

CHAPTER - III

LAND CAPABILITY CLASSIFICATION

- 3.1 Land suitable for cultivation
 - A) Land capability class II
 - B) Land capability class III
 - C) Land capability class IV
- 3.2 Land not suitable for cultivation
 - A) Land capability class VI
 - B) Land capability class VII
- 3.3 Summary

References

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INTRODUCTION :

The physical characteristics of soils in Khatav taluka is studied in previous chapter. The present chapter deals with the overall picture of land capability which is the integrated impact of soil characteristics as analysed in the earlier chapter. Land capability is by and large ascertained by inherent soil characteristics, external land features and environmental factors limiting landuse (Mohammad Noor, 1981). The land capability classification is a scientific appraisal of the physical characteristics of the land and it is inherent capacity of land to perform the general landuse functions. It is, therefore, a quality of land and usually assessed by the physical properties of soil viz. texture, slope, depth, drainage, erosion, gravelness, colour and moisture. The method of land capability classification is a systematic segregation of different kinds of lands which are distinguished from one another by variation in the kind and degree of use imposed by soil characteristics (Singh, 1971). The present study of land capability is based on 20 percent sample studies of villages and field observations of the entire region.

METHODOLOGY :

The land capability classification is grouped into three major categories of soil viz. i) capability unit ii) capability sub-class iii) capability class. Land capability unit is a grouping of soils that has the same responses to

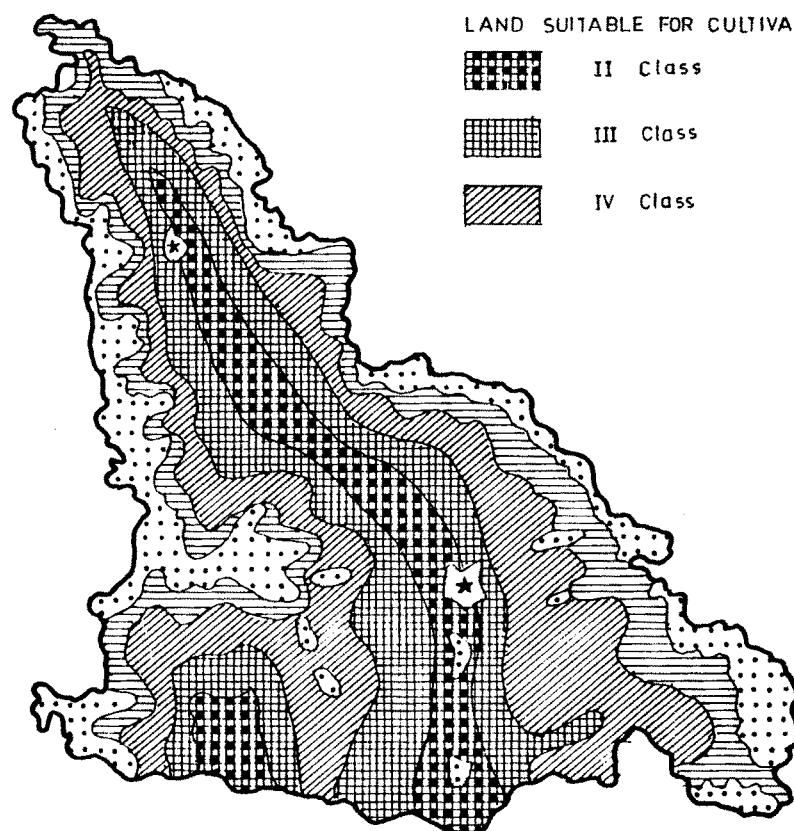
cultivated crops and pasture plants. Yields are also used as criterion in establishing the capability units. The second category i.e. the capability sub-class, is a grouping of capability units having similar kinds of limitations and hazards. The third broadest category of land capability is a group of soils having the same degree of limitations. The limitations in the use of soil progressively increases from class I to VIII. Class I to IV are suitable for cultivation and class V to VIII are not suitable for cultivation but suitable for grazing, forestry and wildlife, maintenance and recreation or watershed protection (Jaiswal et al.(Ed.), 1980). The same procedure is adopted here to group the soils of the region into respective classes. Based on the spot visits the data pertaining to soil properties were depicted in the maps. The superimposition of these maps was further made and capability class was determined for each grid. Thus, general map showing land capability classes was prepared (Fig.3.1).

Based on this scheme of classification the capability classes of land suitable for cultivation viz. class II, class III, class IV have emerged out in Khatav taluka. The characteristics of class I are not observed in the region. Besides this, out of four classes, land not suitable for cultivation ranging from V to VIII, only two i.e. class VI and VII are identified as the characteristics of class V and VIII are absent in the region. A brief analysis of these respective land capability classes is attempted in the ensuing pages.

◎ KHATAV TALUKA ◎
LAND CAPABILITY

LAND SUITABLE FOR CULTIVATION

- [Dotted pattern] II Class
- [Horizontal lines] III Class
- [Cross-hatch] IV Class



LAND NOT SUITABLE FOR CULTIVATION

- [Vertical lines] VI Class
- [Dots] VII Class
- [Star symbol] DAMS

N



5 0 5 10 Kms

FIG. 3-1

ANALYSIS :3.1 LAND SUITABLE FOR CULTIVATION :

Fig.3.1 shows the land capability classes in the region. There are three classes of land suitable for cultivation in the region i.e. class II, class III and class IV. The total area covered by these classes is about 63.8 percent (86,953 hectare) of the total land (136,337 hect.) of the taluka. This zone is located in the central parts which is broadened southwards. Presently, this zone has been devoted for the cultivation of different crops. Agriculturally, this is the core area of the region.

A) Land capability class II :

This tract can be regarded as agriculturally suitable part of the region. The soils in the class are good with moderate limitations occupying about 12.1 percent (16,476.3 hect.) area of study region (Table 3.1). The soil depth is more than 45 cms and the slope is less than 10 percent. The soil erosion is slight and gravel content is less. The soil texture ranges from clay to clay loam and soil is mostly dark brown in colour. However, it was observed that the soils were poorly drained. Generally, such land class has high retentivity of moisture and good capacity for production. Obviously, they are suitable for cultivation with ordinary practices.

This class of land is observed along the banks of Yerala

river. This class covers the areas of villages like Pusegaon, Ner, Khatav, Vakeshwar, Vaduj, Ambavade, Nadhaval, Morale, Chorade and Chitali (Fig.3.1).

TABLE 3.1 : Area under different land capability classes in Khatav taluka, 1989.

| Sr. No. | Capability class | A r e a | |
|--|------------------|------------------|--------------|
| | | Hectare | Percentage |
| 1 Area suitable for cultivation | | | |
| i) | Class II | 16,476.8 | 12.1 |
| ii) | Class III | 26,984.7 | 19.8 |
| iii) | Class IV | 43,491.5 | 31.9 |
| <hr/> | | | |
| 2 Area not-suitable for cultivation | | | |
| i) | Class VI | 17,982.1 | 13.2 |
| ii) | Class VII | 30,403.1 | 22.3 |
| iii) | Area under dams | 998.8 | 00.7 |
| <hr/> | | | |
| | Total | 136,337.0 | 100.0 |
| <hr/> | | | |

SOURCE : Compiled by the Author, 1989.

B) Land capability class III :

About 26,984.7 hectares (19.8%) area of the region has been occupied by this group. The soils of class III are moderately good

with severe limitations that reduce the choice of crops and requires special care in handling and management. Generally the limitations of soil in class III are more than those in class II and therefore, it needs careful management (ICAR, 1980).

The limitations of this class are as follows :-

The slope is 10 to 15 percent and soil depth is 22.5 cms to 45 cms. The soil drainage is moderate to well. The soil erosion is less and moderate. The gravel content is insignificantly observed. The texture ranges from clay to clay loam. Due to high moisture holding capacity the productivity of this soil group is rather substantial.

The lands of such class are mainly confined to the areas of the villages of Mhasurne, Nimsod, Gursale, Vaduj, Kuroli, Khatav, Katgun, Mayani, Anphal, Vikhale, Pimpali, Banpuri, Katarkhatav, Hingne, Pedgaon (Fig.3.1). The zone of this class is located in Yerala valley and is parallel to class II.

C) Land capability class IV :

The soils in class IV are fairly good with occasional cultivation of jowar and bajara crops. It has, however severe limitations like no level land and inadequate irrigation facilities. These limitations restrict the choice of crops and requires very careful management practices (Sharma, 1981). The cultivation of crops is restricted to one or two years. Jowar and bajara are major crops in this class.

The slope varies from gentle to moderate. The soils are shallow and moderate in depth (7.5 to 22.5 cms). They are well drained and erosion is moderate. Gravel content is moderate and colour is brown with moderate moisture capacity. Besides this, texture ranges from sandy loam to sandy clay. The proportion of this class is about 31.9 percent (43,491.5 hect.). This group is mainly confined to the villages of Mayani, Vikhale, Anphal, Dhondewadi, Datewadi, Katarkhatav, Dalmodi, Nidhal, Vanzoli, Rahatni, Vadgaon, Kumthe, Bhosare, and Jakhangaon (Fig.3.1).

3.2 LAND NOT SUITABLE FOR CULTIVATION :

The land having severe limitations are generally considered as unsuitable for cultivation. Obviously, in the study region class VI and class VII are identified as land not suitable for cultivation occupying about 36.2 percent (49,384.0 hect.) of the total area of the region.

A) Land capability class VI :

The soils in class VI have severe limitations which have lead them generally unsuitable for cultivation. Naturally, they have been devoted largely to pastures or woodlands wherever possible.

Thin layered soils (7.5 cms) are located on moderately sloping lands where soil erosion is high. Though soils are well drained, nearby Maradwak and Morale villages, the level lands

have experienced poor drainage. Consequently the watertable has increased resulting into the emergence of saline lands in this tract. Such lands are not suited for agricultural practices. The texture of this class varies from sandy loam to sandy clay loam. The moisture capacity is less because of the high gravels. This class of soil is only suited for pasture or grasslands.

This class of land has covered 13.9 percent (17,982.1 hect.) comprising the area of villages viz. Kaledhon, Pachwad, Vikhale, Padal, Khatval, Enkul, Bombale, Tadavale, Pedgaon, Nidhal, Kharshinge, Aundh, Jaygaon, Amberi, Visapur, Vardhangad, Lalgun, Diskal and Mol (Fig.3.1).

The area (0.7%) under Ner and Yerala dams are not available for cultivation because of the storage of water throughout the year.

B) Land capability class VII :

Since this class of land is not suitable for cultivation it has been devoted to grazing or forestry. Many limitations have made such soils unsuited for cultivation and their use is restricted largely to pastures and forestry.

These soils are confined to the lands having steep slope and rugged topography. The depth is very shallow (below 7.5 cms). Steep slope has lead to intensive soil erosion. There is considerable drainage and proportion of gravel content is also quite

high. The sandy and sandy loam texture is less favourable for moisture holding. All these have resulted in poor productivity of these soils.

This class of land covers about 22.3 percent (30,403.1 hect.) area of the taluka (Table 3.1). The villages namely Kurle, Trimali, Nandoshi, Amberi, Jamb, Visapur, Vardhangad, Kaledhon, Garudi, Pachwad, Enkul, Bombale, Tadawale, Mandve, Pedgaon, Nidhal, and Rajapur (Fig.3.1) have recorded high proportion of such lands.

3.3 SUMMARY :

The land capability classification is the grouping of land according to it's inherent characteristics. They are grouped into eight classes and each class is indicated by the number ranging from I to VIII. The first four classes of land are suitable for cultivation and the remaining four are as land not suitable for cultivation.

Based on this classification scheme, five land capability classes, i.e. Class II, III, IV, VI and VII are identified in Khatav taluka. The land suitable for cultivation covers about 63.8 percent area and land not suitable for cultivation records only 36.2 percent area of the taluka. Class II occupies about 12.1 percent area. Class III and IV records about 19.8 percent and 31.9 percent respectively. Class VI records 13.2 percent area and class VII occupies about 22.3 percent area. The spatial spread of these sub-classes is unevenly distributed all over the region.

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