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Kataribhog Rice Marketing System in Dinajpur District, Bangladesh

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Summary

In this study the marketing system of Kataribhog rice was examined with the help of primary data collected purposively from 24 farmers and 65 intermediaries from Sadar Thana of Dinajpur district. Primary data were collected during the months of January and March, 2000. Attempts were made to identify the marketing system of Kataribhog rice to estimate marketing costs and margins as well as investigate marketing problems with probable suggestive measures.

Faria, Bepari, the miller, Aratdar and the retailer who were involved in Kataribhog rice marketing formed a complex marketing channel in the study area. The total marketing cost of Kataribhog paddy/rice incurred by Faria and Bepari were Tk. 28.44 and Tk. 34.00 per quintal while the marketing cost by the miller, Aratdar and retailer were Tk. 92.90, Tk. 16.79 and Tk. 7.21 per quintal respectively. The marketing margin of Faria, Bepari, the miller, Aratdar and the retailer were Tk. 38.50, Tk. 49.45, Tk. 118.98, Tk. 39.07 and Tk. 45.58 per quintal respectively. The margin was the highest for the miller followed by Bepari, the retailer, Aratdar and Faria. Regarding net margin, retailers received the highest net margin (38.37) followed by miller (26.08), Aratdar (Tk. 22.28) and Bepari (Tk. 15.45). The Faria obtained the lowest net margin (Tk. 10.06).

Major problems faced by the farmers and intermediaries were lack of capital, poor communication and transportation facilities, lack of adequate storage facilities, lack of adequate market information, higher market tolls, lack of market facilities etc. The farmers and intermediaries also suggested some solutions to these problems. The Government should take necessary steps to solve these problems and thus to increase the efficiency of Kataribhog paddy/rice marketing in the country.

Key words: Kataribhog rice, Aman rice, Bangladesh agriculture, Marketing channel

Introduction

1.1 Background

Bangladesh is a developing country having an area of 147,570 square kilometers and a total population of 111.4 million. Bangladesh is one of the most densely populated countries in the world with an annual growth of about 1.5 % [5].

The country is expected to have a population of 137.3 million by the 2000 [6]. Net national

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income was 126.5 million taka in 1997-98. Since the level of per capita income is very low (Tk. 12834 in 1997-98) [5] people spend more than one half of their income for food. Also, more than 80% of cultivable land is used for food production. Among the food, cereals (mainly rice and wheat) cover most of the land i.e. 82.7 % of total land [1]. Therefore, production and marketing of these major crops play a significant role in shaping the entire economy [9]. Rice is the dominant crop and largely determines the rate of progress at the agricultural sector of the economy. In Bangladesh three rice crops, Aman, Aus and Boro accounted for about 74% of the total cropped area. The Aman crop is a very important crop representing more than 42.27% of the total cropped area. The other rice crops viz. Aus and Boro occupied respectively about 11.58% and 20.15% of the cropped area. Rice production in 1989-90 was 17 million tones which increased to 18 million tones in 1993-94. However, in 1996-97, Aman, Aus and Boro occupied 57.01% 15.65% and 27.23% respectively of the total paddy cultivated area [3].

Bangladesh is an agricultural country. At present, agriculture accounts for about one third of GDP and employs about two-thirds of the labour force. Exports of agricultural primary products accounted for about 12% of total exports in 1996/97. Total GDP at market price is Tk.1548334 million in 1996/97[5]. Crop agriculture represented a share of about 24% in total GDP and about 73% in agricultural GDP during 1996/97. Contribution of agricultural sector to GDP was 28.6% in 1997/98 [5]. Within the crop sub-sector, foodgrain particularly the rice crop dominated the count ry's agricultural scenario in respect of both cropped area and production claiming a share of 74% and 54% respectively in 1996/97. Rice is the dominant crop and largely determines the rate of progress in the agriculture sector and to a significant extent that of the non-agricultural sectors. It covers about 75% of the cropped area and accounts for about 70% of the value of crop output [17]. In fact the entire growth in crop production is due to the growth in foodgrain production particularly rice. Yield of other non cereal crops such as pulses, oilseeds and vegetables was almost stagnant while that of wheat did not increase markedly. Total production of rice in Bangladesh during 1989/90 to 1997/98 is shown in Table 1.

Bangladesh made steady progress in crop agriculture in the post independence period. It has been striving for self-sufficiency in foodgrain production for a long time. But the land area is very limited and it needs increased agricultural production to feed the growing number of people every year. The cropping intensity increased from 148 to 179% and foodgrain production almost doubled during the period from 1969/70 to 1992/93[17]. At present cropping intensity is 174% [5] and rice

Table 1. Total production of rice in Bangladesh

(1,000 tons)

Year	Production of rice
1989-90	17,856
1990-91	17,852
1991-92	18,251
1992-93	18,340
1993-94	18,042
1994-95	16,833
1995-96	11,188
1996-97	18,882
1997-98	18,862

Source: BBS, 1998, p. 140 and p. 211.

Table 2. Quantity of imported rice

(1,000 tons)

Year	Quantity of rice imported
1992-93	21
1993-94	63
1994-95	1,041
1995-96	1,239
1996-97	195

Source: BBS, 1998, p.276.

production has increased from 125 lakh tonnes in 19979/80 to 168 lakh tonnes in 1994/95. In spite of that every year Bangladesh government imported rice. The quantity of imported rice during 1992/93 to 1996/97 has been shown in Table 2.

Marketing plays a great role in value addition and generating employment in the economy. The quantity of a crop grown by the farmers depends to a large extent on the marketing facilities available in the country. If the farmers fail to sell their produce at incentive prices, they are likely to discontinue modernizing their production activities, which will adversely affect the progress of the economy.

1.2 Marketing of PaddyRice in Bangladesh

Paddy is one of the most important food crops grown in the world. Marketing is the performance of all business activities involved in the flow of goods from producer to ultimate consumer. Marketing of any product is the most important activity to harvest big economic fortunes and to bring prosperity especially in the agricultural sector.

The marketing of paddy or rice in Bangladesh consists of two broad systems:

a) Public Foodgrain Distribution System (PFDS) and

b) Private Marketing System (PMS).

The former system includes different government agencies and approved government agents while the later system consists of producer-sellers as well as different groups of functionaries [13]. The Public Foodgrain Distribution System (PFDS) was introduced in Bengal in 1943 with a view to ensure a minimum quantity of foodgrain at controlled prices to urban consumers. In the latter period it tried to address the rural poor, financing infrastructural development and stabilizing foodgrain prices. In PFDS import of rice and internal procurement of paddy/rice are the main sources of supply to the government. For this purpose foodgrain is purchased through procurement centers at a price fixed by the government. Initially foodgrains were purchased directly from the farmers which have been replaced by millgate purchase by the millers. This system was however abolished in 1992 and procurement through open tendering directly from farmers was introduced. Over the years the structure of flow from PFDS has changed sharply away from rationing system, test relief and Vulnerable Group Development (VGD) to Open Market Sales (OMS) and Food for Education (FFE). At present PFDS contains 7 major channels through which rice and wheat are procured and imported, try to reach the ultimate consumer [13]. However only a small part of foodgrain including paddy/rice is handled by the public sector. The maximum portion of foodgrain is marketed through the private marketing mechanism participated by farmer-sellers and a host of functionaries. Of the numerous agents involved in private paddy/rice marketing in Bangladesh, wholesaler-cum-Aratdars play an important role in the sense that about 80-90% of all rice that reaches the consumers are transacted through them.

1.3 Existing Situation of Rice

Rice plays an important role in the individual as well as overall economy of Bangladesh. About 80% of the agricultural production originates in the crop sector alone of which rice contributes about 72% [3]. Bangladesh is the fifth largest rice producing country in the world after China, India, Indonesia and Vietnam (Table 3).

Rice is extensively grown throughout the year of high to deeply flooded low land in three seasons, namely Aus (March-July), Aman (July-December) and Boro (January-June) with overlapping or short turnover periods.

Table 3. Top paddy producing countries in the world, 1998.

Country	Area (1,000 ha)	Output (1,000 mt.)	Yield (kg/ha)
China	31,848	192,971	6,059
India	42,300	122,244	2,890
Indonesia	11,613	48,472	4,174
Vietnam	7,362	29,142	3,958
Bangladesh	10,263	28,293	2,757
Thailand	10,000	23,240	2,350
Myanmar	5,408	16,651	3,079
Japan	1,801	11,200	6,219
Philippines	3,170	8,333	2,699
U.S.A.	1,342	8,530	6,354
Brazil	3,072	7,796	2,537
Republic of Korea	1,045	7,314	6,997

Source: FAO,1998, pp.64-65.

Table 4. Area, production and yield of different varieties of rice in 1997-98

Varieties	Area (1,000 ha)	% of total area	Production (1,000 tonnes)	% of total production	Yield (tonnes/ha)
Aus	1,565.99	15.25	1,875	9.94	1.20
Aman	5,810.93	56.60	8,850	46.92	1.52
Boro	2,889.88	28.15	8,137	43.14	2.82

Source: BBS, 1998, p. 140.

Table 5. Projection of important crop production during Fifth Five Year Plan

(Unit: million ha, million tones)

Crop	1996/97 (Bench mark)		2001/2002 (Projection)	
	Area	Production	Area	Production
Rice	10.40	18.88	10.11	23.40
Wheat	0.71	1.45	0.70	1.60
Sub-total	11.11	20.33	10.81	25.00
Other coarse grain	0.10	0.10	0.12	0.12
Total food grain	11.21	20.43	10.93	25.12

Source: FFYP, 1997-2002, p.229.

During 1997-98, Aus occupied 1.57 million hectares but average yield was comparatively low (1.2 tonnes/ha), Aman occupies the largest area which is 5.81 million hectares and the average yield of Aman was 1.52 tonnes per hectare. At the same period Boro occupied 2.89 million hectare and the average yield of Boro was 2.82 tonnes per hectare which was the highest amount of all the rice varieties (Table 4).

The foodgrain production in the terminal year of the Fifth Five Year Plan has been projected to be 25.12 million tonnes. Out of this, rice production is expected to be 23.40 million tonnes as against the production of 18.88 million tonnes in 1996/97. The estimates of wheat and other coarse grain production have been made at 1.60 million tonnes and 0.12 million tonnes respectively in the terminal year of the plan. The projected of important crops have been shown in Table 5.

The cultivars of transplanted Aman rice are usually characterized by their relatively fine and flavored grain rice. Kataribhog is one of the fine grain Aman rices which are mainly used by the rich people in the preparation of delicious dishes here and abroad. And it is sold at a higher price in the market due to their special appeal for fragrance and palatability.

1.4 Justification of the Study

Bangladesh is the ninth most populous country in the world. The Bangladeshi Government has given too much emphasis on paddy production. Then every year Bangladesh imports rice. In 1996/97 Bangladesh has imported 195 tonnes of rice [5]. Bangladesh soil is suitable for producing fine grain rice and Kataribhog is a special variety of fine rice. This special variety rice is transplanted in the Aman season. Kataribhog rice is grown in some selected areas in Dinajpur district.

In the past a few studies have been made on the marketing system of fine grain paddy/rice in Bangladesh. But there is no exclusive study on the marketing system of Kataribhog rice particularly in the Dinajpur district. As such it was felt that a study on the Kataribhog rice in the Dinajpur area would be of much importance. The present study is a modest attempt to describe the marketing of Kataribhog rice stating the problems of its production and marketing and giving some solutions. The study would provide useful information to the producers, traders, consumers, future researcher and planners of this rice.

1.5 Objectives of the Study

The present study visualizes the following objectives:

1. To study the socio-economic condition of Kataribhog rice producers.
2. To analyze the marketing system of Kataribhog rice in the selected area
3. To estimate the cost and margin of different intermediaries.
4. To investigate the problems of the Kataribhog rice marketing system in the study area.
5. To suggest remedial measures to solve the existing problems.

The study is organized into eight sections. The first section delineates the introduction of the study along with the objectives and justification. In the second section a review of literature is presented and methodology is described in section three. Socio-economic characteristics of farmers and intermediaries are presented in section four. The fifth section deals with the marketing system of Kataribhog paddy/rice. The marketing cost and margin of the intermediaries are estimated in section six. Section seven is devoted to the problems and solution of Kataribhog paddy/rice marketing. A summary of the major findings of the study along with suggestions and concluding remarks are incorporated in section eight.

Review of the Literature

This chapter is devoted to a brief review of the results of some of the previous studies which are related to the present research work. It is always beneficial for research to consult available literature to assess the stock of knowledge and receive future guidelines for conducting further research in the particular area.

A lot of micro and macro level studies on the economics of paddy mostly emphasizing the production and farm management aspect have been conducted in Bangladesh and abroad. However, the marketing aspect of rice remains relatively neglected and studies on the marketing behavior of intermediaries are also very scanty.

There are no specific studies on Kataribhog rice marketing but there are a few studies on aromatic rice marketing. A brief review of the few important studies available in the field of paddy/-rice marketing in Bangladesh and abroad is given below.

Islam [12] conducted a study on marketing of aromatic rice in selected areas of Dinajpur district and he identified marketing channels of aromatic paddy to estimate marketing cost and margins as well as to investigate marketing problems with probable suggestive measures. He observed that the marketable surplus and net marketed surplus were 80.57% and 37.28% of total quantity produced/received respectively. On an average 11.52% of total aromatic paddy produced was sold by the farmers, of the total sale 38.00% were sold at the farmgate and rest in the market. The total marketing cost of aromatic paddy/rice incurred by the Faria, Bepari, miller, Aratdar, Wholesaler and retailer Tk. 8.22, Tk. 9.20, Tk. 24.65, Tk. 9.99, Tk. 10.59 and Tk. 9.08 per maund. The margin was the highest for the miller followed by the retailer. The marketing margin of Faria, Bepari, miller, Aratdar, wholesaler and retailer were Tk. 9.95, Tk. 13.85, Tk. 37.40, Tk. 14.99, Tk. 11.59 and Tk. 17.08 per maund[1] respectively.

Ali et al. [2] conducted a study on costs and returns of HYV Boro paddy with reference to resource use in an area of Mymensingh district in Bangladesh. They identified the problems faced by farmers in the production and marketing of Boro paddy. Small farmers were found to face acute problems with regard to fertilizers and institutional credit. Problems in the marketing system included the inefficiency of the government procurement system and the unsatisfactory condition of rural markets. Lack of market information and a poor transportation system were also highlighted.

Kumar [16] prepared a case study on marketing channels, costs and margins of rice and compared the efficiency of rice marketing under three marketing channels such as -

1. farmer → village Faria/itinerate trader → wholesaler → retailer
2. Farmer → miller/small rice processor → wholesaler/commission agent → retailer → consumer, and
3. Farmer → wholesaler/commission agent → retailer → consumer.

He found that medium and large farmers sold produce (either raw or processed) directly to millers or wholesalers. Marketing margins were found to be higher for retailers than for other market intermediaries.

Khan [14] conducted a farmer's disposal pattern of T. Aman paddy in three selected villages of Karimgonj thana under Kishorgonj district. He studied the farm level disposal pattern of T. Aman paddy and observed that consumption and sale were the major heads of disposal of T. Aman paddy. The harvest period sale of T. Aman paddy was more than that of its off season sale.

The higher disposal of T. Aman occurred at the farmgate for which a lower price was obtained. Lower disposal, on the other hand, occurred at the secondary market and it retained a higher price of paddy. The higher disposal of T. Aman paddy occurred in the month of Agrahayan and higher prices prevailed in the months of Falgun and Chaitra. The disposal and price of T. Aman were lower in Baishakh and Agrahayan respectively. Consumption, sale, seed kept and kind payment were the ingredients of disposal of T. Aman paddy. Farm size, family size, off-farm income and farm income were the major factors affecting the disposal of T. Aman.

Rahman, et al.[19] conducted a study to evaluate the role of intermediaries in paddy/rice marketing in Bangladesh, with particular reference to their services, marketing costs, margins and price spread. It constituted part of the foodgrain marketing survey conducted by the Bangladesh

[1] One maund is equivalent to 40kg

Rice Research Institute (BRRI) between 1982 and 1984, in which a total of 322 marketing intermediaries throughout the country were interviewed. The intermediaries were found to be performing an indispensable role and the marketing costs incurred by them did not appear to be high considering the variety of services they rendered. As a class, the intermediaries were not found to be exploitative as their profit levels were relatively low. The farmers' share of the consumer prices was about 72%. The intermediaries however, faced some problems such as inadequate transportation and storage facilities. Removal of these obstacles would improve the overall efficiency of the paddy marketing system.

Quasem [18] conducted a study on farmer's participation in the paddy markets, their marketed surplus and factors affecting it in Bangladesh. He analyzed the pattern of disposal of paddy and its variations in prices during the period. The gross and net marketed surplus of paddy in the study area has been estimated to be 28% and 11% of total production. In recent years gross surplus appears to have increased but there is an indication of decline in the case of net surplus. Small farms showed a negative surplus of 9% of their production. The two most important factors affecting the marketed surplus were per capita production and prices of paddy.

Islam [11] conducted a study on market functionaries involved in paddy/rice marketing and observed the behavior pattern of the functionaries and estimated the marketing cost and margins of paddy/rice. The study mentioned that the farmers received 72.11% of the prices paid by the consumers and the share of the functionaries was 27.89%. The functionaries incurred 16.72% of the consumer's prices as marketing cost and their net margin was 11.17%. The farmers received a relatively lower share of consumer's prices in comparison to other developed countries. The middlemen's share of the profit was not high due to the higher cost of marketing. There was ample scope to reduce the marketing costs and transportation losses and improve the marketing infrastructure and physical facilities, thereby raising the level of marketing efficiency.

Islam et al. [10] conducted a benchmark study on rice marketing in Bangladesh, Joydevpur, Gazipur. They found that the functionaries involved in paddy/rice marketing were somewhat efficient because of intense competition among the intermediaries. On an average, 150 traders plus 80 retailers were observed to compete with each other on a Hat day at the primary markets. While 400 traders and 200 retailers were in operation in the secondary or assembly markets. They also found that the middlemen were not earning exorbitant profit, but high marketing costs were responsible for lower returns to the farmers and higher costs to the consumers. The existing physical facilities in primary, secondary and assembly markets and the transportation system were responsible for the higher marketing costs of the functionaries.

It is obvious from the above discussion that a number of studies on the paddy marketing system have been conducted in different areas of Bangladesh and abroad. But there was no study on Kataribhog paddy/rice marketing in the area covered in this study. Therefore an attempt was made to examine the marketing system of Kataribhog rice in Sadar thana of Dinajpur district where there is one of the highest concentrations of production of Kataribhog rice in Bangladesh.

Methodology

3.1 Introduction

Methodology is an indispensable and integrated part of any research. Careful considerations are needed by a researcher before conducting a study. The researcher has great responsibility in

Figure 1. Map of Bangladesh and research site

describing clearly what sorts of research design, method and procedure is to be followed in selecting the study area, the sampling technique and the analysis and interpretation to arrive at the correct conclusions. A chronological description of the methodology used for this piece of research is presented below.

3.2 Selection of the Study Area

The present study is related to fine grain rice. Dinajpur district[2] was purposively selected because of the fact that Dinajpur is one of the leading Kataribhog paddy producing districts of Bangladesh and the researcher had easy access to these areas. On the basis of higher concentration of Kataribhog paddy production and considering easy road communication, Dinajpur Sadar Thana was purposively selected for this study.

The producers' information was collected from two selected villages and the traders' information from 12 selected markets in Dinajpur Sadar Thana. The study areas are shown by an arrow on the map (Fig. 1). The selected villages were Gopinathpur and Dakshin Gosaipur in Uthrail Union in Sadar Thana and the selected primary and secondary markets were Godagari Hat , Farm Hat, Baro Baro Bazaar, Bahadur Bazaar, Pul Hat, Rail Bazaar, Chak Bazaar, Gudri Bazaar, Rail Station Bazaar, Bashunia Potti N.A. Market and New Town bazaar. The Farm Hat is beside the highway about ten

[2] Administrative unit: Bangladesh is divided into six main territorial "Divisions" (The six divisions had the same name as the six City Corporations). The six divisions are subdivided into sixty-four "Districts" (*Zila* in Bengali). Below the district level, there are further subdivisions. The countryside had 464 "Sub-districts" (*Upazila* in Bengali), which are further divided into 4,401 unions; the local government unit (included a groups of two or more villages called Union).

km to the north of Dinajpur district town. The Godagari Hat is about 20 km to the south of Dinajpur town and it is situated by the road side and the middle part of the Uthrail Union. The Farm Hat is held on Friday and Monday and Godagari Hat on Thursday and Monday. The other markets are situated in Dinajpur town and all these are secondary markets but the first two are primary markets.

3.3 Selection of Sample and Sampling Technique

Sampling is an important part of survey work. It was not possible to interview all the farmers and traders of the study area due to time limits and resource constraints. Both the Kataribhog paddy farmers and traders were selected purposively from the study area. Twenty four farmers from two selected villages were chosen for this study. The selected Kataribhog paddy farmers were categorized into three groups, (i) small, (ii) medium and (iii) large. Out of a total of 24 farmers, 8 had small, 8 medium and the rest large farms. Farms having less than 0.51 to 1.00 hectares of land, 1.01 to 2.00 hectares of land and more than 2.00 hectares of land were considered as small, medium and large respectively.

The intermediaries involved in the marketing of Kataribhog paddy/rice were categorized into several groups viz. i) Faria, (ii) Bepari, (iii) miller, (iv) Aratdar and (v) retailer.

As regards the selection of intermediaries 15 Farias, 10 Beparis, 15 millers, 5 Aratdars and 20 retailers operating in the five selected primary and secondary markets were chosen as respondents for this study. So, in total the sample size of the study was 89.

3.4 Collection of Data

Generally most farmers in Bangladesh do not keep written records on annual or daily transactions or activities. So, it was very difficult to collect data and the researcher had to rely completely on the memory of the farmers. Data were collected from the respondents through face to face interviews by the researcher herself. During data collection the objectives of the study were clearly explained to the respondents so that they could respond freely. The traders were interviewed at paddy/rice markets and Hats. Producers were interviewed at two selected villages under Sadar Thana in Dinajpur district. The respondents were interviewed during their leisure time so that they could respond easily.

To overcome errors and to ensure collection of accurate data from the field/study area, all possible measures were taken. Such as, after completion of each interview, each schedule was checked and verified to make sure that answer to each item had been properly recorded. If there were any items which were overlooked or contradictory, the respondents were again interviewed for relevant corrections. Adequate measures were taken to make the information was reliable and accurate and thereby to make them meaningful for the present study.

Secondary data regarding areas, production, food value and other related aspects of Kataribhog rice marketing were collected from various published books, reports and journals.

Generally the harvesting of Kataribhog paddy started from mid December and continued up to January. For this study the data obtained refers to last Aman season.

After the collection of data, each schedule was verified for the sake of consistency and completeness. Editing and coding were done before putting the data in the master sheets. All the collected data were summarized and scrutinized carefully and necessary summary tables were made from the master sheets. Tabular analysis was used mainly based on average, percentages, etc.

In order to arrive at a meaningful conclusion a mainly tabular method of analysis was followed.

Numbers of tables were prepared in accordance with the objectives of the study. Averages and percentages were major statistical tools employed to show the results in a comprehensive manner. Interpretation and discussion of findings were presented in simple terms and finally all were arranged and compiled in the form of the thesis.

3.5 Problems Faced During the Data Collection

During the period of data collection the following problems were encountered by the author:

1. Most of the respondents were not well educated. They had no previous idea about such a study. They were suspicious about the researcher and therefore did not co-operate and it was therefore difficult to explain the purpose of this research to convince them. At last the respondents were convinced.
2. Sometimes the producer-respondents were not available at their home because they remained busy with their outside work. This is why some times more than two visits were required to get information from them. So, the author had to give extra effort and time to collect the information.
3. The respondents always had a tendency not to provide correct data relating to the size of their holding, income and expenditure received from different activities. Because most of the respondents in the study area thought that the investigator was a government officer. They initially hesitated to answer the question relating to their income and expenditure. The respondents thought that new taxes would be imposed on them if correct information was provided. When they understood then they gave relevant data.
4. The respondents (farmers and intermediaries) did not keep records of their farming business and business activities; they had difficulty in recalling information. Therefore, the author had to depend upon their memory.
5. There was a time limitation so all data and other necessary information were collected within the shortest possible time.

Socio-Economic Characteristics of Farmers and Intermediaries

4.1 Introduction

The socio-economic background and characteristics of the Kataribhog paddy farmers influence the area under Kataribhog paddy production and marketing behavior to a great extent. So, a brief description of characteristics is necessary for analyzing the main objectives of the present study. Therefore, information regarding age, family composition, level of education, occupation, annual income etc. of the respondents was collected for this study. A brief description of these characteristics is presented below.

4.2 Age Distribution

After collecting data, the respondents were classified into three age groups: 25 to 35 years, 36 to 46 years and over 46 years. Table 6 shows that 37.5%, 25% and 50% of small, medium and large farmers respectively were within the age group of 25 to 35 years. In small and large farm size groups 37.5% farmers were within the age group of 36 to 46 years whereas 62.5% medium farmers were within this range. On the contrary 25%, 12.5% and 12.5% of small, medium and large farmers belonged to the age group of above 46 years respectively.

It is evident from Table 6 that a larger percentage (45.83%) of Kataribhog paddy producers

Table 6. Age distribution of Kataribhog paddy farmers according to farm size (%)

Farm size	Number of Sample	Age groups (in years)		
		25-35	36-46	Above 46
Small	8	37.50	37.50	25.00
Medium	8	25.00	62.50	12.50
Large	8	50.00	37.50	12.50
All farms	24	37.50	45.83	16.67

Source: Field survey, 1999.Same as the following tables

Table 7. Family composition of Kataribhog paddy producers according to farm size

Farm size	Male (%)	Female (%)	family size (No.)
Small	61.36	38.67	5.50
Medium	48.15	51.85	6.75
Large	62.50	37.50	8.00
All farms	57.41	42.60	6.75

Table 8. Occupation of the Kataribhog paddy producers according to farm size (%)

Farm size	Agriculture	Business	Service
Small	87.50	12.50	-
Medium	75.00	12.50	12.50
Large	62.50	12.50	25.00
All farms	75.00	12.50	12.50

belonged to the 36-46 years age group followed by 25-35 years age group (37.50%) and over 46 years (16.67%).

4.3 Family Size and Composition

A family in the present study is defined as a group of individual living together taking meals together and living under the control of one person as its leader. It includes wife, son, unmarried daughter, father, mother, etc.

Using such a definition the average size of family was found to be 6.75 per sons of which 57.41% were male and 42.60% were female in the study area as shown in Table 7. Table 7 also shows that the average size of family was 5.50, 6.75 and 8.00 for the small, medium and large farmers. The size of family was the largest for large farmers followed by medium and small farmers which indicated a positive relationship between family size and land holding.

4.4 Occupational Status

The main occupation of farmer was that occupation which was the main source of family income i.e. from which most of the income was earned. Table 8 shows that agriculture was the main occupation for 75% of farmers followed by business and service industries (12.5%).

It was observed that agriculture was found to be the main occupation of the majority of sample farmers which was 87.5%, 75% and 62.5% for the small, medium and large farmers respectively. The

Table 9. Level of education of the Kataribhog paddy/rice farmers (%)

Level of education	Small	Medium	Large	All farms
Illiterate	62.50	25.00	12.50	33.33
Primary	25.00	25.00	-	16.67
Below secondary	12.50	12.50	-	8.33
Secondary passed	-	25.00	37.50	20.83
Higher secondary and above	-	12.50	50.00	20.83

Table 10. Income of the Kataribhog paddy farmers according to farm size (In Taka)

Farm size	Total annual income	Average income per family
Small	32,500	4062.5
Medium	60,220	7527.5
Large	90,700	11337.5
All	183,420	7642.5

rest of the farmers in each category reported either business or service industries as their main occupation.

4.5 Educational Status of Kataribhog paddy/rice producers

Education plays an important role in accelerating the process of the agricultural development of a country. Table 9 shows the educational level of the Kataribhog paddy producers in the study area. It is revealed from Table 9 that about 33% farmers were illiterate while about 17% had primary education, about 8% were below secondary, about 21% were secondary passed and about 21% were higher secondary and above. The evidence of secondary passed, higher secondary and above level of education was found more among the large and medium farmers followed by the small farmers. A positive relationship is observed between literacy and farm size.

4.6 Income of Kataribhog Paddy Producers

Agriculture being the main occupation of the selected farmers, their income mainly came from agriculture. Sources of income included also business and service. Total annual income of the respondents was Tk. 32,500, Tk. 60,220 and Tk. 90,700 for small, medium and large farm size. Their average income was Tk. 4062.50, Tk. 7527.50 and 11337.50 respectively. According to Table 10, average income was the highest for the large farmers followed by the medium and small farmers due to the fact that the large farmers possessed more land were more educated and had large business.

4.7 Age Distribution of the Intermediaries

The socio-economic characteristics i.e. age group, level of education and occupation of selected intermediaries are discussed below.

The selected intermediaries of Kataribhog paddy/rice were classified into three age groups such as 25-35 years, 36-46 years and over 46 years. Table 11 reveals that about 49% of the traders belonged to the age group of 36-46 years followed by about 29% of traders in 25-35 years age group and the rest, about 22%, were in the age group over 46 years. It is evident from Table 11 that the highest proportion of different intermediaries belonged to the age group 36-46 years.

Table 11. Age distribution of the intermediaries (%)

Intermediaries	Age groups (years) of Intermediaries		
	25 to 35	36 to 46	Above 46
Farias	26.67	53.33	20.00
Beparis	30.00	50.00	20.00
Millers	26.67	46.67	26.67
Aratdars	20.00	60.00	20.00
Retailers	35.00	45.00	20.00
All	29.23	49.23	21.54

Table 12. Occupation of the intermediaries (% of Intermediaries)

Intermediaries	Business only	Business with Agriculture	Business with service
Ferias	80	20	-
Beparis	80	20	-
Millers	100	-	-
Aratdars	100	-	-
Retailers	60	10	30
All	80	10.77	9.23

Table 13. Education levels of intermediaries (%)

Educational status	Farias	Beparis	Millers	Aratdars	Retailers	All
Illiterate	33.33	10	-	-	10	15.38
Primary	46.67	20	-	-	30	20.00
Below Secondary	13.33	50	6.67	-	40	24.62
Secondary passed	6.67	20	13.33	40	20	16.92
Higher Secondary and above	-	-	80.00	60	-	23.08

4.8 Occupational Status of the Intermediaries

So far the occupation of the selected intermediaries was concerned 80% had rice business as the only occupation while 10.77% did business together with agriculture and only 9.23% were involved in business with service. Table 12 shows that only business was the main occupation of 100% of millers and Aratdars while 80% of Farias and Beparis were involved in only business. Business with agriculture was the main occupation for 20% of the Farias and Beparis. 60% of the retailers participated only in business followed by 30% in business along with service and only 10% were engaged in business with agricultural activities.

4.7.3 Educational Status of the Intermediaries

Education plays an important role in the efficient marketing of Kataribhog paddy/rice. Educated intermediaries would be more aware of information and would make rational marketing decisions. The educational level of intermediaries is presented in Table 13. After collecting data, the selected intermediaries were grouped into four categories according to their level of education.

It is evident from Table 13 that about 15% of the selected traders were illiterate. On an average only 20% traders had primary level of education. About 25% of the traders were below secondary level of education. About 17% of the traders had secondary passed. About 23% of the traders had higher secondary and above level of education.

Marketing System of Kataribhog Paddy/Rice

5.1 Introduction

The marketing system may be thought of as the connecting link or the bridge between producers and consumers. The marketing system plays two important roles: that of physical distribution, which is concerned with the physical handling and transfer of products as they move from producers to consumers. It also adds value to farm commodities and facilitates the exchange process between buyers and sellers [15]. This chapter deals with the different components of Kataribhog paddy/rice marketing system i.e., marketing channels, market intermediaries and their marketing functions. The three components of Kataribhog paddy/rice marketing system are briefly examined below.

5.2 Marketing Channels of Kataribhog Paddy/Rice

The chain of intermediaries through which the transaction of goods takes place between producer and consumer constitutes a marketing channel. In other words, the marketing channel refers to a path composed of middlemen who perform such functions that are needed to ensure the smooth and sequential flow of goods and services from the producers to consumers in order to achieve the marketing objectives of the producing firms. In the study areas the paddy moves from the producer-sellers to the consumers through market intermediaries such as Farias, Beparis, millers, agent, Aratdars and retailers. It was observed that Kataribhog paddy/rice traveled a long distance from the production points in order to reach the consumers. The marketing channels of Kataribhog paddy/-rice as observed in the study area are shown in Figure 2.

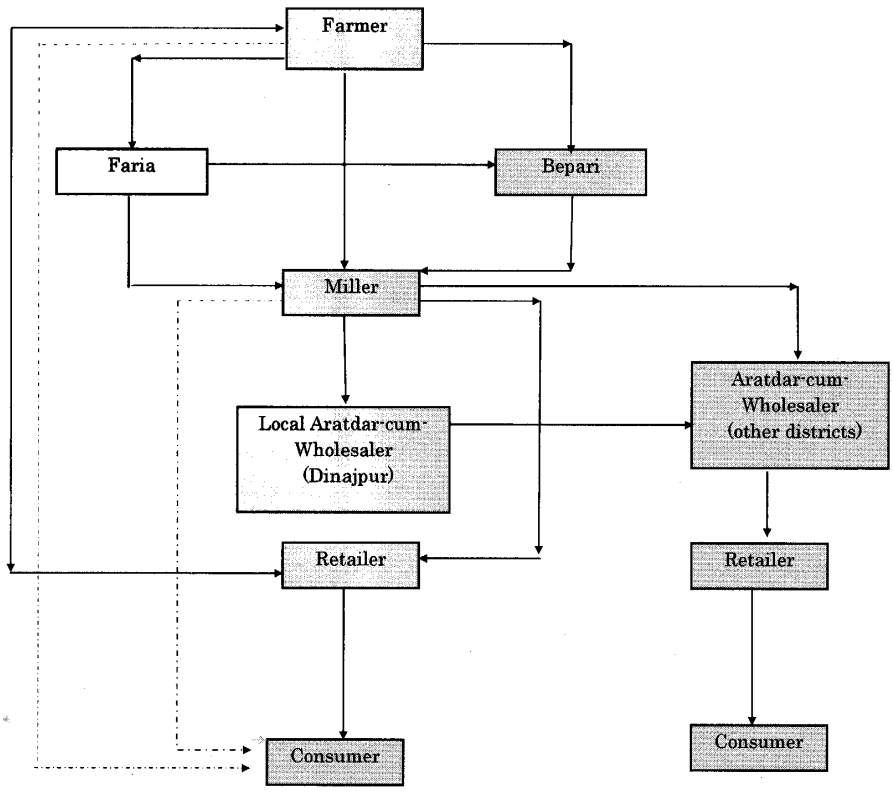

Figure 2. Marketing channels of Kataribhog paddy/rice
Note: Less important marketing channel ---------

On the basis of Figure 2 the following channels can be identified:

Farmer → Consumer
Farmer → Retailer → Consumer
Farmer → Faria → Bepari → Miller → Retailer → Consumer
Farmer → Faria → Miller → Consumer
Farmer → Bepari → Miller → Local Aratdar →Wholesaler cum Aratdar → Retailer → Consumer
Farmer → Faria → Bepari → Miller → Wholesaler cum Aratdar → Retailer → Consumer
Farmer → Miller → Retailer → Consumer
Farmer → Faria → Bepari → Miller → Local Aratdar cum Wholesaler → Retailer → Consumer
Farmer → Bepari → Miller → Retailer → Consumer
Farmer → Miller → Consumer

5.3 Market Participants

A brief description of the market participants are given below.

Producers :

Kataribhog paddy/rice marketing channels started from the farmer. In the study area Kataribhog paddy producers sold their produced paddy to Faria/Bepari at the local market and at the miller's premises. They also sold directly to the consumers. Paddy producers sold their paddy during harvest period and post harvest period. Only 5.39% Kataribhog paddy were processed into rice by farmers and about 95% paddy were sold to different intermediaries.

Farias :

Farias were small traders who dealt in paddy within three or four local markets and handled a small volume of paddy. About 60% of them were regular traders while the others (40%) were seasonal. They were usually the landless laborers or small farmers having no full time work on the farm. They purchased paddy from the farmers and sold that paddy either to the Beparis or the millers. Vans and carts were used by Faria to transport the paddy.

Beparis :

Beparis were larger traders than Farias. Beparis were more or less regular and full time merchants or traders. They handled a larger volume of paddy in primary and secondary markets than the Farias. They generally purchased paddy from the farmers and from the Farias. They sold their entire Kataribhog paddy to the millers. Rickshaw vans and carts were used by the Beparis for the transportation of paddy.

Millers :

Millers were the special type of licensed grain traders. According to the ownership there are two kinds of rice mills. Such as,

1) Ownership of Cooperative Association
   - Small and large husking mills+
2) Private ownership

i) Small and large husking rice mills.
ii) Automatic rice mills.

There are 3 cooperative rice mills, 16 automatic rice mills and others are small and large husking mills. Normally the millers purchased paddy from farmers, Faria and Beparis. Sometimes they purchased paddy through their agent and contact with the Faria and Beparis and processed into rice in their mills. They had to invest a large amount of money to build up an infrastructural framework to their mills. About 97% of millers were license holders and owned established permanent house to process paddy into rice. The rest of millers had no license. Sometimes the millers processed Aratdars-cum-wholesaler paddy by receiving a fixed processing charge. Millers sold their rice to the local Aratdars and retailers. But the major portion was sold to traders of other districts such as Dhaka, Chittagong, Sylhet, Jessore, Rajshahi, Comilla, etc.

Aratdar-cum-wholesalers :

Aratdars who were commission agents having fixed establishments in the market places operated between rice miller and rice traders. Aratdars helped millers to sell their rice for which they generally charged a fixed commission of Tk. 12.50 per quintal. Some Aratdars also acted as merchant middlemen who purchased and sold Kataribhog rice on their own account. They purchased rice from the different local millers and sold to the wholesalers or to some other Aratdars in different districts of Bangladesh such as Dhaka, Chittagong, Sylhet, Rajshahi, Comilla, Kushtia, Jessore, Bogra, Khulna, Tangail and Manikgonj. All of them possessed a trade license. They paid a license fee of Tk. 125 per year.

Retailers :

Retailers were the last link in the chain of Kataribhog paddy/rice marketing. Retailers having a permanent shop in the market were engaged only in rice business and other stationary commodities. Retailers had a trade license. They purchased rice mainly from the millers, and a little from the farmers but sold entirely to the consumers. Sometimes they had to purchase rice from the millers in credit. For this reason the millers charged a higher price for the rice. They did not have adequate finance to operate their business. Only 2 retailers out of 20 purchased paddy from the farmers.

5.4 Volume of Business

The present study reveals that on an average 320 quintals of Kataribhog paddy were handled by Faria per year or 104 Hats (held twice a week). It was found from the observation that on an average 800 quintals of Kataribhog paddy were purchased and sold by the Beparis per year in the study areas. Each miller purchased on an average 2000 quintals of Kataribhog paddy and sold rice after processing to the retailers, local Aratdars, Aratdars- cum-wholesalers of the other districts. The retailer purchased on an average 1 quintal of rice from the millers and sold it to consumers in the different local market or at their stationary shops.

5.5 Marketing Functions of the Intermediaries

Marketing functions may be defined as a fundamental or basic physical process or service required to give a product the form, time place and the procession utility that consumers desire [7]. The most important components of marketing functions at the intermediary level are transportation, storage, grading, financing, market information, pricing, etc. Brief description of the above functions is presented below.

Table 14. Mode of transportation used by farmers and intermediaries

Mode of Transport	Farmers and Intermediaries (%)					
	Farmer	Faria	Bepari	Miller	Aratdar-cum-Wholesaler	Retailer
Head load/ shoulder loads	20	10	-	-	-	-
Bullock/Buffalo carts	50	40	60	10	-	-
Rickshaw vans	30	50	40	13	10	60
Rickshaws	-	-	-	-	-	40
Trucks	-	-	-	77	90	-

Transportation:

Transportation is concerned with making goods and commodities available at the right time in the right condition and at the right place. Transportation includes all the activities involved in preparation for consignment such as crating and loading.

Transportation plays an important role in Kataribhog paddy/rice marketing at every phase in the distributive sequence not only as an integral link in the marketing chain but also for its strategic implication relating to cost and the degree of competition. In the study area traditional means of transportation were used by the intermediaries and farmers. Farmers in the study area transport Kataribhog paddy by human labour using head load/shoulder load (20%), bullock carts (50%), rickshaw vans (30%).(See Table 14) The Farias transported 10%, 40% and 50% of their Kataribhog paddy by head load/shoulder load, bullock carts and rickshaw van respectively. The Beparis transported 60% and 40% of their Kataribhog paddy by bullock/buffalo carts and rickshaw van respectively. But the millers and Aratdars mostly used truck for carrying Kataribhog paddy/rice from the primary market to the secondary market. Sometimes they used bullock/buffalo carts and tractors/-vans. The millers and Aratdars transported 77% and 90% of their paddy/rice by truck respectively. The rest were transported by bullock/buffalo carts and rickshaw vans/vans. The retailers carried 60% and 40% of their rice by rickshaw and rickshaw van respectively.

Storage:

The storage function is primarily concerned with making goods available at the desired time. It creates time utility. Proper storage facilities are essential in order to minimize losses in agricultural commodities. But the storage facility for Kataribhog paddy/rice was not well developed in the study area. About 50% of farmers used Gola and Duly for storing their paddy. Gola are made from bamboo and clay and Duly are made from bamboo.

An average of 51% of intermediaries involved in paddy/rice marketing in the study area had no exclusive grain storage facilities. The Farias generally used a part of their dwellings to store their paddy for a minimum 10-15 days. The Beparis had no permanent storage facilities. But sometimes they used others' storehouse for which they had to pay a lump sum amount. The millers had exclusive grain storage facilities usually buildings or tin sheds. Aratdars used their shops for storing Kataribhog paddy/rice. Retailers used their shops for storing their purchased rice.

Grading:

Grading is one of the basic functions of marketing and is defined as the classification of products according to some standard on measures [15]. It is said that grading affects the process of buying and selling and price formation. Quality testing of Kataribhog paddy/rice was crude and

arbitrary. Quality is determined by eye estimation. Moisture content level was tested by the moisture meter. The following conditions were considered in purchasing paddy at the procurement center:

Component	*Percentage*
a) Moisture content (maximum)	14
b) Foreign materials	0.5
c) Admixture of different varieties	8
d) Immature and damaged grain	2
e) Immature dried grain	0.5

But no standard grading system was found to be practiced by the intermediaries in the study area.

Processing:

Processing is done mainly for the creation of form utility, it increases the value of a product by changing the form. Food manufacturers or processors are primarily engaged in adding form utility to raw products. Paddy is milled into rice. In rice marketing, processing of paddy into rice was a basic and vital function. The millers bought paddy from Farias and Beparis at local markets, then they processed it into rice themselves or using other millers on contract basis.

Financing :

Like other paddy marketing, financing is of crucial importance in the marketing of Kataribhog paddy/rice. Except millers the other traders were mostly self-financed. Besides their own capital the traders needed sufficient capital to carry out their business smoothly.

Table 15 shows the sources of finance of Kataribhog paddy/rice traders. About 60% of Farias, 60% Beparis and 46% millers, 50% Aratdars-cum-wholesalers and 82% retailers operated business from their own fund only.

Only 15% of Farias, 35% of Beparis, 54% of millers and 50% of Aratdars borrowed funds from institutional sources such as the bank (Krishi Bank, Janata Bank, etc.). The rest of the money was borrowed from non-institutional sources. About 25% of Farias, 5% of Beparis and 12% of retailers obtained funds from non-institutional sources such Mohajan, money lenders etc.

Risk Bearing:

Risk bearing facilities are essential in any marketing activity. But in the study area traders at local markets were found to bear risk themselves. They did not resort to insurance policy for risk aversion. On the other hand, in the secondary market the millers and Aratdars-cum-wholesalers protect themselves from risk through insurance policies.

Table 15. Source of finance of the Kataribhog Intermediaries

Sources of Finance	Middlemen/Intermediaries (%)					
	Faria	Bepari	Miller	Aratdar-cum -wholesaler	Retailer	Average
Own	60	60	46	50	82	59.6
Institutional	15	35	54	50	-	30.8
Non-Institutional	25	5	-	-	12	7.6

Table 16. Sources of market information of the intermediaries (%)

Sources of information	Faria	Bepari	Miller	Aratdar-cum -wholesaler	Retailer	Average
Market visits and personal observation	80	75	10	-	85	50
Fellow traders	20	25	30	5	10	18
Telephone	-	-	60	95	5	32

Market Information:

Market information is a facilitative function required for the efficient operation of the marketing system.

Most intermediaries got their market information through market visits, personal observations and from fellow traders. Millers and Aratdar-cum-wholesalers usually used the telephone to collect their information (Table 16).

Although the directorate of Agricultural Marketing, Government of Bangladesh is engaged in the task of regularly disseminating the market price of agricultural products in newspapers, weekly bulletins and on radio, there is no information on the price of Kataribhog paddy/rice.

Pricing:

Pricing is a function of determining product value in monetary terms by the marketing management of a company before it is offered to the target consumers for sale [8]. In fact like a commercial company the Kataribhog farmer-producers did not develop any marketing plan for selling paddy. The farmers' sales decisions were influenced by their cash need, volume of production and amount of debt. The price was mainly determined by the number of buyers attending the market and the volume of product offered for sale. In the study areas all the intermediaries who were involved in the buying and selling of Kataribhog paddy/rice followed open bargaining for fixing the prices of their product and as compared to the intermediaries the individual farmers suffered a low bargaining power. Intermediaries quoted prices for each transaction separately on the basis of an eye estimation of the lot.

Marketing Cost and Margin of the Intermediaries

6.1 Introduction

Marketing costs refer to the expenses incurred by the intermediaries in the process of performing various marketing functions to take a commodity from producers to the ultimate consumers. Different types of expenses such as transportation, loading and unloading, market tolls, personal expenses etc. were incurred by the different intermediaries in the marketing channel of Kataribhog paddy/rice. In the study attempts have been made to quantify the marketing cost of Kataribhog paddy for the intermediaries of Farias, Beparis, millers, Aratdars and retailers only.

6.2 Marketing Cost of Farias

The Farias purchased paddy from the various local markets and sold them to the local markets and the secondary markets in original form and no processing was involved there. The cost involved in performing these services include transportation, loading and unloading, market tolls, cost of bags, weighting charges, personal expenses etc. They carried paddy by carts, vans or rickshaws for their

Table 17. Marketing cost of Farias

Cost items	Average cost (Tk/quintal)	(%)
A. Buying cost		
Transportation	7.50	26.37
Loading and unloading	2.67	9.39
Market tolls	3.13	11.00
Cost of bags	1.64	5.77
Personal expenses	0.69	2.43
Sub-total	15.63	54.96
B. Selling cost		
Transportation	8.00	28.13
Loading and unloading	2.50	8.79
Personal expenses	0.50	1.76
Weighing charges	1.25	4.39
Others	0.56	1.97
Sub-total	12.81	45.04
Total (A+B)	**28.44**	**100.00**

Note: i) Average cost=Total cost÷Total amount
ii) Percentage of total cost=One item÷Total cost×100
iii) Personal expenses: Bidi, cigarettes, betel leaf, sweetmeats, tea etc.
iv) Others: loss of grain, weight, problem extra labour cost, charity etc.

trading. Sometimes they carried paddy by bicycle when the distance was very short. Table 17 depicts the per quintal cost of the Farias.

Total marketing cost per quintal of Kataribhog of Farias was Tk 28.44. Buying and selling cost contributed 54.98 and 45.04% of total marketing cost respectively. The highest cost (54.5%) incurred by Farias was for transportation followed by loading and unloading (18.18%). They had to pay market tolls (11.00%). Other component of expenses included the cost of bags (5.77%), weighting charges (4.40%), personal expenses (2.43%) etc. during running their business. They also spent on other things (1.97%).

6.3 Marketing Cost of Beparis

The Beparis generally purchased paddy from the farmers and Farias. They sold their paddy to the millers without any processing. The costs involved in performing these services included rent, loading and unloading, transportation, cost of bags, market tolls, electricity, personal expenses etc. They carried paddy by van, cart, and rickshaw for their trading.

Table 18 depicts the per quintal marketing cost of the Beparis. The total marketing cost per quintal of Kataribhog paddy of the Beparis was Tk 34.00. Buying and selling costs contributed 68.21% and 31.79% of the total marketing cost respectively. Of the total marketing cost, transportation was the highest (30.15%) followed by cost of loading and unloading (29.44%). They also incurred other costs such as market tolls (23.91%), cost of bags (5.88%), personal expenses (3%), rent (2.21%), electricity (0.71%) and others (4.73%).

6.4 Marketing Cost of Millers

The millers purchased paddy from farmers, Farias and Beparis at the local and secondary markets. They sold rice to the Aratdars and retailers at the Dinajpur town after processing the paddy

Table 18. Marketing cost of Beparis

Cost items	Average cost (Tk/quintal)	(%)
A. Buying cost		
Rent	0.75	2.21
Loading and unloading	6.00	17.65
Transportation	10.25	30.15
Cost of bags	2.00	5.88
Marketing tolls	3.75	11.03
Personal expenses	0.44	1.29
Sub-total	23.19	68.21
B. Selling cost		
Electricity	0.24	0.71
Loading and unloading	4.00	11.76
Market tolls	4.38	12.88
Personal expenses	0.58	1.71
Others	1.61	4.73
Sub-total	10.8	31.79
Total cost (A+B)	**34.00**	**100.00**

Note: i) Average cost=Total cost÷Total amount
ii) Percentage of marketing cost=One item÷Total cost×100
iii) Personal expenses: Bidi, cigarettes, betel leaf, tea, sweetmeats etc.
iv) Others: extra labour cost, weight problems, loss of grain etc.

Table 19. Marketing cost of millers

Cost items	Average cost (Tk/quintal)	(%)
A. Buying cost		
Cost of bags	1.43	1.54
Loading and unloading	1.25	1.35
Transportation	10.00	10.76
Marketing tolls	1.25	1.35
Others	0.10	0.10
Sub-total	14.03	15.10
B. Selling cost		
Processing and milling charge	46.50	50.05
Aratdar commission	12.50	13.46
Telephone charge	0.48	0.52
Labour cost	11.00	11.85
Electricity	2.00	2.15
Permanent labour	3.36	3.62
Rent	0.40	0.43
Loading and unloading	1.19	1.28
Subscription for association	0.06	0.06
Maintenance cost	1.22	1.31
Others	0.16	0.17
Sub-total	78.87	84.90
Total cost (A+B)	**92.90**	**100.00**

Note: i) Average cost=Total cost÷Total amount
ii) Percentage of marketing cost=One item÷Total cost×100
iii) Personal expenses: Bidi, cigarettes, betel leaf, tea, sweetmeats etc.
iv) Others: charity, weight problems, extra labour cost, loss of grain etc.

in their own mills. Sometimes they sold their rice to Aratdar-cum-wholesalers in other districts of Bangladesh.

The average cost per quintal incurred by the millers was Tk. 92.90 (Table 19). From table 19 it is observed that buying and selling costs contributed to 15.10% and 84.90% of the total marketing cost respectively. The highest cost incurred for processing and milling charge of paddy (50.05%) followed by Aratdars' commission (13.64%). They had to pay Aratdars' commission at the rate of Tk 12.50 per quintal for negotiating their sales. They also incurred other costs such as the cost of bags (1.54%), loading and unloading (2.63%), transportation (10.76%), market tolls (1.35%), telephone charge (0.52%), labour costs (11.85%), electricity charge (2.51%), permanent labour (3.62%), rent (0.43%), association subscriptions (0.06%), and maintenance cost s(1.31%) respectively.

All the millers reported that they had no electric motors for processing Kataribhog paddy. Sometimes the millers processed their paddy using diesel engines known as shallow machine in the study area. Small rice mills and co-operative rice mills processed paddy for the farmers and members of the co-operative association on payment of Tk. 35.00 per quintal.

6.5 Marketing Cost of Aratdar-Cum-Wholesalers

The Aratdars purchased rice from the millers and sold it to other wholesalers and Aratdars. The Aratdars bought and sold rice all over Bangladesh. In Table 20, it is observed that the total cost of marketing for Aratdars was Tk. 16.79 per quintal. The highest marketing cost was incurred for transportation (29.48%) followed by labour charges (14.89%) telephone bills (7.92%). Even though they purchased Kataribhog rice from the local millers of Dinajpur district, the transportation cost was high. They used trucks, vans and rickshaws.

They bought rice according to the volume of demand by other Aratdar-cum-Wholesalers. They sent their rice to different districts of Bangladesh such as Dhaka, Chittagong, Rajshahi, Sylhet,

Table 20. Marketing cost of Aratdar-cum-wholesalers

Cost items	Average cost (Tk/quintal)	(%)
A. Buying cost		
Marketing tolls	0.63	3.75
Sweeper	1.25	7.44
Weighting charge	1.19	7.09
Cost of bags	0.24	1.43
Transportation	5.00	29.78
Loading and unloading	1.19	7.09
Sub-total	9.50	56.58
B. Selling cost		
Loading and unloading	1.19	7.09
Rent	1.67	9.95
Electricity charge	0.20	1.19
Labour charge (permanent)	2.50	14.89
Telephone charge	1.33	7.92
Others	0.40	2.38
Sub-total	7.29	43.42
Total cost (A+B)	**16.79**	**100.00**

Note: i) Average cost=Total cost÷Total amount
ii) Percentage of marketing cost=One item÷Total cost×100
iii) Others: charity, weight problems, extra labour cost, loss of grain etc.

Table 21. Marketing cost of retailers

Cost items	Average cost (Tk/quintal)	(%)
A. Buying cost		
Transportation	1.86	25.80
Marketing tolls	1.5	20.80
Sub-total cost	3.36	46.60
B. Selling cost		
Rent	2.05	28.43
Electricity	1.2	16.64
Loading and unloading	0.35	4.86
Other	0.25	3.47
Sub-total cost	3.85	53.40
Total cost (A+B)	**7.21**	**100.00**

Note: i) Others: charity, tea, sweetmeats, bidi, and cigarettes.

Comilla, Jessore, Bogra, Pabna etc. So the distance and amount of rice buying and selling would not be measured. The volume of transaction varied from time to time. They had to get an Aratdar commission of Tk. 12.5 per quintal.

6.6 Marketing Cost of Retailers

Retailers generally purchased rice from the millers and sold to the consumers. In Table 21 it is observed that the total cost of marketing incurred by retailers was Tk 7.21. They incurred the highest cost for rent (28.43%) followed by transportation costs (25.80%), loading and unloading costs (4.86%). They also bore charges such as market tolls (20.60%) and electricity bills (16.64%).

6.7 Marketing Margin of the Intermediaries

The marketing margin of a particular stage of product flow may be defined as the difference between the purchase price and sale price of a commodity. According to Kohls and Uhl [15], the marketing margin may be defined as the difference between what is paid by the consumers and what the producer receives

Calculation of marketing margin

The marketing margin can be calculated by the following three methods

i) By selecting specific lots of truck loads of any commodity and tracing them through the marketing system.

ii) By estimating the difference between the purchase and sale prices of the quantity handled at different points in the marketing channel.

iii) By comparing prices at different level of marketing.

The relative advantage of these methods depends on the particular objectives of the study and the interest of the investigator. In the present study the marketing margin has been computed using the second method of calculation. Marketing margins of different groups of intermediaries were calculated separately to examine their relative performance of marketing activities.

The marketing margin of each intermediary was estimated by deducting the purchase price of Kataribhog paddy from the sale price while the net margin was estimated by deducting the

Table 22. Marketing margin of intermediaries

(Tk. per quintal)

Intermediaries	Purchase price	Sale price	Marketing margin	Total marketing cost	Profit or Net margin
	(A)	(B)	(C=B-A)	(D)	(E=C-D)
Faria	1126.25	1164.75	38.50	28.44	10.06
Bepari	1140.75	1190.20	49.45	34.00	15.45
Miller	1203.20	1322.18	118.98	92.90	26.08
Aratdar	1335.18	1374.25	39.07	16.79	22.28
Retailer	1333.20	1378.78	45.58	7.21	38.37

Note: One hundred kg of Kataribhog paddy is equivalent to 62.50 kg of rice.

marketing cost per quintal from the marketing margin.

It is revealed from Table 22 that the marketing margin of Faria, Bepari, miller, Aratdar and retailer were estimated at Tk.38.50, Tk 49.45., Tk. 118.98., Tk. 39.07 and Tk.45.58per quintal respectively. The margin was the highest for the miller followed by Bepari, retailer and Aratdar. The highest marketing margin of the miller was earned by adding more value to the product through creation of form utility and time utility. In the harvesting period they bought Kataribhog paddy processed and stored it. They sold it later at the highest price. On the other hand, Faria received the lowest marketing margin in the study area.

According to the same Table it is seen that the costs of marketing of Faria, Bepari, miller, Aratdar and retailer were estimated at Tk.28.44, Tk.34.00, k.92.90T, Tk.16.79 and Tk.7.21 per quintal respectively. The marketing costs were the highest for the miller followed by Bepari, Faria and Aratdar. On the other hand, they were lowest for retailer (7.21 Tk. per quintal) in the study area.

The net margins or profits of Faria, Bepari, miller, Aratdar and retailer were estimated at Tk.10.06, Tk.15.45, Tk.26.08, 22.28Tk. and Tk.38.37 per quintal respectively. The retailer received the highest net margin of Tk. 38.37 per quintal followed by miller, Aratdar and Bepari. The lowest marketing cost might be the possible reason for the highest net margin of the retailers.

Problems and Solution of Kataribhog Paddy/Rice Marketing

7.1 Introduction

The problem is defined in relation to the objectives to be attained. The problems of marketing arise when the objectives of marketing get hampered to be active. In this section problems faced by Kataribhog rice farmers and intermediaries and their suggested measures are discussed.

7.2 Problems Faced by the Farmers

The farmers were found to face various problems in marketing their Kataribhog paddy. The dominance of intermediaries, lack of capital, low market price at harvest period, poor communication and transportation facilities, higher market tolls, lack of adequate market information, lack of storage facilities and lack of marketing facilities were the marketing problems as reported by the farmers (Table 23). The problems faced by farmers are discussed below.

Intermediaries in the market were small in number but they were organized. On the other hand, farmers were scattered and large in number. So, intermediaries were in a better position in determining price than farmers and they always dominated the marketing system. For this reason 70.83% of

Table 23. Problems faced by the farmers (%)

Reported problems	Farm size			
	Small	Medium	Large	All
Dominance of intermediaries	50.90	75.00	87.50	70.83
Lack of capital	100.00	80.50	75.00	87.50
Low market price at harvest period	87.50	87.50	100.00	91.67
Poor communication and transportation facilities	62.50	75.00	87.50	75.00
Higher market tolls	87.50	75.00	62.50	75.00
Lack of adequate storage facilities	37.50	50.00	62.50	50.00
Lack of adequate market information	87.50	75.00	62.50	75.00
Lack of market facilities	87.50	62.50	50.00	66.67

farmers were compelled to sell their Kataribhog paddy at a lower price because there was no way to bring back the product from market as it involved extra cost.

About 88% of the farmers reported that they did not receive institutional loans in time to cultivate their land properly. They complained that they had to borrow capital from the Mahajan at a high interest rate.

According to the field survey, about 92% of farmers reported that the prices of Kataribhog paddy remained very low during the harvest period than the peak period. The poor producers were compelled to sell their paddy at the lowest price immediately after harvest to repay their debts and for any other emergency needs of the family.

The communication networks of the study areas were not well developed for the movement of agricultural products from the producers to the consumers. 75% of farmers also reported that they could not benefit from the higher prices prevailing at distant markets due to poor communication and transportation facilities.

75% of Kataribhog paddy producers reported that there was no standard rate of market tolls, which varied from market to market in the study areas. The market tolls were collected by eye estimation on the volume of paddy marketed by the farmers.

The storage facilities of the farmers were not well developed in the study areas. 50% of farmers complained about the storage problem. They also reported that Kataribhog paddy was highly susceptible. The farmers generally used separate 'Kutcha Gola' all of which were rudimentary and unscientifically prepared. Thus, the stored paddy often got damp and insect-infested causing great loss of quantity and quality.

75% of farmers reported that they have very limited knowledge about market demand, supply and price of their product. They usually sold their product without considering the market demand for and supply of their product and they were victimized by the exploiting policies of the middlemen.

Lack of marketing facilities was also reported as a problem by 66.67% of farmers. There was no shed to protect the farmers and their produce from the weather and the farmers had to sit in the open to sell their product.

7.3 Measures Suggested by the Farmers

Kataribhog paddy farmers who identified their own problems also suggested measures for the improvement of the existing Kataribhog paddy marketing system. The following measures were

Table 24. Problems faced by the intermediaries (%)

Reported problem	Kinds of intermediary					
	Faria	Bepari	Miller	Aratdar	Retailer	All
Lack of capital	80.00	70.00	73.33	60.00	75.00	71.67
Poor communication and transportation facilities	80.00	80.00	66.67	60.00	10.00	59.33
Milling problems	-	-	100.00	40.00	-	28.00
Lack of market information	66.67	60.00	53.33	40.00	60.00	56.00
Higher marketing costs	53.33	70.00	93.33	60.00	35.00	63.33
Lack of marketing facilities	86.67	80.00	53.33	40.00	50.00	62.00
Lack of storage facilities	93.33	70.00	40.00	40.00	10.00	50.67
Higher marketing tolls	73.33	80.00	66.67	20.00	55.00	59.00
Uncertainty in electricity supply	-	-	100.00	40.00	10.00	30.00

suggested by the farmers for solving the problems.

All the producers suggested that the price of Kataribhog paddy should be fixed by the government. Communication and transportation facilities should be improved to facilitate the marketing process. Priority should be given to the development of link roads to the local village markets.

Institutional credit facilities should be made available to the paddy-farmers for increasing the production of paddy as well as enhancing their sustaining power.

Co-operative marketing societies should be established, which will improve the bargaining power of the farmers and enable them to face the middlemen and ensure better returns. Producers expressed that reasonable market tolls should be fixed for all markets and implementation of this toll should be ensured.

The availability of market information on price, demand and supply would help the farmers to get a fair price for their Kataribhog paddy. Finally, producers advised that market facilities like tin sheds, drainage and drinking water should be provided in the market areas.

7.4 Problems Faced by Intermediaries

The intermediaries were asked to mention the problems they faced in the paddy/rice business and these are presented in Table 24 and discussed below.

On an average about 72% of all intermediaries reported lack of capital as a marketing problem. Among the intermediaries, 80% of Farias, 70% of Beparis, 73.33% of millers, 60% of Aratdars, 75% of retailers faced this problem. No institutional loan was available to them for the paddy/rice business.

Poor communication and lack of adequate transportation facilities were complained about as a marketing problem by about 59% of all intermediaries. 80% of Farias and Beparis, 66.67% of millers, 60% of Aratdars, and 10% of retailers faced this problem. A large portion of their marketing cost was incurred for transportation.

All millers had various problems in milling paddy, such as the scarcity of spare parts, bad weather, lack of temporary labour in season etc. Sometimes the millers had to purchase spare parts from outside the country which was costly. Chatal dependent millers suffered severely during the rainy season.

There was evidence of new entry of rice mills and Aratdar in processing and marketing of paddy as there was no barrier to entry and as the trade license was easily available. These have reduced the

market share of individual millers and Aratdars. So, their income has been reduced.

The lack of adequate market information was a problem as reported by 66.67% of Farias, 60% of Beparis, 53.33% of millers, 40% of Aratdars and 60% of retailers.

Higher marketing costs were a problem for 53.33% of Farias, 70% of Beparis, 93.33% of millers, 60% of Aratdars and 35% of retailers.

On an average 62% of all intermediaries reported the lack of marketing facilities as a marketing problem. Among the intermediaries this problem was faced by 86.67% of Farias, 80% of Beparis, 53.33% of millers, 40% of Aratdars and 50% of retailers.

On an average about 51% of all intermediaries reported lack of storage facilities as a problem. Among the intermediaries 93.33% of Farias, 70% of Beparis, 40% of millers, 40% of Aratdars and 10% of retailers faced this problem.

Higher marketing tolls were another problem as reported by 59.00% of all intermediaries. About 73% of Farias, 80% of Beparis, 67% of millers, 20% of Aratdars and 55% of retailers noted this problem.

Uncertainty in electricity affected all millers, 40% of Aratdars and 10% of retailers.

7.5 Measures Suggested by Intermediaries

The intermediaries identified their own problems and also suggested some remedial measures for the overall improvement of the existing Kataribhog paddy/rice marketing system. These are:

i) The intermediaries need much more cash for conducting their business. They suggested that provision should be made for adequate and easy loans from institutional sources.

ii) They also suggested the improvement of the transport and communication system. The improvement of roads and highways, an adequate number of and availability of transport would also increase marketing efficiency.

iii) The millers had to face some risks and uncertainties which sometimes caused severe losses. These risks might arise due to various internal and external activities such as theft, recovery of low quality rice, burst boilers, machine disturbance, and missing loaded trucks. Sudden falls in price, climate problems and sudden strikes. Insurance programs should be undertaken to share these risks.

iv) A proper supply of electricity, improvement of market facilities such as pacca floors, tin sheds, drainage systems, the supply of drinking water in the market place, and the dissemination of market information would greatly facilitate market operation.

v) The government should set up go-downs for storing paddy/rice. They suggested that an improved storage facility would increase marketing efficiency.

vi) Finally, in order to ensure socio-political stability in the country, the government should help strengthen the law enforcing agencies and root out terrorists from society.

Summary and Conclusion

8.1 Summary

The marketing of Kataribhog rice is a useful study from the view points of producers, consumers and the state. To reduce marketing costs, balancing the production and distribution of a clear and thorough understanding of different marketing aspects of rice is essential. In that respect, the present research project is a step forward. The specific objectives of this study were:

i) To study the socio-economic conditions of Kataribhog rice producers and intermediaries.

ii) To analyze the marketing system of Kataribhog rice in the selected areas.

iii) To estimate the cost and margin of different intermediaries.
iv) To find the problems of Kataribhog rice marketing in the study areas.
v) To suggest the remedial measures to solve the existing problems

On the basis of a higher concentration of Kataribhog rice production, Sadar thana in Dinajpur district was purposively selected for this study. The farmers' information was collected from two selected villages and the trader's information from ten selected markets. Twenty four farmers were chosen for this study and they were categorized into three groups viz., small, medium and large. (8 small, 8 medium and 8 large).

The intermediaries involved in the marketing of Kataribhog rice were categorized into several groups viz.

1) Farias
2) Beparis
3) Millers
4) Aratdars and
5) Retailers.

A total of 65 intermediaries including 15 Farias, 10 Beparis, 15 millers, 5 Aratdars and 20 retailers operating in the selected markets such as Godagari Hat. Farm Hat, Pul Hat, Baro Bandar, Bahadur Bazaar, Rail Bazaar, Chak Bazaar, Gudri Bazaar, Rail Station Bazaar, Bashunia Potti, N.A market etc. were interviewed. Purposive sampling techniques were followed to select the intermediaries. Primary data were collected from the respondent farmers and intermediaries by using different interview schedules. Both tabular and descriptive techniques were used for analyzing data. With respect to socio-economic characteristics the Kataribhog paddy farmers were categorized into three age groups, viz. 25-35 years, 36-46 years and over 46 years and the highest proportion of farmers (45.83%) were in the age group 36-46 years.

A positive relationship was observed between farm size and family composition. Agriculture was the main occupation of 66.67% of the Kataribhog rice farmers. It was found that about 33% of the farmers were illiterate in the study area. Their income mainly came from agriculture; other sources of income included business and services. Average income was the highest for the large farmers followed by the medium and small farmers. Of the intermediaries, it was observed that the highest proportion of intermediaries (about 49%) were in the age group 36-46 years.

80% of the intermediaries were engaged only in business while about 11% had business with agriculture and about 9% business with service as a minor occupation. Most of the Farias and Beparis were involved in agriculture, while millers and Aratdars were not involved in agriculture.

About 15% of intermediaries were illiterate in the study area. However 80% of millers and 60% of Aratdars had a higher secondary level of education and above. They were more educated compared to other groups of traders. Most of the Faria were illiterate in the study area.

The intermediaries involved in the Kataribhog paddy/rice marketing system in the study area were Faria, Bepari, millers, Aratdar and retailers. They formed a complex marketing channel in the study area. The middleman purchased paddy/rice from the local market. On the other hand, they sold their paddy/rice to the consumers on a small amount and to other intermediaries. The Farias purchased paddy from the local markets and sold in the same place to the Beparis and millers. The Beparis purchased paddy from the farmers and Farias and sold the same to the millers.

The millers purchased paddy from the farmers, Farias and Beparis and sold to the local Aratdar-

cum-wholesalers, retailer and other district Aratdar-cum- wholesalers after processing their paddy. Aratdars purchased rice from the millers and sold to other local Aratdar-cum-wholesalers and those in other districts. Retailers purchased rice from the millers and sold it to the consumers. It was observed that the general mode of transportation of Kataribhog paddy/rice used by intermediaries were head load/shoulder loads, carts, vans, rickshaws and trucks.

About 10.00%, 40.00% and 50.00% of the Farias used head loads, carts and vans to carry their paddy. Carts and vans were used by about 60.00% and 40.00% of the Beparis for the transportation of paddy. About 10.00%, 13.00% and 77.00% of the millers used of carts, vans and trucks to carry their paddy. Aratdars mostly used vans and trucks for carrying Kataribhog paddy/rice from primary market to secondary markets. About 60.00% and 40.00% of the retailers used vans and rickshaws to carry their rice.

The storage facilities of Kataribhog paddy/rice was not well developed in the study area. About 51% of intermediaries had no exclusive grain storage facilities. About 93% Farias generally used a part of their dwellings to store their paddy for a minimum 15 days.

The Beparis had no permanent storage facilities. But sometimes they used others' storehouses for which they had to pay a lump sum amount. The millers had exclusive grain storage facilities, usually buildings or tin sheds. 60% of Aratdars used their shops for storing paddy/rice. Most of the intermediaries (about 60%) were found self financed in their business. A few intermediaries were financed by non institutional (7.6%) and institutional (30.8%) sources. About 50% of intermediaries got their market information through market visits, personal observation and from fellow traders. Most of the large traders like 60% of millers and 95% of Aratdars received their information by telephone.

In the study areas, no formal grading was done. The informal grading was done on the basis of moisture, size of grain color, variety, broken grain etc. But some conditions were considered in purchasing paddy/rice in the procurement center.

No packaging or bagging was done on the basis of conspicuous quality of a same variety of rice.

The marketing costs of the intermediaries mainly consisted of buying and selling costs both of which included transportation, cost of bag, market tolls, loading and unloading, etc.

The total marketing cost of Kataribhog paddy/rice incurred by Farias and Beparis were Tk.28.44 and. Tk.34.00 per quintal respectively while that of millers, Aratdars and retailers were Tk 92.90., Tk.16.79 and Tk.7.21 per quintal respectively.

The marketing margins of Farias, Beparis, millers, Aratdars and retailers were estimated at Tk.38.50, Tk.49.45, Tk.118.98, Tk. 39.07, and Tk.45.58 per quintal respectively. The margin was the highest for the miller followed by Bepari, retailer and Aratdar. Faria received the lowest marketing margin in the study areas. Regarding net margin, the retailer received highest amount of Tk.38.37 per quintal followed by miller, Aratdar and Bepari but the Faria obtained the lowest net margin of Tk.10.06 per quintal in the study area.

The Kataribhog paddy farmers faced various marketing problems in the study area such as the dominance of intermediaries, lack of capital, non-availability of institutional credit, low market price at harvest period, poor communication and transportation facilities, higher market tolls, lack of adequate storage facilities, adequate market information and marketing facilities. Considering the marketing problems faced by the farmers the following measures were advocated by the farmers such as:

i) Farmer's co-operative societies should be organized.

ii) Institutional credit should be made available to the farmers for increasing production of

Kataribhog paddy as well as enhancing their sustaining power.

iii) Better and incentive prices for Kataribhog paddy should be ensured by procuring large amounts of paddy by the government directly from producers during harvest time.

iv) The transportation system should be properly developed for the movement of agricultural products from the producers to the ultimate consumers and communication facilities should be also developed.

v) Reasonable market tolls should be fixed for all markets and regulated by a responsible authority.

vi) Storage facilities should be developed and made available to the farmers.

vii) There is no information about Kataribhog paddy marketing such as price, supply and demand. So this should be made available to the farmers through national mass media such as radio, television, newspapers etc.

viii) Marketing facilities should be provided in the market places.

The Kataribhog paddy/rice intermediaries also faced a number of marketing problems such as, lack of capital and adequate transportation and poor communication, milling problems, lack of market information, high marketing cost, lack of market facilities and lack of storage facilities, higher market tolls and uncertainty in electricity supply.

In order to solve the marketing problems faced by the intermediaries the following measures were suggested -

i) Institutional credit should be made available to the intermediaries for handling a greater volume of Kataribhog paddy/rice and banking system should be developed so that traders can take out loans easily and obtain funds at a lower rate of interest.

ii) Improved communication and transportation systems would increase marketing efficiency and lower transportation costs. So they specially suggested for the improvement of communication and transport facilities in primary and secondary markets.

iii) The millers suffered from high electricity bills and irregular supply, lack of spare parts, lack of skilled labour, etc. They suggested to ensure lower electricity charge and regular supply, and to make available the spare parts inside in the country. Their suggestions also included relaxation of licensing procedure, improvement of the local law and order situation for controlling harassment and disturbances created mostly by local hooligans.

iv) Market information should be made available to the intermediaries through national mass media such as radio, television, newspapers etc.

v) Marketing facilities such as pacca floors, tin sheds, and drainage should be improved and pure drinking water should be ensured in the primary and secondary markets.

vi) The Government should set up essential go-downs for storing paddy/rice.

vii) Reasonable market tolls should be fixed for all markets and for all intermediaries.

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