



Agriculture Development Through Arphal Canal Irrigation Project In Kadegaon Teshil

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ABSTRACT

Agriculture is an important sector of Indian economy as it contributes about 13% to the total GDP and provides employment to over 58% of the population. Indian agriculture has registered impressive growth over last few decades. The food grain production has increased from 51 million tones in 1950-51 to 265 million tones during 2016-17 highest ever since independence. The present study is based on Arphal canal irrigation project. The study concludes that there are great differences in the agriculture system pre and post arphal canal irrigation projects. Signification shift has been observed in cropping pattern.

Key words Agriculture, Irrigation, Cropping Pattern, projects, Drought, Monsoon

Introduction

Irrigation is one of the basic infrastructures of agricultural activities. Indian agriculture gambles with the monsoon that causes high fluctuation in crop production. Inadequate rainfall of monsoon and frequent drought condition hampered development of agriculture. However efforts can be done to available water for irrigation applying artificial means. Lift irrigation is a method of irrigation in which water is not transported by natural flow but it is lifted with pumps or other means. The Irrigation Commission 1972 observed that the districts which receive less than 75cm of rainfall per annum are liable to drought. Considering this fact of commission (1972) India has 77 such districts. The Kadegaon tehsil of Sangli district falls in rain shadow zone and it includes in drought prone area where agricultural as well as animal husbandry is mostly prejudiced by the frequent occurrence of the droughts. Many major projects have duly been implemented in the region, and radical transformation has been observed. The Krishna is the second largest eastward draining interstate system in peninsular India. It flows for a distance of 305 km in Maharashtra (Satara, Sangli, Kolhapur districts).

Objectives of the Study

1. To know the irrigation potential in arphal canal.
2. To study the impact of canal irrigation projects on agriculture in Kadegaon tehsil.

Research Methodology

The arphal canal is sourced from the Kanher dam in Satara district. The entire canal has water flows by natural gravity. The overall length of the canal is 235 kms and covers an area of 31005 hectares of Satara and Sangli districts. In Sangli district ten villages from Kadegaon tehsil, with total cultivated area in the 1754 hectares are covered under the project.

Data Collection

The primary data was collected from the sample farmers who are the beneficiaries of the canal. The interviews of farmers who have been benefited were conducted. Moreover, the secondary data was collected from documents, records published by office of irrigation project, and government for the period of 2012-2014 for Kanher Irrigation Project in Satara district.

The Study Area

The Kadegaon tehsil was formed in 2002 from Khanapur and Palus tehsil of Sangli district with having geographical area of 579.11 sq. km with 57 villages. The study area is part of the Deccan trap. Agriculture is the major occupation of people in this area. Overall region experiences a long spell of tropical wet-dry climate with average minimum and maximum 10°C and 45°C temperature respectively. The rainfall received by the area is also greatly varies. The study area is a part of rainfall shadow region which receives 468 mm annual average rainfall within 50 rainy days. The habituated population in Kadegaon tehsil as per 2001 census was 1, 35,416 with population density of 234 persons per sq. km.

Land Use Pattern in Kadegaon Tehsil

Land is prime importance as compare to other resources in aerial development. Therefore, the utilization of land with proper manner to obtain substantial level of desired development. Land use pattern has provided necessary information regarding socio-economic setup of the study area. The table 1 reveals the land use pattern of Kadegaon tehsil. The forest land occupied nearly 06 per cent land which is higher in other parameters except the net cultivated area. The net cultivated area shows more land and that is 81 per cent. The cultivable waste land covers 05 per cent area out of total geographical land, followed by land under non-agriculture (03 percent), barren and uncultivable land (02 percent), the category of land use pattern like permanent pastures and grazing (02 percent), and fallow lands has 01 percent area and which is lowest recorded in study area.

Table -1
Land use Pattern in Kadegaon Tehsil

Type of land use	Area in hectares	Percentage
Forest	3235	6
Land under Non-agriculture Use	1908	3
Cultivable Waste Land	3166	5
Barren & Uncultivable Land	1102	2
Permanent Pastures and Grazing lands	865	2
Fallow Lands	624	1
Net Cultivated Area	47156	81
Total	58056	100

Source - Govt. of Maharashtra, Agriculture Office, Kadegaon Tehsil, 2005

Canal Irrigation Projects in Kadegaon Tehsil

The Tembhu Lift Irrigation canal scheme had sanctioned in 1996 and it started at the Krishna River near Tembhu, of Karad tehsil in Satara district. This scheme is irrigating the drought prone tehsils of Sangli and Solapur districts, with having an irrigated area of 80,672 hectares. The water requirement is met with from Koyana dam through Krishna River.

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Impact of Lift Irrigation Project on Cropping Pattern

Table 2
Cropping Pattern in Lift Irrigation
(in hectare)

A	Kharif	Jowar	Wheat	Groundnut	Maize	Rice	Vegetable	Other	Total	%
1.	2011-12	3.993	-	0.113	0.116	0.020	0.057	3.531	7.524	42.04
2.	2012-13	3.345	-	0.203	0.365	0.183	0.034	2.045	6.175	34.50
3.	2013-14	2.564	-	0.392	0.573	0.203	0.069	0.394	4.195	23.44
B	Rabbi	Jowar	Wheat	Groundnut	Maize	Rice	Harbara	Other	17.894	100
1.	2011-12	2.277	1.129	0.129	0.110	0.752	3.359	0.153	7.909	43.06
2.	2012-13	3.821	1.114	0.171	0.136	0.183	0.554	0.053	6.032	32.84
3.	2013-14	1.475	0.336	0.480	0.613	0.107	0.943	0.904	4.426	24.09
C	Summer	Jowar	Groundnut	Fodder	Maize	Rice	Harbara	Other	18.367	100
1.	2011-12	1.491	0.273	-	0.160	0.426	0.021	0.091	2.651	19.28
2.	2012-13	2.502	0.036	-	0.23	0.698	0.137	0.046	6.442	46.87
3.	2013-14	3.103	1.129	-	0.110	0.203	1.001	0.044	4.65	33.84

	Total							13.743	100
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Source – Kanher Dam Office, 2012-13

Table 2 shows cropping pattern of canal under lift irrigation in the 2011-12 season kharif jowar 3.98 hectare, other 3.531 hectares and total 7.524 hectare and percentage 42.04 in the production in tehsil .lift irrigation in the 2012-13 season kharif jowar 3.345 hectare, other 2.531 hectares and total 6.524 hectare and percentage 34.50 in the production in tehsil. In the 2013-14 season kharif jowar production 2.564 hectare, groundnut 0.392 hectares, vegetable 0.069 hectares and total 4.195 hectares percentage 23.44%.

Conclusion

The canal irrigation projects play important role in the agriculture development of drought prone area of Kadegaon tehsil. In year 2012-13, Maharashtra state face drought and there is shortage of drinking water but because of these three irrigation projects in Kadegaon tehsil water is available not only for the drinking purpose but also irrigation. So, canal irrigation projects are useful to overcome on the drought condition of the study area and getting the agriculture development.

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