The Evaluation of Scarcity Relief Work of Mangi Irrigation Medium Project

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Abstract

The village of Mangi Dam of Karmala Tahsil in Solapur District is one of the drought affected villages in the state (FFC, 1973). It shows all the characteristic features of the drought conditions. There are Very low agricultural output with high degree of uncertainty has affected the process of capital formation. The region is suffering from scarcity of water for both agriculture and domestic use. The micro level studies have put forth the need of external support for such villages. The study of Mangi Dam Project reveals that such support may be given to eight villages in the command area of the Mangi Dam about 3004 hectare of agricultural area. This point is quite significant for carrying out risk analysis and designing planning strategy for sustainable agriculture.

KEYWORDS: evaluation, scarcity, relief, agriculture, medium project, irrigation etc.

Introduction:

The Mangi medium irrigation project is located at Mangi village in Karmala *Taluka* of Solapur district. It is constructed on *Kanoli* river which drains into the *Sina* river and forms part of the *Bhima* sub-basin of *Krishna* basin. The construction work started on the site in 1897 as a scarcity relief work but was subsequently abandoned. It was again taken up and in the drought year of 1926 and later abandoned. Another drought year 1952 saw the construction being restarted, and this time the work was continued and construction of the tank was completed by 1955. The Left Bank and Right Bank canal systems were completed in 1966. The total irrigation capacity area (ICA) is 3,117 ha. The main cropping season is Rabi and accounts for about 2,500 ha of the total irrigation capacity area. The length of right bank canal (RBC) and left bank canal (LBC) is 29 km and 9 km and the ICA under them 2,307 ha and 809 ha ICA respectively. Lifting of about 20% is allowed from the dam storage – 6% under the regular quota and 14% under the drip scheme. The dam site, water storage, RBC, LBC and the command area are shown in the map.

The Figure show that A view of the Mangi RBC, LBC and emergency outlets. The Mangi dam was started as part of famine relief work as early as in 1897. The work was subsequently abandoned, taken up again in the drought year of 1926, again abandoned, taken up again in 1952 and this time completed in 1955.

Objectives:

The Major objectives of the study have been outlined as below:

- To study the physiographic set up at micro level and socio-economic environment at the village level.
- To study the scarcity relief work in various stages.
- To study the sustainable agricultural development based on optimal use of water for each micro region without compromising profitability of the sector.

Table No. 1:
Salient features of the Mangi Irrigation Project

Sr. No.	item	Detail
1	Catchment area	304.97 sq km
2	Average Annual Rainfall	500 mm
3	Type and Length of Dam Earthen	1475 m
4	Maximum Height of Dam	22.60 m
5	Storage	
6	Gross	33.77 mcum
7	Dead	1.07 mcum
8	Silted Contents	2.01 mcum
9	Live	30.69 mcum
10	Length of waste weir	240 m
11	Maximum discharge over waste weir	2,243.68 cumecs
12	Canal length and capacity	
13	LBC	10 km and 0.85 cumecs
14	RBC	27 km and 3.12 cumecs
15	Area under command	
16	GCA	4,646 ha
17	CCA	4,048 ha
18	ICA	3,117 ha

Proposals for the renovation of the distribution system as well as a proposal to raise the height of the dam have been prepared by the officials. In the proposal for the renovation of the distribution system it is mentioned that though the ICA is 3,117 ha, the area that can be actually irrigated is only 1,212 ha which comes to about 39% of the ICA which is very low irrigation intensity. The proposal for increase in the height is also pending because the data given in the height increase proposal shows that inflow into the tank has decreased because of the development in the catchment. About 13 percolation tanks and one MI tank have already come up in the catchment of the Mangi project. Many check dams and various other soil conservation measures have also been taken up in the upstream. Hence it is proposed that one TMC of water be supplied from the Kukadi project using Mangi as a feeding tank/pond. The proposals have not yet been sanctioned.

Water from the canal:

We begin to get a better idea of what is happening on the ground after taking into

consideration the land areas involved. On DO3, one of the first outlets on the RBC, in comparison with the planned irrigation calculated on the basis of the approved crop pattern, the area receiving water varied from 55. We begin to get a better idea of what is happening on the ground after taking into consideration the land areas involved. On DO3, one of the first outlets on the RBC, in comparison with the planned irrigation calculated on the basis of the approved crop pattern, the area receiving water varied from 55 to 110% in the two years it received rabi waterings, and the hot weather area comprised 4.9 to 5.9 times the planned irrigated area for hot weather. A little further down, on Dy2, the area was about 65% of planned seasonal irrigated area for the rabi and 95 to 300 % for the hot weather. DO20 did not receive any canal water in the kharif, while the proportion of area receiving canal water varied from about 25 to 50 % of the planned irrigation for rabi and from 100 to 200 % for the hot weather by kharif and summer irrigation, this implies that well irrigation adds to the variability rather than. On Dy7 further down, the proportion varied from 20 to 35% for rabi and about 105% for the single year in which it received hot weather attiring. On the last outlet, DO50, no canal water was received for the kharif in any of the years and in only one of the years did the farmers receive canal water during the hot weather.

Conclusion:

The main findings here are consistent with the findings in the Mangi Project as well, when we take into account the effect of wells in the command, the apparent degree of deprivation is modified substantially and that there is a disproportionate shift in the utilization in favour of hot weather utilization, which rises to a level many times that originally planned for the project. One can also identify a trend that associates distance towards the tail, with the strength of these effects: that is, the effects are stronger and more pronounced as we approach the head reach within any portion.

To Develop Irrigation Central Control enables the programming, monitoring and Operation of irrigation system from a central location. Central Control System should be designed to allow a user to control a single site or a set of sites from a single computer. Central Control Software allows the water manager to set up promising to automatically. A central control system can monitor and adapt system operation and irrigation run times in response to condition in the system or surrounding area.

An additional factor in deprivation in Mangi and corroborated by irrigation officials is the conflict between those who lift water directly from the backwaters and those in the command area who receive water through canals. Earlier, lifts from the backwater were allowed only sparingly, but now there is a profusion of lifts from the backwaters. There is very little control on how much water is lifted in this way. Often the permission is obtained on grounds that are only a pretext for getting permission. For example, the permission may be obtained for drinking water or for areas in which drip irrigation is installed which are supposed to enjoy special privileges in this respect. However, in practice the water is used for agriculture and there is often no drip irrigation in sight. There is now a continual tussle between those in the command and those lifting water from the backwaters of the dam. This has often played havoc with the planning of rotations.

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