

Change in General Land Use Pattern in Raigarh District: A Geographical Analysis

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Abstract

The analysis of general land use denotes the status of land surface in an area. The general land use of the district is classified into forest land, net sown area, land not available for cultivation, cultivable waste and fallow land. The above classification is used for present study. In this paper an attempt has been made to study the change in general land use in Raigarh District of Maharashtra. Raigarh District is located in North Konkan of Maharashtra and covers 7148 sq. km. area. The entire study is based on secondary data. The period of 20 years i.e. from 1980-81 to 2000-2001 is selected for spatio-temporal changes of land use. The tahsil is a basic unit of investigation. Cartographic techniques are employed to strengthen the analysis of study. The study reveals that during the last two decades drastic changes have taken place in general land use pattern.

Introduction

Land use study carries a great importance because it can provide a picture about intensively used, under used and unused land of the area. The concept of general land use is related to the use to which land is put in a certain reason at a given period of time. Land use is a result of combinations of both natural genesis and human influences which have been brought to bear unit in the past and of those which are still active in the present (Vink, 1975). The changing man-environment relationship also plays a key role in defining the land use of the particular region. The basic objective of the land use pattern is to use the available land which is limited. The pattern of land use is complex and dynamic. The analyses of land use denote the status of land utilization for different purposes in an area. In this paper, an attempt has been made to study the changes in general land use in Raigarh district.

Study Region

Raigarh district is situated in Konkan region of Maharashtra state. It lies between $17^{\circ}.15'$ and $19^{\circ}.50'$ N. latitude and $72^{\circ}.51'$ and $73^{\circ}.40'$ E. longitude. It is surrounded by Mumbai Suburban district to the northwest, Thane district to the north, Pune district to the east, Ratnagiri district to the south Satara district to the south east and Arabian sea to the west. The study region has an area of 7148 sq. km. which is about 3.32 percent of the total area of the state and a population was 2205972 as per 2001 census of which 75.78 percent is rural and 24.22 percent is urban population. For administrative purpose the district is divided in to 15 tahsils. The district as whole is a part of the coastal low land. The study region is drained mostly by short west word flowing parallel streams originating from the Sahayadri ranges. The Climate of the study region is generally hot and moist. The district receives seasonal rainfall from south west monsoon during June and September and the

average annual rainfall for the district as a whole is 3029 mm. The soil of the district is essentially derived from the Deccan trap which is the predominant rock formation of the district. The main types of the soils in the district are laterite soil, forest soil, coastal alluvium and khar or salty soil. Rice and Nachani are the major crops in the study region. Horticulture is also well developed in the region. Two National high ways viz. NH-4 Mumbai- Pune - Banglore and NH-17 Mumbai – Goa - Mangalore and Konkan broad gauge railway line passes from the district and there are fourteen railway stations in the study region.

Objective

- To analyze the change in land use pattern for twenty years. i.e. 1981 to 2001.

Database and Methodology

The data is collected from secondary sources namely, socio economic review, District census Hand-back, District Gazetteer, Agricultural Epitomes, Periodicals, Seasons and Crop reports published by Government of Maharashtra and department of Agriculture.

The data obtained for the study period of 1980-81 and 2000-01 converted in the percentage to the total geographical area. To avoid the fluctuations, three years' data is averaged and used for analysis .The percentage is categories in different groups. The volume of change of these categories for twenty years was computed, mapped and interpreted the text. Tahsil is selected as a basic unit of investigation.

Change in General Land use Pattern

Land use is the surface utilization of all developed and vacant lands on a specific space at a given time. Lands are used for forest, pastures, transportation, settlement, industrial and commercial purposes. Whereas, uncultivable waste land, barren and fallow land are unused lands. The Present land use has been divided into five major category viz.1) Net sown Area, 2) Area not available for cultivation iii) Other uncultivated land iv) Fallow land v) Forest.

Net Sown Area

The net sown area is the land which is being actually tilled for raising the crops. The temporal variation in net sown area from 1981 to 2001 is shown in Fig.-1. In 1981, the net sown area was 26.62 per cent of the total geographical area and after twenty years, in 2001 it was recorded as 28.98 per cent and it was less than the Maharashtra state i.e. 58 per cent. The fluctuation

in the net sown area is observed in study period. Seven tahsils observed high change and nine tahsils had lower change in the study region.

Table-1 General Land Use Pattern (Area in %)

Tahsil	Net Sown Area			Land Not Available for Cultivation			Other Uncultivated Land		
	1980-81	2000-01	Change	1980-81	2000-01	Change	1980-81	2000-01	Change
Alibaug	38.54	47.94	+ 9.39	11.96	12.98	+ 1.08	7.68	8.00	+ 0.32
Uran	42.38	27.05	- 15.32	36.30	48.70	+ 12.40	4.83	3.47	- 1.36
Panvel	34.57	29.84	- 4.73	28.24	29.21	+ 0.97	5.64	6.31	+ 0.67
Karjat	21.09	20.50	- 0.59	16.07	8.89	- 7.19	34.20	55.67	+ 21.4

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Khalapur	21.91	18.27	- 3.64	13.95	19.99	+ 6.03	26.34	25.09	- 1.26
Pen	31.40	30.93	- 0.47	21.60	22.75	+ 1.15	7.13	15.70	+ 8.56
Sudhagad	12.30	19.26	+ 6.96	18.05	19.07	+ 1.02	23.87	9.66	- 14.21
Roha	27.99	21.49	- 6.50	13.49	16.48	+ 2.99	13.55	16.87	+ 3.32
Mangaon	26.33	29.37	+ 2.94	29.10	20.42	- 8.68	13.02	14.39	+ 1.37
Mahad	22.33	38.99	+ 16.66	43.23	24.11	- 19.32	16.90	9.26	- 7.64
Poladpur	24.73	27.45	+ 2.72	21.77	24.22	+ 2.44	22.85	30.43	+ 7.59
Mhasla	21.28	18.45	- 2.83	27.59	46.66	+ 19.66	25.67	22.22	- 3.45
Shrivardhan	30.74	34.66	+ 3.93	29.46	34.48	+ 5.02	22.67	18.23	- 4.45
Murud	29.64	37.70	+ 12.07	23.50	28.90	+ 5.40	24.00	8.38	- 15.62
Tala	#	#	#	#	#	#	#	#	#
District	26.62	28.96	+ 2.34	24.17	22.68	- 1.49	17.22	18.04	+ 0.61

Source - Compiled by Author on Socio-Economic Review and Statistical Abstract of Raigarh District from 1981 to 2001.

- The data of the Tala tahsil is included in Mangaon tahsi

The highest increase has observed with 16.66 per cent in Mahad tahsil and lowest change in observed in Uran tahsil (-15.32 per cent). Very high change has recorded in Mahad and Murud tahsils which is more than 10 per cent. High change in observed in Sudhagad and Alibaug tahsils which is between 5 to 10 per cent. Moderate change was found in Mangaon, Tala, Poladpur and Shrivardhan tahsils. Low change has recorded in Pen, Khalapur, Karjat, Panvel and Mhasla tahsils ranging from 0 to 5 per cent while very low change had recorded in Roha and Uran tahsils due to coastal saline land.

Area not Available for Cultivation

This broad category comprises of a number of different types of land which are not available for cultivation under the existing circumstances. This type of land use represents the land occupied by roads, railways, industries, water bodies, gardens, play grounds, grave land, and settlements.

Table-1 Contd.

Tahsil	Fallow Land			Forest		
	1980-81	2000-01	Change	1980-81	2000-01	Change
Alibaug	13.89	3.15	- 10.74	27.99	27.93	- 0.06
Uran	2.15	7.28	+ 5.14	14.48	13.93	- 0.55
Panvel	2.93	5.03	+ 2.09	28.30	29.61	+ 1.31
Karjat	2.66	2.46	- 0.21	25.80	12.52	- 13.28
Khalapur	2.63	1.26	- 1.36	35.45	35.36	- 0.09
Pen	9.60	2.18	- 7.42	30.02	28.12	- 1.88
Sudhagad	6.99	15.09	+ 8.10	36.90	36.90	0.00
Roha	09.17	9.36	+ 0.19	35.74	35.80	+ 0.06

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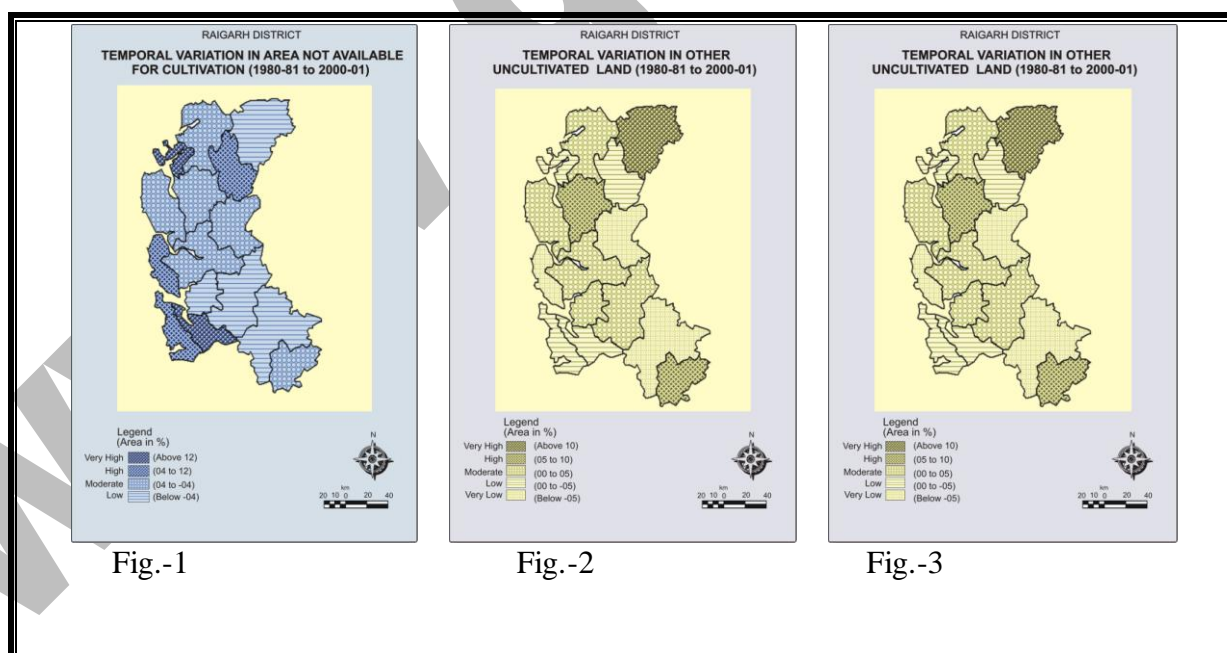
Mangaon	16.97	19.92	+ 2.95	15.05	14.19	- 0.86
Mahad	5.51	15.68	+ 10.17	11.72	11.18	- 0.54
Poladpur	18.55	5.78	- 12.87	12.10	12.12	+ 0.02
Mhasla	9.95	3.80	- 6.14	15.40	9.73	- 5.67
Shrivardhan	6.53	1.97	- 4.56	10.38	10.65	+ 0.28
Murud	2.01	1.54	- 0.47	26.01	23.48	- 2.54
Tala	#	#	#	#	#	#
District	8.48	8.62	+ 0.14	23.50	21.65	- 1.85

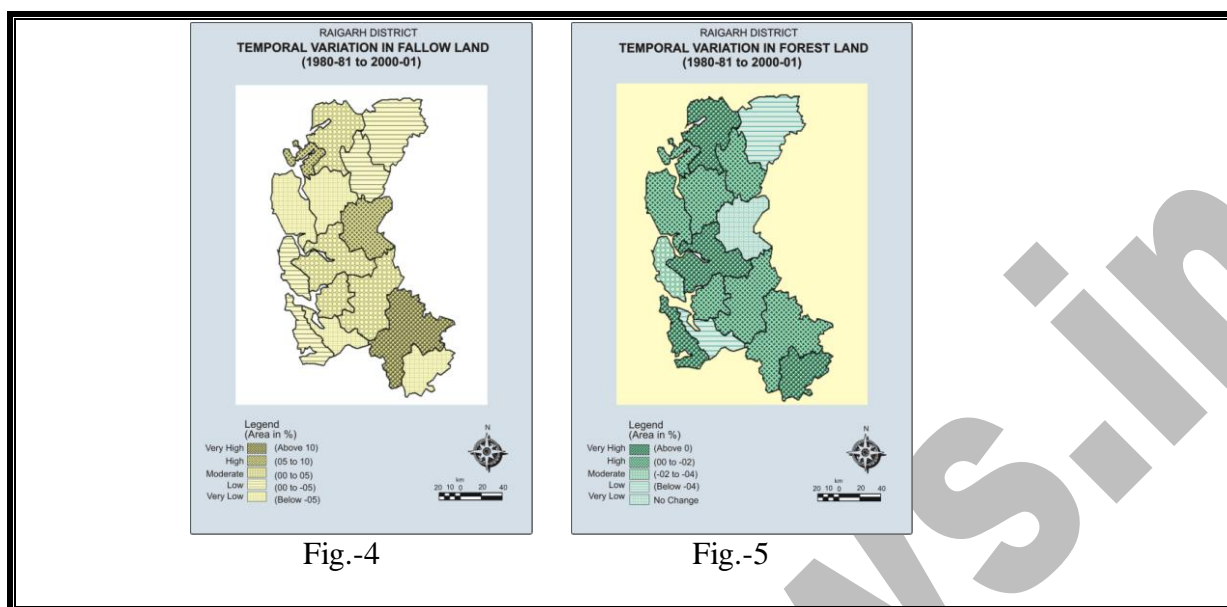
Source - Compiled by Author on Socio-Economic Review and Statistical Abstract of Raigarh District from 1981 to 2001.

- The data of the Tala tahsil is included in Mangaon tahsil

The land under this category in 1981 was 24.17 per cent and 22.68 per cent in 2001 of the total geographical area. The area under land not available for cultivation was 22.68 in 2001, which was more than the per cent area of Maharashtra state. The highest increase has observed in Mhasla tahsil (19.66 per cent) and lowest decrease was observed in Mahad tahsil with -19.32 per cent. Seven tahsils had observed higher change and eight tahsils have lower change in the region.

Very high change has recorded in Mhasla and Uran tahsil (Fig.-2) .High change in recorded in Khalapur, Shrivardhan and Murud tahsil which is between 4 to 12 per cent due to the development of industries and ports near the coastal tahsils. Moderate change was observed in Panvel, Pen, Sudhagad, Roha, Poladpur and Alibaug tahsils. The remarkable negative change was found in Karjat, Mangaon, Tala and Mahad Tahsil. Rough topography and kharland is the main causes for this. Raigarh district has high proportion of non agriculture land due to rapid growth of urbanization.





Cultivable Waste Land

The area under other uncultivable land in Raigarh district was 17.22 per cent in 1980-81 and 18.4 in 2000-01. The highest percentage area under cultivable waste land is recorded in Karjat tahsil with 34.30 per cent and lowest area has observed in Uran tahsil with 4.83 percent. Fig.-3 shows the area under other uncultivable land in Raigarh district. Very high percentage area under cultivable waste is found in Karjat tahsil due to poor irrigation facilities in the tahsil. High percentage area has observed in six tahsils namely Khalapur (26.34 per cent), Sudhagad (23.87 per cent), Poladpur (22.85 per cent), Mhasla (25.67 per cent), Shrivardhan (22.67 per cent) and Murud tahsil (24.00 per cent) ranging from 20 to 30 per cent. Moderate area under other cultivable land has found in Mahad (16.90 per cent), Roha (13.55 per cent) and Mangaon (13.02 per cent). Low percentage area has recorded in four tahsils namely Alibaug, Pen, Panvel and Uran tahsil. The areas under other uncultivable land in all above tahsils are ranging from 4.63 per cent to 7.68 per cent area.

Fallow Land

The fallow land includes permanent fallow and other fallow land. The permanent fallow land is the land kept uncropped for the period more than five years. It includes land under permanent pasture, miscellaneous tress and groves and other folder land. Current fallow land which include lands that were not sown at the time of crop reporting but were sown one or two years or left fallow either in one season or for one complete agriculture year to replenish the soil fertility. Fig.- 4 display the total area under fallow land in Raigarh district. Total land under fallow land was 8.48 and 8.64 per cent in 0980-81 and 2000-01 respectively. The highest fallow land has observed in Poladpur tahsil occupied 18.55 per cent land and lowest area was recorded 2.01 per cent in Murud tahsil. Very high per cent area has recorded in Poladpur (18.55 per cent) and Mangaon (16.93 per cent) tahsils. High percentage area is observed in Alibaug tahsil with 13.89 per cent. Moderate area under fallow land has seen in six tahsils namely Pen, Sudhagad, Roha, Mahad, Mhasla and Shrivardhan tahsils between 5 to 10 per cent. Low percentage area, less than 5.00 percent has observed in Uran, Panvel, Karjat, Khalapur and Murud Tahsils.

Forest

Forest land includes all land classified as a forest under any legal enactment dealing with forests or administered as forests, whether state owned or private, whether wooded or simply maintained as a forest land. Fig. -5 clearly indicate that there is a continuous decline in the forest land. The area under forest 23.50 per cent during 1981 and it was declined by 1.85 per cent in 2001 and reached up to 21.65 per cent as a result of rapid growth of industrialization and urbanization in the district. Increase in area had observed in four tahsils and decrease has observed in eleven tahsils in the study region. The highest increase has recorded in Panvel tahsil (1.31 per cent) and highest decrease is recorded in Karjat tahsil with 13.28 per cent. Fig.-5 shows the temporal changes in the forest land of the district. High change ranging from 0 to -2 per cent was found in Panvel, Roha, Poladpur, and Shrivardhan tahsil due to the massive tree plantation by forest department in reserved forest area. Moderate change has recorded in seven tahsils namely Alibaug, Uran, Khalapur, Pen, Mangaon, Tala, Mahad and Murud tahsils between 0 to -2 per cent. Low change is recorded in Mhasala with (-2.54 per cent) while lowest change has seen in Karjat tahsil with -13.28 per cent. This decrease has been observed due to utilization of forest and under transport, network, residential and commercial establishment of grand town and cities. No change has observed in forest cover in Sudhagad tahsil.

Conclusion

The pattern of land use is complex and it shows the fluctuations in the study period. The district has increase in percentage of area under net sown and decrease in cultivable waste during the study period. This shows the efforts of farmers to bring the maximum land under cultivation. The main problem of land use in the Raigarh district is that, the area under forest is decreased at alarming rate. If it goes on decreasing land under forest the district will certainly face the problem of ecological disturbance. To sustain land resource potential, decision on land use should be made in such way that the responses of environment are put into the most beneficial use for man.

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