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# **Equity issues and their socio-economic impact in a tribal dominated irrigation project of India**

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# **Equity issues and their socio-economic impact in a tribal dominated irrigation project of India**

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## **ABSTRACT**

**Key words:** Social unrest, warabandi agricultural-migration, gainful employment.

Irrigation equity leads to overall socio economic development in an irrigation project. Uneven distribution of water among farmers caused social unsets as well as agriculture migration. The situation becomes more acute when no scientific water distribution policy adopted by the irrigation officials viz.warabandi (Roster system of water distribution as per the owned landholding). The same case was studied in tribal dominated Jakhm irrigation project where more than 82.12 percent farmers were tribals .At tail end of RMC,parel miner was selected purposely where must of the farmers were suffered from scarcity of water. At the parel miner socio economic status further studied as head, middle and tailend farmers. The farmers located at head of the miner were getting more water comparatively to other but they were misutilised the water and not use water rationally. Whereas middle farmers were getting water mordantly and tail enders suffered high scarcity. The data revealed that the socio economic conditions in terms of cropping pattern, cropping intensity, farm income, farm and family assets were better in case of middle farmers followed by headrech and tailand farmers. . The tail end farmers even left the agriculture practices in such of gainful employment.

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## **INTRODUCTION**

Irrigation being a technological carrier, it improve the socio-economic condition of the farmers. In India, this factor becomes more important because of its scarcity nature. The government of India has constructed several irrigation dams to improve agricultural productivity as well as socio-economic conditions of the farmers, but the efficient utilization of this scarce resource is in still to be probe. The development of irrigation potential has increased agricultural productivity to many folds but other part of the story is, it has created several socio-economic and technical problems. The major technical problem is irrigation equity.

## **IRRIGATION EQUITY**

Irrigation equity means, irrigation water must be distributed equally towards head, middle and tailenders of the canal or minors as per the farmers landholdings. This is a situation where all farmers gets their due share of water but in practice, this has not well practiced in irrigation projects. The head farmers received more water and tailenders generally suffered from scarcity of water. The head farmers waste the water whereas, tailenders always fight for their water rights. This situation created a strong socio-economic base for head farmers whereas tailenders condition are very poor.

## **METHODOLOGY**

The present study pertains to Jakham irrigation project where more than 82.12 percent farmers belongs to tribal community. For a detailed study of irrigation equity, Kasharpura minor was selected randomly because of host socio-economic problems. Further, the Kasharpura minor has divided into three segments viz. head, middle and

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tailend. A sample of 50 farmers from head, 50 from middle and 50 from tailends were selected randomly.

## **THE RESULTS**

Irrigation equity played a crucial role to change socio-economic conditions of the tribals. The results have summarised on the following points.

1. change in cropping pattern
2. change in cropping intensity
3. change in farm and family assets
4. change in total household income

### **1. Change in cropping pattern & cropping intensity**

The table-1 revealed the changes in cropping pattern and cropping intensity towards different segments of Kasharpura minor.

**Table-1: Changes in cropping pattern and cropping intensity (As percent of gross cropped area)**

(in percent)

S.No.	Particulars	Head	Middle	Tailend
<b>(A)</b>	<b>Cereals</b>			
1	Paddy	3.0	1.28	-
2	Jawar	0.76	4.39	12.42
3	Maize	39.10	50.29	55.19
4	Wheat	13.46	12.14	3.12
5	Barley	0.86	2.29	3.42
	Sub total - A	57.18	70.30	74.15
<b>(B)</b>	<b>Pulses</b>			
1	Kharif pulses	5.29	3.29	1.19
2	Gram	13.83	12.86	6.12
	Sub total B	19.12	16.15	7.31
<b>(C)</b>	<b>Oil seeds</b>			
1	Ground nut	2.19	1.28	1.10
2	Sesamum	5.75	3.29	2.29
3	Paper seed & mustard	13.34	3.12	1.25
	Sub total C	2.42	7.9	4.48
<b>(D)</b>	<b>other crops</b>	<b>2.42</b>	<b>5.77</b>	<b>13.86</b>
	Gross cropped area	100	100	100
	cropping intensity	161.51	137.20	103.37

The Table-2 revealed the cropping pattern in different segments of Kasharpura minor. The data revealed that cereals occupied 57.18 percent area in head farmers, 70.30 percent for middle and 74.15 percent for tailenders. It increased towards the length of the segment. Maize being a staple food in the area, it alone occupied 39.10 percent area in the

cropping patterns, followed by wheat i.e. 13.46 percent. The paddy as a new crop has introduced in the area and occupied 3.0 percent area. In oil seed crop, rape seed and mustard occupied 13.34 percent area.

The tailenders are more depend upon non cash crops and those crops which required comparatively less water. Paddy is not taken by the tailenders. Maize and Jawar is a important crop for them. The share of other crops also was more in case of tailenders i.e. 13.86 percent of total gross crop area.

The cropping intensity was also reported highest on head farmers i.e. 161.51 percent followed by middle and tailenders farmers i.e. 131.20 and 103.37 percent.

The data revealed that the tailenders are more sufferers than others. They are more depend upon non cash crops whereas, head and middle farmers are taking cash crops like rice, wheat, rape seed and mustard.

The tailenders are more depend upon cereals specially on maize and jowar crops.

## 2. Share of Farm and family assets.

**Table -2 share of farm & family assets**

(per hectare)

S.No.	Assets	Head	Middle	Tail	Overall
1	Farm assets (in Rs.)	43426	39674	36388	39829
2	Family assets (in Rs.)	28498	23922	13462	21960
3	Share of farm assets (in percentage)	65.42	64.44	60.82	65.82
4	Share of family assets (in percentage)	39.58	37.59	28.80	36.92

The table-2 revealed the share of farm and family assets (per hectare) in total assets on the price of crop year 1997-98. The head farmers possessed 65.42 farm assets and 39.58 percent family assets. For middle farmers, the farm assets were accounted 64.44 percent, whereas the family assets accounted 37.59 percent. In the tailend farmers, it was accounted 60.82 percent for farm assets and 28.80 percent for family assets.

The data showed that farm and family assets were more possessed by head farmers followed by middle and tailend farmers.

The share of farm assets and family assets in percent distribution to total assets were also shown the same trend. It has decreased towards head to tailend farmers. The tailend farmers again sufferer in terms of possessive of farm and family assets.

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### **3. Changed in Total House hold Income**

Table - 3 revealed the total house hold income for head, middle and taitned farmers



Table 3 changes in total household income

(in Rs.)

S.No.	Particulars	Head	Middle	Tail	Average
1	Crop farming	15226	14226	6298	11916
2	Dairy farming	2942	3422	4212	3525
3	Hiring out machine	220	120	426	255
4	Other own farm income	114	2262	2426	4174
5	Wages	1022	1404	1609	1345
6	Salary	508	1204	1806	1172
7	Other sources (trade, business)	806	1506	1808	1373
8	Total income	21828	24144	18585	21519

The above table revealed that the crop farming contributed highest i.e. Rs.15226, Rs.1422, Rs.6258 for head, middle and tailend farmers respectively. The crop farming income contributed less in tailend farmers but income from dairy contributed more i.e. Rs. 4212 in comparison to head and middle farmers. The data infers that the tailenders are more depend upon income from other crop production It was noticed during the study that the total house hold farmers reported highest for middle farmers i.e. Rs.24144 in comparison to head and tailend farmers. This was due to the fact that the head farmers misutilized water and tailend farmers do not received due share of water. Hence middle farmers are more conscious about utilization of water. Although their income is comparative less with head farmers.

## **CONCLUSION**

Irrigation equity leads to changes in socio-economic conditions of the farmers. The tail farmers on Kasharpura minor are worst sufferers in terms of possession of farm and family assets, and total household income. They are forced to generate their income from other than crop farming. Generally due to uneven distribution of canal water, tailenders are not getting their due share of water. Hence, it seriously affects their socio-economic conditions.

The middle farmers are more conscious about utilization of canal water whereas, head farmers were misusing the water. The study revealed that head farmers were receiving more water in comparison to middle and tailend farmers.

## **POLICY IMPLICATION**

The policy implication is that the government must seriously review the present water distribution policy. The farmers must get their due water share as per their owned landholdings. The government must ensure that water must be equally distributed, otherwise a serious socio-economic, maintaining law and order problem will arise. It may result in group clashes between head and tailend farmers.

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