

TRANSFORMATION IN IRRIGATION PATTERN OF SATARA DISTRICT**Mrs. K.V. Pawar***Dept. of Geography,
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University of Mumbai,**Kalina, Santacruz, Mumbai (MS) India***ABSTRACT**

Irrigation is a lifeline of agriculture especially in the drought prone zone according to many researchers. Irrigation constitutes one of the most effective procedural means of raising agricultural production. The availability of irrigation facility plays a vital role in the socio-economic and agricultural development area. Agriculture is a large activity in India as well as Maharashtra. The economic base of the country depends on agriculture. Water is an important element for increasing the agricultural production. In this paper a detailed study has been done to find out the tehsils wise changing pattern of irrigation in Satara District Maharashtra amid to (1980-81 to 2010-11). The objective is to study the changing irrigation pattern in Satara district. The study has been conducted through secondary source data collection. Data will be collected through government agencies. Hence the study will help to evaluate of the aspects of irrigation in Satara district, Research has been undertaken in detail in order to understand the role and impact of changing irrigation pattern in Satara district The irrigation facilities in eastern part of Satara tehsil which is more developed than the western part due to the Krishna, Venna River and their tributaries. The level of well water is always at medium level due to availability of water in

dams and canals. The factors responsible for this change are industrialization, urbanization and modernization of agricultural techniques. Satara district is basically an agriculturally dominated area of Maharashtra and most of the people of this district are engaged in agriculture activity for livelihood.

Keywords : Agriculture, Net irrigated Area, Surface Irrigation, Well irrigation.

Introduction :

Development in agriculture plays an important role in every national economy-whether developing, developed or in-transition. More than 70% of the population in India lives in rural areas. Due to the increase in food demand, intensive agriculture is practiced in India with high yielding varieties of seeds and fertilizers using modern implement technology. The land under agricultural area is nearly 46% in India compared to the world 11% various other method were also practiced to improve the crop production (A.K.Shridevi, 2014).

Agriculture is a large activity in India as well as Maharashtra. The economic base of the country depends on agriculture. Irrigation is an old age art. The success of agriculture depends upon use of irrigation water, irrigation plays very significant role particularly in the areas where rainfall is low and uncertain. Therefore it is one of the significant inputs in the transformation of subsistence to commercial agriculture.

In India early development of irrigation took place in valley of Ganga and Indus. The British people systematically developed the irrigation to diminish the effects of drought and famines. After

independence political stability has stimulated irrigation development which brought green revolution and many attempts were made to tap water for irrigation through major, medium and minor irrigation projects or schemes.

In the region under study, irrigation was started in early period of British rule with opening of Krishna canal but actual construction of were started in 1864 which was completed in 1867. The weir is 60.66 mt. long and 7.01 mt. high which is situated across the Krishna river near Khodashi in Karad taluka. The canal discharges 160.06 cubic mt. water per second in Krishna canal and irrigates 3,079.02 hector land of cultivable land.

Objective:

The main objective of this paper to analyse the Changing tehsil wise irrigation pattern in Satara District, Maharashtra.

Data sources and Methodology:

The study was conducted in Satara district of Maharashtra. The present study based on the secondary data and information, collected through village revenue offices, tehsil revenue offices, Satara district statistical office, Department of Agriculture Satara District, Socio-economic Review of Satara District, Besides this some

literature has been referred from agricultural journals, books and reports.

The Study Area:

Satara district has typical landscape due to the variation in relief, climate and vegetation. The variation of relief range from the pinnacles and high plateau of the main Sahyadri range having heights over 1,200 meters above mean sea level to the subdued basin of Nira river with an average height of about 600 meters above mean sea level. The climate ranges from the rainiest in the Mahabaleshwar region which has an average annual rainfall of over 6000 mm to the driest in Man, Phaltan, Khandala and Khatav tahsil where the average annual rainfall is about 500 mm. the mean minimum temperature is 11.6^o Celsius and mean minimum is 37.5^o Celsius.

Satara district lies at the Western limit of the Deccan plateau in southern Maharashtra state. The district can be divided into two broad types of land forms. (i) The hill ranges of the Sahyadri and Mahadeo hills and (ii) The river basins of Krishna, Nira, Man and Yerla. There are four distinct river basins in the district. The Krishna drains the major portion to the south, the Yerla drains the mid-east portion also to the south, The Man drains the eastern parts to join the Bhima River outside the district and the Nira drains the northern portion of the district. The district lies between 17^o 05' and 18^o 11' north latitudes and 73^o 33' and 74^o 54' east longitudes. It is

surrounded by Pune district to the north, Solapur district to the east, Sangli district to the south and Ratnagiri district to the west. It also has a small boundary of about 24 km. with Raigarh district in the north-west. Satara district consists of eleven talukas covering 1727 villages occupying an area of 10,480.0 sq.km.

Sources of Irrigation:

There are imbalance in irrigation development in Satara district. The natural imbalance are caused due to the relative advantage and disadvantage of region with respect to irrigation source. These natural difference in regions can describe as regional disparities. The sources of irrigation in Satara district is influenced by physical feature such as geology, water, soil, presence of ground water, terrain, etc these source are classified in three categories i.e.

1. Ground water irrigation source - i. Wells
ii. Tube Wells
2. Surface Water irrigation source - i. Rivers
ii. Lakes.
3. Man-made Irrigation Source - i. Project
ii. Canal
iii. Lift irrigation

Tahsil-Wise Irrigation Pattern:

Tahsilwise changes in area under irrigation are shown in table no 1. Of satara district for the period 1981, 1991, 2001 and 2011. The topography of Krishna valley is quite suitable for lift irrigation and very less suitable for tank irrigation. The physical features of Mahabaleshwar,

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Jawali and Patan taluka are not suitable for lift irrigation. In such taluka well irrigation is flourished and eastern part of study area like Man, Khatav, Phaltan, taluka have canal tank and well irrigation the geological structure is suitable to construct the dam and store the water for long time and utilize it

whenever necessary. The lift irrigation widely spread in the Krishna river basin mostly in the Karad taluka. Maximum area is under irrigation. The well and tank irrigation found in eastern and western part of study area.

Table 1- Tahsil wise changes trends in Source of irrigation in Satara district. (1980-81 to 2010-11).

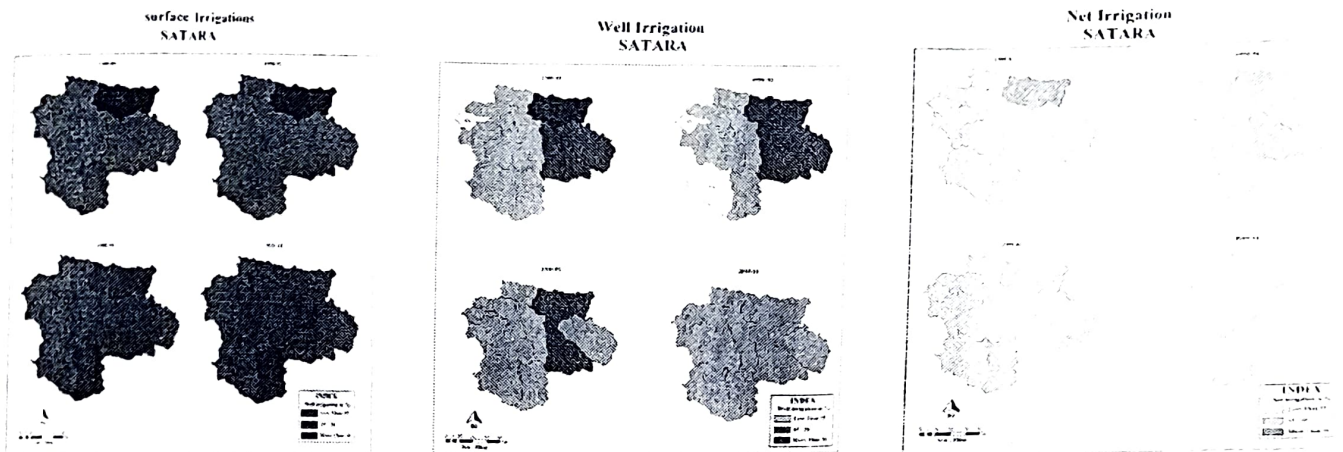
Sr. No.	Tahsils	Surface Irrigation				well irrigation				Net Irrigated Area			
		1980-81	1990-91	2001-01	2010-11	1980-81	1990-91	2000-01	2010-11	1980-81	1990-91	2000-01	2010-11
1	M. shivar	1.77	4.58	1.26	1.42	0.08	0.02	0.64	2.95	0.96	1.22	0.89	2.38
2	Wai	7.42	11.02	8.45	5.11	7.5	4.78	2.79	10.11	7.52	6.44	5.04	1.43
3	Khandala	4.37	2.98	4.16	4.89	1.01	4.89	5.33	5.71	6.32	4.38	4.86	5.41
4	Phaltan	34.55	37.77	25.17	13.84	31.9	24.47	26.45	11	33.44	27.99	25.15	12.94
5	Man	2.48	1.58	1.09	7.81	15.57	25.41	6.14	9.19	9.92	11.72	4.17	1.69
6	Khatav	8.21	13.37	2.66	8.9	14.95	28.74	21.69	8.69	12.89	14.62	14.14	1.76
7	Koregaon	2.47	6.57	1.34	12.3	6.45	3.29	1.92	9.18	4.25	4.31	8.93	11.25
8	Satara	8.87	6.99	9.91	11.66	1.97	1.24	4.16	9.56	5.32	2.77	7.44	11.25
9	Jawali	2.43	3.53	6.48	5.02	1.59	0.66	1.6	11	1.85	1.5	0.89	1.12
10	Patan	6.66	5.72	5.9	12.75	1.16	0.13	11.23	11.7	1.95	1.82	9.11	2.18
11	Karad	20.87	7.16	27.83	15.86	11.23	6.34	11.96	11.98	15.44	1.55	14.87	12.78
12	District	48.12	26.64	39.73	36.53	52.7	73.21	61.26	63.46	16.71	14.5	29.11	32.95

Source : Socio-economic abstract of Satara district 1982-2012.

1. Surface Irrigation:

Surface water is provided by the flowing rivers or from the still water of tanks, pond and artificial reservoirs. Tahsil wise change in area under irrigation are shown in (Map No 1.2) Table No. 1 revealed area under surface irrigation during the year 1980-81 found in 48.12 and 2010-11 surface irrigation tremendous decrease has found in 26.53 percent. Tahsil wise Spatio-temporal

changes in irrigation area are uneven Revealed area under Surface irrigation during the year 1980-81. High Surface irrigation found in phaltan taluka. While Moderate area under Surface irrigation observed in Patan, Khandala Koregaon Khatav, Man taluka.



During the year 1990-91 low categories register in ten taluka i.e. Mahabaleshwer, Wai, Khandla, Karad, Patan, Koregaon, Javli, Khatav, Man and Satara taluka. While moderate category was not found in the District. High surface irrigation was observed in Phalton taluka. while the investigation year 2000-01 low percentage found in nine tehsils i.e. namely Mahabaleshwer, Wai, Khandla, Karad, Satara, Javli, Khatav, Patan Mant taluka. Moderate net irrigated area not recorded in district. While high category was register in Karad and Phalton. During the year 2010-11 moderate Surface irrigation examine in Karad taluka. Rest of taluka found in low surface irrigation here is no found in high surface irrigation. One of the biggest advantages of this district is the presence of the Krishna River. Water from this river is tapped into Dhom and Kanher dams and this water is circulated by the left and right canals. This taluka lies in the western part of Satara district its topography is not favorable. Even though it receives good amount of rainfall, the water

cannot be stored due to its physiography.

2. Well irrigation:

Well irrigation is traditional source of irrigation to agricultur since long time. The main source of irrigation in the district are lake, tanks, river, canal and wells. (Map No 1.2 Table No.1) revealed area under well irrigation during the year 1980-81 found in 52.70 and 2010-11 found in 63.83 percent. Well irrigation is dominant in eastern region of study area. Revealed area under well irrigation during the year 1980-81 High well irrigation found in Phalton tehsil.

During the year 1990-91 low categories register in six taluka i.e. Wai, Khandla, Karad, Patan, Koregaon, Javli, and Satara taluka. Mahabaleshwer and Patan area not available in well irrigation. While moderate category was found in three tehsils i.e. Khatav, Man and Phalton District. High net irrigation was not register in District. During the investigation year 2000-01 low percentage found in nine tehsils i.e. namely Mahabaleshwer, Wai, Khandla, Karad, Satara,

Javli, Patan, Man, Koregaon tehsils. Moderate net irrigated area was recorded in Phalton and Khatav district tehsils. While high category was not found in District.

3. Net irrigation:

(Fig No 1.4 Table No.1) revealed study Net irrigation area during the year 1980-81 found in 16.71 and 2010-11 A tremendous increase in Net irrigation has been found i.e. 32.55 percent. Revealed area under Net irrigation during the year 1980-81. High Net irrigation found in phalton taluka. During the year 1990-91 low categories register in eight taluka i.e. Mahabaleshwar, Wai, Khandla, Karad, Patan, Koregaon, Javli and Satara tehsils. while moderate category was found in Phalton, Khatav and Man tehsils. High net irrigation is not found in the district.

CONCLUSION :

The study reveals that the Phalton and Karad are the leading taehsils in Satara district based on irrigation facilities. The irrigation facilities in Mahabaleshwar Tahsil were very poor. Man, Khatav, Khandala and Phalton tahsil has provided an example of imbalance in the development of irrigation facilities in its spatio – temporal perspective. Man, Khanddala, Khatav tehsil of the district is always in drought conditions as it receives very less rainfall throughout the year. During the investigation transforming of irrigation pattern due to modernization of agricultural activities, urbanization and industrialization in the

district. Even though the Govt. is providing all the necessities to the farmer but due to unfavorable conditions of climate and physiographic the area under irrigation has decreased in 2010-11.

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