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# Irrigation Effect on Agricultural Development in Solapur District Maharashtra

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## Abstract

Agricultural transformation and growth are possible if a steady supply of water is guaranteed. In the absence of irrigation, intensive farming yields relatively little. In addition, irrigation significantly increases the land's output. A thorough assessment of the Solapur district's irrigation system has been conducted in the aforementioned analysis in order to comprehend the function and influence of irrigation on the growth and effectiveness of agriculture. Solapur district in Maharashtra is predominantly an agricultural region, with irrigation playing a crucial role in its agricultural development. This study aims to identify and compare the different types of irrigation systems used in Solapur district. The study reveals that surface water irrigation, groundwater irrigation, and drip irrigation are the primary types of irrigation used in the region. The study also highlights the advantages and disadvantages of each type of irrigation system.

**Keywords:** Development, irrigation, agricultural, Solapur district.

## Introduction

The development of irrigation is a key component of modern agriculture, and the majority of India's successful green revolution regions also have high irrigation intensity. This is because timely and sufficient moisture supply is essential to the new agriculture's success. Improving irrigation systems on farms is one way to address the issue of poor agricultural production. A significant portion of regional variations in agricultural productivity can be attributed to variations in the availability of irrigation infrastructure. The art of irrigation is quite old.

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Civilisations have always developed in tandem with irrigation. Due to its clever application, the majority of persons who are knowledgeable about irrigation are confident in its longevity. Others believe that a society built on irrigation and agriculture would eventually collapse due to the depletion of water supplies. In addition to evolving on irrigated areas, civilisations have also deteriorated and dissolved there. Irrigation is essential for agricultural development, especially in regions with scarce rainfall (Kumar et al., 2017). Solapur district in Maharashtra is one such region, where irrigation plays a vital role in agricultural production (Desai et al., 2019).Because of the absence of social and political stability necessary to maintain agriculture, the majority of ancient societies that relied on irrigated agriculture began to deteriorate. Agriculture's ability to be lucrative over the long term is one of the numerous elements that determine how long civilisation lasts. This research has taken into consideration some of the fundamental ideas and methods necessary for sustainable and successful irrigation-based agriculture.

**Objectives**

Demonstrating the irrigation progress in the Solapur district is the primary goal of the research. Analysis of the Solapur district's irrigation pattern, in addition to the sources of irrigation, regional variations in irrigation, and the effects of irrigation on agricultural land are the study's specific goals.

**Materials and Methods**

The Solapur district includes secondary data for the years 2016–2017. The director of the district irrigation department, the district supervisory agricultural office, the Solapur socioeconomic review, and the district statistical summary of the Solapur district are the sources of the secondary data and information. Maps and graphs based on the findings of the analysis of secondary data using basic approaches are displayed. The study employed a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. Primary data was collected through field surveys and interviews with farmers, while secondary data was obtained from government reports and literature reviews.

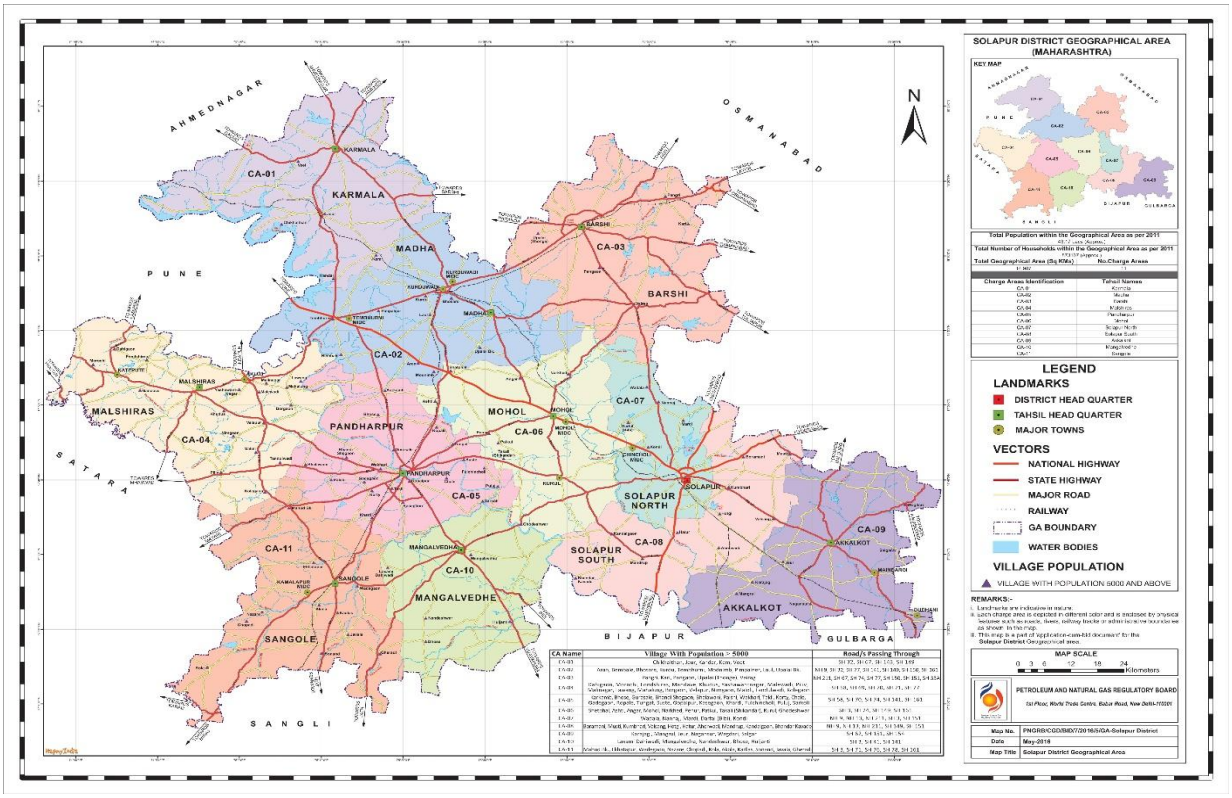


**Figure no. 1:** Map Showing Solapur District Maharashtra State India

| Sr. No. | Utilisation of Land in Solapur District | Area in Hectares |
|---|---|---|
| 1 | Forest Land | 32,000 hectares |
| 2 | Grass land | 37,000 hectares |
| 3 | Total cropped area | 11, 64,000 hectares |
| 4 | Total irrigated area | 2, 51,000 hectares |
| 5 | Total area under fruit and vegetable crops | 29,499 hectares |
| 6 | Total area under cereal crop | 8,15,200 hectares |
| 7 | Total area under pulses | 1,10,000 hectares |
| 8 | Total area under oilseeds | 73,100 hectares |
| 9 | Total area under medicinal plant | 90 hectares |

**Table No. 1:** Land Data of Solapur District as per Utilisation

**Types of Irrigation in Solapur District:**

Types of Watering in the district of Solapur has uneven irrigation development as a result of both natural and man-made imbalances in irrigation supplies. Regions' respective benefits and drawbacks in relation to irrigation supplies are the cause of the natural imbalances. Geographical inequalities can be defined as these inherent geographical variations. Fallows are the type of irrigation sources used in the Solapur district.

The study identified three primary types of irrigation systems used in Solapur district:

1. Surface Water Irrigation: This type of irrigation uses water from rivers, canals, and reservoirs (Sharma et al., 2018). Surface water irrigation is the most common type of irrigation in Solapur district, accounting for 60% of the total irrigated area.

2. Groundwater Irrigation: This type of irrigation uses groundwater from borewells and tube wells (Kumar et al., 2017). Groundwater irrigation accounts for 30% of the total irrigated area in Solapur district.

3. Drip Irrigation: This type of irrigation delivers water directly to the roots of plants, reducing evaporation and runoff (Patil et al., 2019). Drip irrigation accounts for 10% of the total irrigated area in Solapur district.

Advantages and Disadvantages:

Each type of irrigation system has its advantages and disadvantages:

1. Surface Water Irrigation: Advantages - low cost, easy maintenance; Disadvantages - dependent on rainfall, waterlogging.

2. Groundwater Irrigation: Advantages - reliable water supply, reduced evaporation; Disadvantages - high energy costs, groundwater depletion.

3. Drip Irrigation: Advantages - water conservation, increased crop yields; Disadvantages - high initial investment, clogging.

**Conclusion:**

The irrigation situation of Solapur district is not satisfactory come to Maharashtra state. The study concludes that surface water irrigation, groundwater irrigation, and drip irrigation are the primary types of irrigation systems used in Solapur district. Each type of irrigation system has its advantages and disadvantages. The study recommends the adoption of drip irrigation and groundwater recharge systems to address water scarcity issues in the region.

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