops in Bangladesh. Its demand is increasing day by day. The Tuber Crop Research Centre (TCRC) of BARI released 40 HYV potato varieties and disseminated them in the farmer's fields through different agencies. But most varieties were not adopted well by the farmers due to unknown reasons. Therefore, an attempt was made to assess the level of adoption and profitability of BARI released potato variety at farm level. Data were collected from 14 randomly selected potato farmers from Dinajpur districts during January-February 2016. The results indicated that 31% potato areas were covered by Diamand variety, 7% by Cardinal, 35% by Granola, and the rest 7% areas were covered by Lalpakri. The major share of total cost was for seed (42%) followed by fertilizer (21%) and human labour (14%). The average cost of potato was 1331 decimal with average profit of Tk276.36 per decimal. The benefit cost ratios were 1.59 and 1.82 on full cost and variable cost basis. Human labour, land preparation, seed, and irrigation had positive and significant effect on potato production. No availability of HYV seed at proper time, lack of technical knowledge, high price of seed and fertilizer, infestation of insect and diseases, and lack of storage facilities were the major problems of potato production

CHAPTER ONE

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 19th century. By the 1920s, the first commercial production of the crop was established in the country . Potato has become one of the major food and cash crops in Bangladesh. In 2015-16 season the area coverage (4.6 lakh hectare), production (83.5 lakh MT) and yield (18.1 t/ha) of potato were comparatively higher. Simultaneously export also increased sharply during this time. Considering the area coverage in the country, potato is the third major crop after paddy and wheat. It has become a highly successful October-March winter crop in Bangladesh. Bangladesh is now 14th among the world's potato producers and 4th largest in Asia. Potato is mostly consumed as vegetable in the households in Bangladesh. Though Bangladesh has become a major potato producer in the SAARC countries, the status of this crop has remained vegetable in the country. The time has come now for all of us to understand and appreciate the role of potato that can play an important role in the present food situation of Bangladesh Potato is one of the main commercial crops grown all over the country. In Bangladesh, potato is mainly consumed as vegetable. Various other food items (Singara, Samucha, Chop, chips etc.) are also made from potato. Adequate supply of potato stabilizes the vegetable market all round the year 2016 recently, the government has been trying to diversify food habits and encourage potato consumption to reduce pressure on rice. So, potato is becoming an important food for food security in Bangladesh.

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

- 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 determine the problems of potato cultivation across farm size.
- To suggest policy implications for improvement of potato production in Bangladesh
- To identify the actors involved in value chain and their function in potato marketing;

- To estimate the value addition of potato by the actors in potato market;
- To estimate the seasonal price fluctuation of potato in the study area ;
- To identify the constraints of potato marketing and suggest measure for the improvement of potato marketing in the selected area.

Uses of Potato

In Bangladesh, potato is primarily used as a vegetable, although in many countries of the world it constitutes the staple food and contributes more than 90% of the carbohydrate food source. Millions of tons of potatoes are processed annually in Europe into starch, alcohol, potato meal, flour, dextrose and other products. Some are processed into potato chips, dehydrated mashed potatoes, French fries and canned potatoes. Large quantities of potatoes in the Netherlands, Ireland, Germany and other countries of Europe are grown specifically for the manufacture of alcohol, starch, potato meal or flour, and for livestock feeding. Europeans consume much larger quantities of potato than the North Americans. Asian countries consume more rice than potato for carbohydrate foods.

In Bangladesh, although the principal use of potatoes is to make potato curry along with fish, meat, and eggs, there exists a great diversity in the consumption of potatoes. Notable among potato-based food items are the boiled potato, fried potato, mashed potato, baked potato, potato chop, potato vegetable mix, potato *signora*, potato chips, French fry etc. In recent years, bakeries and fast food shops have started preparing a wide variety of potato-based food delicacies:

Methodology of the Study

The survey method is probably 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. Dinajpur sadar Sub-district was selected randomly from the 7 Sub-district of Dinajpur districts as the study area. A preliminary survey was conducted in some villages of Rangpur sadar Sub-district to gather primary knowledge about the potato production, productivity and efficiency of the potato growers. After preliminary visit three village's namely Uttor Tumpat, Dhakin Tumpat and Hajirhat 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 Sub-district were as follows:

- The selected Sub-district 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 Sub-district.

- 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 30 farmers were selected for the study. Among the 14 farmers, 6 were small, 5 were medium and 3 were large. Farm size was arbitrarily classified on the basis of their land where they produce potato. Farmers having 0.01-0.33 acre considered as small, 0.34-1.00 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. Secondary Data: The secondary sources include govt. publications; annual reports on groundnut cultivation, seminar papers, and journals. 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. Results and Discussion: Socio-economic Characteristics of Potato Farmers: The socio-economic background and characteristics of the farmer's influences the productions to a great extend. So, a description of the characteristics of farmer is necessary for analyzing the main objective of the present study. Socioeconomic characteristics of the farmer's included their age, family size, educational status, farm size, farming experience, use of seed variety, place of sale, land ownership pattern of the respondent. These are described below

CHAPTER TWO: DATA COLLECTION

Farmers Name: Md. Hamidul Islam

Production Area: 1 Acred

Production: Diamant Potato

Contact Number: 01516728433

Cost of Cultivation:

For calculating the cost of cultivation of potato, all variable costs like human labour, land preparation, seed, organic manure, chemical fertilizer, insecticides, irrigation and fixed cost land use. The major cost was seed, fertilizer, insecticides, hired labour.

Table-1: Cost of production of Diamand potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			4500
Hired labour		96x260	24960
Seed	365	37(37x365)	13505
Organic manure			5000
Chemical fertilizer:			
Urea	150	16.4	2460
TSP	150	23	3450
MP	150	15	2250
Zink	6	80	480
Boric Acid	6	120	720
Insecticides			11540
Irrigation			1750
Fixed Cost:			
Land use			9000
Total Cost:			79615

Profitability of potato cultivation:

The potato production 1 acred the production potato 144 bag = $144 \times 184 = 12240$ Kg /acred.
The market price of the Diamond potato in the Dinajpur district Tk. 10/kg.

Table-2: Profitability of potato cultivation:

Item	Weight/kg	Price	Cost/Revenue
Net Revenue	12240	10	122400
Total Cost			79615
Profit			4278

Farmers Name: Md.Shahinur Islam

Production Area: 66 Decimal

Production: Granula

Contact Number:01792914450

Table-1: Cost of production of Granula potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			2750
Hired labour		35x230	8050
Family labour Cost		10x230	2300
Seed	680	17	11560
Organic manure			
Transport cost			3600
Marketing cost			1200
Other cost			1050
			1500
Chemical fertilizer:			
Urea	70	17	1190
TSP	80	23	1840
MP	84	18	1530
Zink	4	180	720
Boric Acid	4	160	640
Insecticides			2050
Irrigation			600
Fixed Cost:			
Land use			6500
Total Cost:			47030

Table-2: Profitability of potato cultivation:

Item	Weight/kg	Price	Cost/Revenue
Net Revenue	7650	8	61200
Total Cost			47030
Profit			14170

Farmers Name: Md Masud Rana

Production Area: 70 Decimal

Production: Lal Pakri

Contact Number: 01716936503

Table-1: Cost of production of Lal Pakei potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			3350
Hired labour		55x250	13750
Family labour Cost		10x250	2500
Seed	637	24	1530
Organic manure			
Transport cost			3950
Marketing cost			2050
Other cost			750
			1260
Chemical fertilizer:			
Urea	70	17	1530
TSP	80	23	2185
MP	84	18	1800
Zink	4	180	570
Boric Acid	4	160	510
Insecticides			5000
Irrigation			2250
Fixed Cost:			
Land use			6000
Total Cost:			63745

Table-2: Profitability of potato cultivation:

Item	Weight/kg	Price	Cost/Revenue
Net Revenue	5610	13	72530
Total Cost			63745
Profit			9185

Farmers Name: Md.Alomgir Hasan

Production Area: 33 Decimal

Production: Lal Pakri

Contact Number: 01724680192

Table-1: Cost of production of Lal Pakri potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			1500
Hired labour		10x210	2100
Family labour Cost		5x210	1050
Seed	200	25	5000
Organic manure			
Transport cost			2200
Marketing cost			850
Other cost			950
			700
Chemical fertilizer:			
Urea	45	17	765
TSP	60	23	1380
MP	45	18	810
Zink	2	190	380
Boric Acid	2	175	350
Insecticides			1850
Irrigation			1050
Fixed Cost:			
Land use			25600
Total Cost:			23435
Net Revenue	2450	15	36750
Total Cost			23435
Profit			13315

Farmers Name: Shahidul Islam

Production Area: 66 Decimal

Production: Granula

Contact Number: 0175016596

Table-1: Cost of production of Granula potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			2650
Hired labour		29x220	8580
Family labour Cost		10x220	2200
Seed	680	17	11560
Organic manure			
Transport cost			3500
Other cost			1620
			1250
Chemical fertilizer:			
Urea	80	17	1360
TSP	95	23	2185
MP	90	18	1620
Zink	2	180	360
Boric Acid	2	170	340
Insecticides			4200
Irrigation			1500
Fixed Cost:			
Land use			4150
Total Cost:			45075

Net Revenue	7140	8	57120
Total Cost			45075
Profit			12045

Farmers Name: NAJRUL ISLAM

Production Area: 133 Decimal

Production: CARDINAL

Contact Number: 0175016596

Table-1: Cost of production of cardinal potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			5120
Hired labour		50x220	11000
Family labour Cost		15x220	3300
Seed	1360	23	31280
Organic manure			
Transport cost			6000
Marketing cost			2520
Other cost			3470
			1750
Chemical fertilizer:			
Urea	180	17	3060
TSP	200	23	4600
MP	190	18	3420
Zink	8	185	1480
Boric Acid	8	160	1280
Insecticides			8500
Irrigation			2750
Fixed Cost:			
Land use			9500
Total Cost:			97463

Net Revenue	14280	11.5	164220
Total Cost			97463
Profit			66757

Farmers Name: Shariful Islam

Production Area: 33 Decimal

Production: Granula

Contact Number: 01744605662

Table-1: Cost of production of granula potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			1200
Hired labour		12x250	3000
Family labour Cost		10x250	2500
Seed	150	22	3300
Organic manure			
Transport cost			800
Marketing cost			850
Other cost			700
			900
Chemical fertilizer:			
Urea	50	17	850
TSP	50	23	1150
MP	50	17	850
Zink	2	175	350
Boric Acid	2	150	300
Insecticides			1500
Irrigation			500
Fixed Cost:			
Land use			2500
Total Cost:			21250

Net Revenue	3145	8	25160
Total Cost			21250
Profit			3910

Farmers Name: Ansarul Islam

Production Area: 65 Decimal

Production : Diamand

Contact Number: 0175183168

Table-1: Cost of production of Diamand potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			2000
Hired labour		35x230	8050
Family labour Cost		5x230	1150
Seed	565	16	9520
Organic manure			
Transport cost			2000
Marketing cost			2300
Other cost			1600
			1500
Chemical fertilizer:			
Urea	95	17.26	1640
TSP	89	23	2050
MP	85	18	1500
Zink	3	200	600
Boric Acid	3	180	540
Insecticides			2000
Irrigation			1000
Fixed Cost:			
Land use			4000
Total Cost:			39450

Net Revenue	6950	8	55600
Total Cost			39450
Profit			16150

Farmers Name: Md.Abdus Salam

Production Area: 150 Decimal

Production: Diamand

Contact Number: 01738278094

Table-1: Cost of production of diamand potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			5500
Hired labour		125x240	30000
Family labour Cost		5x240	1200
Seed	1338	22	39436
Organic manure			
Transport cost			8000
Marketing cost			2650
Other cost			3560
			2750
Chemical fertilizer:			
Urea	200	17	3400
TSP	215	23	4945
MP	220	18	3960
Zink	7	180	1260
Boric Acid	7	150	1050
Insecticides			12000
Irrigation			5023
Fixed Cost:			
Land use			13000
Total Cost:			127734
Net Revenue	17212.5	11	189337
Total Cost			127734
Profit			61603

Farmers Name:Md. Anuddin

Production Area: 1 Hector

Production: Diamand

Contact Number: 01797907511

Table-1: Cost of production of diamand potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			8000
Hired labour		150x250	37500
Seed	2040	20	40800
Organic manure			8000
Transport cost			5500
Marketing cost			6500
Other cost			3500
Chemical fertilizer:			
Urea	265	17	6205
TSP	370	23	8510
MP	345	18	6210
Zink	14	180	2520
Boric Acid	15	165	2475
Insecticides			18050
Irrigation			6000
Fixed Cost:			
Land use			21000
Total Cost:			180770

Net Revenue	23800	14	261800
Total Cost			180770
Profit			81030

Farmers Name: Babul Hasan
 Production Area: 150 Decimal

Production: Granula

Contact Number: 0164975427

Table-1: Cost of production of GRANULA potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			4000
Hired labour		70x220	15400
Family labour Cost		15x220	3300
Seed	892.5	22	19635
Organic manure			
Transport cost			13500
Marketing cost			3350
Other cost			2560
			1350
Chemical fertilizer:			
Urea	130	17	2210
TSP	150	22.5	3375
MP	140	18	2520
Zink	5	150	750
Boric Acid	6	160	960
Insecticides			7500
Irrigation			2500
Fixed Cost:			
Land use			9500
Total Cost:			92410

Net Revenue	10200	10	102000
Total Cost			92410
Profit			9590

Farmers Name: Shefaul islam

Production Area: 50 Decimal

Production: Granula

Contact Number: 0164975427

Table-1: Cost of production of GRANULA potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			2750
Hired labour		27x240	6480
Family labour Cost		5x240	1200
Seed	467.5	16	7480
Organic manure			
Transport cost			2250
Marketing cost			1920
Other cost			1470
			1200
Chemical fertilizer:			
Urea	70	17	1190
TSP	65	23	1495
MP	70	18	1260
Zink	2	185	370
Boric Acid	2	165	330
Insecticides			3450
Irrigation			1720
Fixed Cost:			
Land use			3750
Total Cost:			38315
Net Revenue	4670	8	37400
Total Cost			83315
Profit			(915)

Farmers Name: Maharemujjaman

Production Area: 50 Decimal

Production: Cardina

Contact Number: 01966042990

Table-1: Cost of production of Cardinal potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			3000
Hired labour		18x230	4140
Family labour Cost		9x230	1800
Seed	270	17	4590
Organic manure			1300
Transport cost			1500
Marketing cost			1200
Other cost			
Chemical fertilizer:			
Urea	60	17	1020
TSP	70	23	1610
MP	65	18	1170
Zink	2	190	392
Boric Acid	3	170	510
Insecticides			2700
Irrigation			950
Fixed Cost:			
Land use			4200
Total Cost:			30082

Net Revenue	4217.5	10	42175
Total Cost			30082
Profit			12093

Farmers Name: Najmul
 Production Area: 155 Decimal

Production : Granula

Contact Number: 01728707160

Table-1: Cost of production of GRANULA potato

Item	Weight/Kg	Price	Cost
Variable cost:			
Land Preparation			7320
Hired labour		110x220	24200
Seed	1530	18	27540
Organic manure			
Transport cost			8050
Marketing cost			4500
Other cost			1725
Chemical fertilizer:			
Urea	225	17	3825
TSP	250	23	5750
MP	240	18	4320
Zink	10	170	1700
Boric Acid	8	150	1200
Insecticides			10525
Irrigation			4000
Fixed Cost:			
Land use			10240
Total Cost:			116930
Net Revenue	10200	10	151470
Total Cost			116930
Profit			34540

CHAPTER THREE: FINDINGS AND DECISION

Table: Total cost, Total profits, Average profits

Farmar Name	Potato Name	Land Use/Dicimal	Total cost	Average cost	Total profit	Average profit	Production (mound)
1. Hamidul Islam	Diamond	100	79615		4278		306
2. Ansarul Islam	Diamond	65	39450		16150		173.75
3. Md. Abdus Salam	Diamond	150	127734		61603		430.31
4. Md. Anuddin	Diamont	210	180770		81030		595
5. Md. Shahinur Islam	Cardinal	66	47030		14170		191.25
6. Md. Maharemujjaman	Cardinal	50	30082		42175		105.44
7. Md. Masu Rana	Lal Pakri	70	63745		9185		140.25
8. Md. Alamgir Hasan	Lal Pakri	33	23435	1003304	13315	26274	61.25
9. Md. Shahidul Islam	Granula	66	45075		12045		178.50
10. Md. Nazrul Islam	Granula	133	97463		66757		357
11. Babul Hasan	Granula	150	92410		9590		255
12. Md. Shefaul Islam	Granula	50	38315		(915)		116.75
13. Nazmul Islam	Granula	155	116930		34540		255
14. Md. Shariful Islam	Granula	33	21250		3910		78.63

Total land use = 1331 Decimal

Average Profit= Total Profit / Total land use

$$= 367833/1331 \text{ per decimal}$$

$$= 276.36 \text{ per}$$

Production per decimal:

Diamond: $1505.06/525=2.87$

Cardinal: $296.69/116=2.56$

Lal Pakri: $201.5/103=1.96$

Granula: $1240.88/587=2.11$

Production cost per decimal:

Diamond: $427569/525=814.42$

Cardinal: $77112/116=664.76$

Lal Pakri: $87180/103=846.41$

Granula: $411443/587=700.92$

Production cost per mound:

Diamond: $427569/1505.69=284.09$

Cardinal: $77112/296.69=259.91$

Lal Pakri: $87180/201.5=432.655$

Granula: $411443/1240.88=331.57$

Profit per decimal:

Diamond: $163061/525=310.59$

Cardinal: $56345/116=485.73$

Lal Pakri: $22500/103=218.45$

Granula: $125927/587=214.53$

Profit per mound:

Diamond: $163061/1505.06=108.34$

Cardinal: $56345/296.69=189.91$

Lal Pakri: $22500/201.5=111.66$

Granula: $125927/1240.88=101.48$

Productivity analysis:

As per the information attained, the selected farmers used four categories of potato namely Diamond, Cardinal, Lal Pakri and Granula. Out of these, Diamond holds the highest productivity measured in terms of per decimal, with 2.87 mound; whereas Lal Pakri with the lowest, at only 1.96 mound per decimal. Cardinal and Granula fall in between with 2.56 mound and 2.11 mound per decimal respectively. Because I haven't collected the information regarding the expected production per decimal from the local agricultural office, future research can be conducted in this respect. The results would be more reliable and comparable then.

Profitability analysis:

With regard to the cost per decimal, Granual type has the highest production expenditure at around Tk. 700; whereas the cost of production for the Cardinal has the lowest with close to Tk. 665 per decimal. Diamond and Lal Pakri has a production cost in between. Therefore, the cost per decimal for different varieties of potato is a matter of controversy in terms of the production (in mound). Because Granual has the highest cost of production, it has lower profit accordingly, at only around Tk. 215 per decimal relative to approximately Tk. 485 for Cardinal. Diamond producer has made a good profit too compared to the Lal Pakri producers. For making a good conclusion, I have also calculated the production cost per mound of potato as well as profit per mound. As the results shows, Lal Pakri required the highest cost to produce one mound, at around Tk. 433, on the other hand, Cardinal required the lowest. As a result, Cardinal shows the highest amount of profit earned by its producers, around Tk. 190 per mound of potato. The other varieties revealed a moderate profit to the respective producers.

Now it's up to you to make a good conclusion that must have, in brief, the objective of the study, the methodology followed and the findings.

CHAPTER FOUR

Conclusion

Based on the findings of the study it can be concluded apparently that considerable scope exists to increase the productivity of potato and to develop the value chain. Expanded potato cultivation can upgrade the living standard of the function areas of value chain.

Potato is not only a source of nutrients but also a source of cash income for farmers. A large number of people are involved in the production and marketing of potato. So, the farmers and actors could certainly be benefited financially if production and marketing system of potato are well developed.

For stabilizing 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. Government intervention in potato marketing is necessary to ensure fair price to the farmers by controlling such unexpected price fluctuations.

Farmer engaged in potato production was not very solvent to make the full utilization of value chain opportunity. They could not store potato for better price in the off season. Credit facilities should be made available at low interest rate by government. Processing opportunities were not available in the study area. Some local and

Traditional methods were applied by the processor. So, if there were any technological and financial support in processing industries more value could be added efficiently. Grading and standardization facilities should be utilized properly for efficient value chain of potato market. Lack of timely and proper market information was a great problem. So, market information should be available and ease accessible for the producers also for other value chain actors.