CHAPTER - IV

IMPACT OF IRRIGATION ON AGRICULTURAL INCOME AND SOCIAL LIFE

4.1 INTRODUCTION

4.2 AGRICULTURAL INCOME OF FARMERS

4.3 CLASSIFICATION OF HOUSEHOLDS BY LEVELOF INCOME (CROP WISE)

4.4 CLASSIFICATION OF HOUSEHOLDS BY LEVELOF INCOME (CATEGORY WISE)

4.5 GROSS AGRICULTURAL INCOME

4.6 PARTICIPATION OF FARTMERS IN VARIOUS INSTITUTIONS

Chapter IV

IMPACT OF IRRIGATION ON AGRICULTURAL INCOME AND SOCIAL LIFE

4.1- INTRODUCTION

In this chapter an attempt has been made to study the impact of irrigation on agricultural income and social status of farmers in the command area. The agricultural income has been measured from main crops in command area i.e. Hybrid Jowar, Ground nut, Wheat, Rice, Rabbi Jowar, Sugarcane, and soyabean. In irrigated areas cash crops were mainly produced followed by cereal crops. Because in such areas expected income from crop determine the nature of cropping pattern. Among cash crops Hybrid Jowar was major crop before scheme. Now sugarcane is main cash crop in the region. The following sections deals crop wise position with respect to agricultural income.

4.2 - AGRICULTURAL INCOME OF FARMERS

The agricultural income of farmers from main crops is given following tables. The income of each crop is determined with multiplying average price of five year to total production of each crop before and after scheme. The income from Hybrid Jowar shown in table no.4.1

Table no. 4.1 Income from Hybrid Jowar (Production: Quintal, Income: Rupee)

Sr.No.	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	200.00	81400.00	5.00	4670.00
2	Small farmer	317.00	129019.00	17.00	15878.00
3	Medium farmer	517.00	210419.00	51.00	47634.00
4	Large farmer	1233.00	501831.00	31.00	28954.00
	Total	**2267.00**	922669.00	**104.00**	97136.00

Source: field work

Hybrid Jowar was the main crop in command area before scheme after scheme it was not much produced by farmers. Total income of farmers from Hybrid Jowar was Rs. 9, 22,669.60 before scheme. It was Rs. 97136.00 in after scheme. Out of total income of before scheme highest income was of large farmers about Rs. 501831 and followed by this Rs. 210419.00 of medium farmers, Rs. 129019 of small farmer and lowest of all was of 8 Rs. 81400 of marginal farmers.Out of total income of farmers from Hybrid Jowar after scheme highest income was of medium farmers about Rs. 47634 followed by large farmer Rs. 28954, small farmer Rs. 15878 and marginal farmer Rs. 4670. It showed income from this crop increased due to increased in yield of jowar in irrigated area.

Table no. 4.2 Income from Groundnut (Production: Quintal, Income: Rupee)

Sr.No.	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	168.00	145656.00	0.00	0.00
2	Small farmer	236.00	204612.00	0.00	0.00
3	Medium farmer	442.00	383214.00	0.00	0.00
4	Large farmer	1097.00	951099.00	0.00	0.00
	Total	**1943.00**	1684581.00	**0.00**	0.00

Source: field work

Table 4.2 shows income from groundnut crops. Groundnut was one of the main crops in the region before scheme. After scheme was initiated, farmers have given up cultivate this crop due to low yield and low price. Total income from this crop was Rs. 1684581 before scheme. Highest income was (Rs. 951099) of large farmers, followed by medium farmers of (Rs. 383214), small farmers (Rs. 204612). After scheme this crop was not produced by farmers. Farmers in this region switch over irrigated land to other cash crops particularly sugarcane.

Table no. 4.3. Income from wheat (Production: Quintal, Income: Rupee)

Sr.No..	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	0.00	0.00	2.00	1960.00
2	Small farmer	0.00	0.00	17.00	16660.00
3	Medium farmer	**33.00**	14190.00	44.00	43120.00
4	Large farmer	15.00	6450.00	33.00	32340.00
	Total	**48.00**	20640.00	**96.0**	94080.00

Source: field work

Above table 4.3 depicts income from wheat crop before and after scheme. Total income from wheat was Rs. 20640 in before scheme. It was increased to Rs. 94080 after scheme. Out of total income before scheme highest income was Rs. 14190 of medium farmers followed by large farmers Rs. 6450. After scheme Rs. 43120 was income of medium farmers, large farmers income Rs. 32340, small farmers Rs. 16660 and lowest of Rs. 1960 of marginal farmers.

Table no. 4.4 Income from Rice (Production: Quintal, Income: Rupee)

Sr.No.	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	0.00	0.00	0.00	0.00
2	Small farmer	0.00	0.00	66.00	78804.00
3	Medium farmer	0.00	0.00	135.00	161190.00
4	Large farmer	70.00	42210.00	40.00	47760.00
	Total	**70.00**	42210.00	241.00	287754.00

Source: field work

Above table 4.4 shows income from rice crop before and after scheme. Total income from rice was Rs. 42210 before scheme. It was increased to Rs.287754 after scheme. Before scheme, of Rs. 42210 income was of large farmer. After scheme Rs. 161190 was income of medium farmers followed by small farmers (Rs. 78804) and large farmers Rs.47760.00.

Table no. 4.5 Income from Sugarcane (Production: Quintal, Income: Rupee)

Sr.No.	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	0.00	0.00	1087.50	899362.50
2	Small farmer	0.00	0.00	2247.00	1858269.00
3	Medium farmer	35.00	18095.00	3600.00	2977200.00
4	Large farmer	77.00	39809.00	8600.00	7112200.00
	Total	112.00	57904.00	15534.50	12847031.50

Source: field work

MKR. BALASAHEB KHARDEKAR LIBRARY
SHIVAJI UNIVERSITY KOLHAPUR

Above table 4.5 shows income from Sugarcane before and after scheme. The total income from Sugarcane was Rs. 57904.00 before scheme which increased to Rs. 12847031.50 after scheme. Income of large farmers was Rs. 39809.00 and followed by medium farmers Rs. 18095.00. After scheme Rs. 7112200.00 was income of large farmers, followed by medium farmers Rs. 7112200.00, small farmer Rs. 1858269.00 and of marginal farmers Rs. 899362.50.

Table no. 4.6 Income from Soyabean (Production: Quintal, Income: Rupee)

Sr. No.	**Particulars**	**Before scheme**		**After scheme**	
		Production	Income	Production	Income
1	Marginal farmer	0.00	0.00	0.00	0
2	Small farmer	0.00	0.00	19.00	25935
3	Medium farmer	0.00	0.00	17.00	23205
4	Large farmer	0.00	0.00	274.00	374010
	Total	**0.00**	**0.00**	310.00	423150

Source: field work

Table no. 4.2.6 shows the income from Soyabean crop before and after scheme. Total income from Soyabean was nil before scheme. It was increased to Rs. 423150 after scheme. After scheme Rs. 374010 was income of large farmers followed by small farmers' Rs. 25935, medium farmers Rs. 23205 . Marginal farmers did not cultivate this crop.

Table no. 4.7 Income from Rabbi Jowar (Production: Quintal, Income: Rupee)

S.N.	Particulars	Before scheme		After scheme	
		Production	Income	Production	Income
1	Marginal farmer	0.00	0.00	0.00	0.00
2	Small farmer	0.00	0.00	33.00	35343.00
3	Medium farmer	0.00	0.00	56.00	59976.00
4	Large farmer	0.00	0.00	303.00	324513.00
	Total	**0.00**	**0.00**	392.00	419832.00

Source: Field work

Table no. 4.7 shows the income from rabbi jowar crop before and after scheme. As earlier said, due to lack of irrigation facility and low quality of soil the farmers were not produce rabbi jowar before but after made available irrigation rabbi jowar was produced by farmers in command area. Income from rabbi jowar was Rs.419832.00 after scheme. Rs.324513.00 was highest income of large farmers followed by medium farmers' income of Rs. 59976.00, and small farmers Rs. 35343.00. Marginal farmers did not cultivate this crop before and after irrigation scheme was initiated.

4.3 - CLASSIFICATION OF HOUSEHOLDS BY LEVEL OF INCOME (CROP WISE)

The classification of households by level of income derived from each main crop has been made categorized inti 8 groups, like 1) Less than 1000, 2) 1001-2500, 3) 2501-5000 4) 5001-10000 5) 10001-25000 6) 25001-5000 7) 50001-100000 and 100000 and above.

Table No- 4.8 Classification of households by income from Hybrid Jowar

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	7	4.7	139	92.7
1001-2500	46	30.7	0	0.0
2500-5000	36	24	2	1.3
5001-10000	32	21.3	6	4.0
10001-25000	27	18	3	2.0
25001-50000	0	0	0	0.0
50001-100000	2	1.3	0	0.0
above 100000	0	100	0	0.0
Total	150		150	100.0

Source: Field work

Table no 4.8 depicts income from Hybrid Jowar before and after scheme. Out of total 150 sample farmers maximum farmers were concentrated in the category of Rs. 1001 to 2500 and Rs. 5001-10000 and Rs. 10001-25000. Thus it showed all farmers used to grow this crop. After scheme was implemented farmers in their region reducearea under hybrid jowar and switch over to cash crop like sugarcane. Consequently income from hybrid jowar was reduced. Therefore it was observed that large number of farmers were concentrated in the range of less than 1000 category.

Table No 4.9 Classification of households by income from Groundnut

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	9	6	150	100.0
1001-2500	3	2	0	0.0
2500-5000	43	28.7	0	0.0
5001-10000	43	28.7	0	0.0
10001-25000	29	19.3	0	0.0
25001-50000	21	14	0	0.0
50001-100000	2	1.3	0	0.0
above 100000	0	0	0	0.0
Total	150	100	150	100.0

Source: Field work

Table no 4.9 indicates that income from Groundnut before and after scheme. Out of total 150 sample farmers maximum number of farmers were concentrated in the range of the category of Rs. 2501 to 5000 and Rs. 5001-10000. Nearly 57% were in this category. The 19.3% farmers were Rs. 10001 to 25000 category. 14% farmers were in the range of Rs. 25001 to 50000 category. 1.3% farmers were in the range of Rs. 50001 to 100000 category. After Irrigation project was started, situation has been changed. All farmers reduced cultivated areas under groundnut and switch over to cultivation of sugarcane. Therefore all cultivators reduced in the category of less than Rs.1000.

Table No- 4.10 Classification of households by income from Rabi Jowar

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	150	100	129	86.0
1001-2500	0	0	1	0.7
2500-5000	0	0	0	0
5001-10000	0	0	8	5.3
10001-25000	0	0	7	4.7
25001-50000	0	0	4	2.7
50001-100000	0	0	0	0.0
above 100000	0	0	1	0.7
Total	150	100	150	100.0

Source: Field work

Table no 4.10 shows income from Rabi Jowar before and after scheme. It shows that all farmers were in the range of less than Rs. 1000. Because like groundnut farmers in this region reduced land under Rabbi jowar and transferred to Sugarcane crop.

Table No- 4.11 Classification of households by income from wheat

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	142	94.6	136	90.67
1001-2500	6	4	1	0.67
2500-5000	1	0.7	4	2.67
5001-10000	1	0.7	8	5.33
10001-25000	0	0	1	0.67
25001-50000	0	0	0	0.0
50001-100000	0	0	0	0.0
above 100000	0	0	0	0
Total	150	100	150	100.0

Source: Field work

Table no 4.11 indicates income from wheat before and after scheme. Out of total 150 sample farmers, maximum number of farmers were in the category of less than Rs.1000 accounted 94.6% farmers before scheme and 4% farmers were in Rs. 1001 to 2500 category. Thus it shows that farmers reduced area under wheat and used for other cash crops that to shift in cropping in favour of cash crop enhanced income of farmers in the region.

Table No. 4.12 **Classification of households by income from Rice**

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	147	98	139	92.67
1001-2500	0	0	0	0.00
2500-5000	0	0	0	0.00
5001-10000	1	0.7	1	0.67
10001-25000	2	1.3	6	4.00
25001-50000	0	0	4	2.7
50001-100000	0	0	0	0.0
above 100000	0	0	0	0
Total	150	100	150	100.0

Source: Field work

Table no. 4.12 shows income from Rice before and after scheme. Out of total 150 sample farmers three farmers were cultivating rice crop and income as in the range of Rs.5001 – 25000. Moreover it was noticed that even after scheme initiated. Farmers did not concentrate to grow rice crop. In fact there has beenreduction in the cultivation of rice.

Table no. 4.13 Classification of households by income from sugarcane

Income (Rs.)	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	143	95.3	1	0.67
1001-2500	0	0	2	1.33
2500-5000	1	0.7	1	0.67
5001-10000	3	2	7	4.67
10001-25000	3	2	23	15.33
25001-50000	0	0	30	20.00
50001-100000	0	0	58	38.67
above 100000	0	0	28	18.67
Total	150	100	150	100.0

Source: Field work

Table no. 4.13 shows income from sugarcane before and after scheme. Before scheme was started, farmers used to cultivate sugarcane marginally and income from it was not much high. After irrigation project in the region, majority of farmers started cultivating sugarcane as cash crop and main crop. It was observed that income from sugarcane increased significantly. Consequently majority of sugarcane producers were in the range of Rs.100000 and above. Thus changes in the cropping pattern in favour of sugarcane crop brought out substantial improvement in economic condition of sugarcane producers.

Table no. 4.14 Classification of households by income from Soyabean

	Before Scheme		After Scheme	
	Frequency	Percent	Frequency	Percent
Less than 1000	150	100	130	86.67
1001-2500	0	0	0	0.00
2500-5000	0	0	1	0.67
5001-10000	0	0	6	4.00
10001-25000	0	0	6	4.00
25001-50000	0	0	6	4.00
50001-100000	0	0	0	0
above 100000	0	0	1	0.67
Total	150	100	150	100.00

Source: Field work

Above table 4.14 shows income from Soyabean before and after scheme. There has been not much change in case of Soyabean crop. Before scheme was initiated this crop was not being cultivated. Even after scheme was started majority of farmers did not pay much attention to cultivate this crop. Therefore large numbers of farmers were concentrated in the range of less than Rs.1000. Because even in irrigated areas it is marginal crop.

4.4 CLASSIFICATION OF HOUSEHOLDS BY LEVEL OF INCOME (CATEGORY WISE)

In this section and attempt has been made to classify household by level of income, category wise income. Thus, it through light on detail analysis about category wise classification of farmers. Thus intra as well as inter category wise revealed some characteristics of the households. In fact level of agricultural income either from single crop or all crops is determined by size of holdings. Large size of holding, larger is level of income. Some time it is also observed that small size of holding yield more income as compare to big size of holdings. In the following analysis, an attempt is made is study at given level of income, what is nature of distribution of farmers belonging is different categories.

Table no. 4.15 shows income from Hybrid Jowar of marginal, small, medium and large farmers before and after scheme at the income level, less than Rs. 2500 there were 53 farmers of these 39 were marginal farmers and 13 were small farmers and 1 farmer was big farmer.

After scheme 139 farmers were under the less than Rs. 1000 category. Out of that 42, 43 and 32 farmers were marginal, small, medium and large farmer. This income category was highest after scheme. Followed by Rs. 500 – 10000 category 6 farmers and out of 6 farmers 0, 2, 2, and 2 farmers were marginal small, medium and large responsively. Under the Rs. 1000 – 25000 category there were 3 farmer out 3 farmers 2 farmers were medium and 1 was large farmer. Out of 150 farmers 2 farmers were under Rs. 2500 5000 category out of that 01 was marginal and 012 was small farmer. 0 farmers were under the remained categories. Before scheme Rs. 100 – 2500 was highest income category but after scheme less than Rs. 1000 category was highest. Due to decrees importance of hybrid Jowar, farmers were not produced of large portion this crop

Table no. 4.15 Classification of Households by level of income (Category wise)

Crop: Hybrid Jowar.

Income	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	7	0	0	0	7	42	33	32	32	139
1001-2500	32	13	0	1	46	0	0	0	0	0
2500-5000	4	15	14	3	36	1	1	0	0	2
5001-10000	0	8	20	4	32	0	2	2	2	6
10001-25000	0	0	2	25	27	0	0	2	1	3
25001-50000	0	0	0	0	0	0	0	0	0	0
50001-100000	0	0	0	2	2	0	0	0	0	0
above 100000	0	0	0	0	0	0	0	0	0	0
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no. 4.16 Classification of Households by level of income (Category wise)

Crop: Groundnut.

Income	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	9	0	0	0	9	43	36	36	35	150
1001-2500	3	0	0	0	3	0	0	0	0	0
2500-5000	23	17	2	1	43	0	0	0	0	0
5001-10000	7	12	21	3	43	0	0	0	0	0
10001-25000	1	7	12	9	29	0	0	0	0	0
25001-50000	0	0	1	20	21	0	0	0	0	0
50001-100000	0	0	0	2	2	0	0	0	0	0
above 100000	0	0	0	0	0	0	0	0	0	0
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no. 4.17 Classification of Households by level of income (Category wise)

Crop: Rabbi Jowar.

Income	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	43	36	36	35	150	43	30	31	25	129
1001-2500	0	0	0	0	0	0	1	0	0	1
2500-5000	0	0	0	0	0	0	0	0	0	0
5001-10000	0	0	0	0	0	0	4	2	2	8
10001-25000	0	0	0	0	0	0	1	3	3	7
25001-50000	0	0	0	0	0	0	0	0	4	4
50001-100000	0	0	0	0	0	0	0	0	0	0
above 100000	0	0	0	0	0	0	0	0	1	1
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no. 4.18 Classification of Households by level of income (Category wise)

Crop: Wheat

	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	43	36	29	34	142	42	33	29	32	136
1001-2500	0	0	6	0	6	1	0	0	0	1
2500-5000	0	0	1	0	1	0	1	3	0	4
5001-10000	0	0	0	1	1	0	2	4	2	8
10001-25000	0	0	0	0	0	0	0	0	1	1
25001-50000	0	0	0	0	0	0	0	0	0	0
50001-100000	0	0	0	0	0	0	0	0	0	0
above 100000	0	0	0	0	0	0	0	0	0	0
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no. 4.19 Classification of Households by level of income (Category wise)

Crop: Rice

	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	43	36	36	32	147	43	32	30	34	139
1001-2500	0	0	0	0	0	0	0	0	0	0
2500-5000	0	0	0	0	0	0	0	0	0	0
5001-10000	0	0	0	1	1	0	1	0	0	1
10001-25000	0	0	0	2	2	0	3	3		6
25001-50000	0	0	0	0	0	0	0	3	1	4
50001-100000	0	0	0	0	0	0	0	0	0	0
above 100000	0	0	0	0	0	0	0	0	0	0
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no – 4.20 Classification of Households by level of income (Category wise)

Crop : sugarcane

	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	43	36	33	31	143	1	0	0	0	1
1001-2500	0	0	0	0	0	2	0	0	0	2
2500-5000	0	0	0	1	1	1	0	0	0	1
5001-10000	0	0	3	0	3	7	0	0	0	7
10001-25000	0	0	0	3	3	18	5	0	0	23
25001-50000	0	0	0	0	0	14	15	1	0	30
50001-100000	0	0	0	0	0	0	13	31	14	58
above 100000	0	0	0	0	0	0	3	4	21	28
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

Table no – 4.21 Classification of Households by level of income (Category wise) Crop: Soyabean

	Before Scheme					After Scheme				
	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
Less than 1000	43	36	36	35	150	43	33	34	20	130
1001-2500	0	0	0	0	0	0	1	0	0	1
2500-5000	0	0	0	0	0	0	1	1	4	6
5001-10000	0	0	0	0	0	0	1	1	4	6
10001-25000	0	0	0	0	0	0	0	0	6	6
25001-50000	0	0	0	0	0	0	0	0	0	0
50001-100000	0	0	0	0	0	0	0	0	1	1
above 100000	0	0	0	0	0	0	0	0	0	0
Total	43	36	36	35	150	43	36	36	35	150

Source: Field work

In case of groundnut large numbers of farmers belonging to various categories were concentrated in the income range less than Rs.1000. In fact this crop is not main crop in the region, being produced marginally. In fact area under groundnut has been shifted to cash crops in the irrigated areas.

In case of rabbi jowar which is minor crop in the region. Income range of farmers from rabbi jowar crop is shown is Table number 4.17. Before scheme period, all farmers had income less than Rs.1000 from rabbi jowar before scheme was started. Out of total farmer 43 were marginal farmers, 36 were small farmers, 36 were medium farmers, 35 were big farmers. After irrigation project was started improvement in level of income was observed.

Table no 4.18 shows income from wheat crop. Out of total farmers 142 farmers were in the range of less than Rs. 1000. Out of which, 42 were marginal farmers, 33 were small farmers, 29 were medium farmers and 32 farmers were big farmers. Some farmers could succeed to raise income from wheat cultivation. However the position of wheat in the cropping pattern is not significant.

Table 4.19 shows income from rice crop. Before scheme, rice crop was not taken at large proportion by farmers. But after scheme also situation was not changed satisfactory. Due to shifted irrigated land to cash crop, food grain crops were ignored by farmers in region. 142 farmers income were in the range of less than Rs.1000 before scheme. Few farmers could succeed to increase income from rice, however it was not much satisfactory.

Due to shifted irrigated land to cash crop like sugarcane economic condition of farmers improved. Sugarcane is one of the main cash crops in the command area. Before scheme, sugarcane was taken only by medium and large farmers. All farmers started growing sugarcane in the region. In fact these crop helped inhance income of sugarcane producers. Therefore it was found that large number of farmers were in higher income level. Thus in brief it could be observed that Washi irrigation project has contributed improve the economic condition of farmers belonging into all categories in the region.

4.5 – Gross Agricultural Income

After having discussed crop wise position, in this section an attempt has been made to classify farmers by total agricultural income before and after scheme. Total agricultural income here consists of income from seven crops i.e. hybrid Jowar, groundnut, rice, wheat, sugarcane and Soyabean. Following table 4.22 shows that large numbers of farmers had income less than Rs.2500 before scheme.

Table No. 4.22 Classification of Households by total agricultural income:

Before Scheme			
Sr. No.	Income (Rs.)	Frequency	Percent
1	Less than 1000	2	1.33
2	1001-2500	7	4.67
3	2500-5000	10	6.67
4	5001-10000	48	32.00
5	10001-25000	50	33.33
6	25001-50000	25	16.67
7	50001-100000	6	4.00
8	Above 100000	2	1.33
	Total	150	100.00

Source: Field work

Few farmers particularly big farmers had income from agricultural in the range of Rs. 50,000 to 1 lakh. However this situation has changed after scheme was initiated. Even medium, small farmers started to earn income more than Rs. 50,000. Therefore the nature of frequency distribution was more diversed in nature. Out of 150 farmers 93 farmer had income more than Rs.50,000 per annum (table 4.23.) This change has occurred through change in cropping pattern, occurred due to irrigation facility made available to the agriculture in this region.

Table No. 4.23 Classification of Households by total agricultural income

After Scheme			
Sr. No.	Income Rs.	Frequency	Percent
1	Less than 1000	1	0.67
2	1001-2500	2	1.33
3	2500-5000	1	0.67
4	5001-10000	7	4.67
5	10001-25000	22	14.67
6	25001-50000	24	16.00
7	50001-100000	51	34.00
8	Above 100000	42	28.00
	Total	150	100.00

Source: Field work

Thus table 4.22 and 4.23 taken together showed that due to irrigation, agricultural income of farmers has increased as compared to earlier position. All farmers belonging to various categories have been benefited. Break up of such analysis is discussed in the next section.

Category wise Classification of Households by total Agricultural income:-

From earlier study are found that low percentage farmers were in high income range before scheme and after scheme it was more percentage in high income range. But from this, we could not found what were the positions of marginal, small, medium and large farmers in different income ranges in before. This situation we can study from following two tables in before and after schemes of total agricultural income of farmers.

Table No. 4.24 Category wise classification of Household by total Agricultural income:-

Sr. No.	Income Rs.	Before Scheme				
		Marginal	Small	Medium	Large	Total
1	Less than 1000	2	0	0	0	2
2	1001-2500	7	0	0	0	7
3	2500-5000	6	4	0	0	10
4	5001-10000	26	19	1	2	48
5	10001-25000	2	13	30	5	50
6	25001-50000	0	0	4	21	25
7	50001-100000	0	0	1	5	6
8	Above 100000	0	0	0	2	2
	Total	43	36	36	35	150

Source: Field work

Above table 4.24 shows different categories farmers across different range of income before scheme. Out of total sample farmer 2 farmers had income less than Rs. 1000. There were 7 farmers in the income range of Rs.1001 to 2500, 10 farmers were in the income range Rs. 2501- 5000, out of this 6 were marginal farmers and 4 were small farmers , 48 farmers were in the income range of Rs. 5001- 10000 and out of 48 farmers, 26 farmers were marginal, 19 small, 1 medium and 2 large. The highest numbers of farmers 50 were in the income range of Rs. 10001- 25000 out of 50 farmers 2 were marginal, 13 small, 30 medium and 21 were large farmers. Six farmers were in the income range of Rs. 50001- 100000 (1 medium , 5 large) and 2 farmers had above 1 lakh income. Overall position show that maximum farmers were concentrated in the range of Rs. 5000 to 25000.

Table No. 4.25 Category wise Classification of Households by Total Agricultural Income:-

Sr. No.	Particulars	After Scheme				
		Marginal	Small	Medium	Large	Total
1	Less than 1000	1	0	0	0	1
2	1001-2500	2	0	0	0	2
3	2500-5000	1	0	0	0	1
4	5001-10000	7	0	0	0	7
5	10001-25000	18	4	0	0	22
6	25001-50000	14	9	1	0	24
7	50001-100000	0	20	24	7	51
8	Above 100000	0	3	11	28	42
	Total	43	36	36	35	150

Table No. 4.25 depicts category wise classification of households by total agricultural income after scheme was started. The maximum number of farmers (51) were in the range of Rs. 50001 - 100000 income range followed by 42 farmers in above Rs. 100000 income range and 24 farmers were in Rs. 25001- 50000 and 22 farmers were in the range of Rs. 10001- 25001 and remaining 7 had income less than Rs. 5000. Thus it shows that farmers in the region have been benefited from Washi irrigation project, because as compared as earlier position, economic condition of all farmers in the region has improved.

4.6 - PARTICIPATION OF FARTMERS IN VARIOUS INSTITUTIONS

In this section an attempt has made to examine the impact of washi irrigation project on the social life of the beneficiaries. Improvement in social life of beneficiaries is examined by taking into consideration the participation of farmers in various institutions like gram panchayat, co-operative societies etc. The participation of farmers in various institutions is increased due to improvement of economic condition of the farmers. These changes occurred mainly due to availability of irrigation facilities.

Table no.4.26 Participation in gram Panchayat

Sr.No.	Particulars	Frequency	Percent
1	Member	16	10.67
2	Non Member	134	89.33
	Total	150	100.00

Source: Field work

Table shows participation of farmers in villages panchayat. Out of total sample 150 farmers 16 farmers were members of gram panchayat. Its percentage was 10.67%. Remained 134 farmers were non-members and its percentage was 89.33 %.

Table no.4.27 Participation in PACS

Sr.No.	Particulars	Frequency	Percent
1	Member	150	100.00
2	Non Member	0	0.00
	Total	150	100.00

Source: Field work

Table no.4.23 shows participation of farmers in PACS. Out of total sample 150 farmers all farmers were members of PACS. It reveals the fact that farmers in the region have understood the importance of Co-operative societies. Therefore they are actively participate in PACS availed the benefits of such

societies more ever farmers are also participate in other co-operative society. More ever in this are also participate in other co-operative societies.

Table no.4.28 Participation in Co-operative Societies

Sr.No.	Particulars	Frequency	Percent
1	Member	150	100.00
2	Non Member	0	0.00
	Total	150	100.00

Source: Field work

Table 4.28 show that out of total farmers were participated in other co-operative societies. More over farmers who are members of Washi irrigation project take active participation and decision about the allocation of water and other related issues.

Table no.4.29 Participation in Washi Irrigation scheme

Sr.No.	Particulars	Frequency	Percent
1	Member	150	100.00
2	Non Member	0	0.00
	Total	150	100.00

Source: Field work

Table 4.29 shows that all 150 farmers are members of this scheme. This is good sign of collective action being under taken by these farmers. More ever break up these farmers show that 43 farmers were marginal, 36 were small farmers, medium farmers and 35 were big farmers.

Table no.4.30 Participation in Other Society

Sr.No.	Particulars	Frequency	Percent
1	Member	31	20.67
2	Non Member	119	79.33
	Total	150	100

Source: Field work

Definitely this participation of farmers led economic as well as social development. Moreover it was observed that all farmers like marginal, small, medium and big farmers were participating in co-operative societies and other institutions.