

## Chapter - VIII

# Agricultural Credit Demand in the Study Region: *Farmers' Surveys*

### 8.1 Rural Credit Situations and the Farmers' Credit Survey

The preceding chapter has already analysed the flow of institutional credit through the medium of formal-sector banks to the agricultural sector in Daudkandi upazila. However the impact of this credit flow would only become visible from supporting evidence drawn from resulting changes in socioeconomic and agricultural activity patterns in the area. A micro level survey on farmers in Daudkandi upazila was hence undertaken using a structured questionnaire [see Appendix-D] to elicit primary information on the social and economic situation of the Daudkandi farmers and their agricultural activities. The farmers interviewed during the sample survey were either potential or direct beneficiaries of agricultural credit. The survey collected a wide range of information relevant to the impact analysis, also yielding information which would be of considerable help to formal-sector banks in formulating future agricultural credit programmes in Bangladesh.

As described in Chapter 6, the sampling procedure followed while drawing the farmer's sample involved purposive selection of the sample village of Maligaon and complete census enumeration of its 516 resident households, followed by random selection of 100 farm households for intensive interviews after eliminating landless and non-cultivating households from the sampling universe. Comprehensive information was then collected on the socioeconomic structure of the sample, prevalent cropping patterns, agricultural costs and agricultural productivity and the consequent rural need for credit support, as well as the primary sources of credit and credit levels of the sample households. The qualitative part of the field survey covered the responses of sample farmers on the utility of rural credit as well as present difficulties faced in obtaining it from formal banking institutions.

For the purpose of data analysis, sample residents were grouped into separate landholding groups on the basis of the sizes of their operational holdings. Extending the standard three-part land classification widely used in Bangladesh land statistics, farmers in the small farmer group were reclassified into sub-marginal, marginal, very small farmers and small farmers, with the limiting land-sizes used by the analysis being defined by 0.05-0.49 acres (*sub-marginal*), 0.50-0.99 acres (*marginal*), 1.00-1.49 acres (*very small*), 1.50-2.49 acres (*small*), 2.50-7.49 acres (*medium*), and 7.50 acres or more (*large*), with the fractional sizes being expressed in decimals. While this splitting of the smallholder land category into the four separate subcategories used in the subsequent analysis is somewhat uncommon, it has been followed in the Bangladesh Agricultural Census of 1996,<sup>2</sup> and was further necessitated by extreme land pressure in Comilla Zila, as result of which more than 90 percent of all agricultural landholdings are small.<sup>3</sup> Use of multiple classification categories within the overall category of small holdings allows intra-group differences to be brought out more clearly. The names assigned to the smaller land categories have been adopted for the purposes of the present study. Detailed analysis of the small farmer category in terms of the subgroups also became necessary in terms of the context of the problem under study, namely the extension of institutional credit support to presently unsupported sections of the rural population in Bangladesh. Use of operational holdings instead of ownership holdings for sample classification was justified since the characteristics of farm operations in the study area are better reflected by the former.

### 8.2 Key Characteristics of the Farmers' Sample

Comprehensive tabulation and analysis was made of sample data obtained from 100 randomly-chosen farmer households in the village of Maligaon located within Daudkandi upazila in Comilla district. A review is made below of key socioeconomic characteristics of the sample farmers, including land and asset holdings.

general family profiles, living conditions, and equipment ownership, etc. This is followed by a review of agricultural operations conducted by these farmers including their crop production patterns, cropping costs, and crop productivity in the light of the income and credit distribution among them. All analyses are conducted on the grouping categories of farmers in terms of their operational landholdings, as described above.

### 8.2.1 Asset-holding Patterns of Farmers

Examination of land and asset-holding patterns among the Maligaon farmers is important not simply because it contributes to an understanding of the economics of scale in cropping operations, but also because several institutionalised forms of credit support and subsidies and program-assistance towards disaster relief, etc. are disbursed in direct relation to the asset-holdings of farm households. In studies on rural asset-holding found in the literature, six major asset forms, namely holdings of farmland, farm buildings such as cattlesheds, etc., holdings of livestock, farm implements and machinery, as well as other nonagricultural assets and financial assets are usually considered.<sup>4</sup> In the present study, the number of asset categories were reduced to three for more specific analysis, in keeping with the general patterns of asset holding among the Maligaon farmers. These related to holdings of lands under different forms of landuse, holdings of irrigation and other equipment, and the livestock-holding patterns of the sample farmers in Maligaon village.

**Table 8.1: Landholding and Landuse Patterns of Farmers in Maligaon Village, Bangladesh**  
Classification by Operational Holding-classes

Farmer Class	Ownership Holding	Leased -in	Leased -out	Operational Holding	Home -stead	Cultivated Land	Vegetable Garden	Orchard	Fish Tank	Fallow Land	
<i>[in decimals]</i>											
<b>SUB-MARGINAL (0.05-0.49ac)</b>											
n=8	Total	483	0	158	316	55	230	1	9	21	9
	Mean	57.56	0.00	17.56	39.00	6.89	28.67	0.11	1.00	2.33	1.00
	SD	52.20	0.00	52.25	3.64	2.62	4.55	0.33	2.09	2.12	1.96
	F-value	0.407	0.000	1.637	0.026	0.283	0.044	0.086	0.751	0.329	0.756
<b>MARGINAL (0.50-0.99ac)</b>											
n=20	Total	1225	230	0	1433	162	953	34	2	52	22
	Mean	61.25	11.50	0.00	71.65	8.10	47.65	1.70	0.10	2.60	1.10
	SD	24.23	15.56	0.00	15.24	8.37	22.88	4.63	0.44	1.93	2.45
	F-value	0.189	0.280	0.000	0.111	0.903	0.223	1.202	0.157	0.300	0.941
<b>VERY SMALL (1.00-1.49ac)</b>											
n=24	Total	2586	637	290	2902	212	1966	15	6	66	31
	Mean	107.75	26.54	12.08	120.92	8.83	81.92	0.63	0.25	2.75	1.29
	SD	40.06	31.22	16.78	14.33	4.69	30.73	1.84	1.20	3.96	2.88
	F-value	0.312	0.561	0.526	0.104	0.506	0.299	0.479	0.431	0.615	1.107
<b>SMALL (1.50-2.49ac)</b>											
n=35	Total	5597	1610	340	6823	345	4609	77	22	160	44
	Mean	159.91	46.00	9.71	194.94	9.86	131.69	2.20	0.63	4.57	1.26
	SD	59.68	60.05	17.42	25.82	6.67	53.95	4.46	1.91	3.95	2.74
	F-value	0.465	1.080	0.546	0.188	0.721	0.525	1.160	0.688	0.614	1.054
<b>MEDIUM (2.50-7.49ac)</b>											
n=11	Total	4293	450	610	4114	214	3295	37	22	96	19
	Mean	390.27	40.91	55.45	374.00	19.45	299.55	3.36	2.00	8.73	1.73
	SD	117.77	52.52	59.14	97.68	13.69	63.51	4.05	5.72	7.79	2.05
	F-value	0.918	0.944	1.853	0.710	1.478	0.618	1.052	2.058	1.210	0.788
<b>LARGE (7.50ac &amp; above)</b>											
n=2	Total	1177	500	0	1672	81	1020	0	14	57	5
	Mean	588.50	250.00	0.00	836.00	40.50	510.00	0.00	7.00	28.50	2.50
	SD	71.50	50.00	0.00	24.00	0.50	60.00	0.00	7.00	21.50	2.50
	F-value	0.557	0.899	0.000	0.174	0.054	0.584	0.000	2.518	3.339	0.962
<b>TOTAL SAMPLE</b>											
n=100	Total	15361	3427	1398	17260	1069	12073	164	75	452	130
	Mean	153.61	34.27	13.98	172.60	10.69	120.73	1.64	0.75	4.52	1.30
	SD	128.29	55.62	31.92	137.57	9.26	102.78	3.85	2.78	6.44	2.60

Source: Farmers' Credit Survey

#### 8.2.1a Landholding

With land as one of the most scarce resources in Bangladesh, the distribution of land assets among resident farmers plays a critical role in the dynamics of the village economy. As seen during the analysis of

bankers' opinions in the previous chapter, command over land is often found to influence the allocation of loans. In the agricultural credit policies followed in Bangladesh, formal-sector banks have been advised to pay more attention to farmers with landholdings of less than 2.50 acres, who are collectively classified as weak farmers. The distribution of agricultural land in Maligaon has been examined above for the operational size-categories of farmers defined earlier. The land categories considered include ownership holdings of land, leased land categories, including lands leased-in and leased-out and the resulting distribution of operational holdings in the farmers' sample. Further analysis of the operational holding distribution is made in terms of landuse, with the landuse categories considered being homesteads, cultivated lands, vegetable gardens and orchards, fish-tanks and other fallow land.

The table shows that the distribution of the landholdings across the size-classes of sample farmers differ in several aspects. Of the sample farmers, 8 percent belong to the class of sub-marginal farmers, 20 percent to the class of marginal farmers, 24 percent to the class of very small farmers, 35 percent to the class of small farmers, 11 percent to the class of medium farmers and only 2 percent to the class of large farmers. In terms of the aggregative definition of all farmers with landholding between 0.05-2.49 acres as *small farmers* in other sources in the Bangladesh literature, this places 87 percent of the farmers in the Maligaon village sample in the *small farmer* category, which reflects the corresponding proportion of small farmers for Comilla Zila as a whole (90.74 percent) fairly closely. In area terms, this combined class of farmers collectively operates around 67 percent of total operational holdings in the Maligaon sample and accounts for 72 percent of all leased-in lands against 56 percent of all lands leased-out, amounting to net combined lease-in of 16.9 acres (1689 decimals), which constitutes over 83 percent of net lands leased-in by the sample farmers in Maligaon. The extent of the net lands leased-in that farmers in this combined class are enterprising and supplement their own meagre ownership holdings of land by leasing in lands from other farmers and non-cultivating owners in order to run more efficient agricultural operations. A high level of tenancy consequently prevails in Maligaon village.

However, the bulk of lands are operated by the class of farmers operating agricultural holdings between 1.50-2.49 acres, who are classified as small farmers in the table. This class of farmers constitutes 35 percent of the sample and holds around 36 percent of total ownership holdings, but operates around 40 percent of total lands held as operational holdings. Net land lease-in by this class is thus significant and amounts to about 63 percent of net lands leased-in by the Maligaon farmers. In comparison, the farmers in the sub-marginal are unable to lease-in lands and thus experience net land lease-out. Farmers in the larger size-classes show less proneness to leasing-in agricultural lands and the medium farmer class in fact experiences a net lease-out of about 160 decimals. By far, the bulk of leased-in lands are drawn from owners outside the sample, many of whom have sub-marginal holdings or are non-cultivating owners.

As a result of such lease-in behaviour, the average operational holding-sizes of farmers in the very small and small farmer classes are sizably larger than those of farmers in the marginal and sub-marginal classes, indicating that lease-in behaviour is fairly widespread among very small and small farmers. Farmers in the medium class tend to have the largest homestead lands, and also the largest lands committed to vegetable gardens. However the largest orchards and fish tank belong to the large farmers, who are in a numerical minority in Maligaon village. Besides the fact that farmers in the larger land-size categories have more lands to spare for these forms of landuse, this may also be due to their comparatively well-off economic conditions which allow them to invest on rural activities like fishery and orchardry which offer easier financial returns than common agricultural operations in Bangladesh. All available land in Maligaon is intensively used, as a result of which little land remains fallow, no matter which class of farmers is being considered.

The analysis in the table also demonstrates the high degree of inequality in the land distribution of the village of Maligaon. However the intra-class land distributions vary considerably in the degree of inequality, depending on the class of farmers being considered, as can be seen from variance analysis based on computed values of the F-statistic. These show that while the leasing-in behaviour of the small farmers is markedly stronger than that of the general sample of farmers, the tendency to lease-out lands is more present among sub-marginal and medium farmers. As a consequence of leasing-in and leasing-out of lands, several farmers with medium operational holdings have smaller or larger homesteads than other farmers in the medium class. While farmers in the small and medium class who are able to make the necessary investment of labour and resources are more likely to resort to vegetable gardening, few marginal farmers are able to do the same.

Only farmers in the medium and large categories are able to make significant commitments of land to orchards and fisheries. Very small and small farmers show more variable behaviour in the utilisation of fallows. Those who can invest necessary resources and labour are more prone to fully utilise their lands.

### 8.2.1b *Livestock-holding Patterns*

Livestock are an important asset of farm families under peasant-farming systems such as those that exist in Bangladesh. Besides providing home-produced commodities like milk, butter, eggs, meat, etc., to rural households, the livestock-holdings of the farm family are also sources of tractive-power in agricultural operations such as land-preparation, ploughing and weeding, and in transporting commodities to and from the village. Livestock are also an important source of organic manure, as well as domestic fuel. Since the surplus tractive-power of livestock can be hired out to families having no livestock holdings of their own, and the surpluses of livestock-products find ready sale, livestock assets also supplement the incomes of farm families. After cultivating their own land they can plough the others land on hired basis. Thus the acquisition of livestock assets by the rural household represents an investment of past savings, and like landholdings, livestock holdings can be treated as a form of peasant capital. Although farm livestock holdings can exist in multiple forms, such as holdings of milch cattle and draught cattle (bovine livestock), goats and sheep (ovine livestock) and poultry, etc., most farm families hold livestock in some form or the other, depending on their necessities and their capacity to invest. While the more prosperous families with large landholdings tend to invest more in cattle, poor families may find it difficult to purchase and maintain cattle assets, because of shortages of capital as well as land, which makes it difficult for them to feed the animals. Thus the distribution of livestock assets and the forms in which livestock assets are held provide partial indication of the wealth distribution in the village.

Table 8.2: Livestock-holding Patterns of Farmers in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes

Farmer Category	Total Cattle	Milch Cattle	Draught Cattle	Goats & Sheep	Ducks	Chickens
<b>SUB-MARGINAL (0.05-0.49ac)</b>						
n=8						
Total	6	1	5	1	18	54
Mean	0.67	0.11	0.56	0.11	2.22	6.56
SD	1.30	0.33	0.99	0.33	1.48	3.31
F-value	0.813	0.421	0.910	0.531	0.504	0.879
<b>MARGINAL (0.50-0.99ac)</b>						
n=20						
Total	9	5	4	3	44	64
Mean	0.45	0.25	0.20	0.15	2.20	3.20
SD	0.74	0.43	0.51	0.36	2.79	3.03
F-value	0.463	0.551	0.468	0.574	0.949	0.804
<b>VERY SMALL (1.00-1.49ac)</b>						
n=24						
Total	22	12	10	5	70	131
Mean	0.92	0.50	0.42	0.21	2.92	5.46
SD	0.95	0.65	0.64	0.82	2.89	3.55
F-value	0.597	0.821	0.587	1.310	0.983	0.943
<b>SMALL (1.50-2.49ac)</b>						
n=35						
Total	75	28	47	8	118	180
Mean	2.14	0.80	1.34	0.23	3.37	5.14
SD	1.40	0.79	1.12	0.72	2.90	3.12
F-value	0.874	1.000	1.028	1.157	0.987	0.829
<b>MEDIUM (2.50-7.49ac)</b>						
n=11						
Total	43	18	25	1	35	74
Mean	3.91	1.64	2.27	0.09	3.18	6.73
SD	1.16	0.64	0.62	0.29	3.56	2.73
F-value	0.729	0.818	0.566	0.462	1.213	0.727
<b>LARGE (7.50ac &amp; above)</b>						
n=2						
Total	8	4	4	0	8	34
Mean	4.00	2.00	2.00	0.00	4.00	17.00
SD	1.00	0.00	1.00	0.00	4.00	3.00
F-value	0.626	0.000	0.918	0.000	1.362	0.797
<b>TOTAL SAMPLE</b>						
n=100						
Total	163	68	95	18	293	537
Mean	1.63	0.68	0.95	0.18	2.93	5.37
SD	1.60	0.79	1.09	0.62	2.94	3.76

Source: Farmers' Credit Survey

As shown by the table, cattle-holding among the Maligaon farmers is concentrated among the small, medium and large farmers, who hold from 2 to 4 animals on the average. More draught animals are held than milch animals. In contrast, the sub-marginal, marginal and very small classes of farmers have less than one animal per farm-family on the average and generally hold more milch animals than draught animals, except for the sub-marginal class. Farmers with larger landholdings need more cattle for ploughing their own lands and other associated agricultural work, and can also hire out the surplus draught-capacity of their animals to other farmers in return for hire-charges. They also have the investing and fodder capacity to purchase and maintain cattle. Farmers from weaker economic sections cannot maintain their own cattle and are more dependent on cattle-hire for draught operations, but keep some milch animals for personal needs and sale of dairy products. They are thus more inclined to keep minor livestock like goats, ducks and chickens, which are easier to maintain. Analysis of the computed F-values indicates that small farmers in Maligaon are most inclined to maintain livestock in multiple forms, while other farmers tend to concentrate on one form of livestock holding or the other. Sub-marginal farmers who tend to hold more draught animals than marginal farmers are more likely to maintain these in order to earn extra income from cattle-hire, since their own operational holdings are small.

### 8.2.1c Irrigation and Equipment-holding

Although the use of modern agricultural equipment such as power tillers, sprayers, pumpsets and so on can contribute significantly to increased agricultural production, the capital cost of such equipment is usually high. On the other hand, the extent of credit support extended by the banks for equipment purchase in the Daudkandi region has been seen to be meagre. Farmers in Maligaon thus have to depend on outside sources of finance and consequently possess limited agricultural and other equipment, as can be seen below.

Table 8.3: Irrigation and Equipment Assets of Farmers in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes [brackets %]

Farmer Category	Cultivated Land (decimals)	Irrigated Land (decimals)	IRRIGATION METHOD				EQUIPMENT	OTHER ASSETS		
			Shallow Tubewell	Deep Tubewell	Hand Tubewell	Manual Methods	Sprayer	Rickshaw Van	Boat	
<b>SUB-MARGINAL (0.05-0.49ac)</b>										
n=8	Total	230	191	-	7	-	1	-	-	-
	Mean	28.67	26.38	(0.00)	(87.5)	(0.00)	(12.5)	(0.00)	(0.00)	(0.00)
	SD	4.55	5.62							
	F-value	0.044	0.143							
<b>MARGINAL (0.50-0.99ac)</b>										
n=20	Total	953	745	-	19	-	-	-	1	1
	Mean	47.65	39.21	(0.00)	(95.0)	(0.00)	(0.00)	(0.00)	(5.0)	(5.0)
	SD	22.88	10.19							
	F-value	0.223	0.259							
<b>VERY SMALL (1.00-1.49ac)</b>										
n=24	Total	1966	1078	-	23	-	1	2	1	4
	Mean	81.92	46.87	(0.00)	(95.8)	(0.00)	(4.2)	(8.3)	(4.2)	(16.7)
	SD	30.73	15.54							
	F-value	0.299	0.395							
<b>SMALL (1.50-2.49ac)</b>										
n=35	Total	4609	2570	-	35	-	-	4	-	11
	Mean	131.69	73.43	(0.00)	(100.0)	(0.00)	(0.00)	(11.4)	(0.00)	(31.4)
	SD	53.95	31.77							
	F-value	0.525	0.808							
<b>MEDIUM (2.50-7.49ac)</b>										
n=11	Total	3295	1305	-	11	-	-	6	-	7
	Mean	299.55	118.64	(0.00)	(100.0)	(0.00)	(0.00)	(54.5)	(0.00)	(63.6)
	SD	63.51	45.93							
	F-value	0.618	1.168							
<b>LARGE (7.50ac &amp; above)</b>										
n=2	Total	1020	300	-	2	-	-	2	-	1
	Mean	510.00	150.00	(0.00)	(100.0)	(0.00)	(0.00)	(100.0)	(0.00)	(50.0)
	SD	60.00	50.00							
	F-value	0.584	1.272							
<b>TOTAL SAMPLE</b>										
n=100	Total	12073	6189	-	97	-	2	14	2	24
	Mean	120.73	63.80	(0.00)	(97.0)	(0.00)	(2.0)	(14.0)	(2.0)	(24.0)
	SD	102.78	39.31							

Source: Farmers' Credit Survey

As seen from the table, farmers belonging to sub-marginal, marginal and very small classes have only limited cultivated land. Sizeable increments are visible thereafter in the average size of cultivated ownership holdings among small, medium and large farmers, leading to high size-variability for the entire sample as indicated by the corresponding standard deviation figure. On the other hand, the distribution of irrigated operational holdings shows less dispersion, indicating that the distribution of irrigation facilities among the Maligaon farmers is more equal. The reason seems to lie in the nature of irrigation in the village, which is still provided mainly by private deep tubewells [DTWs] which operate on a cluster principle. In the absence of credit support to finance individual irrigation facilities such pumpsets and shallow tubewells [STWs], farmers belonging to the medium and large classes still have large tracts of cultivated lands which are not covered by irrigation. In contrast, farmers in the smaller landholding classes receive better proportionate irrigation coverage. In the case of two of the smaller farmers, however, recourse is still being made to manual irrigation methods, because their lands lie beyond the reach of the cluster scheme. Computed F-values show that higher variability in the extent of irrigation coverage exists among the medium and large farmers, than for sample-farmers as a whole.

No farmers in the sample currently use mechanised means of cultivation, with the exception of one farmer who possesses a power tiller. Farmers in the sub-marginal and marginal categories do not possess sprayers or pumpsets. The use of private pumpsets is noticed among farmers cultivating from very small to large operational holdings. However all categories of farmers have access to deep tubewell [DTW] facilities for irrigation, because of the presence of two privately-owned cluster DTWs in Maligaon village. Because of this, traditional methods of irrigation are now hardly used by the Maligaon farmers. Farmers in the sub-marginal and marginal categories possess few other equipment assets such as rickshaw vans and boats, even though boat ownership is relatively high among very small, small and medium farmers. Because of the overall paucity of land, such assets often provide a supplemental source of income to their owners. In general, well-off farmers in Maligaon have better access to equipment and technology than the poorer farmers in the area, and can thus cultivate their lands more scientifically.

Table 8.4: Family Structures and Sizes among Farming Families in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes

Farmer Class	Unitary Families	Joint Families	Total Males	Total Females	Avg. Family Size
<b>SUB-MARGINAL</b>	8	-	36	29	65
%	100.0	0.0	4.5	3.6	8.1
<b>MARGINAL</b>	17	3	66	67	133
%	85.0	15.0	3.3	3.4	6.7
<b>VERY SMALL</b>	20	4	92	94	186
%	83.3	16.7	3.8	3.9	7.8
<b>SMALL</b>	27	8	116	110	226
%	77.1	22.9	3.3	3.1	6.5
<b>MEDIUM</b>	8	3	44	48	92
%	72.7	27.3	4.0	4.4	8.4
<b>LARGE</b>	-	2	16	13	29
%	0.0	100.0	8.0	6.5	14.5
<b>ALL FARMERS</b>	80	20	370	361	731
%	80.0	20.0	3.7	3.6	7.3

Source: Farmers' Credit Survey

### 8.2.1d Socioeconomic Condition of Farm Families

The social and economic position of farm-families in the Maligaon sample also partially determines the nature of their participation in agricultural activity. As indicated by their respective average ages of 42.7 years and 44.3 years, farmers in the marginal and very small classes are the youngest in the sample. Farmers in the small and medium classes are older and have average ages of 51.6 years and 55.9 years. Compared to marginal farmers, sub-marginal farmers have a higher average age of 49.8 years, bringing them close in age terms to the small farmer group. The oldest farmers in the sample comprise large farmer (only 2) who have an average age of 75 years. Since the position of farmers in the smaller landholding classes is partially a result of inheritance and land fragmentation, the younger ages of marginal and very small farmers indicate that many farmers among them belong to families which have recently undergone land-division. This does

not however seem to be the case among sub-marginal farmers. Further evidence of these characteristics is also provided in the table above.

The joint or unitary status of the farm-family has some bearing on the overall participation of family members in agricultural activities, since each family member has some role in the process of subsistence production. As implied in the age-distribution, more undivided families are found among farm families in the higher landholding classes indicating that many of them have not yet undergone fragmentation and land division. Additional evidence of this is also carried in their higher average family-size. However, in spite of relatively lower average-age and the lower incidence of joint families among them, farmers in the sub-marginal class have larger family-sizes than most of the landholding classes above them, implying that dependency is higher among them. In contrast, the largest farm-families with an average size of 14 members have a joint-family structure and also have large landholdings that enable them to support their dependants more effectively. In most farmer-classes, the number of males and females in the family tends to be similar. Only among the smallest and largest landholding classes is an exception noticed.

Table 8.5: Earning and Dependency Structure among Farming Families in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes

Farmer Class	Sole-earner Families	Joint-earner Families	Adult Male Earners	Adult Female Earners	Adult Earners	Earning Minors	Minor Dependents	Elderly Dependents	Dependency Ratio
<b>SUB-MARGINAL</b>	4	4	15	12	27	-	22	16	<b>1.41</b>
% / Avg	50.0	50.0	1.9	1.5	3.4	0.0	2.8	2.0	
<b>MARGINAL</b>	13	7	33	28	61	1	68	3	<b>1.16</b>
% / Avg	65.0	35.0	1.7	1.4	3.1	0.1	3.4	0.2	
<b>VERY SMALL</b>	11	13	46	39	85	1	88	12	<b>1.18</b>
% / Avg	45.8	54.2	1.9	1.6	3.5	0.0	3.7	0.5	
<b>SMALL</b>	14	21	76	62	138	3	66	19	<b>0.62</b>
% / Avg	40.0	60.0	2.2	1.8	3.9	0.1	1.9	0.5	
<b>MEDIUM</b>	3	8	24	22	46	1	39	6	<b>0.98</b>
% / Avg	27.3	72.7	2.2	2.0	4.2	0.1	3.5	0.5	
<b>LARGE</b>		2	10	8	18		10	1	<b>0.61</b>
% / Avg	0.0	1.0	5.0	4.0	9.0	0.0	5.0	0.5	
<b>ALL FARMERS</b>	45	55	204	171	375	6	293	57	<b>0.93</b>
% / Avg	45.0	55.0	2.0	1.7	3.8	0.1	2.9	0.6	

Source: *Farmers' Credit Survey*

Note: Adult earners includes earning adolescents.

The earlier table has shown that the fragmentation of farm-families in Maligaon village is relatively high, leading to a very high proportion of unitary families. In spite of this, most farm-families depend on the earning contributions from more than one family member. Because of high levels of land scarcity in the region, families with smaller landholdings supply labour services during seasons of high agricultural labour demand. Since the agricultural economy of Bangladesh depends predominantly on the cultivation of rice, exclusive labour demands also exist for female workers, allowing both male and female adolescents to make occasional contributions to family earnings. As seen in the above table, at least 3 family members contribute their earnings per family, irrespective of its joint or unitary family structure across all farming classes. The mean number of male and female earners also remains relatively steady among sub-marginal, marginal and very small farm-families, but the participation of female earners declines in the larger landholding classes. This is partially compensated by the higher incidence of joint families and the greater number of male earners found among these classes. Participation by earning minors is low across all farmer groups. As indicated by the dependency ratios in the table, the earning members of farm-families in the sub-marginal, marginal and very small classes have to support a larger number of dependents than the higher landholding classes. The latter have more than one earner per dependent. However, only sub-marginal farm-families have to support a large proportion of elderly dependents, while families in the other classes have few elderly dependents.

Education is usually considered to be an important determinant of the progressive nature of farmers, influencing both their occupational choices and economic activities. Education may thus also affect rural credit patterns and the ability of farmers to make intelligent use of credit. The educational and occupational backgrounds of respondent farmers in Maligaon are analysed in the table below.

Table 8.6: Educational Levels and Occupational Activities among Farmers in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes

Farmer Class	EDUCATIONAL ATTAINMENTS					OCCUPATIONAL DISTRIBUTION						Total Families with second Occupations
	Total Families	Illiterate	Functionally Literate	Primary School	above Primary School	Main Activity Cultivation	Secondary Activity					
							Agri Labour	Artisan -ship	Small Trade	Service	Other	
<b>SUB-MARGINAL</b>	8	3	1	-	4	8	2	1	2	1	1	7
%		37.5	12.5	0.0	50.0	100.0	25.0	12.5	25.0	12.5	12.5	87.5
<b>MARGINAL</b>	20	8	6	2	4	20	5	1	2	3	1	12
%		40.0	30.0	10.0	20.0	100.0	25.0	5.0	10.0	15.0	5.0	60.0
<b>VERY SMALL</b>	24	10	6	1	7	24	2	-	1	3	2	8
%		41.7	25.0	4.2	29.2	100.0	8.3	0.0	4.2	12.5	8.3	33.3
<b>SMALL</b>	35	4	15	3	13	35	-	-	4	5	1	10
%		11.4	42.9	8.6	37.1	100.0	0.0	0.0	11.4	14.3	2.9	28.6
<b>MEDIUM</b>	11	2	3	-	6	11	-	-	5	2	-	7
%		18.2	27.3	-	54.5	100.0	0.0	0.0	45.5	18.2	0.0	63.6
<b>LARGE</b>	2	1	-	1	-	2	-	-	-	-	-	-
%		50.0	0.0	50.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>ALL FARMERS</b>	100	28	31	7	34	100	9	2	14	14	5	44
%		28.0	31.0	7.0	34.0	100.0	9.0	2.0	14.0	14.0	5.0	44.0

Source: *Farmers' Credit Survey*

The table shows that 59 percent of the sample farmers in Maligaon have not received any formal education, although 31 farmers are now functionally literate. Only 41 farmers are formally literate, with education levels ranging from primary school to the degree level. The distribution in the table also shows that the concentration of illiterate farmers is higher in the sub-marginal, marginal and very small classes. Though 50 percent of the farmers belonging to the large class is found to be illiterate, this may not be considered significant because this class contains only 2 farmers. The literacy rate is relatively higher among the small farmer class. Another noteworthy feature is that more farmers belonging to the sub-marginal and medium classes have educational attainments above primary school. It may be noted also that farmers in the sub-marginal, marginal and very small classes are more illiterate because of their poor economic condition. The relatively higher educational attainments of sample farmers in the sub-marginal class would imply that they are more dependent on their education for their occupational needs. In strong contrast, higher educational levels among the medium class of farmers is more likely to be due to their well-off economic status, rather than being the basis of their economic activity.

Because of the nature of the sampling process and its focus on the farm population of Maligaon, all sample farmers had cultivation as their primary occupation. Although in 66 percent of the farm families, the survey respondents had no other occupation, 44 survey respondents reported having secondary occupations. The proportion of farmers with second occupations decreased steadily between the sub-marginal to small farmer class, but again rose among medium farmers. This would imply that while farmers in the lower size-groups engaged themselves in second occupations out of economic necessity, farmers in the larger size-groups engaged in second occupations to supplement their incomes. Thus while small trade and service were the principal activities undertaken as second occupations in Maligaon, the involvement of farmers in the small size-groups in small trade increased in inverse proportion to their operational holding of land. In contrast, farmers in the medium class who showed the highest involvement in small trade were so involved because of the potential gain in income. In the case of service occupations, no notable class concentration was observed. Agricultural labour was more prominent as a second occupation among farmers in the smaller landholding class, and represented the work performed against wages on lands belonging to other farmers. On the whole, while the poorest farm families were more involved in secondary occupations, the larger farm families were more dependent on agricultural activity as their principal mainstay.

All farm families in Maligaon sample lived in self-owned *kaccha* (mud-built) houses, except for the largest farmers who had *pucca* or semi-*pucca* homes. Average ages of the dwellings varied according to farmer-class, with the houses of small, medium and large farmers being the oldest with average ages ranging from 16-17 years. Most of the joint-families in the sample were found among these classes. On the other hand, farm-families in the smaller landholding classes resided in dwelling with an average age of 12 years, indicating in many cases that they were new households that had resulted from the nucleation of older joint-

families. Sharp distinctions were observed in the construction costs of the houses of poor and rich farmers. While the houses of sub-marginal, marginal and very small farmers had an average construction value ranging from Tk.24000-28000, indicating that their living conditions were similar, the average construction values of the houses of small, medium and large farmers doubled with every step occupying a range between Tk.45000-175000. For farmers with kaccha dwellings, maintenance costs remained similar, irrespective of dwelling size, since mostly local materials were used. The houses of large farmers required more maintenance expenditure. Since electricity had entered Maligaon only recently, only 23 percent of the families had access to domestic electricity. 12 families, mostly from small landholding classes, were still dependent on local ponds for drinking water. The rest drew drinking water from tubewells.

**Table 8.7: Sources of Rural Energy among Farming Families in Maligaon Village, Bangladesh**  
*Classification by Operational Holding-classes*

	ENERGY SOURCE			
	Cowdung	Agro Waste	Firewood	Kerosene
<b>SUB-MARGINAL (0.05-0.49ac)</b>				
Total	102	353	93	7
Mean	12.75	44.13	11.63	0.88
SD	17.12	29.86	10.48	0.33
F-value	1.281	1.490	0.515	0.443
<b>MARGINAL (0.50-0.99ac)</b>				
Total	186	592	410	22
Mean	9.30	29.60	20.50	1.10
SD	12.02	11.01	35.83	0.54
F-value	0.899	0.549	1.763	0.721
<b>VERY SMALL (1.00-1.49ac)</b>				
Total	274	917	299	26
Mean	11.42	38.21	12.46	1.08
SD	10.87	19.81	8.72	0.64
F-value	0.814	0.988	0.429	0.857
<b>SMALL (1.50-2.49ac)</b>				
Total	500	1359	604	54
Mean	14.29	38.83	17.26	1.54
SD	14.20	13.36	13.59	0.60
F-value	1.063	0.667	0.669	0.806
<b>MEDIUM (2.50-7.49ac)</b>				
Total	193	425	190	18
Mean	17.55	38.64	17.27	1.64
SD	10.58	12.81	18.21	1.23
F-value	0.792	0.639	0.896	1.642
<b>LARGE (7.50ac &amp; above)</b>				
Total	65	210	75	5
Mean	32.50	105.00	37.50	2.50
SD	7.50	35.00	22.50	0.50
F-value	0.561	1.746	1.107	0.670
<b>ALL FAMILIES</b>				
Total	1320	3856	1671	132
Mean	13.2	38.56	16.71	1.32
SD	13.36	20.04	20.33	0.75

Source: *Farmers' Credit Survey*

Agro-wastes and firewood are the two most common sources of rural energy in Maligaon. In keeping with the distribution of livestock assets among farm families, the use of cowdung as an energy source tends to be limited, except among farmers with larger land and livestock holdings. Kerosene use is negligible and is confined mainly to lighting. It is evident from the table that the average quantities of energy used in different forms remain roughly similar between all farm households, except joint households and large farmers. However, the patterns of energy dependence vary in accordance with the relative access of the farm family to the energy source. Since both cowdung and agro-wastes are available in greater quantities to farmers in the larger landholding classes, their dependence on these sources is greater. Higher variability in the use of cowdung is seen among sub-marginal and small farmers, and the poorer families with less direct access to cowdung depend to a greater extent on agro-wastes and firewood collected from different sources. Some of these families also collect and sell firewood to other households as a source of income. Except among large farmers, the use of cowdung as an energy source is low, showing that farmers having a limited number of cattle-holdings attach more importance to the use of cowdung as organic manure. Hence their relative dependence on agro-wastes and firewood is greater. However, considerable variability in firewood-use is seen among marginal farmers, which appears to depend on their ability to commit family labour to the

collection of firewood. Since more unitary families are found among the marginal and very small landholding households, their dependence on firewood sources ranges from low to high.

### 8.3 Income and Credit Availability among the Maligaon Farmers

Besides the monetary returns directly obtained from farming activity by each farmer-class, the rural income distribution among farm-families in the study area was determined by their supplementary earnings obtained from livestock and other related subsidiary activities; alternative wage-employment opportunities available to members of the family, members in agricultural and nonagricultural activities; earnings of salaried members, if any; direct earnings from nonagricultural activities, e.g. artisanship and trading profits, etc.; as well as remittances received from family members employed elsewhere. While the extent of landholding by the family is the primary determinant of the income position of the family, families with multiple sources of income may occupy a better economic position in certain cases.

Table 8.8: Income-sources & Income Distribution of Farmers in Maligaon Village, Bangladesh  
Classification by Operational Holding-classes

Farmer Class		Income from Cultivation	Income from Agri Labour	Income from Artisanship	Income from Trade	Other Income	Total Family Income
<i>[in Taka]</i>							
<b>SUB-MARGINAL (0.05-0.49ac)</b>							
n=8	Sum	24260.00	16000.00	48000.00	42000.00	102000.00	232260.00
	Avg	3032.50	8000.00	24000.00	21000.00	25500.00	29032.50
	STD	810.49	0.00	0.00	9000.00	17168.28	13473.38
	F-value	0.061	0.000	0.000	0.909	0.832	0.496
<b>MARGINAL (0.50-0.99ac)</b>							
n=20	Sum	158150.00	62000.00	0.00	24000.00	255000.00	499150.00
	Avg	7907.50	7750.00	-	12000.00	21250.00	24957.50
	STD	3782.30	3699.66	-	12000.00	13899.19	15963.95
	F-value	0.284	0.797	-	1.212	0.674	0.587
<b>VERY SMALL (1.00-1.49ac)</b>							
n=24	Sum	315850.00	53000.00	0.00	96000.00	326000.00	790850.00
	Avg	13160.42	8833.33	-	24000.00	27166.67	32952.08
	STD	5129.37	7357.91	-	14696.94	29373.55	26225.55
	F-value	0.385	1.586	-	1.484	1.424	0.965
<b>SMALL (1.50-2.49ac)</b>							
n=35	Sum	793110.00	52500.00	0.00	200000.00	464000.00	1509610.00
	Avg	22660.29	8750.00	-	20000.00	30933.33	43131.71
	STD	7872.95	2376.10	-	8613.94	17295.34	21047.16
	F-value	0.590	0.512	-	0.870	0.838	0.774
<b>MEDIUM (2.50-7.49ac)</b>							
n=11	Sum	401750.00	0.00	18000.00	91000.00	225000.00	735750.00
	Avg	36522.73	-	18000.00	18200.00	25000.00	66886.36
	STD	9105.53	-	0.00	4214.26	8993.83	20490.53
	F-value	0.683	-	0.000	0.426	0.436	0.754
<b>LARGE (7.50ac &amp; above)</b>							
n=2	Sum	129200.00	0.00	0.00	20000.00	108000.00	257200.00
	Avg	64600.00	-	-	20000.00	54000.00	128600.00
	STD	16150.00	-	-	0.00	30000.00	3850.00
	F-value	0.826	-	-	-	0.688	7.060
<b>ALL FARMERS</b>							
n=100	Sum	1822320.00	183500.00	66000.00	473000.00	1480000.00	4024820.00
	Avg	18223.20	8340.91	13200.00	19708.33	27407.41	40248.20
	STD	13337.80	4640.21	10998.18	9901.51	20633.05	27180.34

Source: Farmers' Credit Survey

#### 8.3.1 Income Distribution among Farmers

In order to the income situation of the study village, information was gathered during the survey on the extent of land under cultivation, the prevailing labour situation, the income directly derived from cultivation, and income from other sources. These sources included subsidiary or off-season occupational incomes earned from rendering agricultural labour services, artisanship, trade and so on. Because of the critical land situation in Bangladesh, it is usual for most farm families to have one or two members who have left the village for employment in Bangladesh or in areas like West Asia which receive a large contingent of expatriate

labour from outside. All remittances received by the Maligaon families from such educated members of the family working elsewhere within or without the country were included under other income sources. The annual income of the Maligaon farmers was then computed as the total of gross agricultural income and income received from other sources. The pricing factor used while converting home-production and other crop outputs into monetary units was the average of prices quoted by individual farmer-respondents.

**Table 8.9: Income-sources & Income Distribution of Farmers in Maligaon Village, Bangladesh**  
Classification by Operational Holding-classes

Farmer Class		Income from Cultivation	Income from Agri Labour	Income from Artisanship	Income from Trade	Other Income	Total Family Income
<i>[in Taka]</i>							
<b>SUB-MARGINAL (0.05-0.49ac)</b>							
n=8	Sum	24260.00	16000.00	48000.00	42000.00	102000.00	232260.00
	Avg	3032.50	8000.00	24000.00	21000.00	25500.00	29032.50
	STD	810.49	0.00	0.00	9000.00	17168.28	13473.38
	F-value	0.061	0.000	0.000	0.909	0.832	0.496
<b>MARGINAL (0.50-0.99ac)</b>							
n=20	Sum	158150.00	62000.00	0.00	24000.00	255000.00	499150.00
	Avg	7907.50	7750.00	-	12000.00	21250.00	24957.50
	STD	3782.30	3699.66	-	12000.00	13899.19	15963.95
	F-value	0.284	0.797	-	1.212	0.674	0.587
<b>VERY SMALL (1.00-1.49ac)</b>							
n=24	Sum	315850.00	53000.00	0.00	96000.00	326000.00	790850.00
	Avg	13160.42	8833.33	-	24000.00	27166.67	32952.08
	STD	5129.37	7357.91	-	14696.94	29373.55	26225.55
	F-value	0.385	1.586	-	1.484	1.424	0.965
<b>SMALL (1.50-2.49ac)</b>							
n=35	Sum	793110.00	52500.00	0.00	200000.00	464000.00	1509610.00
	Avg	22660.29	8750.00	-	20000.00	30933.33	43131.71
	STD	7872.95	2376.10	-	8613.94	17295.34	21047.16
	F-value	0.590	0.512	-	0.870	0.838	0.774
<b>MEDIUM (2.50-7.49ac)</b>							
n=11	Sum	401750.00	0.00	18000.00	91000.00	225000.00	735750.00
	Avg	36522.73	-	18000.00	18200.00	25000.00	66886.36
	STD	9105.53	-	0.00	4214.26	8993.83	20490.53
	F-value	0.683	-	0.000	0.426	0.436	0.754
<b>LARGE (7.50ac &amp; above)</b>							
n=2	Sum	129200.00	0.00	0.00	20000.00	108000.00	257200.00
	Avg	64600.00	-	-	20000.00	54000.00	128600.00
	STD	16150.00	-	-	0.00	30000.00	3850.00
	F-value	0.826	-	-	-	0.688	7.060
<b>ALL FARMERS</b>							
n=100	Sum	4024820.00	1822320.00	183500.00	66000.00	473000.00	1480000.00
	Avg	40248.20	18223.20	8340.91	13200.00	19708.33	27407.41
	STD	27180.34	13337.80	4640.21	10998.18	9901.51	20633.05

Source: Farmers' Credit Survey

Average family income across size-groups was observed to be lowest among the marginal rather than the sub-marginal class of farmers and maximum for large farmers, indicating a difference of 5 times between the lowest and highest average incomes. This appears to be so because the marginal farmers do not earn any income from artisanship, and their average income from trade is lower than sub-marginal class. In terms of aggregate family income, only the class of very small farmers show closeness in the average family income earned within the group, while the variation of income in the other farmer groups tends to be high.

Income from cultivation is common to all respondent classes in the study village since all of them are active farmers. Most farmers belonging to the sub-marginal, marginal and small farmer class depend on additional earnings from agricultural labour. A few farmers have some earnings from artisanship. However, although crop income constitutes the major income source for all classes, wide variation exists in the range of average incomes for the different farmer categories in the sample. As expected, average income from cultivation is lowest for sub-marginal farmers and largest for large farmers. The scale of difference between lowest and highest earnings from cultivation widens considerably and the average earnings of the large farmers from cultivation sources is 21 times higher than that of sub-marginal farmers. For each of the farmer classes ranging from marginal to small farmers, average income from cultivation are nearly double

compared to the immediately higher class. Even though the differences in landholding are much greater among the medium and large class, their income differentials narrow down considerably.

Meaningful inferences regarding the relationship between holding size-classes and the benefits from cultivation can be drawn from the above observations. Although the differences in holding-size between them amount to 0.50 acres only, income from cultivation among sub-marginal, marginal and very small farmers more than doubles with each step. In marked contrast, despite a size-difference of 5 acres or more between their operational holdings, the incomes from cultivation drawn by medium and large farmers do not show a similar order of variation. Besides providing corroborating evidence of small-farmer efficiency in Bangladesh, this clearly indicates that the sub-marginal, marginal and very small farmer-classes offer more potential gains from the proper application of agricultural credit, and should thus form the focus of the formal credit institutions. Their potential in this respect should also be considered from the point of view of development of agricultural sector and welfare of poorer sections of the population in Bangladesh as a whole.

Table 8.10: Credit-Accessibility among Farmers in Maligaon Village: Sources of Finance  
Classification by Operational Holding-classes

Farmer Class	<u>Bank Loans Taken</u>		NGO Loans	Personal Loans	Mahajan Loans	Other Loans	Borrower Families	Non-Borrower Families
	BKB	Other Banks						
SUB-MARGINAL	—	nil	1	3	-	-	4	4
MARGINAL	—	nil	3	12	2	2	16	4
VERY SMALL	2	nil	1	13	5	2	19	5
SMALL	4	nil	3	17	7	1	25	10
MEDIUM	7	nil	—	6	-	-	10	1
LARGE	1	nil	—	1	-	-	1	1
ALL FARMERS	14	nil	8	52	14	5	75	

Source: Farmers' Credit Survey

### 8.3.2 Sources of Credit and Credit Accessibility

Increased access to agricultural credit is an important means of ensuring rural development. Agricultural credit to villages in Bangladesh is provided through multiple credit agencies, which include *formal-sector* banks [NCBs, BKB, BSBL, etc.], *semi-formal* agencies [GB and NGOs] and *informal* sources [including friends and relatives, etc., as well as traders and professional moneylenders]. The effectiveness of their participation in RFMs can be assessed in terms of the loan purpose and coverage they presently provide to the farmers, and the actual amount of agricultural credit disbursed and recovered. An idea of the extent to which local financial resources are being circulated within the local banking and non-banking systems can be gathered from information collected during the Maligaon farmers survey.

Information on the current patterns of borrowing among the Maligaon farmers are provided in the above table. As seen in the table, most farmers who resort to borrowing have to borrow from multiple credit sources, indicating that the present levels of access to bank credit in the village are inadequate. Greater dependence on informal instead of institutional sources is also seen among the households. Since formal credit institutions provide loans for specific purposes under specific conditionalities, the farmers have to draw upon other credit sources to meet non-specific credit needs. A fourth of the sample farmers do not borrow at all, either because they do not need to or because they are unable to obtain credit from any source. More non-borrowing families are found among the sub-marginal, marginal and very small farm-families, who have less cultivated land and more limited needs for production loans. However, nearly a third of the small farmers do not borrow, indicating that credit access within this class is unequal. Most other farmers have obtained credit from at least some source.

Despite being assigned the responsibility of catering to the agricultural credit needs of farmers, formal-sector banks still have a limited credit role in Maligaon village. Only 14 percent of the farmers in the village have received institutional credit through the BKB, which is the lead bank covering the Mohammadpur East Union where Maligaon village is located. None of these farmers belong to the sub-marginal and marginal farmer groups. Even among the very small and small farmer groups, only 8 percent and 11 percent respectively have been able to draw institutional credit from BKB loans. Much larger percentages of farmer in the

medium and large farmer groups have drawn upon BKB credit, as a consequence of which their dependence on other credit sources has also been minimal. Since the BKB loans are allotted specifically for agricultural purposes, these farmers have thus been able to draw credit assistance for their cropping operations at low interest rates. Farmers who have not been able to draw upon BKB credit have had to depend on other non-institutional credit for loan-support, and accordingly face more financial difficulties in expanding crop operations.

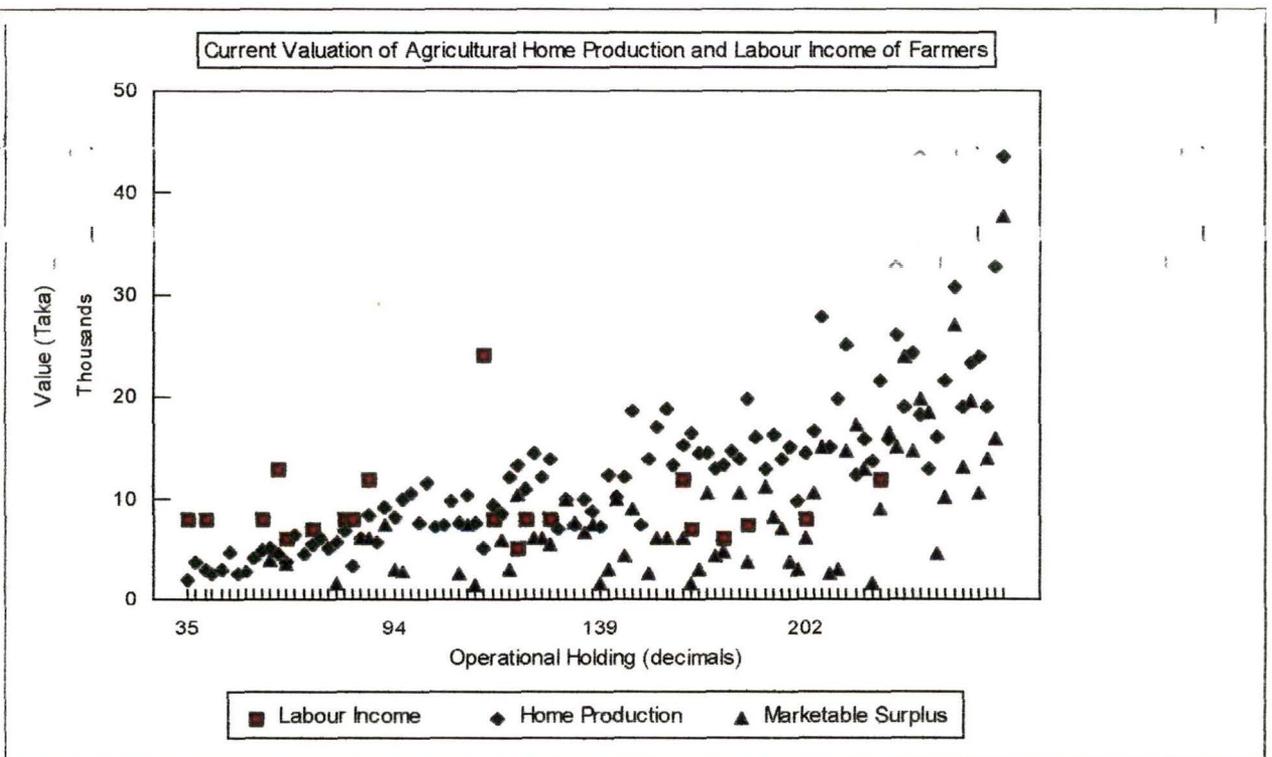
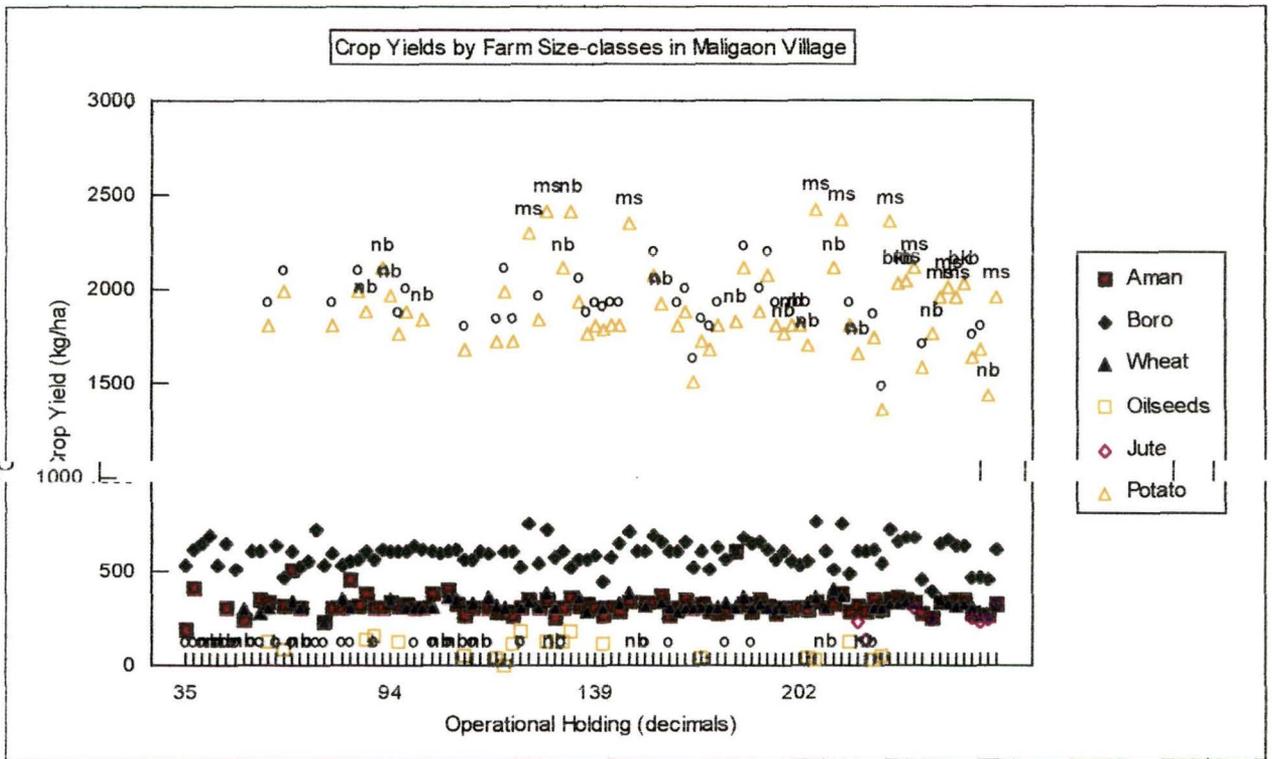
**Table 8.11: Credit-Accessibility among Farmers in Maligaon Village: Levels of Borrowing**  
Classification by Operational Holding-classes

Farmer Class	BKB Loan Amount	Other Bank Loan Amount	NGO Loan Amount	Personal Loan Amount	Mahajan Loan Amount	Other Loan Amount	Aggregate Loan Amount	
<b>SUB-MARGINAL (0.05-0.49ac)</b>								
n=8	Sum	0.00	0.00	5000.00	30500.00	0.00	0.00	35500.00
	Avg	-	-	5000.00	10166.67	-	-	4437.50
	STD	-	-	0.00	7306.77	-	-	6497.30
	F-value	-	-	0.000	0.993	-	-	0.538
<b>MARGINAL (0.50-0.99ac)</b>								
n=20	Sum	0.00	0.00	8000.00	84500.00	38000.00	65000.00	195500.00
	Avg	-	-	2666.67	7041.67	19000.00	32500.00	9775.00
	STD	-	-	471.40	8636.69	1000.00	17500.00	14106.94
	F-value	-	-	0.385	1.173	0.085	1.114	1.168
<b>VERY SMALL (1.00-1.49ac)</b>								
n=24	Sum	15000.00	0.00	3000.00	83000.00	76500.00	22000.00	199500.00
	Avg	7500.00	-	3000.00	6384.62	15300.00	11000.00	8312.50
	STD	2500.00	-	0.00	1933.05	8553.36	2000.00	7773.90
	F-value	0.506	-	0.000	0.263	0.730	0.127	0.644
<b>SMALL (1.50-2.49ac)</b>								
n=35	Sum	29500.00	0.00	12000.00	155000.00	128000.00	8000.00	332500.00
	Avg	7375.00	-	4000.00	9117.65	18285.71	8000.00	9500.00
	STD	2769.81	-	1414.21	3341.05	10911.52	0.00	9295.93
	F-value	0.561	-	1.155	0.454	0.932	0.000	0.770
<b>MEDIUM (2.50-7.49ac)</b>								
n=11	Sum	74000.00	0.00	0.00	120000.00	48000.00	0.00	242000.00
	Avg	10571.43	-	-	20000.00	24000.00	-	22000.00
	STD	2128.52	-	-	9574.27	21000.00	-	15326.74
	F-value	0.431	-	-	1.301	1.793	-	1.269
<b>LARGE (7.50ac &amp; above)</b>								
n=2	Sum	25000.00	0.00	0.00	20000.00	0.00	0.00	45000.00
	Avg	25000.00	-	-	20000.00	-	-	22500.00
	STD	0.00	-	-	0.00	-	-	22500.00
	F-value	-	-	-	-	-	-	0.537
<b>ALL FARMERS</b>								
n=100	Sum	143500.00	0.00	28000.00	493000.00	290500.00		95000.00
1050000.00	Avg	10250.00	-	3500.00	9480.77	18156.25		19000.00
10500.00	STD	4938.01	-	1224.74	7361.36	11709.66		15709.87
12077.41								

Source: *Farmers' Credit Survey*

While the sub-marginal farmers show the least amount of indebtedness with average loan-size of under Tk.4500 as well as high standard deviation within the sub-sample, average borrowing by marginal, very small and small farmers are around the same level ranging between Tk.8300-9800. However, the dispersion in loan-size is greater for marginal farmers and is much less for very small and small farmers. Many sub-marginal and marginal farm-families do not borrow. Sub-marginal families have to depend entirely from personal sources of credit and NGO loans, since they do not have access to other sectors of the RFM. Very small and small farmers are more prone to depend on small loans from multiple sources. While some of them have been able to draw upon BKB credit, their dependence on loans from mahajans (moneylenders) is high. Farmers in the upper land-categories draw much higher levels of credit averaging more than Tk.22000, but are able to focus their borrowing on two or three sources, since most of them derive credit support from BKB. In overall terms, the highest average borrowings by the Maligaon farmers are drawn from mahajans and other non-personalised credit-sources against the pledging of their fixed assets. These are followed in scale by borrowings from BKB and personal sources. NGO credit only provides minor loan support and is limited to farmers in the lower land-categories.

Figures 1 & 2: Agricultural Credit Impact on Productivity of Farms in Maligaon Village  
Graphical Analysis



It is seen therefore that the present participation of formal credit institutions in the RFM at Maligaon village is limited, although the demand for rural credit in the village is quite high. Since the amount of formal banking resources committed to the RFM is not at adequate levels, most farm-families have to depend on sources of credit other than the banks. Rural credit in Maligaon is dominated by medium and large farmers. On the other hand, the access of sub-marginal and marginal farmers to formal credit is nil, and is still insignificant among the very small and small farmers. On the basis of this credit study, it would appear that formal-sector banks in Bangladesh have deliberately followed a selective credit approach, thereby excluding farmers in the lower landholding classes from obtaining access to finance from these banks. Since farmers in these categories are by far the largest farming segment in Bangladesh, denial of cheap credit to them raises their cost of borrowing and limits the degree of agricultural progress they can make.

#### 8.4 Agricultural Performance of Maligaon Farmers

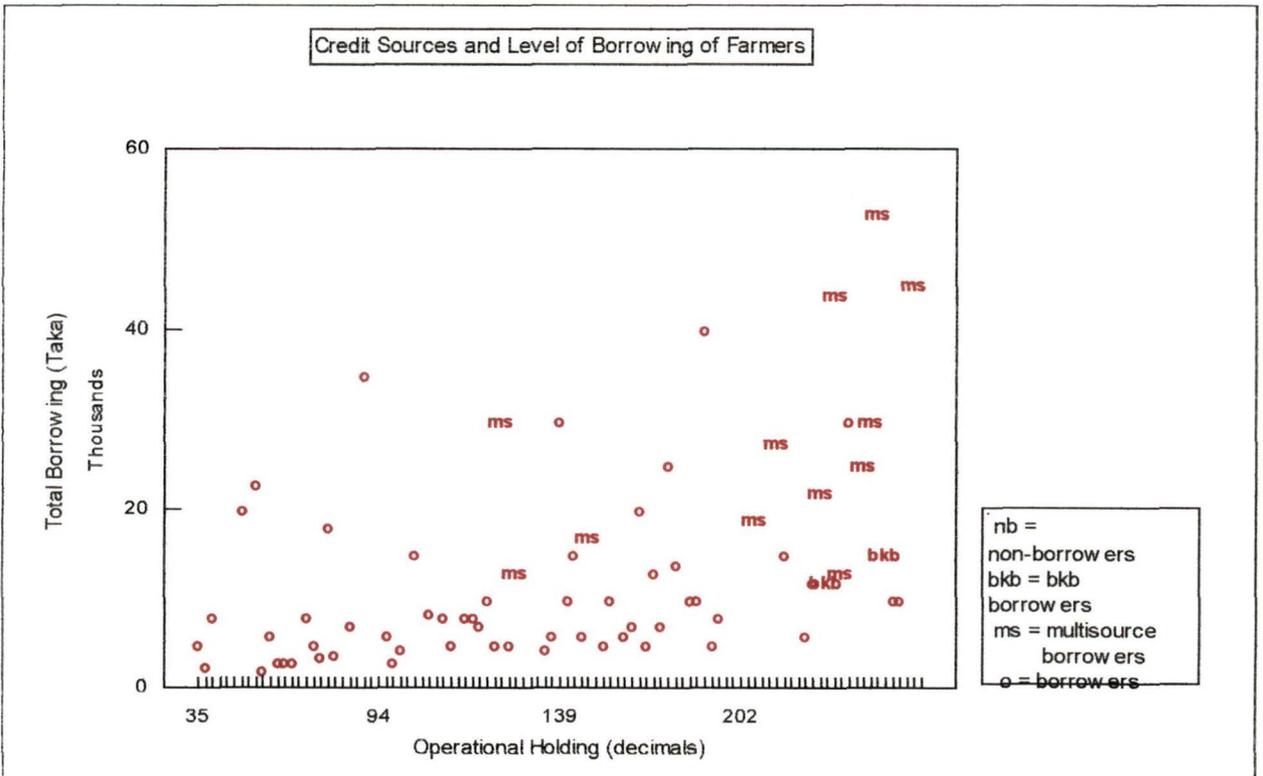
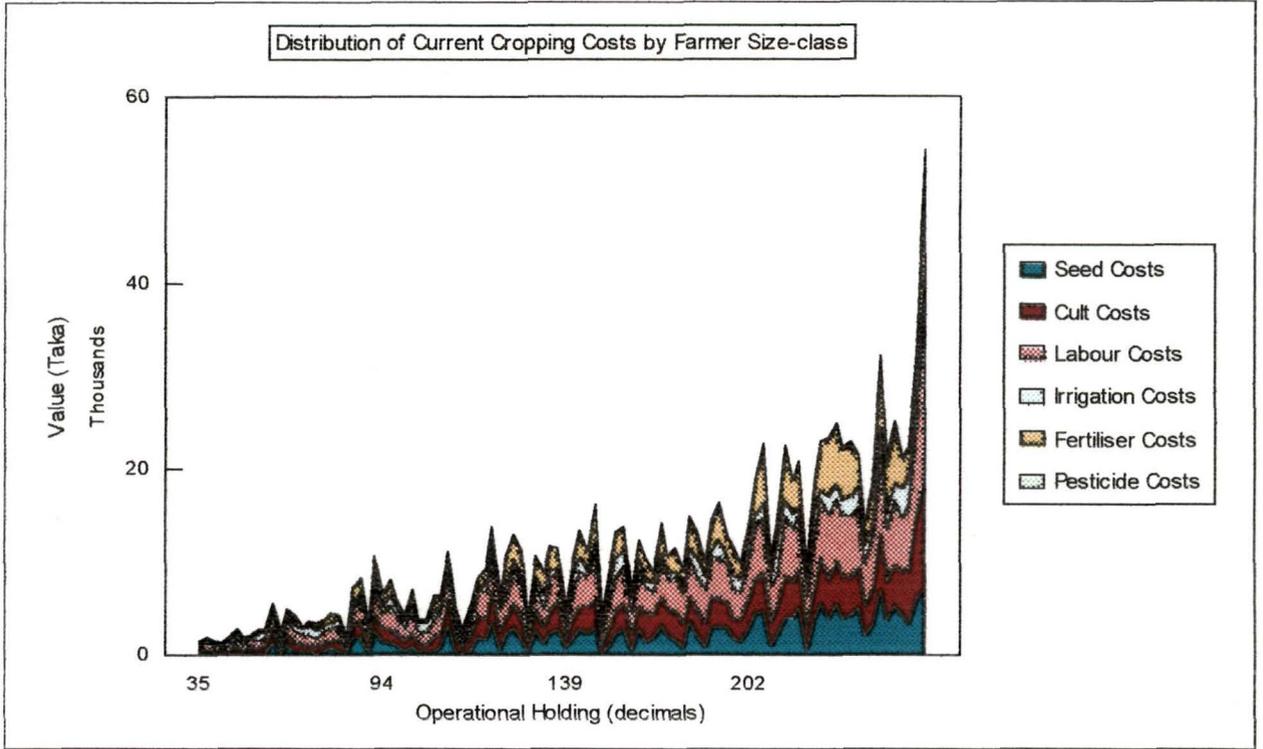
It thus becomes interesting to explore the relation between the credit position of the farmers, especially in terms of their relative access to formal credit, with their overall agricultural performance. This is accomplished through the graphical analysis below for the entire farmers' sample drawn from the village of Maligaon. The relations explored look at the average crop-yields realised by farmers in different landholding and credit categories, the current valuation of home production and marketable surplus obtained by the farmers from agricultural activities, the crop-specific cost increments involved in raising their level of production and the incremental cropping increases in aman rice, boro rice and potato cultivation reported by individual farmers as their response to the availability of agricultural credit. This enables the evaluation of how agricultural credit has contributed to agricultural development in Maligaon, and how the recipients of cheaper bank credit have had more advantage in this. Evaluation can also be made of the potential agricultural progress that can be made by the village if formal-sector credit is expanded and is distributed more equitably.

##### 8.4.1 Crop Yield by Farm Size

Current cropping patterns in the sample-village reflect the current land-allocation decisions of the Maligaon farmers regarding the production of various subsistence and cashcrops during the different crop-seasons of the year. Factors such as the regional topography and marketing facilities, etc., as well as the size of the farm-family and its capacity to mobilise agricultural inputs in the quantities required influence the cropping decisions of the farmers. Farmers in Maligaon produce a combination of aman and boro rice during the principal crop-seasons, along with potato, wheat, oilseeds, etc., as winter crops. The aman and wheat crops and minor quantities of potatoes are subsistence crops for most farm families. Farmers in better economic situations are more inclined to produce potato and HYV rice as cashcrops, since these have good market potential. Current crop yields obtained by farmers in different land-size categories have been plotted for the entire Maligaon sample of 100 farmers in Fig. 1 opposite. The plot also indicates the current borrowing status of farmers in terms of alphabetical codes, so that 'nb' indicates non-borrowers, 'bkb' indicates farmers who have received institutional credit from the formal-sector i.e., BKB, 'ms' indicates farmers who have fulfilled their credit needs by borrowing from multiple sources including both formal and informal sectors, and 'o' indicates farmers who have drawn credit from informal credit sources only. As can be seen, many farmers in the village, ranging from marginal farmers and above borrow for agricultural purposes, with proportionately more borrowers being found in the larger categories.

Certain distinctive features relating to crop yields in Maligaon can be identified from the graphical plot. It is noticed that yields for staple crops tend to be similar, regardless of the borrowing status of the cultivator, while the yields for cashcrops are more influenced by the access to credit. For instance, although the yield rates for aman rice range between 189-604 kg/ha, most farmers realised the mean yield 319 kg/ha, irrespective of farm-size and borrowing status. In the case of boro rice, yield rates are in the range 387-765 kg/ha with mean yield of 594 kg/ha, the standard deviation in yields increases from 54 to 71. Highest physical yields are found in the case of potato in the range 1359-2431 kg/ha with mean yield of 1905 kg/ha. However, the standard deviation in potato yields is much greater at 230. It is apparent that farmers with low access to crop finance can only undertake staple production. Other farmers who have private means or have wider access to credit are better placed to take advantage of cash cropping. Surprisingly, crop productivity is not necessarily low among sub-marginal, marginal and very small farmers, indicating that these farmers do not lack initiative and personal productive efficiency. The lack of adequate crop finance thus appears to

Figures 3 & 4: Agricultural Credit Impact on Productivity of Farms in Maligaon Village  
Graphical Analysis



be the main hindrance to increased agricultural production by farmers in these classes.

It is obvious that the adoption of new agricultural technology has been crucial to the performance of the progressive farmers in Maligaon. Since cheap institutional credit is mostly available to medium and large farmers in the village, it is only they who have drawn benefits from the present credit policy of banks. However, the fact that many farmers still have to borrow from multiple sources indicates that the quantum of credit available from BKB is not adequate. Enterprising farmers in the smaller landholding classes do not receive BKB credit and thus have to borrow at higher interest cost. The fact that they still manage to generate high crop yields indicates that they produce more efficiently than larger farmers.

#### 8.4.2 Agricultural Production and Labour Income

Most farm-families in Maligaon are subsistence producers and only market a small proportion of their crop. The poorest farmers have to supplement home production with the wages they receive from agricultural labour. The graphical plot in Fig.2 describes the dependence of each farm family in the sample on agriculture in terms of the value of home production and marketable surplus and the labour income from agricultural operations. Valuation of agricultural produce has been made in terms of the local prices prevailing between November 1998 to May 1999, when the fieldwork was conducted.

As seen in the graph, the value of home production is related fairly closely to operational holding size, while the marketable surplus shows wide variability in all farm-classes. Although only around 20 percent of the farm-families depend on supplementary labour income, such families are widely scattered in all farmer-classes ranging from sub-marginal to small. Marketable surplus on the whole tends to increase among medium and large farmers, but shows high variability among small farmers. With more than 50 percent of the Maligaon farmers belonging to the sub-marginal, marginal and very small classes, home production continues to constitute the bulk of agricultural production. This pattern is typical of Bangladesh. Low and expensive credit access is the major limitation faced by farmers in these classes in expanding production for the market. Among small farmers, many of whom do draw upon credit from formal or informal sources, the variability in marketable surpluses shows fairly close correspondence with the source and relative interest-cost of credit. Small farmers fortunate enough to draw upon BKB credit are placed at an advantage in generating income through the market-sale of agricultural produce.

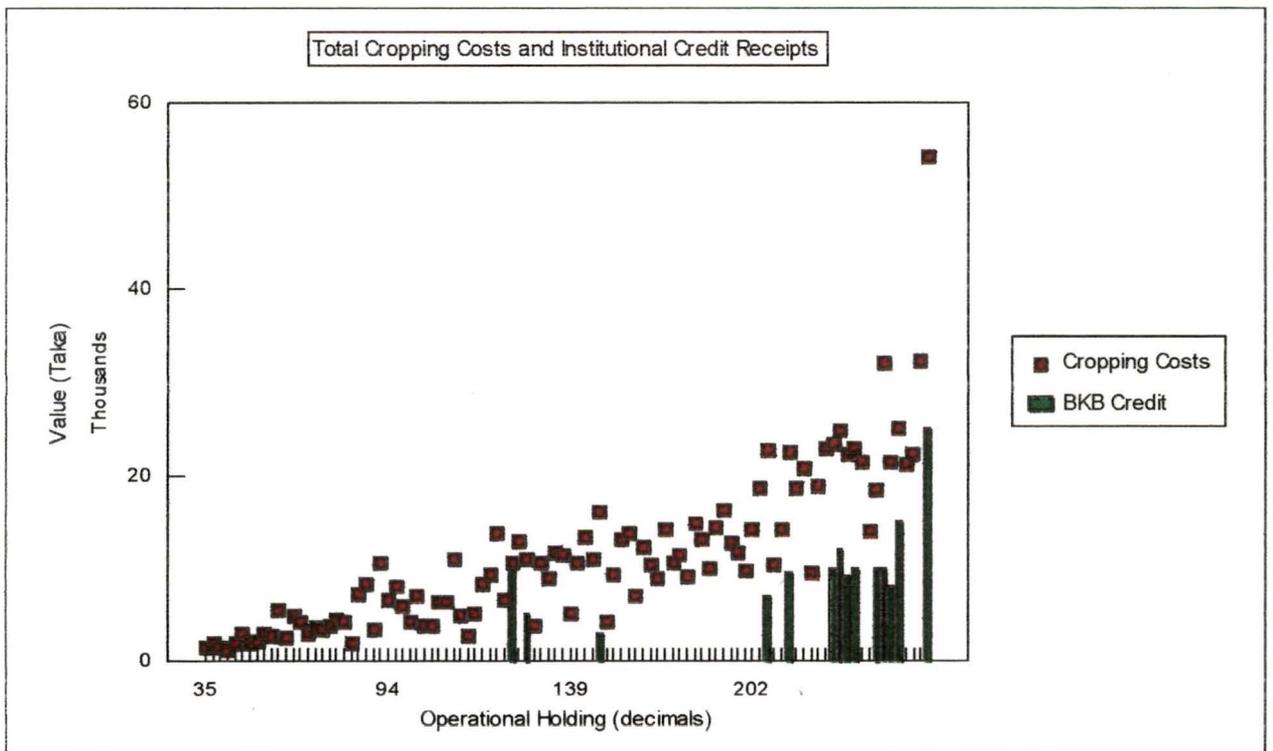
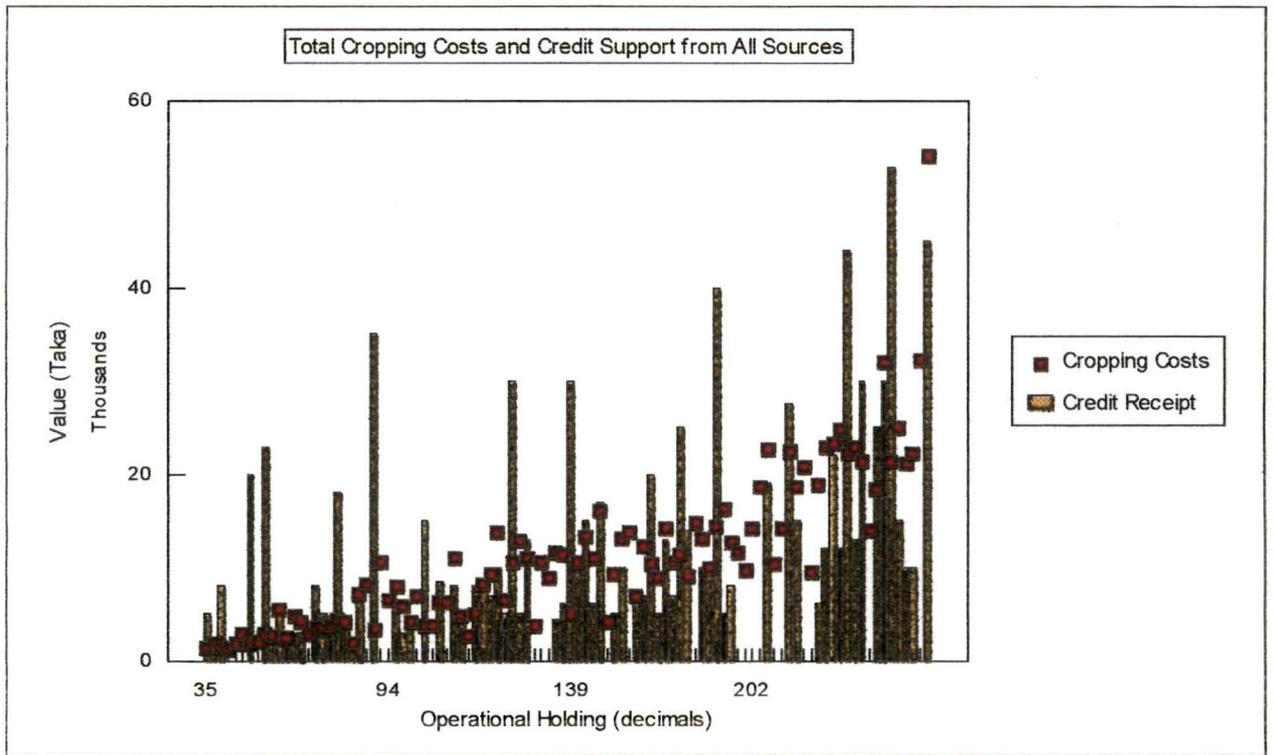
#### 8.4.3 Crop Production and Incremental Costs

An increase in the level of agricultural production will involve concomitant increase in the costs of agricultural production. Variation in the production costs of aman, aus, oilseeds and jute crops among different classes of farmers in Maligaon was found to be small. This is because the modes and methods of cultivation of these crops are traditional and hence are similar among all farmer-groups. Increasing incremental costs with farm-size was observed however in case of HYV and other cash crops. This is most true in the case of potato cultivation. There is also some demonstration of diseconomies of scale, since on farms in the larger size-groups, average production cost tends to increase in the long run as outputs increase. Accordingly, increases in the scale of cropping costs with farm-size reflect the increases in the size of agricultural operations as well as the inefficiencies of large-scale production.

Although little variation in incremental seed costs occurs between small, medium and large farmers, the associated graph (*see Fig.3*) shows that the ability of farmers to incur additional labour costs, irrigation costs and fertiliser costs increases sharply in the larger farm sizes. It is seen in the associated graph (*see Fig.4*) that a close association exists between the credit availed by the farmers and the level of incremental cropping costs they can bear. Since the sources of formal agricultural credit in Daudkandi upazila are limited, farmers who incur the highest cropping costs frequently resort to multi-source borrowing. This behaviour appears to spread evenly into farmers in the lower size-classes also, where the farmers who resort to multi-source borrowing are also able to incur the highest incremental production costs.

Several notable findings emerge from the cost analysis. The need to borrow from multiple sources clearly indicates the inadequacy of institutional credit in the Daudkandi RFMs. Another qualitative difference exists between borrowers in the larger and smaller size classes. While the latter have to depend more on their borrowings from informal credit sources, many of the latter are able to tap the formal credit supplied by banking institutions like BKB. Since the interest costs are smaller in the case of credit from formal-sector banks, farmers in the medium and large size-classes have to bear lower interest charges on their

Figures 5 & 6: Agricultural Credit Impact on Productivity of Farms in Maligaon Village  
Graphical Analysis



borrowing. Nevertheless, the difference in their farm-size productivity is not remarkable when compared to that of the smaller-sized farms, where the corresponding interest charges on informal credit are much larger. It might therefore be said that farmers in the very small and small size-segments show greater credit-efficiency than the medium and large farmers of Maligaon village.

#### 8.4.4 Credit Impact on Agriculture

Analysis of the relation of total cropping costs and credit support (*see Fig. 5*) shows that credit needs distributed fairly evenly among farmers in all operational holding-sizes, even though total cropping costs tend to rise with farm-size. While few farmers in the sub-marginal and marginal sizes have the capacity to bear heavy cropping costs, several exceptions are noticed where individual farmers resort to informal borrowing in their effort to increase agricultural production. The association between cropping costs and credit support becomes more correlated for farmers in the very-small, small, medium and large sizes. The very high cropping costs incurred by medium and large farmers are supported by high levels of borrowing, which allow them to diversify into input-intensive production of boro, potato and the like. Their ability to bear such costs is of course related to their better access to cheap institutional credit.

This is borne out in the lower plot (*see Fig. 6*) where the cropping costs are plotted against BKB institutional credit receipts. Since BKB credit disbursements are concentrated among farmers in the medium and large size-classes, they have considerable credit advantage over the other Maligaon farmers. However, this credit advantage is translated into higher production of cashcrops rather than foodcrops. The extremely limited role played by formal-sector banking institutions in supporting the agricultural credit needs of the farmers in Maligaon village are also highlighted by the plot. Only three farmers in the very small and small size-groups have been able to avail of BKB credit. However, it is also clear from the plot that the potential of other farmers in the marginal, very small and small size-groups to absorb institutional credit and raise agricultural productivity is immense. At present, these farmers have to support production costs by borrowing from semi-formal and informal sources at exploitative rates of interest. A strong effort on the part of formal sector banks to expand the credit access of these farmers can thus lead to an agricultural breakthrough in Bangladesh.

### 8.5 Institutional Credit Needs among Farmers

The principal role of agricultural credit is to raise agricultural production and farm productivity. The credit needs of farmers include production credit needs as well as credit needs for subsistence. Land situations and socioeconomic conditions in Bangladesh, have become so pressing that the resource-poor small and marginal farmers are hardly able to undertake capital formation on their own to meet agricultural investment needs. Thus the farmers of the country have to meet most of their capital requirements through rural credit. In this country-scenario, the institutional credit needs among the Maligaon farmers are still largely unmet, increasing their dependence on informal credit sources. Because of the declared credit policies of Bangladesh, which emphasise the social banking needs of the rural economy, the limited institutional credit access shown by the Maligaon farmers pointed to the glaring failure of the formal-sector banks to fulfil such these national policies. The farmers were therefore also surveyed for their opinions on the general need for agricultural credit, the difficulties they encountered during the credit delivery stage, and their frustration in dealing with the formal-sector credit institutions. The results of this survey are briefly discussed below.

#### 8.5.1 Survey Results

While a high percentage of farmers in all size-categories reported that their main credit needs arose because of their need to meet the purchase costs of agro inputs, the agricultural credit needs appeared less pressing among farmers in the sub-marginal class whose land units were too small to support intensive agriculture. However, the need for credit to support the purchase of agro equipment was only reported by medium and large farmers. This would tally with the findings noted above, where it was observed that the labour costs on medium and large farms are particularly high and warrant the induction of labour-substituting agricultural technologies. Conversely, the need for credit to meet subsistence needs of farm families was confined to farmers in the size-classes ranging from sub-marginal to small. The need was most pressing among the marginal and very small farmer class, where close to half the families reported the existence of subsistence needs. While families in the small farmer class were engaged in more viable farming operations.

families in the marginal and sub-marginal classes were also able to depend partially on their earnings from wage labour. Hence their dependence on agricultural credit for meeting subsistence needs was less. Few farmers reported a need for credit for making fixed asset purchases. A fairly sizeable number of farmers spread over all categories reported the existence of other reasons for seeking institutional credit.

**Table 8.12: Institutional Credit Needs and Credit Difficulties of Farmers in Maligaon Village**  
Classification by Operational Holding-classes

<b>RURAL NEED FOR CREDIT</b>					
Farmer Class	Purchase of Agro Inputs	Purchase of Agro Equipment	Family Needs	Purchase of Fixed Assets	Other Reasons
<b>SUB-MARGINAL</b>	5	-	3	-	5
%	62.5	0.0	37.5	0.0	62.5
<b>MARGINAL</b>	20	-	8	-	5
%	100.0	0.0	40.0	0.0	25.0
<b>VERY SMALL</b>	23	-	12	-	5
%	95.8	0.0	50.0	0.0	20.8
<b>SMALL</b>	35	2	10	-	11
%	100.0	5.7	28.6	0.0	31.4
<b>MEDIUM</b>	11	5	-	1	6
%	100.0	45.5	0.0	9.1	54.5
<b>LARGE</b>	2	2	-	-	1
%	100.0	100.0	0.0	0.0	50.0
<b>ALL FARMERS</b>	96	9	33	1	33
%	96.0	9.0	33.0	1.0	33.0
<b>DIFFICULTIES IN ACCESSING BANK CREDIT</b>					
Farmer Class	Lack of Information	Lack of Cooperation	Long Procedure	Insufficient Loan Amount	Other Difficulties
<b>SUB-MARGINAL</b>	6	2	6	1	1
%	75.0	25.0	75.0	12.5	12.5
<b>MARGINAL</b>	14	11	17	5	6
%	70.0	55.0	85.0	25.0	30.0
<b>VERY SMALL</b>	18	13	21	8	12
%	75.0	54.2	87.5	33.3	50.0
<b>SMALL</b>	20	26	33	14	15
%	57.1	74.3	94.3	40.0	42.9
<b>MEDIUM</b>	2	8	11	9	11
%	18.2	72.7	100.0	81.8	100.0
<b>LARGE</b>	-	1	2	2	1
%	0.0	50.0	100.0	100.0	50.0
<b>ALL FARMERS</b>	60	61	90	39	46
%	60.0	61.0	90.0	39.0	46.0
<b>REASONS FOR NOT AVAILING BANK CREDIT</b>					
Farmer Class	Distance of Branch	Difficult Credit Rules	Lack of Collateral	Lack of Timely Loan Assistance	
<b>SUB-MARGINAL</b>	3	5	7	2	
%	37.5	62.5	87.5	25.0	
<b>MARGINAL</b>	8	20	16	8	
%	40.0	100.0	80.0	40.0	
<b>VERY SMALL</b>	12	19	6	14	
%	50.0	79.2	25.0	58.3	
<b>SMALL</b>	14	29	7	25	
%	40.0	82.9	20.0	71.4	
<b>MEDIUM</b>	3	4	-	4	
%	27.3	36.4	0.0	36.4	
<b>LARGE</b>	-	1	-	1	
%	0.0	50.0	0.0	50.0	
<b>ALL FARMERS</b>	40	78	36	54	
%	40.0	78.0	36.0	54.0	

Source: Farmers' Credit Survey

The main difficulties faced by farmers in securing agricultural credit from the formal-sector banks were the long institutional procedures that had to be followed by loan applicants. This perception was shared by farmers in all size-classes, regardless of whether they had been successful or unsuccessful in securing institutional loan. However, the strength of the response increased with the size-class of farmers, indicating that the medium and large farmers who were more successful in securing institutional loans, felt the procedural difficulties directly and therefore more acutely. Unsuccessful loan applicants among the smaller farming classes probably gave up their quest after encountering difficult loan procedures. Lack of information about institutional loans and the lack of cooperation from bank personnel were also major difficulties encountered by farmers while seeking agricultural loans. The level of information improved with size-class and was consequently better among the medium and large farmers who were the preferred clients of banking institutions. Lack of institutional cooperation was felt uniformly by farmers in the small and medium classes and again in the marginal and very small classes. Most farmers in the larger size-classes felt that the loan amounts released to them were insufficient. Many of these farmers had been successful in securing loans, but had to resort to multi-source borrowing as noted above.

Since a very large section among the Maligaon farmers had not been successful in securing institutional loans, farmers were also asked about their main reasons for not availing of bank credit. The two principal reasons they cited were the difficult credit rules and the lack of timely loan assistance. Proportionately more farmers in the smaller size-classes felt that the difficult credit rules of banking institutions obstructed their access to credit, and fewer of them cited the delays in processing loans as their main reason for not availing bank credit. Farmers in the medium and large classes gave equal weightage to difficulties in credit rules and lengthy loan-processing procedures, both of which delayed the receipt of loans. Factors like the distance of the bank branch posed less hindrance. The lack of collateral to offer was cited as a principal reason by sub-marginal and marginal farmers, but was less of a hindrance for farmers in the very small and small classes. None of the farmers in the medium and large classes reported the lack of collateral. As was seen above, it was these farmers who had received the bulk of the institutional loans.

The findings from the farmers' opinion survey also strongly suggest that the formal-sector credit institutions do not put in adequate effort into clearing the apprehensions and difficulties of potential borrowers. No procedure exists within normal banking channels to apprise or advise farmers about institutional credit programmes. The lending procedures of the credit institutions are complicated and can intimidate the uneducated borrower.

### 8.5.2 Problems of RFMs: Farmers' Perceptions

The credit survey of farmers has revealed that adoption of new agricultural technology has been crucial to the success of progressive farmers in Maligaon. Since land quality is uniform, except for differences in unit size, and the existence of cluster irrigation has given equitable access to water, intensive cultivation has brought dividends to all classes of farmers, irrespective of land size. The ability of farm families in the smaller classes to apply family labour in very high doses makes smaller farms highly labour-efficient. When similar agricultural technology is used, for instance during the cultivation of the rainfed aman rice crop, the smaller-sized holdings display higher agricultural yields and higher average returns compared to larger farms which have to depend on hired labour. Hence, even small and marginal farmers in Maligaon village are not reluctant to borrow in order to finance their needs for productive inputs..

Although land is not the constraining factor to the productivity of the Maligaon farmers, land nevertheless becomes a constraining factor to their access to institutional credit. Despite the fact that short term crop loans in Bangladesh do not require the prior provision of collateral, disbursements of bank credit are directed primarily to those farmers who hold the largest units of land. These farmers constitute the rural elite for whom the possession of land becomes a source of economic as well as political power. Although agriculture depends on the combination of human labour and capital with the productive powers of land, the access to financial capital through institutional credit becomes interlinked to the possession or non-possession of land. Farmers with larger landholdings also have access to cheaper sources of capital in the RFM. Their greater access to institutional credit helps them to consolidate their economic hold on rural society. The lending procedures of formal-sector banks mutely accept the rural *status quo*. Institutional credit is not allocated according to the relative efficiency of the cultivator, but according to the economic and political

power of credit recipients. Thus formal-sector credit becomes the instrument for the consolidation of rural power equations, rather than an instrument for rural development.

In this equation, the small and marginal farmers who form the bulk of the farming population and are therefore the main borrowers in RFMs, are given almost no access to the cheap credit provided by the formal-sector banks. They rely on non-institutional borrowings at exorbitant interest rates. Since cheap institutional credit against land title and collateral is mostly available to medium and large farmers in the RFM, it is only they who draw benefits from the present institutional credit policies followed by the banks in Bangladesh. However, the fact that many farmers still have to borrow from multiple sources indicate that the quantum of credit available from the formal sector banks is not adequate. Enterprising farmers in the smaller landholding classes do not receive formal sector credit and thus have to borrow at higher interest cost. The fact that they still manage to generate high crop yields indicates that they produce more efficiently than the medium and large farmers.

### **References**

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