

IMPACT OF BHIMA-SINA RIVER JOINT CANAL ON CROPPING PATTERN CHANGE IN KHAIRAO VILLAGE OF MADHA TAHSIL IN SOLAPUR DISTRICT

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Article Info	ABSTRACT
Article History: Received: 26th Sep 2025 Accepted: 10th Oct 2025 Published: 25th Oct 2025 Keywords: Bhima-Sina River joint canal, Cropping Pattern, Irrigation	Canal construction is an art and science of artificial application of water to agriculture and different types of uses (industrial use, drinking water etc.) to develop and increase in agriculture production. In India there are many canal constructed to solve the irrigation problem in arid, semi arid and in drought prone area. The Bhima-Sina River joint canal started at Kandalgaon (near Ujani Dam) and meets to Sina River near Kavhe in Madha tahsil. The construction of canal was started in 1994-95 and completed in 2003. The present paper analyzes the impact of Bhima- Sina joint canal on changing cropping pattern of Khairao village in Madha tahsil of Solapur district. It shows that the changing cropping pattern due to the availability of such an irrigation sources. Irrigation is the single most important factor which changes the cropping pattern of area or region. The area under Sugarcane and Banana crop increases in study region.

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INTRODUCTION:

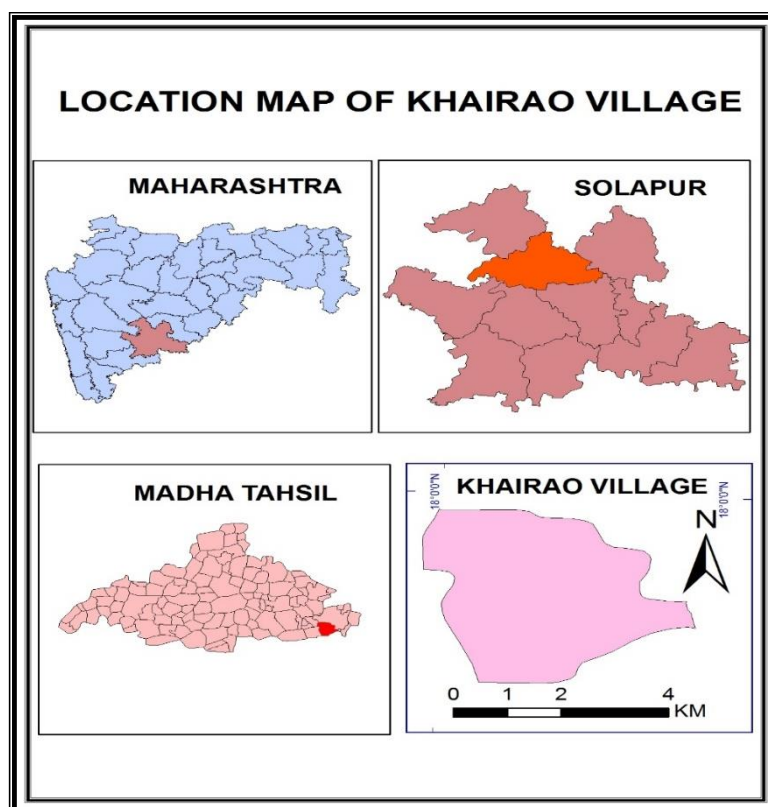
In India, the rivers that are proposed to be linked with each other, work on many of them has been started. Some of the main projects are such as Mahanadi has to be linked with Godawari & the river Inchampalli is to be linked with Nagarjun Sagar & Pulichintala. Somasila River is to be linked with Nagarjun Sagar & Grand Anicut Link. To Link of Penar River to Almati & Sirisela, to link Yamuna river with Sharda & Rajasthan & Rajasthan is to be linked with Sabarmati. Similarly Son bairaj is to be linked with Chunar & Ganges in the South, to link Ganges River to Damodar River & Swarn Rekha River to Mahanadi. Like that the Bhima River is link to the Sina river tunnel canal in Solapur district of Maharashtra. Canal irrigation has been practiced in one form or other in the arid, semi arid and in drought prone area. Madha tahsil is located in drought prone area in Solapur district of Maharashtra state. In India there are many canals constructed to solve the irrigation problem in arid, semi arid and in drought prone area.

The Bhima Sina River joint canal started at Kandalgaon (near Ujani Dam) and meets to Sina River near Kavhe gaon in Madha tahsil. The construction of canal was started in 1994-95 and completed in 2003. Due to this canal, the area under irrigation is increasing in Solapur district and its impact shows the development of agricultural, socio-cultural and economic growth in Solapur district.

The area under irrigation is increasing in Madha, Barshi, Mohol, North Solapur and South Solapur Tahsils. Cropping pattern is an area under various crops at a point of it changes over space and time. The cropping pattern of a region is closely influenced by the geo-climatic, socio-economic, historical and political factors. Patterns of crop land use of region are influenced of physical and human environment. The village Khairao is sited near the River Sina in Madha tahsil of Solapur district. The present paper analyzes the impact of Bhima- Sina joint canal on changing cropping pattern of Khairao village in Madha tahsil of Solapur district. It shows that the changing cropping pattern due to the availability of such an irrigation sources.

THE STUDY AREA:

The study area is located in Southern part of Madha tehsil. The absolute location is 17° 57' 26" North latitude and 75° 36' 42" East Longitude. The study area is 35 Kilometer from Barshi town and just 16 Kilometer from Madha tahsil head quarter. The geographical area of the study area is 1391.82 hectares, Out of them 90.47 per cent is under Cultivation. The population of the village is 1536. The percentage of cultivators and agricultural labours are 55.2 and 34.8 respectively, as per 2011 census, Indicates that farming is the main occupation of the Village.



OBJECTIVES:

To study cropping pattern of village Khairao before construction of Bhima-Sina river joint canal.

To study changing cropping pattern of village Khairao after construction of Bhima-Sina river joint canal.

DATA COLLECTION & METHODOLOGY:

Research study based on the secondary data. Data is collected from Panchayat Samiti Office Kurduwadi and also from Grampanchayat office Khairao, Tal- Madha, Dist- Solapur. The period of data collection is 10 years before the construction of Bhima -Sina joint canal i.e. 1991-2000 and 2011-2020, and 10 years after construction of canal. The average area under various crops in Khairao village has been considered for the comparison of changing cropping pattern. The suitable cartographic technique was adopted to depict diagram to find out variation of cropping pattern in above period in village Khairao.

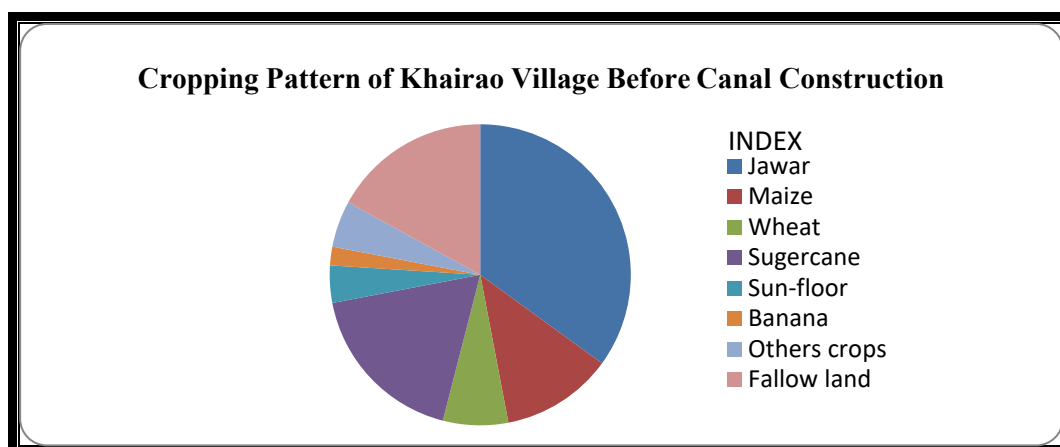
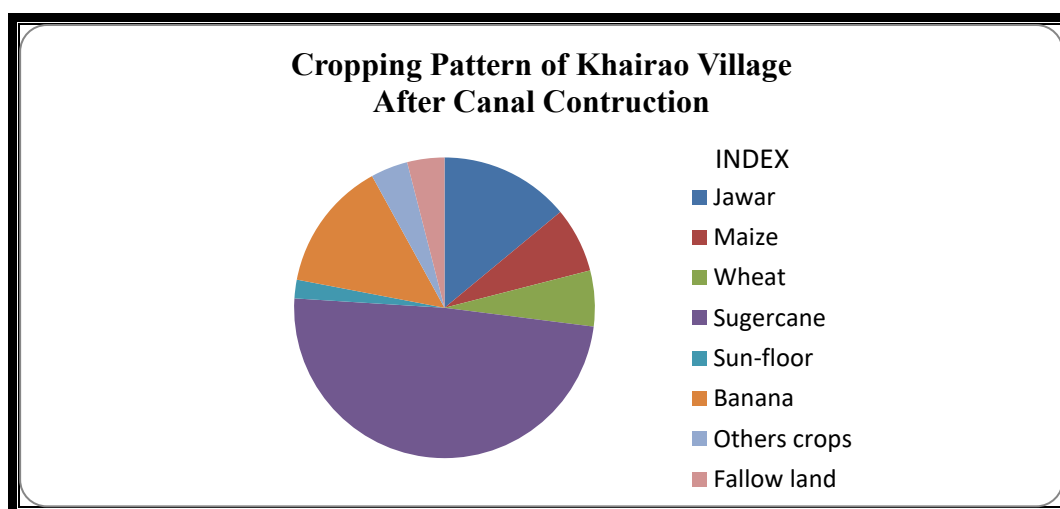
INTERPRETATION:

Following table shows the cropping pattern change in Khairao village of Madha tahsil of Solapur district.

Table 1. Cropping pattern change in study region

Sr. No.	Name of Crops	Average Area under crops in Percentage (%) (before canal construction) 1991-2000	Average Area under crops in Percentage(%) (after canal construction) 2011-2020	Change
1	Jawar	32	12	-20
2	Maize	15	7	-8
3	Wheat	7	6	-1
4	Sugarcane	13	45	32
5	Sun-floor	8	2	-6
6	Banana	3	20	17
7	Others crops	15	4	-11
8	Fallow land	7	4	-3
	Total area	100 (%)	100 (%)	

Source: Socio-Economic review of Solapur district. 1991-2000, 2011-2020.

**Fig. No.2 Cropping pattern of Khairao village before canal construction.****Fig. No. 3 Cropping pattern of Khairao village after canal construction.**

Data Interpretation:

The above table and diagram shows that the after construction of Bhima-Sina River joint canal cropping pattern of Khairao village has been changed. Before the canal construction i.e. the year 1991-2000 cropping pattern of Khairao village shows that different subsistence crops were taken out. The Jawar was the major crops it cover the 32% area of the village. Maize crop is the second highest crop at that time and it covers the 15 % area. The other crops, Sugarcane, Banana, Sunfloor and Wheat contributes the 15%, 13%, 3%, 8%, and 7% area respectively. Most of these crops are dependent on Indian Monsoon.

After the Bhima-Sina river joint canal the cropping pattern of Khairao village has been changed. The data shows that the most of cash crops area has been increased because of availability of irrigation resource. The period 2011-2020 shows that after canal construction Sugarcane occupies 45%, Banana 17% etc. cash crops area has been increased in Khairao village. The Other crops, Sunfloor, Maize, Jawar and Wheat contributes the 4%, 8%, 7%, 12%, and 6% area respectively. Jawar crops reduced 20% area after the canal construction. The fallow land area also change, the fallow land area decreased up to 3% after the canal construction.

Conclusion:

The present paper concludes that the Cropping pattern of Khairao village has been changed because of Bhima-Sina river joint canal. Irrigation is the single most important factor which changes the cropping pattern of area or region. The area under Jawar has been decreased and area under Sugercane, Banana has been increased in study region. Minor changes are observed in Wheat, Sunfloor and other crops area.

Irrigation is the single most important factor which changes the cropping pattern of area or region. The area under Sugarcane and Banana crop increases in study region.

1. References:

2. Husain Majid. :- (2005) Agricultural Geography, Rawat Publications, Jaipur.
3. Pant D. K.(2008): Project of "Economic Impact of Interlinking of Rivers Programme. Pp-22-24
4. Pawar C. T. :- (1989) Impact of Irrigation – A Regional Perspective, Himalaya Publication, Mumbai.
5. Roy Prithwish (2004): "Importance of irrigation" Redbin Publication New Delhi. Pp- 8-15
6. Sen Amart (2001): Indian Economic Development, Lotus publication, New Delhi.Pp-45
7. Shanan L. (1987): "The Impact Of Irrigation" Joha Wiley and Sons Publication, London, Pp. 115-118.
8. Socio-economic review of Solapur district 1911 to 2020.
9. Surindra Mishra:-(1988) Irrigation Development and Economic Growth,Capital Publication House, New Delhi.