

# TEMPORAL VARIATIONS FOR GENRAL LANDUSE IN AHMEDNAGAR DISTRICT AT 1961-62 TO 2010-11

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## ABSTRACT

The net sown area, current fallows and land under tree crops and groves are included in agricultural land use. Use of land is an important factor for planning process because of the predetermined nature of land resource. Ahmednagar district in Maharashtra covered an area of about 17 lakh hectares comprising nearly 73.52 percent area under net sown area in 1971-1972. Area under forest decreased slightly, area not available for cultivation decreased by 0.52 percent, other uncultivated area increased by 0.38 percent, while fallow land decreased by 0.92 percent during that period. Among the talukas, overall volume of change is greater in Nagar, Sangamner, Shrirampur and Newasa talukas probably due to dynamic conditions existing there.

**Key Words:** Land Use, Land Utilization, Fallow land, Net Sown Area.

## INTRODUCTION

The fundamental utility of land is satisfying the human needs of food habitation and housing materials. It is essential to choose proper mode of landuse planning and allocation to various ingredients of optimum landuse to solve the human needs (Kellong, 1980) has rightly pointed out that this calls for the clear understanding of land classification for successful planning and development. The application of various inputs in land may change the allocation of land to different uses. The factors, conservation and quality of our socio economic environments are most fundamental for the proper use of our land. This statement is true not only of large urban centres as well as most of the remote areas. The growing pressure of population coupled with an increasing variety of demand on land resources has brought extra pressure on available resources. In order to deal with these and to plan for optimum utilization of land, it is necessary to have accurate and up to date information in all possible details on landuse. It is therefore, the study of classification of landuse pattern in Ahmednagar District would be helpful for preparation of the relative development plan for the district.

## DATA SOURCE & METHODOLOGY

The area of Forest Cover (FC), Net Sown Area (NSA) Land Not Available for Cultivation (ANC), Fallow Land (FL) and Cultivable Waste (CW) had converted into percentage to total geographical area. Secondary data has been used from Socio-Economic Reviews and District Statistical Abstracts of Ahmednagar District from 1961 to 2011. The description of each land classification has been supplemented by numerous spot-inquires, besides information embodied by using the Ahmednagar District Census Handbook, District Gazetteer and District Socio Economic Review of Ahmednagar District.

## OBJECTIVES

1. Know the availability of land in Ahmednagar District and its different uses.
2. To highlight the general land use in Ahmednagar district from 1961-62 to 2010-11.

## STUDY AREA

Ahmednagar district is situated partly in the upper Godavari Basin. It lies between 18°2' North latitude to 19° 9' North latitude and 73°9' East longitudes to 75° 5' East longitudes. It is surrounded by Nashik district in the North, Beed and Aurangabad districts in the East, Pune district in the South, Thane and Raigad district in the North-West. Ahmednagar district has an area of 17410 square km and a population is 4543159 (2011 Census). It ranks first in terms of area and sixth in terms of population amongst the district of the state. The main stream of hills in the Sahyadri which is runs north-south in the western proportion of the district. From the main Sahyadrian range, two prominent spurs Stretch out of the east. Baleshwar and Harishchandra range which runs right across the district. It acts as a watershed between the Pravara and its tributaries which drain towards the Godavari. Some of the ranges are flat topped and regular in height and slope, while others are conical and irregular. The district is broadly divided into three major geographical regions: I) Pravara Basin, II) Dhora Basin and III) The Kukadi Basin. The district is drained by two main rivers, viz. Pravara and the Kukadi and their tributaries. The climate of the district is generally dry except during the South-West monsoon season. The average annual rainfall for the district as a whole is 488.4 mm. Within the district there are considerable variations in rainfall. The rainfall in generally decrease as one proceeds from West to East. Temperature begins to increase rapidly from the latter half of February. May is the hottest month and December is the coldest month with the Maximum temperature at 36.38°C and minimum temperature at 19.92°C at Ahmednagar. The soil of the district is essentially derived from the Deccan Trap which is the predominant rock formation of the district. The soil formation is mainly affected by the climatic condition and topography of the district. The soil in the Pravara and Mula valley is quite deep and fertile. The relief in the rest of the district is undulating and susceptible to erosion. Light shallow soil is found on hills lopes and very coarse soils at higher elevation.

## CLASSIFICATION OF LAND

The aim of the classification of land is to divide land into different categories according to single factor or set of factors. Therefore, classification of land may be different types and depending on the factors taken into consideration. The classification of land has a direct bearing on climatic factors, soil characteristics, and slope of land, degree of erosion, water supply, drainage and similar environmental conditions. The landuse capabilities, classification portrays, physical capability of land to produce over a long period of time for selected uses, which can be provide land operation with a basis for actual practice of land (Stamp, 1968).

Landuse records department has officially classified land under following categories (1) Reporting area for land utilization purposes, (2) Forest, (3) Barren and uncultivable land, (4) Land put to non-agricultural uses (i) Cultivable waste, (ii) Permanent pastures and other grazing land, (5) Land under miscellaneous tree crops and groves not included in net area sown; (i) Current fallows(ii) Other fallow land, (6) Net sown area, (7)Area sown more than once and (8) Total cropped area. It would be convenient for a clear understanding to condense to above mentioned twelve categories into five categories as (1) Forest land, (2) Net sown area, (3) Land not available for cultivation, (4) Cultivable waste and (5) Fallow land.

## TEMPORAL VARIATIONS IN LANDUSE

The temporal variations in landuse pattern in the Ahmednagar District have been studied for a period of fifty years (1960-61 to 2010-11) and possible causes of changing landuse have been interpreted. The investigator could not succeed in uncovering temporal variations of landuse for consecutive years due to paucity of data for the years concerned. However, alternative year has been taken into consideration for showing temporal variations in landuse pattern in the area under study. The temporal variations in landuse for Ahmednagar District are studied in five categories as follows:

1. Net Sown Area (NSA)
2. Land not Available for Cultivation, (LNAC),
3. Cultivable Waste (CW)
4. Fallow Land (FL)
5. Forest (F)

**Table 1.1: Ahmednagar District- Temporal Variation in General Landuse Pattern from 1961to 2011**

(Area in Percentages)

Sr. No.	Landuse Types	Years					
		1961	1971	1981	1991	2001	2011
1	Net Sown Area( NSA)	73.95	73.61	70.25	68.61	69.87	68.11

2	<b>Land Not Available for Cultivation (LNAC)</b>	9.11	9.86	9.76	9.26	7.66	10.10
a)	Land put to non agricultural use	0.02	0.06	0.39	0.49	1.18	0.85
b)	Barren and uncultivated land	9.08	9.80	9.37	8.77	6.48	9.25
3	<b>Cultivable Waste(CW)</b>	2.58	1.87	3.04	3.53	5.95	2.03
a)	Permanent pastures and other grazing land	1.90	1.43	1.86	2.81	2.60	1.13
b)	Miscellaneous tree crops and groves not include to Net Sown Area	0.00	0.01	0.00	0.00	0.57	0.00
c)	Cultivable Waste	0.68	0.43	1.18	0.72	2.78	0.90
4	<b>Fallow Land( FL)</b>	2.74	3.75	6.36	7.57	7.89	11.88
a)	Current Fallow	0.36	0.93	2.36	3.67	2.34	7.45
b)	Fallow land other than current fallow	2.38	2.81	4.02	3.90	5.55	4.43
5	<b>Forest (F)</b>	11.63	10.91	10.58	11.03	8.70	7.89

(Source: Socio-Economic Abstract- Ahmednagar District)

The changes occurred during the period of study are interpreted as follows:

### 1. Net Sown Area (NSA)

The net sown area is steadily decreased since 1960-61 to 2010-2011. It is seen from Table 1.1 that 73.95 percent area was under cultivation in 1960-61 and it has been stepped to 68.11 percent area under cultivation in 2010-11, registered decreased by 5.84 percent. From 1960-61 to 1970-71 net sown area decreased by 0.34 percent in 1970-71 and 1980-81 it had decreased by 3.36 percent; from 1980-81 to 1990-91 there was decreased by 1.64 percent; from 1990-91 to 2000-01 there was slight increased by 1.26 percent and 2000-01 to 2010-11 there was a decreased 1.76 percent. The total decreased between the study periods was 5.84 percent. This decrease may be attributed to increasing population, development of transportation routes and residential purpose, residuals subsequently under land put to non-agricultural use, cultivable waste and fallow land. Therefore, other types of land have continuously increased from 1960-61 to 2010-11 (Table 1.1).

### 2. Land Not Available For Cultivation (LNAC)

This category includes the land put to non-agricultural uses, barren and uncultivated land. The area under this category has shows the cyclic change from 1960-61 to 2010-11 in the study area. The total increased during the study period is only 0.99 percent (Table 4.1). There is slight decline during the second last two decades. The land not available for cultivation has been increasing due to the decrease in the



cultivable waste and fallow land. Tables 1.1 reveals the temporal variations in land put to non-agricultural uses. Non-agricultural land has been substantially increased for the study period from 1960-61 to 2010-11 (0.83%). While barren and uncultivated land no more changes between the study periods. More land in the past has been put to cultivation use, brought under non-agricultural use due to residential purpose and transport routes.

### 3. Cultivable Waste (CW)

In Ahmednagar District, cultivable waste indicates increase during the study period. In 1960-61, land under cultivable waste was 2.58 percent to the total geographical area while it is decreased up to 2.03 percent in 2010-11 (Table 4.1). The cultivable waste includes such sub types as permanent pasture and other grazing land, miscellaneous tree crops and groves not include in net sown area and cultivable waste.

The trend of cultivable waste is shown in Table 1.1. The total increase in cultivable waste is only 0.55 percent from 1960-61 to 2010-11, that shows lightly upward trend. The permanent pasture and other grazing land decline by 0.77 percent, but miscellaneous tree and groves data not available in district statistical office and cultivable waste increased by 0.22 percent. There was a small decline in permanent pasture and other grazing land.

### 4. Fallow Land (FL)

The fallow land includes current fallow and other than current fallow. The current fallow means land kept uncultivated for regaining fertility of soil and other purposes during the agricultural year. Other fallow land means land kept uncultivated more than five years due to various reasons i.e. non-availability of capital, lack of agricultural know-how. In study region both current fallow and other than current fallow show increased trend during the study period of 2.74 percent and 11.88 percent respectively while the total increase of fallow land is 9.14 percent (Table 4.1). This fact suggests that less land under other fallow has been brought under cultivation. Moreover, there is a fluctuation in the area under fallow land from 1960-61 to 2010-11.

### 5. Forest (F)

In assess the character of the vegetation type, a factor that cannot be neglected in the long occupation of man and the consequent change on the vegetal carpet through agriculture. The type of vegetation met with any given locality depends on the climate, soil and past treatment has been emphasized by the leading plant ecologists. Ahmednagar District had 11.63 percent and 10.91 percent of land under forest cover during 1960-61 and 1970-71 respectively. There was forest lands decreased during a span of ten years. Whereas during 1980-81 to 1990-91 land under forest increased 0.45 percent. From 1990-91 to 2000-01 land under

forest decreased by 2.33 percent and from 2000-01 to 2010-11 land under forest decreased by 0.81 percent. Geographical area had been increased under forest between 1980-81 to 1990-91. Forest plays a dominant role in maintaining ecological and environmental balance in the district.

## COMPARATIVE STUDY OF LANDUSE IN AHMEDNAGAR DISTRICT AND MAHARASHTRA STATE

Table 1.2 shows the area under different landuse categories in Ahmednagar District and Maharashtra. Net sown area in the district is relatively less under cultivation (68.11%) and Maharashtra (56.52%). The less hectare of net sown area in Ahmednagar District is attributed to highly diversified relief. Moreover presence of Sahyadrian mountain range and its offshoots spread within the district restricted land for cultivation. The percentage of land not available for cultivation is near about same as compare to Maharashtra, but the percentage of land put to non-agricultural use is very less (0.85%) as compare to the state (4.72%) while the percentage of barren and uncultivated land is maximum (9.25%) and in Maharashtra (5.62%).

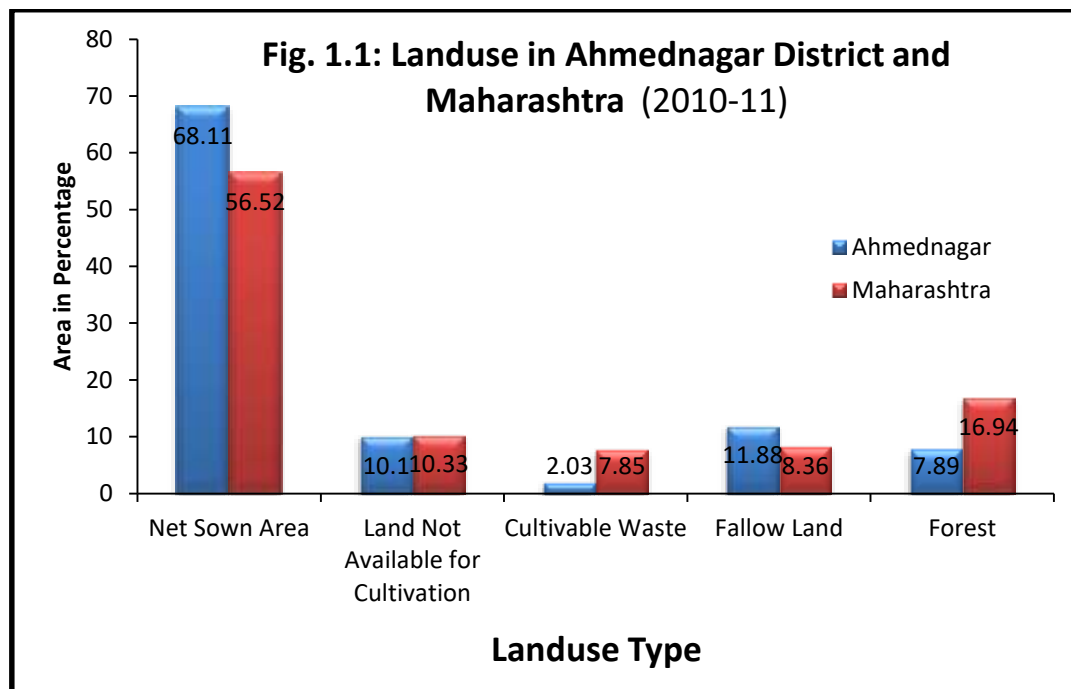
Table 1.2 and Fig. 1.1 shows that land under permanent pasture and other grazing is less (1.13%) as compared to Maharashtra (4.04%) while land under miscellaneous tree crops and groves data not available in Ahmednagar District. This table also shows that negligible land under cultivable waste (0.90%) in Ahmednagar District. It is less than Maharashtra (2.99%). The area under current fallow is maximum (7.45%) in Ahmednagar and it is minimum in Maharashtra (4.48%), while the area under fallow land other than current fallow is high (4.43%) as compared to Maharashtra (3.87%). the area under forest is minimum in Ahmednagar (7.89%) as compared to Maharashtra (16.94%).

**Table 1.2: Landuse in Ahmednagar District and Maharashtra State (2010-11)**

Sr. No.	Landuse Types	Ahmednagar		Maharashtra	
		Area in Hectare	Area in %	Area in '00' Hectare	Area in %
1	<b>Net Sown Area( NSA)</b>	1135879	68.11	173856	56.52
2	<b>Land Not Available for Cultivation ( LNAC)</b>	168382	10.10	31785	10.33
a)	Land put to non agricultural use	14162	0.85	14505	4.72
b)	Barren and uncultivated land	154219	9.25	17280	5.62
3	<b>Cultivable Waste(CW)</b>	33842	2.03	24134	7.85
a)	Permanent pastures and other grazing land	18842	1.13	12438	4.04
b)	b) Miscellaneous tree crops and groves not include to NSA	0	0.00	2504	0.81
c)	Cultivable Waste	15000	0.90	9192	2.99

4	<b>Fallow Land( FL)</b>	198093	11.88	25699	8.36
a)	Current Fallow	124179	7.45	13783	4.48
b)	Fallow land other than current fallow	73914	4.43	11916	3.87
5	<b>Forest (F)</b>	131592	7.89	52109	16.94

(Source: Socio-Economic Abstract- Ahmednagar District)



## SUMMARY AND CONCLUSION

- The net sown area steadily decreased by 5.84 percent since 1960-61 to 2010-2011. The trend of cultivable waste increased 0.55 percent from 1960-61 to 2010-11.
- Ahmednagar District has 11.63 percent and 10.91 percent of land under forest cover during 1960-61 and 1970-71 respectively. From 1990-91 to 2010-11 land under forest decreased by 3.14 percent.
- The highest area under follow land has increased to 11.88 percent to total geographical area followed by land not available for cultivation 10.10 percent to total geographical area in the district. The cultivation of crops in Ahmednagar District is confined to kharif and rabbi seasons.
- Population pressure has tremendously increased on the land but net sown area has also slightly increased, there is little scope for expansion of agriculture except for multiple cropping. For the environmental balance it is very necessary to increase area under forest. Fallow land has also increased in Ahmednagar district, which can be converted in to fruit gardening.

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