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## **GRT** PROSPECT OF KRISHNA KOYNA LIFT IRRIGATION PROJECT, TAKARI SECTION IN SANGLI DISTRICT (MAHARASHTRA)

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**Abstract:**-Irrigation is the artificial supply of water to the plant growth to maintain moisture availability since deficiency. Indian agriculture is a gamble of monsoon within which Sangli District in Maharashtra State can not be excluded. The greater part of the district has to make fight to the famine circumstances year after year. Krishna Koyna lift irrigation project ambitious major public lift irrigation project launched by the Govt. of Maharashtra to minimize the impact of drought condition Takari lift irrigation scheme is one of the parts of it.

The construction of the project was started in year 1986, but it has taken Very big schedule to completion due to inadequate provision of the funds. The project has utilized huge amount of capital e.g. Rs.383.76 crores up to the April 2007; The revised total cost of the project is Rs.608.46 crores The aim of the paper is to assess the present situation of the scheme, its construction cost, proposed irrigated area actual irrigated area and its maintenance from geographical point of view

### **INTRODUCTION**

Irrigation is an artificial provision of water for agriculture in moisture deficiency region. The northern part of the District Sangli in Maharashtra comprised Kadepur, Khanapur, Tasgaon, Miraj and Palus taluka, where there is uncertainty and inadequacy of rain fall year after year. The area comprised receives rainfall ranging from 500 mm to 650 mm. The spatiotemporal variation is also considerable. To meet the need of irrigation, Krishna Koyna lift irrigation project launched by Krishna Valley Development Corporation. This is lift irrigation project. It was the only path to provide irrigation by major lift from river Krishna.

The Takari Lift irrigation scheme is a section of Krishna Koyna lift irrigation project. The Takari section has proposed to provide irrigation to 27630 Ha. of land in 67 villages in above five talukas in the district Sangli.

The aim of the paper is to assess the present situation of the scheme, proposed irrigated area. Actual irrigated area, water rates and its collection from Geographical point of view.

### **OBJECTIVES:**

The following are the objectives of the paper.

- 1) To analyse the plan outlay of the Takari Lift irrigation project.
- 2) To discuss the irrigation, actual utilization from proposed irrigated area.
- 3) To assess the water charges, collection of water revenue and energy consumption.
- 4) To analyse the problem and prospect of the scheme.

### **Data Base and Methodology:**

The paper has used the data obtained from the irrigation department, divisional office Islampur, Krishna Koyna Lift irrigation project, which is in secondary form. The field survey and observation has also done by visiting each and every village several times. The relevant data and information have been organized, classified, tabulated and mapped using suitable techniques and methods. The attempt has been made to render the interpretation and analysis of the fact as objectively and logically as possible.

**The Region:**

The work of irrigation project begins with the study of morphology. The region under study located in the north western zone of the district Sangli along with both sides of the river Yerala, a left bank tributary of river Krishna. Hill and Hillock zone of the machindragad – Kamal Bhairav ranges and Machindragad Panhala ranges in the region do not allow as easy as possible flow irrigation method. Foot hill zone of those ranges, intermediate amphitheaters region of the basin of Sonhira nala is suitable to irrigation and gently sloped from west to east up to the river Yerala. The region consist of plain is situated along with the Yerala and Nandini enclosed with east and west contoured from 580 mts to 640 mts of height is best and suitable for easy irrigation. The areas intersperse over the western slope of the water divider of Yerala and Agrani in taluka Tasgaon is plain sloped from east to west.

Although the area under Takari Lift irrigation scheme comprised 67 villages that the actual irrigation facilities provided to only 24 villages in the region under study.

**The Plan Outlay:**

The Takari Lift irrigation scheme starts at villege satpewadi near Takari village. Pump house first is constructed on left bank of the river Krishna. About 16 pump sets of 2000 H.P. each have been set up to lift water and provide to second stage , where the again 16 pump sets of 2000 H.P. each has installed to provide water to the already constructed canal at south of Sagreshwar Sanctuary in village devarashtre in Taluka Kadegaon revealed in figure 1.

The Stage 3rd is introduced and lifts water from Takari main canal at km. 6. It delivers water to chinchani ambak feder canal. The stage 3rd has 4 pumps of 1250 H.p.each. This stage provides water enclosed land and also to the Sonsal K.T. Wair The stage 4th starts from Sonsal K.T. Wair, Installed 3 pumps and provides water to sump well constructed on north western side of Sonsal village from which only Shirasgaon and Sonsal has benefited. The proposed area under various canal are as following –

1. Takari main canal – 23859 Ha.
2. Chinchani Ambak Feder canal – 815 Ha.
3. Sonsal Left bank canal – 2444 Ha.
4. Sonsal Sump well underground gravitational pipeline – 512 Ha.

The total proposed irrigated area under the scheme is 27630 Hectares. The total length of canal is 178 Kms and static head is 220.74 mts revealed in table 1

**Table 1: Stage wise Installation of Pumps, Static Head and Proposed Discharge of Water.**

Stages	Total No. of Pump	Static Head Mts.	Proposed Area in Ha.	Proposed Discharge Cumecs
1	14+2	58	No irrigation	24.12
2	14+2	58	23859	24.12
3	4	48.05	3259	5.20
4	3	56.69	512	o.513
<b>Total -</b>		<b>220.74</b>	<b>27630</b>	

Source: - Krishna Koyna Lift Irrigation Project, Divisional Office, Islampur, district Sangli.

**Present Situation: -**

As explained above the scheme proposed to provide irrigation benefits to 27630 Ha. of land, but at present, the construction work of canal, distributaries and field Channels have been completed up to km. 44 of the Takari main canal since 2001. The chinchani ambak feder canal and work of stage fourth has completed except miner work.

The irrigation has started from 2000-2001 and provides water to 24 villages under above three canals. In 24 benefiter villages, 10552 Ha of the land would have to be irrigated but out of which only 4791.34 has created potential and 2357 Ha of land has been actually irrigated in the year 2006-07 for rabbi and hot weather season.

**Proposed area and actual area irrigated:**

Irrigation potential of a project should then be measured not in term of what was designed but in term of what was actually achieved over a period of time. The percentage of proposed and actual irrigated area for year 2005-06 is considered for

analysis here. It represents that out of 24 villages 10 villages have received below 20 percent of irrigation land out of the proposed irrigated area viz. Kumbhargaoon, Chinchani, wangi, Ambak, Padali, Sonsal, Shirasgaon, Shivani, Hanmantvadiye, Bhalawani and Shirgaon etc.

The eight villages comprised in the category of 20 to 40 percent area and the category of 40 to 60 percent area has included in two villages viz. Asad and Kadepur. Above 80 percent of the area actual irrigated from proposed, comprised both villages viz. Devarashtre and Tupewadi.

The under utilization of the proposed irrigated potential has been most marked in respect of the major project such as, in Takari scheme, The average actual irrigated land out of proposed area in actual benefited villages is about only 22.34%.

This is very low as it is considered against the cost of construction. Lift irrigation requires huge amount of capital to transport the water due to which energy consumption is main aspect as it is compared to the flow irrigation project.

Water charges and collection of revenue:-

Irrigation water is supplied to the crops on the basis of the demand received through water application invited by the management staff from time to time. The government of Maharashtra has incurred huge amount of money on this scheme. For recover the energy charges, cost of operation and maintenance it is necessary to have collect the required revenue from the benefiter. The benefiter has also essential to give response to collect water revenue,

An electric charge is the major part of the water revenue in lift irrigation scheme. The table 2 exhibits represents revenue collection and defaulter amount. According to the irrigation department and evaluation of data, the total electric bill from 2001-02 to 2006-07 is Rs.965.62 lakhs. The actual paid amount is Rs.547.36 lakhs and defaulter amount is Rs. 418.56 lakhs up to June 2007 to the MSLB by the project administration.

**Table.2: Irrigation revenue, collection and defaulter amount- 2001-02 to 2006-07 (Amount in lakh Rs.)**

Year	Water Charges	Electric Charges	Collection %	Defaulter %
2001-02	-	-	-	-
2000-03	77.91	74.12	21.40	78.60
2003-04	489.88	456.90	0.004	99.99
2004-05	83.88	77.50	60.14	39.46
2005-06	160.41	150.37	45.30	54.70
2006-07	218.88	207.03	31.48	68.52
<b>Total</b>	<b>1030.96</b>	<b>965.92</b>	<b>20.25</b>	<b>79.75</b>

Source: 1) K K L I S Divisional Office Islampur, district Sangli.  
2)Compiled by Author.

From the year 2001-02 to 2006-07, the collection of revenue and defaulter amount has very big disparity. In all the years than 2004-05, the collection amount has not more than 50 percent. In year 2003-04 has very less collection because of the famine conditions. It is very insignificant amount. The total outstanding amount in six year is 79.75 percent and only 20.25 percent of amount is collected for meet the various cost of the scheme.

The outstanding amount is increasing year after year. The collection amount cannot meet simply the energy charges and o. & m. cost of the scheme. If this amount is increase in future the government cannot paid again and again the outstanding amount.

This differentiation is tending to alarm the undesirable future of the scheme. This gap is help to widened deficiency year after year. The table 3 revealed represents the village wise distribution of revenue collection and defaulter amount in percentage.

**Table 3: Village wise collection and defaulter amount of water revenue in percentages-2005-06**

Sr. No.	Villages	Water Charges in Lakh Rs.	Collection in Percentage	Defaulter amount in Percentage
1.	Devarashtre	42.00	45.04	54.96
2.	Kumbhargaon	02.25	64.88	35.12
3.	MohiteVadgaon	10.54	56.26	43.74
4.	Asad	01.99	73.36	26.64
5.	Chinchani	00.75	28.00	72.00
6.	Ambak	08.84	79.41	20.59
7.	Wangi	38.00	48.97	51.03
8.	Shirgaon	09.19	29.05	70.95
9.	Ramapur	08.80	50.45	49.22
10.	Balawadi	01.95	75.38	24.62
11.	Jadhavwadi	01.25	78.40	21.62
12.	Hingangaon	11.57	43.56	56.44
13.	Shivani	02.35	21.27	78.73
14.	Amarapur	00.08	00.00	100.00
15.	H.Vadiye	02.69	18.58	81.42
16.	Tupewadi	01.22	00.00	100.00
17.	Bhikawadi	00.52	07.69	92.31
	<b>Total</b>	<b>59.41</b>	<b>45.30</b>	<b>54.70</b>

In year 2005-2006 the average collection above 75 percent comprised three villages viz. Jadhavwadi, Balawadi and Ambak etc. In the category of 50 to 75 percent, four villages are comprised viz. Kumbhargaon, MohiteVadgaon, Ramapur and Asad etc. The villages included in between 25 to 50 % revenue collection categorized viz. Shirgaon, Chinchani, Wangi, Hingangaon and Devarashtre. Lastly the category below 25%, the remained villages viz. Kadepur, Shivani Hanmantvadiye, Tupevadi, Bhikawadi and Amrapur exhibited in Table.3

It is observed that maximum of the villages which are located in tail end portions of the existing irrigation system has low proportion of collection of the water revenue.

#### **PROBLEMAND PROSPECT:**

The scheme has provided irrigation facilities on the basis of the water demand from the farmer. The unlined canal and distributaries are arising problem of water logging in each and every kilometers of the canal on both the sides. The actual data pertaining to this problem is not available but on the basis of observation the author has approximated, there would have to be more than 400 Ha. of land has going to face of danger of salinity in the near future because of the problem of water logging.

The Takari lift irrigation project has proposed 45 percent of the irrigation efficiency. This proportion of efficiency is not correlates the costly water from lift scheme and irrigated area proposed. The scheme lifts water through four stages, due to which the costly water has need to be taken. This costly water would have to be conveying within the lined canal and distributaries system. But the unlined canal and distributaries not only increases the problem of salinity but decreases the area under irrigation and increases the electric bill unavoidable per unit of area in the region under study.

The scheme was sanctioned in 1984, but due to inadequate provision of funds, the scheme is not completed within expected time, so the cost of the scheme is increased 7 times of the original cost. The scheme has carried on and farmers are utilizing the irrigation water at present, because the rate of irrigation is on subsidiary base.

At present the water rate is Rs.2750 per Hectares per rotation. Even today the cultivators are taking traditional crops, such as cereals and pulses etc. The sugarcane is bumper crop at present in the region but future is not good because of the unstable and insignificant prices against the input cost and cost of water provided to it.

The fruit crops are beneficial to which the climate and physical phenomena is favourable, but unassured supply of water through the scheme, the farmers are not desired to invest big capital in fruit cash crop. Therefore the area under fruit crop is not increased. Only 1.88 percent of the area of the total cropped area is under fruit crop at present. This proportion is very



insignificant.

#### SUGGESTION AND CONCLUSION:

The above observation leads to the suggestions and conclusion;

1) The scheme has required to be increase area under actual irrigation by complete the work of lining with concrete of canal and Distributaries with made available fund in which the efficiency of the canal and distributaries will be increase. Along with it the electricity bill will decrease with per unit of area.

2) The water users associations have to be constituted and hand over the water management system below outlet to the WUA. The work of water revenue collection has to be handover within which the recovery of revenue work will softly. The water has to be released on the volumetric basis through which the wastage will decrease.

3) Cropping pattern should be changed in which the cash crop will include e.g. sugarcane, fruit, vegetables, flower etc. There are profitable from which the farmers get big profit.

4) Drip irrigation, diffuser and sprinkler irrigation system has to be utilized; those methods are saving more than 60 percent of water. The micro irrigation although costly, it has to be utilized and save the costly water from seepage and wastage unavoidable.

If the proper measures have been not taken, the Govt. definitely will unable to run the project in the future.

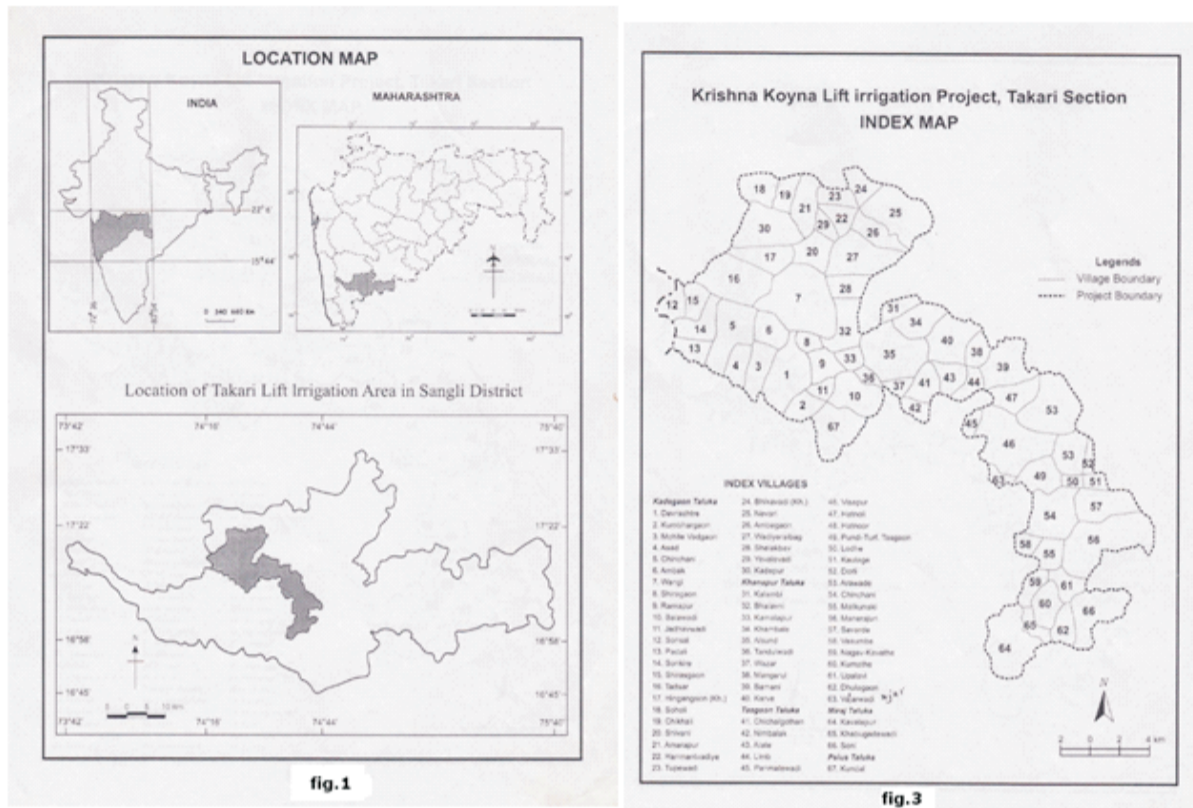
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Fig. 2

Prospect Of Krishna Koyna Lift Irrigation Project, Takari Section In Sangli District (Maharashtra)





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