



A GEOGRAPHICAL ANALYSIS OF AGRICULTURAL LAND USE EFFICIENCY IN SATARA DISTRICT

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ABSTRACT:

Land use is the actual use of land by house, apartments and industrial location which are categorized the term as residential, industrial and agricultural. It refers to a system of land utilization including roads, neighborhood retail and service activities as well as location of industries and the carrying of agricultural pursuits. In a real area, tree crop or row crop would identify land use, whereas track farming and grazing indicate a system of land utilization. The main objectives of the present research paper is to analysis the importance of agricultural land use efficiency and examine the impact of gross cropped area in the study area. Land use efficiency calculating method is used for measurement of land use efficiency to the collected information of Socio-economics abstract, 2011 in study area. It has been observed that the spatial pattern of gross cropped area and Net sown area widely unequal from tahsil wise in the study area.

KEYWORDS: Land use efficiency, Gross cropped area, Net sown area.

INTRODUCTION:

Land use efficiency may be defined as the extent to which the net sown area is cropped or re-sown. Land is basic source of human society and land use is the surface utilization of developing and vacant land it is use made of the land by man in a series of recognized category. Land use is an important economic activity of man. It is function of four variables viz. land, water, air, and Man certain proportion of its available for cultivation, which the best base for the agricultural production land use changes occur to meet the variables demands of the society in its new way of life. The gross cropped area as a percentage of the net sown area gives a measure of land use efficiency, which means the intensity of cropping. Land use efficiency is calculated by using following formula:

$$\text{Land use efficiency} = \frac{\text{Gross cropped area}}{\text{Net sown area}} \times 100$$

STUDY REGION:

Satara district lies at the western limit of Deccan table of the Southern Maharashtra. The district extends between 17°5' to 18°11' north latitudes and 73°33' to 74°54' east longitude. The district has component shape with the west street of about 144 km and the north-south 120 km. It covers an area about 10,480 sq.km. This is 3.4 % of the area of Maharashtra State. Among 36 district of the state it ranks 15th in the terms of area. The district consists of Eleven Tahsils. The district bordered by the Pune district to the north, Sangli districts to the south, Solapur district to the east and Ratnagiri district to the west. It has very short boundary of Raigad district to the northwest. Although the boundaries are main administrative line along with several lines this considered with physical features. The study area is distributed in three important river basins viz. the Krushna, the Koyana basin which covers Mahabaleshwar and Karad Tahsils, and the Venna covers Koregaon and Satara tahsils. The Manganga, the Banganga basin which covers the Man and Phaltan Tahsil. These three tributaries drain about 27 percent of the total area under study and play an important role in the irrigation facilities of the area. On the agricultural front, the presence of black soil helps in raising crops like Sugarcane, wheat, rice, jowar and oilseeds and that of red soil is more suitable for paddy (fig-1).

**Fig-1**

OBJECTIVES:

The selected objectives for the research are as follows.

1. To study the Land use and Land use efficiency of the study area
2. To assess the Gross Cropped Area and Net sown area in the study area.
3. To study analyze the tahsil wise distribution of land use efficiency in Satara district.

DATABASE AND METHODOLOGY:

The present study is based on secondary data pertaining to land use efficiency. All relevant published and unpublished records have been considered. The secondary data has been collected from district census handbook, Gazetteer, District statistical abstracts, socio-economic abstracts of the Satara district. Results of tabulation have been depicted in the form of table and it has also shown using graph and map wherever appropriate. The period selected for the study is 2001 to 2011.

REVIEW OF LITERATURE:

1. Zodage S.B. and K. S. Surwase (2014), who have published research paper on “Agricultural Land use pattern and Irrigation in Phaltan Tahsil of Satara District”. They studied the temporal variation in land use pattern and irrigation facility. The paper has analyzed the existing land use pattern between 1991 to 2011.
2. Zodage S.B. and K. S. Surwase (2014), Research worked on “Agricultural Land use and Cropping Pattern in Satara District of Maharashtra State”. Author selected Land use pattern and cropping pattern of Satara District. In this paper author examine the intensity of agriculture to be stepped up by adopting technological changes.
3. Zodage S.B. and K. S. Surwase (2015), who have published research, paper on “Rainfall Trend in Drought Prone region in Phaltan Tahsil of Satara District”. In this research paper an attempt is made to describe the spatial distribution of rainfall, rainfall intensity, annual rainfall, rainfall variability, drought prone, and climate change in Phaltan Tahsil on seasonal and annual basis.
4. Zodage S.B. and K. S. Surwase (2015), who have published research, paper on “A Study of Crop Combination Region of Phaltan Tahsil in Satara District”. He has discussed in his research paper the crop combination in Phaltan Tahsil as demonstrated by the crop combination modified weaver method and calculate the deviation. The application of Rafiullah’s method shows the realistic picture of crop combination.
5. Zodage S.B. and K. S. Surwase (2015), have made very remarkable research paper on “Agricultural Problems and Prospects in Phaltan Tahsil of Satara District”. He has discussed in his research paper Agriculture, Drought Climate, Soil, land use and

Irrigation. In this paper an emphasis given on the agricultural problems and prospects of Phaltan Tahsil.

ANALYSIS OF LAND USE EFFICIENCY:

The tahsil wise land use efficiency in the Satara district has been calculated with the help of formula and the results has been put in the table-1.

Table-1: Land Use Efficiency in Satara District (Area in hectares)

Sr. No	Name of the Tahsils	2001			2011			Volum e of Change in land use Effi.in %
		Gross Cropped Area	Net Sown Area	Index of Land use Effi.in %	Gross Cropped Area	Net Sown Area	Index of Land use Efficiency	
1	M.shwar	11812	8475	71.75	6468	3249	50.23	-21.52
2	Wai	53862	34617	64.27	50112	30880	61.62	-2.65
3	Khandala	33794	22590	66.85	40903	29920	73.15	6.3
4	Phaltan	77823	54243	69.70	64419	41063	63.74	-5.96
5	Man	74077	58185	78.55	55851	40084	71.77	-6.78
6	Khatav	110335	92436	83.78	83428	65529	78.55	-5.23
7	Koregaon	67757	53896	79.54	68817	54956	79.86	0.32
8	Satara	69795	50950	73.00	92158	73663	79.93	6.93
9	Jawali	51301	37275	72.66	45355	31429	69.30	-3.36
10	Patan	74998	64604	86.14	92950	82556	88.82	2.68
11	Karad	94980	80332	84.58	95278	80930	84.94	0.36
Total		720534	557603	77.39	695739	534259	76.79	-0.60

Source: Socio-economic Abstract, Satara District (2001, 2011).

Table-1 indicates that the highest gross cropped area was recorded in Khatav tahsil during 2001 and Karad tahsil in 2011; on the other hand, the lowest gross cropped area was recorded during 2001 and 2011. On the basis of the figures in the table the region is divided in three region / level of efficiency, i.e. Low, Medium & High. The details of the same are given as below:

1) Low land use efficiency region (Below 70 percent):

Low efficiency of land use is observed in Mahabaleshwar, Wai, Phaltan and Jawali tahsils. Both physical and non-physical determinants of agriculture are responsible for low land use efficiency.

2) Moderate land use efficiency region (70% to 80 percent):

It was observed in Khandala, Man, Koregaon, Khatav and Satara tahsil where infrastructural facilities for agriculture are not so much developed. Government has given

more benefits to improve the irrigational condition even then due to variability of rainfall these tahsils showed moderate land use efficiency.

3) High land use efficiency (Above 80 percent):

High land use efficiency has been observed in Patan and Karad tahsil during the period of investigation. The highest negative change in land use efficiency was experienced in Khatav tahsil whereas the lowest negative change in land use efficiency was took place in Man tahsil from 2001 to 2011. Below 6 percent positive change in land use efficiency has been observed in Satara and Patan whereas 3percent to 8percent negative change has been observed in Wai, Phaltan, Man, Khatav and Jawali tahsil. The highest positive change in land use efficiency experienced in Khandala tahsil and the lowest positive change was received from Karad and Patan tahsil during investigation period.

CONCLUSION:

The agriculture efficiency of Satara district has shown variation at large scale. Erratic nature of monsoon, cropping pattern, crop combination and other relevant factors are responsible for it. Farmers of the district should increase the net sown area and especially the area under irrigation. More irrigation in low efficiency region will certainly increase the efficiency of the land since it is the boosting factor to increase production.

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