



## GENERAL LANDUSE PATTERN IN PANCHAGANGA BASIN: A GEOGRAPHICAL ANALYSIS

**Pujari A. A.**

Asso. Prof., Department of Geography, Jaysingpur College, Jaysingpur, Dist. Kolhapur

**Koli V. P.**

Research Student, Shivaji University, Kolhapur

### ABSTRACT

*The utilization of land for different purposes indicates an intimate relationship between prevailing ecological conditions and man. The efficient use of land depends on the capacity of man to utilise the land and manage it in proper perspective. In view of the predominantly agrarian nature of the study region, such studies are the subject of supreme importance. In this context, the present study aims to assess general land use pattern and highlight volume of change in land utilization. The present investigation is based on primary and secondary data. The period selected for study is from 2001-02 to 2012-13. The data thus collected is processed and further represented through the table, graphs and maps. The study region is the Panchaganga basin in the southern part of Maharashtra which is one of the well watered & agriculturally progressive part of the state. The study region has 59.20 per cent of the total area under agricultural purpose. However, the rest of land about 40.8 per cent of total area has come under different purpose like, forest (15.94%) land not available for cultivation (14.08), other uncultivated land (6.04) and fallow land (4.74). During the period under review the region has decrease in area under forest (0.24%), other uncultivated land (7.31%).*

### 1.1 INTRODUCTION:

Landuse means surface utilization of all developed and vacant lands for specific point at a given time and space. Such studies are fundamental for future planning. The utilization of land for different purposes indicates an intimate relationship between prevailing ecological conditions and man. The efficient use of land depends on the capacity of man to utilise the land and manage it in proper perspective. General land use pattern affected by Physical setting, proportion of population of the area, economical status of the area. Land use study carries a great importance because it can provide about intensively used, under used and unused land of country. This paper an attempt has been made to explain changing general land use pattern in Panchganga Basin.

### 1.2 OBJECTIVES

The present study aims to assess general land use pattern and highlight volume of change in land utilization.

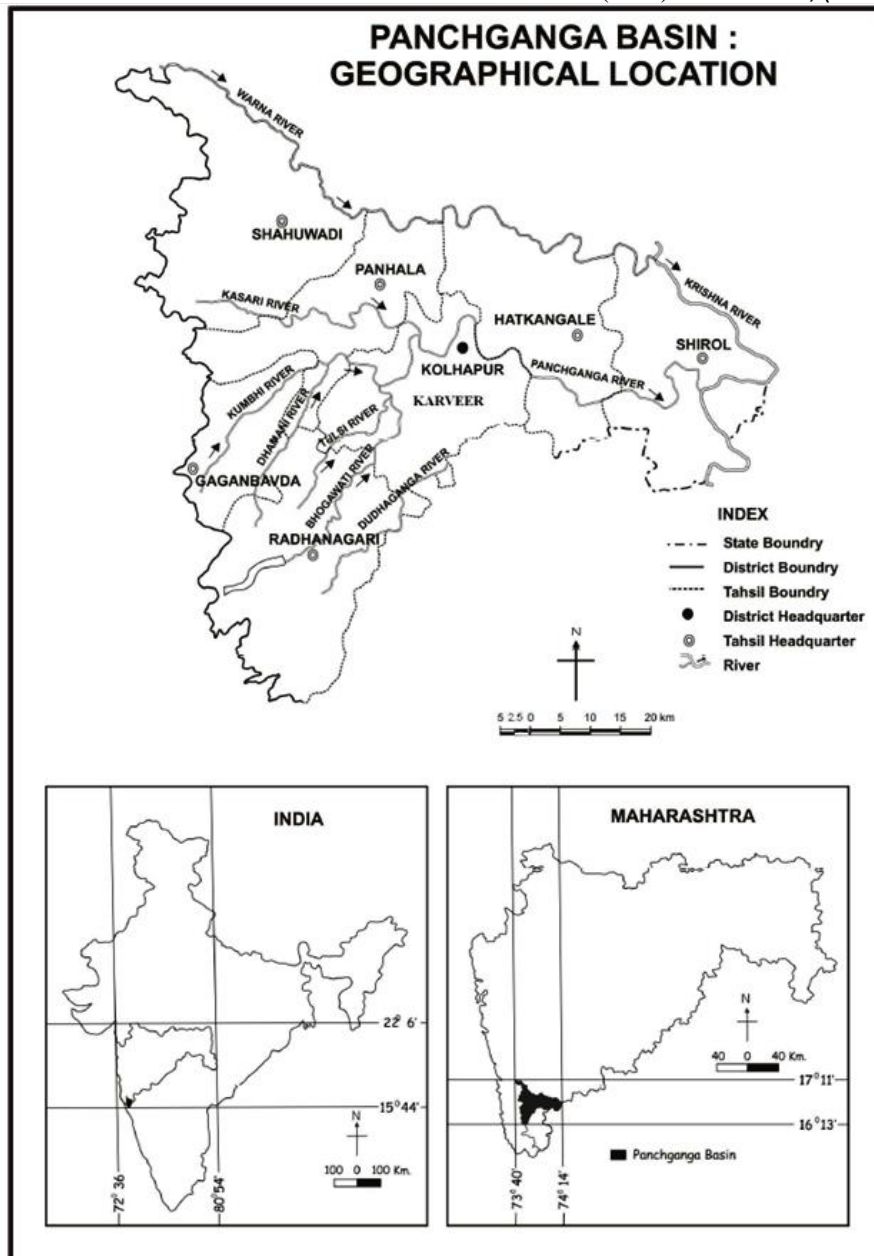


Fig. 1

### 1.3 STUDY REGION

The selected region for the present investigation is the 'Panchganga Basin' of south Maharashtra state. It comprises 7 tahsils of Kolhapur district namely Shahuwadi, Panhala, Gagan-Bawada, Karveer, Hatkanagle, & Shirol (Fig.1). The triangular tract region lies between  $16^{\circ} 13'$  North and  $17^{\circ} 11'$  North latitude and  $73^{\circ} 41'$  East and  $74^{\circ} 42'$  East longitudes. It covers about 45752.2sq.km area and supports 29,17,042 (2.6 % of state) population. The Panchganga basin is well- watered and agriculturally developed part of the state (Shinde,1973). This region is topographically complex, having river valley flood plains to the east and hilly ranges to the west. Climatically this region have temperate climate. The region located in rain shadow zone of Western

Ghats receives a decreasing amount of rainfall from the west (6000mm) to east (500mm).

#### 1.4 METHODOLOGY

The entire study is based on secondary data, which is collected from Socio-economic review, agricultural department of Kolhapur district. The land use pattern for present study means the proportion of area under different land use at a point of time. Based on census classification, the land is grouped under five major types of uses namely forest, land not available for cultivation, other uncultivated land, fallow land and net area sown. The data for general land use is collected from village and tahsil revenue departments. The period selected for study is from 2001-02 to 2012-13. Collected data are processed and represented by statistical and cartographic techniques.

#### 1.5 LANDUSE PATTERN AND CHANGES:

**Table 1: Trends in general land use pattern in Panchganga Basin**

Sr. No.	Land use category	2001-02 (% area)	2011-12 (% area)	Volume of change
1.	Forest	16.18	15.94	- 0.24
2.	Land not available for cultivation	11.31	14.08	2.77
3.	Other uncultivated land excluding fallow	13.35	6.04	- 7.31
4.	Fallow land	2.99	4.74	1.75
5.	Net sown area	56.17	59.20	3.03
	Total	100	100	$\pm$ 7.55

Source: Compiled by the researcher.

##### 1.5.1 Forest

The area under study has about 15.93 per cent land under forest. Relatively high per cent (over 20%) area under forest is confined to Shahuwadi, Gagan Bavda and Radhanagari (Fig. 2 A). Here rugged, hilly areas and poor soils are observed. The moderate per cent (10 to 20%) area under forest is observed only in Panhala Tahsil. The low per cent (below 10%) area is confined to Shirol, Hatkanangle and Karveer tahsils. The area under forest has decreased marginally (0.24 per cent). Hatkanangle, Panhala, Shirol and Gagan Bavda tahsils indicate negative change and Shahuwadi, Radhanagari tahsils shows low positive change (Fig. 2 B).

##### 1.5.2 Land not available for cultivation:

About 14.08 per cent of area is not available for cultivation includes land put to non-agricultural use, barren and uncultivable land. The areas of high proportion under this category (above 15) are observed in the tahsils of Hatkanangle and Shahuwadi. (Fig. 2 C). The areas of moderate proportion (10 to 15%) of this category are confined to the tahsils of Radhanagari and Karveer. The area under this category has increased by 2.75 per cent. It is mainly due to developments like roads, settlements, industries etc. The high positive change (over 5%) is observed in the tahsils of Hatkanangle, and Shahuwadi. (Fig. 2 D). The low positive change (below 5%) is observed in the tahsils of Panhala and Karveer. However, high negative

change (below 2%) is observed in tahsil of Radhanagari. The low negative change (0 to 2 %) is found in tahsils of Shirol and Gagan Bavda.

### 1.5.3 Other uncultivable land (Excluding fallow):

This category includes the land under permanent pastures, other grazing lands, miscellaneous tree crops, groves not included in the net sown area and cultivable wasteland. This category of land covers 6.04 per cent of total area of the region. Relatively high per cent (over 8%) area under this category is observed in the tahsils of Shirol and Karveer (Fig. 3 A). The moderate per cent (4 to 8 %) area under this category is noted in tahsils of Gagan Bavda, Hatkanangle and Radhanagari. The low per cent (below 4%) area under this category is found in the tahsils of Shahuwadi and Panhala. The area under this category has decreased by 7.31 per cent (Table 1). Owing to the increasing pressure of agricultural population on land, the extent of pastures of grass lands is diminishing rapidly. The high and moderate (above 10% and 5 to 10%) negative change are observed in the tahsils of Shahuwadi, Gagan Bavda, Radhanagari and Panhala. The low negative change (below 0 to 5%) is noted in Karveer and Hatkanangle tahsils. However positive change (0 to 5%) is observed in Shirol tahsil.

### 1.5.4 Fallow land:

The term fallow is applied to the lands not under cultivation at the time of reporting but has been sown in the past. The fallow land includes current fallow and other fallow land. About 4.74 per cent of area under this category has been recorded. The significant high proportion (above 4%) of fallow land is observed in the tahsils of Panhala, Shirol, Karveer and Gagan Bavda. The moderate proportion (2 to 4 %) of area under this category is noted in Hatkanangle and Radhanagari tahsils. The low proportion (below 2%) of fallow land is observed in Shahuwadi tahsil. (Fig.3 C).

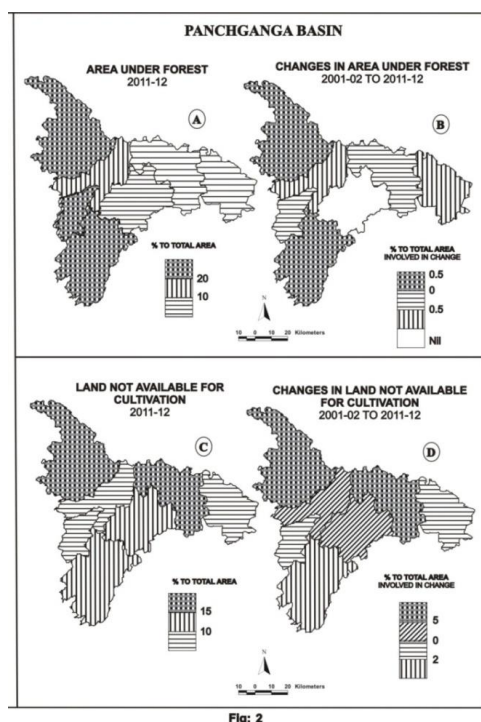


Fig: 2

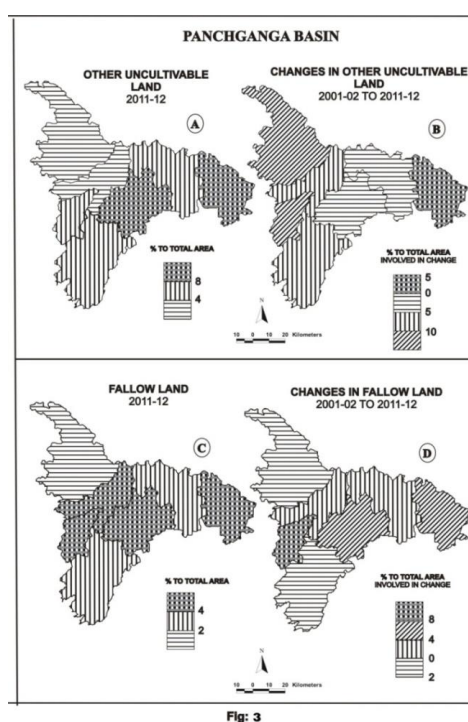


Fig: 3

The area under fallow land has increased from under 4 & 4 to 8 per cent in Panhala, Hatkanangle, Shirol and Karveer tahsils and over 8 per cent in Gagan Bavda tahsil. Due to some technological and administrative mistakes in the execution of the irrigational schemes, considerable area has become agricultural wasteland in the upper Krishna basin of Maharashtra. Krishna and its tributaries have provided plain areas of very fertile soils in the southern Maharashtra. But this fertile land is now turning into agricultural wasteland very rapidly due to water logging and by salinasation of soil (Shinde, 1988). However, the area under fallow land has decreased in some tahsils i.e. Shahuwadi, and Radhanagari. (Fig. 3 D). In the context of changing attitude of farmers regarding adoption of new techniques of agriculture, increase in irrigation facilities, the proportion of fallow land might show a downward trend leading to extension in area of cultivated land.

### 1.5.5 Net sown area

Net sown area represents the extent of cultivated areas actually sown during the agricultural year (Singh, 1974). About 59.20 per cent of its reporting area has been devoted to crops. The distribution of net sown area provides a very useful and good index for evaluating the capability and capacity of the land. Fig. 4 A exhibits the areal variation in the share of net sown area. The significant (above 70%) area under this category is observed in Hatkanangle and Shirol tahsils. The high per cent (60 to 70%) area under this category is observed in the tahsils of Panhala and Karveer. The moderate (50 to 60%) area under this category is found in Shahuwadi tahsil. The low per cent (below 50%) is noted in Radhanagari and Gagan Bavda tahsils.

The Region has noted the increased by 3.03 per cent in net-sown area during 2001-02 to 2011-12. There has been considerable increase in net sown area (above 10%) in tahsils of Panhala and Radhanagari. The moderate increase (0 to 10%) is found in Shahuwadi, Gagan Bavda tahsils. (Fig.4 B). However there has been considerable decreased in net sown area (above 6%) in tahsils of Shirol and Hatkanangle. It cannot be overlooked that there is a close relationship between the 'fallow lands' and 'net area sown', because there are frequent shift-over from one to the other (Mitra, 1980). Similarly in study region net sown area has shifted to fallow land. This can be well attributed to problems of soil degradation which is increasing in sugarcane tract due to excessive use of irrigation water and chemical fertilizers and mono-culturing cropping pattern as well (Pawar & Pujari, 2001).

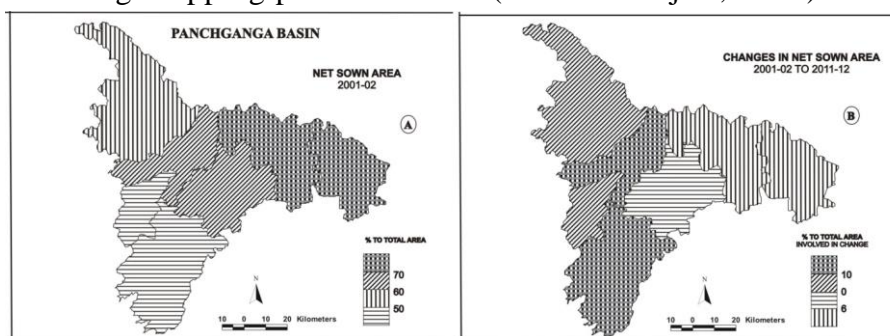


Fig: 4

## 1.6 CONCLUSION

The net sown area occupies prominent place in land use system of the region with fertile soils having well developed irrigation system. The study region has 59.20 per cent of the total area under agricultural purpose. However, the rest of land about 40.8 per cent of total area has come under different purpose like forest (15.94%), land not available for cultivation (14.08%), other uncultivated land (6.04%) and fallow land (4.74%). Area under land not available for cultivation, fallow land and net sown area has increased. On the other hand area under forest and other uncultivated land has recorded decrease. However, during the period under investigation, net sown area has shown significant reduction in the eastern part of the region, where shift is towards the fallow land. This can be well attributed to the problems of soil degradation, which is increasing in sugarcane tract due to excessive use of irrigation water and chemical.

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