Sustainable Agriculture and Irrigation Facilities in Satara District

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Abstract

The present research paper is the study of the irrigation pattern of Satara district. The researcher has studied the available facilities of irrigation in Satara district in its whole sense. The researcher has found out the utilization of water through various sources such as well, bore well, cannels in the study area of Satara district. The study has came to know that there is variety of utilization of water and its methods to use such as open irrigation method, sprinkler method, etc.

KEYWORDS: Irrigation, methods, utilization, well, bore well, sustainable, cannels etc.

Introduction

India represents around 4% of the world's sustainable water assets. The average yearly precipitation in India is around 4000 BCM (Billion Cubic Meter). Of this, approximately half (1869 BCM) water keeps running off from waterways to seas. What is left from that lone 690 BCM is utilizable surface water. This alongside 430 BCM groundwater makes India's aggregate yearly utilizable water assets to be near 1120 BCM.

The water system is the utilization of controlled measures of water to plants at required interims. Water system develops farming harvests, look after scenes, and revegetate exasperates soils in dry regions and amid times of not as much as normal precipitation. Water system likewise has different uses in edit generation, including ice protection, suppressing weed development in grain fields and counteracting soil consolidation. In differentiate, an agribusiness that depends just on coordinate precipitation is alluded to as rain-nourished or dry land cultivating.

In the present paper, the researcher has studied the irrigation pattern and its sources of Satara district with its utilization and the suggestions to the running off the water.

Objective

1. **To study the source of irrigation in the study area.**
2. **To study the Methods of irrigation in the study area.**
3. **To study the Cost of Water in the study area.**

Research Methodology

This district has a moderately higher extent or the reconstructed with the state (58%). In addition, the dirt and climatic conditions in the locale are to such an extent that it has both sub-par editing design, ruled by tow esteem products and relativity low yield in regard of the vast majority of the essential harvests. Eventually, it demonstrates the presence of present cultivating. In such regions the greatness of reception of new products and new procedures rely on the speed with which they could be incorporated and absorbed into the current framework.

The Study Area

The proposed study covers the hilly area of Satara district particularly Mahabaleshwar, Jaoli and Patan Talukas.

Period of the Study

As pointed out before, the present investigation intends to look at the manageable advancement of horticulture. Toward this path, the period, from 1999-2000 to 2009-10 is chosen for examination.

Sampling Design

30 villages will be selected from these three Talukas viz. 10 villages from Mahabaleshwar taluka, 10 villages from Jaoli and 10 villages horn Patantaluka. Moreover, 10 farmers will be selected randomly from each village based on the appropriate representation of the economic and social status of the farmers that is form marginal, small medium and big categories of landholding. Hence, study covered 300 farmers form 10 villages of Mahabaleshwar taluka, 100farmers from 10 villages of Jaolitaluka and 100farmers from 10 villages of Patantaluka. Thus, total 300 sample farmers from these three talukas will be selected.

Statistical Tools

Keeping in mind the end goal to look at the targets and theories of the investigation the proper measurable systems will be utilized For bringing out changes in some significant factors, in view of two purpose of time viz. 1999-2000 and 2009-2010 method of rate change will be utilized. Furthermore, some factual procedures, for example, coefficient of variety and straightforward relationship will be utilized. Close to these factual procedures some cartographic strategies will.

Review of Literature

Veer (2016): In this study it is revealed that the total area under irrigation in Khatav, Koregaon, Jawali, Patan, Karad, Wai and Mahabaleshwar tahsils has increased from 2000-01 to 2010-11. The factors responsible for this change are industrialization, urbanization and modernization of agricultural techniques. The total area under irrigation in Khandala and Man tahsils has decreased from 2000-01 to 2010-11.

BarkadeJ D (2017): The study reveals that irrigation development in the western and northeastern part of the Satara district is low, where physical environment is unfavorable for irrigation development. Whereas severe drought prone conditions in Man and Khatav, Khandalatalukas have adversely influenced the socio-economic conditions of these talukas including agriculture, industrialization, education etc. because of this population of these talukas is comparatively low than other talukas.

Bello (2008), According to Bello" Irrigation facilities and rainfall influences to agricultural production.

Kore, Dhanushwar, Gone and Kalgapure (2009) ,According to Kore, Gone and Kalgapure, Irrigation is high influence of production of rise and groundnut and alternatively to wheat, Jwar, Tur and Sugarcane.

Hussain (2012), the study shows, irrigation and cultivated land highly affected to production of rice and finance and fertilizers are affected in low ratio.

Subramanian & Ramachandra (2009),Water and fertilizers plays vital role of production in agriculture.

Data Analysis

This section consist the overall data and analysis of Irrigation facilities available in the study area.

Sources and Methods of Irrigation

Table No.1.1
Source of Irrigation

	Pathan	Jaoli	Mahabaleshwar	Total
Rainfall	**5**	**1**	**2**	**8**
Well	**87**	**40**	**70**	**197**
Bore well	**1**	**8**	**9**	**18**
Cannel	**0**	**6**	**0**	**6**
Lake	**0**	**5**	**0**	**5**
River	**3**	**10**	**12**	**25**
Other	**0**	**29**	**1**	**30**
Well & Bore well	**0**	**0**	**2**	**2**
Well & River	**4**	**1**	**4**	**9**
Total	**100**	**100**	**100**	**300**

Table No1.1- indicates the source of irrigation for farming activities in study region. We observed that in study area respondent use all types of source of Irrigation is well. 197 respondent uses the Well, 18 Bore-well, 6 cannel as sources of Irrigation, very few respondents(8) depend upon the rainfall water. Other respondent use the other sources of Irrigation most of respondent use the source of Irrigation is well water

Table No. 1.2
Method of Irrigation

	Pathan	Jaoli	Mahabaleshwar	Total
Open	**84**	**42**	**10**	**136**
Sari Method	**9**	**43**	**23**	**75**
Drip	**0**	**10**	**22**	**32**
Sprinkler	**1**	**2**	**8**	**11**
Open & Sari	**5**	**1**	**1**	**7**
Sari & Drip	**0**	**0**	**5**	**5**
Sari & Sprinkler	**0**	**0**	**5**	**5**
Drip & Sprinkler	**0**	**2**	**18**	**20**
Open, Sari & Sprinkler	**1**	**0**	**1**	**2**
Sari, Drip & Sprinkler	**0**	**0**	**7**	**7**
Total	**100**	**100**	**100**	**300**

Table No.1.2-shows that which method of Irrigation is used by respondents in farming activities in study area. It shows that most of respondents use the open method of Irrigation, 136 respondents use drip method very few respondents use the method of sprinkler other and respondents use other methods of Irrigation. It direct that number of respondents use the open method of Irrigation anywhere

Table No. 1.3
Cost of Water

	Tahsil						Total	
	Pathan		Jaoli		Mahabaleshwar			
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
No cost on water	5	1.7%	1	0.3%	2	0.7%	8	2.7%
up to Rs 20000	66	22.0%	82	27.3%	68	22.7%	216	72.0%
Rs. 20000 to 50000	23	7.7%	17	5.7%	21	7.0%	61	20.3%
Rs. 50000 to 1 Lakh	6	2.0%	0	0.0%	9	3.0%	15	5.0%
Total	100	33.3%	100	33.3%	100	33.3%	300	100.0%

Table 1.3 shows cost of water resources used for farming in the study area. It reveals that 22% of the farmers in PatanTahshil spend up to Rs. 20000 on water resources for agriculture and 7.7% spend from Rs. 20000 to Rs. 50000, only 2% of the respondents spend more than Rs. 50000 and only 1.7 % of the respondent snot spending their money on water resources they are using rain water for the farming.

Findings

Use of Irrigation Facilities

Sources and methods of irrigation are very important for the agriculture sector hence we have collected required information concern to the various sources of irrigation and methods of irrigation applied by the formers in study area, the results indicates that;

- 197 respondent uses the Well, 18 Bore-well, 6 cannels as sources of Irrigation, very few respondents 8 depend upon the rainfall water.
- Most of respondents use the open method of Irrigation, 136 respondents use drip method very few respondents use the method of sprinkler other and respondents use other methods of Irrigation
- 22% of the farmers spend up to Rs. 20000 on water resources for agriculture and 72% of the farmers are spending up to Rs 20000 and only 5 % of the respondents are spending Rs. 50000 to 1 Lakh on water resources they are using rain water for the farming.
- **Suggestions:**
- In the study area most of farmers use well water. So there is need to increase the other water sources
  - Most of the area of the study region is under irrigation in which there is variety of use of water among them open irrigation method of watering is mostly used. For the modernization
  - There is need to increase the cost of water ratio

Conclusion:

The study reveals that the most of the people/ farmers are using watersources like well bore well and cannels but only 8 % farmers are dependingupon rainfall water source. In case of watering most of respondents use theopen method of Irrigation

instead of this only 136 farmers are using drip irrigation method and others are using other irrigation method.

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