



## GENERAL LAND USE PATTERN IN SOLAPUR DISTRICT OF MAHARASHTRA: A GEOGRAPHICAL ANALYSIS

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**Abstract-** Landuse of a region is a combined result of the natural set up and human dynamism within socio economic set up and technological development. Physical limitation of the site finds a direct expression in land-use. Land-use pattern is the to understand geographical adjustment of agriculture resources. Landuse context in a special context is essential to understand regional zonation of the areas of optimum landuse degraded areas etc. The use of land constitutes a major item in national planning and this is especially in India. This study of land-use is of vital importance from the point of view of the planning and development of the area.

**Keywords-** Uncertainty, human dynamism, rainfall scarcity, pivotal role, drought prone

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### Introduction

Land-use is an important aspect of studies in agriculture geography. Several scholars have used the concept in many ways. Therefore there is no generally accepted scheme of quantitative rather than qualitative variables. Land classification is based largely on quantity and intensity of the use of land (Ali Mohammad 1978). Census of India has classified land utilization in nine different categories, but in the present study they have been grouped into five major relatively significant categories.

Man plays a pivotal role in conditioning and transforming his physical environment through its utilization. The two sets of limits which determine the pattern of landuse are the absolute or outer limits which are set by nature and relative limits set by cultural human attitudes and actions which determine the range of actual and probable use within limits while classifying land under different heads its subsequent use by man for a particular purpose is taken into consideration.

### Objective

To categorized general land use pattern in study region. To study the general land use and change in during the investigation period.

To find out scope for extension of cultivation area in future.

### Study Area

The present study deals with the geographical perspectives of the landuse in Solapur district. The Solapur district is bounded by 17°05' North latitudes to 18° 32' North latitudes and 74°42' east to 76°15' East longitudes. The total geographical area of Solapur district is 14895 K.m<sup>2</sup>. divided into eleven tahsils. Climate of the district is dry. The daily mean maximum temperature range between 30° C to 35° C and minimum temperature range between 18°C to 21°C. The highest temperature is 47° C recorded in the month of May. The average annual rainfall is registered 510 mm. The soil of the district essentially derived from the Deccan trap. The soil of the district can broadly classify into three groups shallow, medium and deep soil.

**Data Base and Methodology** The study is completely based on secondary data which is obtained district socio-economic abstract 1990/91 and 2004/05 and other information has been collected from the interview and questionnaire. For the present investigation, district is selected is as in general and tahsils in particular. Simple statistical method has used to asses the change in general landuse in Solapur District.

**Explanation**

Landuse of a region is a combined result of the natural set up and human dynamism within socio economic set up and technological development. Physical limitation of the site finds a direct expression in land-use. Land-use pattern is the to understand geographical adjustment of agriculture resources.

**Definition of Land-Use**

Many geographers are trying to give the definition of land-use .Some of these are following:-Land-use is also related to conservation of land from one major use to another general use.- Nanaoti M B (1957) Land-use means surface utilization of all developed and vacant land for a specific point at a given time and space. - Foreman T W (1968) Land-use means optimum use of every piece of land. - Mandal R B Land-use is the function of four variables land , water, air and man.- Sjngh R P Land-use means use actually made of any parcel of land. – Gharpure

**General Land-Use**

Land use is an important aspect of studies in agricultural geography and for making the study of land use; it is classified into different categories. The concept of land use has been used in so many ways that no generally accepted scheme of classification exists, despite many years of land use studies by geographers. In most of such schemes, activity on the land has been the major criterion for classifying land use which is essential a qualitative rather than quantitative variable. Several scholars have used the concept in many ways. Therefore there is no generally accepted scheme of quantitative rather than qualitative variables. Land classification is based largely on quantity and intensity of the use of land (Ali Mohammad 1978). Census of India has classified land utilization in nine different categories, but in the present study they have been grouped into five major relatively significant categories.

The propose is to examine the general land use pattern of the district with the help of the area data from the census handbooks of the district. Land use statistical figurers for the reference period 1990/91 to 2004/05 have been abstracted from the socio-economic review and district statistical abstract, prepared by the Bureau of Economic and statistics, Government of Maharashtra, Mumbai. Taluka level statistical figurers have been used for analysing the distributional patterns of general land use and changes there in.

Table 1- Solapur District: Percentage of General Land-use to total Geographical Area

Sr.	Land-use category	1990-91 (hect)	%	2004-05 (hect)	%	Change from 1990-91 to 2004-05
1	Forest	26929.9	1.8	31839.8	2.1	0.33
2	Non agriculture land	77665.5	5.2	78855.6	5.3	0.08
3	Potential land excluding fallow land	60703.9	4.1	75731.2	5.1	1.01
4	Fallow land	175565	12	356338	24	12.2
5	Cultivated area	1146978	77	980786	66	-11.2
	Total	1487843	100	1487843	100	-

Source- The socio-economic abstract of Solapur district 1991,2005

Table 1 shows the general land use classification of Solapur district during the period from 1991 to 2005. As per the reference year 2004-05, only 2.14 percent (318.43 hect.) of the total area is under forest and it is very low compared to the state and the country. The

cultivated area in the district is 65.92 percent but fallow land is 23.95 percent it is more compared to any developed district. Non agriculture and Potential land in the district is 5.30 percent and 5.09 percent. Fallow land in the district is more because this district is located in drought prone area and rainfall is uneven and uncertain.

The volume of change in general land-use during the fifteen years (1990/91 to 2004/05) is depicted in the adjoining map in Fig No 1 and Fig No 2. Although, large scale change is observed in cultivated area i.e. 11.17 percent of the total geographical area, decrease and fallow land i.e. 12.15 percent increase. This happens because of rainfall scarcity , long absence of electricity (load shedding) and no guaranteed source of irrigation. Except in these areas, there large change is observed. The general landuse pattern is also changing from tahsil to tahsil.

**1. Area under Forest:**

This category includes all areas actually under forests whether state owned or private and classified or administrated as forests under any legal enactment dealing with the forest.

The Solapur district has a very limited area under forest i.e. it occupies about 2.14 percent. Mostly out of the total geographical area in the district being lower than the average of Maharashtra.During the period 1991-2005 forest land has slightly increased and became 0.33 percent in 2005. This has decreased due to the growing pressure of population some forest lands were converted in to agricultural land and some were denuded of vegetation and soil.

There are marked variations in tahsil level, ranging from below one percent in Akkalkot to over five percent in Mangalvedha. Highest percentage recorded in Mangalvedha, Pandharpur tahsils with 6.4 percent and 5.8 percent change respectively. Lowest percentage recorded in Akkalkot, Sangola and Malshiras tahsils with '0.0' percent, 0.4 percent and 0.2 percent respectively. Forest gradually decreased from west to east. Most of the forests in the region are situated on hills and Ghats of Vadashing, Ghat in Barshi, Wag

**2. Area Not Available for Cultivation**

This category includes land put, to non agricultural uses, barren and uncultivable land like hill ranges and river beds. These land uses show that these areas will be available no more for crop cultivation in future. These areas which are not available for crop cultivation sort a close association with other and uncultivated land and net shown area will be transferred to this categories and this may happen particularly due to increasing urbanization, predominantly the spread of the cities of south solapur, Pandhapur and Barshi. The land under this category can not be brought under cultivation but for a very high price it can be brought under cultivation. About 5.32 percent of area belongs to this category which is much less as compared to Maharashtra which is 8 percent. It is slightly increased in investigation period.

Non-uniform pattern of change in the land under this category is observable in the distribution of area involved in the period from 1991 to 2005. High increase in the area under this category has been found in Pandharpur (7.36 percent). Significant (above 2 %) increase is observed in North Solapur, South Solapur and Sangola. To the other end decrease area under this category is confined to Mohol (3.26 percent), followed by Karmala (2.19 percent) and Mangalwedha (0.96%) . Remaining tahasils come under positive change, but to small extent.

### 3. Potential Land

The land reserved for the purpose of extension of the cultivation can be found only in this category, the land which could be used for cultivation but it has not been cultivated owing to certain reasons. It generally consists of 1) uncultivable wasteland 2) permanent pastures and grazing land and 3) miscellaneous tree crops and growers. Cultivable waste land includes the land which can be brought under cultivation for some time but which has not been cultivated successively for more than 5 years. The category of land under miscellaneous tree crops includes land under caesura trees, grass, bamboo bushes or other trees used for fuel. Actually this land is put to some agriculture use but the aerial extent of it is not included in the category of net sown area. In insuring discussion the three are considered together under the heading of potential agriculture land, which was about percent of the total geographical area in the years from 1990-91 to 2004-05.

Solapur district covered 5.09 percent potential land of the total geographical area. Potential land was slightly (+0.91) increased from 1980-81 to 2004-05 as shown in Fig No 1. The region distribution of change in potential land is depicted in Fig No 2. The potential agriculture land highly increased in only Akkalkot tahsil (+2.85 %) and Mangalweda (2.28 %) and increased below 2 % in Madha, Karmala, Malshiras and South Solapur. Potential agriculture land slightly (below 1 %) decreased in the tahsils of Barshi, and Sangola.

### 4. Fallow Land

The term fallow land is applied to land, not under cultivation at the time of reporting, but which have been under cultivation in the past. The Fallow land includes current fallow land and old fallow land are largely found due to inadequate water supply or excess of moisture supply, extensive holding and heavy clayey soils difficult for tilling at proper time. Some times, they are kept fallow for preserving fertility and to prevent soil exhaustion. Thus, efficiency of fallow land system in preserving fertility and maintaining crop yields to be acknowledged.

The fallow land may be divided into two groups i.e.

- A. Current fallow land
- B. Other fallow land

#### A. Current fallow land

Land lying fallow during the current year only or the land which was uncultivated in the previous year is known as the current fallow land. The main reason of fallow land is scarcity of water, unfavorable climate, farmer's poverty and quarrels between two farmers.

#### B. Other fallow land

Lands lying fallow for more than one agricultural year but less than five agricultural years. The area which is uncultivated more than one to five area is which is known as other fallow land.

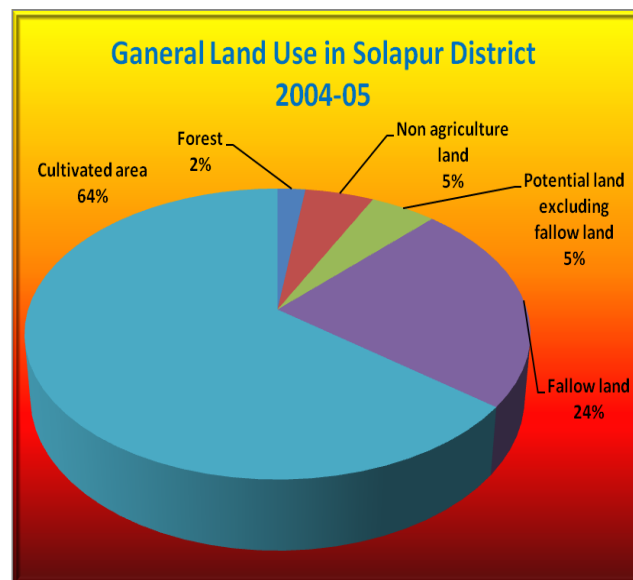
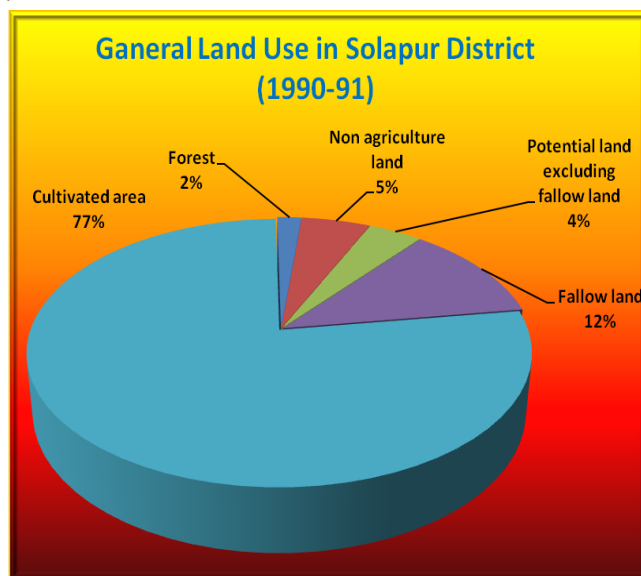
Solapur District has a substantial proportion of fallow land with an average of 9.12 percent for the reference year 1990-91 and it largely increased in the reference year in 2004-05 (23.95 %) as shown in table No 1. It is clearly shows that located in drought prone region.

### 5. Net Sown Area

Net sown area represents the actual net sown area during an agriculture year. The environmental factors directly affect agriculture land-use or net sown area. Traditionally agriculture is practiced intensively on a large scale.

The total agriculture area of Solapur district is 980786.1 hectares, which covers 65.92 percent of total geographical area in which

63.50 percent is net sown area and 2.42 percent area is used twice in 2004/05. The net shown area accounts for 77.09 percent in the reference year 1990/91 and 63.50 percent in the reference year 2004/05. It is clearly shown that the net sown area largely decreased from 1990/91 to 2004/05. The decrease in the year from 1990/91 to 2004/05 is probably due to uncertainty of rainfall, deep water level and main rivers (Chime, Man, Sine) remain dry for a long period of the year. In all the tahsils of Solapur district net shown area decreased except Malshiras tahsil in the reference period from 1990/91 to 2004/05.



### Findings

- The general land-use of the region not so stable, there are many spatial and temporal oscillations.
- The changes in general land-use are the outcome of interaction between the physical factors on one hand and socio-economic factors on the other hand.
- The share of net sown area to the total geographical area is more than 65.92 in which 63.50 percent is net sown area and 2.42 percent area is used twice in 2004/05.

- Fallow land is also 23.95 percent in district but current fallow land is also high i.e. depend on rainfall variance.
- The share of forest is only 2.14 percent to geographical area this indicate that there is great need of a forestation.
- Negative change is observed in cultivated area due the decreasing the rainfall, decreasing ground water level, increasing urbanization and farmers dualism.
- Positive change is observed in forest area, potential land, fallow land and uncultivable land of district during investigation period.

#### Recommendation

- The forest area is very low in Solapur District that is directly affected on rainfall. Forestation is best answer for increasing forest area.
- The increasing fallow land is largely controlled by irrigation. There is a greater need of expansion and improvement in the existing facilities of irrigation.
- \The decline of ground water is anxious problem in study region. It is essential to solve this problem to recharge ground water in different artificial way by public awareness.
- Water scarcity is a serious problem in Solapur District. The farmer should use the mulching techniques for maximum use of available water. Drip irrigation system is most useful in getting good yield during the water scarcity period.
- Absence of electricity is major problem of irrigation which decrease the cultivated area. For these it is suggested that farmers should use water stove rage at farm level for the rest of the year.

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