CONTENTS

Front Cover : Landforms produced by physical processes - exfoliated rocks, Beaches, Sea cave, Columnar basalt and biological weathering because of tree roots (in the background)

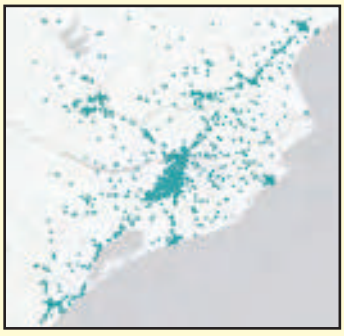
Back Cover : V-shaped valley, retail seller, man-made cave in hard rocks, Wholesale seller, Seif dunes.

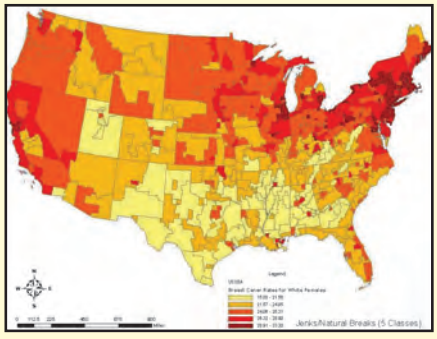
1. Distributional Maps

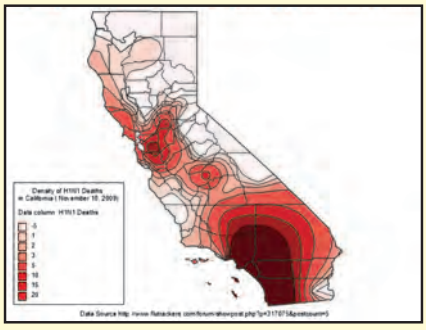
You have studied district, state and country maps in the earlier classes in Environmental Studies and Geography subjects. The main aim of maps is to show the location of a place and distribution of variables. Some maps are prepared with special themes. Such maps are called Thematic Maps. Through such maps, distribution of various variables in a region is shown. Distribution of temperature, rainfall, population, etc. is shown on the map according to the data of these variables. These maps are useful to explain the distribution of these variables in the region. Such maps easily bring out the patterns of distribution. To draw distributional maps, we need statistical data of the variables. Distribution can be shown in the three following ways on a map:

Distributional Maps

Dot method | Choropleth method | Isopleth method







Dot method:

A dot map is prepared using statistical data. While preparing dot maps, only data gathered through counting is used. The way a variable is distributed throughout the region, the dots are used to show its distribution on the map. For example, the population of a region, the distribution of cattle, etc.

To show distribution through dot method, the value of a dot has to be determined. To do that, the lowest and the highest values of a given variable in a region are taken into consideration. Accordingly, the number of dots are determined. Also, we need to consider the size of the dot, the density of the variable and the scale of the map. The number of dots to be given for the value of variable in each sub-administrative unit needs to be decided first. The following precautions should be taken while using the dot method for a map:

- The size of a dot should be uniform.
- The distribution of physiography, water sources, transport system, etc. of a region should be considered while placing dots on a map.
- While showing population distribution, rural population is shown by dots and circles are used to show urban population.

The dot method is most suitable for that variable which is freely scattered across the region.

Make friends with maps!

In Fig. 1.1, the population distribution map of Amravati district is given. Answer the given questions by reading the distributional map shown by dot method:

- What is the population of the Amravati town?

- Name the place having population of 1 lakh on the map.
- Which part of the map shows sparse distribution of population?

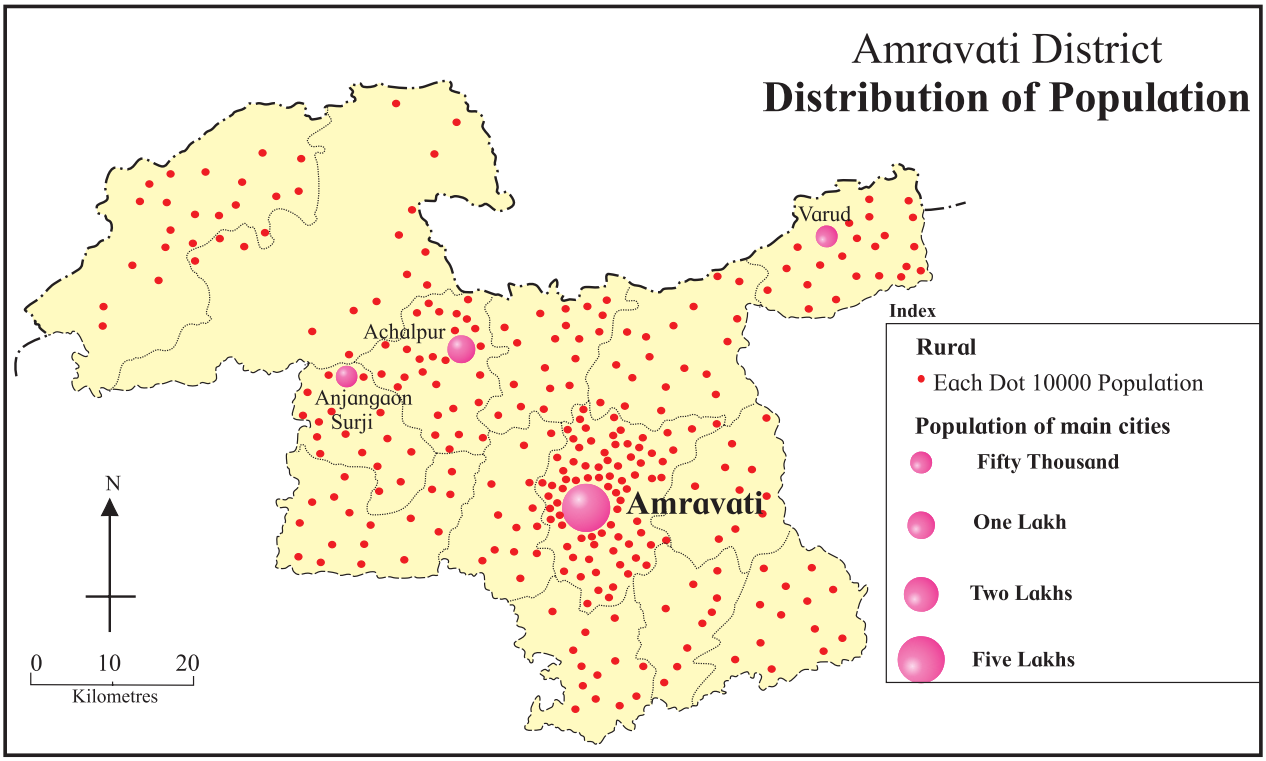


Figure 1.1 : Dot method map

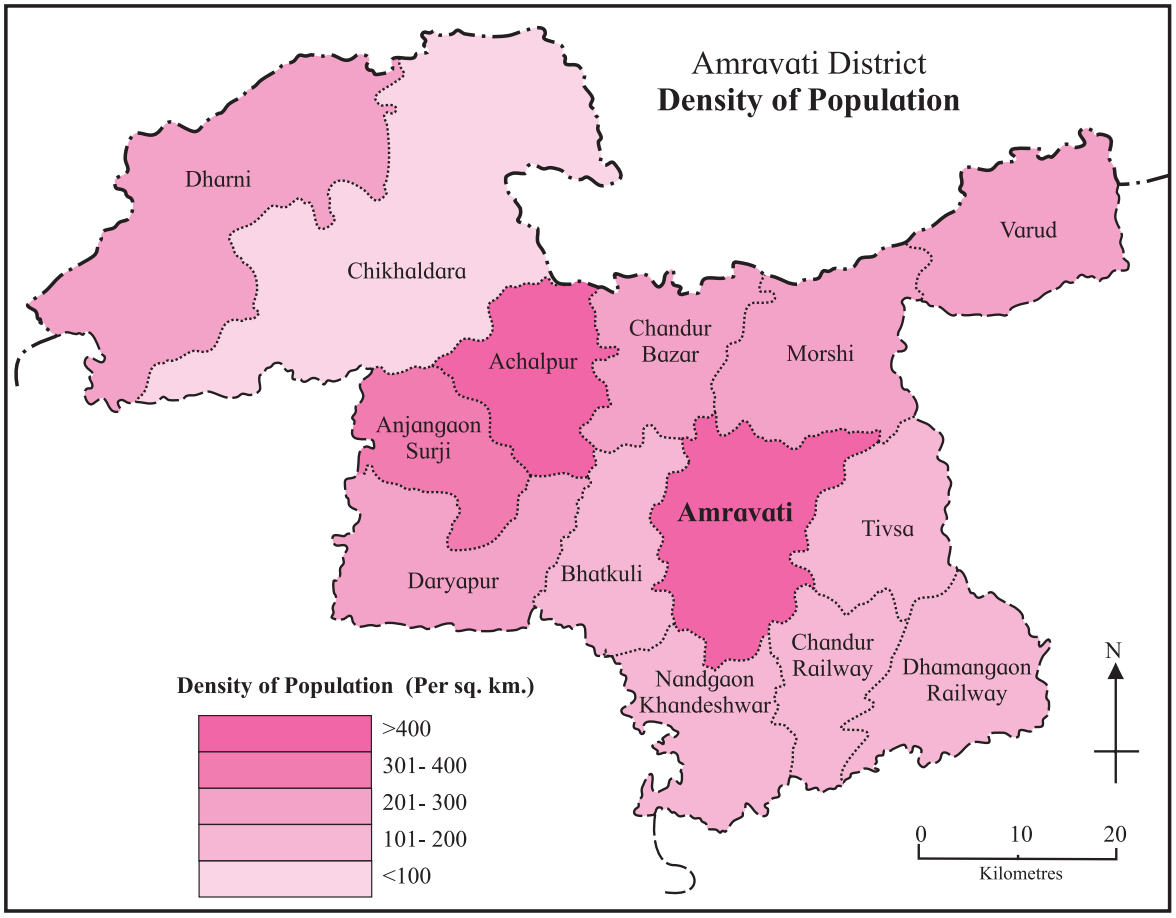


Figure 1.2 (A) : Choropleth map (tints)

Choropleth method:

In these maps, the data regarding various geographical variables is shown by shades or tints of various colours. While making such maps, the data used for different variables is obtained through various processes such as measurement, surveying, etc. In this method, only one value is given to one sub-administrative unit in a region. The smallest and the largest values of the given data of the variable are taken into consideration. After that, 5-7 classes are made. Each class is assigned a tint of the same colour or black-and-white patterns. The shades or the patterns become darker with the increasing values of the given variable and are drawn accordingly on the map in the given classification.

In fig. 1.2 (A) and 1.2 (B), the population density maps of Amravati district using color shades and black-and-white patterns are shown. Read any one map in detail and answer the following questions:

- Name the Talukas having population density between 301 and 400 persons per sq.km.
- What is the density of the Amravati Taluka?
- Name the Talukas having population density less than 300 persons per sq.km.

Isopleth method :

You have seen contour maps and isobar maps in earlier classes. In these maps, the distribution was shown with the help of lines showing equal values. When the distribution of a variable is continuous, the isopleth method is then used to show its distribution. For example, altitude, temperature, rainfall, etc.

For these maps, we need to obtain

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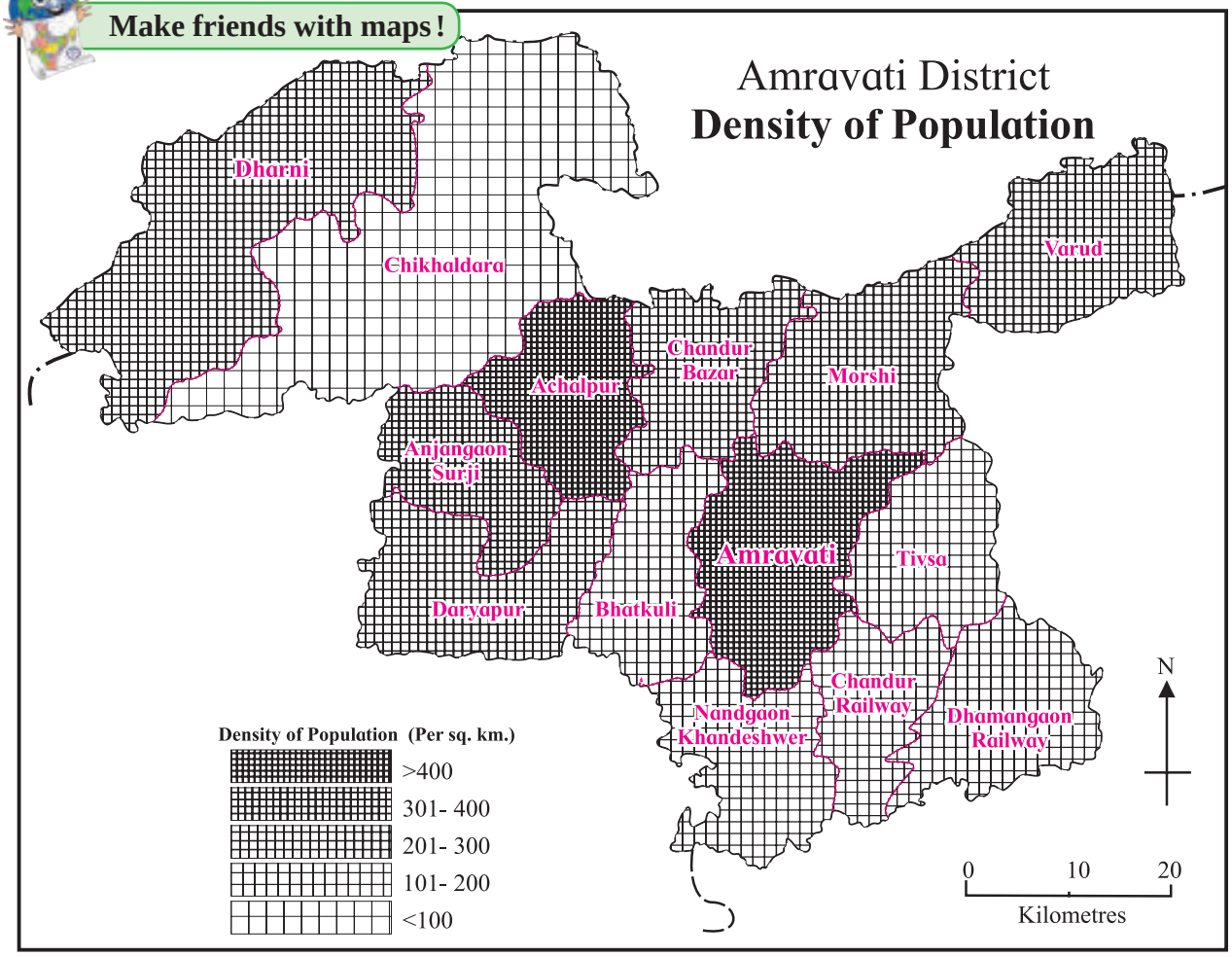

Figure 1.2 (B) : Isopleth Map (Black and White patterns)

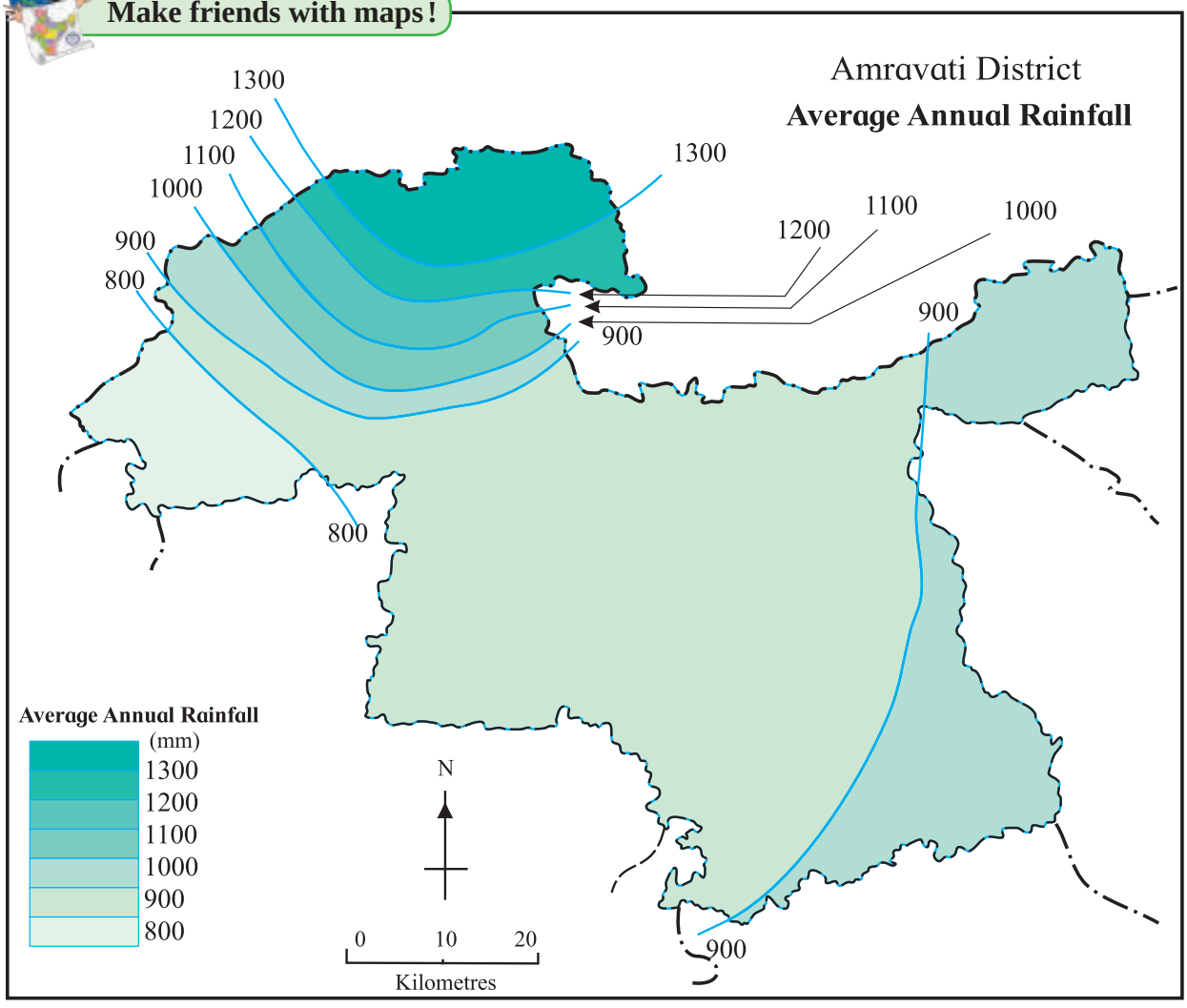

Figure 1.3 : Isopleth Map

the accurate data regarding the altitude, temperature, rainfall, etc. of some places in a region. It is assumed that the difference between the altitude or rainfall of two places changes at a uniform rate. The sub-administrative units are not taken into consideration here. Statistical data belongs to the respective places. Such data is known as point-related data.

Values of the variable are written on the map at their respective locations. If the data for more places is available, mapping of the distribution can be done more accurately.

On the basis of this information, isopleth maps are prepared using the steps below:

- By considering the highest and the lowest values of the variable, the class interval is decided to draw the isopleths maps which in turn decides the difference between the lines.
- Lines are drawn for the decided intervals. Locations with the same value are joined by a line.

Following conclusions are drawn on the basis of the maps prepared in such a way.

- If the lines are closer to each other then the change in the variable is steep and if the lines are away from each other, then it is gentle.
- We get an idea of the natural trend of the distribution of the variable with the help of this map.

In fig. 1.3, the rainfall map of Amravati district is given. Read the map in detail and answer the questions.

- In which part of the district is the rainfall more?

- In which direction is the rainfall decreasing?
- What is the lowest value of the rainfall in the district?

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Read the maps given in fig. 1.4 and 1.5 and answer the questions.

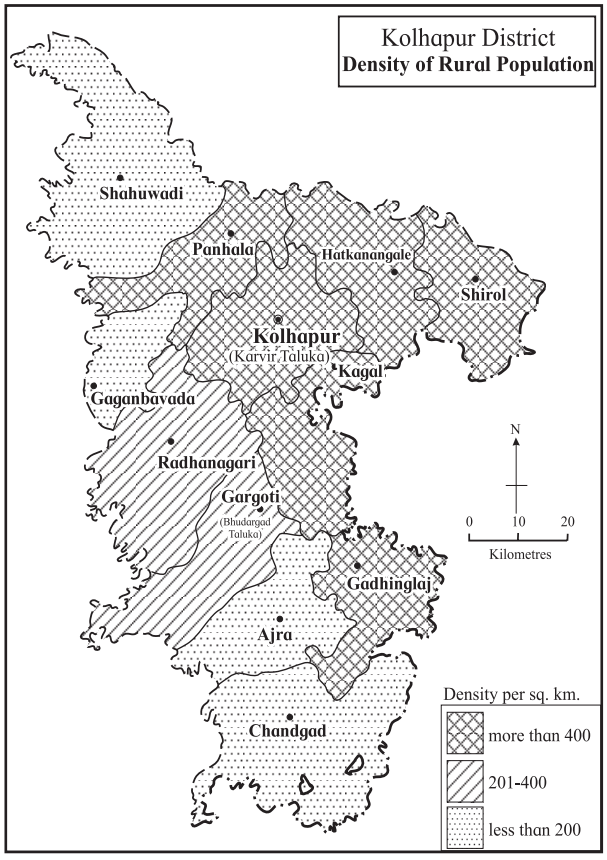

Figure 1.4 : Density of population

- In which direction is the density of population decreasing?
- Name the Talukas with population density less than 200.
- Name the Talukas having population density between 200 and 400
- Name the Talukas with population density more than 400.
- In which direction are the Talukas having higher density of population located in the district?
- Which method has been used in preparing this map?

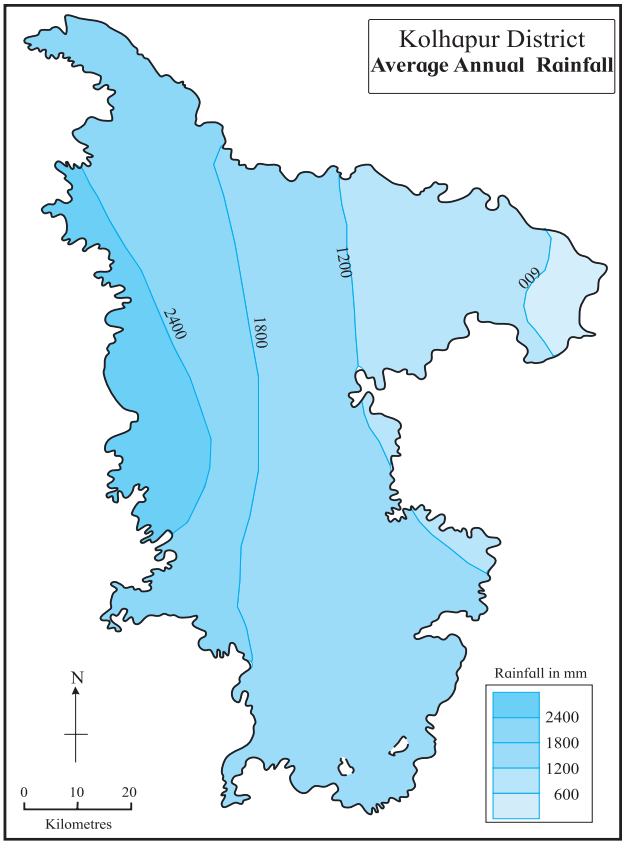

Figure 1.5 : Rainfall

- In which direction is the rainfall more in the district?
- In which direction is the rainfall decreasing?
- Which class shows low rainfall category in the district?
- Which class shows high rainfall category in the district?
- Which method has been used in preparing this map?

Try this.

Now we will prepare a map using dot method. Carry out the following activity.

- See the map of Nandurbar given in fig. 1.6 carefully. Draw it on another paper or tracing paper along with its taluka and district boundaries.
- Now see the population table given along the map. On the basis of the statistical data, decide the value of the dots considering the highest and the lowest

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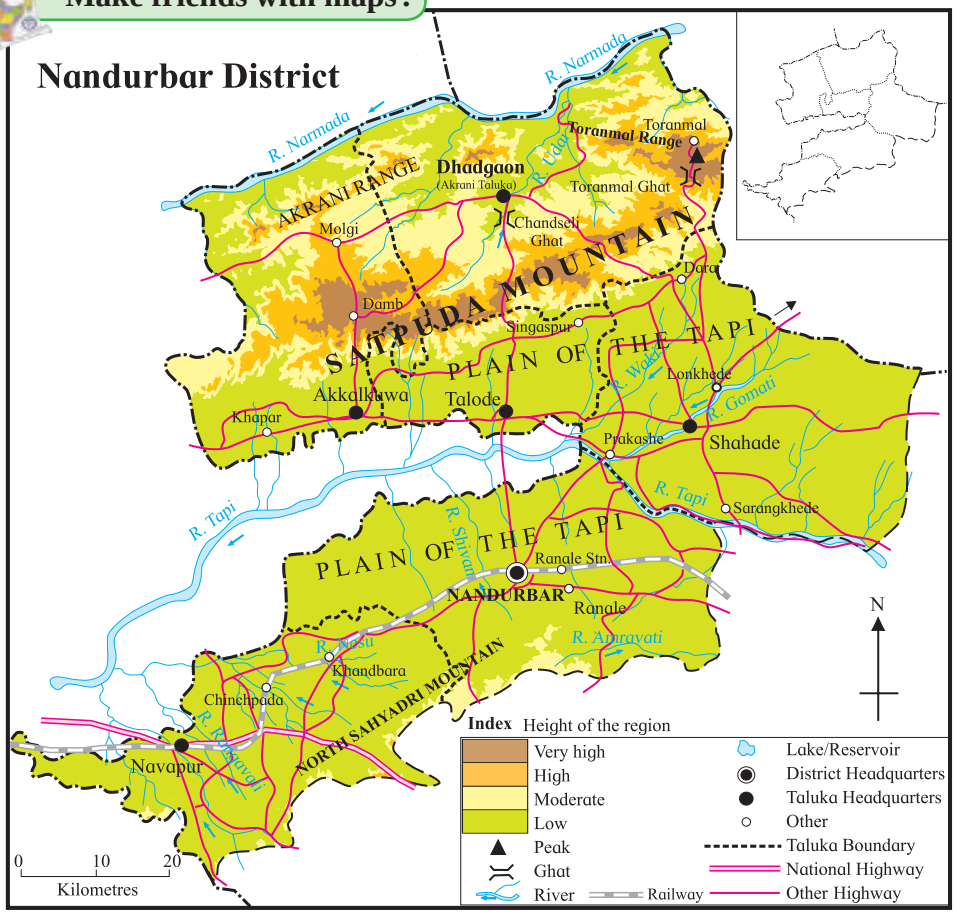

Figure 1.6 : District Nandurbar

S.No.	Talukas	Rural Population 2011
1.	Akkalkuwa	2,15,974
2.	Akrani	1,89,661
3.	Taloda	1,33,291
4.	Shahada	3,46,352
5.	Nandurbar	2,56,409
6.	Nawapur	2,31,134

values of population. For example, 1 dot = 10000 people, so that you can decide how many dots to be given to each sub-administrative unit.

- To draw dots of the uniform size, take a ball pen refill. Close the back end of the refill with cotton. Press this end on a stamp-pad and draw the imprints of the dots wherever required.
- While placing the dots, consider the physiography, water sources, roads, rails, taluka and district headquarters as shown in the map in fig 1.6
- Compare your dot map with other students and arrange a discussion in the class.

Geographical field-visit

Field visit is an important study method in geography. Geographical concepts and elements can be directly experienced through field-visits. Field-visits are extremely useful for understanding the correlation between humans and environment.

Preparations for field-visits :

Before going to the field-visit, decide the place and the purpose of visit. The elements which will be observed in field-visit should be decided. Study the location map and the route map of the place to be visited. Distance, transport route, means of transport and duration of field visit should be planned ahead. With the help of teachers, students should prepare a questionnaire.

Selection of the study area :

Geographical field-visit is organised for study of various elements. e.g. physical landforms, river banks, dams, coastal areas, tourism sites, offices or museums related to geographical elements, villages, forest areas, etc. Elements should be selected after studying the local conditions and necessary permission letters have to be obtained.

For a field visit, you should carry a notebook, specimen questionnaire, pen, pencil, scale, tape, compass, a bag for collecting samples, maps, camera, etc.

Precautions to be taken during field-visit :

It is very important to ensure safety of ourselves and others during a field-visit. You should obey the instructions given by the teachers. You should not go to unknown remote places alone. During field-visit, you should try to understand the local circumstances by conversing with the local people. You should also ensure that you do not harm the environment in any way during your visit. You should always keep a first-aid box with you for emergency circumstances.

Report-writing :

A field-report should be written on the basis of information obtained after the visit is complete. Use the following issues to make a report. Add photographs wherever necessary:

- Introduction
- Location map and Route Map
- Physiography
- Climate
- Population
- Environmental problems and measures
- Land Utilization
- Conclusions

Exercise

Q 1. Give reasons why following sentences are right or wrong:

(1) The main aim of distributional maps is to show location.

(2) In choropleth maps, only one value is assigned to the sub-administrative unit.

(3) In choropleth maps, colours/tints do not change according to the values of the variables.

(4) Choropleth maps are used to show altitudes.

(5) Isopleth maps are used to show population distribution.

(6) In dot method, every dot should have an appropriate scale.

(7) Isopleth maps are not made using isolines.

(8) Distribution of various geographical elements can be shown using dot method.

Q 2. Answer in brief.

(1) Explain the use and types of distributional maps.

(2) Differentiate between choropleth and isopleths methods.

(3) Explain with reasons the method which is best suited to show the distribution of population in a region.

Q 3. Which method will you use for the following information ?

(1) Talukawise wheat production in the district

(2) Distribution of the altitude of the land in the district.

(3) Distribution of domestic animals in the State

(4) The distribution of population density in India

(5) Temperature distribution in Maharashtra State.

Q 4. Study the population distribution map of Kolhapur district and answer the following questions:

(1) Which method has been used to show the distribution of population in the district?

(2) Explain the directionwise distribution of population from dense to sparse.

(3) What is the population shown by the largest circle ? Which place is that?

(4) Which Taluka has the least population?

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