Investment in Mushroom Cultivation at Savar Upazila: A Prospective Sector for Bangladesh

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Abstract

Bangladesh is one of the most suitable countries in the world for mushroom cultivation for its favorable climate with low production cost and high market price. By collecting data from a sample of 10 Mushroom firms of Savar Upazila, researchers identified a number of key findings regarding Mushroom Cultivation. The study shows that mostly the illiterate and people having poor academic background are involved in Mushroom cultivation at Savar. It also reveals that investors with minimum capital and labor investment get high rate of return in this business. Mushroom cultivation has opened a new opportunity for landless farmers and unemployed people in this area. The researchers suggest that it would be a more profitable sector if educated people get involved and trained up in Mushroom cultivation. Consequently, positive and necessary initiatives from the government and private sectors have been sought for the flourishing of mushroom cultivation in the whole country.

Introduction

Mushroom cultivation is a popular income generating activity that can alleviate poverty, eradicate malnutrition and create employment **o**pportunity for educated, uneducated youths, adolescents, men and women respectively. It can be a suitable job for poor people, alternative income source for all. Basically Mushroom production is labor and management-intensive which takes a considerable amount of knowledge, research, planning, and capital investment to set up a production system. Comparing with other agro-economic crops mushroom cultivations is more profitable for its low production cost, and high market price. Using agricultural waste mushroom can be produced by small, landless and marginal farmers inside a house. In Bangladesh, there is a huge prospect of mushroom cultivation because of its climate which is fairly suitable for high volume of mushroom production (Begum, 2008).So it is possible to make a good profit by investing a small amount of capital and labor in mushroom cultivation.

One can earn easily Tk. 4-5 thousand a month by investing only Tk. 10-15 thousand. The trend of mushroom cultivation in Bangladesh is very recent. Mushroom cultivation in Bangladesh began in 1979 with assistance from Japanese organization JOCDV.In early 1980s commercial mushroom cultivation was initiated by Bangladesh Agricultural Research Council and Mushroom Culture Centre at Savar. Apart from Savar, mushroom is being cultivated in Dinajpur, Jessore, Barisal, Chittagong, Sylhet, Comilla, Khulna, Mymensingh, Bandarban, Rangamati, Chapainawabganj and Rangpur (Asia Pulse News, 2008). In these areas mushroom is being cultivated domestically in a small scale by landless people. But it is possible to earn even foreign currency after meeting the demand of the domestic market. Considering the potentiality of mushroom cultivation in

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Bangladesh, this study attempts to find out the profitability of Mushroom farming as an income generating source and its prospect in Bangladesh.

Area of the Study

As Savar Upazila produces major share of mushroom produced in Bangladesh, this study is restricted into the firms of this area. The selected region is situated at a distance of about 24 km to the northwest of Dhaka metropolis on the Dhaka-Aricha road, at the confluence of the Bangshi and Dhaleshwari (Dhaleshvari) rivers and it is bounded by KALIAKAIR and GAZIPUR SADAR upazilas on the north, KERANIGANJ upazila on the south, MIRPUR, MOHAMMADPUR, PALLABI and UTTARA thanas of Dhaka City Corporation on the east, DHAMRAI and SINGAIR upazilas on the west. The land of the upazila is composed of alluvium soil of the Pleistocene period. The height of the land gradually increases from the east to the west. The southern part of the upazila is composed of the alluvium soil of Bangshi and Dhalashwari rivers.

Methodology

The population of interest in this explorative study was the investors of mushroom farms in Savar upazila. The study was cross sectional in nature as segments of the population were sampled at a single point in time. And to conduct the survey, 10 farms in Savar had been randomly chosen. A single set of questionnaire in English had been developed for the respondents. The questionnaire was designed with different aspects which comply with the research objective. Before the questionnaire was filled up by the respondents the purpose of the questionnaire was explained to each of the respondents. As secondary source, journals, newspapers and various web-sites had been considered to collect relevant data. Since the study is explorative in nature, no rigorous statistical technique was used in analyzing the data.

Conceptual Framework about Mushroom

Mushroom is a soft delicate white fruit body of fleshy fungi. Its body looks umbrella-shaped and it grows on the substratum or under the surface of soil. The term ‘mushroom’ is a macro-fungus with a distinctive fruiting body, which can be hypogenous or epigeous, large enough to be seen with the naked eye and to be picked by hand (Chang and Miles, 1992). Mushroom is a highly nutritious, delicious and a good food for the children and the older as well. It is also halal vegetable with medicinal qualities which is appropriate for Bangladeshi Muslims (Begum, 2008). It has high protein and economic value. The amount of protein in mushroom is double than that of other vegetables. One hundred grams of dried mushroom contain 26.9 per cent protein while the same quantity of potato contains 7.6 percent protein (Asia Pulse News, 2008). Mushroom is used as delicious item of our food menu containing both nutritive and medicinal values (Agrahar-Murugkar *et al.,* 2005; Cheung and Cheung, 2005).

Mushroom is a fungus-type colorless plant. It does not need any sunlight to survive or grow. Mushroom cultivation does not require soil, electricity any insecticide or chemical fertilizer. Mushroom seed can be sowed using industrial waste like wooden dust and husk of wheat and rice. Given a suitable environment and proper nursing its cultivation is possible throughout the year. The main raw material for growing is a composite mixture of rice straw and rice husk saw dust and cotton waste, and some other agro-residues. Although mushroom is a popular and

nutritious food in many countries of the world, but the production and consumption of mushroom is limited in Bangladesh (Begum, 2008). Now mushroom appears to be a sustainable source of income for many people in our country. In many countries in the world, mushroom food is prepared in different ways. In our country, some Chinese restaurants serve food made of mushroom. The mushroom soup, fry and vegetable available in Chinese restaurants of our country are very delicious. Mushroom also can be used with fish, meat and vegetables. Even in many countries researchers now use mushroom to combat cancer, hypertension, blood pressure, diabetes, heart disease, rheumatic pain, throat inflammation and to control blood cholesterol. Particularly Mushroom is effective in preventing diseases like cancer, kidney problems, hepatitis, AIDS, asthma, diabetes, insomnia and tumor (Begum, 2008).

Findings and Interpretations

Demographic Profile of the Respondents

A summary of findings on mushroom cultivators' profile along three variables: gender, age and level of education have been presented in Table 1. It has been found that the majority of the investors are male (70%) while 30% of the investors are female. It may be attributed to the fact that as a source of income, men in this area are getting more attracted to mushroom cultivation than their counterpart. The table shows a high concentration of investors belong to the age category 20-30 years, which may be explained by the fact that this age level inculcate skill and talent in any productive effort and motivate to take any creative challenges towards new things which can be helpful for building career. Respondents of age group 40-50 years have mentionable percentage of 30%. Furthermore, the table presents that in terms of level of education, 50% mushroom cultivators are illiterate and only 30% have secondary level of education. Thus, the findings of the study indicate that mushroom cultivation is still limited to the people having poor academic background. The study also reveals that for 40% of the

Table: 1 Demographic Variable

Variables	Structures	Indicators
Gender	Male	70%
	Female	30%
Age	20-30 Years	40%
	30-40 Years	20%
	40-50 Years	30%
	Above 50	10%
Level of Education	Illiterate	50%
	Primary	20%
	Secondary	30%
	Higher Secondary	0%
	Graduate	0%
	Post Graduate	0%

Source: Field Survey, 2009

investors sampled, this is their main source of income while for the majority it has been an additional one. This can be attributed to the fact that mushroom cultivation has not yet been the first choice as main source of income for most of the investors rather it is popular as an alternative option.

Mushroom Production: A Profitable Income Source

Among several income- generating activities like dairy and poultry industries, Mushroom cultivation also has a new opportunity of earning and has become most popular income generating activity among a good number of landless farmers and unemployed people. But the farmers are facing many problems like lack of spawns, insufficient loans, lack of promotion and so on. The study reveals that there are about 46 Mushroom firms in Savar Upazila. It is playing significant role to cultivate mushroom in this region. Mushroom Centre at Savar provides free training and Mushroom spawns among the farmers. As a result many middle class and poor people get attracted in this business. Mushrooms can be grown in the small space of a farmer's own house for small scale of production and whereby they can afford to invest in a small scale capital which generates income that aids in the family support. Basically Mushroom production is labor and management intensive and it takes only a considerable amount of knowledge, research, planning, and capital investment to set up a production system. Table 2 depicts how easily a farmer can produce mushroom with the support of small scale of space, capital, and labor. The farmer sells fresh Mushrooms to the Mushroom center or merchants only at Tk. 110-130 per kg. But if they can sell the Mushroom in Dhaka, the price would be at least Tk.200.

Table-02: Establishment of Mushroom Firm

Name of Firm	Area/Size	Capital Investment (Tk.)	Man power (Units) Per Months	Total Cost (Per month) (BDT)	Total Production (per month)
Sadhin Bangla Mushroom Center	(10feet/06feet)	120,000	03	3,000	140 kg & 2,000 pieces spawns
Rahela Mushroom	(08feet/04feet)	15,000	01	1,000	30 kg
Basar Mushroom	(08feet/04feet)	25,000	02	2,000	100 kg
Monowara Mushroom	(07feet/05feet)	17,000	02	2,000	90 kg
Mama-Vagne Mushroom	(10feet/05feet)	18,000	02	1,200	100kg
Forida Mushroom	(09feet/04feet)	19,000	02	1,100	90kg
Nurjahan Mushroom	(05feet/05feet)	12,000	02	1,500	60kg
Tara-Banu Mushroom	(09feet/05feet)	14,000	02	1,300	80 kg
Sahara Mushroom	(06feet/03feet)	13,000	02	900	60 kg
Happy Mushroom	(10feet/03feet)	11,000	02	1,400	69 kg

Source: Field Survey, 2009

Table-3 shows that mushroom investors earn huge money per month. Table 2 and Table 3 combinedly reveal that the capital investment, number of manpower and monthly cost is

reasonably low for mushroom cultivation and mushroom investors earn huge money per month at a low cost of production. The amount of net profit shows the ability of each farm to earn high rate of return over a short period of time. High profit generated from mushroom is measured by profitability ratios.

Table-03: Mushroom Cultivation as an Income Source

Name of Firm	Total Production (Per month)	*Total Revenue (Per month) (BDT)	Total Cost (Per month) (BDT)	Labor Cost (Per month) (BDT)	Labor Cost in %	Materials Cost (Per month) (BDT)	Materials Cost in %	Net Profit (Per month) (BDT)
Sadhin Bangla Mushroom Center	140 kg & 2000 Piece spawns	32,800	3,000	2400	80%	600	20%	29,800
Rahela Mushroom	30 kg	3,600	1,000	700	70%	300	30%	2,600
Basar Mushroom	100 kg	12,000	2,000	1800	90%	200	10%	10,000
Monowara Mushroom	90 kg	10,800	2,000	1800	90%	200	10%	8,800
Mama-Vagne Mushroom	100kg	12,000	1,200	1000	83.33%	200	16.67%	10,200
Forida Mushroom	90kg	10,800	1,100	900	81.82%	200	18.18%	9,700
Nurjahan Mushroom	60kg	7,200	1,500	1200	80%	300	20%	5,700
Tara Banu Mushroom	80 kg	9,600	1,300	1100	84.62%	200	15.38%	8,300
Sahara Mushroom	60 kg	7,200	900	750	83.33%	150	16.67%	6,300
Happy Mushroom	69kg	8,280	1,400	1200	85.71%	200	14.29%	6,880

** Average Price- 120 Taka per kg & each spawns 8 Taka*
Source: Field Survey, 2009

Basically profitability shows the ability of a business firm to earn profit over a period of time because a business firm always earns profits to survive and grow over a long period of time. The overall measure of success of a business firm is the profitability which results from the effective use of its resources and shows the return on sales and capital employed. There are two important ways how we can measure profitability. One is to measure return from sales i.e. Net Profit Margin, another is return from investment i.e. Return on Investment. The following formula is used to measure net profit margin –

Net Profit Margin	**=**	**Net Profit / Total Sales/Revenue**	**x 100**

Net profit margin ratio tells the amount of net profit on 100% of turnover a business has earned. On the other hand, the return on investment is perhaps the most important ratio of all. This is a good measure of profitability because it combines the effects of profit margin and asset turnover.

It measures how efficiently profits are being generated from the assets employed in the business. The owner determines the business's relative strengths and weaknesses through this ratio. The formula is-

Return On Investment	**=**	**Net Profit / Capital Employed**	**x 100**

Table 4 shows the calculation of Net profit margin and rate of return on investment in mushroom cultivation. Initial cost, monthly cost and monthly revenue of the sampled firms have also been shown in the table.

Table: 04 Profitability of Mushroom Cultivation (Monthly)

Name of Firm	Capital Investment (BDT	Total Revenue (Per month) (BDT)	Total Cost (Per month) (BDT)	Net Profit (Per month) (BDT)	Net Profit Margin = Net Profit /Total Revenue ×100	Return on Investment = Net Profit/ Total Capital ×100
Sadhin Bangla Mushroom Center	120,000	32,800	3,000	29,800	90.85%	24.83%
Rahela Mushroom	15,000	3,600	1,000	2,600	72.22%	17.33%
Basar Mushroom	25,000	12,000	2,000	10,000	83.33%	40%
Monowara Mushroom	17,000	10,800	2,000	8,800	81.48%	51.76%
Mama-Vagne Mushroom	18,000	12,000	1,200	10,200	85%	56.66%
Forida Mushroom	19,000	10,800	1,100	9,700	89.81%	51.05%
Nurjahan Mushroom	12,000	7,200	1,500	5,700	79.16%	47.5%
Tara Banu Mushroom	14,000	9,600	1,300	8,300	86.45%	59%
Sahara Mushroom	13,000	7,200	900	6,300	87.5%	48.46%
Happy Mushroom	11,000	8,280	1,400	6,880	83%	62.54%

Source: Field Survey, 2009

From the Table-4 it is clear that the net profit margin and return on investment both are high which indicates an attractive potentiality of the sector and efficient use of capital where as a low ratio indicates an inefficient use of capital**.** With low production cost and high market price, mushroom cultivation can generate higher profit potentiality of its cultivators. The high rate of net profit margin tells high turnover that sector has earned.

Conclusion and Recommendation

Mushroom has already been an important crop in developed countries. Comparing with other agro-economic crops, mushroom cultivation has been found more profitable for its low production cost, and high market price. The present study found that having a poor academic background and only with a little knowledge from a very short training at Mushroom center, investors made a good profit with their low investment. From their success rate, it can be stipulated that if the educated people get themselves involved in mushroom cultivation, they can earn substantial income from this sector. The profit margin with low capital indicates that Mushroom cultivation can be the main source of income if it can be nurtured professionally. Savar upazila, here, plays as a role model for the whole Bangladesh. As soil and climatologically. situation of this region is very suitable for mushroom cultivation, Bangladesh has a huge prospect of mushroom cultivation. Through mushroom cultivation, it is possible to generate considerable employment opportunity, alleviate poverty, and reduce malnutrition to meet the required protein of Bangladeshi people. Even it is possible to earn a huge amount of foreign currency by exporting Mushroom after meeting the domestic demand. So, government and private initiative is required to encourage people in Mushroom farming and along with the motivation, training to the poor and unemployed people, sufficient supply of Mushroom spawns, providing flexible loan facilities, ensuring suitable price, reducing the effects of middleman and creating better opportunity for mushroom marketing will undoubtedly bring this sector to a boom and will eventually contribute significantly in the economy of the country.

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