Chapter-IV

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ECONOMIC BENEFITS OF DHOM IRRIGATION PROJECT

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4.1 Introduction :

Irrigation has significant role in improving crop pattern and yield effects; It increases the net area cultivated and the gross cropped area by crop intensity via double and multiple cropping. It diversifies and transforms cropping pattern from inferior quality crops to high value superior and remunerative crops, Increased irrigation facilities help to generate additional employment, increased production and productivity through intensive farming. The network of irrigation is offering the following benefits in the region.

4.2 Benefits Received Due to Canal Irrigation

Out of 200 reported farmers 186 farmers (93 %) did receive benefit of canal water. Table No.4.1 indicates that out of responding farmers 102 farmers (51 %) reported that their income was raised due to canal water facility for agriculture, while, 35farmers (17.5 %) reported that the yields of their crops were increased and 49 farmers (24.5 %) expressed that their standard of living was enhanced.

Table No.4.1

Benefits Received Due to Canal Irrigation

Sr.No	Particular	No.of farmers Reported	Percentage
1	No Benefit	14	7
2	Income Raise Due to Canal Water	102	51
3	Yield of Crops Increased	35	17.5
4	Standard of Living Enhanced	49	24.5
	Total	200	100

Source :- Fieldwork

4.3 Production and Income from some Major Crops

In this region, major crops are sugarcane, jowar, wheat, turmeric, groundnut and soyabean. In irrigated area, cash crops are mainly produced followed by cereal crops. Because in such areas expected income from crop determine the nature of cropping pattern and land use pattern. Among cash crops, sugarcane is major cash crop. The following section deals crop wise position with respect to production, income and price.

4.3.1 Production and Income from Sugarcane

Unlike other crops, sugarcane is an annual crop. Sugarcane is the major cash crop, in the study region in the total irrigated areas, larger areas are being used for sugarcane cultivation due to assurance of price offered by sugar factory. It was reported from Table No 4.2 shows that out of 200 farmers 62 farmers did not cultivate sugarcane, 138 farmers cultivated sugarcane. 31.5% farmers were produced sugarcane between 25 to 50 tonnes, followed by 12.5% farmers were produce sugarcane range 75 to 100 tonnes, 10% farmers were produced sugarcane above 100

tonnes, 9% farmers produces sugarcane between 1 to 25 tonnes and 6% farmers were produce sugarcane ranged 50 to 75 tonnes.

Table No.4.2

Production of Sugarcane

SR.No	Production of Sugarcane (In Tonnes)	No.Of farmers	% of Farmers
1	No Production	62	31
2	1 to 25	18	9
3	25 to 50	63	31.5
4	50 to 75	12	6
5	75 to 100	25	12.5
6	Above to 100	20	10
	Total	200	100

Source :- Fieldwork

Table No.4.3

Income form Sugarcane

SR.No	Income (In Rs.)	No.of farmers	% of Farmers
1	No Income	62	31
2	1,000 to 25,000	81	40.5
3	25, 000 to 50,000	33	16.5
4	50, 000 to 75,000	15	7.5
5	75,000to 1,00,000	6	3
6	1,00,000to 1,25,000	1	0.5
7	Above 1,25,000	2	1
	Total	200	100

Source :- Fieldwork

Income from Sugarcane

It was observed that of total producers of sugarcane, majority of sugarcane producers 40.5% farmers get income range from Rs. 1to 25

thousand. Out of 138 sugarcane producers, 33 farmers reported that they received income upto Rs. 25 to 50 thousand. While 15 farmers got income from sugarcane in the range of Rs 50 to 75 thousand, 3 farmers reported that they received income ranged from Rs.75 thousand to Rs. 1 lac., only 1 farmer received income form sugarcane ranged from Rs 1 lac to 1 lac 25 thousand and remaining 2 farmers received income more than Rs. 1 lac 25 thousand. Thus, income level depends upon the level of sugarcane production.

4.3.2 Production and Income from Jowar

Jowar is grown both as kharif and rabi crop. It can withstand drought to a considerable extent and is grown both as dry as well as an irrigated crop. It is a staple food in the region and also used as fodder. The spatial pattern of jowar is a reflection of topography, climate, and irrigation facilities.

Jowar among the food crop is being produced in the region. Table No.4.4 indicates that 161 farmers had cultivated jowar crops. While 39 farmer were not producing jowar. Out of 200 farmers 66 farmers were produced jowar upto 5 quintals. 57 farmers were produced jowar 5 to 10 quintals, 16 farmers were produced jowar ranged from 10 to 15 quintals,also16 farmers were produces jowar from 15 to 20 quintals And only 6 farmers produce more than 20 quintals.

Table No.4.4

Production of Jowar

SR.No	Production of Jowar (In Quintal)	No.of farmers	% of Farmers
1	No Production	39	19.5
2	0 to 5	66	33
3	5 to10	57	28.5
4	10 to15	16	8
5	15 to 20	16	8
6	Above 20	6	3
	Total	200	100

Source :- Fieldwork

Table No.4.5

Income from Jowar

SR.No	Income (In Rs.)	No.of farmers	% of Farmers
1	No Income	39	19.5
2	1,000 to 5,000	66	33
3	5, 000 to 10,000	57	28.5
4	10, 000 to 15,000	16	8
5	15,000to 20,000	18	9
6	Above 20,000	4	2
	Total	200	100

Source :- Fieldwork

Above table 4.5 shows 39 farmers did have not any income from jowar. Out of 200 farmers 66 farmers had (33%) income up to Rs. 5 thousand .28.5% farmers were reported that they earned income from jowar ranged from Rs.5 to 10 thousand. While Only 2% farmer had income above Rs. 20 thousand from jowar.

4.3.3 Production and Income from Wheat

Wheat is the staple food crop in the region. Warm and cold climate is required at the time of its sowing. Hot climate is needed for tis ripening. Among the cereal crops, wheat is being cultivated mainly in irrigated agriculture in the region. Table no.4.6 showed that out of total 200 farmers, 159 farmers cultivated wheat crop. Majority of farmers (62%) produced wheat ranged 5 to 15 quintals. Only few farmers produce wheat more than 25 quintals.

Table No.4.6

Production of Wheat

SR.No	Production of Wheat (In Quintal)	No.Of farmers	% of Farmers
1	No Production	41	20.5
2	1 to 5	14	7
3	5 to15	124	62
4	15 to 20	9	4.5
5	20 to25	9	4.5
6	Above 25	3	1.5
	Total	200	100

Source :- Fieldwork

Table No.4.7

Income from Wheat

SR.No	Income (in Rs.)	No.of farmers	% of Farmers
1	No Income	41	20.5
2	1,000 to 5,000	14	7
3	5, 000 to 10,000	92	46
4	10, 000 to 15,000	32	16
5	15,000to 20,000	9	4.5
6	20,000to 25,000	9	4.5
7	Above 25,000	3	1.5
	Total	200	100

Source :- Fieldwork

Out of 200 farmers 41 farmers had no income from wheat. 46% farmer reported that they earned income ranged Rs. 5 to 10 thousand from wheat crop. Out of 200 farmers 32 farmers reported they received income ranged Rs.10 to15 thousand. Only 1.5% of farmers earned income from wheat above Rs. 25,000.

4.3.4 Production and Income from Turmeric

Turmeric is an important Cash crop produces in the region under the category of condiments and spices. Out of total sample farmers, only 65 farmers cultivated turmeric. Out of 200 sample farmers 26 farmers (13%) produces turmeric ranged 10 to 20 quintals, 13 farmer produced turmeric above 50 quintals.

Table No.4.8

Production of Turmeric

SR.No	Production of Turmeric (In Quintal)	No.of farmers	% of Farmers
1	No Production	135	67.5
2	1 to 10	2	1
3	10 to20	26	13
4	20 to 30	19	9.5
5	30 to 40	0	0
6	40 to 50	5	2.5
7	Above 50	13	6.5
	Total	200	100

Source :- Fieldwork

Table No.4.9

Income from Turmeric

SR.No	Income (in Rs)	No.of farmers	% of Farmers
1	No Income	135	67.5
2	1,000 to 25,000	2	1
3	25, 000 to 50,000	30	15
4	50, 000 to 75,000	15	7.5
5	75,000to 1,00,000	5	2.5
6	1,00,000to 1,25,000	12	6
7	Above 1,25000	1	0.5
	Total	200	100

Source :- Fieldwork

Income from turmeric showed that farmers get adequate income from such crop. Out of 65 producers of turmeric 30 farmers reported that

they get income in the range of Rs. 25 to 50 thousand while only 1 farmer received income more than Rs. 1.25 lakh.

4.3.5 Production and Income from Groundnut

Groundnut among oil seeds is being produced in the region. Farmers cultivate groundnut crops. So far as production is concern, few farmers produced one to two quintal of output per acre. Thus production level differs due to different varieties of groundnut they grow and season like kharip and rabbi they grow.

Table No.4.10 shows production of groundnut of respondents. Out of total 200 farmers 77 farmers produces groundnut, Majority of farmers 123(61.5%) did not produces groundnut. While 25% farmers were produced groundnut from 1 to 5 quintals, only 7 farmers were produces groundnut above 20 quintals.

Table No.4.10

Production of Groundnut

SR.No	Production of Groundnut (In Quintal)	No.of farmers	% of Farmers
1	No Production	123	61.5
2	1 to 5	50	25
3	5 to10	19	9.5
4	10 to 15	1	0.5
5	15 to 20	0	0
6	Above 20	7	3.5
	Total	200	100

Source :- Fieldwork

Table No.4.11

Income from Groundnut

SR.No	Income (in Rs)	No.Of farmers	% of Farmers
1	No Income	123	61.5
2	1,000 to 5,000	13	6.5
3	5, 000 to 10,000	40	20
4	10, 000 to 15,000	16	8
5	15,000to 20,000	1	0.5
6	20,000 to 25,000	5	2.5
7	Above 25,000	2	1
	Total	200	100

Source :- Fieldwork

Above table shows that 123 of farmers did not have any income from groundnut as they do not produce the crop, 20 % of farmers earned between Rs. 5 to 10 thousand, 8% of farmers has their earning between Rs10. To 15 thousand, only 1% farmers earned income from groundnut above Rs. 25 thousand.

Variations in income from groundnut caused mainly due to variations in quantities they produced and variation in prices of groundnut and seasons they grow.

4.3.6 Production and Income from Soya-bean

Soyabean among oil seeds is being produced in the region. Out of the total sample farmers, 37 farmers had cultivated soyabean crops. Only 1.5% farmers produced soyabean ranged to 5 quintals and 0.5% farmers produced soyabean more than 25 quintals Majority of farmers 17 out of 37 farmer's produces soyabean ranged 5 to 10 quintals

Table No.4.12

Production of Soya-bean

SR.No	Production of Soya-bean (In Quintal)	No.of farmers	% of Farmers
1	No Production	163	81.5
2	1 to5	3	1.5
3	5 to 10	17	8.5
4	10 to 15	1	0.5
5	15 to 20	12	6
6	20 to 25	3	1.5
7	Above 25	1	0.5
	Total	200	100

Source :- Fieldwork

Table No.4.13

Income from Soya-bean

SR.No	Income (in Rs)	No.of farmers	% of Farmers
1	No Income	163	81.5
2	1,000 to 5,000	5	2.5
3	5, 000 to 10,000	19	9.5
4	10, 000 to 15,000	1	0.5
5	15,000to 20,000	8	4
6	20,000to 25,000	0	0
7	Above 25,000	4	2
	Total	200	100

Source :- Fieldwork

Table No 4.12 shows that 163 farmers did not have any income from soyabean as they do not produce the crop, 5 farmer reported that they received income upto Rs.5 thousand. While 19 farmers earn income from soyabean in the range of Rs.5 to 10 thousand and remaining 13

farmers received income more than Rs. 10 thousand. Thus, income level depends upon the level of soyabean production.

4.4 Changes after Availability of Canal Water

After the canal water was made available in the command area it is generally expected that changes in some assets like land, house, cattle shed, agricultural equipments and implements, livestock etc. take place by way of purchases and sales. Table No.4.14 presents the details of such changes, which have taken place after availability of canal water.

Table No.4.14

Changes after Availability of Canal Water

Sr.No	Particulars	Before Dam		After Dam	
		No. of Farmers	Percentage	No. of Farmers	Percentage
1	Residence (Pakka)	156	78	198	99
2	Cattle Yard	90	45	165	82.5
3	Shares	51	25.5	179	89.5
4	Deposit (in Rs)	15	7.5	100	50
5	LIC	24	12	145	72.5
6	Income Other than Agriculture	97	48.5	123	61.5
7	Livestock etc.	143	71.5	166	83

Source :- Fieldwork

It is seen from the table that some marginal improvement has taken place in the case of land, residence and cattle yard and income from No-agricultural activities. Significant changes have taken place in the case of possessing shares, deposits, insurance and income other than agriculture. Sizable changes have also taken place in farm implements and livestock. Thus table No.4.14 shows that after the availability of canal water now slowly the farmers are taking up the activities of improvements on their farms and sizeable changes

are taking place in the area as compared to the situation prevailing before the canal water was made available.

4.5 Expenditure Pattern of Sample farmers

The expenditure pattern highlights the living standards of the farmer. Table No.4.15 indicates the level of expenses made for various items during the period under the review at current prices.

Table No.4.15

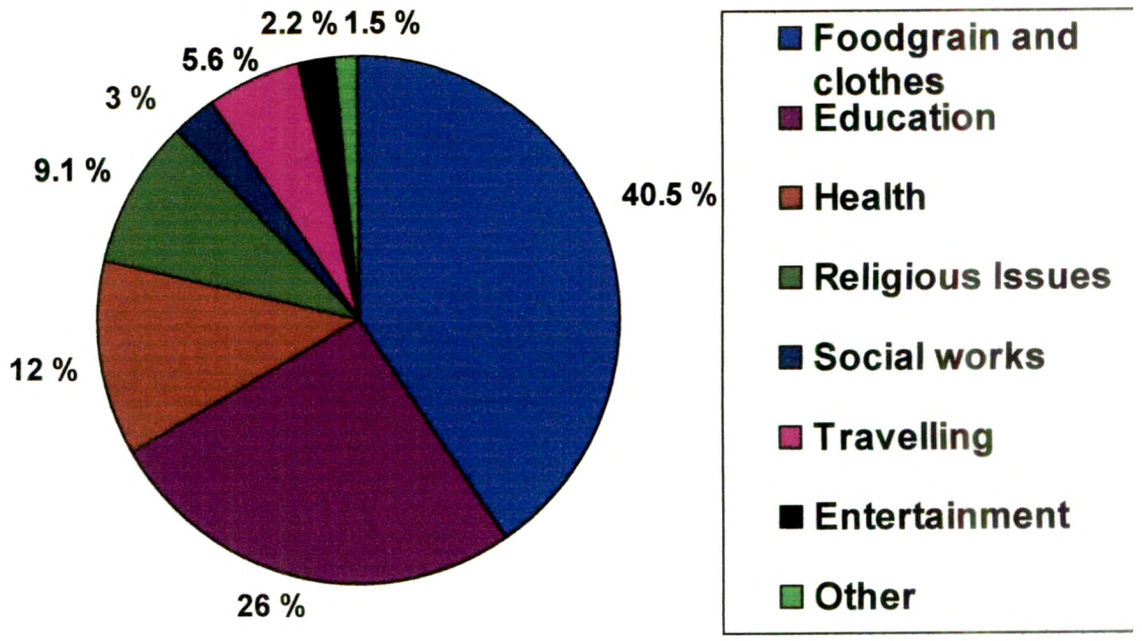
Expenditure Pattern of Sample farmers

Sr.No	Particulars	Average Amount spent at Current Prices (in Rs.)	Percentage
1	Foodgrain and Clothes	26480	40.5
2	Education	17043	26
3	Health	7881	12
4	Religious Issues, Festivals, Marriages etc.	5935.5	9.1
5	Social Work	1954.5	3
6	Traveling	3681	5.6
7	Entertainment	1446.6	2.2
8	Other	1008.505	1.5
	Total	65430.105	100

Source :- Fieldwork

Table No.4.15 gives details of annual expenditure on items such as foodgrain and clothes education, health, entertainment, etc. It is seen from the table 4.15 that on an average a family spends Rs. 65430.105 per year on items enlisted in the table. Major expenditure on of sample families were foodgrain more than 2/4 of total expenditure, expenditure on health were more than 1/4, 9.1% expenditure on religious issues, festivals, marriages etc.

Graph No.4.1 shows Expenditure Pattern of Sample farmers



4.6 Availability Loan, Source and Purpose of Loan

4.6.1Availability of loan

The available evidence indicates a strong positive relationship between agricultural growth and availability of credit. Credit in the agricultural sector, broadly speaking, takes two forms, viz., short-term crop loans to meet the outlay on inputs, and medium or long-term investment loans to facilitate the acquisition of fixed farm assets. Conceptually, the crop loan is expected to bridge the gap in the short-term resources of the borrowers.

Table No.4.16
Availability of loan

Sr. No.	Particular	No.of farmers	Percentage
1	Timely and Adequately	152	76
2	Not in time and Inadequately	48	24
	Total	200	100

Source :- Fieldwork

Table No. 4.16 shows that availability of loan to sample farmers in the region Out of total 200 farmers 152 farmers reported that they got loan timely and adequately, while 48 farmers were reported that they do not get timely and adequately loan. This table shows that majority of farmers got loan on time and adequate.

4.6.2 Sources of Loan

Timely adequate and cheap loan plays a significant role in agricultural development. The role of institutional credit is important in supplying subsidized credit to agriculture sector. Commercial Bank, under priority sector lending, participate in shouldering the burden of agricultural credit, Co-operative credit is much favored by the agricultural class,, Agricultural growth, particularly irrigation & technology directly depends upon the availability of credit.

The share of co-operative societies (PACS) in loan borrowing by samples farmers was major in total loan borrowing, borrowing of loan from DCCB was near about 6.5 %, 10% farmers had borrowed loan from Nationalise bank, and 7.5 % farmers had borrowed from other resource like money lenders, While 2.5% farmers borrowed from other source like relatives etc.

Table No.4.17

Sources of Loan

Sr.No	Particulars	No.of Farmers	Percentage
1	No Loan	36	18
2	PACS	97	48.5
3	DCCB	13	6.5
4	PACS + DCCB	8	4
5	Nationalize Bank	20	10
6	PACS + Nationalize Bank	6	3
7	Money lender	15	7.5
8	Other	5	2.5
	Total	200	100

Source :- Fieldwork

4.6.3 Purposes of loan

The true nature of the problem of agricultural finance can be understood only by considering the credit requirements of the sector along with the various sources from which these requirements are met

A farmer needs loans for diverse purposes which include both production and consumption.

Table No.4.18

Purposes of loan

Sr.No	Purposes of loan	Beneficiaries	Percentage
1	Not taken the loan	36	18
2	Land development	7	3.5
3	Fertilizers and Seed Purchasing	130	65
4	Fertilizers and Seed Purchasing and Irrigation Facility	21	10.5
5	Other purposes	6	3
	Total	200	100

Table No.4.18 shows that maximum loans was taken to purchase fertilizers and seeds (65 %), 10.5% of farmers took the loan for the purpose of purchasing fertilizers and seeds and for improving irrigation facility, only 3.5% of farmers took the loan for land development. While 18% farmers did not taken loan from any institution and other sources.

4.6.4Amount of loan

Table No.4.19 indicates amount of loan taken by respondents. Majority of farmers taken loan up to Rs.25 thousand, followed by 22% farmers were taken loan ranged from Rs. 25 to 50 thousand, only 11% farmers were taken loan above Rs. 1 Lack.

Table No.4.19

Amount of loan

Sr.No	Amount of loan	No.of Farmers	Percentage
1	Not taken the loan	36	18
2	Up to 25,000	74	37
3	25,000 to 50,000	44	22
4	50,000 to 75,000	7	3.5
5	75,000 to 1,00,000	16	8
6	Above 1,00,000	23	11.5
	Total	200	100

Source :- Fieldwork

4.7 Source of Irrigation

The sources of irrigation are greatly affected by the geological, physical and climatological conditions. The important sources available in the region are wells, canals and lift, and local with dominancy of individual in particular parts of the region.

4.7.1 Private Source of Irrigation

Table No.4.20

Private Source of Irrigation

Sr.No	Particulars	No.of Farmers	Percentage
1	No any Private source available	76	38
2	Well	102	51
3	Lift	18	9
4	Tube well	4	2
	Total	200	100

Source :- Fieldwork

The different modes of irrigation were characterized by the change in their ranking order. Consequently the wells ranked first, lift second and tube well sources third during 2007.

Table No.4.20 gives the distribution of land as per the sources of irrigation i.e. well, lift and tube well. Out of total 200 farmer 38% has no any private source of irrigation they were depend upon canal water and monsoon. 51% farmers have wells for irrigation they were self-sufficient in getting water for crops.

4.7. 2 Perennial Water Supply for Agriculture

Canal is an important source of irrigation in the region in which water is utilized by gravity flow. It requires almost plane topography having lesser degree of slopes. As such only valley bottoms are suitable for canal irrigation in the region.

Table No.4.21

Perennial Water Supply for Agriculture

Sr.No	Water Supply	Beneficiaries	Percentage
1	In adequate Quantities	152	76
2	Not in Adequate Quantities	48	24
	Total	200	100

Source :- Fieldwork

Table No.4.21 shows condition of perennial water supply for agriculture in study area. Out of total 76 % farmers were reported that they got adequate water by canal system but 24% farmers were reported that they do not get adequate water by perennial water supply system.

4.7.3 Adequacy of canal water to Different Crops

Table No.4.22 shows that less number of farmers has responded to this question. But, it is clear that farmers received canal water adequately for sugarcane, wheat, rabi & kharip jowar and rice, only 3% farmers received canal water adequately to all crops.

Total No.4.22

Availability of canal water to Different Crops

Sr.No	Crop	No. of Farmers received Water adequately	Percentage (N = 200)
1	Sugarcane	44	22
2	Wheat	34	17
3	Rabbi Jowar	18	9
4	Kharip Jowar	14	7
5	Rice	14	7
6	Beans	7	3.5
7	Gram	5	2.5
8	Summer Groundnut	4	2
9	All Crops	6	3

4.8 Nature of water supplying by farmers to the crops

Table No. 4.23 shows that the nature of water supplying by farmers to the crops. Out of total 51% farmers responded that they irrigated their crop considering the need of crop, 21.5 % farmers irrigated their crop by the stage of crop, 17.5 % farmers were irrigate their crop on availability of water in canal, 7.5% farmers were count days of last irrigated any they decided to irrigate the crop, while only 2.5% farmers were using modern technique of water supplying to crop by measuring moisture of soil.

Table No.4.23
Nature of water supplying by farmers to the crops

Sr. No.	Particular	No.of farmers	Percentage
1	By Need of Crop	102	51
2	By the stage of crop	43	21.5
3	By the Availability of water	35	17.5
4	By counting days	15	7.5
5	By measuring Moisture in soil	5	2.5
	Total	200	100

Source :- Fieldwork

4.8.1Methods of Irrigation used by the sample farmers

The irrigation water available from different sources is applied to the land by various methods, which vary according to slope of the land, the type of the soil and the crop to be raised and modern technology and investment in irrigation systems.

The analysis of the information reveals that mostly surface methods of irrigations are in practice in the region. It includes flooding, border, furrow and corrugation.

Table No. 4.24 indicates that methods of irrigation using by the sample farmers in study region. Out of total 200 farmers 146 farmers were using traditional method of flooding to supply water for crops its percentage was 73%, only 7.5% using modern method of irrigation like drip irrigation sytem, 15 % farmers using sprinkler method and only 1% farmers were using raingun method of irrigation.

Table No.4.24
Methods of Irrigation using by the sample farmers

Sr. No.	Particular	No.of farmers	Percentage
1	Flooding	146	73
2	Drip Irrigation	15	7.5
3	Micro sprinkler	30	15
4	Sprinkler	7	3.5
5	Raingun	2	1
	Total	200	100

Source :- Fieldwork

4.9 Reasons for Inadequate supply of Canal Water

Table No 4.25 evidenced that for a majority of farmers out of 200 responded 39 % told that they did not received canal water on time, while, farmers 23 % told that the irrigation water management (IWM) is not proper, 23.5% farmers reported that inadequacy of canal water due to poor condition of field channels. While 25% farmer responded that the supply of water was insufficient.

Table No.4.25

Reasons For Inadequate Supply of Canal Water

Sr.No	Reason	No.of Farmers Reported (N=200)	Percentage
1	IWM is not proper	25	13
2	Poor condition of Field Channels	47	23.5
3	Insufficient water supply	50	25
4	Canal water not available on time	78	39
	Total	200	100

Source :- Fieldwork

4.10 Solutions to Solve Difficulties in Water Supply

Table No. 4.26 indicates that suggestions of respondents to solve the difficulties in water supply. Out of total farmers 50 % farmers suggested that canal water be made available on time, 31.5% farmers were suggested to improve field channel conditions, 12% farmers were suggested that IWM be managed properly and 6.5% farmers suggested that sufficient water supply should be provided to solve difficulties in water supply

Table No.4.26

Solutions to Solve Difficulties in Water Supply

Sr.No	Particulars	No.of Farmers Reported (N = 200)	Percentage
1	Do IWM properly	24	12
2	Improve Field Channel conditions	63	31.5
3	Provide sufficient water supply	13	6.5
4	Make canal water available on time	100	50
	Total	200	100

Source :- Fieldwork

4.11 Major Problem of Dhom Irrigation Project

1. Saline and Alkaline Soils

Saline soils may be defined as those which contain excess of salts and pH 8.5, whereas soils which contain more exchangeable sodium and pH of 8 to 10 are called alkaline soils. Such type of land problem was observed in the command area. Under the irrigated area of right bank canal where sugarcane was produced large extent near about 10 hectares of land affected at village Udatare.

2. Waterlogged Areas

Surface waterlogged land is that land where the water is at or near the surface and water stands for most of the year. However, land with surface water like lakes, ponds and tanks do not fall under this category. Unskilled irrigation system can cause extensive damage to land. It can saturate the land by too much watering without adequate drainage. Surface flooding also leads to water logging thereby turning fertile lands into wet desert.

It is observed during the fieldwork that about 10 hectares of land is affected by this problem in the study region. Here the intensity of irrigation is above 25 percent and proportion of sugarcane to total irrigated area is significantly high. Cultivation of sugarcane without following crop rotation, heavy does of fertilizers, excessive uses of irrigation water and inadequate drainage have led to this problem.

3. Area Affected by White Grub Larvae

The sudden increase in breeding of some pests like white grub larvae caused considerable damage to growing sugarcane crop in certain pockets. In year of 2006 many crops like wheat, vegetables, and fruit trees heavily affected by these pests.

4. Soil Erosion and silt deposition in catchments area

One of the first problems with dams is the erosion of land. Dams hold back the sediment load normally found in a river flow, depriving the downstream of this. In order to make up for the sediments, the downstream water erodes its channels and banks. This lowering of the riverbed threatens vegetation and river wildlife. A major example of soil erosion problems is the one of the reasons dams are built is to prevent flooding.

The soil erosion and the silt deposition in the area has clearly indicate that in the reservoir area. There is a deposition of silt and the rate of deposition is continuously increasing because of heavy deforestation in the area. Small channels are bringing silt and debris which are deposited in the reservoir it leads to reduction in storage capacity of dam.

5. Spread of Disease

Dam reservoirs in tropical areas, due to their slow-movement, are literally breeding grounds for mosquitoes, snails, and flies, the vectors that carry malaria and river blindness.

It was observed during the field work near the villages of canal proportion of mosquitoes were high than comparatively dry region.

6. Lack of Co-ordination

Still another problem is related to the lack of co-ordination between farmers and D.I.P. department. Lack of mutual adjustment leads to delay in the process of supply and demand for water in the volume and time. Thus, unplanned system in both departments results in chaos which further aggravates the problem.

7. Migration of peoples

The construction of several large dams has involved their eviction of thousands of families and their resettlement at some other sites. People are uprooted from their original areas, their social habitat and their occupational characteristics. Due to the construction of D.I.P. 11,443 peoples was migrated and 12 villages was affected

In the dam affected area the migration was high. There is no change in the agricultural pattern and their sufferings have increased more as compared to the pre-dam period. They have been cut off socially, economically from the various villages. At the same time reservoir has acted as a barrier in the communication between the people of affected area and benefited area. As a matter of fact, people in command area are gaining more economic advantages at the cost of people who are affected by dam construction.

8. Evaporation loss

There is a considerable evaporation loss. The loss from a unit area of water surface varies from place to place and month to month as it is governed by temperature, radiation, humidity and wind velocity. In Wai taluka evaportion in the hot months March to May can be three to five times more that in the winter months of December and January, the annual evaporation can be 400cm to less than 175 cm.

9. Irregular supply

Another important problem of this project is the irregularity in the supply of water. Whatever irrigation water is being made available by these projects this is also discontinued often on operational seasons leading to considerable damage in productive potential.

Non-introduction of warabandi means the water is supplied as per the week or certain gap of weeks. Water week is not supplied on certain in a month or rotational water system.

10. Inefficient management

There is inefficient management of main canal system. There is tail end problem reflects poor management skill and corrupt behavior of those irrigation department staff who are responsible for operation and maintenance of canal irrigation.

11. Lack of maintains of canals

It was observed during the field work many places of main canal has cracks and leakages due to lack of maintains and grass, bushes grown on both sides of the canal. The canal may be cut down periodically the cattle to graze there and damage the plaster of the sides of the canal, There is grass grown even at the bottom of the canal when the canals are dry, the cattle run down the sides and damage the canal walls.

12. Wastage of water

Besides most of the farmers make use of traditional methods of irrigation, such as flood, border method in which water is wasted. Only few farmer were using modern methods of irrigation like Drip irrigation, Micro sprinkler, raingun etc.