

# GEOGRAPHY OF SETTLEMENT

After going through this chapter, you will be able to understand the following features.

## Unit Structure

- 1.1 Objectives
- 1.2 Introduction
- 1.3 Subject- Discussion
- 1.4 Definition, Nature and Scope of settlement Geography.
- 1.5 settlement types, their characteristics and Differences.
- 1.6 Factors influencing growth and distribution of settlement
- 1.7 Importance of settlement Studies in Geography.
- 1.8 Summary
- 1.9 Check your Progress/Exercise
- 1.10 Technical words and their meaning
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## 1.1 OBJECTIVES

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By the end of this unit, you will be able to –

- Understand the meaning of settlement
- Understand the Definition of Settlement
- Know the Nature and Scope of Settlement
- Understand Importance of Settlement
- Know the Types, their characteristics and Differences.

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## 1.2. INTRODUCTION

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In this chapter we will define settlement at first. But before that we must know what settlement is. A group of people living together forms a settlement. A settlement may be broadly classified into four types: 1. Shapeless cluster 2. Linear cluster 3. settlement formed of isolated or dispersed homestead. Moreover, a great variation in the settlement types is observed due to geographical, cultural and economic

factors and on the basis of these factors settlements can be broadly classified into Urban and Rural settlements.

There are some basic differences between rural and urban areas in general. The function is the major difference between rural and urban areas. Rural areas have predominantly primary activities, whereas urban areas have domination of secondary and tertiary activities. Again, rural areas have low density of population compared to urban.

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### **1.3. SUBJECT DISCUSSION**

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Rural settlements, usually quite small, are most closely and directly related to land. Most people living there are involved in primary activities such as farming, fishing, forestry or mining. Hence, rural settlements may be considered as uni-function and have primary activities. In order to address the particular needs of the rural villages, the rural settlements study is important. Rural settlement study identifies the economic, social and environmental aspects of the villages.

Rural settlements have different patterns. Settlements that are far apart are isolated or dispersed. On the other hand settlements that are close together to each other are clustered or nucleated. By the term shape, the morphology of the settlement is discussed. This refers to how the buildings are arranged in relation to each other, and their physical appearance. The shape of rural settlement may be linear, round, square, cross roads or T-shaped. Types of the settlement are determined by the extent of the built-up area and inter house distance. Several physical factors, cultural and ethnic factors, and security factors are the major three factors that determine the types of rural settlements. While going through this unit we will see that geology and general physiography play a very important role in deciding the nature of building material. As far as building materials are concerned, these can be grouped under two categories such as building material used for walls and building material used for roofs.

There is regional variation of rural settlement throughout India as India has varied social, climatic and geographical conditions. Any form of human habitation is a settlement. It varies from a single house to the largest city. It is a place where people live and interact through activities like agriculture, trading and entertainment. Urban areas may be cities, towns or conurbations. There is a distinction between urban and rural areas within a country. Traditionally it is believed that urban areas provide a different way of life and usually a higher standard of living than are found in rural areas. In many industrialized countries, this distinction between the two has become blurred. The degree of concentration of population stands as the principal difference between urban and rural areas. The classification of urban settlements is determined by their economic and social functions and the size of their population. An urban settlement is predominantly engaged in secondary and tertiary activities such as food processing and banking. Developed and developing countries are experiencing rapid rate of urbanization. As a result there is a large

increase in the number of urban dwellers. Hence, they are facing a host of urban problems such as housing, pollution, transport, sanitation and water supply.

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## 1.4 DEFINITION

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Settlement geography is a part of the Human geography. By rural settlement it is meant a sparsely populated community existing in the country, away from densely populated urban centres. The rural settlements derive their life support or basic economic needs from land based primary economic activities. It is observed that the rural people are less mobile and hence social relations among them are intimate. Rural settlement in India can broadly be put into four types:

- a. Clustered or Nucleated Settlements
- b. Semi-clustered or Fragmented Settlements
- c. Hamleted Settlements and
- d. Dispersed or Isolated Settlements

There can be several patterns of rural settlements. Some of them are:

- a. Linear Pattern
- b. Radial Pattern
- c. Star Shaped Pattern
- d. Rectangular Pattern
- e. Fan Pattern and
- f. Circular Pattern.

Growth of urban settlement is a recent phenomenon and very few settlements have reached the population size of more than a few thousand inhabitants till recent past. By around A.D. 1810 the city of London was the first urban settlement to reach a population of one million. By 1982 approximately 175 cities in the world had crossed the one million population mark. Presently 48 per cent of the world's population lives in urban settlements compared to only 3 per cent in the year 1800.

The definition of urban settlement varies from one country to another. Some of the common basis of classification is size of population, occupational structure and administrative setup.

Locations of the earliest urban settlements were based on the availability of water, building materials and fertile land. In the present era these considerations still remain valid with modern technology playing a significant role in locating urban settlements. Piped water can be supplied to a distant settlement; building material can be transported from long distances. For example, the requirements of a holiday resort are quite

different from that of an industrial town. Industrial towns generally need local energy supplies or raw materials while tourist centres require attractive scenery.

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## 1.5. NATURE AND SCOPE

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A settlement is an organized colony of human beings consisting of buildings in which they live or work or store various things and streets on which their movements take place. The study of settlements has been one of the most significant themes of human geography. The term “settlement geography” is derived from the German “siedlung geographisch” (R. L. Singh 1978) which involves the study of visual imprints made by man upon cultural landscape in the process of occupation.

Rural settlement and urban settlement geography are two integral parts that constitute the discipline of Settlement geography.

Rural areas are often referred to as those areas outside of the city or urban boundary or periphery where populations are spatially dispersed. Rural settlement as a pioneer habitat of human being is a living functional space since time immemorial. Rural settlement means a rural space occupied by rural community with their economic, social and cultural environment. This environment influences the entire rural way of life and their dynamic structure. Geographers look at the rural settlements as agglomeration of manmade habitats on the earth which is dependent mostly on primary occupation.

Rural settlement is considered as the basic part of the human society around the world. It is the topographic expression of cluster of dwellings of any type or size where human beings live.

For this purpose, people may erect houses and other structures and command some area or territory as their economic support-base. Thus, the process of rural settlement inherently involves grouping of people and apportioning of territory as their resource base. As a result fertile lands free from environmental hazards have dense population and compact rural settlements. These areas also have central places with more confined hinterland due to inter competition. For example in the Ganga-Yamuna doab, high fertility soil, adequate irrigational facilities, and means of well-developed transport have given rise to almost uniform distribution of settlements.

On the other hand, the infertile lands with less safety from environment have low population density, scattered human settlement. In these areas the central places have wider zones of influence especially in flood plains and foreign margins. In ‘Terai’ area of Rohilkhand-Awadh region, the settlements are, however, unevenly distributed due to high percentage of forests, marshy tracts and seasonal floods, and the villages are located on relatively higher ground.

The location and functions of human as well as rural settlement are the outcome of human behaviour in a particular geographical environment in relation to houses and highways. The accessibility and efficiency of work performance increases if the location of settlement is systematic on beautiful sites and protected areas. The outcome is opposite whenever the development of rural

settlement is haphazard. It decreases human effort and accessibility resulting uncomfortable living which again leads to insanitary and vice to underworld. To conclude it can be said that if the rural settlements are systematic it will reflect good environmental conditions whereas congested huddled houses are indications of environmental pollution, unscientific living and development of slums.

In rural settlement agriculture is the main economic activity that provides job opportunities. In these areas opportunities for socio-economic development are often perceived as limited, leading to the migration of able bodied individuals to the cities and leaving a residue of generally vulnerable, under educated, aged and very young population. These households are often largely dependent on social grants and remittances from family members working in the cities.

Significant themes of human geography. The term "settlement geography" is derived from the German "siedlung geographisch" (R. L. Singh 1978) which involves the study of visual imprints made by man upon cultural landscape in the process of occupation. Rural settlement and urban settlement geography are two integral parts that constitute the discipline of Settlement geography.

Settlement in geography helps us to understand man's relationship with his environment. Urban settlement geography deals with the study of compact non-agricultural settlements, mainly towns and cities. It concerns with the spatial dimensions of urban centres, i.e., their origin, location, site, growth, functions and relationship with each other within and outside its surrounding areas or zone of influence. Urban settlement geography has been continuously and consistently growing as a systematic and scientific branch of geographical knowledge.

Its nature, scope and subject matter have been broadened, its analytical focus has been realigned and its analytical tools have been refined. Remote sensing technology has provided an opportunity to study, interpret and closely monitor the urban phenomenon. The rise of radicalism in geography generated a fruitful debate on social relevance of urban settlement geography and could strengthen the applied nature of the discipline.

Urban settlements represent the highest forms of humanisation in both amount and complexity. The term 'urban' refers to towns and cities having marked with secondary and tertiary functions along with municipality or notified area committee. It discusses the town as a dwelling place where inhabitants are mainly engaged in industry, retail trade, and wholesale trade and transport activities. If we compare between urban and rural land

use we will find that urban land use is used on the land while rural land use is use of the land. Although urban settlement and rural settlement geography are two branches of settlement geography there is rarely a sharp division between urban and rural either physically or socially. Most of the countries have fixed their criteria regarding the population size, functional structure, administrative status and pattern of land use to define urban settlements. Thus an international consensus is difficult to arrive at. Moreover it is even difficult to draw a precise boundary between the urban and rural settlement over the ground. The focus of urban settlement geography has widened enough since its modest beginning as a scientific discipline during the first decade of the present century as a result of changes in economic organisation, transportation and communication technology, data acquisition, analysis and retrieval technology, politico-social organisation and population growth and migration. The urban centres and the non-urbanised area stand to each other in a symbiotic relationship deriving support and sustenance from each other. But urban development always encroaches on agricultural land and transforms the rural countryside. With the passage of time it has been observed that urban geography, as a scientific discipline occupies a unique place among various ramifications of geography because of expansion in non-primary activities, intensification of space utilisation, an accelerating pace of urbanisation, urban expansion and proliferation, globalisation of economic organisation and industrial production system, sub-sonic and supersonic transportation and satellite communication, rising land values and land rent and shrinking and in some cases vanish.

There are different zones for different urban functions. Change in landscape as well as socio-economic environment, which may be gradual or sudden, is observed when we pass through one urban settlement to another. There is a direction of change and the adjacent zones interact with it in many ways. This interaction again follows a pattern that is repeated from one city to another. From the existence of similar pattern we can conclude that urban structure is determined by a number of pre-determined general principles of land use and location. Operations of powerful social and economic forces are the determinant factors. The major aspects of studying urban settlement geography are to identify and account for the existence of these internal patterns and processes. It may appear at first that the layout of urban geography is primarily related to its physical environment only. But with gradual growth, form and structure of urban settlement are determined by modes of production and social structure on a large scale. Site and terrain generally determine the overall shape of the city. Example of Kolkata may be taken into consideration which is situated between river Hugli and the salt marshes. The city is elongated and elongation is due to restriction of terrain. But London on a structural basin has grown radially from the centre. However, an ideal city should assume a circular form so the city centre is equally accessible from all points. The terrain plays a negligible role except for the form of the city. The plan of the city, its landscape, architecture and social geography are the results of the past and present socio-economic processes. Industrialisation has brought many changes in various cities. This is

reflected in the pattern of cities found in the most industrialised countries and those in the third world.

One more thing must be remembered that the urban growth process vary over space through time. A competition for space always present in an urban settlement is identified as one of the principles regarding this feature. This may be attributed to the social value of an area or the accessibility of certain services. The location of main commercial area may be considered as the second principle which lies in such a place that is well connected from within the city and as well as from outside. Moreover, the morphology of a city is dynamic in nature. Thus, technological changes, (underground transport system, Kolkata) will have immediate effect. Large scale migration like influx of refugees may also change the cityscape. The morphology of any urban settlement is also influenced by its population itself as urban population displays social and economic segregation.

As a science of human settlement, urban geography deals with the complex urban areas which possess sharp internal differentiation. It concerns about delineation of urban activities which are expressed in characteristic association of intensive land use and human occupancy features. Thus, man is the pivotal point in urban geography and the study itself comes under the cultural environment made by man.

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## 1.6 SETTLEMENT TYPES, THEIR CHARACTERISTICS AND DIFFERENCES

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Human settlements can broadly be divided into two types – rural and urban.

**Rural settlements:** Rural settlements are most closely and directly related to land. They are dominated by primary activities such as agriculture, animal husbandry, fishing etc. The settlements size is relatively small.

**Urban Settlements:** Rapid urban growth is a recent phenomenon. Until recent times, few settlements reached the population size of more than a few thousand inhabitants.

### **CHARACTERISTICS - Rural settlements:**

1. Rural area is sparsely populated because many people leaves rural areas and settles in the urban areas for more facilities.
2. These society has homogeneity. in its profession that is their only source of earning is agriculture and this is transmitted from generation to generation.
3. There is homogeneity in dress, language and customs. It means all these remain same because their culture is same they belong to the same area.

4. These areas have got slow means of communication. Rural areas have very slow rate of change because of lack of education and modern technology.
5. These settlements have got simple culture transmitted from generation to generation. Rural areas have got informal social life that is they spent their life in a simple way.
6. Rural communities have got strong relationships and interactions of the people. It means that they help each other in distress and shares the happiness. In such areas there is less rate of pollution because there are no factories and mills and the number of automobiles is less. In such areas people shows great hospitality to their guests and treat them as a member of a family.

#### **CHARACTERISTICS – Urban settlements:**

The main characteristics of urban settlements are:

1. The main occupation of the people is related to secondary and tertiary sectors.
2. There is a density of human structures such as houses, commercial buildings, roads, bridges, and railways.
3. Urban settlements are large in size with a high density of population.

#### **DIFFERENCES BETWEEN - RURAL AND URBAN SETTLEMENTS:**

##### **Rural settlements:**

- Rural settlements usually refer to villages
- Rural areas usually don't have much development in terms of infrastructure.
- Rural areas are sparsely populated
- Rural areas usually don't have much development in terms of infrastructure.
- Rural people are less mobile and therefore, social relations among them are intimate.
- The rural settlements derive their life support or basic economic needs from land-based primary economic activities.

##### **Urban settlements:**

Economic, social, and population factors differentiate urban settlements from rural ones. Most urban settlements have the following characteristics.

1. An urban settlement is mainly a built-up area. The size of an urban community is much larger than that of a rural community. One point to be noted that a positive correlation persists between urbanity and size of a community. There are many tall buildings with little open space. The natural landscape is almost totally modified into a cultural landscape.

2. Urban land use is intensive. There is keen land use competition. Hence, the land rent is the high.
3. An urban settlement has a large population size and a high population density. So far as urban community is concerned, greater importance is attached to the individual than to the family. Nuclear families are more popular in urban areas. In case of marriage, love marriages and inter-caste marriages predominate in urban community. One also comes across a greater number of divorces.
4. Urban dwellers have a higher living standard as well as class extremes prevail in urban settlements. According to Bogardus, "Class extremes characterize the city." A town and a city house the richest as well as the poorest of people. In a city, the slums of the poor exist parallel to the residence of the rich.
5. Secondary and tertiary activities are dominant in an urban settlement.
6. An urban settlement performs many functions, e.g. commercial, industrial, administrative functions. Divisions of labour and occupational specialization are very much common in towns/cities/metropolises.
7. An urban settlement has a hinterland which it serves and is served. The hinterland provides food and raw materials to the urban settlement. The hinterland provides a big market for the urban settlement.
8. Urban settlements have complex culture due to the presence and mixing of different cultures in it. Thus social heterogeneity is found in urban settlements. People from different races and cultures dwell in the cities as a result there is great variety in regarding the food habits, dress habits, living conditions, religious beliefs, cultural outlook, customs and traditions of the urbanites. So it may be said that if villages present cultural homogeneity, the cities symbolize cultural heterogeneity.
9. Social distance among the inhabitants is the result of anonymity and heterogeneity in urban settlements. There is utter lack of personal involvement in the affairs of others.
10. Georg Simmel opined that the social structure of urban communities is based on interest groups. The wider social circles presenting the city make city life more complex and varied. Hence, the city life is characterized by the predominance of secondary contacts.
11. The most important feature of urban community is its social mobility. In urban areas the social status of an individual is determined not by heredity or birth but by his merit, intelligence and perseverance. Urbanity and mobility are positively correlated.
12. **Materialism is another important characteristic of urban settlements.** In the urban community the social existence of man revolves round wealth and material possessions. Financial assets, salaries, costly home appliances stand as status symbols and count a lot for the urbanites.

**13. Individualism comes next as the** urbanites attach supreme importance to their own welfare and happiness.

**14.** In urban community as people are inclined to reason and argue emphasis on rationality becomes important. Relationship is not constant as it takes place on a contractual basis. Once the contract is over, human relationship automatically comes to a close.

**15.** Bogardus observes **anonymity in urban settlement and opined,** “Urban groups have a reputation for namelessness.” By virtue of its size and population, the urban community cannot be a primary group. The urbanites take less or no care for their neighbours.

**16.** The urban community is characterized by norm and social role conflict. Factors such as the size, density and heterogeneity of the population, extreme occupational specialisation and the class structure prevalent in the urban context lead to such a state of affairs. In the absence of uniform and fixed social norms, individuals or groups often seek divergent ends. This has a considerable share in causing social disorganization.

**17.** Rapid social and cultural change characterizes urban life.

**18. Voluntary associations such as** clubs, societies and other secondary groups are formed by urban societies. The urban community is noted for mechanical and formal social contacts. Hence, their desire to develop social relationships to satisfy their hunger for emotional warmth and sense of security came into being.

**19.** Social control in urban community is essentially formal in nature. Individual’s behaviour is regulated by such agencies as police, jails, law courts etc.

**20.** In cities ritual and kinship obligations are diluted. Caste and community considerations yield to economic logic. This results in secularization of outlook.

**21.** Urban areas provide impulses for modernization in society as a whole.

**22.** High rate of pollution prevails due to the presence of industries and automobiles.

**23.** The areas have got fast range of change due to the presence of education and modern technology.

**24.** Fast and modern means of communication help the urban inhabitants to be aware of the changes around the world.

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## **1.6. FACTORS INFLUENCING GROWTH AND DISTRIBUTION OF SETTLEMENT**

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The impact of these various factors on the different houses of rural house types is as follows:

### 1.6.1 Environmental and Physical Factors:

Among the environmental and physical factors house type is mostly affected by the insolation, direction of prevailing wind and the amount of rainfall. In areas of extreme climatic conditions houses are constructed in such a manner so that they keep the interior cool in summer and warm during winter. To combat this type of climatic condition thick mud wall is needed but window for cross ventilation is not at all considered necessary. In the areas receiving heavy rainfall the roofs are generally gable shaped. Although with the decreasing amount of rainfall the roof also tends towards flat.

In mountainous areas availability of **sunlight** is very important determining factor. As the sunny slope is naturally favoured houses are often situated on the south facing slopes in the northern hemisphere.

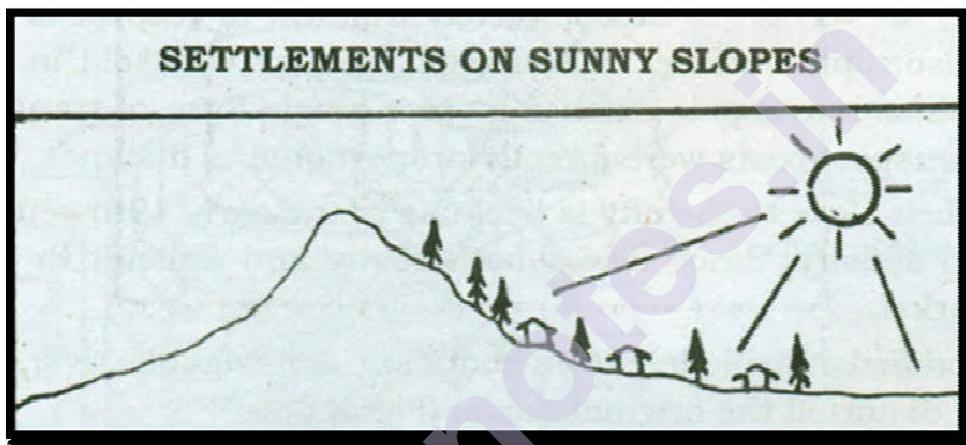


Fig 1.1

In the lesser Himalayan belt a house is naturally built on **spur** jutting out from the hill side. This site is well drained, dry as well as safe from landslide and avalanches.

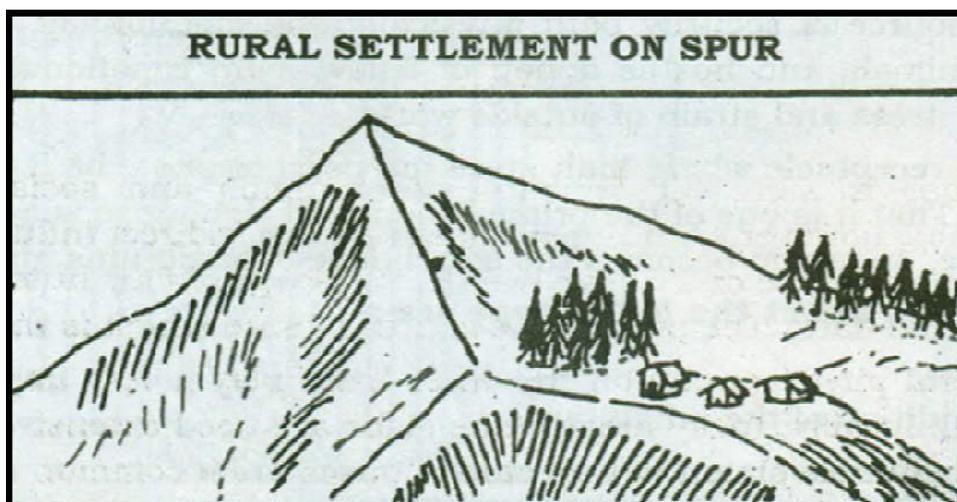


Fig 1.2

- The availability of safe and sufficient **drinking water** for both human and domestic animals also control the location of settlements. The houses from the simple and to the most complex are always located close to the source of water.
- Proximity **to fertile land** is also taken into consideration.
- In hilly areas land is chosen in such a way that terracing can be done without much difficulty.
- Again rural dwellings are usually contiguous and compact as it ensures safety. Therefore while selecting lands for housing sites surplus land is always kept in reserve so that more houses can be constructed when population increases in the course of time.

The structure of house is greatly influenced by nature and degree of precipitation. In India houses in the areas receiving heavy rainfall, like the Konkan region, have steeply sloping roofs. These are also constructed in such a manner that the veranda or the open space in front of the house gains protection from rainfall.

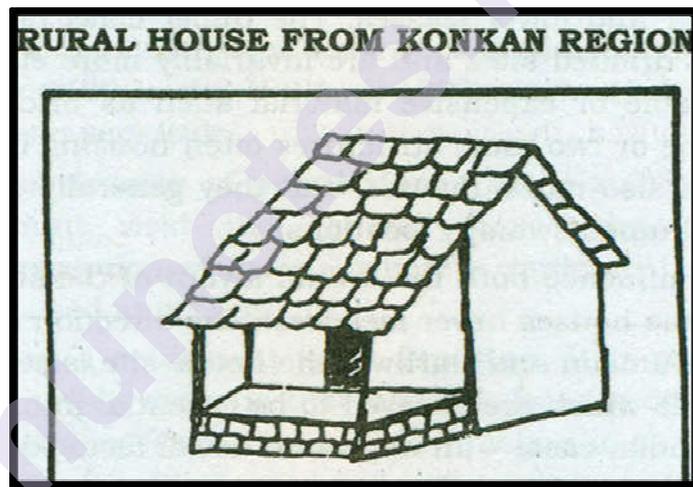
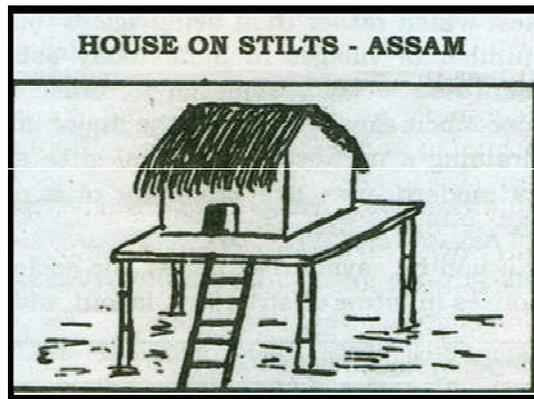


Fig 1.3

- In the region where rainfall is less and areas are dry flat roofs are common, for example Punjab region.
- In areas of high temperature the openings in the houses are kept to a minimum. A thick wall with slit like windows prevents the sun's heat from entering the house keeping the interiors cool.
- Verandas are also common features in the rural houses in hot sunny regions.
- In swampy tidal areas houses are built on stilts to escape flooding during the rise in tidal water. It a common feature in certain parts of Assam.

- Stilts are also common in areas infested with wild animals as a security measure. Geography of Settlements



**Fig 1.4**

- The layout of a house is more influenced by the function of economic and social factors rather than the physiographic ones. However, environment sometimes have an indirect influence over the house type. In Bengal, for example a dwelling house or a homestead is composed of four huts facing central courtyard, with a pond somewhere at the back. This pond is the source of main building material that is mud.

### **1.6.2 Socio-Economic factors:**

Economic factors play important role in deciding the grandeur of the building and its location with respect to other important village sites. The best built house in the village belongs to the chief which is more decorated and of greater height than a commoner's house. The complexity of structure indicates the elevated position of the chief in the society. This disparity is observed in every village in India and the contrast between the houses of the upper class and lower class is thus very conspicuous.

The upper class houses occupy better position and use more durable or expensive material like brick, wooden beam etc. They are located in the well-drained sites. On the contrary the houses of the poor are built with inferior material and located in the flood prone tracts or un-drained swampy areas.

Social and religious factors influence both the overall layout of the structure as well as choosing the site. In Kumayun and Garhwal hills the house site is selected by the village priest. Caste, in India, is another important social factor that determines the site of rural houses. Members of the same caste usually built their houses adjoining each other. The lower castes, schedule castes

live in areas far from the areas occupied higher castes i.e. the village proper. Again as social values and perception of private space varies between societies it is observed in some tribal societies

that the entire village may live in a long hut or all the young boys live in a communal dormitory.

### **1.6.3. Levels of Technological Development:**

With the advent of time Levels of Technological development plays an important role in determining the site, building material as well as the overall structure of a house. In India asbestos or corrugated sheets have replaced tiles or thatch. Mud or wattle is being replaced by brick or stone. Similarly there is a structural change in the house albeit slowly. Through land reclamation and draining a number of marginal sites are being used today. Also rather than the traditional sites modern ones like proximity to roadways or railways or an irrigation canal is becoming more important.

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## **1.7. IMPORTANCE**

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### **Importance Of Rural Settlements**

Rural settlement study identifies the economic, social and environmental aspects of the villages. Several aspects like availability of key facilities and services, the ability of residents to access employment, shops, health facilities and recreational opportunities and identifies environmental and landscape factors which make each settlement unique.

In order to address the particular needs of the rural villages, the rural settlement study is important

The study of settlements has been one of the most significant themes in human geography. It is a symbol of man's occupancy and serves a link between the man and the physical environment. Geographers study rural settlement as a unit. Their distributional patterns help in analysing the sequence of change in cultural landscape. They affect spatial distribution of land use within the settlement. The centre of interest in the study of settlements is the built up structure and its relation to the physical environment.

The studies of Rural Settlement by Paul Vidal de la Blache and Albert Demangeon may be considered as pioneer works. The rural settlements, however were neglected until the 'Rural Geography' emerged in the 1970s. At present, the study of rural settlement, people, places and their environment with special reference to society and economy is an area of interest in which the geographers of the developed and developing countries are increasingly probing. Now there is emphasis on rural settlement studies with special reference to land use, agriculture, and forestry, conservation of environment, rural employment, energy, housing, recreation, health, education and tourism.

Cities in urban settlements play a central role in the ability of nations to achieve sustainable development. Today, half the world's seven billion people live in cities. By 2030 there will be over one billion more urban residents and for the first time ever in many parts of the world the number of rural residents will start to shrink. Between 2010 and 2050, the urban population will grow significantly, by 2.5 to 3 billion people, increasing the urban share to two-thirds of the world's population.

Cities are responsible for the bulk of production and consumption and to transform the social and economic fabric of nations worldwide. They are the primary engines of economic growth and development. About three-quarter of global economic activity is urban. With the growth of urban population the urban share of global GDP and investments grows.

The right to development for low-income and middle-income countries can only be realized through sustainable urbanization that addresses the needs of both rural and urban areas. By getting urban development right, cities can create jobs and offer better livelihoods; increase economic growth; improve social inclusion; promote the decoupling of living standards and economic growth from environmental resource use; protect local and regional ecosystems; reduce both urban and rural poverty; and drastically reduce pollution.

Sound urban development will accelerate progress towards social and economic fields and may help in eradicating extreme poverty.

On the other hand, mistakes made in managing urban growth are very hard to undo. Without adequate management and investments, slums may expand, and cities may fail to generate the jobs necessary to improve livelihoods. As a result, inequalities, exclusion, and violence may increase.

If countries do not utilise resources properly, cities may fail to provide economic opportunities to surrounding rural areas. They may become vulnerable to climate and other environmental changes. There is a rise in population all over the world in the urban settlements. Cities around the world are trying hard and struggling to accommodate the influx of population and address the multidimensional challenges of urban development.

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### **1.8. SUMMARY:**

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Rural settlements, dominated by primary activities such as agriculture, animal husbandry, fishing etc., are most closely and directly related to land. The size of the settlements is relatively small. Most of the people of rural settlement are engaged in agricultural work and each settlement specializes in various activities. Population density as well as the settlement size is small. Rural settlement scattered throughout India are approximately 500,000 villages. The Census of India regards most settlements of fewer than 5,000 as a village.

Rural settlements mostly are nucleated settlements, while others are more dispersed. Rural areas may develop randomly on the basis of natural vegetation and fauna available in a region, and these settlements are based more on natural resources.

These settlements range from tiny hamlets of thatched huts to larger settlements of tile-roofed stone and brick houses. Rural house shows a close dependence on the physical and cultural factors. As a result social, climatic and geographical conditions combine together to produce a specific architecture in these areas. Variations in house types or dwellings are mainly based on the building materials available. In the rainy areas most of the roofs are slanting to both sides from the centre. This is also the case in areas where snowfall occurs. But the places where rainfall is scanty, roofs are flat.

Last but not the least rural areas do not have pollution or traffic problems.

In this chapter it has already been explained that urban geography is a dynamic science as towns are dynamic and it changes its forms and relationships in regional and urban space. Urban settlement geography as a social science became concerned with description and explanation both and a complete scientific explanation required a study of past as well as future. The definition of urban settlement varies from one country to another. Population size is an important criterion most countries use to define urban areas. Urban settlement also varies from country to country. Different zones for different urban functions are observed as a result of changed landscape and socio-economic environment.

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## **1.8. CHECK YOUR PROGRESS/ EXERCISE**

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### **1. True and false**

- a) Rural settlement geography is a part of the settlement geography
- b) One of the basic requirements of animal is a shelter.
- c) In mountainous areas availability of water is a very important determining factor of house types
- d) In earthquake prone areas lightweight building material are used.
- e) Wattle wall is mainly the product of terrain and forest cover
- f) By around A.D. 1810 the New York City was the first urban settlement to reach a population of one million.
- g) An urban settlement has a large population size and a high population density.
- h) Joint families are more popular in urban areas.
- i) Voluntary associations such as clubs, societies and other secondary groups are formed by urban societies.
- j) Industry is considered as the discrete phenomenon in the urban settlement around the world.

**2. Fill in the blanks :**

- a. In Rural settlement \_\_\_\_\_ activity that provides job opportunities.
  - b. \_\_\_\_\_ is the main economic and clothing is the third important need of man after food
  - c. In areas of -----the openings in thehouses are kept to a minimum.
  - d. In the lesser Himalayan belt a house is naturally built on\_ jutting out from the hill side.
  - e. In \_\_\_\_\_the walls of the houses are constructed verythick of mud and the roof is covered either thatch made of grass leaves or tile.
- a. High rate of pollution prevails due to the presence of \_\_\_\_\_ and automobiles.
  - b. Any form of human \_\_\_\_\_ is a settlement
  - c. \_\_\_\_\_ and tertiary activities are dominant in an urban settlement.
  - d. An urban settlement has a \_\_\_\_\_ which it serves and is served
  - e. Locations of the earliest urban settlements were based on the availability of \_\_\_\_\_ , building \_\_\_\_\_ and \_\_\_\_\_ land.

**3. Multiple choice question**

- a. The studies of Rural Settlement
  - I. by Paul Vidal de la Blache and Albert Demangeon may be considered as pioneer works
  - II. by Albert Einstein and Albert Demangeon may be considered as pioneer works
  - III. by Bertrand Russell and Albert Demangeon may be considered as pioneer works
- b. In the region where rainfall is less and areas are dry
  - I. Hip roofs are common, for example Punjab region.
  - II. Gambrel roofs are common, for example Punjab region. III. Flat roofs are common, for example Punjab region
- c. In the **valley of Kashmir** houses are also found
  - I. on boats in Dal, Ullar lakes.
  - II. on boats in Logtok lakes.
  - III. on boats in Sambar lakes.

d. The most common and wide spread oldest material used in houses since old civilization

I. is sand II. is Mud III. is wood

a. Urban land rent is the high because

- i. urban land use is not intensive and so there is no land use competition.
- ii. rural land use is intensive and there is keen land use competition.
- iii. urban land use is intensive and there is keen land use competition.

b. Social heterogeneity is found in urban settlements due to

- i. the presence of different town planning
- ii. the absence of different cultures
- iii. the presence and mixing of different cultures

c. "The "landscape interface between town and country" is known as the

- i. rural–urban fringe
- ii. rural–urban line
- iii. rural–urban settlement

d. People of the fringe area are overburdened because

- i. of the heavy taxes in order to manage urban amenities.
- ii. of the heavy traffic in order to manage urban amenities.
- iii. of the heavy taxes in order to manage rural habits.

e. One of the measures for delimitation of the Rural-urban fringe is as follows

- i. Changes in the land use
- ii. Changes in the vehicles used
- iii. Changes in the seeds used for agriculture

#### 4. Answer the Following Questions

1. State the nature and scope of rural settlement.
2. What is rural settlement? Describe different house types of rural India with special reference to the building materials used.
3. Where do we find timber or woods as building material for wall in India?
4. Which parts of our country stone slabs or flakes are used as building material for roof?
5. "Economic factors play important role in deciding the grandeur of the building and its location with respect to other important village site"- elaborate.
6. State how are the house types in different regions of India.
7. How are the houses in areas of high temperature?
8. Define urban settlements.

9. State the nature of urban settlement.
10. State the scope of urban settlement.
11. What are the characteristics of urban settlements?
12. What do you understand by rural-urban fringe?

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### 1.9. TECHNICAL WORDS:

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- 1) **Dispersed Settlement:** the buildings of the settlement are all spread out
- 2) **Linear Settlement:** the buildings of the settlement are located along a road
- 3) **Nucleated Settlement:** buildings that clustered close together
- 4) **Rural Area:** countryside, where people live on farms, hamlets and small villages.
- 5) **Settlement:** a place where people live; it could be a hamlet, village, town or city.
- 6) **Settlement Pattern:** the shape and spacing of settlements
- 7) **Settlement Hierarchy:** settlements in order of size, with the largest one first
- 8) **Settler:** a person who takes over land to live on, where no one has lived before
- 9) **Site:** the land a settlement is built on
- 10) **Urban Area:** a built-up area, such as a town or city
- 11) **Urban:** It has been derived from Latin word urbanus, meaning city. The Oxford dictionary defines urban as one that is located in or has characteristic of a city or city life.
- 12) **City:** City, a relatively large permanent settlement<sup>1</sup>, generally has advanced infrastructure and complex systems for sanitation, utilities, land usage, housing, transportation, etc.
- 13) **Suburb/Suburban Area:** Suburb mostly refers to a residential area, usually outside administrative boundaries of a city.
- 14) **Urban Area:** An urban area is characterized by higher population density and vast human features in comparison to areas surrounding it. Urban areas may be cities, towns or conurbations.
- 15) **Urban Sprawl** - Urban sprawl is the irresponsible, and often poorly planned urban development that destroys green space, increases traffic, contributes to air pollution, leads to congestion with crowding and does not contribute significantly to revenue.

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## 1.10. REFERENCES FOR FURTHER STUDY

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## GEOGRAPHY RURAL SETTLEMENTS

After going through this chapter you will be able to understand the following features:

### Unit Structure

- 2.1 Objectives
- 2.2 Introduction
- 2.3 Subject discussion
- 2.4 Factors affecting rural settlements:
  - a. Physical, b. Economic c. Social. d. Political e. Cultural
- 2.5 Evolution of rural settlement.
- 2.6 Types of rural settlement on the basis of location, pattern, function, spacing
  - a. Location- wet point, dry point
  - b. Pattern – linear, circular, square, fan, net/reticulum. Star/radial, arrow, terrace pattern
  - c. Function- agriculture, fishing, lumbering, mining d. Spacing- compact, scattered
- 2.7 Summary
- 2.8 Check your Progress/Exercise
- 2.9 Answers to the self-learning questions
- 2.10 Technical words and their meaning
- 2.11 Task
- 2.12 References for further study

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### 2.1. OBJECTIVES

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By the end of this unit you will be able to –

- Understand the Factors affecting rural settlements such as a. Physical, b. Economic c. Social. d. Political e. Cultural
- Understand the Types of rural settlement on the basis of location, pattern, function, spacing

- Know the Location- wet point, dry point
- Understand rural settlement pattern such as linear, circular, square, fan, net/reticulum, Star/radial, arrow, terrace pattern
- Know the rural function like agriculture, fishing, lumbering, mining
- Understand the Spacing- compact, scattered

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## 2.2. INTRODUCTION

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In the previous unit we have learnt about the geography of settlement, its nature scope and importance. A human settlement is defined as a place inhabited more or less permanently. The study of rural settlements is one of the important part of human geography because the form, type, location, pattern as well as function of rural settlement in any particular region reflects human relationship with the environment. For example, people preferred to settle near fertile lands as it was suitable for agriculture.

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## 2.3. SUBJECT- DISCUSSION

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It is known that human settlement means cluster of dwellings of any type or size where human beings live and the term rural settlement describes a settlement, usually quite small and most closely and directly related to land. Most people living there are involved in primary activities such as farming, fishing, forestry or mining. These settlements vary in size and type. There are several factors such as physical, economic, social, political and cultural those affect the growth and development of the same. Settlements could be small and sparsely spaced; they may also be large and closely spaced. The sparsely located small settlements are called villages.

Rural settlements exhibit the reciprocal relationship between human occupancy and environment. Inhabitants of the rural settlement depend for their livelihood mainly on agriculture. Hence there is exploitation of the soil. Small fishing, quarrying, mining forestry etc. may also be taken into consideration as rural occupation.

A typical village has secondary workers that supply services to the primary group of farmers and farm labourers e.g. shopkeepers, teachers, clergymen, the publican, postmaster, smith and garage proprietor. Besides, the village consists of a part of retired people and some part of younger people who live in the village but go to work in a neighbouring town as urbanisation is fast becoming a new way of life. The proportion of population in each of these class bears to the total village population varies with the kind of farming characteristics of the locality, the quality of the soil, the attractiveness and accessibility of the site and its place within the general settlement pattern. Its shape and

arrangements are often in strict accord with the kind of work, the agricultural technique and the way the soil is used.

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## 2.4. FACTORS AFFECTING RURAL SETTLEMENTS

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**a. Physical factors** – These include relief, altitude, soil capability, climate, drainage, ground water level, etc. These factors influence the type and spacing of dwelling.

□ **Nature of Terrain or Relief:** - Dispersed type of settlements is found in remote jungles, small hills of Himachal Pradesh. Compact settlements are found in highly productive alluvial plains of Punjab. The availability of broad flat land such as floodplains promotes agricultural activities. Paul Vidal De La Blache has aptly observed that the clustered village is indigenous in areas where the arable land is continuous. The settlement may become dispersed and hamleted in the marshy areas and near meandering rivers where the river changes its course frequently. In the Terai region the settlement is unevenly distributed due to high percentage of forests, marshy lands and seasonal floods.

□ **Altitude:** - High altitude creates barriers and limit human existence due to reduced atmospheric pressure and low oxygen content. Therefore, very few permanent settlements can be seen in the lofty mountains of the world at a height above 5,000 metres. It has been observed in different parts of the world that the vertical distribution of population, both in numbers and densities, decline with increasing altitude. According to Staszewski, 56 per cent of the world's population lives within 200 metres from the sea level, and over 80 per cent within 500 metres. Thus clustered settlements appear in the plains whereas dispersed settlements are common in the hills. In India dispersed settlements are found in hills of Meghalaya and clustered and semi-clustered settlements are found in Gujarat plains.

□ **Climate:** - Due to frequent droughts and floods settlement may become dispersed and hamleted. The areas of hot and cold deserts do not support compact settlements whereas temperate and subtropical areas favour compact settlements. Occasional floods also lead to compactness of settlements in several areas having almost flat land. In these areas the elevated lands are few and far between. These are built up into compact settlements.

□ **Availability of Water (Drainage and Ground Water level):-** Settlement is generally built near water bodies. Water is essential for human survival and agricultural activities. If they have to depend on deep wells or rivers they are compact. However, in areas where the water table is high and wells can be dug easily and the drainage texture is dense meaning where the surface streams and rivulets are numerous, settlement can be practically built all over the region giving rise to hamlets, semi-sprinkled or semi-compact settlements. Moreover, in the areas where the water table is low, for example in Champaran,

Darbhanga districts in Bihar, dams and irrigation channels are built to store and distribute rain water . These have promoted the evolution of compact villages in these areas. The characteristics of rural settlements in the areas having high water table is semi-sprinkled or hamleted. For example the areas to the east of Sarai station of Vaishali in Bihar exhibit semi-sprinkled type of settlement. In dry regions of Rajasthan, water is a crucial factor and, therefore, houses are situated along a pond or well which guides the compactness of the settlement. So, scarcity of water in Rajasthan has resulted in development of compact settlements. A point to be noted in this regard is that adequate well distributed water resources do not restrict dispersion.

□ **Soils-** Fertility of soil is also another consideration for agricultural activities and agricultural development favouring more and more nucleation. Fertile lands attract compact but smaller hutments whereas unfertile lands repel population concentration and attract only fewer hutments.

### **b. Economic factors**

□ **Income:** In areas of high income of the farmers the settlements are huddled together but poor and backward economy favoured sprinkled settlements. Compact settlements are well adapted in economic conditions of paddy cultivation. This type of agriculture needs large labour force hence both the farmers and associated labourers tend to reside in the same nucleated settlements. Moreover those village communities which are self-contained having cottage industries, their own blacksmiths, carpenter, potter, weaver, and tailor lead to compact settlements.

□ **Nodal points:** Cross roads, ferry points, railroad stations, bus depot attract settlements as they develop business centres. Sometimes emergence of market site along the railway junction also attracts settlements resulting into the creation of separate hamlet. This may outgrow the older cluster on account of better economic advantages.

□ **Viewpoints:** School, college, temple, dak bungalows, hospitals, block development office, literacy centres and places of tourist interests predominate the more modern type of settlements in rural areas.

### **c. Social factors**

□ **Social Relationship-**Social relationship and cooperation among the villagers have influenced the generation of centripetal forces. A pond, temple, well, community hall, panchayat house, even a mango orchard in the central part of the village have attracted houses which clustered around it. The village elders guided and controlled the social relationships and customs which again played an important role in favouring type of settlements.

□ **Superstition:** Superstition also played a role in agglomeration. In the rural areas the *dih* or the ancestral site is considered auspicious so it attracted settlements. Also a settlement does not tend to expand

towards the south and the west as these two directions are considered inauspicious. Even if there is requirement of expanding or rebuilt the houses due to increase in population people continue to cluster in the same locality. As a result there is an increase in the compactness of settlements.

□ **Caste system:** Same social customs and traditions involving the caste systems, especially related to the untouchables, have led to the fragmentation of the rural society. For example the *harijans*, belonging to the lower castes of the society are forced to dwell far away from the main settlements. Moreover, the best land was reserved for the families belonging to the upper castes and their relatives. A multi caste village most likely have hamleted pattern.

**d. Political factors** - Most villages were erected when political instability and hostility of neighbouring groups made defensive sites a great advantage.

□ **Security factors** – In the areas where the land was free from the invaders small hamlets rather than large clusters came into existence. During the times of political instability, war, hostility among neighbouring settlements, villages were built on defensive hills and islands. Upstanding inselbergs in Nigeria formed good defensive sites. In India most of the forts are located on higher grounds or hills.

□ **Defence from invasions and wild animals:** In the past the need of defence from external lawless elements was of paramount importance. Due to defence from dacoits, wild animals or fear, settlements may cluster and form compact settlements.

**e. Cultural and ethnic factors** –

□ **Caste and Tribal Structure:** - Due to ethnic factors settlement may become fragmented and hamleted e.g. Chhattisgarh.

□ **Religion** – People of same religion prefer to live together making a settlement large or small.

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## 2.5 EVOLUTION OF RURAL SETTLEMENT

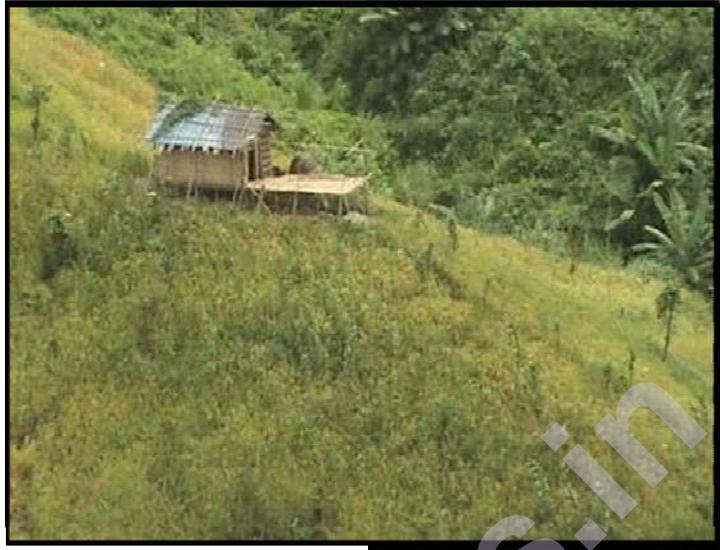
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On the basis of Evolution, rural settlements may be classified as follows:

- a. Farm village,
- b. Hamlets,
- c. Village,
- d. Weekly market centre.
- e. Town

**a. Farm village**

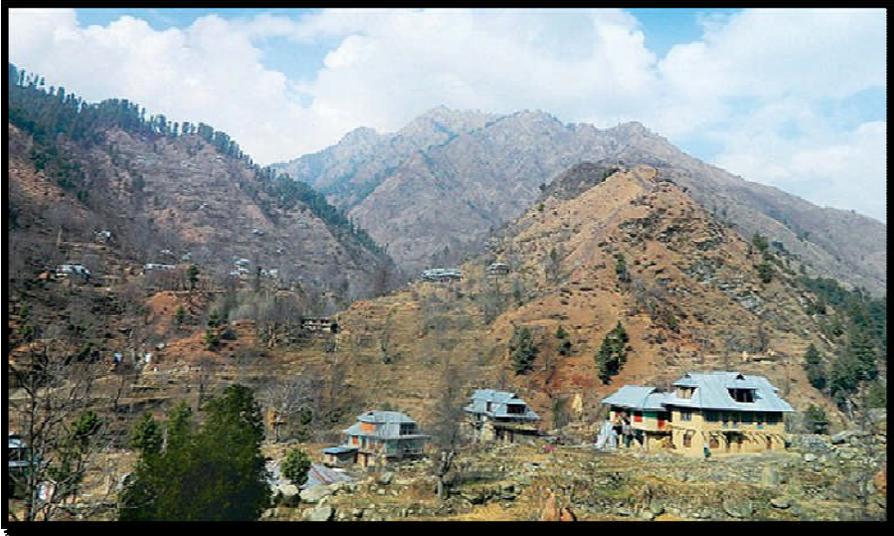
Farm villages are isolated dwellings found in rural areas. These villages may have one or two homes or families in it and the individual lives on his farm with his farmland surrounding him. It has negligible services.



**Fig 2.1: Farm village**

**b. Hamlet**

The word “hamlet”, borrowed from the Old French *hamel*, means “village. A hamlet is a type of rural settlement which is too small to be considered as a town or village. It is a small settlement, with a small population usually under 100. Hamlets generally arise around a specific site such as a mill or a large farm. A typical hamlet consists of only a few houses, often clustered together close to the road. There may be a temple in a hamlet. It is said that a hamlet is smaller and less compact than a village and it lacks some of the village amenities like stores and services which force their inhabitants to travel to the nearest town to meet their needs. Gauribidanur, a hamlet in Chikkaballapur District, Karnataka is India’s 1st smokeless village. Very often hamlets are totally dependent on wealthy men in neighbouring villages who controls grants and with-holds loans and jobs.



**Fig 2.2 : hamlet**

c. **Village:** A village is a small clustered human settlement or community, having inhabitants between 500 and 2,500, usually found in a rural setting. It is larger than a "hamlet" but smaller than a "town". Small villages contain households between 90 and 140. In villages, settlements of people are found clustered around a central point which is most often a church, a temple or the like, marketplace, or public space. Such villages are more frequently found in the middle and lower Ganga plain, Chhattisgarh and lower valleys of the Himalayas. Their ecological situation may differ from that of hamlets regarding soil condition. A village may generally contain some patches of good or irrigated soil but the bulk quality of soil may not be better than that of average hamlet. Although the small village may have much the same farmer /land ratio as the hamlet, it has more land and more farmers. Villages start to have some basic services like a petrol station or a village shop. It is observed that villages have changed over time. In the past, people lived and worked in the countryside and most functions were connected with farming and countryside services. At present, some villages are close enough to urban areas. This has helped people to commute to work in the city, while still living in the countryside.

This has changed the function of some villages. Abit Khind, Agar, Agastinagar, Akola, Ambad, Ambevangan are some of the villages found in Akola Tahsil, in Ahmadnagar districts, Maharashtra.



**Fig 2.3 : village**

#### **d. Weekly Market Centre**

The term “Market” has been derived from a Latin word “Marcatus” meaning to trade. Market place is a location for collection and distribution of goods. Weekly market centres are the farmers first contact points with the marketing field. Weekly market centre as described by Hodder (1965) is an authorized public gathering of buyers and sellers. This occurs at a fixed place, in the rural settlements, at an appointed hour at regular intervals. This may occur on some specific day or days of the week. Weekly market centres in India are locally called “Bazar”. In weekly market centre exchange of commodities, both local and outside, takes place between the buyers and the sellers. Weekly market provides remunerative prices to the producer and fair prices to the consumer and hence marketing costs are reduced. Efficient marketing system becomes a key to the success of rural economy. Apart from exchanging of goods weekly market centres exchange services, ideas and information too. These centres give the opportunities to increase social contacts as different groups of society gather and make contact among themselves at market places. Besides providing knowledge for surrounding villages these market centres act as nodes in the settlement system. It becomes a focal point for economic, social, political, religious and cultural activities for the inhabitants. Daund taluka in Pune, Maharashtra exhibit an example of weekly market centre. The weekly market centre has played an important role in accelerating the rural development particularly in the fields of economic and social life of people. Weekly markets directly contribute in the growth of trade and development of agro based services as there is a constant flow of demand for agricultural products. Geographers also opine that the type of weekly market centre is determined by the physico-



**Fig 2.4: Weekly market place**

#### **e. Town**

A town is a human settlement. It is a thickly populated area, larger than a village but smaller than a city. It has fixed boundaries and certain local powers of government. The size definition for what constitutes a "town" varies considerably in different parts of the world. The number of dwellers ranges from a few hundred to several thousands. In other words a town has less than one lakh population. Town is a place where people live and work. It contains many houses, shops, places of work, places of entertainment, etc. A town may be located at seaside, in the plain or at the mountainous areas. Fishing, mining or industrial towns are other varieties of the same.

The concept of 'town' can best be understood with reference to 'village'. Population size is not the only criterion. Functional contrasts between towns and villages may not always be clear cut, but specific functions such as, manufacturing, retail and wholesale trade, and professional services exist in towns. Towns see an increase in services than a village, for example, they would have senior schools and police stations. Towns which developed as religious and cultural centres are called Ancient Towns whereas, towns which emerged as headquarters of kingdoms are termed as medieval towns.

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### **2.5. TYPES OF RURAL SETTLEMENT ON THE BASIS OF A. LOCATION, B. PATTERN, C. FUNCTION, D. SPACING**

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**a. Location:** Rural settlements, having a relatively small size, are most closely and directly related to land and are dominated by primary activities such as agriculture, animal husbandry, fishing etc. The location

of a settlement is the land upon which it was built. There are a range of factors that determine the site of a settlement. These are:

- **Wet Point Site-** These are sites close to a supply of water
- **Dry Point Site-** These are sites that avoided the risk of flooding

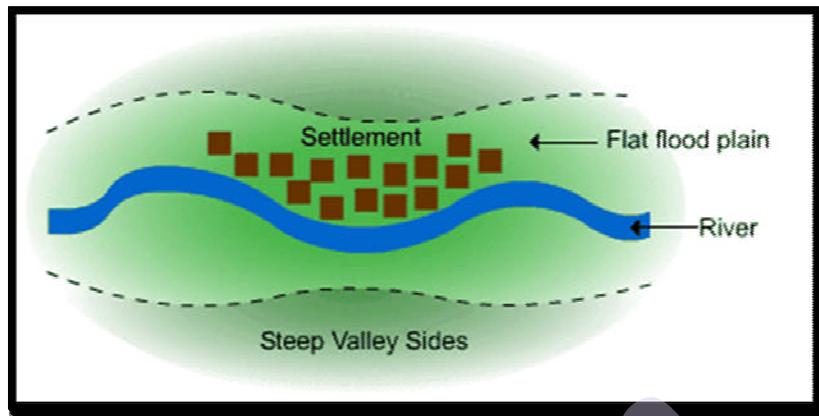
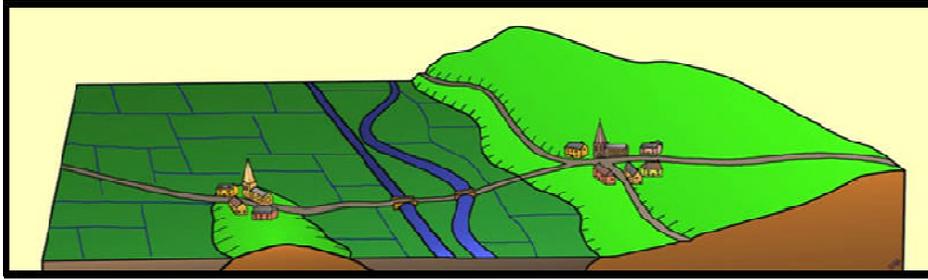


Fig 2.5

□ **Wet Point Sites:** Wet-point settlements develop in dry areas surrounding the point where there is water for e.g. spring, oasis. These dry areas experience scarcity of water so people gather around a wet point. Moreover, wet point sites refer to a particular site that has access to water, usually a river. Settlement would either grow up along the river or clustered near the point at which the river enters the sea. The towns and villages of the Welsh valleys are a few examples of wet point sites, which tend to extend along the flat valley floor, rather than up the steep valley sides. Spring line settlements in the North and South Downs are also good examples of wet point sites. The lava plateau region of Maharashtra has compact settlement near the source of water. Wet-point settlements have permanent as well as fresh water supply. As the settlements seek water they are referred to as water seeking or wet point settlement. These settlements are found in the dry areas, like deserts, where location with water supply is its main advantage. Moreover, a valley with a spring enjoys the similar advantage of wet point settlements. Since water is essential for human civilization and farming, many civilizations, including the ancient ones, selected wet point site to grow and develop.

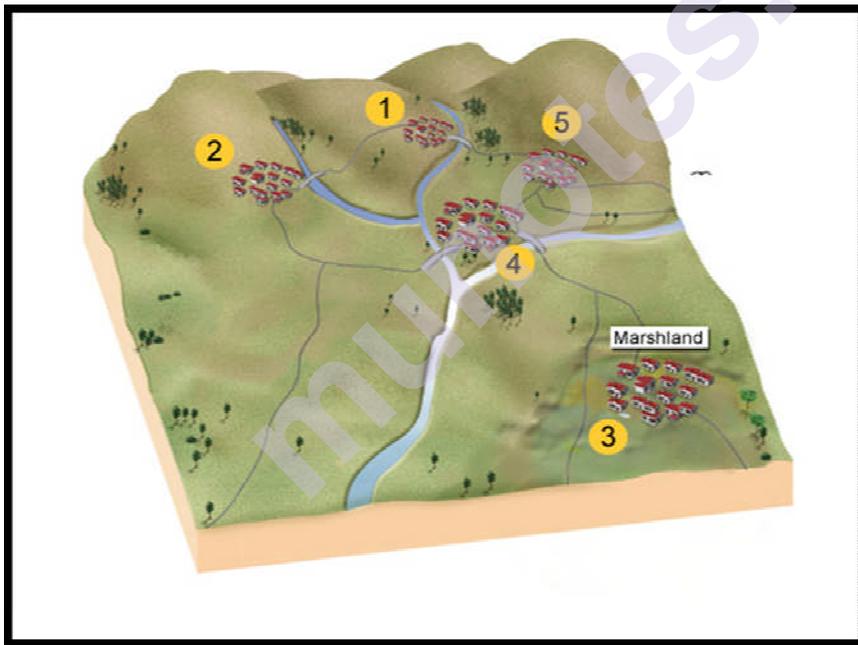
□ **Dry point site,** on the other hand, stands absolutely opposite of wet point site. Where there is a dry point in a wet area, people settle on dry land, e.g. small hills that are suitable for settlement in a marshy area.



**Fig 2.6**

Fig: Dry-Point Settlements: site is chosen to avoid the danger of flooding in a wet area

This site is any flood-free ground located in the middle of a wetland that encompasses marshes and flood plains. Dry point sites are also a major settlement points in history. Although water is a great necessity for human settlement, people cannot settle in marshes or swamps. Hence, a water-free area within these damp places allowed ancient human civilizations to settle. Also the water, that surrounds the land, serves as a defense purpose and makes it difficult for invaders to intrude.

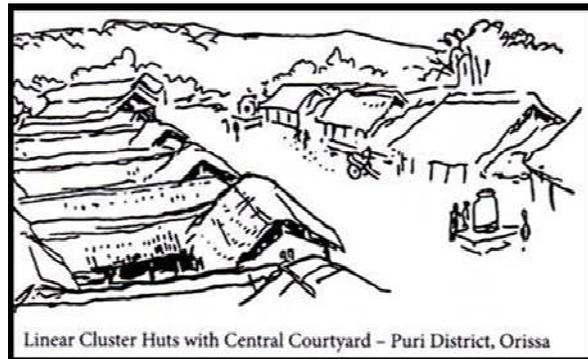


**Fig 2.7** Wet point settlement no: 2, dry point settlement no: 3

**b. Pattern-** Patterns of rural settlements is influenced by the site of the village, the surrounding topography and terrain. This includes, linear, circular, square, fan, net/reticulum, star/radial, arrow and terrace pattern

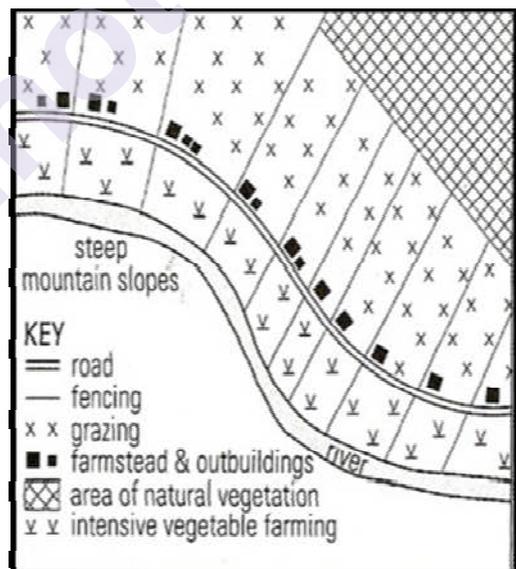
□ **Linear**—This type of pattern includes all villages where the buildings are built along pre-defined lines varying from straight to curved ones. Villages may be aligned along transport routes, cardinal directions or natural features such as slopes and streams. A linear settlement pattern

is also visible along the road. Many people make their houses along these transport routes so that it becomes



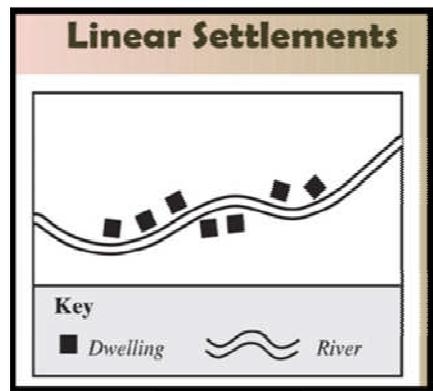
**Fig 2.8**

easier to transport their goods. Lineated form of villages have been described by various names like rectangular, herringbone, linear, horse-shoe shaped T or Y shaped or rcuate. It usually forms a long and narrow pattern, which can be maintained even when the population grows. Physical features sometimes induce lineation. In hilly areas settlements are aligned along the shoulder of a spur or the top of a ridge taking the advantage of the gentler slope of the region. Such settlements are numerous in the Lesser Himalayas and the Siwaliks. The Alps, Rockies, Andes, Pyrenees, Pamir,



**Fig 2.9**

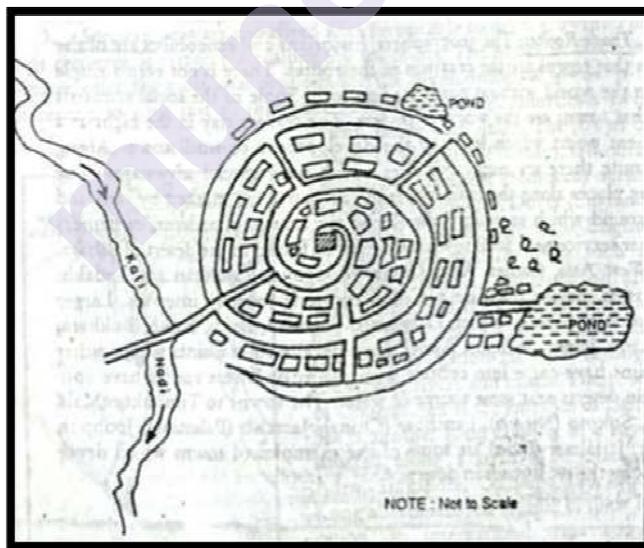
Hindukush, Zagros, and Elburz also have these types of settlements. Narrow confined valleys, river levees in floodplains and coastal areas also lead to a linear form. Fishing villages in the east coast of India exhibit linear pattern. Along the Roads in the plains of Ganga- Yamuna linear type of settlements are prominent. In Dun valley such settlement are known as Doi-wala, Lachhi-wala, and Kaund-wala. On the Konkan coast linear settlement can also be found.



**Fig 2.10**

### Circular

These settlements occur on all sides of some lakes, ponds, wells, a fort, temple, meander bank and bend of a stream or even the house of a landlord. When the houses are constructed along these sites, the settlement takes the shape of circle and hence is known as circular pattern. These settlements appeared as compact villages for security or defence reasons during the ancient times. When the outer walls of dwellings adjoin each other they present a continuous front. As a result, when viewed from outside, the villages look like a walled and fortified enclosure pierced by a few openings. The round form was a natural outcome of maximum aggregation



**Fig 2.11**

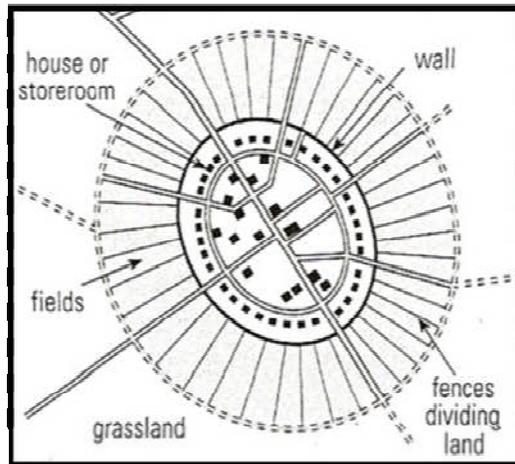


Fig 2.12

for the purpose of defence during the past. In tribal areas this type of settlement may be observed around some place of worship or around some trees considering the place auspicious. Circular settlements may even cover large portion of a land and thus appear as semi-circular changing their shape. These types of settlements are found on the banks of Bhimtal in Uttaranchal. Siwan settlements of Rajasthan are also of circular type. Significant circular settlements are viewed in **Dhulia, Aurangabad districts of Maharashtra** and in Karnataka. Such settlements are also found in the Malwa region, Punjab and Gujarat where large villages are characterized by a very high degree of compactness. □

**Square:**

This is basically a variant of rectangular type and is associated with villages lying at the crossing of cart tracks or roads. The square pattern of settlement is related to features like an old boundary wall, thick orchards, a road or a pond that restrict the extension of the village outside a square space. This is the most common pattern observed in rural settlements and are developed over flat, fertile, alluvial plains and wide inter-montane valleys. The examples of these are villages in Sutlej-Ganga plain, planned settlements of Germany, Malaysia, Israel, France, etc.

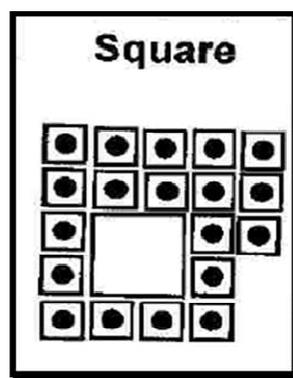


Fig 2.14

### □ Fan

This is seen where some focal points or line is situated at one end of the village. A focal object may be a tank, a riverside, a road, an orchard, a well or even a place of worship. In delta areas or at the base of mountains settlement found at the centre head extent is fan shaped pattern on all sides. Such settlements can be found in the delta areas of Godavari, Krishna and Mahanadi rivers and in alluvial regions at the foothills of Himalayas. The Busiya village of Bagalpur district is an excellent example of Fan shaped settlement. Garkota and Aslana villages of Madhya Pradesh present similar fan shaped patterns.

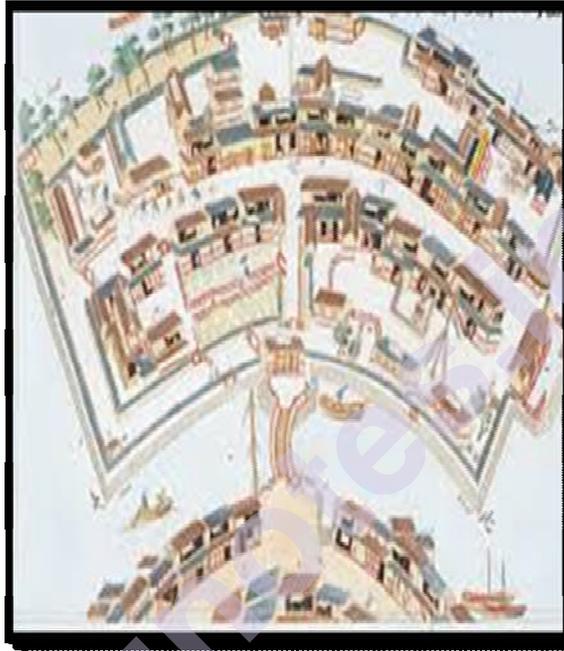


Fig 2.15

### □ Net/Reticulum

Isolated homes with a central court yard found in different parts of India. Net type of settlements is irregularly distributed in the villages. In Birbhum district, West Bengal Net/Reticulum settlements are observed.

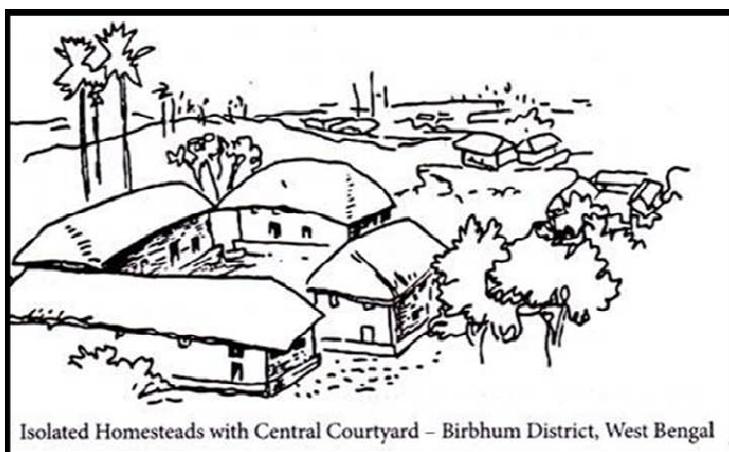


Fig 2.16

□ **Star/Radial:**

In towns and villages where the dwellings in a settlement spread out in several directions from a central point, either around a big water body or where many routes join together is known as star or radial settlements. A village acquires a star-like pattern when streets radiate from a common centre. After the expansion of these villages as a result of population growth the formation sometimes changes into a double radial pattern. This type of pattern is more common in Tamil Nadu and Upper Ganga Plain.



Fig 2.17

□ **Arrow pattern:**

On the meeting of the roads or two rivers arrow head pattern of settlements occur. Triangular pattern is a special feature of this type of settlement and is found on any triangular patch of land.

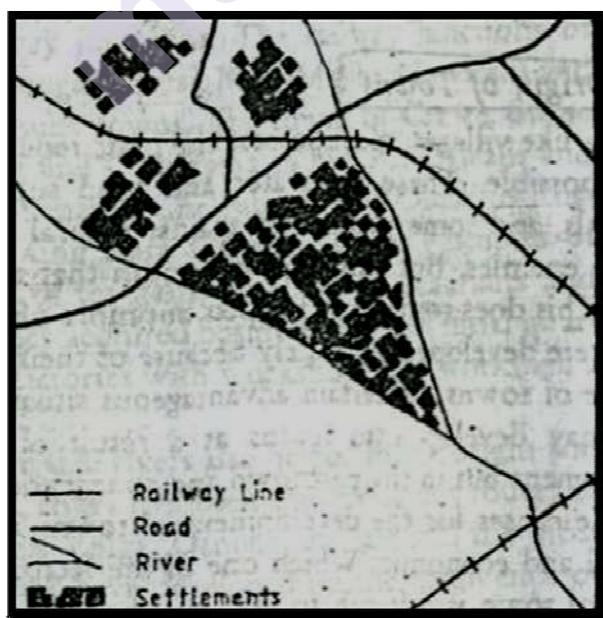


Fig 2.18

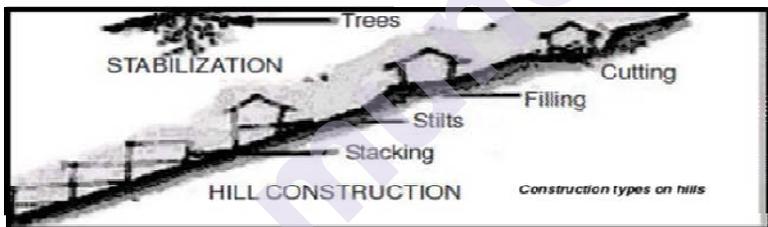


**Fig 2.19** Arrow pattern of settlement

□ **Terrace Pattern:**

In hilly regions somewhere in the hill slopes of the hills settlements occur along the contours in terraced form. Their rows of dwellings and terraced fields are almost parallel to the contours. The distribution of such terraced or contoured settlements is guided by the intensity of the slope.

The elevation over 1000ft. and where the slope is  $30^{\circ}$  it is not suitable for settlements. Such settlements found in Khunou, Tusom, Nambasi and Phunal in Manipur are quite attractive when looked from surrounding sites. Here the lower terrace fields are used for cultivation and the upper ones for settlements.



**Fig 2.20**



**Fig 2.21** Terrace pattern of settlements

### c. Function-

On the basis of functions there may be the following types of settlements.

□ **Agriculture:** Agriculture in Indian villages has been the principal occupation for the inhabitants since time immemorial. In India the climatic condition is perfectly suitable for agricultural activities; consequently, the functions of most of the people of rural settlements are generally agricultural and they earn their livelihoods from the same field. The people cultivate various types of crops throughout the year. Earlier farming in Indian villages depended highly on the monsoonal rainfall and hence, most of the crops cultivated during that period were monsoon type crops. But at present, with the advancement of irrigation and development in the agricultural technology, the dependency on weather has lessened. Thus different types of crops are being cultivated in rural India. In the agricultural villages farmers are involved with the agriculture sector in various ways. Many people cultivate crops independently in their own lands and some of them occasionally take help of others to do the farming.

□ **Fishing:** In the rural settlements where fishermen live, the main activity is fishing. A fishing village is a village, generally located near a fishing ground, where the economy is based on catching fish and harvesting seafood. The fishing grounds may be sited on rivers, lakes and sea coasts and consequently the fishing villages occur there. In the fishing villages the main occupation is fishing, but this may be combined with some agricultural activity. India is a land of water where rivers and seas flow through and along the border of her territory. These are home to a huge variety of fishes. Hence, fishing has been a major source of income mainly for people living in the Indian coastal villages for several centuries. People in the villages of the South Indian states like Kerala, Karnataka, Andhra Pradesh, and Maharashtra are mostly dependent on fishing to earn their livelihoods. In these states most of the villages that are located along the coastal line are fishing villages. Coastal fishing villages are often somewhat isolated, and sited around a small natural harbour which provides safe haven for a village fleet of fishing boats. About 110 nautical miles from Mumbai, Jaigarh is an example of fishing village in India. Other fishing villages may be built on floating islands, such as the Phumdi on Loktak Lake in India. In the fishing villages of India the fishing communities, are not homogenous. They belong to different castes. These communities are characterized by their distinct social, cultural and traditional practices, depending on the coast, where they inhabit. They are not related to the mainstream agrarian system. Important fishing castes in Maharashtra is Kolis, in Kerala are Mukkuvar, Anjootty, Dheevera, and Pooislan in Tamil Nadu they are Pattinavars, Mukkuvars, and Paravas, in Andhra Pradesh they are Vadabaliyas, Jalaris, Pattapu, and Palles, Orissa: Jalaris, Vadabaliyas, Kaibartas, Khandayats, and Rajbhansis and many others. Traditional fishing villages were based on artisan fishing and located adjacent to fishing grounds. A typical fishing village is Veldur in Ratnagiri district of

Maharashtra. Rajapuri is another small fishing village located between the towns of Murud–Janjira, about 48 km away from Alibaug in Maharashtra. Agarsure, Rewas, Navkhar, Mandva, Saswne, Agarsure, Navgaon, Thal, and Chalmal are some of the fishing villages in Alibag Tahsil of Raigarh district, Maharashtra.

□ **Lumbering village:** There are numerous rural settlements in the forest areas in which the dominant economic activity is gathering of forest products and lumbering. Such villages are generally small in size and may be found in the Taiga region, forest areas of the sub-Himalayan region and hilly tracts like North-East India. In the forests where lumbering is on a large scale and timber industry has developed, urban rather than rural settlements are more usual.

□ **Mining-**A mining village is a settlement built by colliery owners to accommodate their workers. During the Industrial Revolution these villages were built on the coalfields of Britain as new coal mines, in isolated or unpopulated areas, needed accommodation for the incoming workers. These are also known as **pit village**, or **colliery village**. Raniganj in West Bengal, the oldest coal mining region of India has this type of settlement.

The fishing, mining or lumbering villages are like agricultural settlements. They have a few shops and some small-scale administrative functions but differ from towns, like other villages, in the relatively narrow range of their activities. They lack commercial and industrial development.

#### **d. Spacing-**

On the basis of spacing settlements are classified into compact and scattered

□ **The Compact or Nucleated Settlements:** In such settlements, houses are built close to each other generally developing near a railway station, a well, a quarry or an industrial site, in river valleys and fertile plains. Here the inhabitants are closely tied and share common occupations.



Fig -2.22



Fig 2.23 : Compact village



Fig 2.24

□ **The Scattered or Dispersed Settlements:** In such settlements, houses or the individual farmhouses are isolated or scattered and are located far apart from each other and often interspersed with fields. They develop mostly in the plateau, forested or hilly areas. These settlements consist of one or two houses and cultural feature such as a place of worship or a market, binds the settlement together.

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## 2.6. SUMMARY:

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After going through this chapter we may conclude that the study of settlements has been one of the most significant themes in human geography. Geographers study rural settlement as a unit because it serves as a link between the dwellers and the physical environment. There are various factors like physical, social, economic, cultural and many more that are responsible for different types, patterns and functions of rural settlements. For example physical factors influence the type and spacing of dwelling whereas ethnic and cultural factors include aspects like caste, community, ethnicity and religion leading to social segregation.

Present day geographers have put emphasis on rural settlement studies with special reference to land use, agriculture, and forestry, conservation of environment, rural employment, energy, housing, recreation, health, education and tourism.

---

## 2.7. CHECK YOUR PROGRESS/ EXERCISE

---

### 1. True and false

- a. Water is essential for human survival and agricultural activities hence settlement is generally built near water bodies.
- b. Dry Point Site is sites that avoided the risk of flooding.
- c. In the areas where the land was free from the invaders large clusters came into existence.
- d. A linear settlement pattern is visible along the road.
- e. Due to physical factors settlement may become fragmented and hamleted

### 2. Fill in the blanks

- a. Most villages were erected when-----and hostility of neighbouring groups made defensive sites a great advantage.
- b. \_\_\_\_\_ Site are sites close to a supply of water.
- c. Many people make their houses along these ----- \_routes so that it becomes easier to transport their goods.

d. Circular settlements occur on all sides of some \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, meander bank and bend of a  
stream or even the house of a landlord.

e. Patterns of rural settlements are influenced by the site of the  
village, the surrounding -----and -----.

### 3. Multiple choice question

a. The Square pattern is the most common one observed in rural  
settlements

i. and are developed over flat, fertile, alluvial plains and wide inter-  
montane valleys

ii. and are developed along the busy transport routes. iii. and are  
developed in the slopes hilly regions.

b. Fan pattern of settlement is seen where

i. focal points such as tank, a riverside, a road, an orchard, a well or  
line, is situated at the beginning of the village.

ii. focal points such as tank, a riverside, a road, an orchard, a well or  
line, is situated at one end of the village.

iii. focal points such as market, high rise buildings, pond,  
riverside or line is situated at one end of the village.

c. In hilly regions somewhere in the hill slopes of the hills settlements  
occur along the contours in terraced form

i. terrace pattern of settlement ii. linear pattern of settlement

iii. circular pattern of settlement

d. In dispersed settlements developing mostly in the plateau, forested  
or hilly areas, houses or the individual farmhouses are found

i. clustered close together and are marked by brick wall boundary

ii. isolated or scattered and are located far apart from each other and  
often interspersed with fields

iii. along a road, river, sea side or forest boundary

e. In Rural settlements found in the Taiga region or forest areas of the  
sub-Himalayan region

i. the dominant economic activity is gathering of forest  
products and lumbering.

- ii. the dominant economic activity is gathering of fish and other marine products.
- iii. the dominant economic activity is mining.

#### 4. Answer the Following Questions

##### Questions

1. Bring out the factors affecting the location of rural settlements.
2. Discuss the types of rural settlements on the basis of location.
3. Elaborate on the types of rural settlements according to functions.
4. Explain the types of rural settlements on the basis of spacing.
5. Explain the difference between nucleated and dispersed settlements
6. Review the different classifications of settlement in terms of size
7. What are the different shapes of rural settlements and discuss the factors that influence them
8. Discuss the different types of patterns of rural settlements with examples from India.
9. Examine the physical and economic factors that influence the site of a settlement

---

#### **2.8. ANSWERS TO THE SELF LEARNING QUESTIONS.**

1. (a) True
1. (b) True
1. (c) False, small hamlets
1. (d) True
1. (e) False, ethnic factors
2. a. political instability
2. b. Wet Point
2. c. transport
2. d. lakes, ponds, wells, a fort, temple
2. e. Topography and terrain
3. a. i.

- 3. b. iii
- 3. c. i.
- 3. d. ii
- 3. e. i

---

## 2.9. TECHNICAL WORDS:

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- 1) **Factors** - a circumstance, fact, or influence that contributes to a result.
- 2) **Altitude**: the height of an object or point in relation to sea level or ground level.
- 3) **Climate**: the weather conditions prevailing in an area in general or over a long period.
- 4) **Nodal points**: is a point where two routes, such as roads, railroads, valleys or rivers meet.
- 5) **Settlement**: a place where people live; it could be a hamlet, village, town or city.
- 6) **Settlement Pattern**: the shape and spacing of settlements
- 7) **Dispersed Settlement**: the buildings of the settlement are all spread out
- 8) **Linear Settlement**: the buildings of the settlement are located along a road
- 9) **Nucleated Settlement**: buildings that clustered close together
- 10) **Circular settlement**: settlement developed in flat levelled areas, around a pond, tank or lake.
- 11) **Rectangular Pattern** : settlement that develops around the rectangular shape of agricultural fields
- 12) **Square Pattern**: This is basically a variant of rectangular type.
- 13) **Rural Area**: countryside, where people live on farms, hamlets and small villages.

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## 2.10. TASK

---

- 1. In a chart draw a column and show various factors affecting the rural settlements.
- 2. In a chart show types of rural settlement on the basis of location, pattern, function, spacing.

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## **RURAL SETTLEMENTS IN INDIA**

**After going through this chapter you will be able to understand the following features:**

### **Unit Structure**

- 3.1 Objectives
- 3.2 Introduction
- 3.3 Subject- Discussion
- 3.4 Regional variation-with special reference to India
- 3.5 Structure of House, Building material in India
- 3.6 Morphology of rural settlement in India

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### **3.1 OBJECTIVES**

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By the end of this unit you will be able to –

- Understand the Distribution of settlement in India
- Structure of House, Building material in India
- Regional variation-with special reference to India
- Morphology of rural settlement in India

---

### **3.2. INTRODUCTION**

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In this chapter we will define rural settlement at first. But before that we must know what settlement is. A group of people living together forms a settlement. A settlement may be broadly classified into four types: 1. Shapeless cluster 2. Linear cluster 3. Square or rectangular cluster 4. Settlement formed of isolated or dispersed homestead. Moreover, a great variation in the settlement types is observed due to geographical, cultural and economic factors and on the basis of these factors settlements can be broadly classified into Urban and Rural settlements.

There are some basic differences between rural and urban areas in general. The function is the major difference between rural and urban areas. Rural areas have predominantly primary activities, whereas urban areas have domination of secondary and tertiary activities. Again, rural areas have low density of population compared to urban.

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### 3.3. SUBJECT DISCUSSION

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Rural settlements, usually quite small, are most closely and directly related to land. Most people living there are involved in primary activities such as farming, fishing, forestry or mining. Hence, rural settlements may be considered as uni-function and have primary activities. In order to address the particular needs of the rural villages, the rural settlements study is important. Rural settlement study identifies the economic, social and environmental aspects of the villages.

Rural settlements have different patterns. Settlements that are far apart are isolated or dispersed. On the other hand settlements that are close together to each other are clustered or nucleated. By the term shape, the morphology of the settlement is discussed. This refers to how the buildings are arranged in relation to each other, and their physical appearance. The shape of rural settlement may be linear, round, square, cross roads or T-shaped. Types of the settlement are determined by the extent of the built-up area and inter house distance. Several physical factors, cultural and ethnic factors, and security factors are the major three factors that determine the types of rural settlements. While going through this unit we will see that geology and general physiography play a very important role in deciding the nature of building material. As far as building materials are concerned, these can be grouped under two categories such as building material used for walls and building material used for roofs. There is regional variation of rural settlement throughout India as India has varied social, climatic and geographical condition.

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### 3.4. HOUSE TYPES IN RURAL INDIA AND ITS REGIONAL VARIATION

---

One of the basic requirements of man is a shelter. House is the third important need of man after food and clothing. It is therefore a universal feature of any region permanently settled by human beings. The house while playing the role of shelter also regulates the harshness of the climate to meet the physiological requirements of the body.

Rural house shows a close dependence on the physical and cultural factors. Climatic conditions, landforms features, and physical features drainage lines and soil types have their differential impacts on house types in terms of construction materials, on their size, shape, location and comfort. This indicates house types and environment is correlated.

Almost everywhere in rural India, the houses are made of locally available building materials such as stones, mud, un-burnt bricks, bamboos, wood reeds, leaves, grasses, etc.

In India the rural houses in the plains are found closely built whereas in the peninsular India due to the undulating terrain houses are found a bit farther apart.

It is observed that from the architectural point of view the style of rural houses is very simple though importance lies in the geographical point of view. In most cases the houses are found in square or rectangular in shape containing one veranda in front with a small courtyard surrounded by many rooms in all directions. Moreover, most of the rural houses are generally one storied with one or no windows. If one window is found it will be very small, located at the back side or in the upper part of the wall of the house.

**The various factors which affect the house type are:**

- a. Environment
- b. Socio-economic condition of the inhabitant
- c. Level of technological development of the society

**The various aspects of house which are affected by these factors are:**

- a. The site
- b. The structure
- c. The layout or plan
- d. The building material

Thus, it may be said that a house is testimonial of a complex relationship between man and environment and reflects the direct influence of ecology. In rural areas these fundamental issues are more apparent. Social, climatic and geographical conditions are combined to produce an architecture on which fashion of style plays little or no part.

The impact of these various factors on the different houses of rural house types is as follows:

**3.4.1 Environmental and Physical Factors:**

Among the environmental and physical factors house type is mostly affected by the insolation, direction of prevailing wind and the amount of rainfall. In areas of extreme climatic conditions houses are constructed in such a manner so that they keep the interior cool in summer and warm during winter. To combat this type of climatic condition thick mud wall is needed but window for cross ventilation is not at all considered necessary. In the areas receiving heavy rainfall the roofs are generally gable shaped. Although with the decreasing amount of rainfall the roof also tends towards flat.

□ In mountainous areas availability of **sunlight** is very important determining factor. As the sunny slope is naturally favoured houses are often situated on the south facing slopes in the northern hemisphere.

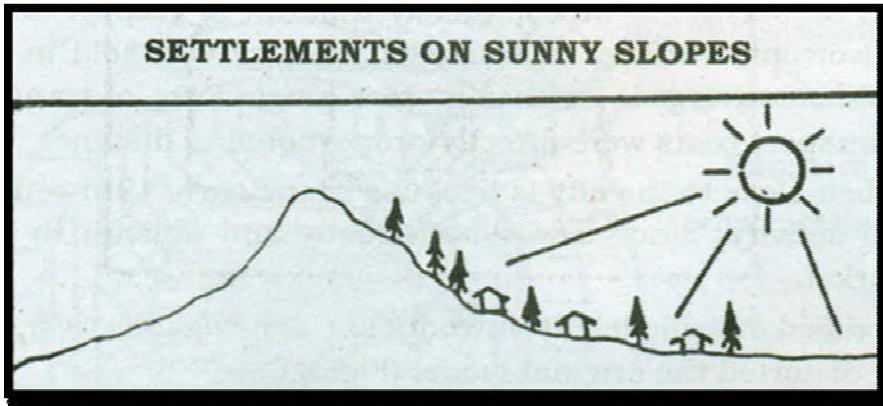


Fig 3.1

□ In the lesser Himalayan belt a house is naturally built on **spur** jutting out from the hill side. This site is well drained, dry as well as safe from landslide and avalanches.

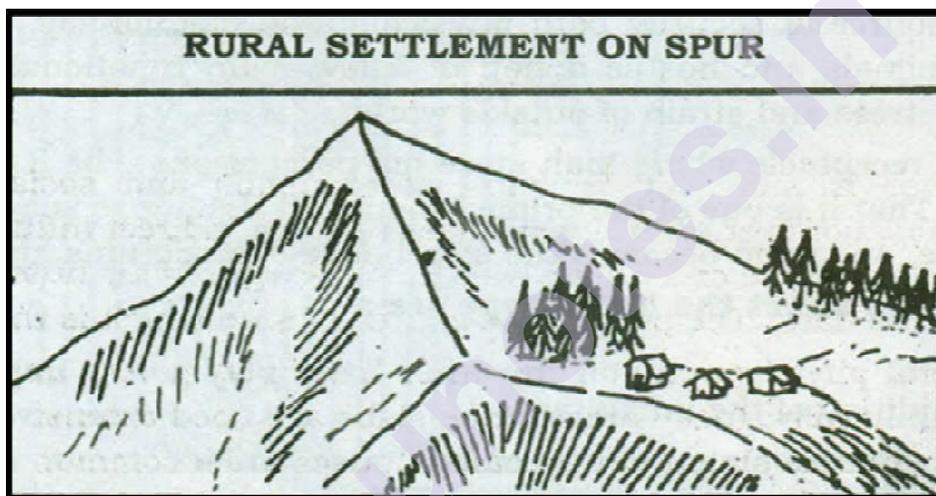


Fig 3.2

- The availability of safe and sufficient **drinking water** for both human and domestic animals also control the location of settlements. The houses from the simple and to the most complex are always located close to the source of water.
- Proximity to **fertile land** is also taken into consideration.
- In hilly areas land is chosen in such a way that terracing can be done without much difficulty.
- Again rural dwellings are usually contiguous and compact as it ensures safety. Therefore while selecting lands for housing sites; surplus land is always kept in reserve so that more houses can be constructed when population increases in the course of time.
- The structure of house is greatly influenced by nature and degree of precipitation. In India houses in the areas receiving heavy rainfall, like the Konkan region, have steeply sloping roofs. These are also

constructed in such a manner that the veranda or the open space in front of the house gains protection from rainfall.

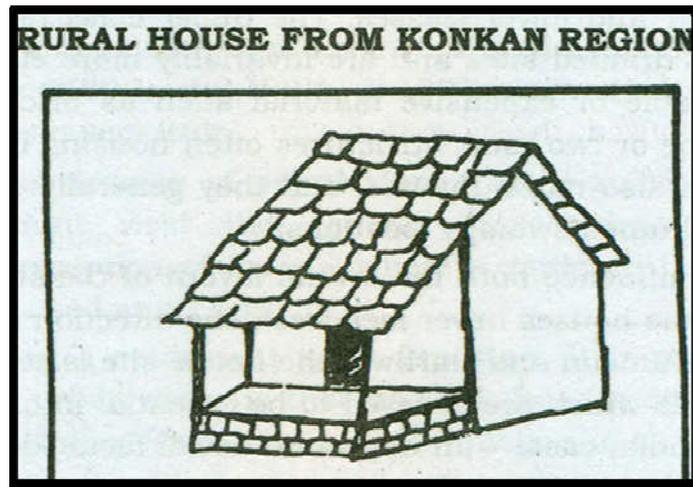


Fig 3.3

- In the region where rainfall is less and areas are dry flat roofs are common, for example Punjab region.
- In areas of high temperature the openings in the houses are kept to a minimum. A thick wall with slit like windows prevents the sun's heat from entering the house keeping the interiors cool.
- Verandas are also common features in the rural houses in hot sunny regions.
- In swampy tidal areas houses are built on stilts to escape flooding during the rise in tidal water. It a common feature in certain parts of Assam.
- Stilts are also common in areas infested with wild animals as a security measure.

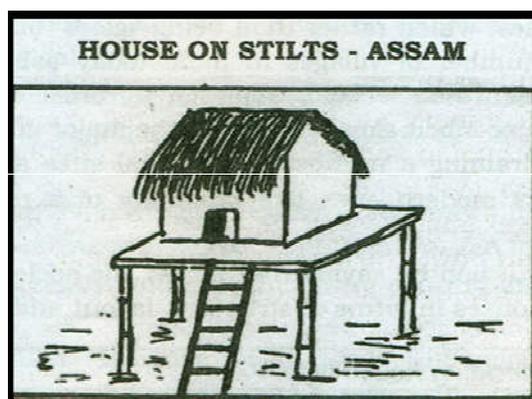


Fig 3.4

- The layout of a house is more influenced by the function of economic and social factors rather than the physiographic ones. However,

environment sometimes have an indirect influence over the house type. In Bengal, for example a dwelling house or a homestead is composed of four huts facing central courtyard, with a pond somewhere at the back. This pond is the source of main building material that is mud.

### 3.4.2 Socio-Economic factors:

Economic factors play important role in deciding the grandeur of the building and its location with respect to other important village sites. The best built house in the village belongs to the chief which is more decorated and of greater height than a commoner's house. The complexity of structure indicates the elevated position of the chief in the society. This disparity is observed in every village in India and the contrast between the houses of the upper class and lower class is thus very conspicuous.

The upper class houses occupy better position and use more durable or expensive material like brick, wooden beam etc. They are located in the well-drained sites. On the contrary the houses of the poor are built with inferior material and located in the flood prone tracts or un-drained swampy areas.

Social and religious factors influence both the overall layout of the structure as well as choosing the site. In Kumayun and Garhwal hills the house site is selected by the village priest. Caste, in India, is another important social factor that determines the site of rural houses. Members of the same caste usually built their houses adjoining each other. The lower castes, schedule castes live in areas far from the areas occupied higher castes i.e. the village proper. Again as social values and perception of private space varies between societies it is observed in some tribal societies that the entire village may live in a long hut or all the young boys live in a communal dormitory.

### 3.4.3. Levels of Technological Development:

With the advent of time Levels of Technological development plays an important role in determining the site, building material as well as the overall structure of a house. In India asbestos or corrugated sheets have replaced tiles or thatch. Mud or wattle is being replaced by brick or stone. Similarly there is a structural change in the house albeit slowly. Through land reclamation and draining a number of marginal sites are being used today. Also rather than the traditional sites modern ones like proximity to roadways or railways or an irrigation canal is becoming more important.

The impact of geographical factors is very conspicuous in the rural house types in India.

House types in different regions of India are as follows:

- a. In **Karnataka** the walls of the houses are constructed very thick of mud and the roof is covered either thatch made of grass leaves or tile.
- b. In **northern Karnataka** single roomed circular house with domal roof is more prominent. Constructed very close together in beehive shape.
- c. In **southern side of Pennar** river huts look like egg in shape with conical roof tops.
- d. In **Malabar and Konkan coasts** of western India rural houses have mud walls and roof tops covered with coconut leaves.
- e. The prominent features of the rural houses in the areas of **Travancore** and **Cochin** are that the lower part of the roof is artistically made to curve towards up.
- f. In **Periyar** region the houses are constructed out of bamboo splits and they are semi-circular in shape.
- g. In **Kottayam** division Mala Arya people make their huts on tree branches with bamboo and grass.
- h. On the slopes of **Cardamom hills** Mulawan people live in square shaped huts.
- i. In **Tamil Nadu** the rural houses are made up of brick walls and tile roofs.
- j. On **Nilgiri hills** Toda people live in semi-circular houses.
- k. The houses in the **Deccan plateau** are characterised by flat roofs. This is a very common feature in the rural house type due to the semi-arid climatic condition.
- l. On **Malwa plateau** stone houses are very common.
- m. Due to the prevalence of dry climatic conditions in **Rajasthan, Punjab, Hariyan and Uttar Pradesh** the houses are characterised by flat roofs.
- n. In **Orissa** thatch and tile roof houses are most common.
- o. In **Andhra Pradesh** the poor man's house is generally circular in shape.
- p. In **Madhya Pradesh** Gond people make parallel linear houses on both sides of the road.
- q. In **West Bengal** the plinth of the house is a bit higher from the level of flood plain. Due to heavy amount of rainfall the roof is generally made gable shaped.

- r. In **Chakrate** area on the southern slope of Himalaya the houses are made of either wood or stone. The roof is made of concrete, tile or grasses available locally. Here the houses found on different contour interval in cluster and linear in shape.
- s. In **Kangra** valley the rural houses are found apart. The walls of these houses are made up of wood or stone while the roof is made up of slate.
- t. In the **valley of Kashmir** houses are also found on boats in Dal, Ullar lakes.

### 3.4.4. Building Material Used in Rural India

Geology and general physiography play a very important role in deciding the nature of building material. As far as building materials are concerned, these can be grouped under two categories.

#### A. Building Material Used for Walls

#### B. Building Material Used for Roofs

The advancement of building technology and availability of financial assistance to the people living below poverty line has brought sea of change in the use of building material. This change is visible largely in the structure of house types in rural areas.

We may discuss them one by one:

#### A. Building Materials Used for Walls

Building materials used for walls in India, can broadly be grouped under **five categories**. These are (i) mud, (ii) stone, (iii) brick, (iv) timber, and (v) wattle

a. The most common and wide spread oldest material used in houses since old civilization is Mud. It is available from all types of soils and varies in texture and colour. These mud buildings are found almost all parts throughout India. For example the house in Indo-Gangetic plains is mainly mud and brick structure as clay is easily available.

b. Stone or basalt boulders or rock cut pieces are widely used in such areas where proximity, availability in greater amount and portability are favourable factors. Sandstone served these purpose in hilly areas, whereas basalt rocks exhibit examples of such houses in volcanic plateau zones. In hilly, rocky areas stone slabs re used extensively both as walls and roofs. In western Himalayas for example slate roofs on stone houses are common sight.

c. At present brick klines are commonly found in rural areas, hence easy availability bake bricks encouraged the use of bricks as building material in the same areas. The construction cost, durability, space saving and manner-variability of brick walls is obvious. Mud mortar and various other cementing materials as mortar is widely used

in country side since ancient times. Cement is covering the market in countryside too at present. Unbaked kachcha brick, popular among the poor class owners, is also used for low height walls.

d. The abundant availability of woods in forest areas became the major factor for using timber as building material in those areas. Examples are abounding in Bhil areas of Central India. In the most vegetated Eastern Himalayas, wood, bamboo, rattan and thatch are main building material. In lower altitude particularly Uttarakhand, Himachal Pradesh, and Jammu and Kashmir the houses are covered with tin or water proof material.

e. Wattle wall is mainly the product of terrain and forest cover. This is due to availability of material almost without cost and skill among the owners. These houses are mostly occupied by aboriginals of Vindhya and Satpura. Mostly Gonds and Bhils reside in such houses. Their small dwellings occupy even the slopes and summits of the hills.



Wattle used as building material

**Fig 3.5**

### **3.4.5. Building Materials Used for Roofs**

These materials can broadly be grouped under **seven categories**. These are

(i) tiles, (ii) thatch, (iii) mud and other material, (iv) stone slab,

(v) wood, (vi) brick (vii) tin and other materials

a. Tiled roofs are common throughout India. Semi-cylindrical and flat are the two types of tiles used for covering houses with varied sizes and forms. The size of tiles is larger in northern Indian plain and shorter in plateau and hilly areas.

b. Thatching, the original shelter making skill, is still prevalent in most of the poor class people throughout India. All sorts of walls, whether made of stone, timber or mud are covered by thatch.

c. Mud thatching often mixed with cow dung, is common in western part of India. In western part of Uttar Pradesh such houses mark the horizon in each settlement. Its occasional plastering is enough to provide safety from rains. The typical thatched roofs of village homes in Kochi

and Jaisalmer, India, may have walls of loosely woven bamboo, to Rural Settlements in India let in breezes, or, more commonly, of mud mixed with straw.

d. Stone slabs or Flakes are being used since time immemorial in mountainous and plateau areas. The local geological structure dictates the nature of stone that is used. Therefore, while sandstone is common in Orissa, it is granite in Maharashtra. Sandstone and slate-slabs make durable roofs after being cut and designed according to need.

e. Wood as roof material is common in northern mountainous region of India. In the north-eastern states wooden slabs are carefully superimposed and joined with rounded corners. This protects house from snow and rainwater.

f. Bricks make flat and smooth roof in the form lintel mixed with iron rods and cement. This is observed in modern type rural house and commonly found in the houses of rural rich.

g. The use of traditional building material is decreasing and it is being replaced by building material like, iron, tin sheets, cement, etc. In **earthquake prone** areas the building material used are lightweight ones for example in India inhabitants of such area use wood as opposed to stone. In **flood prone areas** again cheapest building materials are used in the fear that flood may wash away the whole house. These are found in the riverine tracts of Bihar. Here cultivators live in huts with wattled and thatched roof. These materials are cheapest and easily available too.



Thatched roof

**Fig 3.6**



Slate roof, Himalaya

**Fig 3.7**

To conclude it can be said that with technological development decrease in the use of traditional building materials is observed in rural areas. Modernisation and financial help from different sectors have helped in replacing them by tin sheet, iron cement etc.

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### 3.5. MORPHOLOGY OF RURAL SETTLEMENT

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- **Morphology refers to the internal structure or the constructional plan of a village** which includes the layout of streets and roads, arrangement of houses, pattern of housing, geometrical size and shape of village and agricultural fields, location of either the water body, religious site, or the house of the village headman.

- Rural Morphology includes

- **Physical Morphology**

- **Social Morphology**

#### Physical Morphology

- Physical Morphology includes the study of the relationship between the following:

- **Road to lane relationship:** It includes how roads are connected to lanes.

- **Lane to lane relationship:**

- **It is description of geometrical arrangement of lanes.** How they are connected to each other and ending at what points.

- In Indian villages, lanes are extremely narrow meandering and ending abruptly. This shows unplanned character of Indian villages.

- **In UK, cruciform villages have all the lanes cutting across 90 degree, because they are planned villages.**

- **Lane to house relationship:**

- **Geometry of lanes determines the arrangement of houses** because houses grow along lanes.

- In India, lanes are largely **unplanned** and arrangement of houses determines the lane type.

- **House to house relationship:**

- **Physical morphology is also determined by the spacing between the houses.**

- **In clustered villages, houses are unevenly spaced** or they have wall to wall arrangement.

- Houses are hardly according to geometrical plan and their average height is variable.

- There is clustering of houses based on **social structure/cast system.**

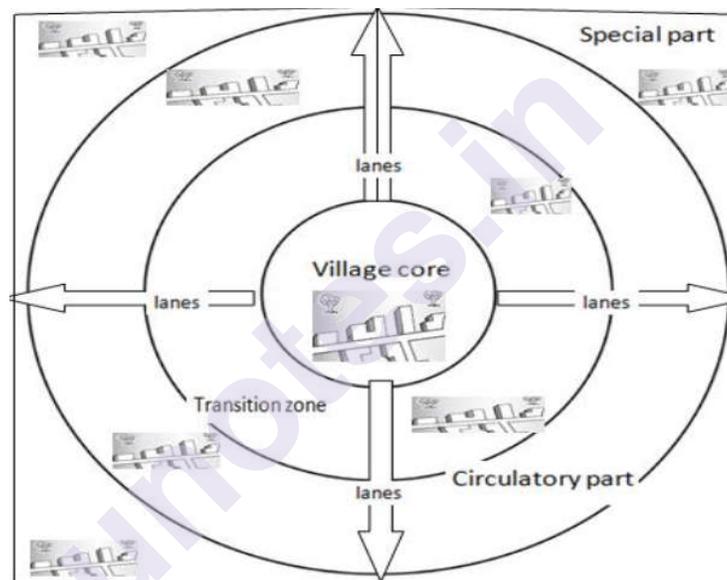
- Role of **geometrical shape of the agriculture field also determines the village pattern.** Rural Settlements in India
- House type can range from ‘**Pucca**’ to ‘**Kutch**’ and in older parts of villages, ventilation is closed to the roof (depends on whether village is developed or not).

### **Social Morphology**

- It refers to the **social structure of a village which is based on cast, or class.**
- **In Indian villages, caste hierarchy is reflected in the morphology of villages.**
- Social factors like division of work, untouchability (not so prominent now), social prohibition over the work of women and lower casts had all led to a distinct social morphology of Rural Settlements from urban ones.
- The following factors affect the following morphological character of villages:
  - **Arrangement of buildings**
  - **Pattern of streets and fields**
  - **Functional characteristics of settlement.**
- For example, **the houses of higher cast people like Brahmins and Rajputs would be large and people from the lower cast would have huts, kutch houses with cattle.**
- The intermediate regions of rural settlement comprise of the people of service casts like Ahirs, Jats, Loth, etc.
- Cast based hamlets at times emerge. These are closely linked with centre under the **Jajmani system** (inter cast cooperation like higher cast people requiring lower cast people for some specific work like ironsmith) and act like a unit.
- **K. N. Singh** in his **religious ritual and secular dominance model highlighted the importance of two concepts:**
  - ***Development of twin settlement which included:***
    - Caste Hindus
    - Outcasts
  - The segregation was much pronounced during the past favouring the outgrowth of the helmeted structure of villages, In the case of compact settlements out-castes generally lived on the outer parts of the built-up area in a direction (south, south-east, and north, etc.) less conducive

for wind movement, for even air gets polluted after coming in contact with a Shudra's body.

- How and why these traditions came into being is a matter of debate amongst scholars, but the author believes these untouchables to be the remnant of the pre-Aryan tribes who were always despised by the Aryans and later Rajput settlers.
- *Secular dominance model:* Under this model, all caste and religion came together as functional units under the **old Jajmani system**. For example, landowners required the services of landless people for the cultivation of fields.
- Thus, the socio-cultural traits of rural settlement is also a field of study in the settlement system



### classification of Rural Morphology

- **Earliest attempt to classify Rural Morphology was done by Doxiadis.**
- He classified rural morphology into **four sectors**:
- **Homogenous sector or Village core:**
- It consists of the central part of the village.
- It has a religious site, water body or Zamindar/ Village headman's house, or community land.
- It is surrounded by the own caste man of village Zamindar.
- It is the most densely populated region and congested part of the village reflecting patriarchal society and security concerns.

- **Transitional zone**
- This part is occupied by the village servicemen e.g. Goldsmith, Blacksmith, Milkman, weavers, etc.
- This zone is attached with the core of the village where middle caste people are mixed with poor upper caste people.
- This zone is also known as the Artisans zone.
- **Circulatory part:**
- It is the outer periphery of the village where new houses and settlers have been migrated or settled outward due to congestion of the core.
- Thus, this zone has mixed land use in terms of social structure.
- **Special part:**
- It was occupied by landless labours outside the village close to farmlands because of work opportunities on-field and social segregation.
- They are usually the people from the lower castes.

#### Features of rural settlements (summary)

- **Small population**
- **Low density**
- **Small size**
- **People engaged in primary activities**
- **Distinct culture**
- **More emphasis on interpersonal relationship such as family, community living (centripetal force)**
- **Urban areas are more isolated than rural areas**



## URBAN SETTLEMENT

**After going through this chapter you will be able to understand the following features:**

### Unit Structure

- 4.1 Objectives
- 4.2 Introduction
- 4.3 Subject discussion
- 4.4 Types of Urban Settlement on the basis of population –
  - a. Town b. City
  - c. Metropolitan city
  - d. Megalopolis e. Conurbation
- 4.5 Types of urban settlement on the basis of Location f. Coastal
  - g. Nodal
  - h. Continental
- 4.6 Types of urban settlement on the basis of Pattern i. Linear
  - j. Circular k. Square l. Fan
  - m. Net or Reticulum n. Star or radial
  - o. Arrow
- 4.7 Types of urban settlement on the basis of Function p. Industrial
  - q. Educational
  - r. Administrative s. Regional
  - t. Tourism u. Cultural
  - v. Commercial
  - w. Transformational
- 4.8 Summary
- 4.9 Check your Progress/Exercise
- 4.10 Answers to the self learning questions
- 4.11 Technical words and their meaning
- 4.12 Task
- 4.13 References for further study

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## 4.1 OBJECTIVES

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By the end of this unit you will be able to –

- Understand different types of urban settlement on the basis of Population like town, city, metropolitan city, megalopolis and conurbation
- Know about types of urban settlement on the basis of Pattern like, linear, circular, square, fan, net or reticulum, star or radial and arrow
- Understand different types of urban settlement on the basis of Function for example industrial, educational, administrative, regional, tourism, cultural, commercial, and transformational

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## 4.2. INTRODUCTION

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In chapters six and seven we have studied the definition, nature, scope and importance of urban settlement, its characteristics along with rural urban fringe. Physical and economic factors affecting urbanisation, growth of world urbanisation, problems in urbanisation its solution as well as planning has also been discussed. We have studied Sustainable development of Towns also. Now in this chapter we are going to learn the types of Urban Settlement on the basis of population, location, pattern and function. Some of the examples are town, city, metropolitan city linear, circular, square, fan, coastal, nodal, continental etc.

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## 4.3. SUBJECT-DISCUSSION

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Settlements are any form of human habitation that ranges from a single dwelling to a large city. It can be broadly divided into two types – rural and urban. The basic difference between rural and urban lies in their functions. Urbanisation is the result of a natural increase in the population as well as rural to urban migration. Urban Settlements are a populated place that encompasses a certain population. Each and every urban settlement fulfils industrial, transportation, cultural, and administrative functions. The classification of urban settlements is determined by their economic and social functions and the size of their population. In a number of countries the only criteria for considering a populated area an urban settlement is the population or its administrative role. Classification based on size and functions are most common.

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## 4.4. TYPES OF URBAN SETTLEMENT

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An urban settlement has a large population size and a high population density where secondary activities like manufacturing and tertiary activities such as trade are dominant.

It is observed that there is no common definition of what constitutes an urban settlement. As a result, the definition varies widely across countries, and in some cases has changed over time within a country. The criteria for classifying an area as urban may be based on one or a combination of characteristics, such as: a minimum population threshold; population density; proportion employed in non-agricultural sectors; the presence of infrastructure such as paved roads, electricity, piped water or sewers; and the presence of education or health services.

Urban settlements may be classified on various bases. However, classification based on size and functions are most common. According to population size, census of India classifies urban centres into six classes. Class wise urban settlements and their population are given below in a tabular form.

v) **Classification of Urban Settlement**

Class		Population
Class	I	1,00,000 and above
Class	II	50,000 – 99,999
Class	III	- 20,000 – 49,999
Class	IV	- 10,000 – 19,999
Class	V -	5,000 – 9,999
Class	VI -	less than 5,000

1. **Types of Urban Settlement on the basis of population**

On the basis of population size and the services available and functions rendered, urban settlements are designated as town, city, million city, conurbation, and megalopolis. Population size of a place is not a reliable determinant of urban character. It is observed in many parts of the world, as in present India, a large village might contain several times as many people as a small town. In the United Kingdom, there are historical cities that are far smaller than the larger towns.

a. **Town**

A human settlement that is larger than a village but smaller than a city is known as town. The size definition for what constitutes a "town" varies considerably in different parts of the world. It is a place having a municipality or an administration of a notified committee and the population may range between 2000 to 20000. Population size is not the only criterion to designate a settlement as town. Specific functions such as, manufacturing, retail and wholesale trade, and professional services exist in towns. The population of a town earn their livelihood from manufacturing industry, commerce, and public services rather than primary industry such as agriculture or related activities. Temporary

mining locations or some similar forms of non-rural settlement which are clearly non-rural may not be designated as a town. Urban Settlement

According to the 2011 Census of India towns are of two types i.e., Statutory town and Census town. A settlement is designated as a Statutory town when it has a municipality, corporation, Cantonment Board etc. Whereas, Census town is defined based on the places that satisfy the following criteria: i) a minimum population of 5,000; ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and iii) a density of population of at least 400 per km<sup>2</sup>. (1,000 per sq. mile). All the Statutory towns, Census towns and Out growths are considered as urban settlements.

Examples of towns are Adra, Puruliya, in West Bengal (census town), Karimganj in Assam has a population 56,854, (2011 census), Karjat in Maharashtra, has a population of 29,663, (2011 census).

### **b. City**

City, a large and permanent human settlement, may be regarded as a leading town. According to Lewis Mumford, "the city is in fact the physical form of the highest and most complex type of associative life". It is an urban centre having population between one lakh to one million. Cities are much larger than towns and have a greater number of economic functions. Generally a city has transport terminals, major financial institutions and regional administrative offices. In city complex systems for sanitation, utilities, land usage, housing, and transportation are found. It also has a particular administrative, legal, or historical status based on local law. When the population crosses the one million mark it is designated as a million city. Kolhapur, Kalyan, Kamptee, Kandhar, Akola, Bassein, Bhusawal are a few examples of cities in Maharashtra, India.

### **c. Metropolitan city**

Metropolitan Cities are those Cities which have population in between one million to five million.

#### **v) List of Metropolitan cities of India**

Sl. No.	City	Population in 2011	State
1.	Mumbai	12,478,447	Maharashtra
2	Delhi	11,007,835	Delhi
3	Bangalore	8,425,970	Karnataka
4	Hyderabad	6,809,970	Andhra Pradesh
5	Ahmedabad	5,570,585	Gujarat
6	Chennai	4,681,087	Tamil Nadu

7	Kolkata	4,486,679	West Bengal
8	Surat	4,462,002	Gujarat
9	Pune	3,115,431	Maharashtra
10	Jaipur	3,073,350	Rajasthan
11	Lucknow	2,815,601	Uttar Pradesh
12	Kanpur	2,767,031	Uttar Pradesh
13	Nagpur	2,405,421	Maharashtra
14	Indore	1,960,631	Madhya Pradesh
15	Thane	1,818,872	Maharashtra
16	Bhopal	1,795,648	Madhya Pradesh
17	Visakhapatnam	1,730,320	Andhra Pradesh
18	Pimpri-Chinchwad	1,729,359	Maharashtra
19	Patna	1,683,200	Bihar
20	Vadodara	1,666,703	Gujarat
21	Ghaziabad	1,636,068	Uttar Pradesh
22	Ludhiana	1,613,878	Punjab
23	Agra	1,574,542	Uttar Pradesh
24	Nashik	1,486,973	Maharashtra
25	Faridabad	1,404,653	Haryana
26	Meerut	1,309,023	Uttar Pradesh
27	Rajkot	1,286,995	Gujarat
28	Kalyan-Dombivali	1,246,381	Maharashtra
29	Vasai-Virar	1,221,233	Maharashtra
30	Varanasi	1,201,815	Uttar Pradesh
31	Srinagar	1,192,792	Jammu and Kashmir
32	Aurangabad	1,171,330	Maharashtra
33	Dhanbad	1,161,561	Jharkhand
34	Amritsar	1,132,761	Punjab

35	Navi Mumbai	1,119,477	Maharashtra
36	Allahabad	1,117,094	Uttar Pradesh
37	Ranchi	1,073,440	Jharkhand
38	Howrah	1,072,161	West Bengal
39	Coimbatore	1,061,447	Tamil Nadu
40	Jabalpur	1,054,336	Madhya Pradesh
41	Gwalior	1,053,505	Madhya Pradesh
42	Vijayawada	1,048,240	Andhra Pradesh
43	Jodhpur	1,033,918	Rajasthan
44	Madurai	1,016,885	Tamil Nadu
45	Raipur	1,010,087	Chhattisgarh
46	Kota	1,001,365	Rajasthan

(Source: Census 2011)

#### d. Megalopolis:

This Greek word meaning “great city”, was popularised by Jean Gottman (1957) and signifies ‘super- metropolitan’ region extending, as union of conurbations. A very large, heavily populated city or urban complex having more than 5 million population is known as Megalopolis. This urban region, consist of several large cities and suburbs that adjoin each other. This term has been used for the most massive concentration of urbanised settlement on the Atlantic sea board of North America over a stretch of 900 kms from Boston in the north to Florida in the south. A megalopolis is formed from the coalesce of chain of metropolitan areas. Each of these metropolitan areas again have grown around a substantial urban nucleus.

Mumbai, Maharashtra, in India is a megalopolis, which also includes Thane, Navi Mumbai, Kalyan-Dombivali, Ulhasnagar, Vasai-Virar, Ambernath, Badlapur, and Panvel. Pune in Maharashtra is another one which also includes Pimpri-Chinchwad, Aurangabad, Solapur, Nashik, Ahmednagar, Alibag (39,500,000). Other Megalopolis in India are Delhi National Capital Region and Jaipur (35,000,000), Gujarat - Ahmedabad, Gandhinagar, Surat, Vadodara, Rajkot, Anand, Nadiad, Bharuch, Ankleshwar (19,200,000), Kolkata (Also includes the suburban areas of kolkata Barrackpore, Dum Dum, Bidhannagar, Naihati, Kanchrapara, Kankinara, Kalyani, Rajarhat, Ichapore, Halisahar and Howrah)

#### e. Conurbation

The term conurbation was coined by Patrick Geddes in 1915. A conurbation is an extended urban area, comprising a number of cities, large towns, and other urban areas which have merged to form one continuous urban and industrially developed area, through population

growth and physical expansion, such as "the major conurbations of London and Birmingham". Usually, a conurbation is a polycentric urban agglomeration, where transportation has developed to link areas to create a single urban labour market or travel to work area. Thus conurbation is a city that has expanded into the surrounding towns (urban sprawl) and is now one big settlement under one name.

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#### 4.5 TYPES OF URBAN SETTLEMENT ON THE BASIS OF LOCATION

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Primarily the availability of water, building materials and fertile land were the bases of locations of the earliest urban settlements. Today, while these considerations still remain valid, modern technology plays a significant role in locating urban settlements far away from the source of these materials. For example piped water can be supplied to a distant settlement; building material can be transported from long distances. So dependency on above stated locational factors for urban settlements has diminished.

Different sites play an important role in location of a town. They are stated under:

- a. **Coastal** - When a town is located on the coast it is called coastal town. Mumbai in Maharashtra, Visakhapatnam in Andhra Pradesh, Kanyakumari in Tamil Nadu are a few examples of coastal town in India.
- b. **Nodal** town develop at the convergence points of rivers, roads and railways. These towns do not serve the surrounding territory. The passengers who pass through these routes are the source of support to these towns. New York is an example of nodal town.
- c. **Continental** – When a town is surrounded by land only it may be designated as continental such as Kabul in Afghanistan and Kathmandu in Nepal.

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#### 4.6 TYPES OF URBAN SETTLEMENT ON THE BASIS OF PATTERN

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A pattern of urban settlements is influenced by the surrounding topography and terrain. This includes, linear, circular, square, fan, net/reticulum, star/radial, arrow and terrace pattern.



**Fig 4.1**

**a. Linear** settlement is type of settlement that has grown in a line. The line doesn't have to be straight, but will normally follow a road, a river, the coast or the valley floor. Thus this type of pattern includes all urban settlements where the buildings are built along pre-defined lines varying from straight to curved ones. Towns may be aligned along transport routes, cardinal directions or natural features such as slopes and streams. A linear settlement pattern is also visible along the road. Many people make their houses along these transport routes so that it becomes easier to transport their goods. Lined form of urban settlements have been described by various names like rectangular, herringbone, linear, horse-shoe shaped T or Y shaped or arcuate. It usually forms a long and narrow pattern, which can be maintained even when the population grows. Physical features sometimes induce lineation. In hilly areas settlements are aligned along the shoulder of a spur or the top of a ridge taking the advantage of the gentler slope of the region.

**b. Circular** - When urban settlements occur on all sides of some lakes, ponds, wells, a fort, temple, meander bank and bend of a stream they are known as circular settlements.. When the houses are constructed along these sites, the settlement takes the shape of circle and hence is known as circular pattern. Circular settlements may even cover large portion of a land and thus appear as semi-circular changing their shape. Such settlements are also found in the Malwa region, Punjab and Gujarat where large settlements are characterized by a very high degree of compactness.

**c. Square** - Square or rectangular cluster-with straight streets running parallel or at right angles to one another. They are found in Sutlej-Ganga plain in India and in planned settlements of Germany, Malaysia, Israel, France, etc.

**d. Fan** - This is seen where some focal points or line is situated at one end of the town. A focal object may be a tank, a riverside, a road, an orchard, a well or even a place of worship. In delta areas or at the base of mountains settlement found at the centre head extent is fan shaped pattern on all sides. Such settlements can be found in the delta areas of

Godavari, Krishna and Mahanadi rivers and in alluvial regions at the foothills of Himalayas.

**e. Net/Reticulum:** Isolated homes with a central court yard found in different parts of India. Net type of settlements is irregularly distributed in the villages. In Birbhum district, West Bengal Net/Reticulum settlements are observed.

**f. Star/Radial:** In urban settlements where the dwellings are spread out in several directions from a central point, either around a big water body or where many routes join together is known as star or radial settlements. A settlement acquires a star-like pattern when streets radiate from a common centre. After the expansion of these settlements as a result of population growth the formation sometimes changes into a double radial pattern. This type of pattern is more common in Tamil Nadu and Upper Ganga Plain.

**g. Arrow** - On the meeting of the roads or two rivers arrow head pattern of settlements occur. Triangular pattern is a special feature of this type of settlement and is found on any triangular patch of land.

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## 4.7 TYPES OF URBAN SETTLEMENT ON THE BASIS OF FUNCTION

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### Functional Classification of Towns

Besides playing a role as central or nodal places, many urban settlements or towns and cities perform specialised services. These towns or cities specialise in certain functions and are designated according to the dominant function they perform. However, each town performs a number of functions.

**a. Industrial-** An industrial town is an urban settlement where the economic system is based on industry. Hence in industrial towns industries constitute prime motive force of these cities such as Mumbai, Salem, Coimbatore, Modinagar, Jamshedpur, Hugli, Bhilai, etc. Ludhiana is an example of industrial town in Punjab. Woollen hosiery is Ludhiana's pride. It also dominates the machine tools industry. Tirupur in Coimbatore district of Tamil Nadu has in the last decade grown as an industrial hamlet.

### b. Educational towns

Initially these towns have started as centres of education but with time some of the towns have grown into major campus towns such as Roorki, Varanasi, Aligarh, Pilani, and Allahabad in India and Cambridge, Oxford in United Kingdom. They are characterised by universities, college buildings, libraries and playground. These towns also have shops that fulfil the student's requirements such as book shop, sport shop, etc.

### **c. Administrative towns and cities**

Towns supporting administrative headquarters of higher order are administrative towns, such as Chandigarh, New Delhi, Bhopal, Shillong, Guwahati, Imphal, Srinagar, Gandhinagar, Jaipur Chennai, etc.

### **d. Regional–**

a town that is related to a large geographic region or relating to a particular region or district or pertaining to a particular part of a country.

### **e. Tourism - Tourist towns –**

Nainital, Mussoorie, Shimla, Pachmarhi, Jodhpur, Jaisalmer, Udagamandalam (Ooty), Mount Abu are some of the tourist destinations.

### **f. Cultural towns**

These towns have cultural functions like the inoculation of education, art galleries and religious buildings. The cultural significance of Varanasi, Mathura, Amritsar, Madurai, Puri, Ajmer, Pushkar, Tirupati, Kurukshetra, Haridwar, Ujjain are the reasons behind their prominence.

### **g. Commercial towns**

Towns and cities specialising in trade and commerce are kept in this class. Kolkata, Saharanpur, Satna, in India and London, (England), New York (U.S.A), Frankfurt (Germany), etc. are some examples. These towns have business houses, banks, insurance companies and other financial organisations. Commercial towns also offer many other commercial services.

**h. Transformational** - relating to, characterized by, or concerned with transformation of a town.

To summarise it may be said that the cities are not static in their function. As functions change due to their dynamic nature, even specialised cities, when they grow into metropolises become multifunctional and industry, business, administration, transport, etc. become important. All the functions are very much interrelated so it is difficult to categorise a city in a particular functional class.

**The following chart shows name of some cities and their functions**

<b>Functions</b>	<b>Name of the cities</b>
1. Administrative	New Delhi, Chandigarh, Bhubaneshwar, Gandhi Nagar, Thiruvananthpuram, Imphal, etc.
2. Industrial,	Jamshedpur Bhilai, Salem, Coimbatore, Modinagar, Surat, etc.
3. Transport	a. Port cities like Kandla, Kochi, Vishakhapatnam, etc.
	b. Road and Railway Junctions like Mughal Sarai, Itarsi, Katni, Kharagpur, Agra etc.
4. Commercial towns	Kolkata, Mumbai, Saharanpur, Indore, Chennai,
5. Mining towns	Raniganj, Jharia, Dhanbad, Digboi, Ankaleswar, Singrauli, etc.
6. Cantonment	Meerut, Ambala, Jalandhar, Mhow, Pathankot,
7. Educational	Roorkee, Pilani, Manipal, Aligarh, Varanasi, etc.
8. Religious	Puri, Mathura, Madurai, Tirupati, Katra, Amritsar, Allahabad, Varanasi, etc.
9. Tourist	Nainital, Mussorie, Shimla, Pachmarhi, Udagamandalam (ooty), Mount Abu, Gangtok

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**4.8 SUMMARY:**

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Modernization and industrialization play an important role in population increase in urban areas. In this chapter we have studied about different types of urban settlements. Urban settlement may be classified on the basis of population like town, city, metropolitan city, megalopolis and conurbation, on the basis of pattern like, linear, circular, square, fan, net or reticulum, star or radial and arrow. Furthermore on the basis of function this is classified as industrial, educational, administrative, regional, tourism, cultural, commercial, and transformational urban settlements. In short, a Town has less than one lakh population, City urban centres have population between one lakh to one Million, Metropolitan Cities have population in between one million to five million and Mega cities have more than 5 million population. Now people live in urban settlements for retailing, wholesaling, manufacturing, business services, entertainment, political administration, military defence, social and religious services, public services, educational services, transportation and communication, recreation etc. The

location of the urban centres may be categorised as, a. Site – Urban Settlement conditions at that point, b. Situation – relative location, c. Transportation accesses, and d. Break of bulk (ports).

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## 4.9 CHECK YOUR PROGRESS/ EXERCISE

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### 1. True false

- a. Urban settlements may be classified on various bases among which size and functions are most common.
- b. In France, there are historical cities that are far smaller than the larger towns.
- c. In village complex systems for sanitation, utilities, land usage, housing, and transportation are found.
- d. When urban settlements occur on all sides of some lakes, ponds, wells, a fort, temple, meander bank and bend of a stream they are known as circular settlements.
- e. When a town is surrounded by land only it may be designated as continental such as Mumbai, India.

### 2. Fill in the blanks

- a. ----- Cities are those Cities which have population in between one million to five million.
- b. Nodal town develop at the ----- points of rivers, roads and railways. These towns do not serve the surrounding territory.
- c. -----in a line.settlement is type of settlement that has grown in the line.
- d. An industrial town is an urban settlement where the economic system is based on ----- .
- e. ----- town is one that is related to a large geographic region or relating to a particular region or district or pertaining to a particular part of a country.

### 3. Multiple choice question

- a. Cities which have population in between one million to five million are known as
  - i. Metropolitan Cities
  - ii. Town
  - iii. Megalopolis
- b. Linearsettlement is type of settlement that has grown in a line

- i. normally following a road, a pond, the coast or on the hill top ii. normally at the points of rivers, roads and railways..
- iii. normally following a road, a river, the coast or the valley floor.
- c. Towns and cities such as Kolkata, Saharanpur, Satna, in India and London, (England), New York (U.S.A), Frankfurt (Germany), specialising in trade and commerce are known as
  - i. Commercial towns ii. Cultural towns
  - iii. Tourist towns
- d. An example of a Cantonment is
  - i. Ambala
  - ii. Roorkee iii. Puri
- e. In Square urban settlement,
  - i. settlement are grown in a line.
  - ii. straight streets run parallel or at right angles to one another. iii. the settlement takes the shape of circle.

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#### **4.10 ANSWERS THE FOLLOWING QUESTIONS**

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1. Classify urban settlement on the basis of population. Define any three of them with examples from India.
2. Write short notes on coastal, nodal and continental urban settlement.
3. What is a conurbation?
4. What is an industrial town?
5. What is an educational town?
6. Describe different types of urban settlement on the basis of their pattern.
  - 1.a. true
  - 1.b. false, the United Kingdom
  - 1.c. False, city
  - 1.d. true
  - 1.e. false, Kabul in Afghanistan.
  - 2.a. Metropolitan
  - 2.b. convergence

- 2.c. Linear
- 2.d. industry
- 2.e. Regional
- 3.a.i.
- 3.b.iii
- 3.c.i.
- 3.d.i.
- 3.e.ii.

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#### 4.11 TECHNICAL WORDS:

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1. **Metropolitan**-relating to or denoting a metropolis
2. **Convergence**-the process or state of converging
3. **Conurbation**-a city area containing a large number of people, formed by various towns growing and joining together
4. **Megalopolis**-a very large, heavily populated city or urban complex.
5. **Cantonment**-a military garrison or camp
6. **Continental**-of, relating to, or located on a continent

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#### 4.12 TASK

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1. In a chart draw and describe different types of urban settlement on the basis of pattern.
2. In a chart make a list of metropolitan cities of India and state in which Indian state they belong to.

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## URBAN SETTLEMENT IN INDIA

**After going through this chapter you will be able to understand the following features:**

### Unit Structure

- 5.1 Objective
- 5.2 Introduction
- 5.3 Subject discussion
- 5.4 Definition of Urbanisation
- 5.5 Factors affecting urbanisation- a. Physical, b. Economical
- 5.6 Growth of world urbanisation
- 5.7 Problems in urbanisation- a. Solution, b. Planning
- 5.8 Solutions of Urbanisation
- 5.9 Sustainable development of Towns
- 5.10 Sustainable Development of Towns in India
- 5.11 Summary
- 5.12 Check your Progress/Exercise
- 5.13 Answers to the self-learning questions
- 5.14 Technical words and their meaning
- 5.15 Task
- 5.16 References for further study

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### 5.1 OBJECTIVES

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By the end of this unit you will be able to–

- Understand the physical and economic factors affecting urbanisation
- Know about the growth of world urbanisation
- Understand the problems in urbanisation, solution and planning
- Know about the sustainable development of towns

## 5.2. INTRODUCTION

In the previous chapter we have studied the definition, nature, scope and importance of urban settlement along with its characteristics. Rural Urban Fringe has also been discussed. Now in this chapter we are going to learn the physical and economic factors affecting urbanisation along with the growth of world urbanisation. Problems in urbanisation its solution as well as planning will also be learnt. Sustainable development of Towns will be studied in the latter part of this chapter.

## 5.3. SUBJECT-DISCUSSION

With the advent of agriculture man began to change the land and with the industrial revolution, urbanisation happened. Urbanization occurs when people move from rural to urban areas. As a result the proportion of people living in cities increases while the proportion of people living in rural areas diminishes. In the last century there was a rapid growth of urbanization among the world's population. In 1900, just 13% of people lived in cities; by 1950, the proportion rose to 29%. According to projections, the proportion could reach 60% by 2030, or nearly 5 billion people.

The sustainable city is a relatively recent concept. Sustainable development is one of the major components of territorial development policy in a number of countries. This has gained immense attention in the last decades both through the international community and through grass root movements.

## 5.4 DEFINITION OF URBANISATION

Urbanization is pervasive and recent phenomenon. When population shift from rural to urban areas it is known as urbanization. Urbanization is "the gradual increase in the proportion of people living in urban areas", together with the ways in which each society adapts to the change, the process by which towns and cities are formed and become larger as more and more people begin living and working in central areas.

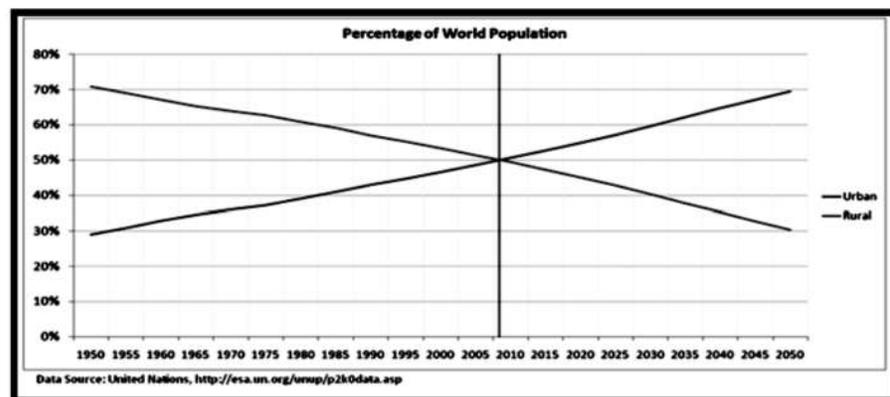


Fig 5.1 : Rural and Urban World Population

Another term for urbanization is “rural flight”. It is so termed because the more and more people leave villages to live in cities, the result is urban growth. This kind of growth is very common in developing countries and the rapid growth of Mumbai can be attributed largely to rural-urban migration. So, Urbanization is the physical growth of urban areas as a result of rural migration and even suburban concentration into cities.

The idea of urbanism in India is somewhat different from that of the west. Here the rural urban distinction has never been very sharp.

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## 5.5 FACTORS AFFECTING ON URBANISATION

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### a. Physical,

### b. Economical

In the demographic sense, the factors regarding the increase in the proportion of urban population to the total population over a period of time may be attributed to the rural-urban migration. Urbanisation generally occurs with modernisation and industrialisation. There are many physical and economic factors that often motivate urbanisation. These are generally known as pull and push factors. These factors pull people to cities at the same time they push people from rural homes. A Push factor is something that can force or encourage people to move away from rural area. Push factors, those are physical may include famine, drought, flooding. The Push factors which are economical can be, lack of employment opportunities, population growth and over population, and civil war. A Pull factor is one in which encourages people to move to an area. Pull factors include the chance of a better job, better access to education and services, and a higher standard of living. There are three components of urban population growth

- i. natural growth of urban population
- ii. rural urban migration and
- iii. the reclassification of areas previously defined as rural.

Natural increase provides a base for urban population growth rates, while rural-urban migration and reclassification supplement this growth. It is found that with the urbanization process the natural increase of the population in the city often declines sharply, for example, in Thailand, Malaysia and Indonesia.

### a) Physical factors

- **Flat Land:** Compared to the hills, the plain area makes it easier to build offices and associated facilities. For example Kolkata.
- **Climate:** The regions having high temperature attract less people than the regions having slightly cooler climate making the working environment more bearable.

- **Site:** Site is another important factor. The central location makes it easy for businesses to trade through the neighbouring countries.
- **Coast:** Urbanisation in the city of Mumbai is an example of coastal location. This enables the businesses to trade by sea.
- **Transport:** Well developed transport system such as roads, railways, highways that run through the city make trade with the rest of city and other parts of the country easier. Presence of international airport is also important.
- **Education:** If the urban area is home to the best national or international schools and universities it would definitely pull rural folks towards it. This means that there are trained and skilled workers to work in business, but also facilities to carry out research.
- **Communications:** Nowadays major cities have the best internet connections and mobile phone network making it easier for businesses to communicate with customers and suppliers.
- **Market:** There is no doubt that a biggest urban settlement will have a large market to sell their products
- **Workforce:** The larger the population of any settlement the large will be the supply of both manual and professional workers.
- **Capital:** If the city is the capital of a state of nation it is home to the country's main banks, so it is easier for companies to raise capital to invest in their businesses.

#### **b) Economical factors**

There are innumerable economic factors that have led to the growth of cities. They are as follows:

- **Industrialization:**

Industrialization, which has expanded the employment opportunities, is an important cause of urbanization. Rural people have migrated to urban areas on account of better employment opportunities. In the urban areas, people work in modern sector in the occupations that assist national economic development. This represents the trend in where old agricultural economics changes to a new non-agricultural economy.

- **Employment opportunities:**

In rural sector people were mainly dependent on agriculture for their livelihood. But when natural calamities like, flood, drought, famine affected cultivation rural folk migrated to the urban areas. India exhibits a good example. Indian agriculture being highly depended on monsoon,

during drought situations or natural calamities, rural people are forced to migrate to cities.

- **Modernization:**

People wish to lead a comfortable life. Urban areas are characterized by modern technology, better infrastructure, communication and medical facilities. These attract the rural mass, and to have a better life they migrate to cities.

- **Emergence of large manufacturing centres**

It provides ample job opportunities in mega cities therefore village people or individuals rural areas frequently migrate to these city areas.

- **Availability of transportation:**

Due to easy transport, people prefer to stay in big cities.

- **Infrastructure facilities in the urban areas:**

This plays a vital role in the process of urbanization. As agriculture becomes more fruitful, cities grow by absorbing workforce from rural areas. Industry and services increase and generate higher value-added jobs, and this led to economic growth. The geographic concentration of productive activities in cities creates agglomeration economies, which further raises productivity and growth. The augments income and demand for agricultural products in cities.

- **Migration:**

Migration is main cause for rapid growth of urbanisation. Migration is a normal phenomenon and has been going on since time immemorial. When considering urbanization rural-urban and urban- rural and rural-rural migrations are very important. People may move to the city because they are forced by poverty from rural community or they may be pulled by the magnetism of city lives.

- **Social factors:**

Many social factors such as attraction of cities, better standard of living, better educational facilities, need for status also induce people to migrate to cities.

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## 5.6 GROWTH OF WORLD URBANISATION

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“Managing urban areas has become one of the most important development challenges of the 21st century. Our success or failure in building sustainable cities will be a major factor in the success of the post-2015 UN development agenda,” said John Wilmoth, Director of UN DESA’s Population Division.

### **5.6.1 Trends**

The global urban population is expected to grow approximately 1.84% per year between 2015 and 2020, 1.63% per year between 2020 and 2025, and 1.44% per year between 2025 and 2030.

### **5.6.2 Present day scenario of world urbanisation**

The present day scenario of world urbanisation indicates that in the increasingly global and interconnected world, over half of the world's population lives in urban areas although there is still substantial variability in the levels of urbanization across countries. The record of 54 per cent of the world's population residing in urban areas in 2014 states that globally more people live in urban areas than in rural areas.

### **5.6.3 Global rural population**

The global rural population is now close to 3.4 billion and is expected to decline to 3.2 billion by 2050. Nearly 90 per cent of the world's rural population live in Africa and Asia. India has the largest rural population (857 million), followed by China (635 million).

### **5.6.4 Global urban population**

In 1950, 30 per cent of the world's population was urban. It is expected that by 2050, 66 per cent of the world's population will be urban. Many decades ago most of the world's largest urban agglomerations were found in the more developed regions. The urban population of the world has grown rapidly from 746 million in 1950 to 3.9 billion in 2014. In spite of its lower level of urbanization Asia, is home to 53 per cent of the world's urban population, followed by Europe with 14 per cent and Latin America and the Caribbean with 13 per cent. The world's urban population is expected to exceed six billion by 2045.

At present large cities are concentrated in the global South. The fastest growing urban agglomerations are medium-sized cities located in Asia and Africa. These cities have less than 1 million inhabitants.

It is expected that much of the urban growth will take place in developing countries, especially Africa. India, China and Nigeria, these three countries together are expected to account for 37 per cent of the projected growth of the world's urban population between 2014 and 2050. India is expected to add 404 million urban dwellers, China 292 million and Nigeria 212 million. Thus these developing countries will face various challenges to meet the needs of their growing urban populations. These may include housing, infrastructure, transportation, energy and employment, as well as the basic some services like education and health care.

Today, the most urbanized regions include Northern America (82 per cent living in urban areas in 2014), Latin America and the Caribbean (80 per cent), and Europe (73 per cent). In contrast, Africa and Asia remain mostly rural, with 40 and 48 per cent of their respective populations

living in urban areas. All regions are expected to urbanize further over the coming decades. Africa and Asia are urbanizing faster than the other regions and are projected to become 56 and 64 per cent urban, respectively, by 2050.

### **5.6.5 Mega-cities with more than 10 million people are increasing in number**

In 2014, there are 28 mega-cities worldwide, home to 453 million people or about 12 percent of the world's urban dwellers. Of today's 28 mega-cities, sixteen are located in Asia, four in Latin America, three each in Africa and Europe, and two in Northern America. By 2030, the world is projected to have 41 mega-cities with 10 million inhabitants or more.

Almost half of the world's urban population dwell in relatively small settlements has less than 500,000 inhabitants. Tokyo is the world's largest city having an agglomeration of 38 million inhabitants. It is followed by Delhi with 25 million, Shanghai with 23 million, and Mexico City, Mumbai with around 21 million inhabitants. By 2030, it is expected that the world will have 41 mega-cities with more than 10 million inhabitants. Tokyo is projected to remain the world's largest city in 2030 with 37 million inhabitants while Delhi will follow closely with expected rise in population to 36 million.

### **5.6.6 Small cities are numerous and many are growing rapidly**

Many of the fastest growing cities in the world are relatively small urban settlements. Nearly half of the world's 3.9 billion urban dwellers reside in relatively small settlements with fewer than 500,000 inhabitants. Some cities, located in the low-fertility countries of Asia and Europe, have experienced population decline in recent years. Population loss and decline in some cities is due to prevailing unstable economic condition and natural disasters.

### **5.6.7 Sustainable urbanization is the key to successful development**

It is clear from the above discussion that attention must be given to urban settlements of all sizes to have a successful urban planning. As the world continues to urbanize, sustainable development challenges will be increasingly concentrated in cities, particularly in the lower-middle-income countries where the pace of urbanization is fastest. Integrated policies to improve the lives of both urban and rural dwellers are needed.

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## **5.7 PROBLEMS OF URBANISATION**

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Although want of jobs, prosperity and better life pull people to cities, and half of the global population dwells there at present, urbanisation is not free of problems. By 2050 two-thirds of the world's people are expected to live in urban areas. But poverty and environmental degradation in cities are the two major problems that are faced by the

world today. Poor air and water quality, insufficient water availability, waste-disposal problems, and high energy consumption are exacerbated by the increasing population density and demands of urban environments. Urbanisation can cause problems such as transport congestion, lack of sufficient housing, over-rapid growth and environmental degradation. Many cities display particularly sharp inequalities in housing provision, health and employment. Strong city planning will be essential in managing these and other difficulties as the world's urban areas swell.

Some of the problems of urbanisation have been discussed below.

- Intensive urban growth can lead to greater **poverty**. Poverty means that human needs are not met. Often local governments are unable to provide services for all people.
- **Degradation of environmental quality**: Due to urbanization, there is environmental degradation especially in the quality of water, air and noise.
  - a. **Pollution of water**: Some factories and houses have poor infrastructure. So, the domestic waste, industrial effluents and other wastes are directly channelled to the nearest river or water resources which pollute the water and thus degrade the water quality.
  - b. **Air pollution**: One more after effects of urbanization is the air pollution which has also increased due to emanation from motor vehicles, industrial development and use of non- environmental friendly fuel sources. Automobile exhaust produces elevated lead levels in urban air. The concentrated energy use leads to greater air pollution which has significant impact on human health.
  - c. **Noise pollution**: The noise pollution is produced from the various human actions which also degrade the environment and ultimately affect the human health.
  - d. **Solidwaste**: The growth of population has generated a very high quantity of solid waste and there is pressure to provide a waste disposal place in the urban areas. Large volumes of uncollected waste create multiple health hazards.
- Urban development can magnify the risk of environmental hazards such as **flash flooding**. The maintenance of drains and debris collection is incompetent in the urban settlements which may raise serious problems such as flash floods and poor public health. The reappearance of flash floods is due to the drainage system being unable to contain surface water run-off that has greatly increased with the higher intensity of urban activities.
- Pollution and physical barriers to root growth promote **loss of urban tree cover**.

- Animal populations are inhibited by toxic substances, vehicles, and the loss of habitat and food sources.
- **Inefficient transportation system:** Urbanization created severe problem of transportation. With the movement of people from rural areas into metropolitan cities, the number of vehicles on the road is increased simultaneously every year. As more people move to the towns and cities, traffic congestion get worse. Various types of public transportation are provided in the cities without referring to the need to integrate the different modes of transportation. Consequently it is difficult for the user to change the modes of transportation. Due to the ineffective and not trustworthy public transportation urban people still prefer to drive private vehicles. This again led to the severe problem of blockage in the cities. If any traffic jam happens, public transportation, especially bus and taxi and private vehicles are trapped together and cannot move. It creates lot of problem for people.
- Some people try to escape these problems by moving away from the city - a process called counter-urbanisation. Long term, however, the solution must be to make cities more sustainable.
- Problems like inequalities are found in the inner city. Inequality means extreme differences between poverty and wealth.

This also includes people's well-being and access to things like jobs and education. Inequalities may also occur in access to services, access to open land, safety and security.

**Decline in quality of living for urban dwellers:** Urbanization decline the quality of living of urban inhabitants. With the development of a city, the land value will also increase. The more influx of people in cities, the more will be the demand of facilities such as housing. But the housing provision focuses more to fulfil the needs of the high income group in the cities. As a result, there will be problems to provide housing, especially for the middle and low class people. The urban poor suffer from inadequate supply of housing as the cost of these houses is very high and thus unaffordable. Hence the low income group continue unlawful resident settlements in the city. These unlawful tenant settlements, lacking in proper infrastructure bring about many hindrances to the urban environment. Social problems such as child education, crime, drugs, delinquency also show up as bad effects of urbanisation.

**Unsuccessful urban governance:** The urban authority undergoes with multifaceted challenges to manage a city. The local authority also deals with the different goals and interests of community groups which they need to fulfil. The local authority also needs to find solution for different social issues.

To conclude it may be said that although the cities are developed on two percent of the land's surface their inhabitants use over three-quarters of the world's resources and release similar amounts of wastes. In general urban wastes have local impacts but these are issues at global scale. The impacts of the cities are usually seen both locally and globally such as air pollution, city populations, as the major users of energy, cause both regional and worldwide pollution. These factors have adverse impact on health of the people, air quality and biosphere.

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## 5.8 SOLUTIONS OF URBANISATION

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- **Possible remedy for the urbanization issues and problems at global level:**
  1. **Combat poverty** by promoting economic development, job creation and make the economy of village and small scale fully viable. Economies will be revitalized if government undertakes huge rural development programme. Moreover surplus manpower may be absorbed in village in order to reduce migration to urban areas.
  2. It is needed to **control traffic congestion** in urban region and people must be encouraged to use public transport. Cities must improve the traffic control system to avoid accidents. Some cities have tried to manage this problem by introducing traffic management schemes such as, park and ride schemes, cycle lanes, congestion charging schemes, (as those in Durham and London), car-pooling, (as used in the USA), low emission zones, (as in London). Efforts of local councils to make the roads in urban areas may be taken into consideration.
  3. It is essential to implement **resilient clean-up campaign**.
  4. In order to accommodate the slum dwellers government must make policies to **construct low cost multi-storeyed flats**.
  5. Government should provide **funds** to encourage entrepreneurship and also find solution for pollution in the nation.
  6. **Development of health cities:** WHO reports indicated that, "A healthy city is one that is continually creating and improving the physical and social environments and expanding the community resources that enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential."
  7. **Involve local community in local government.** People from different backgrounds, including community members to government representatives, from cities were organized and encouraged to come together and work together in order to deal with the problems that emerge in urban environments.

8. **Reduce air pollution** by upgrading energy use and alternative transport systems.
9. Create **private-public partnerships** to provide services such as waste disposal and housing.
10. **Plant trees** and incorporate the care of city green spaces as a key element in urban planning.

### 5.8.1. Urbanization problems in Indian context

In India about 73 percent of its population live in rural villages. Hence the growth and speed of urbanization as compared to most of the other Asian countries has been usually slow.

It is known that urbanisation is a mechanism of economic, social and political progress. It can give rise to some serious socio- economic problems also. The absolute magnitude of the urban population, random and unplanned growth of urban areas, and lack of infrastructure are major issues in India due to urbanization. The fast growth of urban population both natural and through migration, has put immense pressure on public utilities like housing, sanitation, transport, water, electricity, health, and education.

Rural immigrants face problems regarding poverty, joblessness and under employment. Among them beggary, thefts, dacoities, burglary and other social evils are prevalent. urban slum encroaches the valuable agricultural land.

### 5.8.2. The major problems of urbanisation in India are as follows:

1. Urban Sprawl,
2. Overcrowding,
3. Housing,
4. Unemployment,
5. Slums and Squatter Settlements,
6. Transport,
7. Water,
8. Sewerage Problems,
9. Trash Disposal,
10. Urban Crimes, and
11. Problem of Urban Pollution

#### 1. Urban Sprawl:

Urban sprawl or real expansion of the cities, both in population and geographical area, of rapidly growing cities is the root cause of urban problems. In most cities, the financial support is unable to deal with the

problems created by their excessive size. Massive immigration from rural areas as well as from small towns into large cities occurring almost consistently resulted in the increase of the size of the city.

## **2. Overcrowding:**

Overcrowding, a logical consequence of over-population in urban areas, is a situation in which too many people live in too little space. It is naturally expected that cities having a large size of population squeezed in a small space must suffer from overcrowding. Overcrowding is well exhibited by almost all the big cities of India. Delhi, Mumbai, Kolkata, Chennai, Bangalore are examples of urban slump due to huge migration of people from the nearby places. Mumbai has one-sixth of an acre open space per thousand populations though four acre is suggested standard by the Master Plan of Greater Mumbai. Delhi has a population density of 9,340 persons per sq km (Census 2001). Population density in central part of Delhi could be much higher. Thus overcrowding leads to tremendous pressure on infrastructural facilities like housing, electricity, water, transport, employment, etc.

## **3. Housing:**

It is another intense problem due to urbanization in India. Overcrowding, leading to shortage of houses in urban areas, is specifically more acute in those urban areas where there is large influx of unemployed or underemployed immigrants. These people do not have any place to live in when they enter cities from the surrounding rural areas. Moreover, very slow rate of housing construction makes the problem further complicated. Indian cities require annually about 2.5 million new dwellings but less than 15 per cent of the requirement is being constructed.

## **4. Unemployment:**

The problem of unemployment is no less serious than the other problems of urbanisation. Urban unemployment in India is estimated at 15 to 25 per cent of the labour force. This percentage is even higher among the educated people.

## **5. Slums and Squatter Settlements:**

The rapid growth of urbanisation along with industrialisation has resulted in the growth, spread and enlargement of slums and squatter settlements. This presents a striking feature in the ecological structure of Indian cities, especially of metropolitan centres. The explosion of slums occurs due to many factors, such as, the lack of developed land for housing, the high prices of land beyond the reach of urban poor, a large influx of rural migrants to the cities in search of jobs.

## **6. Transport:**

Urbanization poses major challenge to transport system. Almost all cities and towns of India suffer from acute form of transport problem. With traffic bottleneck and traffic congestion transport

problems increase and become more complex as the town grows in size. With its growth, the town performs varied and complex functions and more people travel to work or shop.

### **7. Water:**

Scarcity of water in urban areas is a major problem. Water is one of the most essential elements of nature to maintain life and right from the beginning of urban civilisation. However, supply of water started falling short of demand as the cities grew in size and number. Keeping in view the increased demands for water by the urban population, Central Public Health and Environmental Engineering Organisation (CPHEEO) fixed 125-200 litres of water per head per day for cities with a population of more than 50,000, 100-125 litres for population between 10,000 and 50,000 and 70- 100 litres for towns with a population below 10,000. On the other hand The Zakaria Committee recommended the water requirement per head per day 204 litres for cities with population between 5 lakh and 2 million and 272 litres for cities with population more than 2 million. This amount of water is supposed to be used for drinking, kitchen, bathing, cloth washing, floor and vehicle washing and gardening.

### **8. Sewerage Problems:**

Urban areas in India face insufficient and inefficient sewage facilities. Not a single city in India has proper arrangements for treating the sewerage waste and it is drained into a nearby river or in sea as in Mumbai, Kolkata and Chennai and these activities pollute the water bodies. Resource crunch faced by the municipalities and unauthorised growth of the cities are two major causes of this pathetic state of affairs.

### **9. Trash Disposal:**

Urbanisation has led Indian cities grow in number and size. But problem of trash disposal faced by the dwellers is in an alarming stage. Most cities do not have proper arrangements for garbage disposal. The existing landfills which are full to the brim are hotbeds of disease. Moreover, countless poisons leak into their surroundings from these. As a result huge quantities of garbage produced by the urban inhabitants cause a serious health problem. People who live near the decomposing garbage and raw sewage become victims to several diseases such as dysentery, malaria, plague, jaundice, diarrhoea, and typhoid.

### **10. Urban Crimes:**

People from different walks of life, who have no affinity with one another, settle in urban centres. With the increase in urbanisation inhabitants develop different demand and when their want is not satisfied the problem of crimes increases. The problem of urban crime is becoming more complicated in current situation because criminals often get shelter from people of high position in the urban society. Dutt and Venugopal (1983) stated that violent urban crimes such as rape, murder, kidnapping, robbery are more prominent in the northern-central parts of

the nation. Even the economic crimes such as theft, cheating, breach of trust are concentrated in the north- central region. Poverty related crimes are prevalent in the cities of Patna, Darbhanga, Gaya and Munger. This may be due to poverty existing in this area.

### **11. Problem of Urban Pollution:**

With rapid pace of urbanisation, industries and transport systems grow rather out of proportion. These developments are primarily responsible for pollution of environment, particularly the urban environment.

### **5.8.3. Remedy to the problems of urbanization in India**

India's population is rapidly increasing. According to the estimates of New McKinsey Global Institute research, cities of India could produce 70 percent of net new jobs by 2030, may generate around 70 percent of Indian GDP, and drive a near fourfold increase in per capita incomes across the country.

The government must focus on two critical factors, solid waste management and waste water treatment to manage city system and fulfil the great demands of inhabitants due to the rapid urbanization. The Gujarat government on its part has taken up 50 towns in the state and took initiatives like 'Clean city, Green city' in partnership to execute solid waste management and waste water treatment. There is an urgent need to develop social mechanisms which will assist to reduce inequality and make sure the basics like health, sanitation, education to reach those who have been underprivileged of the same. Most of the urban actions are technical but the employees who do these jobs are often clerical level therefore there must be focus on opening universities on urban planning, urban infrastructure, urban development for the assistance of young people to learn how to meet the demands of urbanization. To lessen urban crime, the police staffs in urban areas need a specific training to maintain demands of the law and order situation.

To summarize, it may be said, urbanisation is the substantial expansion of urban areas due to rural migration and it is strongly related to modernization, industrialization, and the sociological process of rationalization. Urbanization occurred in developing countries due to the eagerness of government to accomplish a developed city status. Hence, almost all area in the city has been developed not even leaving the green areas. These are also turned into industrial or business centres. Explosive growth in the world population and migration of people to urban centres hamper the quality of life in these urban centres as well as the life-supporting capacity of the planet ecologically and communally. Many researchers believe that urbanization is good for the financial growth of country but careful planning is required to develop cities and offer basic amenities for healthy living.

### 5.9.1 Introduction

Sustainable development means attaining a balance between environmental protection present and future needs. It means equity in development and sectoral actions across space and time. It requires an integration of economic, social and environmental approaches towards development. Sustainable urban development refers to attaining social equity and environmental protection in urbanization while minimizing the costs of urbanization.

A conference was convened by UN General Assembly on the “human environment” at Stockholm in June 1972. This came out with guiding principles on human environment. In this conference emphasize was put on man’s fundamental right to environment of quality. It has also stressed that man has a responsibility towards protecting the environment for present and future generations. It also established the point that natural resources of the earth must be safeguarded for the benefit of present and future generations.

After a decade, the World Commission on Environment and Development was created in 1983, to address the issues concerning continuing depletion of natural resources and unsustainable development. This is popularly known as Brundtland Commission (1983). It described sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

After twenty years of Stockholm Declaration, the UN Conference on “Environment and Development” (also known as Earth Summit.) was held at Rio-de Janeiro in 1992 that adopted an action plan, popularly known as Agenda 21. The agenda 21 promised to reduce poverty, provide clean water and health care, and protect the natural resources and many others. While explaining implications of climate change for sustainable development, the Intergovernmental Panel on Climate Change (IPCC) stressed on the importance of social and environmental equity in development. Thus to attain sustainable development all the major world conferences and initiatives taken so far on environment and development have stressed on economically viable development, socially equitable development and protection of the environment. Sustainable urban development means achieving a balance between the development of the urban areas and protection of the environment with an eye to equity in employment, shelter, basic services, social infrastructure and transportation in the urban areas.

Rapid growth of urban population around the world has given rise to wide awareness to the people. As a result thoughts about minimizing the environmental costs of urbanization have developed. Concerns are raised at environmental damages and depletion of non-renewable resources and rising levels of pollution in urban areas. In recent times cities have

become places of urban environmental degradation and wasteful use of resources, which is proving to be costly to generations present and future. The solution to these problems is that we should resort to environmentally sustainable economic development and minimize the depletion of non-renewable resources. But this has to be done in ways that are socially, economically and politically acceptable. While planning for sustainable development of the towns, we should also take into account the factor of climate change. According to this, ensuring environmental sustainability means taking steps, which include a) integration of the principles of sustainable development in the policies and programmes of the country, b) reversal of loss of environmental resources, c) reduction of the proportion of people without sustainable access to safe drinking water, d) improving the lives of slum dwellers.

A common problem of today is the fact that the world's population is using up natural resources in a faster pace than it takes the earth to regenerate it. In addition, the rapid population growth and the increasing urbanization put a strain on governments to manage the flow of people into urban areas. The consequence of these processes generates a stress on the environment as well as the human society.

### **5.9.2 Effects of Environment and Climate Change on Sustainability in Urban Development**

While planning for sustainable development of the towns, the factor of climate change must be taken into consideration. One of the major challenges that today's world is facing is climate change. These changes can be caused by dynamic process on earth, external forces including variations in sunlight intensity and more recently by human activities. Human influences can be by increase in CO<sub>2</sub> levels due to combustion of fossil fuels, aerosols, cement manufacture etc. Other factors like ozone depletion, animal agriculture and deforestation also change climate. The effect of climate change can be found on among other things, on rising sea level that may accelerate coastal erosion, on increasing temperature, on increase in intensity of natural disaster, and very importantly on vector borne diseases.

Urban areas mostly face problems of air quality pollution, greenhouse gases, and unsustainable consumption and of inadequate sanitation and water supply. Thus environmental sustainability of urban form should aim at energy efficiency in transport and buildings. Also there must be optimal planning solutions in terms of locations, distances and spaces, which will reduce air and noise pollution. Sustainable management of sanitation, water supply, equity in provision of services and reduction in deforestation include other aims.

### **5.9.3. Definition: Sustainable City**

A city which is designed with consideration of environmental impact is known as a **sustainable city**. Here the inhabitants are dedicated to minimization of required inputs of energy, water and food, and waste

output of heat, air pollution and water pollution. This is also known as "**Eco city**." Richard Register first coined the term "Eco city" in his 1987 book. Usually developmental experts opine that a sustainable city should meet the needs of the present without sacrificing the ability of future generations to meet their own needs. The ambiguity within this idea leads to a great deal of variation in terms of how cities carry out their attempts to become sustainable. In a sustainable city life functions across the four domains: ecology, economics, politics and culture. Thus, at first a sustainable city should be able to feed itself with a sustainable reliance on the surrounding countryside. Secondly, it should be able to power itself with renewable sources of energy.

- **Building sustainable cities**

Urban planning, transport systems, water, sanitation, waste management, disaster risk reduction, access to information, education and capacity-building are all relevant issues to sustainable urban development.

Cities are centres for ideas, commerce, culture, science, and productivity, social, human and economic development. On the other hand, city-dwellers are the most important part of the sustainable city as they generate both tangible and intangible demands such as the wherewithal to feed and house themselves along with the need for education, training, culture and a meeting place. Sustainable cities are built to give them priority in cities. Thus the "citizens' city" is built by every social class, including the excluded and the middle classes or in short who inhabit it. The citizens themselves take charge to make the cities more pleasant to live in.

The city-dwellers' constant move by public and other transports generate congestion and paralyse traffic. So while we build a road, we must begin by designing the pavement, then the cycle track, followed by a bus lane and then the car lanes. This will be an excellent action almost the reverse of current practice.

### **Human settlements**

According to the UN-HABITAT Global Activity Report 2015, in the last century, the world has been rapidly urbanizing. In 2008, urban population outnumbered rural population and marked the advent of a new 'urban millennium'. By 2050, it is expected that two-thirds of the world population will be living in urban areas. With more than half of humankind living in cities and the number of urban residents growing by nearly 73 million every year it is estimated that urban areas account for 70 per cent of the world's gross domestic product and has therefore generated economic growth and prosperity for many.

### **Practical achievement**

There are several means through ecological cities are achieved. They are stated under:

- Inclusion of different agricultural systems like agricultural plots within the city which will in turn reduce the distance food has to cover from field to fork. This may be done by either small scale/private farming plots or through larger scale agriculture (e.g. farm scrapers).
- Renewable energy sources, such as wind turbines, solar panels, or bio-gas created from sewage. Cities provide economies of scale that make such energy sources viable.
- Use of various methods in the urban areas so that the need for air conditioning is reduced. Planting trees, lightening surface colours, natural ventilation systems, an increase in water features, and green spaces equalling at least 20% of the city's surface should be taken into consideration. The abundance of tarmac and asphalt in the cities make it several degrees warmer than surrounding rural areas. These measures counter this "heat island effect".
- To reduce car emissions modern and improved public transport is used. An increase in pedestrianization is another measure taken.
- Optimal building density to make public transport viable but avoid the creation of urban heat islands.
- Solutions must be found out to decrease urban sprawl. This should be done in such a way so that people could live closer to the workspace that tends to be in the city, downtown, or urban centre. Solutions worked out by the Smart Growth Movement are one of the new ways to achieve this.
- Green roofs
- Sustainable transport
- Zero-energy building
- Sustainable urban drainage systems or SUDS
- Energy conservation systems/devices
- Xeriscaping - garden and landscape design for water conservation
- Key Performance Indicators - development and operational management tool providing guidance and M&V for city administrators.

### **Architecture**

Buildings provide the infrastructure for a functioning city and allow for many opportunities to demonstrate a commitment to sustainability. A commitment to sustainable architecture encompasses all phases of building including the planning, building, and restructuring.

## **Eco-industrial Park**

An eco-industrial park connects a number of firms and organizations. These again work together to decrease their environmental impact and simultaneously improve their economic performance. This goal is attained through collaboration in managing environmental and resource issues, such as energy, water, and materials.

There are several components for building an eco-industrial park. These are natural systems, more efficient use of energy, and more efficient material and water flows. Industrial parks must be built in such a way so that these fit into their natural settings. This will in turn reduce environmental impacts, accomplished through plant design, landscaping, and choice of materials. For example an industrial park in Michigan built by Phoenix Designs is made almost entirely from recycled materials. Native trees, grasses, and flowers are included in the landscaping of the building. The design of the landscape is made in such a way so as to act as climate shelter for the facility. While selecting the building materials the designers should consider the life-cycle analysis of each medium used for the construction of building to assess their true impact on the environment as well as steam connections from firms to provide heating for homes in the area, and using renewable energy such as wind and solar power.

The companies in an eco-industrial park may have common waste treatment facilities, a means for transporting by-products from one plant to another. Anchoring the park around resource recovery companies that are recruited to the location or started from scratch is another field that the companies have. Moreover, the processed water from one plant can be reused by another and the parks infrastructure can include a way to collect and reuse storm water runoff. In this way the parks may have more efficient water flows in them.

## **Urban farming**

By urban farming it is meant a process of growing and distributing food in and around a city or in urban area. It also includes raising animals in the farm. According to the RUAF Foundation, urban farming is different from rural agriculture because "it is integrated into the urban economic and ecological system: urban agriculture is embedded in -and interacting with- the urban ecosystem. Such linkages include the use of urban residents as labourers, use of typical urban resources (like organic waste as compost and urban wastewater for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, being influenced by urban policies and plans, etc".

Apart from other motivations behind urban agriculture, creating a sustainable city is an important one as this method of food cultivation saves energy in food transportation and hence saves costs. If cities allot a common area for community gardens or farms, as well as a

common area or a farmers market where the foodstuffs grown within the city can be sold to the residents of the urban system, urban farming will be a successful method of sustainable food growth.

### **Urban infill**

Many cities show a significant geographic distribution of population or in other words a shift from the suburban sprawl model of development to a return to urban dense living. This shift leads to a denser core of city residents. The increasing demand of the residents in various sectors of the city is reflected in the architectural fabric of the same. This demand may be fulfilled by new construction. Sustainable cities will opt for historical rehabilitation wherever possible. When people live in higher densities it gives economies of scale and allows infrastructure to be more efficient.

### **Walk able urbanism**

A development strategy in opposition to suburban sprawl is called walk able urbanism advocating housing for a diverse population, a full mix of uses, walk able streets, positive public space, integrated civic and commercial centres, transit orientation and accessible open space. It also advocates for density and accessibility of commercial and government activity.

### **Individual buildings (LEED)**

LEED, or Leadership in Energy and Environmental Design, is an internationally recognized green building certification system. LEED recognizes whole building sustainable design by identifying key areas of excellence including: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Locations & Linkages, Awareness and Education, Innovation in Design, Regional Priority.

### **Transportation**

At present, transportation systems account for nearly a quarter of the world's energy consumption and carbon dioxide emission. Sustainable city's primary focus is laid on, sustainable transportation system. It attempts to reduce the use of greenhouse emitting gases by utilizing eco-friendly urban planning, vehicles having low environmental impact, and residential proximity to create an urban centre that has greater environmental responsibility and social equity.

Sustainable transportation put stress on three grounds in order to reduce the environmental impact caused by transportation in metropolitan areas, like carbon trust, car free city and carbon footprint. The Carbon Trust states that better land use planning, modal shift to encourage people to choose more efficient forms of transport and making existing transport modes more efficient will make transport more sustainable decreasing journey times. Car free cities or a city with large

pedestrian areas is another important concept to design a sustainable city. Carbon footprint of a city is generated by cars so the car free concept is often considered an integral part of the design of a sustainable city.

**Emphasis on proximity:** Moreover, emphasis on proximity is an essential element of current and future sustainable transportation systems. Hence cities will be built with appropriate population and landmark density so that destinations are reached with reduced time in transit. With the reduced time in transit reduced fuel expenditure will be there. Alternative means of transportation such as bike riding and walking will gain importance. Close proximity of residents and major landmarks eliminate long sprawled out routes and hence reduce commute time. As a result social cost to residents decreases because the people who chose to live in these cities will be able to have more time with families and friends.

**Diversity in modes of transportation:** Sustainable transportation emphasizes the use of a diversity of fuel-efficient transportation vehicles in order to reduce greenhouse emissions and diversity fuel demand. Among the different modes of transportation, the use alternative energy cars and widespread instillation of refuelling stations has gained increasing importance, while the creation of centralized bike and walking paths remains a staple of the sustainable transportation movement.

**Access to transportation:** Public transportation will be more accessible if the cost of rides is affordable and stations are located within a walking distance in every part of the city. This highly affects the lower income residents because cheap and available transportation will allow individuals to seek employment opportunities all over the urban centre beside the area in which they live. This in turn reduces unemployment and a number of associated social problems such as crime, drug use, and violence.

### **Urban strategic planning**

An organization, the United Cities and Local Governments (UCLG) is working to establish universal urban strategic guidelines. The UCLG a democratic and decentralized structure that operates in Africa, Asia, Eurasia, Europe, Latin America, North America, Middle East, West Asian and a Metropolitan section work to promote a more sustainable society. The 60 members of the UCLG committee evaluate urban development strategies. An International conference is going to be held in Italy at Università del Salento and Università degli Studi della Basilicata called 'Green Urbanism' from 12–14 October 2016.

### **Obstacles**

The City Development Strategies (CDS) has evolved to address new challenges. There are differences between regional and national conditions, framework and practice.

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## 5.10 SUSTAINABLE DEVELOPMENT OF TOWNS IN INDIA

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India's urban population is expected to increase from 377 million in 2011 to 590 million by 2030. By 2030 it is predicted that 68 Indian cities will each have more than one million inhabitants, and six megacities, more than ten million each. As Indian cities are urbanizing at an unprecedented scale and pace its urban settlements need efficient infrastructure and smart city planning. This will in turn meet the demands of a growing population in the country. The key elements for sustainable urban development are access to healthcare and drinking water, a reliable power supply and public transportation.

India's demographic status states that an increasing number of Indians are leaving rural areas to seek employment in cities, relying on efficient urban infrastructure. Thus the rapid growth of cities faces innumerable challenges. This includes insufficient power supply, unreliable public transportation systems and limited access to adequate medical treatment. So it is very obvious that to meet the challenges of continuing growth without destroying the environment, smart city planning for sustainable development is crucial.

In India there are great regional disparities in terms of economic growth and specialization. Under typical patterns of economic development, countries or areas tend to go through labour-intensive manufacturing cycles before they specialize. But according to a 2006 International Monetary Fund working paper in India, fast growth in states or areas have skipped steps in the economic development models and focused where they appear to have comparative advantage. That is, leading regions like Delhi, Karnataka (Bangalore), and Maharashtra (Mumbai) which embraced the IT wave with their first-tier cities, have realized faster growth and rising incomes alongside better infrastructure offerings. Conversely, slow growth or lagging regions like Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh grow with less-educated populations. These regions are expected to have more traditional economic growth and development patterns.

Moreover in India problem also lies in her existing urban transport infrastructure because it is already over-burdened with the high rate of traffic fatalities, increasing air pollution and greenhouse gas emissions, congestion, and urban sprawl. Hence it has become very urgent to improve the quality of city life now so that it benefits our future generations.

### 5.10.1. Effects of Environment and Climate Change on Sustainability in Urban Development in India

It is presumed that climate change will hamper sustainable development of India. In India extreme climatic events like heat wave, intense rain, floods and droughts is present. Mumbai in India had recorded heavy rainfall in July 2005, which had taken numbers of lives. Consecutive

droughts between 2000 and 2002 caused crop failures, mass starvation and affected millions of people in Odisha. Increased stress on water stands out to be a major problem for India. Simultaneously as a result of global warming glacier is melting at a faster rate which will cause glacial melt-related floods, slope destabilisation and a decrease in river flows as glaciers recede. The researchers have opined that with the current trend in the melt of glaciers, the Ganga, Indus, Brahmaputra and other rivers could likely become seasonal rivers in the near future and affect the lives of people residing around them. Thus, it is likely that climate change will hamper sustainable development of India as it increases the pressures on natural resources and the environment associated with rapid urbanization, industrialisation and economic development.

### **5.10.2. Urban Basic Services in India**

#### **Shortcomings:**

Aim of sustainable city planning is to achieve social and environmental equity while improving the lives of the people. For this we need to have a sustainable city form. The provision and proper management of the services are other functions must be present in the city. Hence, in order to turn a city or urban area into a sustainable one it needs to produce and manage basic services like water, waste, energy, and transportation in a way that it conforms to the principles of sustainable development. In other words, the city should be able to produce and distribute the services in an economic, environment friendly and equitable way.

Cities in the developing countries are deficient in the provision of basic services that pollute the environment. It is to be noted that though there are some differences between cities and between rich and poor nations, in general urban infrastructure systems are designed without much attention to environmental and social impacts. Mostly the delivery of the services like water, energy, waste, transportation, is based on non-renewable energy sources. Moreover, the inequality in the provision of these services is very high. Indian cities are characterized by high density of population, deficiency in services and air pollution. As we can see in urban India in 2001, 69 per cent of the households had safe drinking water, 61 per cent of the households had their latrine facilities within their houses and only 35 per cent of the households had closed drainage facilities (Census 2001). Eighty eight per cent (88%) of the urban households had electricity and only 0.2 per cent had solar energy in 2001(Census, 2001). In Delhi, the capital city of India, 77 per cent of the urban households had tap as source of drinking water, 63 per cent had their latrine facilities within their premises and 52 per cent of the households had closed drainage facilities.

Air pollution has become a major problem in Indian cities. Taking the case of Delhi, we find that there are around 54 lakh vehicles in Delhi. Around 70 per cent of the air pollution in Delhi happens to be due to

vehicles. It has been found in a World Bank study based on 1994-95 air quality data that around 10,000 people die every year prematurely due to air pollution in Delhi alone. According to Delhi Medical Association the incidence of asthma in Delhi is ten times the national average (Centre for Science and Environment). Densities of Indian cities are very high. Management of the basic services should be done keeping in mind the deficiency in the services, the environmental impacts and the inequality in the provision of the services.

### **5.10.3. Sustainable Management of Urban Basic Services**

#### **Water supply management:**

The effect of climate change on water supply will have negative impact in almost all of the nations of the world. Hence we should take care so that energy efficient alternative systems are innovated. For an efficient practice we can limit our water consumption by using raw water, recycled water for gardening and landscaping. In the state of Vermont, U.S.A., a wastewater treatment system uses a series of tanks containing plants and other organisms to naturally clean wastewater that serves 500,000 people per year.

In India the water from Sewage Treatment Plants (STP) in factories are used for landscaping and gardening. It has been considered as an optional reform under Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in India. In Delhi marsh land and water bodies have been converted in residential areas, garbage dumps, petrol pumps etc. Marshlands recharge ground water substantially.

#### **Waste management:**

Reuse of various things like metals, glass, paper, plastic, textiles, organic waste and water will reduce demand for energy, raw materials, fertilizers and fresh water sources. Therefore waste management practices should be started from an early stage of an economic activity that is the production and distribution stages. This should be done through reuse and recycling as well as taking care about hazardous wastes so that those do not go for recycling. Use of plastic should be less. In Delhi more than 5000 tons of municipal solid waste is generated everyday, which is disposed of in landfills. Danger of ground water contamination is created with too much consumption of land for disposal.

The department of environment of the government of India recommended that waste management should be adopted in a large scale including the practices like vermiculture, pelletisation, aerobic composting and many others.

#### **Energy management:**

While planning buildings and the cities there should be energy management practices. Buildings and city forms must be energy efficient and use sustainable energies like solar and wind energies. In

India there are very few settlements that use solar power, water recycling techniques and waste management practices. But to have a sustainable urban settlement the environment friendly techniques are to be followed. But these are yet to be practiced in urban areas, especially in large cities where the differences would be felt.

City forms should use energy efficient transport.

### **Reduction in inequality:**

Regarding management of basic services in the cities the inequality between rich and poor should be reduced in services. City form should take into account social conditions also. Apart from deficient, non-environment friendly and unequal basic services, the other major problem in developing a sustainable city form in India is inefficient land policy of the country.

### **Inefficient Land Policy of India**

Land is an important input for producing goods and services for urban development. Sustainable urban development takes care of social and environmental effects. It maintains balance between the development of the areas and protection of the environment. This development keeps an eye on equity in employment, shelter, basic services, social infrastructure and transportation in the urban areas. Hence the land should be properly used to meet these objectives.

Urban India is suffers from shortage of housing facilities and scarcity of land which causes hindrances for construction and developments of roads, footpaths, parks, schools etc. the inadequate, inefficient, iniquitous land policy of the country are the roots cause of these problems. Thus an effective and appropriate land policy is important to promote sustainable development. National Commission on Urbanization of India (NCU, 1988) recognized the need for adequate supply of land, efficiency and equity in allocation of land and promotion of flexibility in land use.

### **Conclusion:**

The most difficult part of sustainable city is to create the smallest possible ecological footprint. The production of lowest quantity of pollution, efficient use of land along with compost use of materials, recycling or convert the waste-to-energy are some other actions to be taken in a sustainable city. If such practices are adhered to the city's overall contribution to climate change will be minimal. It is estimated that over 50% of the world's population now lives in cities and urban areas. So the majority of the world's population being urban, there are many problems with the modern city such as, the city pulls people spatially from the productive rural land leaving them dependent on resources from rural areas. Secondly in the cities water, air and natural resources are considered free, resulting in serious environmental problems affecting human health and quality of life. Thirdly, cities

are reflections of the values embedded in the legal constructions on which society is based, which is why it is difficult to make a fundamental change as these values need to be re-evaluated. Beside these problems a city has a positive side too. As there is high concentration of dwellers on a limited area, if properly planned and managed cities could support this high density of people with a limited impact on the environment with benefits for the economy and the human health. To summarise it may be said that these large urban communities provide both challenges and opportunities for environmentally-conscious developers, and there are distinct advantages to further defining and working towards the goals of sustainable cities. Humans are social beings and thrive in urban spaces that foster social connections. Because of this, a shift to denser, urban living would provide an outlet for social interaction and conditions under which humans can prosper. Urban systems can be more environmentally sustainable than rural or suburban living as both city dwellers and resource are located very close to one another. Thus it is possible to save energy for transportation and mass transit systems, and resources such as food. Finally, cities benefit the economy by locating human capital in one relatively small geographic area where ideas can be generated.

However, in developing countries the main challenge is to provide clean drinking water to all the urban residents adopting sustainable water management practices. Rainwater harvesting has its possibilities for partially managing water supply. Conservation of old water bodies like lakes, ponds can be made for increased and sustainable water supply.

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### **5.11 SUMMARY:**

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In this chapter we have learnt about the trends in urbanisation and the causes of urban growth. The demography, health, environmental and social consequences of urbanisation has also been learnt. Urbanisation occurs mainly because people move from rural areas to urban areas. We have come to know that more than half of the world's population lives in urban areas. As a result of the ongoing urbanisation there is immense growth of the world's population. The world's urban areas are highly varied. These changes in population lead to other changes in land use, economic activity and culture. The extent of urban areas are facing problems such as a lack of jobs, homelessness and expanding squatter settlements, inadequate services and infrastructure, poor health and educational services and high levels of pollution.

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### **5.12 CHECK YOUR PROGRESS/ EXERCISE**

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#### **1. True or false**

- a. By around A.D. 1810 the New York City was the first urban settlement to reach a population of one million.

- b. An urban settlement has a large population size and a high population density.
- c. Joint families are more popular in urban areas.
- d. Voluntary associations such as clubs, societies and other secondary groups are formed by urban societies.
- e. Industry is considered as the discrete phenomenon in the urban settlement around the world.

## 2. Fill in the blanks

- a. With the increase in urbanisation inhabitants develop different demand and when their want is not satisfied the problem of ----  
---increases.
- b. With rapid pace of urbanisation, industries and transport systems grow rather out of -----
- c. A city which is designed with consideration of environmental impact is known as a----- city
- d. Increase in----- is one of the measures taken to reduce car emissions
- e. Due to urbanization, there is-----especially in the quality of water, air and noise.

## 3. Multiple choice questionegradation

- a. The idea of urbanism in India is somewhat different from that of the west because
  - i. here the rural urban distinction has always been very sharp.
  - ii. here the rural urban distinction has never been very sharp.
  - iii. here is no rural urban distinction at all.
- b. A Push factor is something that can force or encourage people
  - i. to move away from urban area
  - ii. to move away from rural area
  - iii. to stay back in rural area
- c. Urbanisation in the city of Mumbai is an example of
  - i. coastal location
  - ii. desert location
  - iii. mountainous location

d. Major cities with internet connections and mobile phone network has made it easier for businesses

i. to communicate with student and teachers.

ii. to communicate with farmers and seed suppliers.

iii. to communicate with customers and suppliers.

e. Rural people have migrated to urban areas on account of

i. better employment opportunities

ii. better entertainment opportunities

iii. better education opportunities

#### **4. Answers the following Questions**

1. What is urbanisation? State how the physical factors affect urbanisation.

2. What are the economic factors that affect urbanisation?

3. What are the three components of urban population growth?

4. What is the present day scenario of world urbanisation?

5. Write a short note on Global urban population.

6. What are the problems of urbanisation?

7. What are the possible remedies for the urbanization issues and problems at global level?

8. State the major problems of urbanisation in India?

9. What are the effects of environment and Climate change on sustainability in urban development?

10. Define sustainable city.

11. State the role of transportation in sustainable development of town.

12. What are the sustainable management of urban basic services in India?

13. Write a short note on Inefficient Land Policy of India.

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### 5.13 ANSWERS TO THE SELF LEARNING QUESTIONS.

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a. false, city of London

1.b. true

1.c. false, Nuclear

1.d. true

1.e. false, City

2.a. crimes

2.b. proportion

**2.c.** sustainable

2.d. pedestrianization

2.e. environmental

3.a.i.

3.b.ii

3.c.i.

3.d.iii.

3.e.i.

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### 5.14 TECHNICAL WORDS:

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1. **Sustainable**- able to be maintained at a certain rate or level
2. **Pedestrianization**- the restriction of access to a street to pedestrians only, where vehicles are not allowed to go
3. **Environmental**-relating to the environment
4. **Energy management**-planning and operation of energy production along with energy consumption units
5. **Vermiculture**-the raising and production of earthworms and their by-products especially in order to use them to convert organic waste into fertilizer
6. **Palletization**: Method of storing and transporting goods stacked on a pallet, and shipped as a unit load
7. **Aerobic composting**-is decomposition of organic matter using microorganisms that require oxygen

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## 5.15 TASK

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1. In a chart write the definition of urbanisation and with the help of bullets state how the physical factors affect urbanisation.
2. In a chart draw a map of India and in it write down the major problems of urbanisation in India.

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