

4 - MAPS

There are three **Components of Maps** – distance, direction and symbol.

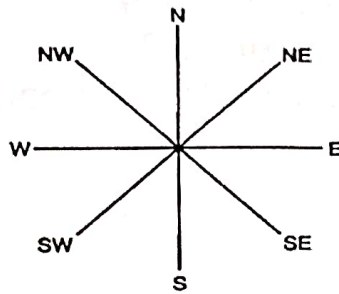
DISTANCE

- Maps are drawings, which reduce the entire world or a part of it to fit on a sheet of paper. Or we can say maps are drawn to reduced scales. But this reduction is done very carefully so that the distance between the places is real. It can only be possible when a small distance on paper represents a large distance on the ground.
- Therefore, a scale is chosen for this purpose. **Scale** is the ratio between the actual distance on the ground and the distance shown on the map.
- For example, the distance between your school and your home is 10 km. If you show this 10 km. distance by 2 cm on a map, it means, 1 cm on the map will show 5 km. on the ground. The scale of your drawing will be 1cm = 5 km.
- Thus, scale is very important in any map. If you know the scale, you will be able to calculate the distance between any two places on a map.
- When large areas like continents or countries are to be shown on a paper, then we use a small scale. For example 5 cm. on the map shows 500 km. of the ground. It is called a **small scale map**.
- When a small area like your village or town is to be shown on paper, then we use a large scale that is 5 cm. on the map shows 500 metres only on the ground. It is called a **large scale map**.
- Large scale maps give more information than small scale maps.

DIRECTION

- Most maps contain an arrow marked with the letter 'N' at the upper right hand corner. This arrow shows the northern direction. It is called the north line.

- When you know the north, you can find out other directions, for example east, west and south. There are four major directions, North, South, East and West. They are called **cardinal points**.
- Other four intermediate directions are north-east (NE), southeast (SE), south-west (SW) and north-west (NW).
- We can locate any place more accurately with the help of these intermediate directions.



CARDINAL DIRECTIONS

- We can find out the direction of a place with the help of a compass. It is an instrument used to find out main directions. Its magnetic needle always points towards north-south direction.



MAGNETIC COMPASS

SYMBOLS

- It is the third important component of a map.
- It is not possible to draw on a map the actual shape and size of different features such as buildings, roads, bridges, trees, railway lines or a well.
- So, they are shown by using certain letters, shades, colours, pictures and lines.
- These symbols give a lot of information in a limited space.

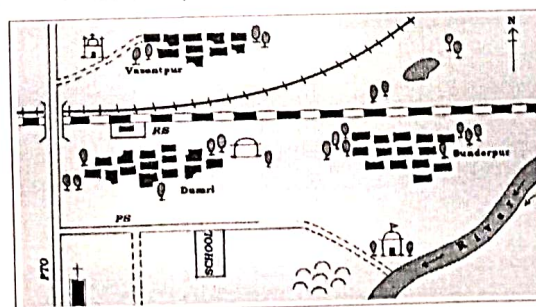
- With the use of these symbols, maps can be drawn easily and are simple to read. Even if you don't know the language of an area and therefore cannot ask someone for directions, you can collect information from maps with the help of these symbols.
- Maps have a universal language that can be understood by all.
- There is an international agreement regarding the use of these symbols. These are called **conventional symbols**.
- Various colours are used for the same purpose. For example, generally blue is used for showing water bodies, brown for mountain, yellow for plateau and green is used for plains.

Railway Line : Broad gauge, Metre gauge.	
Railway station	
Roads : Metalled, Unmetalled	
Boundary : International, State, District.	
River, Well, Tank, Canal, Bridge	
Temple, Church, Mosque, Chhatra	
Post Office, Post & Telegraph Office, Police Station	PO, PTO, PS
Settlement, Graveyard	
Trees, Grass	

CONVENTIONAL SYMBOLS

SKETCH

- A **sketch** is a drawing mainly based on memory and spot observation and not to scale.
- Sometimes a rough drawing is required of an area to tell where a particular place is located with respect to other places.
- Suppose, you want to go to your friend's house, but you don't know the way. Your friend may make a rough drawing to show the way to his house. Such a rough drawing is drawn without scale, and is called a *sketch map*.



A SKETCH MAP

PLAN

- A **plan** is a drawing of a small area on a large scale. A large-scale map gives lot of information, but there are certain things which we may sometimes want to know for example the length and breadth of a room, which can't be shown in a map. At that time, we can refer drawings drawn to scale called a *plan*.

Todarmal pioneered land surveying and map-making as an integral part of the revenue collection procedure. Besides, Sher Shah Suri's revenue maps further enriched the mapping techniques during the medieval period. The intensive topographical surveys for the preparation of up-to-date maps of the entire country, were taken up with the setting up of the Survey of India in 1767, which culminated with the map of Hindustan in 1785. Today, the Survey of India produces maps at different scales for the entire country.

Types of Maps Based on Scale: On the basis of scale, maps may be classified into large-scale and small-scale. Large scale maps are drawn to show small areas at a relatively large-scale. For example, the topographical maps drawn at a scale of 1: 250,000, 1:50,000 or 1:25,000 and the village maps, the zonal plans of the cities and house plans prepared on a scale of 1:4,000, 1:2,000 and 1:500 are large scale maps. On the other hand, small-scale maps are drawn to show large areas. For example, atlas maps, wall maps, etc.

(i) Large-scale Maps: Large-scale maps are further divided into the following types :

- (a) Cadastral maps
- (b) Topographical maps

(a) Cadastral Maps : The term 'cadastral' is derived from the French word 'cadastre' meaning 'register of territorial property'. These maps are drawn to show the ownership of landed property by demarcating field boundaries of agricultural land and the plan of individual houses in urban areas. The cadastral maps are prepared by the government agencies to realise revenue and taxes, along with keeping a record of ownership. These maps are drawn on a very large scale, such as the cadastral maps of villages at 1 : 4,000 scale and the city plans at a scale of 1 : 2,000 and larger.

(b) Topographical Maps : These maps are also prepared on a fairly large scale. The topographical maps are based on precise surveys and are prepared in the form of series of maps made by the national mapping agencies of almost all countries of the world (Chapter 5). For example, the Survey of India undertakes the topographical mapping of the entire country at 1 : 250,000, 1 : 50,000 and 1 : 25,000 scale (Fig. 1.3). These maps follow uniform colours and symbols to show topographic details such as relief, drainage, agricultural land, forest, settlements, means of

communication, location of schools, post offices and other services and facilities.

(ii) Small-scale Maps: Small-scale maps are further divided into the following types :

- (a) Wall Maps
- (b) Atlas Maps

(a) Wall Maps : These maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls. The scale of wall maps is generally smaller than the scale of topographical maps but larger than atlas maps.

(b) Atlas Maps : Atlas maps are very small-scale maps. These maps represent fairly large areas and present highly generalised picture of the physical or cultural features. Even so, an atlas map serves as a graphic encyclopaedia of the geographical information about the world, continents, countries or regions. When consulted properly, these maps provide a wealth of generalised information regarding location, relief, drainage, climate, vegetation, distribution of cities and towns, population, location of industries, transport-network system, tourism and heritage sites, etc.

Types of Maps Based on Function: The maps may also be classified on the basis of their functions. For example, a political map serves the function of providing administrative divisions of a continent or a country and a soil map shows the distribution of different types of soils. Broadly, maps based on their functions may be classified into physical maps and cultural maps.

(i) Physical Maps: Physical maps show natural features such as relief, geology, soils, drainage, elements of weather, climate and vegetation, etc.

(a) Relief Maps: Relief maps show general topography of an area like mountains and valleys, plains, plateaus and drainage. Figure 1.7 shows the relief and slope map of Nagpur district.

(b) Geological Maps: These maps are drawn to show geological structures, rock types, etc. Figure 1.8 shows the distribution of rocks and minerals in Nagpur district.

(c) Climatic Maps : These maps depict climatic regions of an area. Besides, maps are also drawn to show the distribution of temperature,

rainfall, cloudiness, relative humidity, direction and velocity of winds and other elements of weather (Fig 1.9).

(d) *Soil Maps* : Maps are also drawn to show the distribution of different types of soil(s) and their properties (Fig. 1.10).

(ii) Cultural Maps: Cultural maps show man-made features. These include a variety of maps showing population distribution and growth, sex and age, social and religious composition, literacy, levels of educational attainment, occupational structure, location of settlements, facilities and services, transportation lines and production, distribution and flow of different commodities.

(a) *Political Maps* : These maps show the administrative divisions of an area such as country, state or district. These maps facilitate the administrative machinery in planning and management of the concerned administrative unit.

(b) *Population Maps*: The population maps are drawn to show the distribution, density and growth of population, age and sex composition,

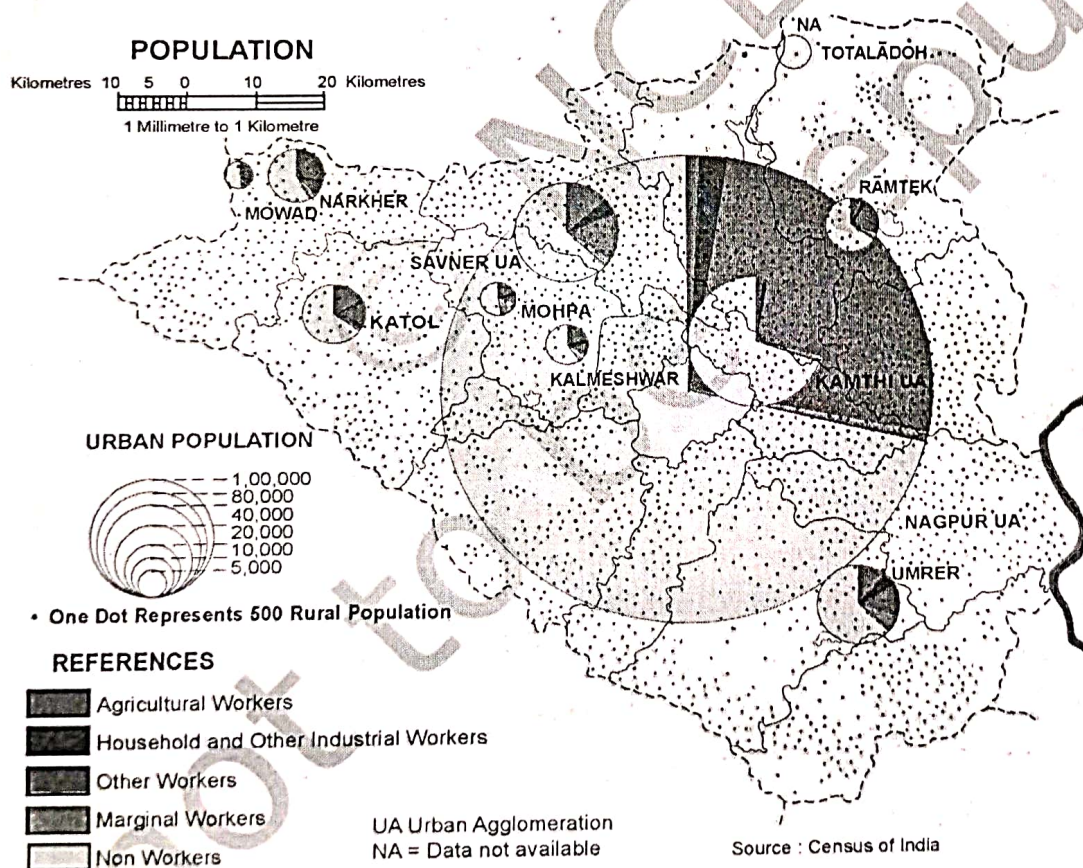


Figure 1.11 Nagpur District : Distribution of Population

distribution of religious, linguistic and social groups, occupational structure of the population, etc. (Fig 1.11 on previous page). Population maps serve the most significant role in the planning and development of an area.

(c) *Economic Maps:* Economic maps depict production and distribution of different types of crops and minerals, location of industries and markets, routes for trade and flow of commodities. Figures 1.12 and 1.13 show the land use and cropping patterns and the location of industries in Nagpur district respectively.

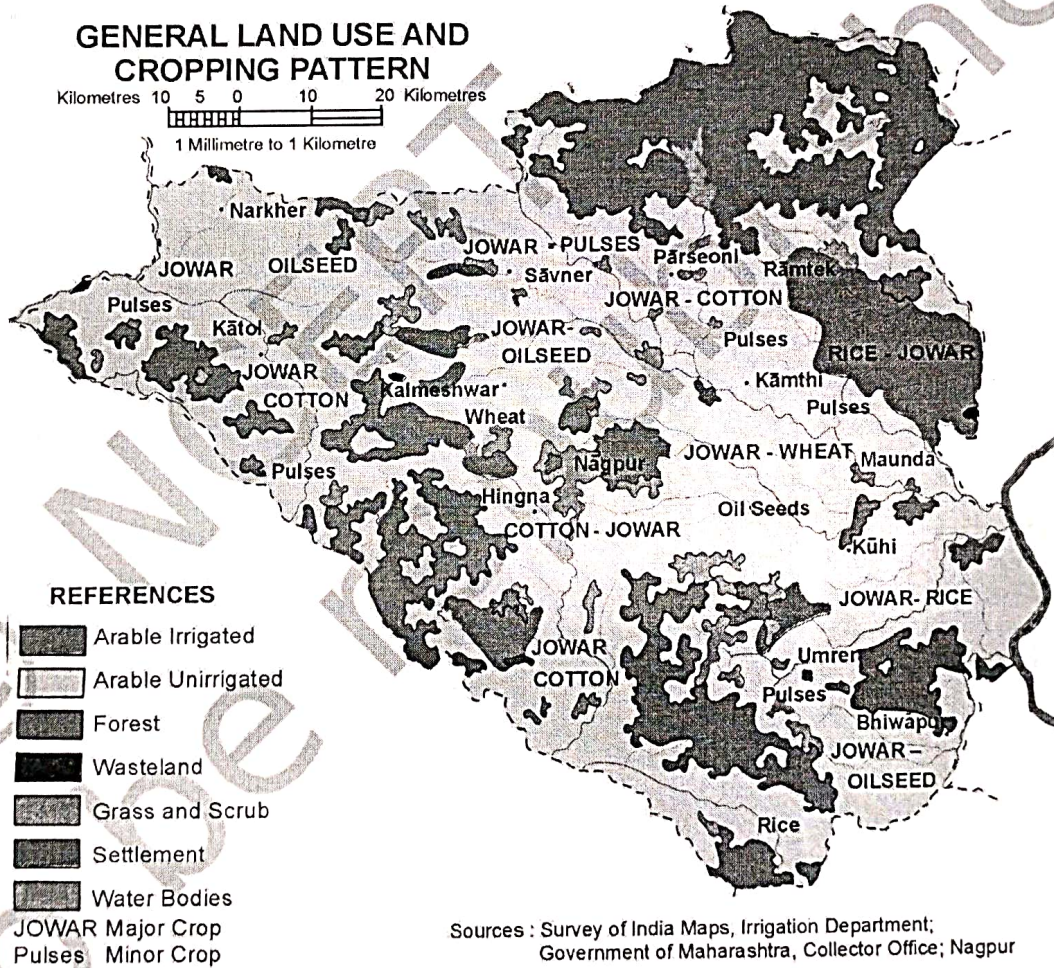


Figure 1.12 Land use and Cropping Patterns in Nagpur District

(d) *Transportation Maps:* These maps show roads, railway lines and the location of railway stations and airports.