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Regional Disparities of Ground water irrigation in Solapur District: A Geographical Analysis

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ABSTRACT

The Solapur District is located in drought prone area, and so rainfall is low . Hence irrigation plays a vital role in agriculture. In 1990-91 the total area from all sources of irrigation was 214567 hectares which later rose to 288736 hectares in 2004 -05. The spatial pattern of irrigation is however, uneven and has been characterized by the changes over time. The success of agriculture is completely dependent on the monsoon. Due to vagaries of monsoon rainfall, even in the rainy season, particularly, when there is long gap in the chain of rainy days assured water supply is one of the conditions, which is very essential for crop growth. In short, in the study region the success of crop production is by and large associated with hydrological conditions. Today's trend is to consider irrigation as vital input in maximizing the production. The concept of protective irrigation has changed region. So in the present research paper try to understand the ground water sources of irrigation in Solapur District.

Keywords : regional imbalances, well irrigation, tube-well irrigation, protective irrigation, spatial pattern

Introduction

Water is one of the strategic inputs for the agricultural transformation. The predominant source of water is rainfall. But it is erratic and unevenly distributed over time and space. This temporal and spatial variations in the occurrence of rainfall very often result in drought situations. In view of this the need for the development of water resource, in the country was well recognized more particularly, after the launching of planning process. Irrigation assumes a key role in the strategy for agricultural transformation in developmental planning in Indian economy.

Objective

1. To understand spatial pattern of well irrigation in study region.
2. To study tube-well irrigation variation in study region.
3. To assess the level of ground water irrigation in study region.

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 Karnataka 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".

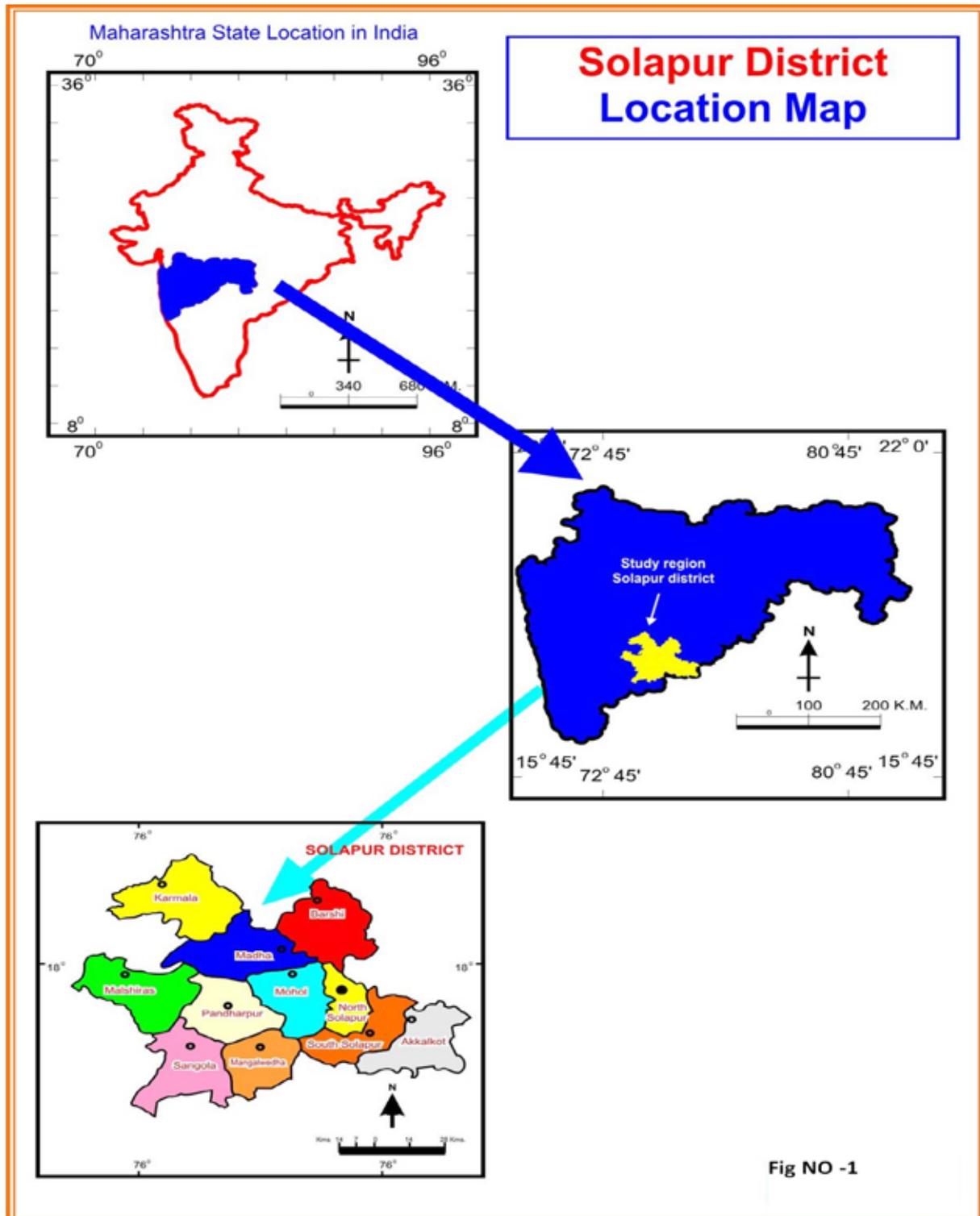


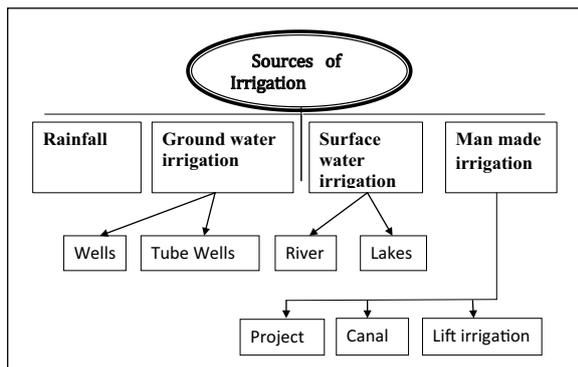
Fig NO -1

Data Base and Methodology

For the present investigation secondary data are used which is collected from District Socio-economic Abstract of Solapur District in 2005 and District Irrigation Department. The data are tabularized and analysed by using simple statistical equation. The analysis represented by cartographic and choropleth techniques.

Explanation

There are regional imbalances in irrigation development in Solapur district. They are natural as well as created imbalance. The natural imbalances are caused due to the relative advantages and disadvantages of regions with respect to irrigation sources. These natural differences in regions can be described as regional disparities.



A. WELLS IRRIGATION:

The main source of irrigation in the Districts Lake, tanks, river, cannel and wells. Well irrigation is a traditional source of irrigation to man, it is as old as agriculture well in the district irrigating 01 to 1.5 hectares of land. The number of wells has also gone up sharply due to several favorable factors, including easy availability of loans from the government and financial institutions, subsidies on lift machines, mostly cheap power supply and easy to operate, because the cost construction of wells is low. The most of the wells in the district are open wells with a diameter of 25 feet to 40 feet and depth from 45 to 90 feet. The distribution of wells is different according to the taluka. In the district 75 per cent of the area from total irrigated is from the wells. This may be attributed either to geological quality of the land, that is quality of under ground water or absence of substitute means of irrigation.

- (a) High Well Irrigated Area:- The Pandharpur and Mohol are the tow highly irrigated by the wells. Pandharpur 85.5 per cent of the area from the cultivated land is irrigated by the wells. 11818 wells are available in the talukas. In Mohol 82.9 per cent area is irrigated by the wells. 4657 wells are available to the irrigated.
- (b) Medium well Irrigated Area:- Most of taluka are the medium, irrigated land by wells. Akkalkot, South Solapur, Madha, North Solapur are the medium wells irrigated land.
- (c) Low Well Irrigated Area:- Sangola, Mangalweda are the low irrigated land. There is the low number of wells. In this way the distribution of wells irrigation is different taluka. The total no. of wells in district are 65364 in the district. It is main source of irrigation in the district

Table No. 1. SOLAPUR DISTRICT: AREA IRRIGATED BY WELLS (2005)

Sr. No.	Taluka	Area Irrigated by wells (in hector)	%
1	Karamala	15424	8.07
2	Madha	19885	10.36
3	Barshi	13972	7.27
4	North Solapur	8255	4.29
5	Mohal	19275	10.05
6	Pandarpur	33832	17.69
7	Malshirash	29337	15.34
8	Sangola	12615	6.59
9	Mangalweda	2546	1.30
10	South Solapur	17782	9.26
11	Akkalkot	18118	9.47
	Total District	191041	100

Source: Department of agriculture, Solapur

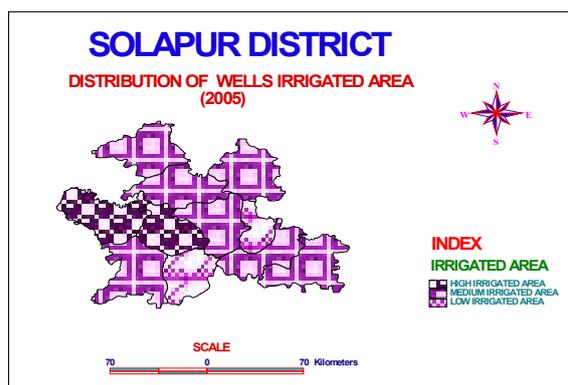


Fig No- 2

B) DISTRIBUTION OF TUBE WELLS IRRIGATION

Tube wells are the most important source of water in solapur district ,in purpose of irrigation. Tube wells are the type of irrigation method to similar to wells irrigation. The distribution of Tube wells is different according to the taluka. In the district few areas from total irrigated is from the tube wells. In the district the tube wells are classify are as fallow.

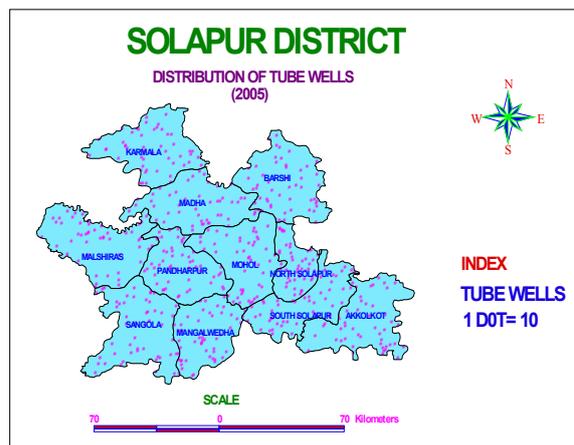


Fig No- 3

- (a) High Number Of Tube Wells:- The highest number of tube wells found in Pandharpur, Malshiras, Mohol, Mangalwedha. I.e. above 1300 tube wells.
- (b) Moderate Number Of Tube Wells:- There are Sangola, Madha, Karamala talukas are include in such category therefore number of tubewells are above 1000 to 1300 respectively.
- (c) Low Number Of Tube Wells:- Barshi, N.Solapur, S. Solapur, Sangola involved in this category, i.e. 390 to 943 tubewells ouccues in these talukas respectively.

Conclusion

The spatial pattern of irrigation is however, uneven and has been characterized by the changes over time. Among the ground water irrigation well and tube well are major source of irrigation. The well irrigation area is high in Malshiras and Pandharpur Tahasils but it is low in Mangalwedha and Mohol tahasils. Other wise moderate irrigation area is observed. The tube-well irrigation is scattered in all over district. The highest number of tube-wells are found in Pandharpur, Malshiras, Mohol, Mangalwedha. Low number of tube-well is observed in Barshi, N.Solapur, S. Solapur, Sangola.



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