

CHAPTER - IVLANDUSE PATTERN

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4.1 LANDUSE PATTERN :

In the previous chapters the physical properties of soils, land units and capability of land is presented and now this chapter proposes to analyse the relationship between land capability and landuse to suggest the suitability of landuse. Landuse means the use of a piece of land for a specified purpose at a given time. Landuse is a use of land particle for the general purposes and crops (Singh and Dhillon 1984).

The use of land is most important economic activity of man. It is the function of four variables i.e. land, water, air and man (Singh 1981). But, unfortunately this important resource is not used properly, which has lead to deterioration. The land capability on the basis of soils is an important tool for landuse planning. The basic purpose of the capability classification is to utility the land resources according to their capability (Sharma 1981). Keeping this in view the present chapter proposes to map and analyse spatial aspects of landuse pattern.

1) General Landuse Pattern :

Landuse of an area is a dependent function of two variables of resources endowment which includes amount of rainfall, type of soil, nature of land situation, availability of surface and underground water, total cultivable land

acreage etc. There is an over all pattern that is roughly similar among all. Generally land is classified into Arable land and non arable land. Village lands can be divided on the basis of use also. There are clear cut divisions into settlement land, forest land, cultivable land, waste land, grassland, and in one case hay or pasture land and under irrigation. Hence, the overall area may be interpreted in terms of more intensive land utilisation and better yield. Thus, landuse pattern means most efficient use of land and other land resources.

There are regional variations in the landuse pattern in the study area. The total geographical area of 1981.81 hectare of the Kotavade circle is divided into four major landuse classes viz. cultivated area or arable land, grassland, forest land and waste land area (Fig.4.1).

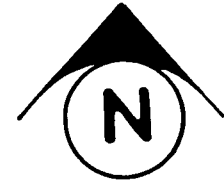
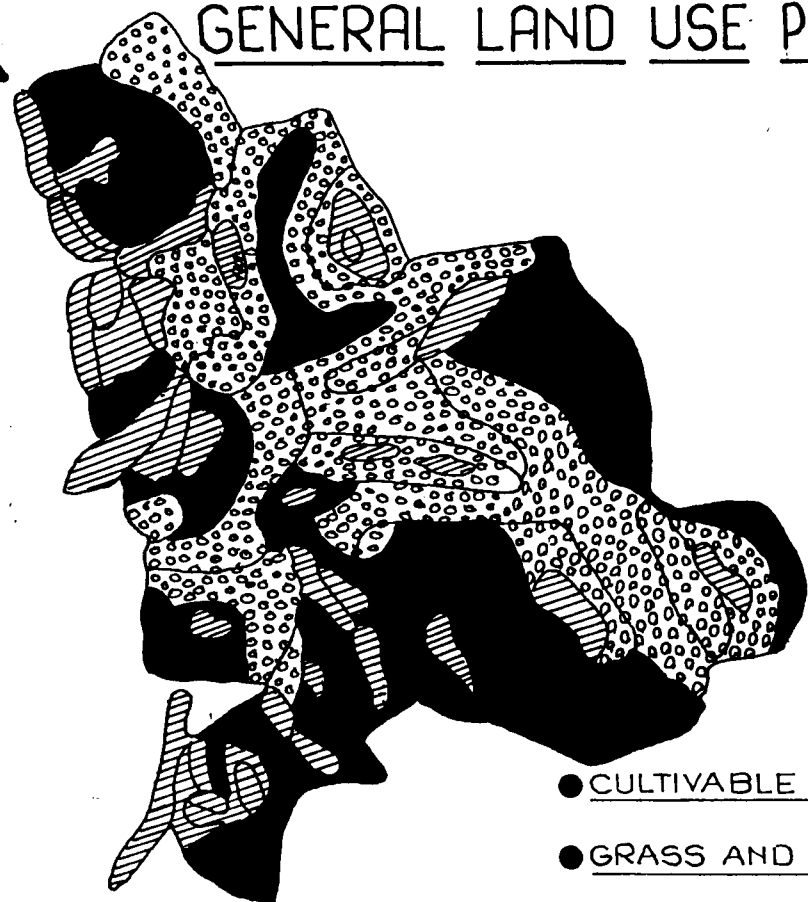
Table 4.1 : Area under different landuse categories in Kotavade circle, 1992-93.




Sr. NO.	Class	Percentage area
1	Cultivable land *	23.60
2	Grass & Forest land	65.68
3	Waste land @	10.72
Total		100.00

SOURCE : * Village Talathi Records.
 @ Compiled by the Author.

A

GENERAL LAND USE PATTERN

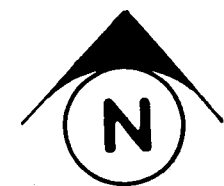
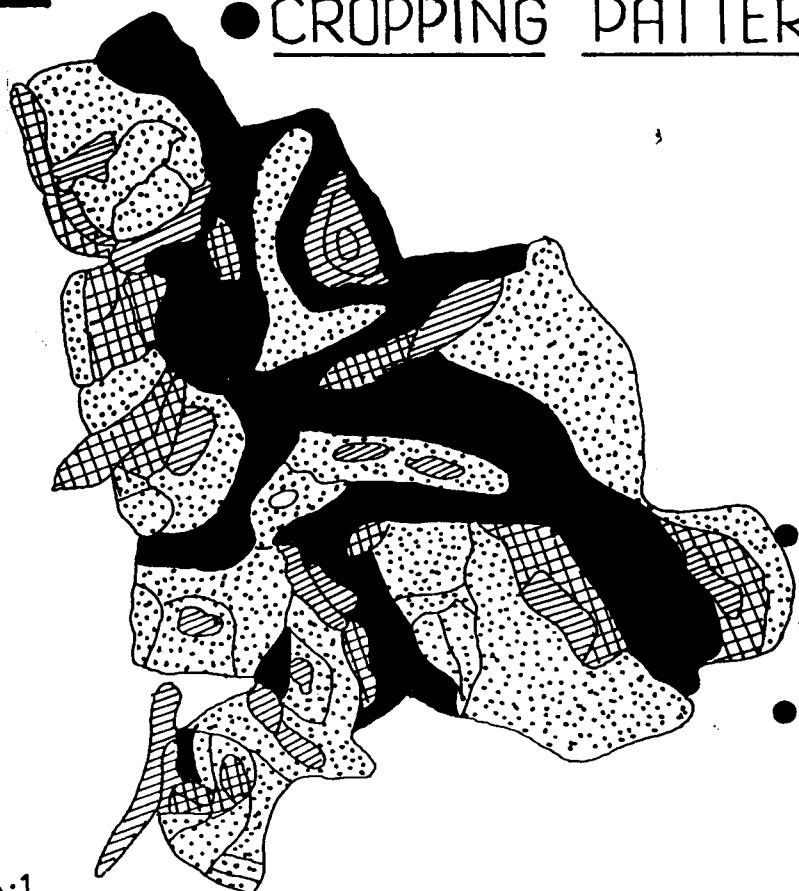





- CULTIVABLE LAND ----- 
- GRASS AND FOREST LAND ---- 
- WASTE LAND ----- 

0 2 4 6 KM.

B

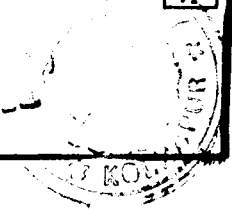
● CROPPING PATTERN ●



- RICE, OIL SEEDS ---- 
- OTHER CEREALS AND PULCES ----- 
- FRUITS ----- 

0 2 4 6 KM.

FIG. NO. 4-1



i) Cultivated land or Arable land :

The cultivated land consists of irrigated and non irrigated lands. The total area covered by cultivated land is 23.60 percent (3169.46 hect.). The map (Fig.4.1) shows that the villages Are, Bholewadi, Mayekarwadi, Kalbadevi and Kasarwadi are having more cultivated land. The villages having more cultivated land are in the north western part. They are Ganpatipule, Bhandarpule, Nivedi, Bhagwatinagar and Bhandarwada.

The villages in central part and eastern part having moderate cultivated land are - Dhamanase, Are, Narme, Jambrun and Vetoshi. Generally this may be due to the level land in the region. North, eastern and western border regions have low proportion of land due to the high altitude and rugged topography. Its proportion is very low in the circle.

ii) Grassland :

The grassland area occupies 38.13 percent (6129.29 hectares) of the total geographical area in Kotavade circle. The grassland area is distributed in all villages of circle in scattered form. The major part of grassland is observed in north area. The villages in this area are Malgund, Nivedi, Talepatwadi and Nevare Marathwadi. The villages in central



and eastern region are Dhamanse, Ori and Jambrun. The villages in southern part are Narme and Jambrun.

iii) Forest Land :

The forests covers only 27.55 percent (5238.17 hect.) area. They are located in central and western part of the Kotavade circle. The forests are found in Dhamanse, Kharavate, Dhokambale villages. Its proportion is very low in Sadye village. In north eastern part Malgund, Marathwadi, Talepatwadi, Ori and in south eastern part Narme and Jambharun covered area under forest in the study circle.

iv) Waste Land :

The waste land covers 10.72 percent (45.45 hectares) area in the Kotavade circle. The Katal covers larger area in the circle. So this area is not available for the cultivation purpose.

The waste land is found in northern part of this circle. The villages which have wasteland are Bhandarwada, Nevare, and Dhokambale. At the southern part there is also waste land. The villages in this area are - Basani, Kasarwadi, Wadajun, Vetashi and Jumbrun. The villages in eastern part having waste land are Ori and Narme.

4.2 CROPPING PATTERN :

Cropping pattern is the use of land for the cultivation of crops, in other words it is the proportion of area under different crops at a point of time. According to agricultural economist a cropping pattern means the proportion of area under various crops at a point of time (Kanwar 1972).

Cropping pattern is not the same all over the Kotavade circle under study. Variation in cropping patterns are related to physical and non-physical conditions. Moreover, it is governed by the farmers cropping choices and the choices are directly governed by specific purposes.

But cropping in Kotavade circle is different from rest of the state in many ways. In the region, it is mainly of intensive subsistence type wherein paddy or wet rice is the single dominant crop. Rice cultivation in Kotavade circle is practiced in larger area in which large amount of human labour used.

Based largely on variations in the environmental, socio-economic setting and general land utilization pattern, the cropping pattern of Kotavade is also different from that of Ratnagiri district. The cropping pattern of the region reveals a wide gap in percentage of five important sets of crops (Table 4.2).

Table 4.2 : Cropping pattern of Kotavade circle, 1990-91.

Sr. No.	Crops	Percentage of cropped area
1	Rice	50.21
2	Other vari, ragi, cereals nachni	23.18
3	Pulses	1.86
4	Oilseeds	1.64
5	Fruits and Vegetables	23.11
	Total cropped area	100.00

SOURCE : Village Talathi Records.

The cropping pattern of the Kotavade circle is characterised by the predominance of foodgrains. Kharif crops are by far the most important in area as well as production. The Rabi crops record a very small area under cultivation.

1) Rice :

Rice is the staple food of the great majority of Kotavade circle people and it clearly dominates the entire economy of the Konkan. Major share of the cop hectarage is under rice. Rice is important as a subsistence crop in the region but it also enters into the commercial economy of the region.

Rice is grown almost in all the Kotavade circle but

its cultivation is more concentrated in certain areas occupying e.g. fertile river valleys and lowlying coastal tracts. The popular varieties are Patni-6, Warangal-1487, Waksal-207, Panvel-61, Bhadas-79.

Most of the paddy in Kotavade circle is grown largely in the Kharif season. However, in some parts of the region, especially where artificial water supply is available some rice is also taken as summer crop known as Waingan paddy. The introduction of Japanese method of paddy cultivation marks an important development in the paddy cultivation of the region where traditional methods persisted since long.

ii) Nachni or Ragi :

It is a minor Kharif foodgrain crops at national level but is next in importance to rice in Konkan. Nagli or nachni is the local names of this crop. Sometimes it is called as finger millets (or buck wheat) because its fine seeds are carried on a cluster of five stalks like the fingers of human palm.

Ragi is a short durational crop and permits inter-culture with other Kharif crops that do not require much soil moisture. It is usually grown on lighter, hilly soils which are unsuitable to grow anything else varkas lands of Kotavade hill slopes or poorer upland soils provide the



ideal setting for ragi cultivation. Ragi, nachni, and other cereal occupies about (23.18%) percent of the total area in Kotavade circle.

Vari :

Vari is confined to north and south Konkan. Vari is a common hill millet holding third place in the foodgrains produced in Kotavade circle. It occupies 23.78 percent of the cultivated area in Kotavade circle.

Pulses :

Kotavade circle grows a variety of pulses. But in Kotavade, the actual area under pulses is just under 1.86 percent. Pulses constitute a group of crops of the legume family. Pulses are necessary in rural economy of the Kotavade circle because they form the major portion of the protein. Kulith (Horsegram), Udid (Blackgram), Tur (Pigeon pea), val are various pulses grown in Kotavade circle.

Many pulses are generally taken as a second (Rabi) crop in the winter season. But some are taken in Kharif season usually grown in rotation with hill millets and therefore occupy light soils along the slopes.

Oil seeds :

The oil seeds play a significant role occupying 1.64 percent of the total cropped area in Kotavade circle. Til

nigar are important oilseeds grown in Kotavade circle, but the proportion of area under oil seeds is very insignificant (1.64%).

v) Fruits and Vegetables :

The actual area under individual fruits and vegetables in Kotavade circle is too small about 634.73 hectares amounting to some 23.11 percent of the total cropped land. It has a great variety in both fruits. The mango, cashwnut, jackfruit, betelnut, ananas, coconut are important fruits cultivated in this study area. The total area occupied by the fruits and vegetables is 23.11 percent.

4.3 LANDUSE AND LAND CAPABILITY :

The concept of land capability was developed during the 1930s in the USA, but the widespread adoption of land capability schemes only began after 1960. The assessment of land capability involves an evaluation of the degree of limitation posed by permanent or semipermanent attributes of land to one or more landuses. This method has therefore been referred in the determination of landuse limitations.

Capability is the inherent capacity of land to perform at a given level for a general landuse. Land can be classified on the basis of capability indices according to their potentials

and limitation for sustained production. Land capability is the grouping of soil map units on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a longer period of time (Klingebiel and Montgomery 1973). Land capability classification helps for rational utilization and conservation of the land. It enable us to know as to show different soils can be utilized with safety according to the qualifications of class into which they are places (Mohammad Noor 1981). In this context the land capability classification study of Kotavade circle reveals the area suitable and not suitable for cultivation. The total area suitable for cultivation class II, III and class IV is about 21.11 per cent. But presently in the area under study the cultivated area is 23.60 percent. It indicates that there is no potential for further extention of area under cultivation which is presently waste and barren. Whereas the total area of class V, VI and VII is about 78.89 percent, it is not suitable for cultivation. But is suitable for forestry, grazing or unprotected. But actually the area under forest, permanent pastures is 65.68 percent. It is indicates that there a potential for further extention of area under forests and grassland. The waste land covers 10.72 percent area in the circle and it can be also used in future, after improving it for tree plantation.



The above relation between landuse and land capability in the study area is also tested by Chi-square values. All observed Chi-square values are less than the critical Chi-square values. So the null hypothesis is accepted that means the landuse and land capability classes are not significantly related in the study area.

4.4 SUMMARY :

There are regional variations in landuse pattern of the study area. The areal extent of cultivated area is 23.60 percent and its high proportion is observed in several part of the study area. The forest and grassland area (65.58%) is registered in the northeast and south part of the study area.

The relation between landuse and land capability, is tested by Chi-square method. The null hypothesis is accepted, that means the landuse and land capability classes are not related to each other. The land capability class II and III is highly suitable for cultivation, after removing some problems in it. The land capability class IV is suitable for occasional cultivation but class VI is not good land, it is suitable for grazing and wood land, after removing some natural hazards.

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