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AGRICULTURAL AND RURAL DEVELOPMENT IN BANGLADESH  
----- Case Studies at the Farm Level -----

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Summary

This report discusses the farmers' attitudes, performance in the farm and perceptions regarding their future. This study was carried out to provide valuable information necessary for effective planning of agricultural development of Bangladesh. In the course of analysis, two village studies were compared: progressive farms in Panchkitta and traditional farms in Austodona.

Based on the study, differences in problem identification and investment preferences existed among villagers. Moreover, attitudes and perceptions differed between different classes of the villagers specifically in terms of size of landholding, structure (ownership, lease, landless, part-time, etc.) and other factors (sex, age, etc.).

By taking our study experiences into account, some of suggestions could be made as follows: (1) Projects which cope with villagers' needs and preferences have to be at the first priority; (2) Small projects which might be easily managed by villagers as well as be adaptable to the environment are desirable; (3) Closed rural-urban linkage should be respected in the planning; (4) The receiving mechanism which is organized by villagers as a participatory body have to plan a vital role in improvement of their socio-economic conditions. At present this mechanism is not clear and not effective at the village level. It is therefore recommendable to have this kind of people's participatory organization.



## Introduction

Though Bangladesh is a land of fertile, she could not supply sufficient food for her millions of people. The natural disasters and other problems created by men are said to be the underlying constraints to her development. The share of the agricultural population to the total is approximately 85 percent. Besides, population is increasing at a net rate of 2.4 percent per annum, and unemployment remains an economic problem of the country.

The present scenario of the rural Bangladesh suggests that attention to the small scale farmers and landless households be given. Since independence, various kinds of development strategies were already implemented but these did not provide antidotes to the problems on basic needs. In fact, the economic condition of the rural masses was deteriorating every year. The percentage of landless households to total households was increasing and the per capita consumption in terms of calorie intake remained at low levels.

The main concern of this presentation is therefore to identify the current problems and to find key factors that would contribute to the development of the rural areas. Farmers' attitudes and perceptions regarding their future and/or development planning were examined through the pilot socio-economic village studies using the purposive sampling.

### I. Agriculture and Development Efforts

The chronic foodgrain shortage in Bangladesh compels its agricultural policy to center its focus on foodgrain. With excessive pressure of population on its limited land, the Bangladesh government



since the early 1960's had been working on the population-food balance strategies through technological progress, namely, the adoption of MV (modern variety) seed-fertilizer-irrigation technologies. Before, MV seeds, chemical fertilizer and modern irrigation technologies were unknown to the farmers.

New MV rice, which opened up the possibility of vastly increasing foodgrain supply on the limited land, was first introduced in Bangladesh in 1968. The variety was developed by the International Rice Research Institute (IRRI) located in the Philippines. On the side of Bangladesh to develop more new varieties adaptable to local conditions, the Bangladesh Rice Research Institute was set up in 1970. New varieties were developed and some, particularly MV Boro, contributed substantially to the increasing foodgrain production. However, the overall success of this program was largely complemented by the irrigation facilities and large applications of fertilizer by the farmers.

Another breakthrough in foodgrain production came in the early 1970s via the introduction of MV wheat, which demanded less irrigation than MV Boro. After 1974, MV wheat production expanded very fast and the total wheat area increased remarkably during the Second Five Year Plan period (1980-1985). From 1973 to 1986, the area expansion rate was 33 percent for MV wheat.

Irrigation is an important complementary modern input of MV seed in rice production. In 1960, only 7 percent of the cultivated land was irrigated by the traditional technologies. In 1986, modern technologies were used in about 77 percent of the total irrigated area.



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Initially, the government's policy was to expand irrigation facilities through large-scale multipurpose projects (i.e., irrigation, drainage and flood control). A number of major projects were carried out by BWDB (Bangladesh Water Development Board) during the late 1960s and the 1970s. Although these successfully protected coastal areas from high tides and intrusion of saline water, they contributed only 18 percent of the total irrigated area covered by modern irrigation technologies. Besides, small-scale irrigation technologies, i.e., deep tubewells, shallow tubewells and low-lift pumps spread very fast at the early stage of their introduction as encouraged by heavy subsidies. Of these, low-lift pumps were first introduced and their number rose quickly from about 3,000 in 1965-1966 to about 35,000 in 1973-1974. At the end of Second Five Year Plan period (1987), the total number reached 55,400 units.

## II. Case Studies of Two Village in Comilla

### 1. Panchkitta

Panchkitta is a rural village with high farm household concentration (about 85%) and with no industries other than agriculture. Panchkitta features "part-time farm households" (80% of all farm households are part-time farm households).

#### 1.1. Economic Performances

The average farm area per farm household was only 0.9 acre, but farming was very intensive, involving triple and diversified cropping. The cropping intensity recorded as high as 240 percent, and vegetables had a share of about 20 percent of the total harvested acreage. Adoption of MVs of rice was prominent, and fertilizers and chemicals



were widely used. This technical structure of the farm business reflected in turn good economic performance. Per acre yield (Aman rice: 30 md., Aus rice: 33 md.) was comparatively high. Per acre net income was about Tk. 11,000. Consequently, average farm income per household was high, with net income of Tk. 10,000.

A large portion of nonfarm employment was temporary and employment were mostly in neighboring villages and Comilla town. The resorted to temporary nonfarm employment since the households had to devote a large proportion of their time for their intensive farming. They earned about Tk. 10,000 from nonfarm jobs.

The average household income in Panchkitta was about Tk. 20,000. The average living expenditure, on the other hand, was relatively high amounting to about Tk. 24,000. As a result, the farm household economy depicted deficits.

## **1.2. Problems Recognized**

Villagers had a strong inclination to farming despite various types of economic opportunities. However, farming was beset with problems and the serious ones included shortage of farmland, shortage of draft animals, and the irregular weather and natural disasters (21, 19 and 14 percents, respectively).

The landless households generally complained on the shortage of fundamental production factors such as land and draft animals.

There were other serious problems reported such as insufficient food production to meet family consumption requirements (33%), increases in prices of basic necessities (34%), and lack of medical



facilities (49%). In particular, the landless households and the farms operating less than 0.5 acre complained of the large debts.

It was found out that the villagers sought improvement in the distribution system of farm materials and employment by Food for Work Programs.

### 1.3. Investment Preference

In the field of agriculture, 88 percent of the total samples expressed the intention of investing substantial amount of money to purchase or lease farmland. Correspondingly, 64 percent were interested in purchasing livestock and 23 percent in purchasing current production factors such as fertilizer and pesticide. Investment in current production factors tended to be favored by males (46% by old males, 29% by young males) and less among the females.

Outside agriculture, 56 percent of the total samples would invest several thousands Taka in their own business. This was followed by construction/repair of houses (43%) and education of children (30%). Young males had strong propensities to invest in businesses (90%). In contrast, old males had relatively wide range of investment preferences (62% in businesses, 27% in construction or repair of houses, 23% in education of children, and a little in food and clothes expenses). These preferences appeared to reflect economic roles and position within the household. Of the females, the young preferred the construction/repair of houses (72%) over the businesses (38%). The education of children was second priority for 52 percent of the respondents. In addition, the old women signified their perspective to purchases of durable goods, ornamental goods and repayment of loans, following construction or repair of houses (58%), business



(42%), savings (35%), and education of children (31%).

Individual farm households were eager to have small nonfarm jobs in the surrounding areas. Furthermore, they expressed their desire to increase their agricultural income by expanding their operated farmlands and through adoption of improved technologies.

Whether for agriculture or not, farm households looked forward to a greater role of the cooperative as a source of capital. In the field of agriculture, the cooperative introduced irrigation facilities and modern technologies such as chemicals and MV seeds. All the respondents favored further improvement and extension of farming technologies. In particular, the young expected group farming and cooperative use of machinery. In this connection, the importance of the cooperative as initiator appears to be crucial to agricultural development.

## **2. Austodona**

Austodona is a rural village with a high proportion of farm households (78%) and no industry other than agriculture. It is characterized by "part-time farm households", as nonfarm jobs contributed significantly to the farm households' economies. The proportion of part-time farm households to the total farm households was 81 percent.

### **2.1. Structure of Households**

The area of farmland per household was comparatively large averaging 1.4 acre, with farming being generally very extensive. The cropping systems were dominated by the traditional patterns to the extent that the pattern of mixed Aus-Aman rice was still in practice.



Rice was cultivated only in the Aus and Aman season and rice and other cereal crops were virtually not grown in the Boro season. Potato and vegetable production were hardly practiced throughout the year. The annual cropping intensity was low (160%). The diversification of farming was recessive with rice as the only crop raised. Moreover, most of the rice varieties planted were of local types and use of fertilizers and agricultural chemicals were in small amounts. This technical structure of the farm business affected its economic performance, that is, per acre yield (Aus rice: 28 md., Aman rice: 27 md.) was low. Consequently, per acre net income was nearly Tk. 4,000, on the average. On a per farm unit, Tk. 5,600 was generated by a household.

Most farm households in the village engaged in nonfarm jobs on a part-time basis, because it was virtually impossible for them to live on their farm income alone. A large portion of household members' nonfarm jobs were located away from home and these were mostly in large cities such as Dhaka and even abroad. They worked regularly on a seasonal or yearly basis. These jobs brought in about Tk. 10,000, which accounted for more than half of household income.

The farm household income averaging about Tk. 15,600 per household was lower than the living expenditure amounting to Tk. 20,000. The farm household economy as a whole therefore was characterized by deficits.

## 2.2. Problems Recognized

The most serious problems mentioned in agriculture included limited supply of fertile soil (33%) and the unusual weather and



natural disasters (20%). In addition, the landless households complained on the lack of farmlands.

Outside agriculture, there were serious problems like lack of medical facilities (73%), large debts (49%), inadequate food production to meet nutritional requirement of households (36%), and the rise of prices of basic necessities (34%). In particular, the landless households faced seriously large debts.

Improvement in employment was preferred more by villagers than improvement in direct agricultural production as a quick remedy to their current situation. This was their concern even though the benefit would be short-term like that of the Food and Works Program.

### **2.3. Investment Preference**

In the field of agriculture, 89 percent of the total samples expressed propensity to invest several thousands of Taka to purchase or lease farmland. Far behind and also the second preference, the purchase of large livestock was mentioned by 29 percent of the total sample. A relatively high extent of preference for investment in farmland or large livestock was found in all categories.

Outside agriculture, 56 percent of the total samples would invest several thousands of Taka in the construction/ repair of houses. This was followed by education of children (55%). Young males had a relatively strong desire to invest in businesses (59%), education of children (53%), and the construction/repair of houses (41%). In contrast, old males preferred to spend on food (57%) and clothes (48%) as living expenses, followed by businesses (48%) and the construction/repair of houses (39%). As for the females, the young



placed high priority on the construction/repair of houses (72%) rather than on businesses (8%). Education of children was their second priority (69%). Similarly, the old showed high interest in the construction/ repair of houses (68%) and education of children (68%). This results therefore manifest a preference gap according to **sex** among the respondents.

As a whole, the respondents were very interested in nonfarm jobs and tended to favor investment in consumption. A comparison of the sex and age categories reveals that young males were relatively eager to develop their individual economy through investment in businesses, had greater awareness of family planning, and had expectations of engagement in urban areas. In contrast, old males tended to seek a stable life in the village. On the other hand, the females were generally conservative, holding the traditional values, especially from the viewpoint of religion. By generation, the young had comparatively flexible and positive attitudes in terms of the cooperative's activities and family planning, while the old were eager to be engaged in nonfarm jobs that lead to higher income.

Henceforth, though there was a variety of preferences according to sex and age, there was no appropriate organization, institutional or otherwise, that had been adequately prepared to bridge the gap. The traditional functions of leaders did not match the prospective needs of the rural society. Respondents felt that leaders should evolve in order to deal with a variety of expectations from manifold classes.

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### Concluding Remarks

The village study shows that there are still possibilities to increase farm incomes. Factors which mainly influence individual economic performances under the given natural and socio-economic conditions include: (1) size of farmland operated; (2) type of enterprises; (3) cropping pattern; (4) adoption levels of MVs; and (5) productivities (per acre or per animal unit). However, in the long run, there are other factors such as: (1) environmental conditions to include among others soil quality, irrigation and drainage; (2) managerial ability and attitudes; (3) knowledge and technology of farming; (4) credit availability; and (5) post harvest and marketing. At the village level, the conditions of (1) cooperative and/or group activities, (2) leaders and their supporters, (3) education and training opportunities, (4) agricultural extension services can provide indirect benefits to individual household performances.

The other sources of income were observed to contribute to the household economy. While the two study villages had similar percentages of part-time farm households in the total farm households, they differed remarkably in the proportional share of temporary part-time farm households, with over 90 percent in Panchkitta, and only 5 percent in Austodona. This difference is closely related to the difference in the intensity of farming, and to the capacity of farmland to absorb labor. Farming was very intensive in Panchkitta and extensive in Austodona. In Panchkitta, farmers could not engage in stable part-time jobs, because they were usually busy with their farming all year round.

Basically, the study shows that there is a demand to improve the



infrastructures as well as the role of cooperative in the area. In its search toward development, participation by the villagers is recognized to be very important. This pilot study showed certain varieties in the villagers' attitudes and perception on development. Villagers expressed their needs and preferences positively.

There were still fundamental problems which needed to be solved for future development. Some of the significant ones were as follows:

- (a) There was a large difference in household income between large and small farm households. Workers in small farm households did not have good access to part-time jobs because they were undereducated and they lack working capital for part-time jobs. Naturally, their part-time nonfarm income was lower than that of their counterparts in large farm households, who were comparatively well educated.
- (b) The rate of unemployment, including underemployment, was high in both farm and nonfarm households. A large portion of this unemployment was borne by the small farm households.
- (c) Many farm households were short of food, including rice.
- (d) A large portion of farm household members were generally undereducated.

Attitudes and preferences varied somewhat with sex. Males had precise interest in increasing agricultural production, especially through irrigation facilities. As a means of increasing household income, nonfarm employment was far from neglected. Young males had positive interest in farming and self-owned businesses so as to increase income. Females were not positively concerned with agriculture. In addition, they were not very enthusiastic to the development progression of the rural society, viz a viz, through activities such as cottage industries, and livestock production within the residential quarter. Young males and females tended to be more eager for positive changes to improve their standard of living.

The study shows the significance of recognizing the villagers' needs and preferences in formulating development plan. Participation



of villagers should be seriously taken into consideration within an integrated framework in any development programs. Small projects which might be easily managed by the villagers and be desirable if these are designed to be adaptable to the environment. In addition, rural-urban linkage, especially in regard to creation of job opportunity, should be respected in the planning. At present, it is fairly difficult to find an active organization serving as "receiving mechanism" at the village level. Better cooperation between planning/executing bodies and villagers has to be pursued towards real development.

Notes:

1. The purpose of the study and methodology, were discussed lengthily in the following publication.

JICA (Dhaka); Agricultural and Rural Development in Bangladesh "Proceedings of the Mid-Term Review Workshop of JSARD --- Jan. 24, 1988", JSARD Publication No. 6, October

2. Period studied: 1986-1987, Marked point: Aug. 1, 1987.

3. Number of households samples:

Village	Kinds of Survey	General Survey	Economic Household Surveys	Surveys for Attitudes and Preferences
Panchkitta		259	84	259
Austodona		73	47	73

4. Boro(Dec.- Apr.), Aus(May - July), and Aman(Transplanting: Aug.- Nov., Broadcasting: May - Nov.) denote the names of seasonal-specific rice production, respectively.

5. Approximate exchange rate: US\$ 1 = Tk. 32.

6. md. = maund, 1 md. = 82.3 lbs. = 37.4 kgs.

7. "Young" is defined as between 20 and 39 years of age, while "old" as between 40 and 60 years of age.



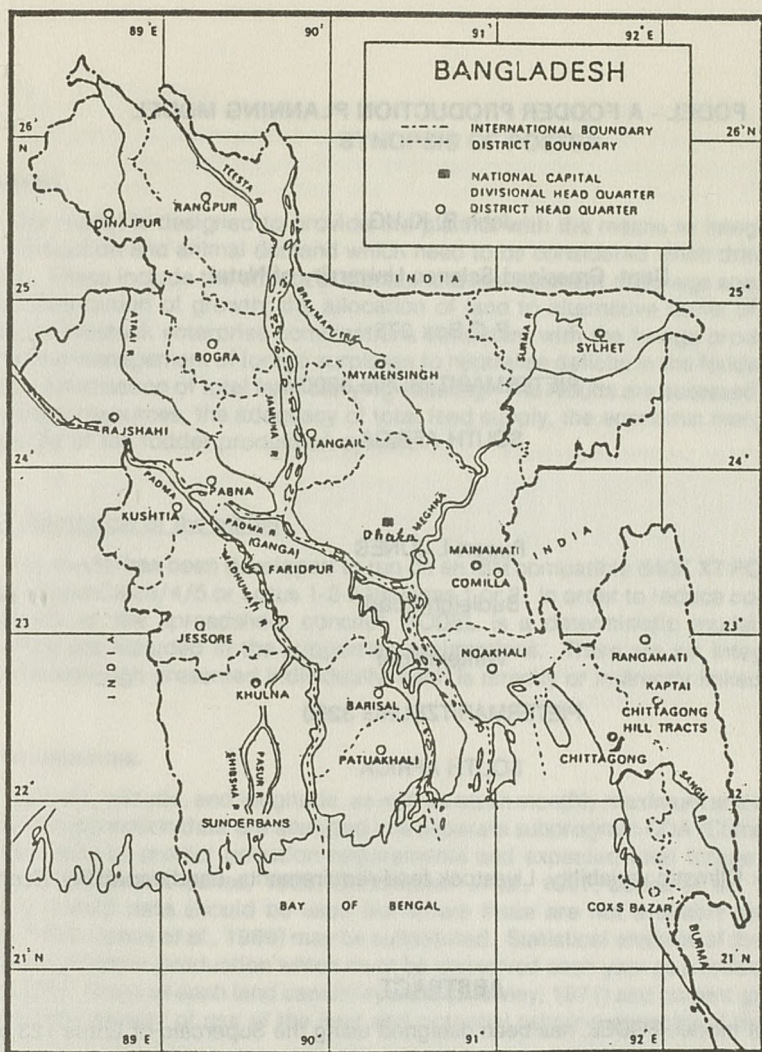


Table Number of Households by Type in Study Villages

Village	No. of Bari	Population	Farm Households			Nonfarm households		
			Total	Full-time farm	Part-time farm	Total Agr. laborer	Others	
Panchkitta	36	1,557	219 (100)	45 (21)	174 (79)	40 (100)	17 (43)	23 (57)
Austodona	16	456	57 (100)	11 (19)	46 (81)	16 (100)	5 (31)	11 (69)

Source: JSARD, G-Survey.