

**MARKETING PROBLEMS OF GUAVA FARMERS IN THE SELECTED AREA  
OF NESARABAD UPAZILA UNDER PIROJPUR DISTRICT**

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**MARKETING PROBLEMS OF GUAVA FARMERS IN THE SELECTED AREA  
OF NESARABAD UPAZILA UNDER PIROJPUR DISTRICT**

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**CERTIFICATE**

This is to certify that the thesis entitled “**MARKETING PROBLEMS OF GUAVA FARMERS IN THE SELECTED AREA OF NESARABAD UPAZILA UNDER PIROJPUR DISTRICT**” submitted to the department of Agricultural Extension and Information System, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka in partial fulfillment of the requirements for the degree of Master of Science (M.S.) in Agricultural Extension, embodies the result of a piece of bona fide research work carried out by **YEASIR ARAFAT, Registration No. 11-04302** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that any help or source of information, as has been availed of during the course of this investigation has been duly acknowledged by the Author.

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*DEDICATED TO  
MY  
BELOVED PARENTS*

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### **ABBREVIATIONS USED**

FAO

Bangladesh Agricultural University

BBS	Bangladesh Bureau of Statistics
BARI	Gross Domestic Product
IADP	Intensive Agricultural Development Project
NGOs	Non-government Organizations
SPSS	Sub-Assistant Agriculture Officer
PFI	Problem Faced Index

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## **ABSTRACT**

The purposes of the study were to describe some selected characteristics of the guava farmers and to determine the extent of marketing problems of guava farmers; and to find guava marketing problems. The study was conducted in two villages of Atghorkuriana unions under Nesarabad upazilla of Pirojpur Districts. Data for this study were collected from a random sample of 101 guava farmers by using an interview schedule during 20 February, 2019 to 20 March, 2019. The overall problem faced scores of the guava farmers ranged from 13 to 29 against the possible range 0 to 30. The mean score was 21.90 and standard deviation was 3.23. The highest proportion (63.3 percent) of the farmers had medium problem faced in guava marketing, while 22.8 percent had high and 13.9 percent had low problem faced. Guava selling in time is the top problem for the guava farmers and this was followed by Non-availability of skilled labour during guava marketing. Multiple regressions analysis indicated that agro-based organizational participation, agricultural training exposure, agricultural extension contact and level of education had significant negative contribution with their problems faced in guava marketing. Age, family size, farm size, land under guava cultivation, annual family income, income from guava cultivation and cosmopolitans had non-significant relationship with their problems faced in guava marketing.

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The purposes of the study were to describe some selected characteristics of the guava farmers; to determine the extent of marketing problems of guava farmers, and to find out contribution of the farmers selected characteristics on their marketing problem. The study was conducted in two villages of Atghorkuriana unions under Nesarabadupazilla of Pirojpur Districts. Data for this study were collected from a random sample of 101 guava farmers by using an interview schedule during 20 February, 2019 to 20 March, 2019. The overall problem faced scores of the guava farmers ranged from 13 to 29 against the possible range 0 to 30. The mean score was 21.90 and standard deviation was 3.23. The highest proportion (63.3 percent) of the farmers had medium problem faced in guava marketing, while 22.8 percent had high and 13.9 percent had low problem faced. Guava selling in time is the top problem for the guava farmers and this was followed by non-availability of skilled labour during guava marketing. Multiple regressions analysis indicated that agro-based organizational participation, agricultural training exposure, agricultural extension contact and level of education had significant negative contribution with their problems faced in guava marketing. Age, family size, farm size, land under guava cultivation, annual family income, income from guava cultivation and cosmopolitans had non-significant relationship with their problems faced in guava marketing.

## CHAPTER I

### INTRODUCTION

#### 1.1 General Background

Guava (*Psidium guajava*), the apple of the tropics, is one of the most common fruits of Bangladesh and other countries. Guava is known as peyara/pearah or goyaa in Bangladesh. In English this fruit is also known and called apple guava. This is not our indigenous fruit. In Bangladesh region guava (peyara/pearah or goyaa) was first introduced by the Portuguese during the seventeenth century. Originally guava (peyara/pearah or goyaa) is native to Mexico and Latin America that is tropical and sub-tropical American region. Now a day's guava is regarded as an indigenous fruit of Bangladesh that grows and eaten all over the country. It is a native of South America. California, Florida, Cuba, Brazil, Taiwan, Mexico, Peru, Hawaii, China, Malayasia, India, Pakistan, Thailand and Bangladesh are major guava producing countries (FAO, 2015).

Fruit is very important for our health. There are many types of fruit like Apple, Orange, Barry, Guava, Pineapple, Mango, Banana etc. All fruit are supplied a high amount of nutrients to our body. Fruit cultivation is beneficial than other crop cultivation. Guava cultivation is one of them. In Bangladesh it occupies 4,858 hectares and produces 24,000 Metric tons of fruit (BBS, 2014).

It claims to be the 5th most important fruits in area and production after banana, mango, pineapple and jackfruit. In Bangladesh annual production of guava is 146 thousand tons of fruits (BBS, 2006). Rich in C (two to five times more than fresh orange juice) and pectin. Required 50 mg vitamin C /day/person. More than 93% of the people

are suffering from vitamin C deficiency. Contains water 82.50%, calcium 20 mg, iron 104 mg, carbohydrate 15.2 g, total soluble solids 9.73% and Vitamin C 210 mg/100 gm. Pink-fleshed varieties are less rich in Vitamin C. Firm ripe fruit is richer in Vitamin C than those of fully ripe or over-ripe fruits.

According to the geographic distribution of the country's guava producers as well as the informal organizations of the trade, guava passes from farmer to final user in different ways. Three principal types of marketing channels for guava exist: local, regional and inter-regional. Local marketing channels are characterized by the intervention of fewer middlemen between guava producers and consumers. Guavas are sold to consumers, local traders, rural assemblers, wholesaler/commission agents or cold storage operators or in a nearby urban area by the growers under local marketing channels. Regional marketing channels consist of an extended chain of intermediaries between producer and consumer. Inter-regional marketing channels are the most lengthy, because a number of traders are involved in the system (BARI, 1992).

Market intelligence provides information relating to some market forces such as demand, supply, prices, transportation, storage etc. Dissemination of market information is a useful tool for making competition among producers and traders. In the developing economics, greater specialization, diversification and commercialization depends upon the timely movement of agricultural inputs and finished products. Storage is necessary to reduce the seasonal and regional fluctuations of prices. The storage facilities are very inadequate and insufficient in Bangladesh, which is also perceived as an important marketing problem at the grass root level.

The major constraints to the development of marketing in Bangladesh are production shortage, high domestic price, non-availability of export quality produce, seasonality of

domestic supply, lack of proper sorting and grading facilities, absence of improved packaging materials, absence of an efficient transportation system, inadequate cargo space and high air freights (BARI, 1992). There are three principal markets: 1. shipping point market; 2. wholesale markets, and 3) retail markets. This marketing system is undergoing change as a result of vertical integration, decentralization, new handling and transportation methods, and the growth of the away-from-home and direct farmer consumer markets. The principle according to which farm produce and farm income are distributed is followed by a look into the problems of agricultural marketing. Surplus cropping operations necessitate the emergence of marketing problems in the agricultural sphere (Alam, 2002).

Marketing system is essential for any farm products. In consideration of guava it is also most important. Because guava mainly used year round, but easily deteriorated its quality. There is no way of government control of guava marketing. Mainly its marketing depends on consumers demand and supply of traders. All the problems for marketing of guava may not be addressed timely. But it is necessary to acquire knowledge on different problems of guava marketing process (Mizanur, 1992).

## **1.2 Statement of the Problem**

The purpose of the study had an understanding of the marketing problems of the guava growers. Moreover, since various characteristics of an individual are likely to have an influence on the marketing problem, it would be necessary to ascertain the associations and contributions of such factors with respect to the problems. Therefore, examining the associations and contributions of a set of personal, socioeconomic and socio-psychological characteristics of the guava growers with their marketing problems would be considered pertinent to the study. In the light of the above discussion and the



background information, the present study has been undertaken with the following research questions:

- ❖ What are the problems being faced by guava grower in guava marketing?
- ❖ What are the growers' characteristics (personal, social, economic and psychological) that are directly related to their problems faced in guava marketing?
- ❖ What relationships exist between selected characteristics of the guava growers and their marketing problems?

An understanding to these queries is likely to be helpful for the extension organizations to take strategies for market development of the guava growers through designing marketing system.

### **1.3 Specific Objectives**

To give the proper guidelines, the following specific objectives were set up-

- i. To describe some selected characteristics of the guava farmers;
  - a. Age
  - b. Education
  - c. Family size
  - d. Farm size
  - e. Land under guava cultivation
  - f. Annual family income
  - g. Income from guava cultivation
  - h. Agricultural extension contact
  - i. Cosmopolitaness
  - j. Agricultural training exposure
  - k. Organizational participation

- ii. To determine the extent of marketing problems of guava farmers;
- iii. To find out the contributory factors in guava marketing problems and
- iv. To compare the severity of marketing problems of guava cultivars.

#### **1.4 Scope of the Study**

- i. The present study was designed to have an understanding of marketing problems of guava farmers and to explore its relationship with their selected characteristics.
- ii. The findings of the study will, in particular, be applicable to the study area at Atghorkuriana union under Nasarabadupazila of Pirojpur District. The findings may also be applicable to other areas of Bangladesh where socio-cultural, psychological, and economic situation do not differ much than those of the study area.
- iii. The findings of the study may also be helpful to the field works of agricultural marketing service providers to improve strategies of action for adopting guava marketing.
- iv. The findings of the study will be helpful to accelerate the development in agriculture, farmers' logistic supports, information needs and the way of dissemination especially turned to key role players in the society as well as reducing the marketing constraints of the vegetable growers. The findings might also be helpful to the planners and policy makers and extension workers.
- v. To the academicians, it may help in the further conceptualization of the systems model for analyzing the constraints of vegetable growers. In addition, the findings of this study may have other empirical evidence to all aspects of marketing problems faced by the guava growers which may be used to build an adequate theory of marketing activities.

#### **1.5 Limitations of the Study**

In order to make the study manageable and meaningful, it was necessary to impose some limitations as stated below:

- i) The study was confined in the area of Pirojpur district.
- ii) Characteristics of the farmers are many and varied, but time, money and other resources did not permit the researcher to include all of them in the study. Hence, only 11 characteristics of the farmers and their problem faced in guava marketing were selected for investigation in this study.
- iii) Various problems in guava marketing were likely to be faced by the farmers. However, only 10 problems have been considered for investigation.

### **1.6 Assumptions of the Study**

An assumption is the supposition that an apparent fact or principle is true in the light of the available evidence (Goode and Hatt, 1952). The researcher had the following assumption in mind while undertaking this study.

- i) The respondents selected for the study were capable to provide proper responses to the questions included in the interview schedule.
- ii) The responses furnished by the respondents were reliable. They expressed the truth about their convictions and awareness.
- iii) Views and opinions furnished by the respondents included in the sample were the representative of the whole population of the study area.
- iv) The researcher who acted as interviewer was well adjusted to the social and cultural environment of the study area. Hence the respondents furnished their correct opinions without estimation.

## **1.7 Definition of Terms**

Some terms which have been frequently used throughout the thesis are defined and interpreted below:

### **Age**

Age of a respondent is defined as the span of his/her life and is operationally measured by the number of years from his/her birth to the time of interviewing. Age of a respondent was measured by the period of time from their birth to the time of interview and it was measured in terms of complete years on the basis of their response.

### **Education**

Education refers to the development of desirable knowledge, skill, attitudes, etc. of an individual through the experiences of reading, writing, observation and related matters. Education was measured in terms of grades (class) passed by respondent. If a respondent received education outside the school, their education was assessed in terms of education of the school.

### **Family size**

Family size referred to the number including the respondent himself, his wife, children and other permanent dependents, which lived and lived together in a family unit.

### **Farm size**

Farm size meant the total area of land on which a farmer's family carried on farming operations in terms of full benefit to the family.

### **Guava cultivation area**

Guava cultivation area referred to the area of land under his/her management only for guava cultivation. The area was estimated in terms of full benefit to farmers or his/her family.

### **Annual family income**

Annual family income referred to the total earnings of a respondent and the members of his family from agricultural and non-agricultural sources (business, services, daily labor etc.) during the previous year.

### **Agricultural Extension contact**

It refers to the extent of contact with various communication media by the farmers in receiving agricultural information.

### **Training Exposure**

Training exposure of a farmer was defined as the number of days s/he had so far received training. It was used to refer to the completion of an activity by the farmer which was offered by the government, semi-govt. or non-government organizations to improve the knowledge & skills of farmers and changing attitude of a farmer for doing a specific job properly.

### **Organizational participation**

Organizational participation of an individual referred to his participation in various organizations as ordinary member, executive committee member, and president/secretary. Organizational participation of a respondent was measured on the basis of the nature and duration of their participation in different organizations.

### **Problems**

Problems are the elements which hinder/resist/oppose in doing some activities or operations in a certain field. The problems in technology transfer are those, which act as the barriers to the adoption of technologies by the potential users (Kashem and Halim, 1991).

### **Problem faced**

Problem faced indicates the argument, altercation or conflict that acts as barrier in potato marketing.

### **Marketing**

Marketing is the process of handover goods or products from growers to consumers either directly or through some channel.

### **Guava marketing**

The participants in guava marketing activities include large scale local buyers, itinerant traders, commission agents, wholesalers, cold storage operators and retailers including the groups themselves.

## CHAPTER II

### REVIEW OF LITERATURE

This chapter deals with a brief review of previous research studies relating to the problem related to marketing. The relevant information regarding this problem is limited in number. However, the researcher has tried her best to collect needful information through searching relevant studies. Unfortunately, few research works were found directly related to the problem faced in marketing. However, research works related to problem faced by the farmers in different aspects of marketing of some important crops are presented below.

#### **2.1 Problem Faced by the Farmers in different Aspects of Marketing**

Marothia (1983) conducted a research to find out the constraints in the adoption of paddy technologies and marketing in two villages in Raipur Block, Madhya Pradesh, India. The findings revealed that the majority of farmers still adopt a partial package of recommendations, mainly due to the high cost of inputs, financial limitations and risk of crop failure and marketing. Inadequate supportive input-facilities were found to be responsible for the slow adoption of a paddy technology and marketing.

Rahaet *al.* (1986) identified some common problems of cotton cultivation and marketing as perceived by the farmers in Bangladesh. Those were: lack of suitable land, lack of irrigation facilities, shortage of labor, shortage of cash money, lack of technical knowledge, lower price of cotton, and non-availability of seed, insecticides and fertilizers.

Rahman (1995) in his study identified that farmer faced several problems in cotton cultivation. Non-availability of quality seed in time, unfavorable and high cost of fertilizer and insecticides, lack of operating capital, not getting fair weight and reasonable price according to grade, effects of cattle in cotton field, lack of technical knowledge, lack of storage facility, stealing from field at maturity stage, and late buying of raw cotton by Cotton Development Board were identified as major problems of cotton farmers in Mymensingh district.

Thakur *et al.* (1997) conducted a study to (1) calculate the marketable and marketed surplus of principal food grain and vegetable crops of small and large farms in the hills of Himachal Pradesh, India; (2) examine market supply response and factors affecting marketed surplus; and (3) investigate the problems of agricultural marketing in the hills.

The study was carried out in Kangra and Mandi districts during the agricultural year 1992/93. Both districts were covered under the Indo-German Intensive Agricultural Development Project (IADP). A total of 145 farmers were selected from Kangra and Nurpur block (Kangra district) and Mandi-Sardar and Sundemagar blocks (Mandi district). Eight crops were covered: maize, wheat, rice, tomatoes, cauliflower, cabbage, peas and radish. The study showed that the farmers were market-oriented with sufficient marketable and marketed surplus. The supply response is positive for all crops. The small farmers are more responsive in increasing marketed surplus with increased production than the large farmers. Farmers encounter many agricultural marketing problems.



Faroque (1997) found that female rural youth in Bhaluka (Mymensingh) lacked cash for buying seeds, seedling and fisheries and devoid of necessary knowledge in improved vegetable cultivation. He further added that the majority of female rural youth faced very high (54%) problems related to marketing.

Yadav *et al.* (2000) conducted a survey during 1996-97 in the Basti district of Uttar Pradesh, India, among farmers of 6 selected villages who were classified based on the size of their farmland: below 1 ha (38 farmers), 1-2 ha (33) and 2 ha and above (19). Three potato disposal channels (I: producer-consumer, II: producer-retailer-consumer and III: producer-wholesaler-retailer-consumer) were used. Under channel III, 3 storage systems were used: without storage, storage by producer and storage by wholesaler. Tabulated data were represented on (1) the pattern of potato disposal by size of farmland, (2) potato price spread in Basti vegetable markets for the 3 channels and (3) inter-channel comparisons as a whole. Potato marketing problems can be overcome by cooperative marketing.

Ismail (2001) conducted a study on farm youth of haor area of Mohanganjupazila. Study revealed that there were six top problems in rank order such as (i) no arrangement of loan for the farm youth for fishery cultivation, (ii) lack of government programs in agriculture for the farm youth and (iii) absence of loan giving agencies for establishing farm.

Pramanik (2001) made an extensive study on the twenty-four problems of farm youth in Mymensingh villages relating to different problems in crop cultivation and marketing. Out of twenty-four problems top five problems in rank order were; i) local NGO take high rate of interest against a loan, ii) lack of agricultural machinery and tools, iii) lack of

cash iv) financial inability to procure improved seeds, fertilizers and irrigation v) marketing facilities.

Erbe and Neubauer (2002) reported that potato production area in Germany increased by 2.1% to 288000 ha in 2002 compared to production area in 2001. The area reduced in 2001 because of marketing problems. The greatest reduction (14%) was in Sachsen-Anhalt. The main varieties are Agria (7.3% of total area), Kuras (5.4%), Cilena (4.1%), Marabel (3.9%) and 20 other varieties. Seventeen new varieties were approved for 2002, including 1 very early, 3 early, 10 semi-early (5 for consumption and 5 for processing), and 3 semi-late and late ripening, while 5 varieties were removed from the German national list.

Salam (2003) in his study identified constraints in adopting environmentally friendly farming practices. Top six identified constraints according to their rank order were : i) low production due to limited use of fertilizer (ii) lack of organic matter in soil, (iii) lack of Government support for environmentally friendly farming practices, (iv) lack of capital and natural resources for integrated farming practices, (v) lack of knowledge on integrated farm management and (vi) marketing facilities.

Uddin (2004) in his study identified five aspects of constraints in commercial cultivation of vegetables viz. seed constraints, disease and insect infestation constraints, field management constraints, marketing of vegetable constraints and extension work constraints. Among these aspects of constraints they revealed marketing problem severely faced by the farmers.

Yulafci and Cinemre (2007) conducted a study to explore marketing structures of fresh fruits and vegetables, which are produced in Carsamba plain (Turkey), to determine marketing problems and to put forward solution suggestions. According to brokers, the most important problem of fresh vegetable and fruit marketing was not being able to find quality crops. Producers had only limited power in setting the prices of vegetables and fruits which in the market was estimated around 6-7 percent. The most important problem in the market was said to be not having enough standard size. In addition to this, there were some deficiencies related with infrastructure of the market area.

## **2.2 Relationship between Selected Characteristics of the Farmers and their Problem faced in Guava Marketing**

### **2.2.1 Age and marketing problem**

Rahman (1995) conducted a study to identify the relationship between the personal characteristics and constraints facing in cotton marketing of Muktagacha Thana under Mymensingh district. He found that there was no significant relationship between the age of the farmers and their faced constraints in cotton cultivation and marketing. Similar findings were obtained by Ali (1999), Rashid (1999), Pramanik (2001), Ahmed (2002), Hossain (2002), Salam (2003) and Halim (2003) in their respective studies.

Azad et al. (2014) also found that age of the vegetable growers has no significant relationship with problem faced in vegetable cultivation.

Pandict et al. (2013) conducted a study to identify the relationship between the personal characteristics and constraints facing in vegetable marketing of Trishal Upazila

under Mymensingh district found that there was no significant relationship between the age of the farmers and their faced constraints in vegetable cultivation and marketing.

Bhuiyan (2002) in his study found a positive and significant relationship between age of the farmers and their constraints in banana cultivation and marketing. A similar finding was obtained by Rahman (1996) in his respective study.

Rashid (2003) found that age of the rural youth had significant negative relationship with problem faced in selected agricultural production activities and marketing.

Rahman (1995), Azad *et al* (2014), Pandictet *al.*(2013) have found no significant relationship within the age of farmers and marketing problem. Bhuiya (2014) have found positive relationship within the age of farmers and marketing problem but Rashid (2003) have found negative significant relationship. So further research should be taken related to this issue.

### **2.2.2 Education and marketing problem**

Mansur (1989) found that education of the farmers had significant negative effect on their problem faced in marketing. Similar findings were obtained by Rahman (1995), Haque (1995), Rahman (1996), Karim (1996), Faruque (1997), Pramanik (2001), Ahmad(2002), Hossain (2002) Bhuiyan (2002) and Salam (2003) in their respective study.

According to Gasperini and Atchoarena (2005), education is a fundamental human right and essential for reducing poverty and improving the living conditions for rural people. They further indicates that from a perspective of agricultural improvements, basic education improves farmer productivity and business management.

Pandictet *al.* (2013) conducted a study to identify the relationship between the personal characteristics and constraints facing in vegetable marketing of TrishalUpazila under Mymensingh district found that there was no significant relationship between the age of the farmers and their faced constraints in vegetable cultivation and marketing.

Azad et al. (2014) also found that age of the vegetable growers has no significant relationship with problem faced in vegetable cultivation.

The study of Ismail (2001) revealed that there was no significant relationship between education and problem faced of farm youth in product marketing.

Hoque (2001) found a significant negative relationship between education and problem faced of the FFS farmers in product marketing.

Pandictet *al.* (2013), Azad *et al.* (2014), Ismail (2001) have found no relationship between education and marketing problem but Hoque (2001) found a negative significant relationship between education and marketing problem. So further research should be taken related to this issue.

### **2.2.3 Family size and marketing problem**

Panditet *al.* (2013) found a significant negative relationship between family size and problem faced of the vegetable growers in vegetable cultivation and marketing.

Rahman (2004) found in his study that family size of the farmers had no significant relationship with their knowledge on boro rice cultivation and marketing practices.

Hossain (2003) found that family size of the farmers was not significantly related to farmers' knowledge on modern Boro rice cultivation and marketing practices.

Panditet *al.* (2013) found a negative significant relationship and Rahman (2004), Hossain (2003) found no significant relationship between family size and marketing problem. So further research should be taken related to this issue.

### **2.2.4 Farm size and marketing problem**

Lionberger (2009) after reviewing the situational factors from the related literature in the field of adoption of new ideas and practices concluded that size of farm was nearly always positively related to the adoption of new farm practices.

Hossain (1996) in a study on landless labourers in Bhabakhali union of Mymensingh district found a significant relationship between barga farm size of the landless labourers and their problem confrontation.

Panditet *et al.* (2013) found a significant negative relationship between farm size and problem faced of the vegetable growers in vegetable cultivation.

Mansur (1999) in his study on the feeds and feeding constraints confrontation found a significant negative relationship between the farm size of the farmers and feeds and feeding constraints confrontation.

Azad *et al.* (2014) also found that farm size of the vegetable growers has significant negative relationship with problem faced in vegetable cultivation.

Lionberger (2009) and Hossain (1996) have found a positive significant relationship and Panditet *et al.* (2013), Mansur (1999) and Azad *et al.* (2014) have found negative significant relationship between Farm size and marketing problem. So further research should be taken related to this issue.

#### **2.2.5 Land under guava cultivation and marketing problem**

There was no available review of literature about on land under guava cultivation and marketing problem.

#### **2.2.6 Annual income and marketing problem**

Hossain (1989) in his study on landless labourers in Bhabakhali union of Mymensingh district found a significant positive relationship between annual family income of the landless laborers and their problem confrontation

Mansur (1998) in his study on the feeds and feeding constraints confrontation found a significant relationship between the annual family income of the farmers and feeds and feeding constraints confrontation, but showed a negative trend.

Panditet *al.* (2013) found a significant negative relationship between the family income and problem faced of the vegetable growers in vegetable cultivation and marketing.

Azad *et al.* (2014) also found that annual income of the vegetable growers has significant negative relationship with problem faced in vegetable cultivation.

Rahman (1995) in his study found that a significant negative and substantially relationship between the annual family income of the farmers and their faced constraints in cotton cultivation.

Hossain (1989) and Mansur (1998) found positive significant relationship and

Panditet *al.* (2013), Azad *et al.* (2014) and Rahman (1995) found negative significant relationship between annual income and marketing problem. So further research should be taken related to this issue.

### **2.2.7 Income from guava cultivation and marketing problem**

There was no available review of literature about on income from guava cultivation and marketing problem.



### **2.2.8 Extension contact and marketing problem**

Panditet *al.* (2013) found a significant negative relationship between the extension media contact and problem faced of the vegetable growers in vegetable cultivation and marketing.

Ali (1978), Saha (1983), Sarker (1983) and Mansur (1989) found in their studies that organizational participation of the farmers had a significant negative relationship with the agricultural constraints faced. On the other hand Islam (1987) and Raha (1989) found no significant relationship with their agricultural constraints faced.

Rahman (1995) found in his study that there was no relationship between the organizational participation of the farmers and their faced constraints in cotton cultivation.

Rashid (1999) in his study revealed that the organizational participation of the rural youth had no relationship with their willingness for undertaking selected agricultural entrepreneurships in their self-employment and their problem perceived for undertaking selected agricultural entrepreneurships in their self-employment. Similar finding was obtained by Hossain (1989) in his respective study. Similar findings were obtained by Rahman (1996), Faroque (1997), Pramanik (2001), Hossain (2002), Bhuiyan (2002) Ahmed (2002) and Salam (2003) in their respective studies.

Panditet *al.* (2013)Ali (1978), Saha (1983), Sarker (1983) and Mansur (1989) have found negative significant relationship On the other hand Islam (1987) and Raha (1989), Rahman (1995) and Rashid (1999) have found no relationship within extension contact and marketing problem. So further research should be taken related to this issue.

### **2.2.9 Cosmopolitaness and marketing problem**

There was no available review of literature about on cosmopolitaness and marketing problem.

### **2.2.10 Training received and marketing problem**

Van der Walt (2005) as cited by Ortmann and King (2007) indicated that poor management, lack of training, conflict among members (due mainly to poor service delivery), and lack of funds were important contributory factors to the smallholder cooperative failures in Limpopo province.

Hossain (2001) found that the length of the training of the respondents had positive relationship with their knowledge of crop cultivation and marketing.

Azad et al. (2014) also found that training exposure of the vegetable growers has no relationship with problem faced in vegetable cultivation.

Van der Walt (2005) and Hossain (2001) have found positive significant relationship between training received and marketing problem. Azad et al. (2014) have found no significant relationship between training received and marketing problem. So further research should be taken related to this issue.

### **2.2.11 Organization participation and marketing problem**

Rashid (1975) concluded in his study that organizational participation of the farmers had no significant relationship with their problem faced.

Ali (1978), Saha (1983), Sarker (1983) and Mansur (1989) found in their studies that organizational participation of the farmers had a significant negative relationship with the agricultural constraints faced. On the other hand Islam (1987) and Raha (1989) found no significant relationship with their agricultural constraints faced.

Rahman (1995) found in his study that there was no relationship between the organizational participation of the farmers and their faced constraints in cotton cultivation.

Rashid (1999) in his study revealed that the organizational participation of the rural youth had no relationship with their willingness for undertaking selected agricultural entrepreneurships in their self-employment and their problem perceived for undertaking selected agricultural entrepreneurships in their self-employment. Similar finding was obtained by Hossain (1989) in his respective study. Similar findings were obtained by Rahman (1996), Faroque (1997), Pramanik (2001), Hossain (2002), Bhuiyan (2002) Ahmed (2002), Salam (2003) and Halim (2003) in their respective studies.

Kashem (1977) found that there was a negative relationship between organizational participation of the landless labours and their constraints faced. There was however, a negative trend between the two variables.

Rashid (1975), Ali (1978), Saha (1983), Sarker (1983) and Mansur (1989), Rahman (1995) and Rashid (1999) have found no significant relationship between organizational participation and marketing problem.

### **2.3 Research Gap of the Study**

There are lots of research on marketing problem but very few research are so far conducted to ascertain the marketing problem of guava farmer. Some researchers have found positive significant relationship between the selected characteristics and marketing problem. On the other hand some other found have no significant relationship and very few have found negative significant relationship. Hence, the researcher carried out the present study to ascertain marketing problem of guava farmer of Nesarabadupazila under Pirojpur districts.

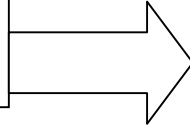
### **2.4 The Conceptual Framework of the Study**

In scientific research, selection and measurement of variables constitute an important task. Problem faced by the guava growers in marketing may be influenced and affected through interacting forces of many independent factors. It is not possible to deal with all the factors in a single study. Therefore, it was necessary to limit the factors, which included age, level of education, family size, farm size, land under guava cultivation, annual family income, income from guava cultivation, agricultural extension contact, cosmopolitaness, agricultural training exposure and organizational participation. Thus, marketing problems of guava growers were the main focus of the study and 11 selected characteristics of the guava growers' were considered as those might have relationship with marketing problem faced.

Considering the above-mentioned situation and discussion, a conceptual framework has been developed for this study, which is diagrammatically presented in the following Figure 2.1.

**SELECTED  
CHARACTERISTICS OF  
GUAVA FARMER**

- ❖ Age
- ❖ Education
- ❖ Family size
- ❖ Farm size
- ❖ Land under guava cultivation
- ❖ Annual family income
- ❖ Income from guava cultivation
- ❖ Agricultural extension contact



**Problem faced  
in guava  
marketing**

**Figure 2.1: The Conceptual Framework of the Study**

## **CHAPTER III**

### **METHODOLOGY**

In conducting a research study, methodological issue is one of the prime considerations for yielding of valid and reliable findings. Appropriate methodology enables the researcher to collect valid and reliable information and to analyze the information properly in order to arrive at correct conclusions. However, the methods and operational procedures followed in conducting this study has been described in the subsequent sections of this chapter.

#### **3.1 Locale of the Study**

The study was conducted at Atghorkuriana union of Nasarabadupazila under Pirojpur district. Out of ten unions, Atghorkurianaunion was purposively selected because of higher guava production. Thereafter, two villages namely, Dholahar and Brahmonkathi were selected randomly from 9 villages of this union. A map of Pirojpur district showing Nasarabadupazila and a map of Nesarabadupazila showing the study area have been shown in Fig 3.1 and 3.2, respectively.

#### **3.2 Populations and Sampling Design**

All the guava growers of the selected villages were the population of the study. A list of the farmers of this Upazila was prepared with the help of Sub Assistant Agriculture Officer, Upazilla Agricultural office; Naserabad, Pirojpur. The total numbers of guava growers in this selected villages were around 253. Out of them 40 per cent of the population were selected following random sampling method. Proportionate random sampling method was used in order to select the respondents. So, 101guava farmers were the sample of the study. If anyone included in the

original sample were unavailable during data collection, the next farmers regarding that list were considered turn by turn for collecting data. Therefore no reserve list was needed.

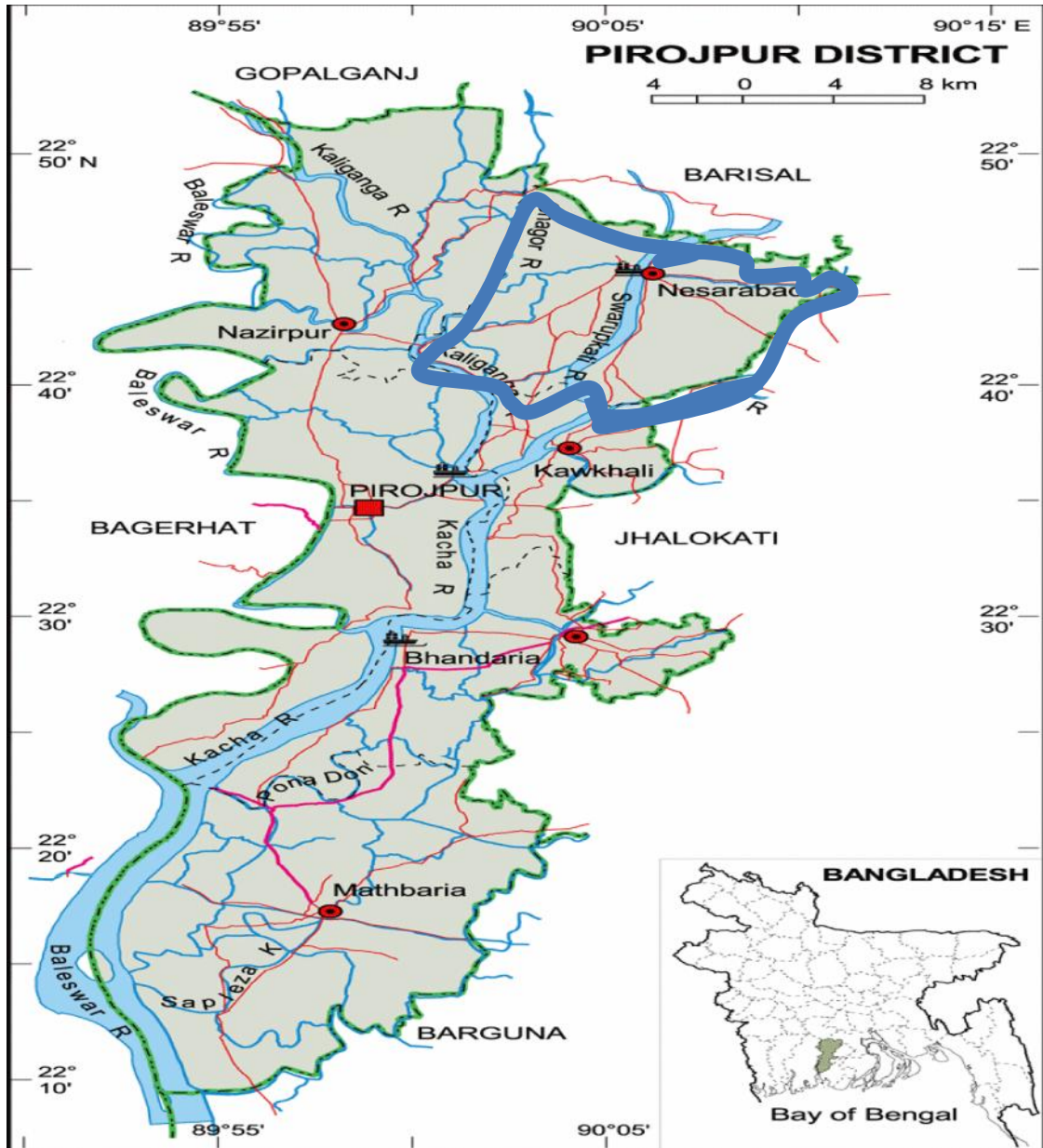


Figure 3.1: Map of Pirojpur district showing Nesarabadupazila



Figure 3.2: Map of Nesarabadupazila showing the study area



**Table 3.1 Distribution of the farmers constituting the populations, sample and reserve list in selected villages under Nesarabadupazila**

Name of unions	Name of villages	Population of guava farmers	Sample size (40%)	Reserve list
Atghorkuriana	Dholahar	140	56	6
	Brahmonkathi	113	45	4
<b>Total</b>		<b>253</b>	<b>101</b>	<b>10</b>

### **3.3 Instrument for DataCollection**

In order to collect reliable and valid Information from the guava farmers, an interview schedule was prepared carefully keeping the objectives of the study in mind. The interview schedule contained both open and closed form questions.

Appropriate schedule was also developed to operationalize the selected characteristics of the guava farmers. The interview schedule was prepared in English version and was pre-tested with guava farmers. This pre-test facilitated the researcher to examine the suitability of different questions and statements in general. The interview schedule has been given atAppendix-A.

### **3.4 Measurement of Variables**

A variable is any characteristic, which can assume varying, or different values in successive individual cases (Ezekiel and Fox, 1959). An organized research usually contains at least two important variables, viz. an independent and a dependent variable. An independent variable is that factor which is maintained by the researcher in his attempt to ascertain its relationship to an observed phenomenon. A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variable (Townsend, 1953). According to the relevant research area, the researcher selected ten characteristics of the guava growers as the independent variable and problem faced by the farmers in guava marketing as the dependent variable. It was pertinent to follow a methodological procedure for measuring the variables in order to conduct the study in accordance with the objectives already formulated. The procedures for measuring the variables are described below:

#### **3.4.1 Measurement of independent variables**

##### **3.4.1.1 Age**

The age of the respondents were measured in terms of years, on the basis of the responses of the respondents. Age was measured by the period of time from the birth of a respondent to the day of interviewing.

##### **3.4.1.2 Education**

Education of a respondent is measured in term of grades (classes) passed by are respondent. One score was assigned for one year of successful schooling. For example, if a respondent passed the final examination of class six, his education score was taken as 6; if a respondent had education outside the school and if the level of education was through equivalent to that of class four of the school, then his education score was taken as '4' An illiterate person was given a score zero. A score of 0.5 was assigned for those who don't read and write but can sign his name only.

### **3.4.1.3 Family size**

Family size was operationally measured by assigning a score of one for each member of the family who jointly lived and ate together. The members included the respondent himself, his wife, children and other dependent members.

### **3.4.1.4 Farm size**

Farm size of a respondent was measured by the area being estimated in terms of full benefit to him. It was expressed in hectare and computed by using the following formula.  $FS = A_1 + A_2 + A_3 + 1/2(A_4 + A_5)$

Where,

$A_1$  = Homestead area

$A_2$  = Own land under own cultivation

$A_3$  = Land taken from others as lease

$A_4$  = Own land given to others as barga

$A_5$  = Land taken from others as barga

### **3.4.1.5 Land under guava cultivation**

Land under guava cultivation of a respondent was measured in terms of area covered by guava cultivation by the respondent. It was expressed in hectare.

#### **3.4.1.6 Annual family income**

Annual family income of a respondent was measured in thousands taka on the basis of total yearly earning of the respondents and other members of his family. For determining the annual family income of all the members of the families from all the sources were added together. It was expressed in thousand taka.

#### **3.4.1.7 Income from guava cultivation**

Income from guava cultivation of a respondent was measured in thousands taka on the basis of total yearly earning of the respondents from guava cultivation.

#### **3.4.1.8 Extension contact**

The extension contact of a respondent was measured by computing an extension contact score on the basis of his extent of contact with 12 selected extension media. The respondents were asked to mention his response to four alternative nature of contact for each media. The score for each respondent was determined by adding his responses to all the items on the basis of his frequency of contact as not at all, rarely, occasionally and regularly with a score of 0, 1, 2 and 3 respectively. Extension contact score of the respondents could range from 0 to 36, where 0 indicating no extension contact and 36 indicating very high extension contact.

#### **3.4.1.9 Cosmopolitanism**

Cosmopolitanism of a respondent was measured in terms of his/her nature of visits to the six (6) selected different places external to his/her own social system. The cosmopolitanism of a respondent was measured by computing cosmopolitanism score on the basis of his/her visits with six selected places as follows:

<b>Nature of cosmopolitaness</b>	<b>Scores assigned</b>
Not at all visit	0
Rarely visit	1
Occasionally visit	2
Frequently visit	3

Cosmopolitaness score of the respondents could range from 0-18, where 0 indicate no cosmopolitaness and 18 indicate highestcosmopolitaness.

#### **3.4.1.10 Agricultural training exposure**

It was measured by the total number of days a respondent received training on differentsubject matters in his/her entire service life.

#### **3.4.1.11Agriculturalorganizationalparticipation**

Organizational participation of respondents was measured on the basis of the nature of their participation in 5 selected organizations. Following scores were assigned for nature of participation:

<b>Nature of participation</b>	<b>Scores assigned</b>
--------------------------------	------------------------

No participation	0
One year of participation as general member	1
One year of participation as executive member	2
One year of participation as president	3

Finally organizational participation score of a respondent was computed by adding all the scores obtained by him/her against all the selected organizations. Organizational participation score of the respondents could range from 0-15 where 0 indicate no participation and 15 indicates highest participation.

### **3.5 Measurement of Dependent Variable**

Problem faced by the farmers in guava marketing was the dependent variable of the study. After thorough consultation with relevant experts, farmers and relevant literature, 10 problems were selected related to guava marketing for the study. A list of 10 probable problems that farmers could face in different aspects were listed and asked to indicate the extent of their problem faced in guava marketing. It was measured by using a four point rating scale. For each problem score of '3', '2', '1' and '0' were assigned to indicate extent of problems as high, medium, low and no problem respectively. The problems score was computed for each respondent by adding his/her scores for all 10 problems. The possible range of problem scores thus could be '0' and 30. A total score of 30 indicated highest problems in respect of guava marketing, while a score of 0 indicated no problems faced in guava marketing.

To ascertain the comparison among the problems a Marketing Problem Faced Index (MPFI) was computed using the following formula:

$$MPFI = P_h * 3 + P_m * 2 + P_l * 1 + P_n * 0$$

Where,

MPFI = Marketing Problem Faced Index

$P_h$  = Number of guava marketing having high problem

$P_m$  = Number of guava marketing having medium problem

$P_l$  = Number of guava marketing having little problem

$P_n$  = Number of guava marketing having not any problem at all

Thus, MPFI is an item which could range from '0' to '303', where 0 indicated no problem at all and 303 indicated highest problem in guava marketing.

### **3.6 Statement of the Hypothesis**

As defined by Goode and Hatt (1952) "A hypothesis is a proposition, which can be put to a test to determine its validity. It may seem contrary to, or in accord with commonsense. It may prove to be correct or incorrect. In any event, however, it leads to an empirical test". In studying the contribution with variables, research hypotheses are formulated which state the anticipated contributory relationship with variables. However, for statistical test it becomes necessary to formulate null hypothesis. A null hypothesis states that "there is no contribution with their problems faced by the farmers in marketing at the selected area of Nesarabadupazila under Pirojpur district".

The selected characteristics were age, education, family size, farm size, land under guava cultivation, annual family income, income from guava cultivation, extension contact, cosmopolitaness, training exposure and organizational participation.

### **3.7 Collection of Data**

The researcher himself through face-to-face interview collected data personally from selected respondents. Before starting collection of data, the researcher met the respective Upazila Agriculture Officer, Agriculture Extension Officer and Sub Assistant Agriculture Officers. Interviews were usually conducted with the respondents in their homes. While starting interview with any respondent the researcher took all possible care to establish rapport with him so that he did not hesitate to furnish proper responses to the question and statement in the schedule. However, if any respondent failed to understand any question the researcher took care to explain the issue. The researcher did not face any major problem in collecting data. Excellent co-operation and co-ordination were extended by the respondents and other concerned persons during data collection. The entire process of collecting data took place during February 20 to March 20, 2019.

### **3.8 Data Processing and Analysis**

After completion of field survey, all the data were processed according to the objectives of the study. Local units were converted into standard unit. All the individual responses to questions of the interview schedule were transferred to master sheet to facilitate tabulation, categorization and organization. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form. SPSS computer package was used for data processing and analysis.



The statistical measures such as range, mean, standard deviation, and percentage were used for describing both the independent and dependent variables. Tables were also used in presenting data for clarity of understanding. To find out the relationship between selected characteristics of the respondents and their problems faced in guava marketing, multiple regression analysis was computed.

Five percent (0.05) level of probability was used for rejecting a null hypothesis. Coefficient values signification at 0.05 level is indicated by one asterisk (\*) and that at 0.01 level by two asterisks (\*\*).

## **CHAPTER IV**

### **RESULTS AND DISCUSSION**

In this chapter the findings of the study and its interpretation are presented in four sections according to the objectives of the study. The first section deals with the selected characteristics for the guava farmers, while the second section deals with problems faced by the farmers in guava marketing. The third section deals with the relationships between the selected characteristics of the guavafarmers and their problems in guava marketing and last section deals with comparative severity among the problems faced by the farmers in guava marketing.

#### 4.1 Selected Characteristics of the Guava Farmers

In this section the results of the guava farmers selected characteristics have been discussed. The salient feature of the respondents with their eleven selected characteristics has been presented in Table 4.1.

**Table 4.1 The salient features of the selected characteristics of the farmers**

Categories	Measuring Unit	Rang		Mean	S D
		possible	observed		
Age	Years	-	35-75	57.07	9.478
Educational Qualification	Year of schooling	-	.00-18	5.0792	5.0654
Family Size	Person	-	2-16	8.01	2.847
Farm Size	Hectare	-	0.36-2.98	1.0956	.59603
Land under guava cultivation	Hectare	-	0.06-2.27	.6654	.44436
Annual family income	('000' tk)	-	45-258	122.38	38.279
Income from guava cultivation	('000' tk)	-	8-148	45.61	29.120
Agricultural Extension Contact	Score	0-36	10-29	17.32	3.990
Cosmopolitaness	Score	0-18	4-18	13.14	2.702
Agricultural training exposure	Days	-	0-30	4.94	4.874
Agro-based organizational Participation	Score	-	0-17	4.50	3.856

##### 4.1.1 Age

The age score of the Guava farmers ranged from 35 to 75 with an average of 57.07 and a standard deviation of 9.48. Considering the recorded age farmers were classified into three categories namely young, middle and old aged following (MoYS, 2012).

**Table 4.2 Distribution of the farmers according to their age**

Categories ( years )	Guava farmers		Mean	S D
	Number	Percent		
Young aged ( up to 35 )	1	1	57.07	9.48
Middle aged ( 36-50 )	25	24.7		
Old aged ( above 50 )	75	74.3		
<b>Total</b>	<b>101</b>	<b>100</b>		

Table 4.2 indicates that the majority (74.3 percent) of the respondents fell into the old-aged category while 1 percent and 24.7 percent were found young and middle categories respectively. The mean value (57.07) rightly indicates the reality.

#### 4.1.2 Education

Educational qualification of the respondents' had been categorized as done by Poddar(2015). Education of the farmers ranged from 0 to 18years of schooling having an average of 5.08years with a standard deviation of 5.06. On the basis of their education, the respondents were classified into five categories as shown in Table 4.3.

**Table 4.3 Distribution of the farmers according to their education**

Categories	Guava farmers		Mean	SD
	Number	Percent		
Illiterate (0)	2	2	5.08	5.06
Can sign only (0.5)	46	45.5		
Primary education (1-5 class)	11	10.9		
Secondary education(6-10 class)	25	24.8		
Above secondary level	16	16.8		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.3 indicates the 45.5percent of the farmers could sign their name only. It was found that 24.8percent had secondary level of education, 10.9percent had primary level of education, and 16.8percent had above secondary level of education. Only 2.0percent were illiterate (don't read and write).

#### 4.1.3 Familysize

To describe the family size of the respondents, the category has been followed as represented by Poddar (2015). Family size scores of the farmers ranged from 2 to 16 with an average of 8.01 and standard deviation of 2.85. According to family size, the respondents were classified into three categories (Mean  $\pm$  SD) as shown in Table 4.4.

**Table 4.4 Distribution of the farmers according to their family size**

Categories	Guava farmers		Mean	S D
	Number	Percent		
Small family (up to 5)	21	20.8	8.01	2.85
Medium family (6 -11)	66	65.3		
Large family (above 11)	14	13.9		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.4 indicate that (65.3%) of the farmers had medium family while 13.9 percent of them had large family and 20.8 percent of them had small family. Thus, about two third (64.7%) of the farmers had medium to large family.

#### 4.1.4 Farm size

Land possession of the respondents varied from 0.36 to 2.98 hectare and the average being 1.09 hectare and standard deviation of 0.59. Depending on the land possession the respondents were classified into three categories according to DAE (1999) as appeared in table 4.5.

**Table 4.5 Distribution of the farmers according to their farm size**

Categories (hectare)	Guava farmers		Mean	SD
	Number	Percent		
Small land (up to 0-1 ha)	55	54.5	1.09	.59
Medium land (1.01-2 ha)	37	36.6		
Large land (above 2 ha)	9	8.9		
<b>Total</b>	<b>101</b>	<b>100</b>		

Similar result was observed Nasreen et al. (2013) where highest respondents were small farm sized. Data contained in table 4.5 indicates the 54.5 percent of the farmers had small land while 36.6 percent of them had medium land and only 8.9 percent of them were large farmer.

#### 4.1.5 Land under guava cultivation

Land under guava cultivation of the farmers varied from 0.06 to 2.27 hectare. The average Land under guava cultivation was 0.67 hectare with the standard deviation of 0.44. Based on Land under guava cultivation, the farmers are classified into three categories as shown in Table 4.6.

**Table 4.6 Distribution of the farmers according to their guava cultivation land**

Categories ( ha )	Guava farmers		Mean	SD
	Number	Percent		
Marginal ( upto .20 ha)	15	14.9	.67	.44
Small ( 0.21-1 ha)	62	61.3		
Medium ( above 1ha)	24	23.8		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.6 indicate that the largest proportion (61.3%) of farmers had small guava cultivation area compared to 23.8 percent having medium and 14.9 percent had marginal guava cultivation land. It was again found that most (85.1%) of the farmers had small to medium guava cultivation land.

#### 4.1.6 Annual family income

The annual family income of the farmers ranged from Tk.45 thousand to Tk.258 thousand with an average of Tk. 122.38 thousand and standard deviation of 38.28 thousand. Based on the annual income, the farmers were divided into three categories (Mean±SD) as shown in Table 4.7.

**Table 4.7 Distribution of the farmers according to their annual family income**

Categories ('000' Tk.)	Guava farmers	Mean	S D

	Number	Percent		
Low (up to 84)	15	14.9	122.38	38.28
Medium (85-160)	81	80.1		
High (above 160)	5	5		
Total	101	100		

Reza (2007) found the similar result where highest number of respondents were medium annual income. From the Table 4.7 it was observed that the highest portion (80.1%) of the farmers had medium annual family income compared to 14.9 percent having low and only 5.0 percent had high annual family income.

#### 4.1.7 Income from guava cultivation

The annual family income of the farmers ranged from Tk.8 thousand to Tk.148 thousand with an average of Tk. 45.61 thousand and standard deviation of 29.12 thousand. Based on the observed range, the farmers were divided into three categories as shown in Table 4.8.

**Table 4.8 Distribution of the farmers according to their income from guava cultivation**

Categories ('000' Tk.)	Guava farmers		Mean	S D
	Number	Percent		
Low (up to 49)	63	62.4	45.61	29.12
Medium (50-99)	32	31.7		
High (above 99)	6	5.9		
Total	101	100		

From the Table 4.8 it was observed that the highest portion (62.4%) of the farmers had low income from guava cultivation compared to 31.7 percent having medium and only 5.9 percent had high income from guava cultivation.

#### 4.1.8 Extension contact

The observed extension contact scores of the farmers ranged from 10-29 against the possible range of 0 to 32, the mean being 17.32 and standard deviation of 3.99. According to their observed range of

extension contact scores, the farmers were classified into three categories (Mean±SD) as shown in Table 4.9.

**Table 4.9 Distribution of the farmers according to extensioncontact**

Categories	Guava farmers		Mean	SD
	Number	Percent		
Low (upto 13)	19	18.8	17.32	3.99
Medium (14-21)	66	67.3		
High (above 21)	14	13.9		
<b>Total</b>	<b>101</b>	<b>100</b>		

Similar result was observed Poddar (2015) where highest respondents were medium extension contact. Data presented in the Table 4.9 indicated that 67.3 percent of the farmers had medium extension contact compared to having 18.8 percent low and 13.9 percent high extension contact. Findings again revealed that almost all (86.1%) of the farmers had low to medium extension contact.

#### **4.1.9 Cosmopolitaness**

The score of cosmopolitaness of the farmers ranged from 4 to 18, the mean being 13.14 and standard deviation of 2.70. Based on training exposure, the farmers were classified into three categories (Mean±SD) as shown in Table 4.10.

**Table 4.10 Distribution of the farmers according to their cosmopolitaness**

Categories (scores)	Guava farmers		Mean	SD
	Number	Percent		
Low (upto 11)	27	26.7	13.14	2.70
Medium (12-15)	51	50.5		
High (above 15)	23	22.8		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.10 indicates that 50.5 percent of the farmers had cosmopolitaness; while 26.7 percent of the farmers' low cosmopolitaness and 22.8 percent had high cosmopolitaness. Thus, about 77.2% of farmers had low to medium cosmopolitaness.

#### **4.1.10 Agricultural Training exposure**



The score of training exposure of the farmers ranged from 0 to 30 days, the mean being 4.94 and standard deviation of 4.87. Based on observed range, the farmers were classified into three categories as shown in Table 4.11.

**Table 4.11 Distribution of the farmers according to training exposure**

Categories (days)	Guava farmers		Mean	SD
	Number	Percent		
No training (0)	37	36.6	4.94	4.87
Low training (up to 10)	58	57.5		
Medium training (11-20)	4	4		
High training (above 20)	2	2		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.11 indicates that 57.5percent of the farmers had low training exposure; while 36.6 percent of the farmer’s no training exposure and4percent had medium training exposure and only 2.0% of the farmers had high training. Thus, about 94 percentof farmers had noto low trainingexposure.

#### **4.1.11 Organizational participation**

The score of organizational participation of the farmers ranged from 0 to 17, the mean being 4.50 and standard deviation of 3.85. Based on observed range, the farmers were classified into three categories as shown in Table 4.12.

**Table 4.12 Distribution of the farmers according to organizational participation**

Categories (Scores)	Guava farmers		Mean	SD
	Number	Percent		
No participation (0)	19	18.9	4.50	3.85
Low participation (1-5)	49	48.4		
Medium participation (6-10)	23	22.8		
High participation (above 10)	10	9.9		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data contained in Table 4.12 indicates that 48.4 percent of the farmers had low participation; while 22.8 percent of the farmer's medium organizational participation and 18.9 percent had no organizational participation and only 9.9 percent of the farmers had high organizational participation. Thus, about 71.2% of farmers had low to medium organizational participation.

#### 4.2 Problems faced by the farmers in guava marketing

Problems of Guava farmers were measured through 10 items scale. The problems score ranged from 13 to 29 against the possible range of 0-30. The average was 21.90 and standard deviation was 3.23 respectively. Based on problem faced in guava marketing, the farmers were classified into three categories as shown in table 4.13

**Table 4.13 Distribution of the farmers according to problems faced in guava marketing**

Categories (score)	Guava farmers		Mean	SD
	Number	Percent		
Low (up to 18)	14	13.9	21.90	3.23
Medium (>18 to 24)	64	63.3		
High (>24)	23	22.8		
<b>Total</b>	<b>101</b>	<b>100</b>		

Data presented in the Table 4.13 shows that the majority (63.3%) of the farmers faced medium problem while 13.9 percent of the farmers faced low problem. Comparatively few farmers (22.8%) faced high problem in guava marketing. The findings again revealed that an overwhelming proportion (86.1 percent) of the farmers faced medium to high problem in guava marketing.

#### 4.3 The Contribution of the Selected Characteristics of the Respondents on Problems faced by the Farmers in Guava Marketing

In order to estimate the problems faced by the farmers in guava marketing, the multiple regression analysis was used which is shown in the Table 4.14.

**Table 4.14 Multiple regression coefficients of the contributing variables related to problems faced by the farmers in guava marketing**

Dependent variable	Independent Variable	$\beta$	P	R <sup>2</sup>	Adj. R <sup>2</sup>	F
Problems faced by the farmers in guava marketing	Age	-0.106	0.286	0.376	0.299	4.885
	Educational Qualification	-0.237	0.046*			
	Family Size	-0.022	0.803			
	Farm Size	-0.200	0.154			
	Land under guava cultivation	0.112	0.706			
	Annual family income	-0.015	0.884			
	Income from guava cultivation	0.093	0.711			
	Agricultural Extension Contact	-0.226	0.028*			
	Cosmopolitaness	0.021	0.819			
	Agricultural training exposure	-0.225	0.016*			
	Agro-based organizational Participation	-0.237	0.008**			

\*\* Significant at  $p < 0.01$ ;

\*Significant at  $p < 0.05$

Table 4.13 shows that agro-based organizational participation, agricultural training exposure, agricultural extension contact and level of education of the respondents had significant negative contribution with their problems faced by the farmers in guava marketing. Of these, agro-based organizational participation were the most important contributing factors (significant at the 1% level of significant) and agricultural training exposure, agricultural extension contact and level of education of the respondents were less important contributing factors (significant at 5% level of significant). Coefficients of other selected variables don't have any contribution on their problems faced by the farmers in guava marketing.

The value of  $R^2$  is a measure of how of the variability in the dependent variable is accounted by the independent variables. So, the value of  $R^2 = 0.376$  means that independent variables accounts for 37% of the variation with their problems faced by the farmers in guava marketing. The F ratio is 4.88 which is highly significant ( $p < 0$ ).

However, each predictor may explain some of the variance in respondents their problems faced by the farmers in guava marketing simply by chance. The adjusted  $R^2$  value penalizes the addition of extraneous predictors in the model, but value 0.299 is still show that variance is farmers their problems faced by the farmers in guava marketing can be attributed to the predictor variables rather than by chance (Table 4.14). In summary, the models suggest that the respective authority should be considers the farmers' agro-based organizational participation, agricultural training exposure, agricultural extension contact and level of education of the respondents on their problems faced by the farmers in guava marketing and in this connection some predictive importance has been discussed below:

#### **4.3.1 Contribution of organizational participation of the farmers' to problems faced by the farmers in guava marketing**

From the multiple regression, it was concluded that the contribution of organizational participation to the farmers' problems faced in guava marketing was measured by the testing the following null hypothesis;

"There is no contribution of organizational participation to the farmers' on problems faced by the farmers in guava marketing".

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the organizational participation was significant at 1% level (.008)
- b. So, the null hypothesis could not be accepted.
- c. The direction between organizational participation and problem was negative.

The b-value of organisational participation is (-0.237). So, it can be stated that as organizational participation increased by one unit, farmers' problem decreased by - 0.237 units.

Based on the above finding, it can be said that farmers' had more organizational participation decreased farmers' problem in guava marketing. So, Organizational participation has high significantly contributed to the farmers' problem decreased. Organizational participation increase farmer's knowledge about various aspects which helps farmers make enough reduce their problem in guava marketing.

#### **4.3.2 Significant contribution of training exposure to the farmers' problems in guava marketing**

From the multiple regression, it was concluded that the contribution of training exposure to the farmers' problems in guava marketing was measured by the testing the following null hypothesis;

"There is no contribution of training to the farmers' problems faced in guava marketing".

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the training was significant at 5% level(0.016)
- b. So, the null hypothesis could not be accepted.
- c. The direction between training exposure and problem was negatives.

The b-value of training exposure was (-0.225). So, it can be stated that as training exposure increased by one unit, farmers' problems decreased by -0.225 units.

Based on the above finding, it can be said that farmers' had more training decreased the problems faced by the farmers in guava marketing. So, training has high significantly contributed to the farmers' problems. Training helps farmers to gather more knowledge on guava marketing which ultimately helps farmers to reduce their problems in guava marketing.

#### **4.3.3 Significant contribution of extension contact on the farmers' problems in guava marketing**

From the multiple regression, it was concluded that the contribution of extension contact on the farmers' problems in guava marketing was measured by the testing the following null hypothesis;

"There is no contribution of extension contact to the farmers' problems in guava marketing".

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the extension contact was significant at 5%level (.028)
- b. So, the null hypothesis could not be accepted.
- c. The direction between extension contact and problems was negative.

The b-value of extension contact was (-0.226). So, it can be stated that as extension contact increased by one unit, farmers' problems in guava marketing decreased by -0.226 units.

Based on the above finding, it can be said that farmers' had more extension contact decreased farmers' problems in guava marketing. So, extension contact has high significantly contributed to the farmers' problems decreased.

#### **4.3.4 Significant contribution of education on the farmers' problems in guava marketing**

The contribution of education to farmers problems in guava marketing was measured by the testing the following null hypothesis;

"There is no contribution of education to the farmers' problems in guava marketing".

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the education was at 5% significance level(.046)
- b. So, the null hypothesis could not be accepted.
- c. The direction between education and problems was negatives.

The b-value of level education is (-0.237). So, it can be stated that as education increased by one unit, farmers' problems faced in guava marketing decreased by -0.237 units.

Based on the above finding, it can be said that farmers' education decreased the farmers' problems in guava marketing. So, education has significantly contributed to the farmers' problems in guava marketing. Education plays an important role to reduce problems in guava marketing in many cases. Education enhances knowledge on many aspects such as training, participation, extension contact and so on.

#### **4.4 Comparative Severity among the Problems Faced by the Farmers in Guava Marketing**

The observed Problem Faced Index of the problems ranged from 164 to 281 against the possible range of 0-303. Marketing Problem Faced Index (MPFI) of these selected problems is shown in Table 4.14.

On the basis of MPFI, it was observed that “facing problems in selling the guava in time” ranked first followed by “Non-availability of skilled labor during guava marketing”, “Not getting satisfactory price during selling the guava”, “Undesirable involvement of middle men” and “long distance of guava market” were the least problems faced by the farmers in guava marketing.



**Table: 4.14 Marketing Problem Faced Index (MPFI) with Rank Order**

<b>Statement on problems</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>No</b>	<b>Computed score</b>	<b>Rank order</b>
Facing problems in selling the guava in time	85	10	6	0	281	1
Non-availability of skilled labour during guava marketing	77	12	10	2	265	2
Not getting satisfactory price during selling the guava	58	26	13	4	239	3
Undesirable involvement of middle men	59	21	16	8	233	4
Lack of proper transport facilities for maize	53	24	20	4	227	5
Non- availability of storage facility from farmers level to top stage	47	27	20	7	215	6
Poor and inadequate roads for transportation	44	31	18	8	212	7
Low scope for consume as fruit	36	33	15	17	189	8
Lack of co-operation from guava buyers	33	35	17	15	186	9
Long distance of guava market	29	10	37	25	164	10

## CHAPTER V

### SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary of the Findings

##### 5.1.1 Individual Characteristics of the Farmers

**Age:** Age of the respondents ranged from 35 to 75 years with an average of 57.07 years. Majority of the respondents (74.3%) were old aged followed by 1 percent and 24.7 percent young and middle-aged respectively.

**Education:** Education of the farmers ranged from 0 to 18 years of schooling having an average of 5.08 years with a standard deviation of 5.06. Majority of the respondents 45.5 percent of the farmers could sign their name only. It was found that 24.8 percent had secondary level of education, 10.9 percent had primary level of education, and 16.8 percent had above secondary level of education. Only 2 percent were illiterate (don't read and write).

**Family size:** The highest proportion (65.3%) of the farmers had medium family size, while 20.8 percent had small family size and 13.9 percent had large family size.

**Farm size:** Farm size of the respondents ranged from 0.36 to 2.98 with an average of 1.09. Majority of the respondents (54.5%) had small farm followed by 36.6 percent and 8.9 percent medium and large farm size respectively.

**Land under guava cultivation:** Land under guava cultivation of the respondents ranged from 0.06 to 2.27 with an average of 67 ha. Majority of the respondents (61.3 percent) had small farm followed by 23.8 percent and 14.9 percent medium and marginal land under guava cultivation respectively.

**Annual family income:** Annual income score of the respondents ranged from 45 to 258 with an average of 122.38. Majority of the respondents (80.1 percent) had medium income followed by 14.9 percent and 5 percent low and high income respectively.

**Income from guava cultivation:** Income from guava cultivation of the farmers ranged from Tk.8 thousands to Tk.148 thousand with an average of Tk. 45.61 thousand and standard deviation of 29.12 thousand. Most of the respondents (62.4%) had low income from guava cultivation while only 31.7 percent medium and 5.9 percent respondents had high income from guava cultivation.

**Extension contact:** Extension contact score of the respondents ranged from 10-29 with an average of 17.32. Majority of the respondents (67.3%) had medium contact followed by 18.8 percent had low and 13.9 percent had high extension contact respectively.

**Cosmopolitaness:** Cosmopolitaness score of the respondents ranged from 4 to 18 with an average of 13.14. Majority of the respondents (50.5%) had medium cosmopolitaness followed by 26.7 percent and 22.8 percent low and high cosmopolitaness respectively.

**Agricultural training exposure:** Agricultural training exposure score of the respondents ranged from 0 to 30 with an average of 4.94. Majority of the respondents (57.5%) had low training exposure followed by 36.6 percent of the farmer's had no training exposure and 4 percent had medium training exposure and only 2.0% of the farmers had high training respectively.

**Organizational participation:** Organizational participation of the farmers ranged from 0 to 17, the mean being 4.50 and standard deviation of 3.85. The majority of the farmers 48.4 percent had low participation; while 22.8 percent of the farmer's medium organizational participation and 18.9 percent had no organizational participation and only 9.9 percent of the farmers had high organizational participation.

### **5.1.2 Problems faced by the farmers in guava marketing**

The observed problem faced scores of the bean farmers in selected cultivation ranged from 13 to 29 against the possible score ranged of 0 to 30. The mean was 21.90. The highest proportion (63.3%) of the farmers had medium problem faced while 22.8 percent had high problem faced and 13.9 percent the farmers had low problem faced in guava marketing.

### **5.1.3 Contribution of the selected characteristics of the farmers to their problems faced in guava marketing**

Among 11 selected characteristics of the farmers 4 characteristics namely, agro-based organizational participation, agricultural training exposure, agricultural extension contact and level of education had significant negative contribution to their problems faced in guava marketing and the rest 7 characteristics namely, age, family size, farm size, land under guava cultivation, annual family income, income from guava cultivation

and cosmopolitans had non-significant relationship with their problems faced in guava marketing.

#### **5.1.4 Comparative severity among the problems faced by the farmers in guava marketing**

The observed Marketing Problem Faced Index of the problems ranged from 164 to 281 against the possible range of 0-303. On the basis of MPFI, it was observed that “facing problems in selling the guava in time” ranked first followed by “Non-availability of skilled labour during guava marketing”, “Not getting satisfactory price during selling the guava”, “Undesirable involvement of middle men” and “long distance of guava market” were the least problems faced by the farmers in guava marketing.

#### **5.2 Conclusions**

Following conclusions were drawn on the basis of findings, logical interpretation and other relevant facts of the study:

1. About half (45.5 percent) of the farmers can sign only. There existed a negative significant contribution with their problems faced. Therefore, it may be concluded that an appreciable proportion of the farmers will not continue to face problems in guava marketing, if suitable steps are taken to remove illiteracy from the farmers.
2. More than four-fifths of the farmers had low to medium extension media contact. Again 71.2% of the farmers had low to medium organizational participation. Findings expressed that both extension media contact and organizational participation of the farmers had significant negative contribution with their problems faced in guava marketing. So, it may be concluded that if the farmer come in more contact of extension provider, electronics, and printed media and extends their organizational participation they will face less problems in guava marketing.
3. Most of the bean farmers (94%) had no training to low training. Findings expressed that training exposure of the farmers had significant negative

contribution with their problems faced in guava marketing. So, it may be concluded that the farmers having lower training exposure faced more problems in case of guava marketing and vice-versa.

4. On the basis of PFI, the farmers faced serious problems in non-availability of pesticides, Non-availability of fertilizers, lack of capital, difficulty in getting loan, farmers do not get proper price and insect and pest attack in bean field. Therefore, it may be concluded that necessary steps should be taken by the concerned authorities to minimize these problems with priority.

### **5.3 Recommendations**

Recommendations based on the findings and conclusions of the study have been presented below:

#### **5.3.1 Recommendation for policy implication**

1. The findings indicated that an overwhelming majority (86.1%) of the farmers faced medium to high problem. So, it may be recommended that necessary steps should be taken by concerned authority to remove these problems so that they can make their guava marketing profitable by increasing yield with less production cost.
2. The findings of the study indicated that education had significant negative contribution to problems faced by the farmers in guava marketing. Therefore, it may be recommended that the concerned authorities should take the special mass education program for the illiterate and low lettered farmers for solving their problems.
3. The findings extension media contact had a significant negative contribution to their problems faced by the farmers in guava marketing. So, it may be recommended that the extension workers of the concerned authority should increase the contact with farmers personally and motivate them to be connected with electronic and printed media that can help them to exchange related information which will reduce their problems.

4. The findings revealed that the training exposure had a significant negative contribution to the problems faced by the farmers in guava marketing. So, it may be recommended that the concerned authority should increase training facilities to develop skills of the farmers technologically so that they can minimize their problems.

5. The findings indicated that organizational participation had a negative significant contribution with the problems faced by the farmers in in guava marketing. Therefore, it may be recommended that the extension provider of concerned authority should select those farmers with priority that has more attraction, eagerness and attention toward new technologies of more yield and income so that they can overcome their problems.

### **5.3.1 Recommendations for further study**

1. The study was conducted on the farmers of only one selected area of Nesarabadupazila under Pirojpur district. Finding of the study need verification by similar research in other areas of the country including areas where guava cultivation is yet to get popularity.
2. Contributions of 11 characteristics of farmers with their marketing problems of guava have been investigated in this study. Further research can be conducted to find out contribution of the other personal characteristics of the farmers with their others problems.
3. In addition to problems in guava marketing, the farmers also faced other problems such as social, economic, housing, sanitation, nutrition and domestic etc. Therefore, it may be recommended that research should be conducted relation to other problems of the farmer.

4. The research was conducted to find out the problems of guava marketing of the farmer. Further research should be taken related to other issues like inter cropping, other crop marketing etc.

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## Appendix A

Department of Agricultural Extension & information System

Sher-e-Bangla Agricultural University Dhaka-1207

An interview schedule on

“Marketing problems of Guava farmers in the selected area of NasarabadUpazila under Pirojpur district”

Serial No .....

Name.....

Village .....Union .....

Upazila..... District.....

**Please answer the following questions (Proper secrecy will be maintained)**

1. Age:

How old are you? ----- (years)

2. **EducationalQualification**

What is your educational qualification?

- a) Don't know reading and writing -----
- b) Don't know reading and writing but can sign only .....
- c) Passed..... class
- d) Adult education.....class

3. **FamilySize**

Please mention the number of your family members including yourself

- a) Male .....members
- b) Female ----- members
- c) Total -----members

**4. FarmSize**

Please furnish area of your land according to use

SI No.	Type of land	A	
		Local unit	Hectare
1.	Homestead (including pond) area (A <sub>1</sub> )		
2.	Own land under own cultivation(A <sub>2</sub> )		
3.	Land taken from others as lease(A <sub>3</sub> )		
4.	Own land given to others as barga(A <sub>4</sub> )		
5.	Land taken from others as barga(A <sub>5</sub> )		
<b>Total = A<sub>1</sub>+A<sub>2</sub>+A<sub>3</sub>+ ½ (A<sub>4</sub>+A<sub>5</sub>)</b>			

**5. Land under guava cultivation.....ha.**

**6. Annual family income**

Please state the income of your family from different sources during the last one year,

**a) Income from agricultural crops**

SI No.	Source of income	Total production (kg/unit)	Price per kg/unit (Tk.)	Total price (Tk.)
1.	Wheat			
2.	Rice			
3.	Jute			
4.	Maize			
5.	Vegetables			
6.	Pulse crops			
Sub-total (a)				



**b) Income from livestock and fisheries**

<b>SI No.</b>	<b>Source of income</b>	<b>Total production (kg/unit)</b>	<b>Price per kg/unit (Tk.)</b>	<b>Total price (Tk.)</b>
1.	Livestock			
2.	Poultry			
3.	Fisheries			
Sub-total (b)				

**C. Income from non-agricultural sources**

<b>SI No.</b>	<b>Source of income</b>	<b>Income</b>	
		<b>Monthly income (Tk.)</b>	<b>Annual income (Tk)</b>
1.	Service		
2.	Business		
3.	Daily labor		
Sub-total (c)			

Grand total = a + b + c = ----- Tk.

**7. Income from guava cultivation.....tk.**

**8. Agricultural Extension Contact**

Please state the extent your contact with the following agricultural extension media

**A) Personal media**

SI No.	Name of the information sources	Extent of contact			
		Regularly (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1.	DAE Officials (UAO, AAO, AEO)	1-2 times/month	At least 1 time/2month	1-5 times/year	o times/year
2.	Officer of other extension agencies	2-3 times/month	1-2 times/month	1-5 times/year	o times/year
3.	Sub-Assistant Agriculture Officer	3-4 times/month	1-2 times/month	1-3 times/yea	o times/year
4.	NGO workers	3-4 times/month	1-2 times/month	1-2 times/vea	o times/year
5.	Dealers (fertilizer & insecticide)	3 times or	1-2 times/month	1-2 times/yea	o times/year

## B) Group media

SI No.	Name of the information sources	Extent of contact			
		Regularly (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1.	Participation in group meeting/discussion	3 times/year or more	1-2 times/year	1-2 times/year	0 times/year
2.	Participation in result demonstration	3 times/year or more	1-2 times/year	1 time/year	0 times/year
3.	Field day	3 times/year or more	2 times/year	1 times/year	0 times/year

## c). Mass media contact

SI No.	Name of the information sources	Extent of			
		Regularly (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1.	Listening agricultural radio programmes	4-7 time/year	1-3 time/year	1-3 time/month	0 times/year
2.	Watching TV agricultural programme	1-2 days/week	2-3 days/month	1-5 times/year	0 times/year
3.	Reading agricultural printed materials like leaflet, bulletin,	1 piece/month	3-5 pieces/year	1-2 pieces/year	0 times/year
4.	Viewing agricultural posters, flip charts, advertisement (in newspaper)	1 piece/month	3-5 pieces/year	1-2 pieces/year	0 times/year

**9. Cosmopolitaness**

Please indicated the extent of your visits to the following places

Sl No.	Place of visit	Extent of visit			
		Frequently	Occasionally	Rarely	Not at all
1.	Other villages	6 times or more/month	4-5 times/month	1-4 times/mo	0 times/year
2.	Other union	4 times or more/month	2-3 times/month	1 time/month	0 times/year
3.	Other upazilaSadar	6 times or more/month	3-5 times/year	1-2 times/year	0 times/year
4.	Own upazilaSadar	5 times or more/month	3-4 times/month	1-2 times/mo	0 times/year
5.	Own zilaSadar	5 times or more/year	3-4 times/year	1-2 times/year	0 times/year
6.	Capital city	3 times or more/year	2 times in life	1 time in life	0 times/year

**10. Agricultural trainingexposure**

Do you participate in any agricultural training programme yet? If yes, furnish the following information:

SL.	Name of the training course	Organization	Days
1.			
2.			
3.			
4.			

### 11. Agro-based organizational Participation

Please indicate the nature of your participation in the following organization.

SL. No.	Name of the organization	Nature of participation			
		No Participation (0)	General member (1)	Executive member (2)	President/ Secretary (3)
1.	KrishokSamabay Samity				
2.	Union Parisad				
3.	Youth Club				
4.	School Committee				
5.	Madrasa Committee				
6.	Mosque Committee				
7.	Different NGO's				
8.	Bazar Committee				
Total					

### 12. Problems faced in guava marketing

SL. No.	Problems	Extent of problems			
		High (3)	Medium (2)	Low (1)	Not at all (0)
1.	Undesirable involvement of middle men				

2.	Lack of proper transport facilities				
3.	Not getting satisfactory price during selling the guava				
4.	Facing problems in selling the guava in time				
5.	Lack of co-operation from guava buyers				
6.	Long distance of guava market				
7.	Low scope for consume as fruit				
8.	Non-availability of skilled labour during guava marketing				
9.	Poor and inadequate roads for transportation				
10.	Non- availability of storage facility from farmers level to top stage				

Thank you for your kind co-operation.

Dated:

.....

Signature of the interviewer