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March 27, 28　2010

34.

Preliminary study of Farming Systems in the Saline Affected Area of Bangladesh: A Case Study in Shuktia Village

バングラデシュの塩害地域におけるファーミング・システムに関する予備的研究-
シャクティア村における事例研究-

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Introduction

The farming system of an area is needed to study because it has a strong relationship with the existing environment and socio-economic condition of that area. The farming systems are changing over time due to the change in physical, biological, economic and social environments and farmers' technological resources. Out of 2.85 million hectares of coastal and off-shore land in Bangladesh, about 1.5 million hectares are affected by varying degrees of salinity. Almost all of the rivers and their tributaries contain saline water with varying degrees of salinity. Also the poor drainage of rice field causes water stagnancy in the monsoon season. This is a problem for rice production in the coastal villages. The local people are trying to change or modify their cropping pattern to compete with the changing situation of the environment specially the salinity. Thus, the present study was aimed to find out the existing cropping systems and socioeconomic condition of the study area.

Materials and method

The study site is located in Shuktia village of Shatkhira district in Bangladesh. The area of the village is about 177 ha and it has 227 households. All of the household head were interviewed with semi structured questionnaire and PRA was done to get information about the existing farming systems. Data were collected in August-September, 2009 and analyzed by computer software MS excel 2007.

Results and Discussion

Based on the survey and individual interview, it has been found that out of 227 households, 135 are engaged in different agricultural activities. About 59.47% of the household heads have Agriculture as main occupation (Fig. 1). It has been found that there are 11 cropping patterns existing in the study site and out of which **Fish-boro rice** covered the maximum area which is 56.67% of the total cultivated area (Table 1). Usually during the monsoon season the cultivated area is remained water logged and the water become saline due to the saline water entrance from the adjacent river and almost all of the land become unsuitable for rice cultivation. So, usually these lands remain occupied by cultivated

Table 1: Major Cropping patterns in the Village according to land type

Cropping pattern	Land type	Area (ha)	Percent
1. Aman rice- Fallow- Boro rice	MHL	5.87	4.87
2. Aus rice- Aman rice- Boro rice	MHL	0.39	0.32
3. Summer vegetables- Winter vegetables	MHL	4.28	3.55
4. Turmeric- vegetables	MHL	0.2	0.17
5. Bamboo garden	MHL	0.37	0.31
6. Boroj (Betel leaf)	MHL	0.07	0.06
7. Fallow- Fallow- Boro rice	LL	3.89	3.23
8. Fish- Boro rice	LL	**68.35**	**56.67**
9. Fish and Vegetable- Boro rice	LL	33.37	27.67
10. Fish- Fish	LL	0.54	0.45
11. Fish- Fallow	LL	3.28	2.72
Total Area		**120.61**	**100.00**

MHL=Medium Highland, LL=Lowland Source: Author's survey, 2009

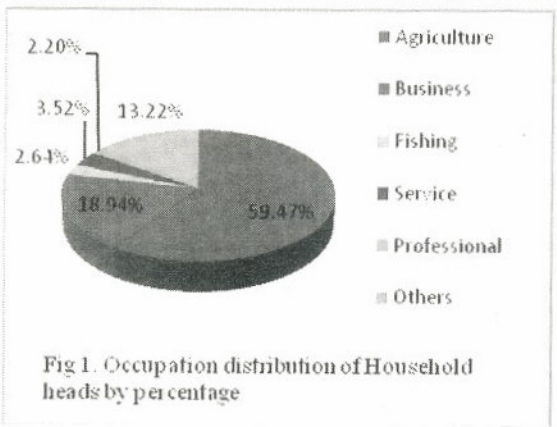

Fig 1. Occupation distribution of Household heads by percentage

fish (especially shrimp). After that, in the winter season by utilizing the ground water through shallow pump the local people cultivate rice (called as *boro* rice).

Farming systems play an important role for the livelihood and economy of the farm families. Table 2 indicates that among the household categories marginal (44.49%) and small (45.37%) farmers are the major portion of the study area and most of the cultivated land is under their agricultural activities. So, as we look to the table 3 we can understand that there are 24 different farming systems are existing in the village of which **Cattle-Goat-Poultry-Fish-Crop** based farming system is being practiced by 57 household and most of them are marginal and small farmers. This is might be as these category household do not occupy much land by their own, they try to intensify their farming enterprise as much as possible.

Table 2: Land use pattern under different categories of Farm

Household categories (ha/HH)	Household		Homestead		Fallow land		Pond		Garden		Cultivated land	
	No.	Percent	Av. Area (ha/HH)	percent	Av. Area (ha/HH)	Percent	Av. Area (ha/HH)	Percent	Av. Area (ha/HH)	Percent	Av. Area (ha/HH)	Percent
Marginal (<0.20)	101	44.49	0.02	29.91	0.001	14.77	0.003	19.75	0.004	12.96	0.23	22.87
Small (0.2-1.0)	103	45.37	0.04	52.93	0.002	27.27	0.006	40.74	0.014	43.38	0.61	50.04
Medium (1.0-3.0)	21	9.25	0.05	16.28	0.020	50.00	0.027	35.19	0.070	41.41	1.43	23.85
Large (>3.0)	2	0.88	0.03	0.88	0.035	7.96	0.035	4.32	0.040	2.25	2.05	3.24
Total	**227**	**100**	**0.03**	**100.00**	**0.003**	**100.00**	**0.007**	**100.00**	**0.015**	**100.00**	**0.53**	**100.00**

Source: Author's general survey, 2009

Conclusion

From the basic survey it can be said that the farmers of the Shuktia village is trying to maintain not only a single enterprise but a combination of different enterprises (crops, cattle, poultry, fish, goat etc.) to get diversified output from their limited land. And the **shrimp-rice** based cropping system is being practiced to cope with the existing salinity and drainage problem as the rice is being cultivated only one time in a year due to the same problem.

Table 3. Existing Farming Systems in the study area

No.	Farming systems	No. of Household	Farm Categories (No. of HH)			
			Marginal	Small	Medium	Large
1	**Cattle-Goat-Poultry-Fish-Crop**	**57**	**15**	**32**	9	1
2	Cattle-Poultry-Fish-Crop	29	6	17	6	0
3	Cattle-Poultry-Crop	14	6	7	1	0
4	Cattle-Fish-Crop	13	3	8	1	1
5	Cattle-Goat-Crop	13	8	5	0	0
6	Cattle-Goat-Poultry-Crop	12	6	6	0	0
7	Goat-Poultry-Crop	12	10	2	0	0
8	Cattle-Goat-Fish-Crop	8	2	4	1	0
9	Goat-Poultry-Fish-Crop	8	5	2	2	0
10	Crop	7	7	0	0	0
11	Fish-Crop	6	0	5	1	0
12	Poultry-Crop	6	3	3	0	0
13	Poultry-Fish-Crop	6	5	1	0	0
14	Cattle-Crop	5	3	2	0	0
15	Cattle-Goat-Poultry	5	4	1	0	0
16	Poultry	5	5		0	0
17	Goat-Crop	4	1	3	0	0
18	Goat-Fish-Crop	4	0	4	0	0
19	Cattle-Poultry	2	2	0	0	0
20	Goat	2	2	0	0	0
21	Goat-Poultry	2	2	0	0	0
22	Cattle	1	1	0	0	0
23	Cattle-Fish	1	0	1	0	0
24	Cattle-Goat	1	1	0	0	0
25	None	4	4	0	0	0
	Total	**227**	**101**	**103**	**21**	**2**

Source: Author's general survey, 2009

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