

REGIONAL VARIATION OF LAND USE AND LAND USE EFFICIENCY IN KOLHAPUR DISTRICT - A GEOGRAPHICAL ANALYSIS

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Abstract:

The aim at this paper is general land use pattern and land use efficiency in Kolhapur District. Land use and efficiency plays vital role in agricultural planning. Land use efficiency is a ratio between gross cropped area and net sown area in a component areal unit. Efficiency of land drastically effects on land use as well as cropping pattern, crop productivity. The present investigation is based on secondary data. The data thus collected is processed and further represented through the table. The study region is the Kolhapur district of Maharashtra which is one of the well-watered & agriculturally progressive part of the state. The study region has low area under forest is observed with 18.04 percent, it needs increase in forestation, The high land use efficiency is observed in Gaganbawda, Bhudargadh and Ajara tahsils due to development of irrigation facilities through medium irrigation facilities. The low land use efficiency in four tahsils i.e. Panhala Kagal, Gadhinglaj and Chandgad.

Key Word: Land use pattern, land use Efficiency, Intensity, Agriculture Efficiency.

Introduction: -

Agricultural geography is a scientific study of the spatial pattern of agricultural activities in the dimension of time and space. Land use is the surface utilization of all developed and vacant land on a specific point at a given time and space. The land use of a Kolhapur district at any particular time is determined by the physical, economic and institutional framework taken together. The general land use can be divided into five categories such as the net sown area, the land not available for cultivation, cultivable waste, fallow land and forest cover. The data regarding general land use have obtained for 2014-15 from the Department of Revenue, Agricultural Department of Kolhapur district.

Land use efficiency is a ratio between gross cropped area and net sown area in a component areal unit. The population is continuously increasing and the demand for food is also increasing. There is very little scope for horizontal expansion of agriculture. So it is very necessary to use land intensively. Agriculture efficiency is a function of various factors including the physical, socio-economic and technical organization (Salunke, 2011). The efficiency of land drastically affects on land use as well as cropping patterns, crop

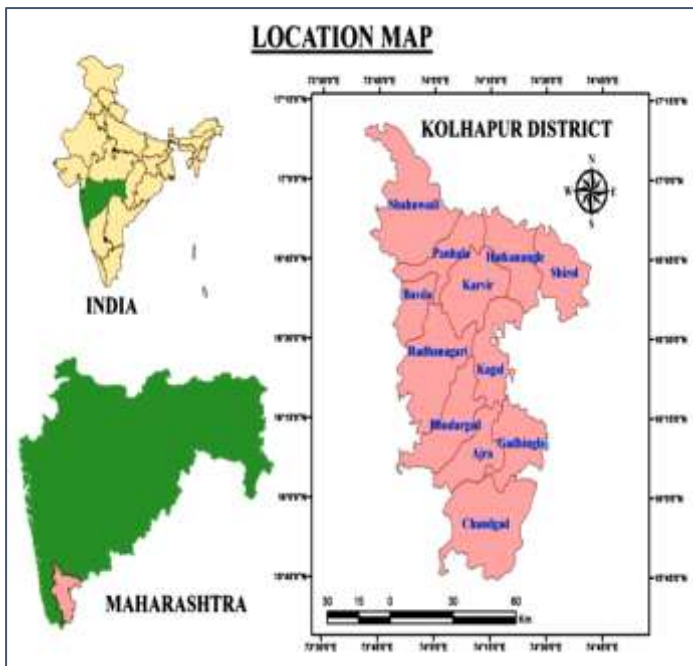
productivity. The study of land use and efficiency is quite significant to develop solutions for natural resource management.

Objectives of the Study: -

- 1) To study the regional variation in general land use pattern of study region.
- 2) To observe Spatio-temporal change in land use efficiency.
- 3) To study analyse the tehsil wise distribution of land use efficiency in Kolhapur district.

Study Area:

The district of Kolhapur lies in the south-west of Maharashtra between 15°43'to 17° 17'North latitude and 73°40'to 74° 42'East longitude and spreads across the Deccan Plateau in the rain shadow region of the Sahyadri mountain ranges on the southernmost tip of the state of Maharashtra. The Sangli district lies to the north, the Belgaum district of Karnataka State is to the east and south, Ratnangiri and Sindhudurg districts of Maharashtra are to the West. To the west, we have the Sahyadri ranges and the river Warana is to the north which forms the natural boundaries to the district. It has an area of 7685.00 sq.kms. Which about 2.5 per cent is of total area of the state and it ranks 24th in the state as far as area is concerned.



Database and methodology:

The entire study is based on secondary data, land use data (2014-15) is obtained from various secondary sources. Sources are socio-economic abstracts of Kolhapur district, Bulletins of agricultural statistics, Agricultural epitomes, and unpublished material. Acquired secondary data, tabulated, processed and labelled with suitable cartographic techniques. Findings and conclusion of this paper are based on analysis of data.

The index of land use efficiency is obtained by using the following formula-

$$\text{Index of Landuse Efficiency} = \frac{\text{Net Sown Area}}{\text{Gross cropped area}} \times 100$$

Spatio-temporal Variations of Land use Pattern: -

The study of land use pattern in the study area covers a proportion of area under different land-use at a point of time. It is based on the classification of the land and grouped into the following five categories. The land use pattern of the study region is shown in Table No. 1. And Figure no.1 the geographical area of the study region is 7685.00 Sq. Km. The

proportion of Forest cover is the total geographical area is 18.04 percent (140100 Hector), Out of the total geographical area is 10.06 percent (78160 Hector) area is Land not available for cultivation while 9.78 percent (75981 Hector) of the land is under other uncultivated land, Fallow land is 3.46 percent (26935 Hector) and the highest area is covered by the Net sown Area is 58.62 percent (455085 Hector).

Table No. 1: Kolhapur District Tahsil Wise Land Use Pattern (2014-Area in Percentage)

Tahsil	Geographical area	Forest cover	Land not Available for Cultivation	Other Uncultivated land	Fallow land	Net sown area
Shahuwadi	13.44	2.82	1.75	2.38	0.37	6.1
Panhala	7.32	1.49	0.64	0.91	0.48	3.78
Hatkanangale	7.85	0.18	0.76	0.46	0.13	6.31
Shirol	6.54	0.11	0.63	0.35	0.07	5.36
Karvir	8.64	0.10	1.03	1.20	0.22	6.07
Gaganbawada	3.63	1.36	0.16	0.70	0.04	1.34
Radhanagari	11.49	3.44	1.67	1.85	0.41	4.11
Kagal	7.05	0.14	0.58	0.21	0.08	6.03
Bhudargadh	8.3	3.06	0.59	0.41	0.76	3.46
Ajara	7.07	1.58	0.43	0.73	0.36	3.95
Gadhinglaj	6.19	0.23	0.31	0.11	0.07	5.45
Chandgad	12.43	3.49	1.47	0.43	0.41	6.61
Total District	100	18.04	10.06	9.78	3.46	58.62

Source: socio-economic abstract, Kolhapur District (2014)

Area under Forest: -

Table no. 1 show that there is much variation in forest area from tahsil to tahsil. Out of total geographical area in Kolhapur district under forest area is about 18.4 % (140100 Hector).If you study different tahsils in Kolhapur district, The highest area under forest was found in chandgad (3.49%), Radhanagari (3.44%), and Bhudargad (3.06%) Respectively. Whereas lowest area was found in under forest in Karvir (0.10%), Shirol (0.11%), Kagal (0.14%), and Hatkanangale (0.18%) Respectively, during 2014 in the study region.

Land not available for Cultivation: -

The table no.1 and fig.no 1 show that cropping pattern of the study area, this category includes land under settlements, roads, railways, streams, canals, rivers, dams etc. Barren and uncultivable land includes rocky and hilly areas, desert land, barren land and inaccessible area in nature. In the study area average proportion of such land is 10.06 percent (78160 hectors). The highest proportion is observed in Shahuwadi (1.75%), Radhanagari (1.67%) and Chandgad (1.47%) tahsils, The lowest proportion is Gganbawada (0.16%), Gadhinglaj (0.31) and Ajara (0.43%) tahsils.

Other Uncultivated land: -

Uncultivated land has not been used for growing crops or has not been changed in

order to make it suitable for farming. The total other uncultivated land is 9.78 percent (75981 hectors) in the study area. Highest proportion of the other uncultivated land is shahuwadi (2.38%) and Radhanagri (1.85%) tahsils, and the lowest proportion is observed in Gadhinglaj (0.11%) and Kagal (0.21%) tahsils.

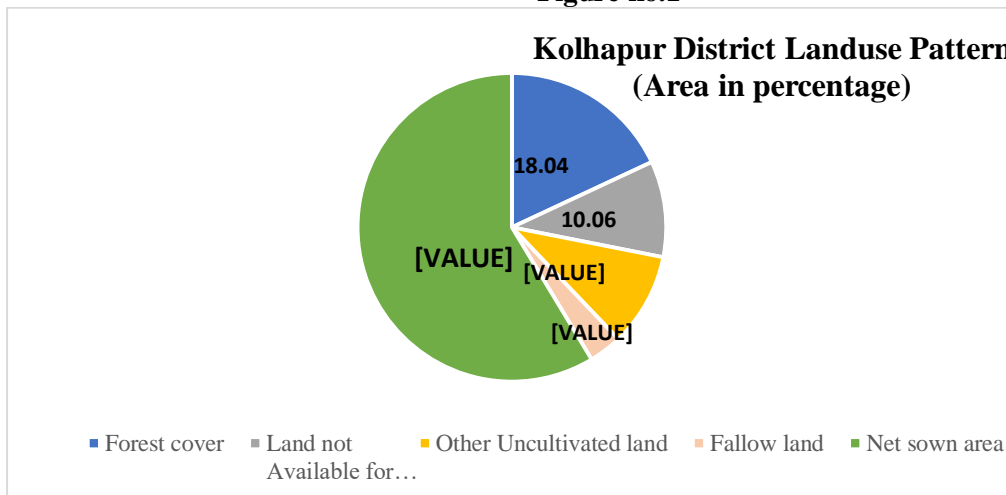
Fallow land: -

A piece of land that is normally used for farming but that is left with no crops on it for a season in order to let it recover its fertility is an example of land that would be described as fall. Table no.1 and figure no.1 the show that the total Fallow land is 3.46 percent (26935 hectors) in the study area. Highest proportion is observed in Bhudargad (0.76%) tehsil, and lowest fallow land is observed in Gaganbawda (0.04%) tehsil.

Net sown Area:-

Net sown area is the total area sown with crops and orchards.it represents an area in which total crops are grown only one in year. The total Net sown area is 58.62 percent (455085 hectors) in the study area. The highest proportion of net sown area is Chandgad (6.61%) and Hatkangale (6.31%) tahsils. The lowest net sown area is Ganganbawda (1.34 %) tehsil

Figure no.1



ANALYSIS OF LAND USE EFFICIENCY:

Land use efficiency of Kolhapur district is 126.47, spatial distribution varies from tahsil to tahsil. The highest land use efficiency is observed in Gaganbawda tahsil

Formula: -

$$\text{Index of Landuse Efficiency} = \frac{\text{Net Sown Area}}{\text{Gross cropped area}} \times 100$$

and lowest tahsil Gadhinglj (Table no.2). This index value land use efficiency is divided in three divisions. To analyse land use efficiency the tahsils of Kolhapur district are grouped into three categories.

Table No.2: Land use Efficiency in Kolhapur District (2014-15) (Area in Hector)

Tahsil	Gross Cropped Area	Net Sown Area	Index of Landuse Efficiency
Shahuwadi	56007	47426	118.09
Panhala	33672	29374	114.63
Hatkanangale	60005	48992	122.47
Shirol	48631	41667	116.71
Karvir	63369	47152	134.39
Gaganbawada	31545	10471	301.26
Radhanagari	38824	31921	121.62
Kagal	54555	46819	116.52
Bhudargadh	35322	26912	131.25
Ajara	46353	30708	150.94
Gadhinglaj	47671	42312	109.66
Chandgad	59622	51331	116.15
TOTAL DISTRICT	575576	455085	126.47

Source: socio-economic abstract, Kolhapur District (2014)

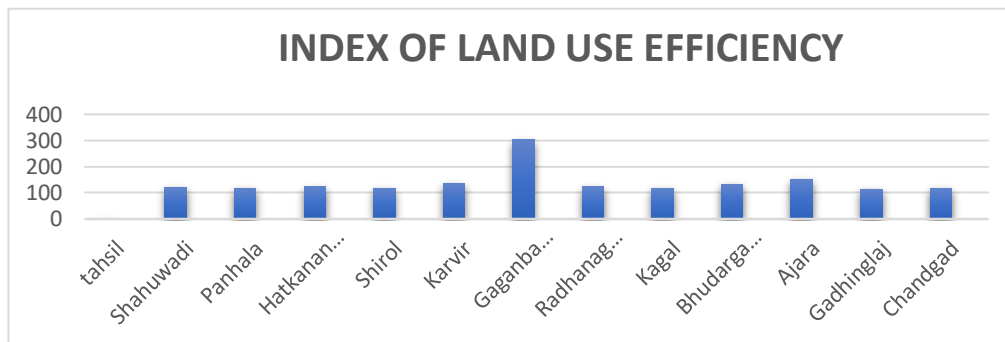


Figure No. 2

● **Areas of Low intensity (Below 110 %):**

Areas of low intensity are distributed in Gadhinglaj Tahsil, soil conditions, use of chemical fertilizers, pesticides, variety seeds, physiography irrigation all these factors are the causes of low intensity.

● **Areas of medium intensity (110 % to 115%):**

Areas of medium intensity are confined to Panhala Tahsil. Percentage of physiography irrigation, soil conditions, manures etc. are responsible for the medium intensity.

● **Areas of High intensity (above 115 %):**

High intensity was found in Shahuwadi, Hatkanangale, Shirol, Karvir, Gaganbawada, Bhudargadh, Ajara, Chandgad Tahsils, Physical and non-physical factors are responsible for the high intensity of landuse.

Conclusions

- 1) The study region has low area under forest is observed with 18.04 percent, it needs increase in forestation.
- 2) Net sown area is quite significant in the study region basically riverside fertile plain region has more area under cultivation.
- 3) Proportion of the fallow land is high in the western part of study region.
- 4) The high land use efficiency is observed in Gaganbawada, Bhudargadh and Ajara tahsils

due to development of irrigation facilities through medium irrigation facilities.

- 5) There is need to proper agricultural policy for agricultural developments in the hilly as well as western part of study region.

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