

CHAPTER - I

REGIONAL SETUP

1.1 Location :

The state of Maharashtra is the third largest states in India both in population (62,78,471) and area (3,07,762 sq.kms.). It lies between 15°45' N to 21°1' N latitude and 72°6' E to 80°9' E longitude. Politically the state comprises 30 districts grouped into seven administrative zones, namely Bombay, Poona, Nasik, Aurangabad, Amaravati, Nagapur and Konkan. Territorially, Maharashtra has Gujarat to its northwest, Madhya Pradesh to its north, and east and the states of Andra Pradesh, Mysore and Goa to its south.

1.2 Physiography :

The physiography has greatly influenced the socio-economic life of Maharashtra. Though two out standing division like vast plateau sloping eastwards and narrow coastal lowland to the west are dominant, physiographically the land of Maharashtra can be defined as follow (Fig.1).

1. The Konkan lowlands,
2. The Sahyadri ranges,
3. The Deccan plateau,
4. The Wardha-Wainganga valley and
5. The Tapi-Purna basin.

1. The Konkan Lowlands :

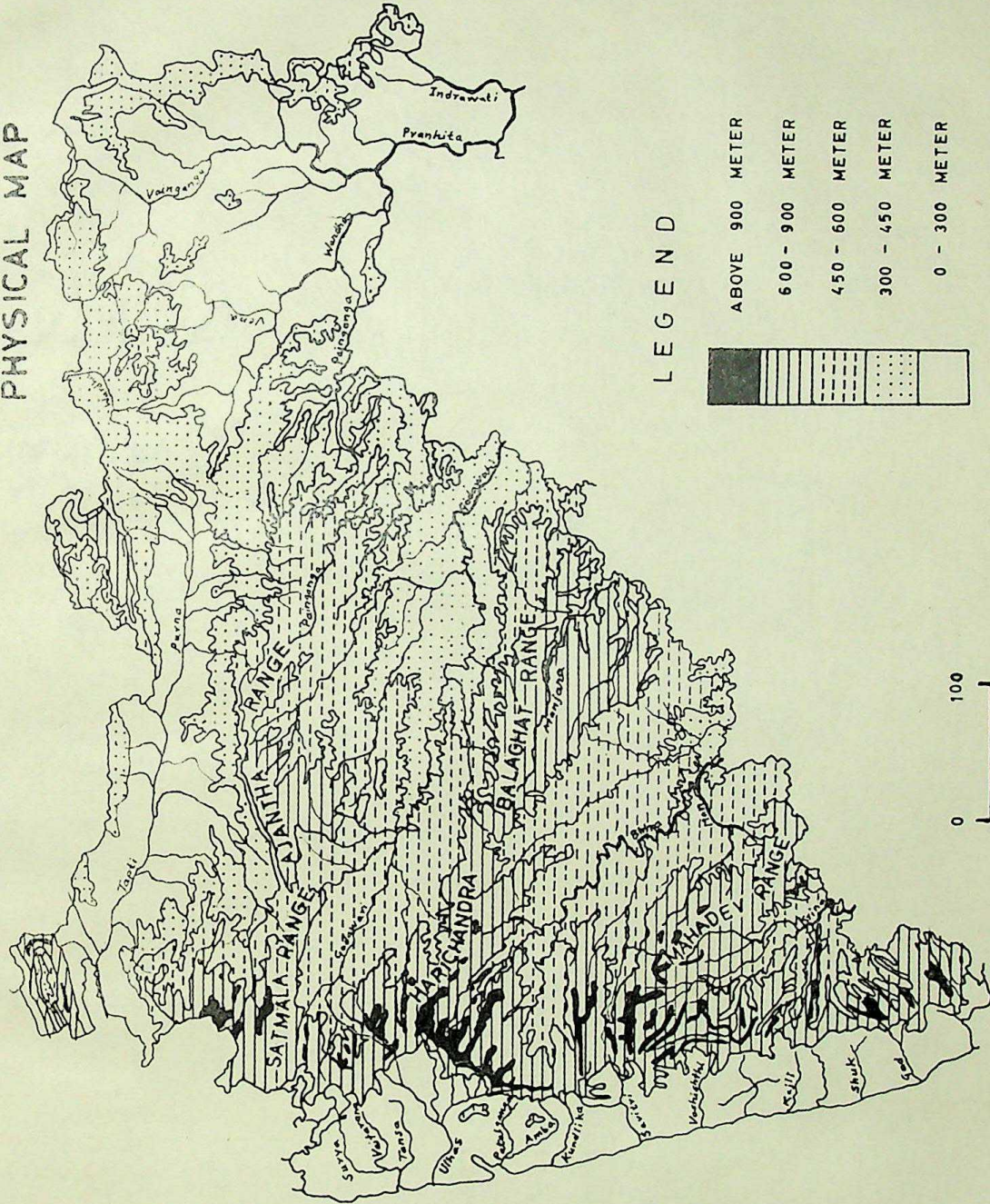
The narrow strip of land between the Arabian sea on the west and the Sahyadri range on the east is called Konkan. It stretches north-south for 720 kms. and its width ranges between 45 to 75 kms. It is about 31,100 sq.kms. in area. The zone falls into three longitudinal sub-divisions, the coastal belt, the middle tract and the foot hills of the Sahyadri. The heavy monsoon rain during the summer and extreme humidity mark its climate. Its rivers flow transversely. During the monsoon they are ranging torrents, while in other part of the year, they are either rivulets or mostly dry.

2. The Sahyadri Range :

The Sahyadri forms the watershed between the east flowing streams and the west flowing streams. Sahyadri with an average height of 1200 metre runs southwards along the western edge of the Deccan plateau from near the Tapi mouth and extends much further beyond the southern limits of the state. In contrast to its steep western face the range slopes gently east and along the Maharashtra plateau. Its three main transverse spurs demarcate the major river basins of the state namely Tapi-Purna, Godavari and Bhima-Krishna. The Thalghat and the Borghat are the two important passes at the heart of the Sahyadri through which communication lie between the

MAHARASHTRA

PHYSICAL MAP



LEGEND

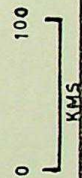
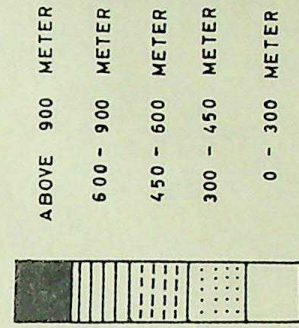


FIG. 1-1

plateau and the Konkan coast land. The other important Ghats are Kumbharli, Amba, Phonda and Amboli.

3. The Deccan Plateau :

It is formed by the Sahyadri running north-south to the west and the Satpuda running east-west to the north. The Lava through tropical weathering has produced a soil known as regur, black in colour and capable of retaining moisture. The plateau is deeply dissected by the eastward flowing Godavari, Bhima and Krishna and their tributaries. The plateau falls in height to less than 300 meter both towards the north and the east.

4. The Wardha-Vainganga Valley :

In the district of Chanda, to the extreme eastern boundary of the state, there occurs a series of detached low hills about 500 metre in elevation. It is also an interior alluvial lowland drained by the Wardha-Vainganga-Pranhita rivers. The Ramtek Hill (400 metre) is a representative, through more prominent, features in landscape.

5. The Tapi-Purna Basin :

The Tapi-Purna basin stretching latitudinally across northern Maharashtra, ranges named in by the Satpuda in the north and Stamala, Ajantha in the south. This rift valley



slopes from east to west. The Tapi rises near Betul in the Satpuda range in Madhya Pradesh and enters Jalgaon district from the north. The upper Purna also rises in the Satpuda and flows through Amaravati, Akola and Buldhana districts and meets the Tapi near Changdev. Like Purna, the Bhogavati, the Vaghur, the Girna and the Bori all join the Tapi when it enters Dhule district.

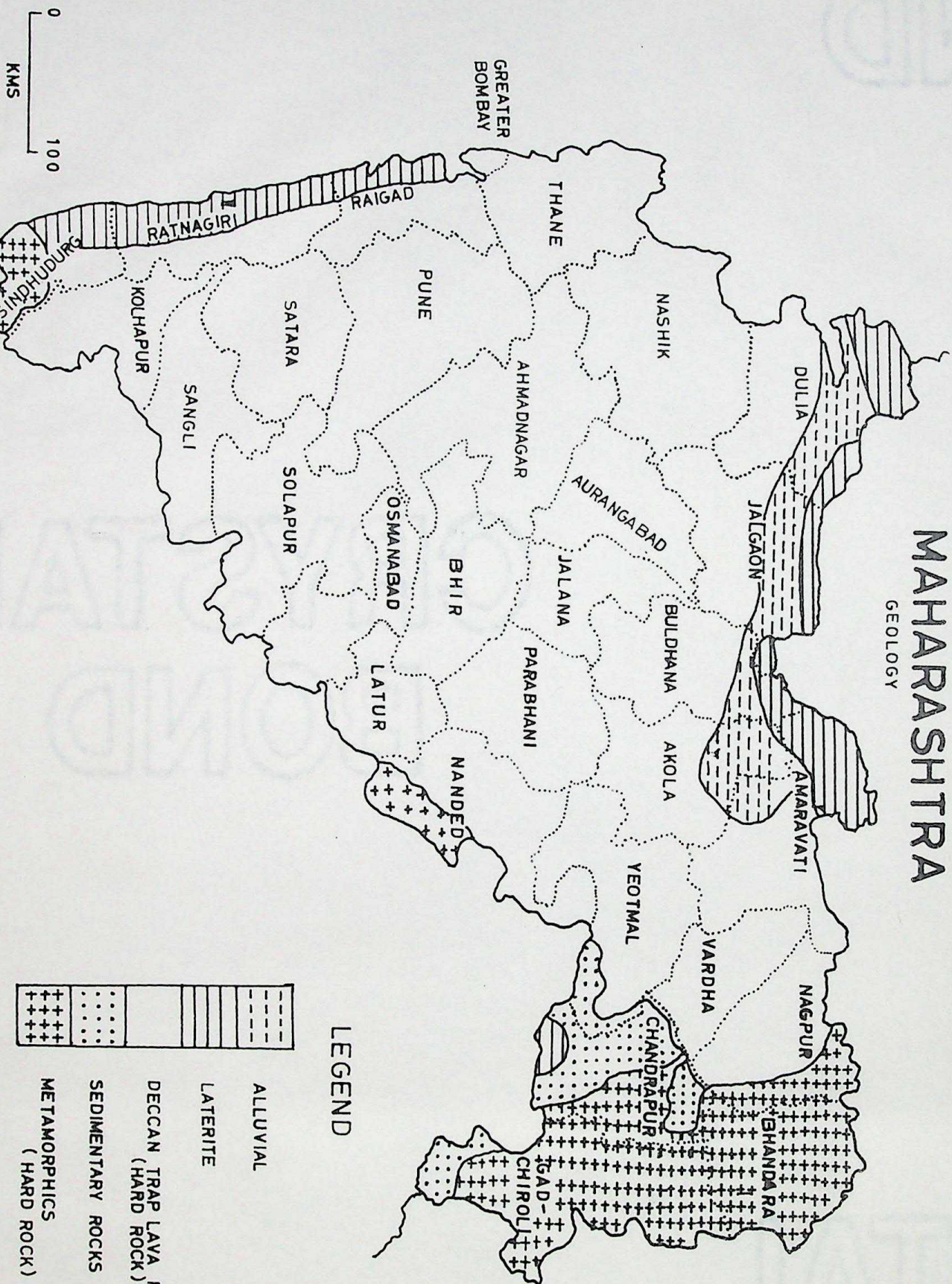
Geologically, the area of the state nearly coincides with the limits of Deccan trap formation (Fig.2). The areal distribution of various rock formation reveals that about 94% of area is covered by the hard rock formation. It presents many structural complexities which control the mode of occurrence of groundwater. The capacity of retain and transmit groundwater through hard rock formations is very much limited. The quarter-nary older alluvial deposits in Tapi-Purna basins provide suitable site for digging tube wells in the state.

1.3 Climate :

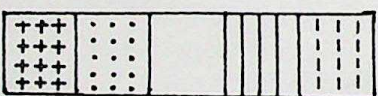
Climatically, the state falls in monsoonal type in character. North-south trending Sahyadries is important factor in determining the climate of Maharashtra. The climatic year can be divided as follow.

1. Hot weather period - March to May
2. South-west monsoon period - June to September
3. Post-monsoon period - October to Mid-December
4. The cold weather season - Mid-December to February

MAHARASHTRA GEOLOGY



LEGEND



ALLUVIAL
LATERITE
DECCAN TRAP LAVA FLOWS
(HARD ROCK)
SEDIMENTARY ROCKS
METAMORPHICS
(HARD ROCK)

i) Temperature :

The temperature in the states changes from season to season and from place to place. Some of the salient features of temperature are as follow.

- a) In cold season mean daily maximum temperature is 28°C in the coastal belt which rises upto 30°C to 33°C in inland part.
- b) In hottest month of a year the mean daily maximum temperature recorded falls between 35°C to 43°C in Vidharbha and 30°C to 33°C along the coast.
- c) In rainy season, day temperatures drop appreciably. The diurnal variation is not much. The daily maximum temperatures recorded fall between 29°C to 31°C in coastal area and 29°C to 38°C in the interior part of the region.
- d) During the post-monsoon period the day temperatures shows increase in October but thereafter the temperatures drops appreciably. The mean daily maximum temperatures are 29°C to 34°C in the interior and 29°C to 31°C in coastal division.

ii) Rainfall :

The major rainfall received in Maharashtra comes from south-west monsoon. June, July, August and September are the rainy months where 70% of the annual rainfall of a year is concentrated. The regional variation in the distribution of

rainfall are obvious. The Konkan has an average of 267 cms. Deccan plateau records 35 cms to 50 cms. Marathwada 60 cms and Vidharba 100 cms. (Pawar, 1984).

Seasonal Distribution :

1. Rainy Season :

This season starts from 7th June and continues upto the mid of September. It is also known as a south-west monsoon period. The major amount of rainfall received in the state is concentrated in this period. Particularly the coastal districts along with Dhule and Amaravati district have recorded more than 90% of the total annual rainfall concentrated in this period. Relatively less amount of rainfall is recorded to the east of Western Ghats as this area falls in rainshadow zone of Sahyadri ranges.

2. Post-Monsoon Season (October-November) :

Certain amount of rainfall during the month of October is associated with thunder storms. Very little rainfall occurs in the months of November and December. About 8% to 12% of the total annual rainfall is recorded in the adjacent district to the east of Western Ghats. Insignificant rainfall is recorded in the Vidharba region.

3. Cool Season (December to February) :

This is the coolest part of the year when continental tropical air prevails over the region. There is very little rainfall, except in the eastern half of the state which gets only 1 to 4 percent of the total rain. Elsewhere rainfall recorded is very insignificant i.e. less than 2 percent.

4. Hot season (March to May) :

During this season local sea winds prevail in the coastal district and dry land winds in the interior. This is a period of thunderstorm and thunder showers. Relatively more rainfall i.e. above 9% of the annual total is recorded in Sangli and Kolhapur district. Less than 3% in a northern and western part of Maharashtra. Elsewhere it ranges between 3% to 9% of the annual rainfall.

Variability of Rainfall and Need of Irrigation :

The co-efficient of variability of rainfall is comparatively low (15 to 20 percent) only in South Konkan and along the Western Ghats (i.e. along Sahyadri ranges). This is the only region of high reliability of rainfall in the state, where need of irrigation is low. Whereas 20 to 25 percent variability is observed in the eastern five districts of Vidharba and western part of the state comprising parts of

VARIBILITY OF RAINFALL AND NEED OF IRRIGATION

MAHARASHTRA STATE

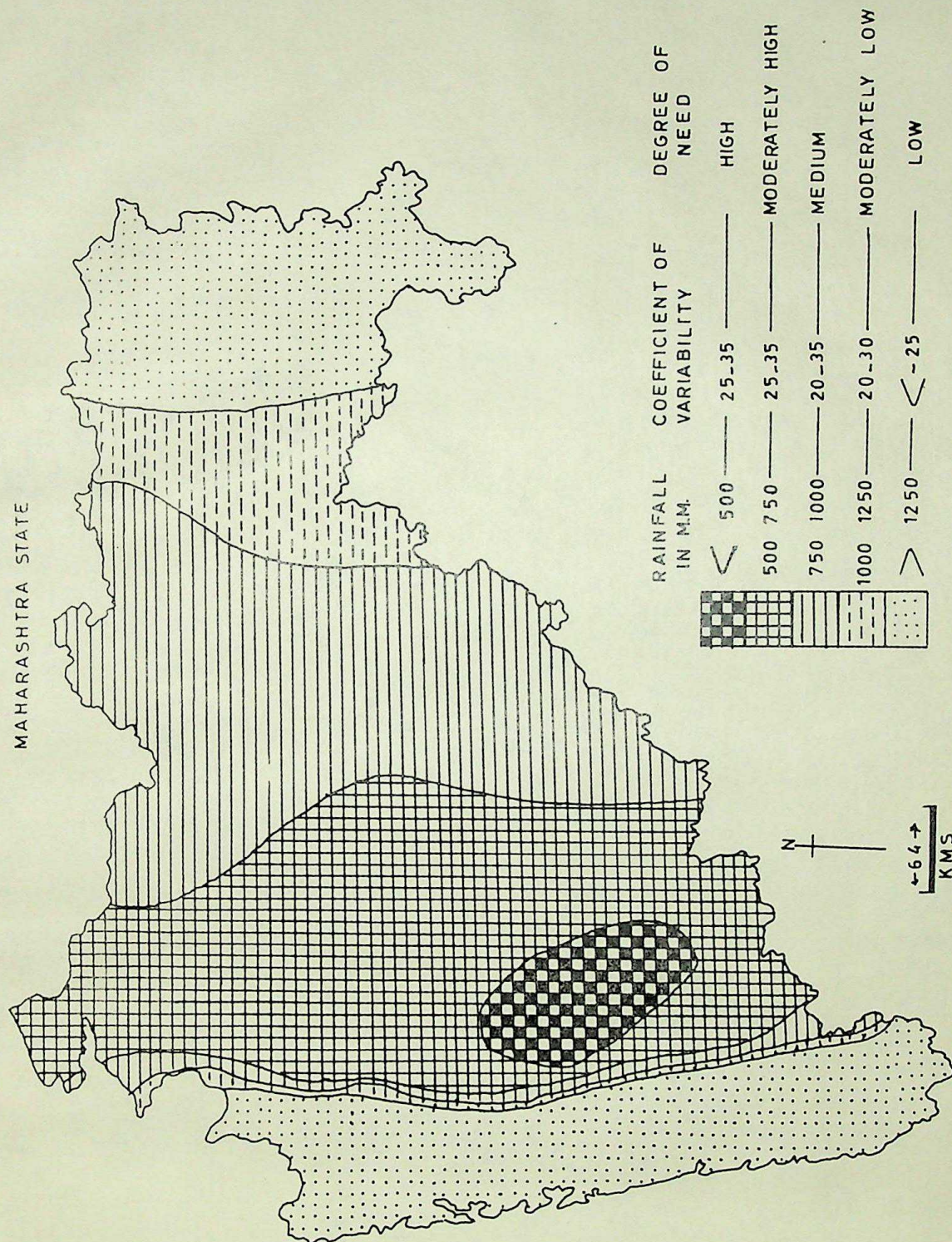


FIG. 1.3

Thane, Raigad, Ratnagiri, Sindhudurg, Poona, Satara and Sangli (Fig.1.3). This is the region of slightly high reliability of rainfall and moderately low need of irrigation. On the contrary very high variability of rainfall is confined to the central part of the state stretching in north-south direction. This is the drought prone area of the state where reliability of rainfall is very low and need of irrigation is high. Surrounding this region lies an area where variability ranges between 25 to 30 p.c. This is the area of moderate reliability of rainfall.

DR. DALASHEB KHAMBHEKAR LIBRARY
SHIVAJI UNIVERSITY, KOLHAPUR

