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Research Article

The socio- economic and institutional constraints relating to canal irrigation system in some parts of Orissa

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SUMMARY : The study was undertaken to find out the technological constraints of canal irrigation system by water users. An attempt was made to secure the responses about the judicious use of canal water and to identify the various technological constraints perceived by them about canal irrigation system in the area of investigation. Kendrapara Block and four villages in it, were selected purposively, whereas the respondents were selected by random sampling method. The major findings of the study were: ninety two per cent of the farmers opined that credit was not available as per the requirement, the farmers got least information about canal irrigation system from co-operative societies, eighty five per cent of the respondents opined that water was not being supplied to the fields at the time of operations, the social constraints were, problems of labour, problems of land fragmentation, tenancy, lack of co-operative water management, lack of farmers participation in water management.

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KEY WORDS :
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BACKGROUND AND OBJECTIVES

Even though Orissa gets plenty of rainfall which is quite suitable for rice cultivation, the erratic nature of rainfall creates a lot of instability in agricultural development. Over 75 per cent of rainfall is received during June to September. Highly variable rainfall at the beginning and end of monsoon delays sowing of crops or retards plant growth in crucial periods, affecting crop yields. Moisture stress at critical stages, water logging in low lands and excessive inundation at the tillering stage also adversely affect farming. Secondly there is not only a lot of inter district variations in rainfall ranging from 1300 mm in Ganjam district to between 1650 mm in Sambalpur district. Though average rainfall for Orissa as a whole during the last 50 years is around 1480mm. We cannot therefore plan our agricultural production on the basis of rainfall.

Flood, drought or cyclones occurs almost every alternate year causing considerable loss of crop production.

Though irrigated agriculture has to play a major part in the agricultural development of Orissa, we must bear in mind that irrigated agriculture has a number of constraints. Unless these constraints are removed, irrigation instead of being a blessing be a curse.

RESOURCES AND METHODS

The study is intended to know the technological constraints of canal irrigation system of farmers of command area of Mahanadi Delta irrigation project. It was thought prudent to select Kendrapara district in Orissa purposively as this is progressive district of the state and it is situated on the bank of canal (Kendrapara canal) which is lower end of the main canal of Cuttack. A total four villages namely, Ajadhya Nagar, Talabaranga, Saranga and Dey Pura were selected for the study. These four villages are irrigated villages and a total 100 respondents from 25 each village were selected as respondents.

The help of statistical methods such as frequency distribution and percentage of measure of different items were taken. To study the constraints yes and no taken as code one and zero. Agree and disagree taken as one and zero

complicated and simple zero as one.

OBSERVATIONS AND ANALYSIS

The study revealed different socio-economic and institutional constraints relating to canal irrigation system. The constraints were identified by asking a number of selected statements to which a particular score was assigned. Out of these, the major constraints were classified into four groups:

- Constraints relating to credit.
- Constraints pertaining to information transfer.
- Constraints pertaining to supply and services.
- Social and cultural constraints.

It is evident from Table 1 that the most important constraints expressed by 94 per cent of respondents was that credit was not available as per the requirement. It was given the first rank. The second rank was assigned to "credit is not available well before time (92%)., the third rank " credit is not available consistently"(90%). The item " high rate of interest" was a serious problems with the farmers.

There are different agencies involved in transfer of information regarding canal irrigation to the farmers. There were five information sources included in institutional agencies. Eighty per cent of the respondents were not getting information from the co-operative society which was ranked first. Twenty per cent of respondents were getting information from the co-operative societies. Village Agricultural Workers play a significant role for transfer of information to the farmers regarding the canal irrigation which was ranked fifth (50%). The respondents got maximum information from the V.A.W. because V.A.Ws were well in contact to farmers. The other information not played vital role for transfer of information to the farmers about canal irrigation (Table 2).

Mass-media is considered as an effective sources for disseminating information about canal irrigation. Among mass-media, Radio was considered as an effective sources for getting information about canal irrigation. Eighty per cent of the respondents faced constraints in farm magazine for collection of information because, farm magazine were not timely available to the farmers. Respondents were least exposed towards, demonstration, Krishi Mela and T.V.

Table 1 : Constraints relating to credit

Sr. No.	Statements	Frequency (n=100)	Percentage	Rank
1.	Credit is not available as per the requirement.	94	94	I
2.	Credit is not available well before time.	92	92	II
3.	Credit is not available consistently.	90	90	III
4.	Complicated procedure of getting credit.	88	88	IV
5.	Malpractices by the employees of credit organization.	84	84	V
6.	Discrimination in giving credit.	80	80	VI
7.	Strict and time bound loan recovery.	70	70	VII
8.	Long distance of credit organization.	69	69	VIII
9.	High rate of interest	50	50	IX

Table 2 : Constraints pertaining to information transfer

Sr. No.	Institutional agency	No. of respondents not getting information from the sources		
		Frequency (n= 100)	Percentage	Rank
Sources of information				
1.	Village Agricultural Worker (V.A.W.)	50	50	V
2.	Agricultural Extension Officer(A.E.O.)	58	58	IV
3.	Subject Matter Specialist (S.M.S.)	70	70	II
4.	Co-operative Societies	80	80	I
5.	Commercial and Input agencies	60	60	III
Mass media				
6.	Poster and charts	59	59	VI
7.	Radio	42	42	VII
8.	Television	70	70	IV
9.	News paper	64	64	V
10.	Farm magazine	80	80	I
11.	Demonstration	76	76	II
12.	Krishi Mela	74	74	III

It is most important that all inputs should be available to the farmers in a package and in time so that agricultural operations are done smoothly without being hampered in anyway. For this, a multi-pronged attack or a well coordinated and integrated approach is necessary such that under a nodal agency the multifarious facilities like, seeds, fertilizers, pesticides, knowledge regarding appropriate packages of practices, hiring of machineries and implements will be made available to the farmers adequately as and when they need it.

Table 3 depicts a miserable state of supply of inputs. In most of the cases, average score was around 60 and above. Eighty five per cent of the respondents did not get timely water supply to their field, which was ranked first. The second rank was assigned to the canal irrigation impounds water (77%). The third rank was assigned to fertilizer, then implements and machinery, and plant protection chemicals.

The social problems confronted by the farmers can be dispensed with if there will be co-operative water management system and greater participation of the farmers in the water management system along with a set of regulation made by Government. Greater emphasis should be given to remove the above social constraints to ensure an assured income from irrigated farmers. This will help in stabilizing the problem of labour migration (Table 4).

The most important constraint was: lack of farmers participation in water management system. It was ranked first among constraints. Second rank went to lack of co-operative structure in water management. The problem of land fragmentation was ranked third.

Constraints :

The study revealed different socio-economic and institutional constraints relating to canal water use. The constraints were identified by asking a number of selected statements to which a particular score was assigned. Out of these, the major constraints were classified under four categories :

- Constraints relating to credit.
- Constraints pertaining to information transfer.
- Constraints pertaining to supply and services.
- Social and cultural constraints.

Constraints relating to credit:

The most important constraint was that credit is not available as per the requirement. Similarly credit is not available well before time. The procedure of getting credit is very complicated. The other important points were discrimination in giving credit and long distance of credit organization etc. The farmers opined that the high rate of interest was not a problem for them.

Constraints pertaining to information transfer:

The technical information about water management system was not available to them. The farmers are ignorant of modern technology to raise the productivity both in irrigated and non-irrigated land. Among the mass media, radio proves to be most widely adopted device which ranked first. The relative contact of V.E.W with the farmers was more than that of the co-operative agents. The relative exposure of the farmers to 'Krishi Mela' followed by ' farm magazine' 'demonstration' were in descending order. So these areas of deficiency should be strengthened to increase the farm information service in the irrigated areas.

Constraints pertaining to supply and services:

By analyzing the constraints relating to the supply of inputs and services, it was found that the irrigated agriculture requires inputs like quality seeds, fertilizers, pesticides, implements in adequate quantity. The constraints posed on these aspects are of immediate concern which need

Table 3 : Constraints pertaining to supply and services

Sr. No.	Statements	Frequency (n=100)	Percentage	Rank
1.	Timely supply of water	85	85	I
2.	Canal irrigation impounds water	77	77	II
3.	Seed availability	67	67	III
4.	Fertilizer	65	65	IV
5.	Implements and machinery	62	62	V
6.	Plant protection chemicals	60	60	VI

Table 4 : Social and cultural constraints

Sr. No.	Statements	Frequency (n=100)	Percentage	Rank
1.	Lack of farmers participation in water management system.	75	75	I
2.	Lack of co-operative structure in water management	71	71	II
3.	Problems of land fragmentation	63	63	III
4.	Tenancy is a problem	61	61	IV
5.	Problem of labour	55	55	V

consideration. So, not only input supply has to be increased, but also the delivery system to be improved and stream lined. So, as to meet the requirement of farmers in time in the irrigated areas.

Social and cultural constraints:

The social constraints are many. However, important among them are problem of labour, problem of land fragmentation, tenancy problem, lack of co-operative water management structures, lack of community nursery and lack of farmers' participation in canal irrigation system. These constraints in some way or the other hinder the successful water management in the canal command and crop production. So, attention should be paid to remove all the above constraints for betterment of farming in general and water management in particular.

The above constraints need to be removed to improve the productivity of irrigated agriculture. Firstly, there is a big gap between gross irrigated potential and the potential which is not utilized the gap is not less than 25 per cent. Particularly the gap is much more in major and medium projects than in minor projects. Since the cost of major and medium projects has increased from about Rs.1200 per hectare of land in the first plan to about Rs. 30,000 per hectare of land during the seventh plan, in the next phase of irrigational development greater stress should be given to bridge the gap rather than to create new major and medium irrigation projects.

Secondly, the canal irrigation by creating water logging has already destroyed quite a good deal of agricultural land threatens many more. This has to be arrested as early as possible, by improving drainage system.

Thirdly, the productivity of the capacity which has been created in major and medium irrigation project is not more than one-third of what can be achieved through improved arrangements for the distribution and application of water. The Govt. of Orissa has initiated some programmes of on-farm development works like field channels, field drains etc. but the progress is very slow. High priority should be given in the next plan to complete the work of on-farm development to increase the productivity of irrigated water.

Fourthly, the maintenance of canal is now in a deplorable stage. Lack of finance has stood in the way of modernization of canals. It will not be of place to suggest to increase the rates of irrigation tax at least to maintain the existing irrigation system, if not to raise revenue for developmental purpose.

Finally, the reservoir which has been built when a lot of expenditure and are used for hydel flood control and irrigation must be saved from the threat of premature siltation by effective afforestation and soil conservation measures in the catchment of areas of reservoirs. Dutta and Chang (1987) supplied some information on under utilization of canal irrigation and Nath (1987) on input-output relationship of irrigated and unirrigated forms. While Mishra (1988) and Shukla (1988) worked on socio-economic constraints in irrigated agriculture of Orissa and on socio-economic implication of minor irrigation project for marginal and small farmers in U.P., respectively.

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