PROFITABILITY ANALYSIS OF CUT FLOWERS-BASED ON ROSE

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ABSTRACT
Rose cultivation is a very popular and at the same time profitable business in Bangladesh, as it's a huge domestic market demand. Although it's a large market coverage in our country, there is a scarcity of socio-economic data regarding flower business specially cut flowers. So, this study aims to collect the appropriate data and analyze the profitability , potentialities of rose cultivation in our country. Three villages (Bonogram purbopara, Bonogram modhopara and Sadullapur) of Savar upazilla under Dhaka district were selected as study area. Purposive and simple random sampling techniques were taken into consideration. A total of 50 rose farmers were randomly selected for this study. For this study , it is found that 88% respondents were married, 10% unmarried and 2% widower who are directly related with rose cultivation. Family members were categorized into three groups and these were less 4 (6%), 4 to 6(52%) and 7 to above (42%). The highest profit is obtained from cultivation compared to its competitive flowers like gladiolas, gerbera and others for rose.

KEYWORDS: *Cut flowers; Rose cultivation; Rose cultivars; Market place; Linear regression*

I. INTRODUCTION

In Bangladesh, small scale flower production initially started in late seventies by some innovative farmers with the production of tuberose but large scale commercial production was started in mid eighties in Jhikargacha Upazila of Jessore district (Sultana, 2003). And flower farming first started in Savar back at the end of the 90s. The most common, commercially grown cut-flowers species in Bangladesh are rose, tuberose, marigold, gladiolus, chrysanthemum, carnation, gerbera, lily, gypsophila, heliconia, anthurium and orchids. Bangladesh is well suited for cut-flowers production due to its favorable climate and other conditions such as scope to expand cultivation in unutilized homestead lands, cheap labour, relatively low capital investment and good prospect for exports. Cultivation of flower is reported to give 3-5 times and 1.5-2 times more returns than rice and vegetable cultivation, respectively (Dadlani, 2003). At present, 10,000 hectares of land covers flower cultivation taking the lead by Jessore district. More than 5,000 farmers are growing flower and foliage in the country and about 1.5 lac people are directly or indirectly involved in floriculture business as their sole livelihood (Chowdhury, 2010). The major production areas of cut-flowers are Dhaka, Chittagong, Cox's Bazar, Jessore, Chuadanga, Jhenidah, Bogra, Rangpur, Kushtia and Mymensingh and the present total area under cultivation of different cut-flowers and foliages is about 3350 hectares (Miah *et al.*, 2015). This study mainly focuses on-

> ➢ To identify the socio-economic characteristics of the rose farmers in the study area.
> ➢ To find out the value chain opportunities of rose in the study area.
> ➢ To analyze the relationship between the variables that affect rose farmer's income in the study area.
> ➢ To determine the problems and recommendation for rose market development in the study area.

II. MATERIALS AND METHODS

Selection of study area

This study was conducted at Savar in Dhaka . Keeping in mind the objectives of the study and considering the adjacent limitations , data were collected from three villages of Savar upazilla named Bonogram uttarpara, Bonogram modhopara and Shaidillahpur. Data were collected randomly from farmers through interview method.

Sources of data

Required data for the present study were collected from primary and secondary sources. Primary data were collected from the flower cultivars , wholesaler and different flower shops. The sources of secondary data were Bangladesh Bureau of Statistics (BBS),Hortex and flower related different websites.

Sample size and sampling technique

Considering money and time constraints , survey area was selected purposively. It was three villages of Savar district area of Dhaka. Simple random sampling technique was used to select the farmers from the population. A sample size of 50 farmers were selected in sampling frame.

Collection of Data

Required data were collected by the researcher with structured questionnaire from primary source and secondary sources. Interviews and survey methods were carried out to fulfill the objectives of the study. After fixing the survey schedule, field level primary data were collected from the farmers through direct interview. Brief description of the purpose of the study was disclosed to the farmers before starting. Responded were ensured that their provided information would be remained secret. Data were recorded in interview period and information was checked carefully.

Analytical technique

In this study, tabular technique , bar graph, pie chart , histogram was used and most importantly multiple linear regression model was used to analyze the data.

III. RESULTS

Age of farmers play a crucial role in flowers production and in better management. The age group of farm family members was classified into four categories in this study.Among these four categories 31-40 years age range is mostly (60%) involved with the rose cultivation. Maximum of the farmers were involved in rose cultivation. But 84% farmers are involved with mainly rose cultivation. Family members were categorized into three groups and these were a) less 4, b) 4 to 6 and c) 7 to above. Among them family having 4 to 6 members are mostly associated with rose cultivation. From this study it was found that the most of the farmers started their investment with 1 lac to 2 lac.

Table 1: Age of sample farmers

The age group of farm family members was classified into four categories in this study. These were: a) 20-30 years, b) 31-40 years, c) 41-50 years & d) 51-above . All respondents were male in gender of this research study.

Range of age (years)	Number of farmers	Percentage (%)
20-30	3	6
31-40	30	60
41-50	16	32
51-above	1	2
Total	50	100

Table 2: Family members of sample respondents

Family members were categorized into three groups and these were a) less 4, b) 4 to 6 and c) 7 to above.

Family members of cut flower farmers in the selected area are given below through table. This table shows that family having more members are involved in flower cultivation in selected area.

Member range	Number of family	Percentage (%)
Less 4	3	6
4 to 6	26	52
7 to above	21	42
Total	50	100

Table 3 : Income source of the respondents

Maximum of the farmers were involved in rose cultivation. Few respondents were cultivated gladiolas, gerbera and a few involved in livestock production in the selected area. This table shows that most of the farmers are involved with rose cultivation than other flowers.

Income source	Number of respondent	Percentage (%)
Rose	42	84
Rose + Gerbera	8	16
Total	100	100

Table 4 : Initial investment of farmers

Initial investment is the vital factor for any successful business. From this study it was found that the most of the farmers started their investment with 1 lac to 2 lac. They did not get any loan opportunities, NGO as well as government support. This result is below in tabular form.

Investment range	Number of farmers	Percentage (%)
1lakh-2 lakh	27	54
2lakh above-3lakh	7	14
3 lakh above-4lakh	8	16
4 lakh above-5 lakh	4	8
5lakh above-6 lakh	3	6
6lakh above-7 lakh	1	2

Multiple linear regression analysis
Table 5 : Estimated value of coefficient related statistics of Multiple Linear regression

This table is tried to explain how the independent variables affect the dependent variable (Monthly income). Here the independent variables are flowers, age, marital status, family members, members involved in rose production, initial investment, input seedlings, transport, market place.

Variables	Co-efficient	Mean	Standard deviation	t value
Flowers	.193	1.1400	.35051	.903
Age	.115	2.3000	.61445	-.798
Marital status	.305	1.0600	.23990	-.849
Family members	.087	2.4400	.50143	.478
Members involves in rose production	.002	1.5200	.70682	.016
Education	.049	2.2200	.86402	-.587
Initial investment	.650	2.0000	1.21218	7.757
Input seedlings	.040	1.2800	.45356	.107
Transport	-.465	1.2400	.43142	-.673
Market place	.119	1.4000	.75593	.370

Here,
The value of R= .866
Value of R^2 = .749
Adjusted R^2 = .677

IV. DISCUSSION

This analysis is tried to explain how the independent variables affect the dependent variable (monthly income). Here, the independent variables are flowers, age, marital status , family members, education, initial investment, input seedlings, transportation and market place.

From the study, it is found that flowers have positive relationship with dependent variable. If the varieties of rose will increase then the monthly income of farmer will increase. Age showed that there was an inverse relation between monthly income and age of the farmers. Most the farmers were above 40 years old that's why the efficiency of the farmer not sufficient to cultivate more flowers. Most of the respondents were married and having large family. So their income is not good enough to lead their lives. Analysis showed that when more family member involved in rose production then monthly income increased of the farmers in the selected area. So involving family members in rose production gives a positive relation with the dependent variable.

There was an inverse relationship between education and monthly income of the farmers. Majority of the farmer educational profile was under eight. Initial investment is crucial for any business.

When initial investment is high then the monthly income is higher. As a result, researcher got a positive relationship with the variables. Input seedlings performed a positive relationship between the variables. Transport system helps to income more when it is suitable. Although the selected area was near to Dhaka but transportation system was not too structural. So it showed an inverse relationship between the variables. There was a positive relationship between the independent variable and dependent variable.

Problems faced in rose production and marketing

For the sake of convenience, the constraints faced by the selected farmers in the study area have been categorized under four general groups such as economic, technical, marketing, and social and others.

Economic Problems In the survey, farmers were asked to identify some economic problems related to growing flowers. The problems that were identified and faced by them are discussed below.

High Input Price The cultivation mostly depends on some important inputs. Seedling or plantlet, fertilizer, insecticide and irrigation are some of them. In every week some of these inputs must be needed for rose cultivation. But high price of input affect floriculture

negatively. According to the field survey, seventy six percent of the rose producers had to face this problem.

Insufficient Credit Facilities Insufficient credit is a big problem for farmers. Rose cultivation needs a lot of credit. In the study area farmers do not get sufficient loan from the banks. Banks are reluctant to give loan to farmers. As a result they take loan from different NGOs and money lender at high interest rate. Twenty three percent of the producers had to face this problem.

Low Selling Price Low selling price is a great problem for farmers because they do not get their anticipated price. Thirty three percent of the flower producers had to face this problem.

Lack of Scientific Knowledge and Training Commercial rose farming is a new practice in Bangladesh. There is a shortage of trained manpower to handle commercial floriculture activities such as production, post harvest handling, product development and biotechnology. Most of the farmers keep a little knowledge about modem technology. It is evident from the table that forty two percent of farmers faced the problem of proper knowledge and training.

Inadequate and Underdeveloped Market Inadequate and underdeveloped market is a big problem for the rose cultivators. Thirty eight percent of flower producers claimed that they faced this problem.

Transportation and Communication Problems

Transportation is the life blood of modem marketing system. The communication network in the study areas was not properly developed for the movement of agricultural products from the producer's field to different markets. Dhaka shahabagh market is the center of flower market. Some villages are far from the market. About sixty one percent of rose cultivators stated that inadequate communication were a problem in transporting their flowers from different flower markets.

Spoilage of flower affect negatively to the rose cultivators. In the survey area, eighty five percent of flower producers claimed that they faced this problem.

V. CONCLUSION

The results revealed that rose cultivation is profitable in the selected area. Its cultivation is also profitable compared to its competitive flowers. Human labor, seedling, flowers' variety, family member as well as family member's involved in rose production, initial investment and market place had positive effect on the monthly income of rose farmers. Age of farmers play a crucial role in flowers production and in better management. 60% of the respondents were 31 to 40 years old. In this study the researcher found 88% respondents were married, 10% unmarried and 2% widower. Family members were categorized into three groups and these were less 4 (6%), 4 to 6 (52%) and 7

to above (42%). 44% of the respondents were in primary level which was the maximum educational percentage of the study of the selected area. The highest proportion of family members had only one earner and the percentage was 60. Most of the farmers were involved in rose cultivation (84%).This study shows that rose cultivation is a prospective business which ensures higher profit. Bangladesh has a very favorable climate to turn the flower business into blooming industry. Bonogram is regarded as commercial zone of rose cultivation. It can not only play a vital role in employment generation but also can contribute in the national economy through earning valuable foreign currency.

Recommendations

On the basis of the findings of this study rose cultivation was considered a profitable business for investment decision and it can provide huge income generation as well as employment opportunities. Based on the findings of the study, the following recommendations were put forward for the improvement of rose cultivation at farm level.

a) Cultivators should provide proper cooling facilities at market place. When they can't sell their flowers, it spoiled. So, if they get cooling facility, they will be able to sell it in the next day.
b) Input price should be reduced or subsidized for lowering the cost of production.
c) Pure pesticide and pest management knowledge should supply to the flower cultivators.
d) Proper transportation and communication system should be ensured.
e) Flower cultivators need to be trained in the scientific production practices and technology related to this new enterprise.
f) Fair selling price should be ensured.
g) Skill development training on Post Harvest Management of flowers and ornamental plants is required for the farmers and traders as well.

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