

AN ASSESSMENT ON NEED OF IRRIGATION IN SOLAPUR DISTRICT OF MAHARASHTRA

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ABSTRACT

Irrigation is identified as a decisive factor in Indian agriculture due to high variability and inadequacy of rainfall. Irrigation is essential for successful agriculture particularly in the area, where rainfall is inadequate uncertain, and unpredictable. Irrigation is necessary in traditional agriculture to overcome droughts scarcity of rainfall. Irrigation constitutes one of the most effective technical means of the raising agricultural production in the developing countries. So the present research paper, 'A Geographical analysis on need of irrigation in Solapur District of Maharashtra.' Solapur district is located in drought prone area of Maharashtra state. For the present study, the secondary data are used which is collected from socio-economic abstract of Solapur district. The statistical equation (More K.S. and Mustafha R.R.- 1984) are used to find out the need of irrigation in study area. Such type of study represents real situation of irrigation and need of irrigation in Solapur District and helps to planners, agricultural scientists and research scholars.

Keywords – traditional agriculture, agriculture productivity, Rainfall inadequacy, co-efficient of index,

INTRODUCTION

Irrigation constitutes one of the most effective technical means of the raising agricultural production in the developing countries. Where irrigation by gravity is possible, much work of installing facilities can be carried out by manual labour, through there is an obvious economic advantages, even in countries with very low wage level, in using technical aids in the constructional and earth moving works where the water necessary. Can not be brought to the land to be irrigated slowly by the force of gravity, it is necessary use pumping installation. Mechanical source of power has considerably increased the efficiency of water pumping and have extended the use of irrigation by making. It possible to use ground water located at considerable depth and with the aid of sprinkling arrangement, to brings irrigation to areas that, could otherwise not have been brought under cultivation except at uneconomically high cost. There is still a very large potential field for development by means of this system. It is identified as a decisive factor in Indian agriculture due to high variability and inadequacy of rainfall. Irrigation is essential for successful agriculture particularly in the area, where rainfall is inadequate uncertain, and unpredictable. Irrigation is necessary in traditional agriculture to overcome droughts scarcity of rainfall.

**OBJECTIVES**

The main objective of the study is to showing the need of irrigation in Solapur district and analysis the regional disparities in need of irrigation in study region.

DATA BASE AND METHODOLOGY

Basically the entire research paper is based on secondary data. The secondary data and information have been taken from the Director, District Irrigation Department of Solapur, District Superintendent Agricultural office, Solapur Socio-economic review and district statistical abstract of Solapur district. For the present investigation, District is selected as in general and tahsils in particular. More K. S. and Mustafa R. R. (1984) suggested simple statistical method which is used to compute the need of irrigation in Solapur District in present study. In order to assess the need of irrigation, the following formula has been adopted.

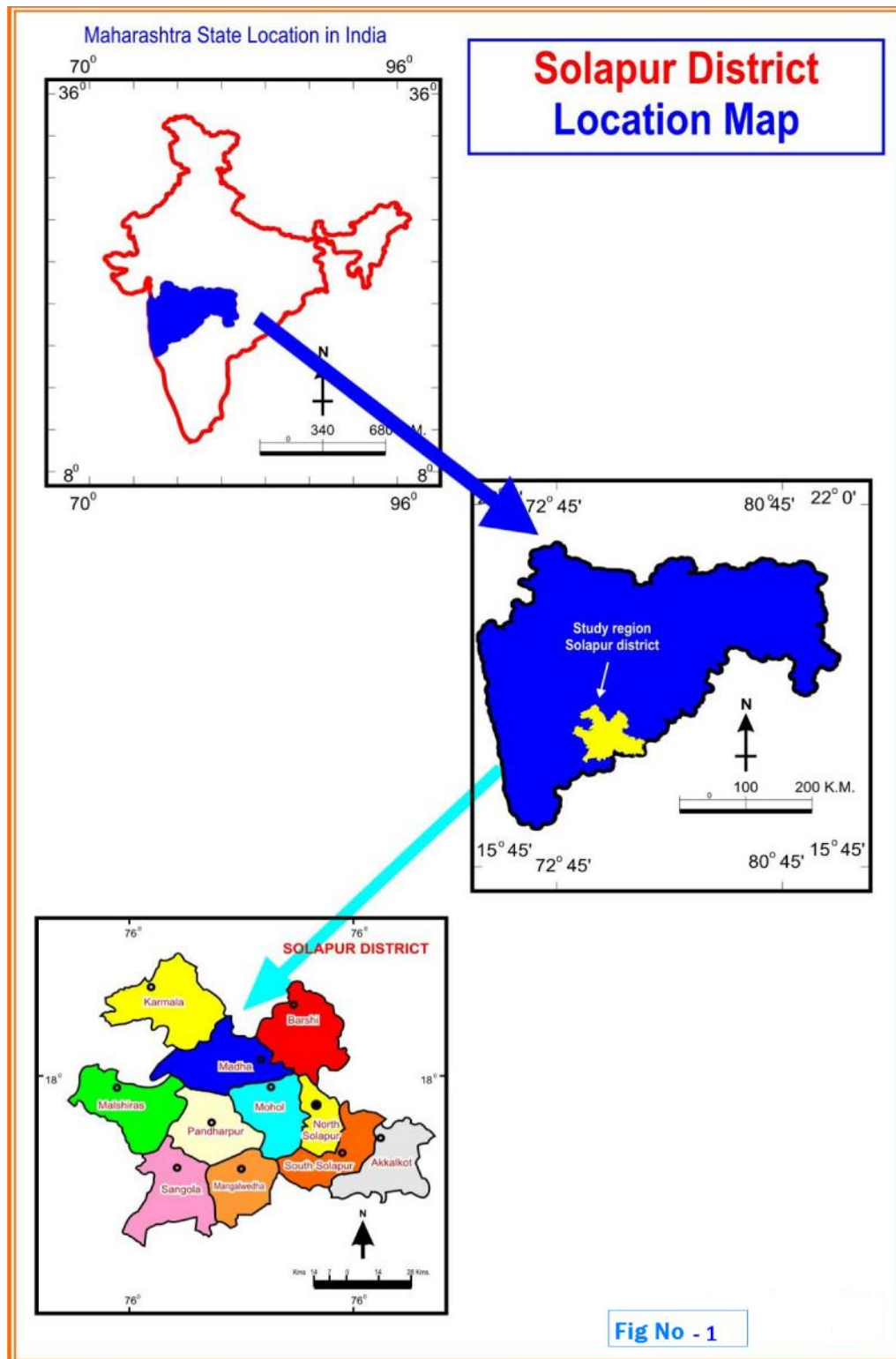
$$\text{Need of Irrigation} = \frac{\text{Pr} \times \text{Ac}}{\text{R}}$$

Where_

Pr = Percentage of rural population in a areal unit
Ar = Percentage of cultivated area in a areal unit
R = Average annual rainfall

STUDY AREA

The present study deals with the geographical perspectives of the agriculture in Solapur district. The Solapur district is bounded by 17°05' North latitudes to 18° 32' North latitudes and 74° 42' East of 76° 15' East longitudes. The total geographical area of Solapur district is 14895² K.m. divided into eleven tahsils. The Population is 32.4 lakhs in eleven tahsils of District.(Censes 2001). It is bounded from the North by Osmanabad district and Ahmednagar district, on the North-East by Satara district and at the South & East it has common boundary of Karanataka state. Temperature is high in summer season. Rainfall varies from East to West between range of 200 to 600 millimeters. The rivers like Bhima, Sina, Man, Nira, Bhogawati and many other smaller tributaries drain in the district. The soil of the district is mainly of DeccanTrap Volcanic origin. It is underlined by partially decomposed Basolatic rock material locally known as “murum”.



EXPLANATION

Irrigation is the most important factor in farming according to the Agriculture Department and Irrigation Officers. Irrigation has played an important role in transforming the crop cultivation and better yield. There are various any other type of irrigation such as in their well irrigation, rivers, tanks and canal etc. But there are additional factors such as their location, their topography, geological aspect and height, hilled area depending on various elements. In the region under study mainly two types of irrigation are practised namely well and canal irrigation.

A. Need of Irrigation in Solapur District

There are imbalances in need of irrigation in Solapur district. The need irrigation in Solapur District is 6.16. The highest need of irrigation is observed in Madha tahsil (13.08) and lowest in North Solapur Tahsil (01.38). This coefficient of need irrigation is divided into three groups.

Table No 1: Need of Irrigation in Solapur District

Need of irrigation	Number of tahsil	Name of tahsil
High (above 10)	07	Karmala, Madha, Mohol, Pandharpur, Malshiras, Mangalwedha, South Solapur
Moderate (05 to 10)	03	Barshi, Sangola, Akkalkot
Low (below 05)	01	North Solapur

Source: Compiled by Researcher

- High need of irrigation:** The value of tahsil above 10 is called high need of irrigation in study region. The seven tahsils of study region are required high need of irrigation. These tahsils are Karmala, Madha, Mohol, Pandharpur, Malshiras, Mangalwedha and South Solapur. It is suggested that the natural environment are unfavorable for agriculture which means that it is essential to provide irrigation facilities for better agriculture.
- Moderate need of irrigation:** The moderate need of irrigation is observed in three tahsil i.e. Sangola, Barshi and Akkalkot. The average rainfall in Sangola and Akkalkot is low but the agriculture area is low due to huge fallow land compare to other tahsil of district.
- Low need of irrigation:** The low need of irrigation is observed in North Solapur. It is happen due to the very few population lived in rural area. The district head quarter Solapur is located in this tahsil, that's why the need of irrigation is low according to this formula.

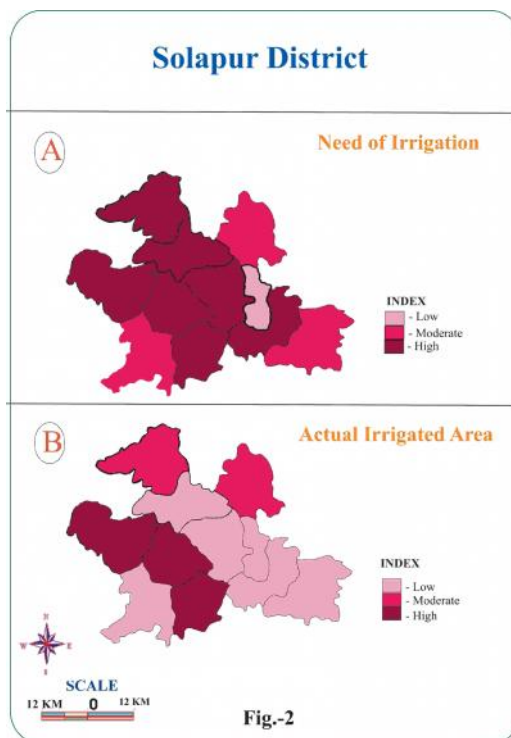
B. Actual irrigated area in Solapur District

The Solapur district is located drought prone area, therefore irrigated area is low. After the development of Ujani dam, Nira – Siana canal and Kolhapur pattern dam, the irrigated area increased. The high irrigated area is observed in Malshiras tahsil (75.02 percent to NSA) and lowest area is in North Solapur (12.16 percent to NSA). The spatial pattern of irrigation is show in following table.

Table No 2: Irrigated area in Solapur District

Irrigated area	Number of tahsil	Name of tahsil
High (above 50 % to NSA)	03	Pandharpur, Malshiras, Mangalwedha
Moderate (25 to 50 % to NSA)	02	Karmala, Barshi
Low (below 25 % to NSA)	06	Madha, Mohol, South Solapur, Akkalkot, North Solapur

Source: Compiled by Researcher



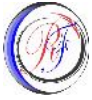
1. **High Irrigated Area:-** High proportion of irrigation is observed in Malshiras (75.02%) taluka, where canal and well irrigation has been developed during the last two decades. This has been followed by Mangalwedha (62.45%) and Pandharpur (60.81%). Bhima river lies in their area. Nira right & left canal and Ujani canal provide more water in this area.
2. **Moderate Irrigated Area:-** Relatively moderate land under irrigation between 25 to 50 percent is found in Karmala and Barshi tahsil. The small water tanks and wells are playing more important role in this area.

3. **Low Irrigated Area:-** Relatively low land under irrigation below 25 percent is found in Madha, South Solapur, Sangola, Mohol and Akkalkot tahsils of the study region.

FINDING AND SUGGESTION

The research paper analyse that the high need of irrigation in study area is in seven tahsil. It is clear that it is essential to provide irrigation facilities for agriculture. It is also observed that the actual low irrigation area is observed in six tahsils. So it is necessary to achieve the growth of irrigation is the district. Few suggestions have to be suggested to individual level, institutional level and administrative level. They are –

1. Give incentives to proper propaganda of irrigation management.
2. Carried out research work to achieve innovative technology and methods of water management.



3. Projects should be planned at micro level as poor peasant will be the major beneficiaries.
4. Watershed development program should be scientifically planned.
5. Drip irrigation, sprinkler irrigation like measures should be adopted by the people. To encourage people give incentives in proportion.
6. Use media for propaganda of irrigation management.
7. Raise funds on local levels to complete small watershed programs.
8. Rain harvesting is essential measure in drought prone areas.
9. Repairing of canals to avoid seepage essential.
10. Think globally act locally, to achieve sustainable water management.
11. People participation should be give vital importance.
12. The fund can rise through strong co-operative sector of the district.
13. Rules, regulation and charges on irrigation water should be restructured.
14. Administration should take care of completion of uncompleted projects in the district.
15. Set local level committees to look after the progression of small project in the area. Such committees should be co-ordinate with CEO and collect orate of the district.

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