CHAPTER - IV

STRUCTURE OF SELECTED FARMS

Land, Labour and Capital are the three important factors of the economic activities of a Society. The use of these three factors in combination accounts for the structure of farms. A population of 240 sample farms comprising of 355.78 hectares of cultivated area has been taken for the present study. These sample farms are divided into three size groups viz. below 1.00 hectare, 1.00 - 2.00 hectares and 2.00 hectares and above. This division is made on the basis of cultivated area available by a farm and in accordance with the popular classification made by Agriculture Census. The important characteristics of these farms have been high lighted in this chapter in order to form a useful background of the analyses made in the subsequent chapters.

4.1 Average size of operational holding

Distribution of holding and cultivated area in various size groups and the average size of selected farms in each individual size groups are depicted in Table 4.1. It is evident from Table 4.1 that the selected farms are dominated by the farms belonging to the small size groups in both Coochbehar and Jalpaiguri district. It also becomes evident from the aforesaid Table that large size group possess above fifty per cent of cultivated area on an average though they only accounts for 22.92 per cent of sample farms. The average size of the sample farms is observed to be 1.48 hectares varying from 0.55 hectare in smallest size group to 3.27 hectares in largest size group. Average size of the farm is noted to be small in Coochbehar.

4.2 Tenures

There are three types of cultivators in accordance with their tennurial system. They are (i) owner cultivators, (ii) owner cum tenant cultivators, and (iii) tenant cultivators. Owner cultivator implies the cultivator having the ownership of land. Owner cum tenant cultivator means the owner cultivator who undertakes cultivation on lease and hold

Table 4.1

Distribution of holdings, cultivated area, and average size of selected farms in various size groups in 1983-84.

Size group	Number of selected holdings	Cultivated area of the selected farms (ha)	Average size of the selected farms (ha)
	Coochbehar		
Less than 1.00	83 (43.46)	43.94 (16.15)	0.53
1.00 - 2.00	65 (34.03)	92.81 (34.12)	1.43
Above 2.00	43 (22.51)	135.27 (49.73)	3.15
Total	191 (100.00)	272.02 (100.00)	1.42
	Jalpaiguri		
Less than 1.00	16 (32.65)	10.32 (12.32)	0.65
1.00 - 2.00	21 (42.86)	28.69 (34.25)	1.37
Above 2.00	12 (24.49)	44.75 (53.43)	3.73
Total	49 (100.00)	83.76 (100.00)	1.71
	Districts Combined		
Less than 1.00	99 (41.25)	54.26 (15.25)	0.55
1.00 - 2.00	86 (35.83)	121.50 (34.15)	1.41
Above 2.00	55 (22.92)	180.02 (50.60)	3.27
Total	240 (100.00)	355.78 (100.00)	1.48

Note : Figure in the parenthesis indicates the percentage of the respective total

Table 4.2

Distribution of holdings according to tennurial status in different size groups in 1983-84.

Size group	Owner cultivator	Owner-cum-tenant	Tenant cultivator	All tennures
		Coochbehar		
Less than 1.00	66 (79.52)	11 (13.25)	6 (7.23)	83 (100.00)
1.00 - 2.00	45 (69.23)	20 (30.77)	-	65 (100.00)
Above 2.00	41 (95.35)	2 (4.65)	-	43 (100.00)
Total	152 (79.58)	33 (17.28)	6 (3.14)	191 (100.00)
		Jalpaiguri		
Less than 1.00	12 (75.00)	4 (25.00)	-	16 (100.00)
1.00 - 2.00	10 (47.62)	11 (52.38)	-	21 (100.00)
Above 2.00	11 (91.67)	1 (8.63)	-	12 (100.00)
Total	33 (67.35)	16 (32.65)	-	49 (100.00
		Districts Combined		
Less than 1.00	78 (78.79)	15 (15.15)	6 (6.06)	99 (100.00)
1.00 - 2.00	55 (63.95)	31 (36.05)	-	86 (100.00)
Above 2.00	52 (94.55)	3 (5.45)	-	55 (100.00)
Total	185 (77.08)	49 (20.42)	6 (2.50)	240 (100.00)

Note : Figure in the paranthesis indicates the percentage of respective total.

Table 4.3 Distribution of cultivated area according to tennurial status in each size group of selected farms in 1983-84.

(in hectares)

Size group	Owner cultivator	Owner-cum-tenant	Tenant cultivator	All tennures
		Coochbehar		
Less than 1.00	35.28 (80.27)	5.75 (13.08)	2.92 (6.65)	43.95 (100.00)
1.00 - 2.00	67.30 (72.52)	25.50 (27.48)	-	92.80 (100.00)
Above 2.00	130.57 (96.53)	4.70 (3.47)	-	135.27 (100.00)
Total	233.15 (85.71)	35.95 (13.22)	2.92 (1.07)	272.02 (100.00)
		Jalpaiguri		
Less than 1.00	7.40 (71.64)	2.93 (28.36)	-	10.33 (100.00)
1.00 - 2.00	15.06 (52.51)	13.62 (47.49)	-	28.68 (100.00)
Above 2.00	42.22 (94.35)	2.53 (5.65)	-	44.75 (100.00)
Total	64.68 (77.22)	19.08 (22.78)	-	83.76 (100.00)
		Districts Combined		
Less than 1.00	42.68 (78.63)	8.68 (15.99)	2.92 ((5.38)	54.28 (100.00)
1.00 - 2.00	82.36 (67.80)	29.12 (32.20)	-	121.48 (100.00)
Above 2.00	172.79 (95.98)	7.23 (4.02)	-	180.02 (100.00)
Total	297.83 (83.71)	55.03 (15.47)	2.92 (0.82)	355.78 (100.00)

Note : Figure in the parenthesis indicates the percentage of the respective total.

Table 4.4 Distribution of cultivated area under different tenurial system in each group of selected farms in 1983-84.

In hectares

Size group	Own land	Share rented	All system
	Coochbehar		
Less than 1.00	38.74 (88.15)	5.21 (11.85)	43.95 (100.00)
1.00 - 2.00	82.67 (89.08)	10.13 (10.92)	92.80 (100.00)
Above 2.00	134.17 (99.19)	1.10 (0.83)	135.27 (100.00)
Total	255.58 (93.96)	16.44 (6.04)	272.02 (100.00)
	Jalpaiguri		
Less than 1.00	9.27 (89.74)	1.06 (10.26)	10.33 (100.00)
1.00 - 2.00	20.89 (72.84)	7.79 (27.16)	28.68 (100.00)
Above 2.00	44.22 (98.82)	0.53 (1.18)	44.75 (100.00)
Total	74.38 (88.80)	9.38 (11.20)	83.76 (100.00)
	Districts Combined		
Less than 1.00	48.01 (88.45)	6.27 (11.55)	54.28 (100.00)
1.00 - 2.00	103.56 (85.25)	17.92 (14.75)	121.48 (100.00)
Above 2.00	178.39 (99.09)	1.63 (0.91)	180.02 (100.00)
Total	329.96 (92.74)	25.82 (7.26)	355.78 (100.00)

Note : Figure in the parenthesis indicates the percentage of respective total.

land as well. Tenant cultivator is the cultivator who has no owned land but cultivates on leased land. The selected farms has also been classified by the type of tenures. Table 4.2, Table 4.3 and Table 4.4 show the distribution of farms and area according to tennurial status.

Table 4.2 shows that the purely owner cultivators have predominance over other types of tenancy in the selected districts. Size wise distribution of selected farms under different tennurial system reveals that the presence of owner cum tennant cultivator in middle size group in both the districts is noted worthy. This implies that lease farming is more widely practised by the small farmers than the merginal farmers in the districts. Distribution of cultivated area according to different tennurial status in various size groups as depicted by Table 4.3 also corroborates with the above findings. Purely tenant cultivators are least important in the farm economy in terms of their number as well as area devoted under this type of tenancy as is evident from Table 4.2 and 4.3.

Distribution of cultivated area under different tennurial system in each of the individual size groups is furnished in Table 4.4. Among the different system of tennure, cultivation with ownership is the most dominant and it accounts for 92.74 per cent of total cultivated area under the selected farms. The remaining 7.26 per cent of total cultivated area falls under the category of rented land. The share rental is noted to be the only leasing system in the districts and the large sized farms are mostly owned as revealed by Table 4.4.

The percentage distribution of leased in area to total cultivated area in each of the size groups is displayed in Table 4.5. It is revealed from the said table that 7.26 per cent of total cultivated land is noted to be cultivated by share rented leasing in the districts. Inter district variation in percentage share of leased in land to total operated land is, however, noted. 11.20 per cent of cultivated land in Jalpaiguri is noted to be cultivated by leasing while in Coochbehar the corresponding share is observed to be 6.04 per cent. The dominance of leased hold land for the middle size group farmers of Jalpaiguri is noted to be 27.16 per cent to total land available whereas the same for Coochbehar is about 11 per cent.

The percentage distribution of leased out area to total cultivated are in each of the individual size groups is deplayed Table 4.6. Roughly 13 per cent of total cultivated area on an average in the districts is noted to be leased out by the selected farmers. Predominance of higher size group in respect of leasing out has been highlighted by Table 4.6. As this leased out area is cultivated by the farmers remain outside of the sample population, this was kept aside of the perview of this study and the total operated land has been calculated by deducting the leased out land from the total owned land available for cultivation.

4.3 Fragmentation of holding

The average number of fragments per holding, per hectare and the average size of fragments of the selected farms are setout in Table 4.7. A glance at the figures presented in the table reveals that extent of subdivision and fragmentation increases with the decrease in farm size.

4.4 Irrigation

As irrigation is one of the most important resources of farm operation, the proportion of irrigated area largely influences the structure of farm organisation. For an exhaustive study of the structure of the selected farms, the percentage of net irrigated area to total cultivated area and percentage of gross irrigated area to gross cropped area in each of the individual size groups of the selected farm has been calculated in Table 4.8. On an average, 29 percent of total cultivated area is noted to be net irrigated area of the selected farms of the districts as evident from Table 4.8.

Table 4.8 also postulates that the percentage of net irrigated area to total cultivated area is inversely related with the size of farms. The proportion of gross irrigated area to gross cropped area, on an average is observed to be roughly 26 per cent. Inverse relationship between the percentage of gross irrigated area and the farm size is also noted. It is interesting to note that despite relatively high proportion of net irrigated area at Coochbehar district the percentage of gross irrigated area is found to be lower than that of Jalpaiguri. Comparitively less utilization of irrigation potential in Coochbehar district has be elicited by this Table.

Table 4.5 Percentage distribution of leased in area to total cultivated area in 1983-84

Size group	Coochbehar	Jalpaiguri	Districts combined
Less than 1.00	11.85	10.26	11.55
1.00 - 2.00	10.92	27.16	14.75
Above 2.00	0.83	1.18	0.91
All groups combined	6.04	11.20	7.26

Table 4.6 Percentage distribution of leased out area to total cultivated area of selected farms in 1983-84

Size group	Coochbehar	Jalpaiguri	Districts combined
Less than 1.00	-	-	-
1.00 - 2.00	0.93	-	0.93
Above 2.00	21.83	16.01	20.46
All groups combined	14.20	10.18	13.26

Table 4.7 Average number of fragments per holding, per hectare and average size of fragments of the selected farms in 1983-84

Size group	Average number of fragments		Average size of fragments (ha)
	Per holding	Per hectare of area hold	
	Coochbehar		
Less than 1.00	3.20	6.05	0.17
1.00 - 2.00	5.25	3.67	0.27
Above 2.00	8.98	2.85	0.35
Over all average	5.20	3.65	0.27
	Jalpaiguri		
Less than 1.00	3.31	5.14	0.20
1.00 - 2.00	6.90	5.05	0.20
Above 2.00	10.83	2.91	0.34
Over all average	6.69	3.92	0.26
	Districts Combined		
Less than 1.00	3.22	5.88	0.17
1.00 - 2.00	5.65	4.00	0.25
Above 2.00	9.38	2.88	0.35
Over all average	5.50	3.71	0.27

Table 4.8 Percentage of net irrigated area to total cultivated area and gross irrigated area to gross cropped area under selected farms in 1983-84

Size group	Net irrigated area (ha)	Net irrigated area as percentage to total cultivated area	Gross irrigated area (ha)	Gross cropped area	Gross irrigated area as percentages to gross cropped area
			Coochbehar		
Less than 1.00	18.44	41.97	21.20	75.38	28.12
1.00 - 2.00	29.13	31.39	33.59	138.30	24.29
Above 2.00	35.45	26.21	43.48	180.66	24.07
Total	83.02	30.52	98.27	394.34	24.92
			Jalpaiguri		
Less than 1.00	3.24	31.40	5.96	21.29	27.99
1.00 - 2.00	9.92	34.58	19.33	50.59	38.21
Above 2.00	7.33	16.38	14.17	64.74	21.89
Total	20.49	24.46	39.46	136.62	28.88
			Districts Combined		
Less than 1.00	21.68	39.96	27.16	96.67	28.10
1.00 - 2.00	39.05	32.14	52.92	188.89	28.02
Above 2.00	42.78	23.76	57.65	245.40	23.49
Total	103.51	29.09	137.73	530.96	25.94

Table 4.9 Net irrigated area under different tenures of selected farms in 1983-84.

Size group	Own land		Share rented		All tenures	
			Coochbehar			
Less than 1.00	17.28	(44.61)	1.16	(22.26)	18.44	(41.97)
1.00 - 2.00	28.91	(34.97)	0.22	(2.17)	29.13	(31.39)
Above 2.00	35.45	(26.42)	-		35.45	(26.21)
Total	81.64	(31.94)	1.38	(8.39)	83.02	(30.52)
			Jalpaiguri			
Less than 1.00	3.24	(34.95)	-		3.24	(31.40)
1.00 - 2.00	9.80	(46.91)	0.12	(1.54)	9.92	(34.58)
Above 2.00	7.33	(16.58)	-		7.33	(16.38)
Total	20.37	(27.39)	0.12	(1.28)	20.49	(24.46)
			Districts Combined			
Less than 1.00	20.52	(42.74)	1.16	(18.50)	21.68	(39.96)
1.00 - 2.00	38.71	(37.38)	0.34	(1.90)	39.05	(32.14)
Above 2.00	42.78	(23.91)	-		42.78	(23.76)
Total	102.51	(31.07)	1.50	(5.81)	103.51	(29.09)

Note : Figure in the paranthesis indicates the percentage to total cultivated area under individual size groups.

Table 4.10 Net irrigated area under different types of irrigation in selected farms during 1983-84.

Size group	Net irrigated area (ha)	
	Occassional	Perennial
	Coochbehar	
Less than 1.00	17.33 (93.98)	1.11 (6.02)
1.00 - 2.00	28.53 (97.94)	0.60 (2.06)
Above 2.00	28.34 (79.94)	7.11 (20.06)
Total	74.20 (89.38)	8.82 (10.62)
	Jalpaiguri	
Less than 1.00	2.98 (91.98)	0.26 (8.02)
1.00 - 2.00	7.53 (75.91)	2.39 (24.09)
Above 2.00	5.53 (75.44)	1.80 (24.56)
Total	16.04 (78.28)	4.45 (21.72)
	Districts Combined	
Less than 1.00	20.31 (93.68)	1.37 (6.32)
1.00 - 2.00	36.06 (92.34)	2.99 (7.66)
Above 2.00	33.87 (79.17)	8.91 (20.83)
Total	90.24 (87.18)	13.27 (12.82)

Note : Figure in the paranthesis indicates the percentage of land covered under each type of irrigation to net irrigated area.

4.4.1 Irrigated area under different tenures

Distribution of net irrigated area under different tenurial system in each of the size groups as well as its percentage to the total respective cultivated area are presented in Table 4.9. The percentage of irrigated area to total cultivated area shows a tendency to decrease with the increase in farm size in case of owner operated land as well as in case of share rented lands. But the proportion of net irrigated area of the middle size group of farms is greater than that of smaller size group for Jalpaiguri in case of self operated land and which is observed as an exception. Significant difference in the percentage of irrigated area to total cultivated area is observed between the self cultivated and share rented lands. This indicates that owned and share rented lands of the selected farms in both the districts are qualitatively different from each other so far as irrigation facility is concerned.

4.4.2 Irrigated area under different types of irrigation

Irrigation system can be classified into two types by its nature. One is (i) perennial irrigation and other is (ii) occassional irrigation. Perennial irrigation implies the permanent source of irrigation such as irrigation from River lift, Deep and Shallow Tubewell etc. On the other hand occassional irrigation is temporary one and arranged by the farmers for the time being and it becomes generally season bound.

Irrigated area under different types of irrigation is each of the individual groups of the selected farms has been presented in Table 4.10. It become evident from the Table 4.10 that roughly 13 per cent of irrigated area, on an average, is of permanent nature. Irrigated area from perennial source is inversely related with the size of farms in both the districts with an exception of middle size group in Coochbehar.

4.5 Cropping intensity

Land is a scarce resource and can not be increased. But crop area can be increased by multiple cropping. Degree of multiple cropping is

judged by cropping intensity. Table 4.11 reveals the intensity of cropping in operated land held under different tenurial system and in each of the individual size groups of selected farms. The average cropping intensity of the combined districts is noted to be 1.49. Table 4.11 shows that the intensity of cropping bears a negetive correspondence with the size of farm in own operated as well as in share rented lands. It becomes also obvious from the Table that cropping intensity in self cultivated land is greater than that of lease hold land. The cropping intensity irrespective of tenurial status is observed to be higher in Jalpaiguri than Coochbehar district.

4.6 Cropping pattern

Climate, Soil, Water and Market accessibility along with other factors regulate the cropping pattern of an area. A comprehensive view on utilisation of land under various crops in three main crop-seasons namely, pre-kharif, Kharif, followed by Rabi-Boro Season is presented in this section. Distribution of area under different crops of the selected farms is displayed in Table 4.12. Paddy accounts for roughly 62 per cent of pre-kharif area under the selected farms. Jute is the second important crop in pre-kharif season. Mesta which is also a fibre crop occupies third place in pre-kharif crop area of the selected farms. Other crops such as Kaun, Pulses and Vegetables are less important in pre-kharif season so far as area under these crops are concerned. Between the selected districts a difference in cropping pattern is, however, noted. Proportion of area under paddy is found to be higher in Coochbehar. But percentage share of HYV paddy in the season is noted higher at Jalpaiguri district. Proportion of area under Jute is also shown higher in Jalpaiguri than that of Coochbehar. The Kaun (small millets) occupies a better place in the crop profile of pre-kharif season. In kharif season paddy accounts for, on an average, above 94 per cent of kharif area under the smaple farms. Pulse is the second important crop for Coochbehar in kharif season. Vegetables and Til are noted to be cultivated in Coochbehar in kharif season but the area devoted under these crops are observed to be negligible. Remarkable difference between the selected districts in crop pattern in kharif

Table 4.11 Intensity of cropping in land held under different tenures in 1983-84.

Size group	Own lands	Share rented lands	All system of cultivation
		Coochbehar	
Less than 1.00	1.74	1.54	1.72
1.00 - 2.00	1.52	1.19	1.49
Above 2.00	1.34	1.05	1.34
All groups combined	1.46	1.29	1.45
		Jalpaiguri	
Less than 1.00	2.10	1.75	2.06
1.00 - 2.00	1.90	1.39	1.76
Above 2.00	1.45	1.00	1.45
All groups combined	1.66	1.41	1.63
		Districts Combined	
Less than 1.00	1.81	1.57	1.78
1.00 - 2.00	1.60	1.28	1.55
Above 2.00	1.37	1.04	1.36
All groups combined	1.50	1.33	1.49

Table 4.12 Distribution of area under different crops in 1983-84

(in hectares)

Crop season	Coochbehar		Jalpaiguri		Districts combined	
A. Pre-Kharif						
1. Paddy (Local)	81.62	(55.55)	17.57	(40.89)	99.19	(52.23)
2. Paddy (HYV)	11.35	(7.72)	6.27	(14.59)	17.62	(9.28)
3. Jute (Capsularis)	24.74	(16.84)	11.61	(27.02)	36.35	(19.14)
4. Jute (Olitorius)	16.56	(11.27)	6.19	(14.41)	22.75	(11.98)
5. Mesta	6.14	(4.18)	0.33	(0.77)	6.47	(3.41)
6. Kaun (small millet)	4.60	(3.13)	0.04	(0.09)	4.64	(2.44)
7. Other pulses	1.47	(1.00)	0.13	(0.30)	1.60	(0.84)
8. Moong	-	-	0.06	(0.14)	0.06	(0.03)
9. Chilly	0.06	(0.04)	0.14	(0.33)	0.20	(0.11)
10. Bhindi	0.36	(0.25)	0.20	(0.47)	0.56	(0.29)
11. Pumpkin	0.03	(0.02)	-	-	0.03	(0.02)
12. Arum	-	-	0.26	(0.61)	0.26	(0.14)
13. Sweet Potato	-	-	0.17	(0.38)	0.17	(0.09)
Total	146.93	(100.00)	42.97	(100.00)	189.90	(100.00)
B. Kharif						
1. Paddy (Local)	149.12	(87.32)	54.73	(75.82)	203.85	(83.90)
2. Paddy (HYV)	8.68	(5.08)	16.83	(23.32)	25.51	(10.50)
3. Brinjal	0.26	(0.15)	-		0.26	(0.11)
4. Chilly	0.04	(0.02)	-		0.04	(0.02)
5. Til (Sesame)	0.26	(0.15)	-		0.26	(0.11)
6. Pulses	12.42	(7.28)	0.62	(0.86)	13.04	(5.36)
Total	170.78	(100.00)	72.18	(100.00)	242.96	(100.00)
C. Rabi-Boro						
1. Tobacco (Rustica)	45.41	(59.26)	11.69	(54.45)	57.10	(58.21)
2. Nicotina Tabacum	20.40	(26.62)	-		20.40	(20.80)
3. Potato	1.25	(1.63)	1.25	(5.82)	2.50	(2.55)
4. Barley	1.22	(1.59)	-		1.22	(1.24)
5. Wheat	3.98	(5.19)	4.19	(19.52)	8.17	(8.33)
6. Mustard	2.65	(3.46)	3.12	(14.53)	5.77	(5.88)
7. Boro Paddy	1.24	(1.62)	-		1.24	(1.26)
8. Chilly	0.26	(0.34)	0.06	(0.28)	0.32	(0.33)
9. Cabbage	0.22	(0.29)	0.33	(1.53)	0.55	(0.56)
10. Brinjal	-		0.27	(1.26)	0.27	(0.28)
11. Tomato	-		0.13	(0.61)	0.13	(0.13)
12. Bittergourd	-		0.43	(2.00)	0.43	(0.44)
Total	76.63	(100.00)	21.47	(100.00)	98.10	(100.00)

Note : Figure in the paranthesis indicates the percentage of respective totals

season has been observed. In Rabi-Boro season Tobacco tops the list of crops produced in this season.

Tobacco, Wheat, Mustard and Potato together account for, on an average, 96 per cent of rabi-boro area under the selected farms. Coochbehar occupies a place of pride in regard to area devoted to Tobacco (86 per cent) crop. Tabacco area of Jalpaiguri is noted be 54 per cent of rabi-area of the sample farms. The proportion of area shared by Wheat, Mustard and Potato are noted to vary significantly between the districts. Barley and Boro Paddy are noted to be grown in Coochbehar district only. Among other crops grown on the same farms, winter vegetables are noted to be grown in both the districts accounting for, on an average, roughly 2 per cent of total rabi-boro area of the selected farms. It also becomes evident from the Table 4.12 that percentage share of area under winter vegetables is varied remarkbly between the districts.

4.6.1 Cropping pattern on irrigated lands

The influence of irrigation facilities on cropping pattern has been studied in Table 4.13. HYV Paddy is the main irrigated crop in pre-kharif as well as kharif season. Corresponding share of this crop in the seasons is around 53 and 98 per cent of total irrigated crops. Jute is the second important irrigated crop in pre-kharif season accounting for roughly 45 per cent of total irrigated crops, on an average, as is observed from Table 4.13. Irrigation facilities have a merginal impact on summer vegetables cultivation as is evident from the said Table. Tobacco and Wheat together account for roughly 95 per cent of irrigated area of the sample farms, though the relative shares of irrigated area under tobacco and Wheat, however, differ significantly between the districts.

Boro Paddy is noted to be grown only in Coochbehar district. Though the relative share of area under Boro Paddy to total rabi-boro irrigated area is meagre but the crop is grown only in irrigated condition. Mustard, Potato and winter vegetables are observed to grow under irrigated condition but the relative share of the irrigated area of these crops are not remarkbly significant.

Table 4.13 Distribution of area under irrigated crops in 1983-84

Name of the Crops	Coochbehar		Jalpaiguri		Districts combined	
A. Pre-Kharif						
1. Paddy (HYV)	11.35	(51.50)	6.27	(56.33)	17.62	(53.12)
2. Bhindi	0.36	(1.63)	0.20	(1.80)	0.56	(1.69)
3. Chilli	0.06	(0.27)	0.14	(1.26)	0.20	(0.60)
4. Pumpkin	0.03	(0.14)	-		0.03	(0.09)
5. Jute	10.24	(46.46)	4.52	(40.61)	14.76	(44.50)
Total	22.04	(100.00)	11.13	(100.00)	33.17	(100.00)
B. Kharif						
1. Paddy (HYV)	8.68	(96.66)	11.13	(100.00)	19.81	(98.51)
2. Brinjal	0.26	(2.89)	-		0.26	(1.29)
3. Chilli	0.04	(0.45)	-		0.04	(0.20)
Total	8.98	(100.00)	11.13	(100.00)	20.11	(100.00)
C. Rabi-Boro						
1. Tobacco	62.20	(92.49)	11.69	(67.97)	73.89	(87.50)
2. Potato	0.02	(0.03)	0.59	(3.43)	0.61	(0.72)
3. Wheat	3.18	(4.73)	2.98	(17.33)	6.16	(7.29)
4. Mustard	-		0.99	(5.76)	0.99	(1.17)
5. Boro Paddy	1.24	(1.84)	-		1.24	(1.47)
6. Chilli	0.26	(0.39)	0.06	(0.35)	0.32	(0.38)
7. Cabbage	0.22	(0.33)	0.33	(1.92)	0.55	(0.65)
8. Barley	0.13	(0.19)	-		0.13	(0.15)
9. Tomato	-		0.13	(0.76)	0.13	(0.15)
10. Bitterguard	-		0.43	(2.50)	0.43	(0.51)
Total	67.25	(100.00)	17.20	(100.00)	84.45	(100.00)

Note : Figure in the paranthesis indicates the percentage of respective totals

Distribution of irrigated area under different crops in each of the size groups of selected holding is displayed in Table 4.14. Highest proportion of total irrigated kharif area has been devoted to paddy by all the size groups of selected farms indicating that the farmers prefer paddy in kharif season irrespective of their economic position. Table 4.14 also reveals that relatively higher percentage of pre-kharif area is devoted to jute and relatively smaller percentage to Paddy by the larged sized farms as compared to small sized ones with an exception of middle sized farms. This implies that large sized farms prefer jute than paddy as irrigated kharif crop while small sized ones attach great importance to paddy in pre-kharif season but middle sized farms are akin to the behaviour of later groups in both the districts. On an average, the proportion of total Rabi-Boro area devoted to wheat is found to have an erratic relation with farm size. The proportion of irrigated area under Tobacco in Coochbehar is noted to be by and large unchanged with the farm size.

4.6.2 Cropping pattern on unirrigated lands

Distribution of area under unirrigated crops is set out in Table 4.15. Paddy and Jute are main pre-kharif crops grown in rainfed in the selected farms of the districts. These two crops together accounts for around 92 per cent of unirrigated pre-kharif area of the sample farms. Next important pre-kharif crops are Mesta, Kaun followed by pulses in the districts. The percentage shares of rainfed area of these crops in Jalpaiguri are reported negligible. Pre-kharif vegetables is noted to be grown in unirrigated condition only in Jalpaiguri. In kharif season unirrigated paddy and pulses together cover about 100 per cent unirrigated area under kharif. The relative share of kharif pulses differs significantly between two selected districts. In Jalpaiguri relatively smaller area under pulses than that of Coochbehar is noted. A negligible area under Til in unirrigated condition is allocated to Coochbehar only in kharif season. Mustard is leading unirrigated Rabi Crop in the districts as is evident from the Table 4.15. In Jalpaiguri no area under Tobacco and barley has been allocated in unirrigated condition while winter vegetables claim such position in Coochbehar. Tobacco is reported to be the most important unirrigated Rabi Crop in Coochbehar district as well. Potato is the next important unirrigated

Table 4.14 : Distribution of area under different irrigated crops in various size groups of selected farms in 1983-84

(in hectares)

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
A. Pre-kharif												
1. Paddy	2.33	4.97	4.05	11.35	1.76	3.98	0.58	6.27	4.09	8.95	4.58	17.62
	(57.25)	(98.81)	(31.30)	(51.50)	(94.62)	(64.61)	(17.04)	(56.33)	(68.97)	(79.98)	(28.54)	(53.12)
2. Jute	1.74	-	8.50	10.24	-	2.12	2.40	4.52	1.74	2.12	10.90	14.76
	(42.75)	-	(65.54)	(46.46)	-	(34.42)	(77.17)	(40.61)	(29.34)	(18.95)	(67.91)	(44.50)
3. Vegetables	-	0.06	0.39	0.45	0.10	0.06	0.18	0.34	0.10	0.12	0.57	0.79
	-	(1.19)	(3.16)	(2.04)	(5.38)	(0.97)	(5.79)	(3.06)	(1.69)	(1.07)	(3.55)	(2.38)
Total	4.07	5.03	12.94	22.04	1.86	6.16	3.11	11.13	5.93	11.19	16.05	33.17
B. Kharif												
1. Paddy	1.78	3.85	3.05	8.68	0.66	5.98	4.49	11.13	2.44	9.83	7.54	19.81
	(97.80)	(100.00)	(92.15)	(96.66)	(100.00)	(100.00)	(100.00)	(100.00)	(98.38)	(100.00)	(96.66)	(98.51)
2. Vegetables	0.04	-	0.26	0.30	-	-	-	-	0.04	-	0.26	0.30
	(2.20)	-	(7.85)	(3.34)	-	-	-	-	(1.62)	-	(3.34)	(1.49)
Total	1.82	3.85	3.31	8.98	0.66	5.98	4.49	11.13	2.48	9.83	7.80	20.11

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Table 4.14 Continued

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
C. Rabi-Boro												
1. Tobacco	13.80	23.39	25.01	62.20	3.11	4.66	3.92	11.69	16.91	28.05	28.93	73.89
	(90.14)	(94.66)	(91.85)	(92.49)	(90.41)	(64.81)	(59.67)	(67.97)	(90.19)	(88.03)	(85.59)	(87.50)
2. Potato	-	-	0.02	0.02	-	0.10	0.49	0.59	-	0.10	0.51	0.61
	-	-	(0.07)	(0.03)	-	(1.39)	(7.46)	(3.43)	-	(0.31)	(1.51)	(0.72)
3. Wheat	1.12	0.55	1.51	3.18	0.33	1.15	1.50	2.98	1.45	1.70	3.01	6.16
	(7.32)	(2.23)	(5.55)	(4.73)	(9.59)	(15.99)	(22.83)	(17.33)	(7.73)	(5.33)	(8.91)	(7.29)
4. Mustard	-	-	-	-	-	0.72	0.27	0.99	-	0.72	0.27	0.99
	-	-	-	-	-	(10.01)	(4.11)	(5.76)	-	(2.26)	(0.80)	(1.17)
5. Boro Paddy	-	0.77	0.47	1.24	-	-	-	-	-	0.77	0.47	1.24
	-	(3.11)	(1.73)	(1.84)	-	-	-	-	-	(2.41)	(1.39)	(1.47)
6. Vegetables	0.26	-	0.22	0.48	-	0.56	0.39	0.95	0.26	0.56	0.61	1.43
	(1.70)	-	(0.80)	(0.72)	-	(7.80)	(5.93)	(5.51)	(1.39)	(1.66)	(1.80)	(1.70)
7. Barley	0.13	-	-	0.13	-	-	-	-	0.13	-	-	0.13
	(0.84)	-	-	(0.19)	-	-	-	-	(0.69)	-	-	(0.15)
Total	15.31	24.71	27.23	67.25	3.44	7.19	6.57	17.20	18.75	31.90	33.80	84.45

Note : Figure in the paranthesis indicates the percentage of respective totals

Table 4.15 Distribution of area under unirrigated crops in 1983-84

(in hectares)

Name of the crops	Coochbehar		Jalpaiguri		Districts combined	
A. Pre-Kharif						
1. Paddy	81.62	(65.35)	15.57	(55.18)	99.19	(63.29)
2. Jute	31.06	(24.87)	13.28	(41.71)	44.34	(28.29)
3. Mesta	6.14	(4.92)	0.33	(1.04)	6.47	(4.13)
4. Kaun (small millet)	4.60	(3.68)	0.04	(0.13)	4.64	(2.96)
5. Kalai (blackgram)	1.47	(1.18)	0.13	(0.41)	1.60	(1.02)
6. Other Pulses	-		0.06	(0.19)	0.06	(0.04)
7. Vegetables	-		0.43	(1.34)	0.43	(0.27)
Total	124.89	(100.00)	31.84	(100.00)	156.73	(100.00)
B. Kharif						
1. Paddy	149.12	(92.16)	60.43	(98.98)	209.55	(94.03)
2. Til (Sesame)	0.26	(0.16)	-		0.26	(0.12)
3. Kalai (blackgram)	12.42	(7.68)	0.62	(1.02)	13.04	(5.85)
Total	161.80	(100.00)	61.05	(100.00)	222.85	(100.00)
C. Rabi-Boro						
1. Tobacco	3.61	(38.49)	-		3.61	(26.45)
2. Potato	1.23	(13.11)	0.66	(15.46)	1.89	(13.85)
3. Barley	1.09	(11.62)	-		1.09	(7.99)
4. Wheat	0.80	(8.53)	1.21	(28.34)	2.01	(14.73)
5. Mustard	2.65	(28.25)	2.13	(49.88)	4.78	(35.02)
6. Vegetables	-		0.27	(6.32)	0.27	(1.96)
Total	9.38	(100.00)	4.27	(100.00)	13.65	(100.00)

Note : Figure in the paranthesis indicates the percentage of respective totals

Rabi crop followed by Wheat for Coochbehar. Contrary position has been observed regarding these crops in Jalpaiguri district.

Distribution of unirrigated area under different crops in each of the individual size groups is depicted in Table 4.16 to examine the inter group variation in cropping pattern, if any, under rainfed condition within the sample farms. In pre-kharif season small sized farms are noted to place relatively more emphasis on paddy production and relatively less emphasis on Jute production under unirrigated condition as compared to larged sized farms in both the districts which corroborates with the earlier finding obtained in case of these two crops grown under irrigated condition. Paddy is seen the leading kharif crop for all the size groups in rainfed condition as is visualised in irrigated condition. Pulses is, however, noted to be grown without irrigation in the districts. No correspondence between relative area share of Mustard under unirrigated condition and size of farms has found in case of Jalpaiguri. However, a positive correspondence between the relative area share of Mustard under unirrigated condition and size of farms is noted for Coochbehar. Table 4.16 reveals no clear cut relation between the area share of Wheat and farm size. Tobacco under unirrigated condition is noted to grow only in Coochbehar district having an inverse relationship with the size of farms. On the whole, around 14% unirrigated Rabi area is devoted to Potato. Larged size farms have allocated relatively higher proportion of unirrigated Rabi area to Potato as is obvious from the Table 4.16. Rainfed vegetables are grown only in Jalpaiguri and barley in Coochbehar as evident from the aforesaid Table.

4.6.3 Cropping pattern on owned and rented lands

The cropping pattern on owned and rented lands is displayed in Table 4.17 and Table 4.18. Paddy occupies, on an average, around 90 per cent and 97 per cent of total area under food crops on owned and rented lands respectively. Variation in the pattern of cultivation of food crops between owned and rented lands is noted. It is interesting to note that only paddy is grown in the rented lands of the Jalpaiguri district. In two selected districts the rented land is found to mostly use in

Table 4.16 : Distribution of area under unirrigated crops in various size groups of selected farms in 1983-84

(in hectares)

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
A. Pre-kharif												
1. Paddy	19.58	26.42	35.62	81.62	3.51	7.07	6.99	17.57	23.09	33.49	42.61	99.19
	(72.28)	(58.16)	(68.02)	(65.35)	(51.09)	(60.02)	(52.99)	(55.18)	(67.99)	(58.54)	(64.99)	(63.29)
2. Jute	4.38	14.79	11.89	31.06	3.36	4.20	5.72	13.28	7.74	18.99	17.61	44.34
	(16.17)	(32.56)	(22.70)	(24.87)	(48.91)	(35.65)	(43.37)	(41.71)	(22.79)	(33.19)	(26.86)	(28.29)
3. Mesta	1.45	1.96	2.73	6.14	-	0.20	0.13	0.38	1.45	2.16	2.86	6.47
	(5.35)	(4.31)	(5.21)	(4.92)	-	(1.70)	(0.99)	(1.04)	(4.27)	(3.78)	(4.36)	(4.13)
4. Khun (small millet)	1.41	1.66	1.53	4.60	-	-	0.04	0.04	1.41	1.66	1.57	4.64
	(5.20)	(3.65)	(2.92)	(3.68)	-	-	(0.30)	(0.13)	(4.15)	(2.90)	(2.39)	(2.96)
5. Pulses	0.27	0.60	0.60	1.47	-	0.13	0.06	0.19	0.27	0.73	0.66	1.66
	(1.00)	(1.32)	(1.15)	(1.18)	-	(1.10)	(0.45)	(0.54)	(0.80)	(1.28)	(1.01)	(1.06)
6. Vegetables	-	-	-	-	-	0.18	0.25	0.43	-	0.18	0.25	0.43
	-	-	-	-	-	(1.53)	(1.86)	(1.34)	-	(0.31)	(0.38)	(0.27)
Total	27.09	45.43	52.37	124.89	6.87	11.78	13.19	31.84	33.96	57.21	65.56	156.73

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Table 4.16 Continued.

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
B. Kharif												
1. Paddy	22.28	50.04	76.80	149.12	7.22	17.58	35.63	60.43	29.50	67.62	112.43	209.55
	(93.50)	(89.42)	(93.65)	(92.16)	(98.63)	(98.16)	(99.43)	(98.98)	(94.70)	(91.54)	(95.42)	(94.03)
2. Til (Sesame)	-	0.26	-	0.26	-	-	-	-	-	0.26	-	0.26
	-	(0.47)	-	(0.16)	-	-	-	-	-	(0.35)	-	(0.12)
3. Kalai (black gram)	1.55	5.66	5.21	12.42	0.10	0.33	0.19	0.62	1.65	5.99	5.40	13.04
	(6.50)	(10.11)	(6.35)	(7.68)	(1.37)	(1.84)	(0.53)	(1.02)	(5.30)	(8.11)	(4.58)	(5.85)
Total	23.83	55.96	82.01	161.80	7.32	17.91	35.82	61.05	31.15	73.87	117.83	222.85
C. Rabi-Boro												
1. Tobacco	2.24	0.97	0.40	3.61	-	-	-	-	2.24	0.97	0.40	3.61
	(68.71)	(30.50)	((13.61)	(38.49)	-	-	-	-	(50.91)	(20.38)	(8.91)	(26.45)
2. Potato	0.14	0.10	0.99	1.23	0.08	0.08	0.50	0.66	0.22	0.18	1.49	1.89
	(4.29)	(3.14)	(33.67)	(13.11)	(7.02)	(5.06)	(32.26)	(15.46)	(5.00)	(3.78)	(33.18)	13.85)
3. Barley	0.07	0.95	0.07	1.09	-	-	-	-	0.07	0.95	0.07	1.09
	(2.15)	(29.87)	(2.38)	(11.62)	-	-	-	-	(1.59)	(19.96)	(1.56)	(7.99)
4. Wheat	0.28	0.28	0.24	0.80	0.46	0.49	0.26	1.21	0.74	0.77	0.50	2.01
	(8.59)	(8.81)	(8.16)	(8.53)	(40.35)	(31.01)	(16.77)	(28.34)	(16.82)	(16.18)	(11.14)	(14.73)
5. Mustard	0.53	0.88	1.24	2.65	0.60	0.74	0.79	2.13	1.13	1.62	2.03	4.78
	(16.26)	(27.67)	(42.18)	(28.25)	(52.63)	(46.84)	(50.97)	(49.88)	(25.68)	(34.03)	(45.21)	(35.02)
6. Vegetables	-	-	-	-	-	0.27	-	0.27	-	0.27	-	0.27
	-	-	-	-	-	(17.09)	-	(6.32)	-	(5.67)	-	(1.96)
Total	3.26	3.18	2.94	9.38	1.14	1.58	1.55	4.27	4.40	4.76	4.49	13.65

Notes : Figures in the parantheses indicate the percentages of respective totals

Table 4.17 : Distribution of area under crops on owned land in various size groups of selected farms in 1983-84.

(in hectares)

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
A. Food Crops												
1. Paddy	40.30	75.22	118.96	234.48	11.55	24.21	47.11	82.87	51.85	99.43	166.07	317.35
	(89.64)	(88.59)	(91.51)	(90.23)	(91.52)	(88.00)	(92.34)	(90.92)	(90.05)	(88.45)	(91.74)	(90.41)
2. Potato	0.04	0.10	1.01	1.15	0.08	0.18	0.99	1.25	0.12	0.28	2.00	2.40
	(0.09)	(0.12)	(0.78)	(0.44)	(0.63)	(0.65)	(1.94)	(1.37)	(0.21)	(0.25)	1.10)	(0.68)
3. Barley	0.20	0.05	0.07	1.22	-	-	-	-	0.20	0.95	0.07	1.22
	(0.44)	(1.12)	(0.05)	(0.47)	-	-	-	-	(0.35)	(0.85)	(0.04)	(0.35)
4. Wheat	1.27	0.66	1.75	3.68	0.79	1.64	1.76	4.19	2.06	2.30	3.51	7.87
	(2.82)	(0.78)	(1.35)	(1.42)	(6.26)	(5.96)	(3.45)	(4.60)	(3.58)	(2.05)	(1.94)	(2.24)
5. Kaun	1.41	1.66	1.53	4.60	-	-	0.04	0.04	1.41	1.66	1.57	4.64
	(3.14)	(1.96)	(1.18)	(1.77)	-	-	(0.08)	(0.04)	(2.45)	(1.48)	(0.87)	(1.32)
6. Pulses	1.44	6.26	5.81	13.51	0.10	0.41	0.30	0.81	1.54	6.67	6.11	14.32
	(3.20)	(7.37)	(4.47)	(5.20)	(0.79)	(1.49)	(0.59)	(0.89)	(2.67)	(5.93)	(3.38)	(4.08)
7. Vegetables	0.30	0.06	0.87	1.23	0.10	1.07	0.82	1.99	0.40	1.13	1.69	3.22
	(0.67)	(0.07)	(0.67)	(0.47)	(0.79)	(3.89)	(1.61)	(2.18)	(0.69)	(1.01)	(0.93)	(0.92)
Total	44.96	84.91	130.00	259.87	12.62	27.51	51.02	91.15	57.58	112.42	181.02	351.02
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

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Table 4.17 Continued

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
B. Oil Seeds												
1. Mustard	0.53	0.76	1.24	2.53	0.60	1.46	1.06	3.12	1.13	2.22	2.30	5.65
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
C. Fibre Crops												
1. Jute/Mesta	7.17	16.09	22.99	46.25	3.10	6.19	8.25	17.54	10.27	22.28	31.24	63.79
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
D. Narcotic Crops												
1. Tobacco	14.72	24.30	25.41	64.43	3.11	4.60	3.92	11.63	17.83	28.90	29.33	76.06
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Notes : Figures in the parantheses indicate percentages of respective totals

Table 4.18 : Distribution of area under different crops on rented lands in various size groups of selected farms in 1983-84

(in hectares)

Name of the Crops	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total	Less than 1.00	1.00-2.00	Above 2.00	Total
A. Food Crops												
1. Paddy	5.67	10.83	1.03	17.53	1.60	10.40	0.53	12.53	7.27	21.23	1.56	30.06
	(90.29)	(96.18)	(100.00)	(94.40)	(100.00)	(100.00)	(100.00)	(100.00)	(92.26)	(98.01)	(100.00)	(96.66)
2. Potato	0.10	-	-	0.10	-	-	-	-	0.10	-	-	0.10
	(1.59)	-	-	(0.54)	-	-	-	-	(1.27)	-	-	(0.32)
3. Wheat	0.13	0.17	-	0.30	-	-	-	-	0.13	0.17	-	0.30
	(2.07)	(1.51)	-	(1.62)	-	-	-	-	(1.65)	(0.78)	-	(0.96)
4. Miscellaneous	0.38	0.26	-	0.64	-	-	-	-	0.38	0.26	-	0.64
	(6.05)	(2.31)	-	(3.44)	-	-	-	-	(4.82)	(1.21)	-	(2.06)
Total	6.28	11.26	1.03	18.57	1.60	10.40	0.53	12.53	7.88	21.66	1.56	31.10
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
B. Oil Seeds												
1. Mustard	-	0.12	-	0.12	-	-	-	-	-	0.12	-	0.12
	-	(100.00)	-	(100.00)	-	-	-	-	-	(100.00)	-	(100.00)
C. Fibre Crops												
1. Jute	0.40	0.66	0.13	1.19	0.26	0.33	-	0.59	0.66	0.99	0.13	1.78
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	-	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
D. Cash Crops												
1. Tobacco	1.32	0.06	-	1.38	-	0.06	-	0.06	1.32	0.12	-	1.44
	(100.00)	(100.00)	-	(100.00)	-	(100.00)	-	(100.00)	(100.00)	(100.00)	-	(100.00)

Note : Figures in the parantheses indicate percentages of respective totals

growing paddy. No remarkable inter-district and inter-size variation in the cropping pattern of food crops in owned land is, however, noted. Mustard is the only Oil Seed crop grown mainly in the owned lands. Of the Fibre crops, Jute is noted to be the most important crop both on owned as well as rented lands. Only Tobacco is observed to be grown as narcotic crop in the sample farms. Pattern of allocation of land under Tobacco in owned as well as rented lands is indifferent in the districts. It is obvious from the Table 4.18 that small sized farms allocate relatively higher area under Tabocco in rented lands as compared to larged sized farms.

4.7 Farm investment

Self operated land, farm and irrigation equipments as well as farm machineries along with drought animals contribute to the investment of a holding. Wooden plough, hoe, Sickles etc. farm implements are reportedly present in the selected farms. Besides, hand operated sprayer is also found available. Manual operated temporary irrigation structure is predominant over the perennial ones like Pumpset, Shallow Tubewell etc. in both the districts. And investment towards this head of accounts is noted to be relatively little. Of the drought animals, use of bullock labour for cultivation is in vouge in the districts. Only one farm is reportedly used buffalo as drought animal in the sample farms. However, a few, though negligible in proportion of total farmers, reportedly used Milch Cow as drought animal for farming operation as because no drought animals is reportedly available to them.

Average investment per farm and per hectare as well as the distribution of total investment among different components in each of the individual size groups of the selected farms are set out in Tables 4.19 and 4.20 respectively.

Per farm investment, on an average is around Rs. 22365. Average per farm investment is high in Jalpaiguri and low in Coochbehar. Similarly per hectare investment of the sample farms, on an average, also high in Jalpaiguri. Interdistrict disparity in per farm as well as per hectare investment is due to variation in expenditure on implements & machinery and drought animals. Inter district difference in land

Table 4.19 : Value of Farm Assets per farm in various size groups in 1983-84 (in Rs.)

Item	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined
Self cultivated Land	6370.35	17587.86	43300.44	18501.91	7228.44	14892.86	56051.25	22469.80	6590.03	16929.79	46082.36	19312.02
Farm implements & Machinery	247.29	423.88	722.03	417.27	266.25	759.88	1377.92	750.05	250.35	505.93	865.14	482.82
Irrigation equipments & Machinery	-	89.62	326.74	104.06	-	428.57	916.67	408.16	-	172.38	455.45	166.15
Drought animals	527.95	1163.85	2141.63	1107.64	856.25	1223.81	2466.67	1408.16	581.01	1178.49	2212.55	1169.00
Milch Cattles and other livestock	523.69	1287.29	2508.02	1280.29	926.81	862.00	2382.50	1255.53	588.84	1183.44	2480.64	1235.44
Total	7669.28	20552.50	48998.86	21361.17	9277.75	18167.12	63195.01	26291.70	8010.30	19970.02	52096.14	22365.43

Table 4.20 : Value of Farm Assets per hectare of owned land in various size groups in 1983-84

Item	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined
Self cultivated Land	12033.20	12317.76	13764.43	12991.20	11206.88	10901.01	15030.50	13144.94	11876.04	11983.22	14079.16	13027.39
Farm implements and Machinery	467.11	296.87	229.52	290.88	412.79	556.20	369.50	438.78	456.78	358.11	264.32	325.70
Irrigation equipments & Machinery	-	62.76	103.87	73.06	-	313.70	245.81	238.78	-	273.22	139.15	112.08
Draught Animals	997.27	815.11	680.79	777.74	1327.52	896.09	661.45	823.78	1060.08	834.16	675.98	788.58
Others domestic animals	989.29	901.56	797.26	863.85	1436.92	630.95	638.88	734.49	1074.36	837.66	757.89	833.40
Total	14486.87	14394.06	15575.87	14996.73	14384.11	13297.95	16946.14	15380.77	14467.26	14286.37	15916.50	15087.15

Table 4.21 Percentage distribution of value of Farm Assets excluding self cultivated land per hectare in various size groups in 1983-84

Item	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined
Farm implements & Machinery	19.04	14.30	12.67	14.50	12.99	23.20	19.29	19.62	17.63	15.55	14.39	15.81
Irrigation equipments and Machinery	-	3.02	4.03	3.64	-	13.09	12.83	10.68	-	11.86	7.57	5.44
Draught Animals	40.64	39.26	37.58	38.78	41.78	37.38	34.53	36.84	40.91	36.22	36.79	38.29
Other domestic animals	40.32	43.42	45.72	43.08	45.23	26.33	33.35	32.86	41.46	36.37	41.25	40.46
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

valuation also contributes to this disparity as well. Table 4.20 shows that value of land increases with the increase in farm size. This may be due to the existence of relatively good quality, less fragmented land in the hand of larger size groups. Per unit higher investment for irrigation in Jalpaiguri is quite conformed with higher proportion of perennial irrigated area as is revealed from Table 4.10. It is interesting to note that occasional irrigation is a temporary arrangement and the cost towards the equipments of this irrigation system is therefore excluded from the farm investment because of its contingent character.

4.7.1 Farm investment excluding land

Percentage distribution of invividual components of farm assets excluding value of land is set out in Table 4.21. Primarily relative higher share of other domestic animals to farm investment is noted. It may be noted that other animals are not essential parts of the farm investment as only the litters are used in farming operation and it renders the farms for economic support as well. However, if the other animals component is kept aside, draught animals claims the largest share of the total farm investment exclusive of land in both the districts. The reason behind greater importance attached to first two components in Jalpaiguri district has already been explained in the earlier subsection.

4.8 Human labour

In order to review the male, female and children constituting the composition of farm families Table 4.22 is prepared. It is observed from the table that the average size of farm family is 6.34 and number per hectare is 4.27. Average size of farm family in Jalpaiguri and number of family members per hectare in Coochbehar is observed to be higher. Table 4.22 shows that the average size of farm family increases with the increase in farm size but the number of members per hectare decrease with the increase in farm size. Relatively less per head availability of agricultural land in Coochbehar district is also highlighted from the Table.

Table 4.22 Average number of Farm Population per farm and per hectare in 1983-84

Description	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined
Male	1.35 (2.55)	1.86 (1.30)	2.65 (0.84)	1.82 (1.28)	1.38 (2.13)	2.00 (1.46)	2.25 (0.60)	1.86 (1.09)	1.35 (2.47)	1.90 (1.34) 1.39	2.56 (0.78) 0.78	1.83 (1.23)
Female	1.31 (2.48)	1.88 (1.31)	2.23 (0.71)	1.71 (1.20)	1.63 (2.52)	1.86 (1.36)	2.08 (0.56)	1.84 ((1.07)	1.36 (2.49)	1.87 (1.33)	2.20 ((0.67)	1.74 (1.17)
Child	2.34 (4.41)	2.82 (1.97)	3.49 (1.11)	2.76 (1.94)	2.06 (3.20)	2.76 (2.02)	3.83 (1.08)	2.80 (1.64)	2.29 (4.18)	2.80 (1.98)	3.56 (1.09)	2.77 (1.87)
Total	5.00 (9.44)	6.56 (4.58)	8.37 (2.66)	6.29 (4.42)	5.07 (7.85)	6.62 (4.84)	8.16 (2.19)	6.50 (3.80)	5.00 (9.14)	6.57 (4.65)	8.32 (2.54)	6.34 (4.27)

Note : Figure in the paranthesis indicates number per hectare

4.8.1 Earners engaged in non farm occupation

No, of earners per farm and per hectare, on an average, engaged in non farm occupation in each of the individual size group is displayed in Table 4.23. Average number of earner per farm and per hectare engaged in non farm occupation are observed to be 0.28 and 0.19 respectively. Monthly salary earners namely Primary Teacher, Panchayet Secretary are noted to be present in both the districts. However, number of per farm earners engaged in non farm occupation is higher in Jalpaiguri but that of per hectare is higher in Coochbehar. Table 4.23 also reveals that the number of per hectare earners engaged in non farm occupation is inversely related with the size of farm.

4.8.2 Literacy of the head of the family

Being the labour is an important factor of production, productivity is usually increased with the increase of quality of labour. Quality of labour may be determined by the level of education as well as level of experience it attended. Table 4.24 is set out for providing distribution of heads of the families according to literacy status. It is revealed from the Table that people without education or having less education is predominating the farm operation in the districts. It is worth noting that illiteracy is higher in Coochbehar than Jalpaiguri district. Number of farmers completed school level as well as preuniversity examination is noted to be highest in Jalpaiguri.

4.8.3 Attached farm servant

Attached farm servants are permanent labourers of a holding hired on annual or seasonal basis in order to mitigate labour requirement of farm operation. Distribution of per farm and per hectare permanent hired labours is depicted in Table 4.25. Table 4.25 shows that average number of per hectare attached farm servant is 0.22. No interdistrict difference regarding per hectare average of attached farm servant is, however, noted. It is, further, obvious from the table that large sized farms are more dependant on farm servants for farming operation.

Table 4.23 Number of earners engaged in non farm occupation per farm and per hectare in various size groups in 1983-84.

Size groups	No. of earners per farm	No. of earners per hectare
	Coochbehar	
Less than 1.00	0.49	0.93
1.00 - 2.00	0.18	0.13
Above 2.00	-	-
All groups combined	0.28	0.19
	Jalpaiguri	
Less than 1.00	0.31	0.48
1.00 - 2.00	0.33	0.24
Above 2.00	0.25	0.07
All groups combined	0.31	0.18
	Districts Combined	
Less than 1.00	0.46	0.85
1.00 - 2.00	0.22	0.16
Above 2.00	0.05	0.02
All groups combined	0.28	0.19

Table 4.24 Literacy of the head of the family

Level of Education	No. of head of the farm family		
	Coochbehar	Jalpaiguri	District combined
Iliterate	60 (31.41)	6 (12.24)	66 (27.50)
Litarate	53 (27.75)	22 (44.90)	75 (31.25)
Primary	43 (22.51)	8 (16.33)	51 (21.25)
VI to IX	23 (12.04)	6 (12.24)	29 (12.08)
X	5 (2.62)	6 (12.24)	11 (4.58)
XII	7 (3.67)	1 (2.05)	8 (3.34)
Total	191 (100.00)	49 (100.00)	240 (100.00)

Note : Figure in the paranthesis indicates the percentage of respective total

Table 4.25 Number of attached farm servants per farm and per hectare in 1983-84

Size groups	Number per farm	Number per hectare
	Coochbehar	
Less than 1.00	0.05	0.09
1.00 - 2.00	0.32	0.23
Above 2.00	0.81	0.26
All groups combined	0.31	0.22
	Jalpaiguri	
Less than 1.00	0.06	0.10
1.00 - 2.00	0.10	0.07
Above 2.00	1.33	0.36
All groups combined	0.39	0.23
	Districts Combined	
Less than 1.00	0.05	0.09
1.00 - 2.00	0.27	0.19
Above 2.00	0.93	0.28
All groups combined	0.33	0.22

Table 4.26 displays the cash and kind wages paid to the attached farm servents in the sample farms. Average total wages paid to a permanent hired labour is around Rs. 1623/- only. This average wage varies significantly between the districts. The reason of this variation may be attributed to the reported use of attached farm servants only in the peak season by a few farmers of the Jalpaiguri district. Variation in composition of average wages between the districts and the size groups is, moreover, noted.

4.9 Bullock labour

Bullock labour is one of the most important component of farm investment. An overall study on per farm and per hectare distribution of bullock labour alongwith its value is made in Table 4.27. Table 4.27 depicts that all small sized farms did not possess bullock power. About 58 per cent of sample farms in Coochbehar and 75 per cent in Jalpaiguri district have their owned bullocks. Middle and large size groups (excepting four in middle size) have bullocks under their disposal. It is also revealed from the said Table that number of bullock labour per farm and per unit of land decreases with the increase in farm size. This observation again becomes true for value of bullock labour maintained by individual farms and per unit of land as well.

Wide inter size difference in number and value of bullock labour is revealed from Table 4.27. Existence of higher number of bullock power per hectare of smaller sized group indicates the possibility of under utilization of bullock power maintained by the small sized farms. However, a considerable amount of hiring in and out is reported to be made by the sample farms. In as much as the presence of hiring in and out by the selected farms, it would not be too much to remark that the bullock power maintained by small sized farms is remained under utilized to some extent as compared to other farms.

4.9.1 Area commanded by a pair of owned bullock

Size wise estimation of command per pair of bullock is presented in Table 4.28. The overall average command area per pair of bullock

Table 4.26 Annual average cash and kind wages paid to attached farm servant by various size groups of farm in 1983-84

(in Rupees)

Size group	Kind wages paid	Cash wages paid	Total wages paid
	Coochbehar		
Less than 1.00	844.50	407.25	1251.75
1.00 - 2.00	1284.57	362.38	1646.95
Above 2.00	1574.26	368.29	142.55
All groups combined	1424.22	360.82	1793.04
	Jalpaiguri		
Less than 1.00	360.00	90.00	450.00
1.00 - 2.00	1250.00	200.00	1450.00
Above 2.00	571.88	506.88	1078.76
All groups combined	632.11	452.63	1084.74
	Districts Combined		
Less than 1.00	747.60	343.80	1091.40
1.00 - 2.00	1281.57	348.26	1629.83
Above 2.00	1259.78	411.76	1671.54
All groups combined	1233.71	388.97	1622.68

Table 4.27 Distribution of number and value of draught animals per holding and per hectare in various size group of farms owning draught animals in 1983-84

Description	Coochbehar				Jalpaiguri				Districts Combined			
	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined	Less than 1.00	1.00-2.00	Above 2.00	All groups combined
Number of farms owning bullock labour	48	61	43	152	12	21	12	45	60	82	55	197
Number of bullock labour (pair)	0.94 (1.45)	1.19 (0.82)	1.94 (0.61)	1.32 (0.79)	1.00 (1.49)	1.07 (0.78)	1.92 (0.51)	1.28 (0.70)	0.95 (1.46)	1.16 (0.81)	1.94 (0.59)	1.32 (0.77)
Value of bullock labour	912.92 (1415.83)	1240.16 (851.05)	2141.63 (680.79)	1391.84 (829.29)	1141.66 (1699.75)	1223.80 (895.78)	2466.67 (661.45)	1533.33 (846.63)	958.67 (1474.12)	1235.98 (861.97)	2212.55 (675.98)	1424.16 (833.49)

Note : Figures in the paranthesis indicate number and value per hectare

Table 4.28 Area commanded by per pair of bullock in 1983-84

Size group	Cultivated area per pair of bullock (in hectares)		
	Coochbehar	Jalpaiguri	Districts combined
Less than 1.00	0.69	0.67	0.68
1.00 - 2.00	1.23	1.28	1.24
Above 2.00	1.62	1.95	1.69
All groups combined	1.27	1.42	1.30

Table 4.29 Frequency distribution of holding with reference to number of bullocks owned in 1983-84

Number of bullocks	Number of holding		
	Coochbehar	Jalpaiguri	Districts combined
0	39 (20.42)	4 (8.16)	43 (17.92)
1	6 (3.14)	1 (2.04)	7 (2.92)
2	102 (53.40)	36 (73.47)	138 (57.50)
3	4 (2.09)	-	4 (1.66)
4	31 (16.23)	6 (12.25)	37 (15.42)
5	-	-	-
6	8 (4.19)	-	8 (3.33)
7	-	-	-
8	1 (0.54)	1 (2.04)	2 (0.83)
9	-	-	-
10	-	1 (2.04)	1 (0.42)
Total	191 (100.00)	49 (100.00)	240 ((100.00)

Note : Figure in the paranthesis indicates the percentage of respective total

Table 4.30 Average employment per pair of owned bullock for various size groups in 1983-84

Size groups	Average number of days employed		
	Coochbehar	Jalpaiguri	Districts combined
Less than 1.00	179.78 (49.25)	151.67 (41.55)	173.86 (47.63)
1.00 - 2.00	186.55 (51.12)	216.00 (59.18)	193.53 (53.02)
Above 2.00	182.53 (50.01)	210.43 (57.65)	188.55 (51.66)
All groups combined	183.36 (50.24)	201.40 (55.18)	187.14 (51.27)

Note : Figures in the paranthesis indicate the percentages to total number of days in a year.

is estimated as 1.30 hectare for the districts. No significant interdistrict variation in command area per pair of bullock labour is observed. However, command area per pair of bullock labour is noted remarkably higher for the largest size groups in Jalpaiguri district. This variation can be explained by the relatively higher cropping intensity of the largest size farms of Jalpaiguri district as is noted earlier in Table 4.11.

Frequency distribution of selected farms with reference to number of bullocks owned is set out in Table 4.29. It becomes obvious from the Table that nearly 58 per cent of total holdings of the districts operate their farming operation with a single pair of bullock while roughly 18 per cent of sample farms are noted to be dependent either on managed or hired bullock labour. A few of the sample farms is reported to perform their cultivation by milch cattle also. It is interesting to note that around 3 per cent of selected holding possesses only one bullock. Bullock hiring activity is revealed to be more prominent in Coochbehar and negligible in Jalpaiguri. Highest pair of bullock per farm is noted to be 5 and 4 for Jalpaiguri and Coochbehar respectively. Nearly 15 per cent sample farms, on an average, maintained 2 pair of bullock for farming operation.

4.9.2 Average working days per pair of bullock

Average working days per annum per pair of bullock is displayed in Table 4.30. Average employment per pair of bullock is noted to be 187 days in a year. Average annual employment of bullock labour is higher in Jalpaiguri on an average. However, bullock labour maintained by smallest size farm of the Jalpaiguri works less than that of Coochbehar district. Table 4.30 also shows that average employment of bullock decreases with the decrease in farm size with an exception of middle sized farms. Lower level of employment of bullock labour in smallest size farm corroborates with the findings of the earlier subsection that the bullock labour maintained by smallest size groups remains relatively unutilised to some extent.