

## A Case Study of Irrigation Effect on Agricultural Productivity in Pandharpur Tehsil

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### Abstract:

This paper seeks to examine the response of agrarian productivity to irrigation and its impact on growth of agrarian productivity in the Solapur quarter with special references of sample named townlets of case study. In malignancy of the technological developments in furnishing bettered crop kinds and better operation practices in Solapur quarter, husbandry has been considered a adventure as the agrarian productivity is explosively told by the vagrancies of the thunderstorm. thus, irrigation is an important for the agrarian productivity in Solapur quarter. Use of diseases, HVY seeds, use of technology, robotization is nearly grounded on the vacuity of irrigation and its impact of the agrarian productivity in a region. Comparing village differences of agrarian productivity, a profile of agrarian productivity is examined with a focus on effect of irrigation on agrarian productivity in study area. As a result, two really discerned scripts of the changes of agrarian productivity have been observed. The mainobjects of the present exploration paper are to analyses the significance of agrarian productivity and examine the impact of irrigation agrarian productivity in study area. The Kendall's ranking measure system is used for dimension of agrarian productivity to the collected information of sample townlets in study area. It has been observed that the spatial pattern of irrigation and agrarian productivity extensively unstable from village in the study area.

**Key words:** Agricultural productivity, ranking coefficient,

### Introduction:

Agrarian productivity is getting decreasingly important issue as the world population continues to grow. India, one of the world's most vibrant countries, has taken way in the once decades to increase its land productivity. Agriculture still forms the backbone of Indian frugality, in malignancy concerned sweats towards industrialization in last three decades. Agriculture contributes a high share of net domestic product by sectors in India. growers are growing multitudinous of crops in the field rather than single crop. husbandry product is told by physical, climatological, socio- profitable, and technological and association factors, planter's station but the vacuity of irrigation installations is the most important determinant on the agrarian productivity. Because the inputs of husbandry similar as use of HYV, use of diseases, use of advanced technology, agrarian robotization, cropping intensities. are completely grounded on the vacuity of irrigation and all these technology told on the agrarian productivity. thus, irrigation is an important determinant of the agrarian productivity. Present study gives an idea of real situation of irrigation installations and its goods on the variations in the agrarian productivity in the named townlets of study area.

### Objectives:

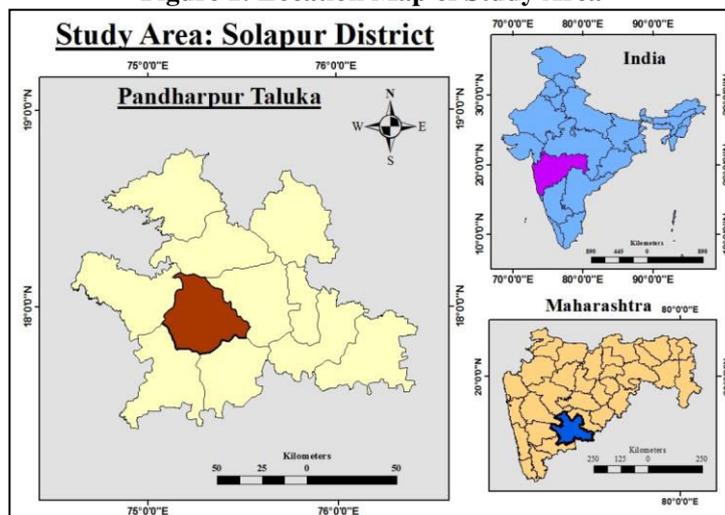
To determine effect irrigation on agricultural productivity selected sample villages of study area.

### Study Area:

Latitude and longitude equals are  $17^{\circ}67'$ ,  $75^{\circ}32'$ . Pandharpur is a veritably important passage megacity in central Maharashtra, India. Every time during the Vaari pilgrim age it attracts plenitude of Hindu religion followers and excursionists who come to visit the Vithoba tabernacle, one of the most important sacred places of the region. The megacity is also notorious with intriguing and unique original crafts of making small rustic toys. Pandharpur is Taluka in Maharashtra state, Pandharpur Taluka population in 2023 is,926. According to 2011 tale of India, Total Pandharpur population is,368 people are living in this Taluka, of which,359 are manly and,009 are womanish. Pandharpur population estimated to be,231 in 2022. knowledgeable people are,467 out of,625 are manly and,842 are womanish. Total workers

are,703 depends on multi chops out of which,547 are men and,156 are women. Total,782 tillers are depended on husbandry out of,653 are cultivated by men and,129 are women.,353 people works in agrarian land as a labour in Pandharpur, men are,610 and,743 are women.

Figure 1: Location Map of Study Area



**Data Base and Methodology:**

Present study substantially relies on the primarily data collected through questionnaire and particular interview system to the growers in the named different townlets in the case studies.

**Methodology**

The detail study of agrarian productivity is conducted to understand the variations in the study area. In this concern agrarian productivity are applied for the identification of variations in the village. The collected area under different cropping product is tabulated, arranged in proper format and statistical styles are applied for the carrying results. A relative analysis is made among 10 townlets with 10 growers to each village to understand the agrarian productivity condition of the present situation due the variations in the irrigation installations. The identification of agrarian productivity in the named townlets of case studies on the base of spatial distribution of irrigation installations. To study the agrarian productivity there are Kendall’s Ranking Co-efficient system used for provides veracious results. Kendall’s Ranking Measure system In this fashion the element areal units are ranked according to the per hectare yields of crops and the arithmetical average rank called the ranking measure for each unit is attained. It’s egregious that an element areal unit with fairly high yields. He’d applied the following formula for the computation of indicator of agrarian productivity.

$$Ranking\ Co\text{--}efficient\ Index = \frac{\sum R}{n}$$

**Importance of Agricultural Productivity:**

The agrarian productivity of a region is an important for numerous reasons. A side from furnishing further food, adding the productivity of granges affects the region's prospects for growth and competitiveness on the agrarian request, income distribution and savings, and labour migration. An increase in an indigenous agrarian productivity implies a more effective distribution of scarce coffers. As some growers borrow new ways and differences in productivity arise, the more productive growers profit from an increase in their weal while growers who aren't productive enough will exit the request to seek success away. As a region or area of granges come more productive, its relative advantage in agrarian products increases, which means that it can produce these products at a lower occasion cost than can other regions. thus, the region becomes more competitive on the world request, which means that it can attract further consumers since they're suitable to buy further of the products offered for the same quantum of plutocrat. Increases in agrarian productivity lead also to agrarian growth and can help to palliate poverty in poor and developing countries, where husbandry frequently employs the topmost portion of the population. As granges come more productive, the stipend earn increased by those who work in husbandry. At the same time, food prices decreases and food inventories come more stable. Labourers thus have further plutocrat to spend on food as well as other products. This also leads to agrarian growth, people see

that there's a lesser occasion earn their living by husbandry and are attracted to husbandry either as possessors of granges themselves or as labourers. still, it isn't only the people employed in husbandry who profit from increases in agrarian productivity. Those employed in other sectors also enjoy lower food prices and a more stable food force. Their stipend may also increase. Dimension of Agricultural Productivity The dimension of product and inputs needed for the product that affair is known as agrarian productivity. Agrarian productivity is the inter play of a multitude of numerous factors, similar as environmental, socio- profitable and technological factors. Among them the vacuity of irrigation is an important determinant to the toll on the agrarian productivity. The agrarian productivity is nearly grounded on the irrigation and its impact on the use of chemical diseases, use of HYV, used of robotizationetc. and its impact on the per hectare yields, whereas the agrarian effectiveness is much further than agrarian productivity and conveys a more comprehensive meaning. Agrarian productivity is the factual performance of the land in terms of per hectare yield, whereas agrarian effectiveness is a rate between the achievement in terms of agrarian product and the factual eventuality of the land productivity.

#### Ranking of Coefficient Index by Kendall's Method:

The co-efficient of agricultural productivity of a village in terms of a single variable is calculated by equation using of Kendall's Ranking Co-efficient method.

#### Pattern of Agricultural Productivity in Selected Villages:

The ranking measure value of veritably high, high, medium, low, veritably low productivity have been given in following table while the attendant pattern of productivity have been colluded in following table.

#### 1. High Agricultural Productivity:

High Agrarian productivity set up in the Suste, Fulchincholi, Pandharewadi and Sangavi concerning in the study area. It has been observed that means high agrarian productivity. Because of vacuity of irrigation installations and so the use of HVY, maintains the fertility, use of upgrade agriculture tool in this area.

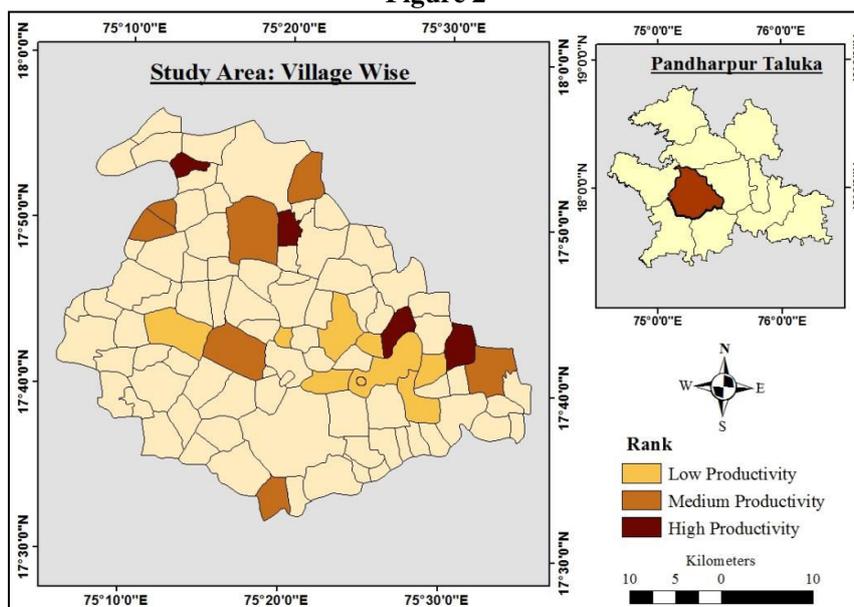
#### B. Medium Agricultural Productivity:

The moderate agrarian productivity has been observed in the Avhe., Nandore, Bhose, Bhandi Shegaon, Puluji and Wakhari. There's medium agrarian productivity, because of acceptable water for irrigation but largely diversified crops, the growers are growing assorted crops ranging from high water in Bhima River basin taking i.e. sugarcane to lower water taking crops like wheat, jowar, etc.

Sr. No	Name of Village	Jawar	Wheat	Sugarcane	Maiz	Bajra	Vegitable	Total Rank	Coefficient Rank
1	Ajansond	18	20	1	2	13	1	96.9	9.16
2	Ambe	12	2	3	10	2	14	76.1	7.16
3	Avhe	8	8	14	7	9	15	33.7	10.16
4	Bardi	4	14	12	19	14	2	60.2	10.8
5	Bhandi Shegaon	5	11	10	11	11	3	41.9	8.5
6	Bhose	2	15	7	14	15	8	52.5	10.1
7	Chale	1	3	4	6	3	10	69.9	4.5
8	Chincholi Bhose	3	12	9	5	7	11	44	7.8
9	Degaon	9	7	11	8	12	4	33.8	8.5
10	Fulchincholi	20	18	2	16	18	13	45	14.5
11	Gopalpur	13	10	5	9	10	5	36.2	8.6
12	Kharsoli	11	4	13	1	4	6	70.6	6.5
13	Kondharki	14	5	2	3	5	12	72.5	6.8
14	Nandore	7	9	16	13	8	18	38.3	11.8
15	Pandharewadi	10	19	18	18	17	20	21.0	17
16	Puluji	15	17	6	15	19	7	40.8	13.16
17	Sangavi	19	16	17	4	16	16	36.5	14.6
18	Shetphal	17	3	19	12	20	9	49.4	13.3
19	Suste	16	16	20	20	16	17	11.2	17.5
20	Wakhari	6	13	8	17	3	19	57.7	11

**Table: Ranks and Coefficient of Ranking Index of Major Crops in the Study Area**  
(Sources: Compiled by researcher)

Figure 2



C.

**D. Low Agricultural Productivity:**

The veritably low agrarian productivity attained in the Ajansond, Ambe, Chale, Chincholi Bhoze, Degaon, Gopalpur, Kharsoli, Kondharki, and Shetphal. Diversity in agrarian product is one key to productivity, as it enables threat operation and preserverscapabilities for adaption and change. Monoculture is an illustration of such anon-diverse product system. In a monoculture system a planter may produce only one crop, but no beast, or only beast and no crop. But this situation isn't set up in study area. In short, irrigation is an important determinant told on the agrarian productivity and also some other many significant causes are responsible for the changing agrarian productivity in pastoral land similar as a lack of current exploration information can have a huge impact on the yields, adding prices of energy, attainability of raw accoutrements for agrarian purposes, lack of machines to produce, illegal seeds, illegal chemical spreading and unscientific husbandry system.

**Conclusion:**

It has been observed that the growers in the townlets of high rinsed with the advanced the agrarian productivity, because of these townlets substantially growers are used of HVY, use of innovative ways etc. so advanced the agrarian productivity in these areas and near Bhima River Basin. While in the some village i.e. low vacuity of irrigation, the growers are using much lower toxin per unit cropped area; toxin consumption is low, performing in poor productivity. Transfer or relinquishment of advanced product technology in uneven downfall, ecosystem has not picked up its asked instigation. thus, productivity of in thiseco-system is vastly poor. The complex ecological situation of downfalleco-system conforming of highland, shallow low land,semi-deep water and deep water conditions is one of high reasons for low productivity. It also socio- profitable, organizational and technological constraints performing in low productivity. Irrigation is an important determinant told on the agrarian productivity and also some other many significant causes are responsible for the changing agrarian productivity in pastoral land similar as a lack of current exploration information can have a huge impact on the yields, adding prices of energy, attainability of raw accoutrements for agrarian purposes, lack of machines to produce, illegal seeds, illegal chemical spreading and unscientific husbandry system.

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