CHAPTER V
TYPES AND PATTERNS OF RURAL SETTLEMENTS

5.1 Introduction.
5.2 Difference between Settlement type and pattern.
5.3 Classification of Settlement type and pattern.
5.4 Factors affecting the types of Rural Settlements.
5.5 Types of Rural Settlements.
5.6 Nucleation and Dispersion of Settlements.
5.7 Factors affecting nucleation of settlements.
5.8 Factors affecting dispersion of settlements.
5.9 Methodology.
5.10 Study of Settlement types from topographical maps.
5.11 Field observation.
5.12 Quantitative methods.
5.13 Lorenz curve.
5.14 Site, situation and location.
5.15 Settlement sites.
5.16 Pattern of rural settlements.
CHAPTER V
TYPES AND PATTERNS OF RURAL SETTLEMENT

5.1 INTRODUCTION :-

Upon a glance on the topography of the region we find that there are wide variations in types and patterns of settlements. Actually a settlement consists of two visible elements :-
i. The man who is the dynamic one and he is wholly responsible for the construction of it.

ii. The second element is the static forms of settlements. Generally the size, shape, form, layout, types and patterns – all these are elements of a settlement.

The first element i.e. man is the subject matter of population geography and the form of houses, arrangements of street, lanes within it and settlement as a whole are important elements of settlement. The size, shape or layout elements are recognizable in relation to different types of settlements in existence with various degrees of variations on the basis of certain norms. These norms vary according to physical or cultural landscape i.e. small, big or amorphous size. So the terms assigned to three elements indicates relative meanings and connotations. Thus, the elements of settlement as a geographical terms used universally, convey various conceptual meanings and significance to a particular group of people living in various environments.

The types and patterns of settlement are intricately woven but visible, hence identifiable. Other attributes are distinguishable on comparison.

5.2 Difference Between Settlements Type and Pattern :-

These two terms find place in geographical literature, particularly in rural settlement geography, conveying various meanings, sometimes as synonymous or
interchangeable but as we go in detailed interpretation we find that these terms have different meanings and they are distinguishable from one another.

Einich and Trewartha refer to two primary types of settlements viz. a. the isolated or dispersed and b. the nucleated or compact. Hudson says that the major patterns in rural areas are either nucleated or dispersed. Pattern of settlements has been defined by Emrys Jones, as the relationship between one house or building and another and to isolate this relationship he refers to a large scale map. He thinks that often pattern is unrelated to site and site may have little or no bearing on pattern. But Finch and Trewartha attribute the contrasts in the arrangement of streets and houses i.e. patterns to the site as well as historical causes. Thus it is clear that –

1. Types of settlement refers to relationship of number of dwellings and number of sites
2. Pattern of settlement refers to geometric form and shape or how settlement looks like, which may be of different types.

While we describe the type, intra – settlement analysis of inter – dwelling distance is considered and it clarifies the occupancy of village territory on one or more than one sites. This provides the picture of nucleation or dispersion of settlements and hence it becomes a type. But when we refer to a certain form of settlement, which indicates a particular shape, a particular pattern gets a name according to geometrical attributes i.e. square, rectangular, linear, elongated, etc.

5.3 Classification of Settlement Types and Patterns :-

Classification of Types :-

According to D.C. Money (Introduction to Human Geography) settlement types are classified as –

1. The single large nucleated village
2. Hamlets scattered throughout the countryside
3. Single homesteads

Enayat Ahmed gives four types:
1. Compact
2. Cluster and hamlet type
3. Fragmented or hamleted
4. Dispersed settlement

R. L. Singh describes four main types:
1. Compact settlements
2. Semi – compact or hamleted clustered
3. Semi – sprinkled or fragmented
4. Sprinkled or dispersed

Most of the settlement geographers have classified the types of settlements according to their regional distribution patterns of such habitations on the basis of theoretical, empirical and associational considerations. Considering above different views it is clear that types are to be recognized on a large scale map through the distribution of houses on one or more sites in defined village territory. On a small scale map inter – settlement spacing and number of sites of a named settlement would help in identifying the types.

5.4 Factors Affecting the Types of Rural Settlements:

Settlement is cluster of houses including surrounding land where people take their shelter and keep their possessions. It is a simple and small agglomeration of people at a favourable site and it is influenced by physical, social and economic factors. Physical factors such as relief (mountainous, plateau and plain areas), source of water supply, drainage lines, nature of soil are the main factors affecting compactness on dispersed nature of rural settlements. Socio –
economic factors such as land use pattern, agricultural pattern, crop association, means of transportation and density of population influences on compactness or fragmented nature of rural settlements.

5.5 Types of Rural Settlements :-

Theoretically, the two extreme types of groupings of the rural settlements are : 1. the isolated farmsteads or dispersed dwelling in which the single family residence unit is the distinctive nucleus occupying its own farm, and 2. nucleated settlement in which all the dwellings are clustered almost in the center of the village lands. Considering different opinions of the above mentioned geographers as well as theoretical explanation, R.L. Singh’s classification is more appropriate. To study the types of rural settlements in Pravara Basin following four categories are considered.

1. Compact Settlements
2. Semi – compact or hamleted clustered settlements
3. Semi – sprinkled or fragmented settlements
4. Dispersed or sprinkled settlements

1. Compact Type Settlements :-

“A settlement of one nuclei or agglomerated without any subhamlet may be known as compact settlement. Compact settlements have narrow lanes and streets separating the houses”. Blache (1962) defines such settlements as clustered settlements while Flinch and Trewartha (1946) called them nucleated settlements. So settlements having closely spaced houses or lower spacing size and greater population size have been declared to be compact. Such types of settlements are normally found in the plain, fertile agricultural regions or in the areas where water resources or other resources are agglomerated at certain points.

2. Semi – Compact Type Settlements :-
“A settlement of one larger hamlet and one or two smaller sub – hamlets falls in the category of semi – compact settlement”. This is a common types on plateau or plains according to environmental constraints as well as cultural considerations. These shows the out growth of later period by the people of diverse castes during settling process, sometimes as a separate grouping by aboriginals and low caste people in the neighbourhood of the main residential unit. This type also reflects modification of the compact type because they cover more area and hamlets occupy new sites.

3. Semi – Sprinkled or Fragmented Type Settlements :-

“A settlement having number of hamlets and therefore, no recognizable central site, is classified as a semi – sprinkled settlements” (R.B. Mandal). In these settlements the entire territory exhibits hamlets spread within the village area as well as houses are away from each other but the entire group of houses makes one village.

4. Dispersed Type Settlements :-

“These settlements exhibit privacy marked by scattered dwellings and raised by farmers in their respective farms and fields. In this type, hamlets are small and the houses are also comparatively far apart. The hamlet having a higher spacing and lower population size have been classified as dispersed settlements”.

Dispersed settlements are commonly found in central and eastern part of the Pravara Basin where dwelling belonging to one family occupy one site situated in his cultivated field, this phenomena is particularly found in the areas where new irrigation facilities are available through canals, so whole village territory receives scattered dwellings. Dispersion is also found in tribal areas where availability of agricultural land becomes the major cause.
5.6 Nucleation and Dispersions of Settlements :-

As it is mentioned above that the types of settlements are the result of various physical and cultural factors, so they are also responsible for nucleation and dispersions.

5.7 Factors Affecting Nucleation of Settlements :-

Physical Factors :-

Agglomerated rural settlements with permanent homesteads are the product of civilized life, which is closely related to the uniformity of relief, fertility of soil and moderate rainfall. Paul Vidal de la Blanche has properly stated that, “the clustered village is indigenous in districts where the arable area is continuous, admitting of uniform and extensive exploitation”.

Plain areas with high fertility of soil and moderate rainfall supports more population and settlements become compact in nature, whereas unproductive land plays negative role.

Cultural Factors :-

1. Man is a social animal. Man tends of necessity to gravitate towards his fellowmen, he wants to live together. From the primitive stage i.e. for clearing the forest, cultivation of land and related activities centralized at one place and agricultural co-operation and practices have been conducive to compact settlements.

2. Village dwellers avails all the amenities of close, warm and communal life, in this regard Mukerjee Radhakamal rightly expressed the view that, “All paths and tracks across the fields, which for each cultivator lie scattered like autumn leaves, lead to the village that is meeting ground of all”. Obviously, the villager, in compact village, lives in center which minimizes his economic distance, where most of the facilities and social services are available.
3. The reciprocal social relationship for compactness – Among others, regarding socio-cultural factors, Enayat Ahmed states, “The social gathering in the center of the village usually under some shady tree or near the temple or at Chavdi or at community hall the mutual get-together on festivals, gathering of neighbours after the days work near the well in summer and round the fire in winter when tales are told and talks of friends and crop exchanged; all these have contributed their influences in the direction of compact settlement.

4. Defense plays significant role in agglomeration. Protection from wild animals or other group of people was the necessity hence people feel safety in the compact settlements. Villages were also walled for this purpose in the past. So this need of defense in the past was fulfilled by the nucleation nature of settlements.

5. Religious centers along river, near spring also attract agglomeration around them. Some villages grow as compact settlements due to definite political or administrative decisions.

6. Superstitions also have been responsible for agglomeration of houses, because the ancestral site is considered auspicious and villagers do not like to move away from such old sites, new site was rarely selected to live separately due to being inauspicious till it was approved of by a group of settlers after getting confirmation from the priests.

7. Unemployed or semi-employed labourers engage themselves in the subsidiary occupations, which can easily flourish in such villages.
5.8 Factors Affecting Dispersions of Settlements :-

Though dispersed settlement unit is taken to be granted as synonymous with the farmstead, its main characteristic is the nucleus family along with isolation and privacy. As the nucleation, physical and cultural factors affect the dispersion.

**Physical Factors :-**

Nature of terrain or relief, availability of water, fertility of the soil are some of the physical factors responsible for dispersion. It is observed that dispersion appears to increase in direct proportion to the ruggedness of the land surface, as well as proportionate increase in dispersion closely related to the extent of fertile land. The poor soil with boulders enhances dispersion to such an extent that one dwelling is enough for several acres.

In the mountainous or hilly areas dispersion is common because of supporting capacity of land, forest and pasture. Sometimes floods in river flood plains provide only seasonal agricultural opportunities, so temporary or shifting types of dispersed settlements grow in such areas.

**Cultural Factors :-**

Various cultural factors are responsible for dispersion of rural settlements these include, land tenure system, type of agriculture, individual initiative, peaceful conditions, availability of irrigation facilities, improvement in modes of transportation and communication, caste system have separately or jointly been responsible for dispersion of settlements.

1. The land tenure system changed in recent time, particularly private landownership favoured outgrowth of hamlets and isolated dwellings. After the zamindary system, farmers appear to be away from the compact village toward farm dwelling.
2. Due to increasing population cultivable land is subdivided into small fields and sub divided families tend to live on their farms for making intensive use of land. To save the time for going and coming they prepared to live on the farm, which is resulted in isolated dwellings.

3. Individual initiative also plays its role in the selection and formation of isolated settlements in newly developing areas, on newly possessed or purchased land either for living or for better agriculture.

4. In recent times peaceful condition prevailing in most of the areas and hence isolated living is increasing. This trend is predominantly appeared in the areas where new irrigation facilities are becoming available.

5. By increasing irrigation facilities agricultural pattern has changed. Some of the cash crops require intensive labour so farmer prepared to live on the farm to look after their crops more carefully.

6. Newly constructed road network becomes responsible for more accessibility for the farmer to the main settlement, transportation facilities provide them to reduce the time for availing various facilities, which are available in nearby villages.

7. Caste system has also been conductive to the dispersion during recent times, particularly low caste people are forced to build their houses a little away from the main settlement, this has resulted in dispersion in different parts.

5.9 Methodology :-

The following methods of classification have been adopted to determining the types of rural settlements in Pravara Basin.

1. Study of settlement types from topographical maps (one inch sheet)

2. Field Work

3. Quantitative methods
5.10 Study of Settlement Types from Topographical Maps :-

A cursory glance at the rural landscape or on the topographical sheets of the study basin shows a variety of rural settlement types. Hence to determine the different settlement types in the region all the topographical maps, which cover the area of the region were studied.

47-1/2 :-

This toposheet shows part of hilly area of the basin. Thick network of surface streams shows that the area is dissected. This geographical condition hampers the development of settlements. Along the river banks and wherever water is available for daily use, small size settlements have come up. The rural settlement type, which is found here is of dispersed or sprinkled type. Within this toposheet extent along the river Pravara some compact settlements are found but few in number (Fig. 5.1).

47-1/6 :-

Rural settlements in the area covered by this toposheet are predominantly dispersed. Development of new wastis and wadis is a main cause of dispersions, which is characterized by hamlets, having a wide spacing and smaller size by population. Development of wadis exhibit rural economy precisely dominated by agriculture as the main stay and intensive
care of farmland is taken to minimize distance between residence and farmland (Fig. 5.2).

47-I/11 :-

In this toposheet variety of settlement types are observed i.e. compact, semi-compact and dispersed. Village Khadambe and Dhanori are twin settlements on either sides of the river Deonadi, described as Khurd and Budrukh (former and later). Both of them are semi-compact. While village Wambori along the Karpar nadi is compact settlement in extreme south eastern corner of the toposheet. This village lie around 600 meter altitude with fair slopes and agricultural landscape. Wambori also enjoys metalled road location and railway station.

In south-western part of the toposheet, settlements are very few and dispersed due to dissected physiography. In the northern half of the toposheet, settlements are rather semi-compact with the reflection of leveled and possibility of agricultural resources. Settlement like Takli, Trimbakpur (triangulated in pattern) and Deolali (circular in shape) are the good examples. These settlements are supported by Pravara right bank canal (Fig. 5.3, 5.4).

47-I/10 :-

This toposheet traversed by main river Pravara and its canal, is having less undulations of relief with fairly good network of main metalled roads of Nagar district. Settlements shown in Fig. 5.5 are semi-compact i.e. Galnimb, Ambi, Kesapur, Ukkalgaon and Belapur. All these settlements have been located along the river Pravara. Semi-dispersed character may be due to again dominance of agricultural landscape, diversifying the type and character of main settlements to look after the agricultural landscape i.e. farmland more intensively.
47-1/14 :-

Figure 5.6 reflects the same semi – compact character of rural settlement, such as Bheradpur, Kopare, Khirdi, Pachegaon along Pravara river and village Pimpri, Tilapur along Mula river, indicating river site and supported by Pravara right bank canal. In northern part of the toposheet settlements are noticeable semi – compact along the river banks, Newsa tahsil place is compact type of settlement along Pravara river (Fig. 5.5, 6).

5.11 FIELD OBSERVATION :-

All the four types i.e. compact, semi – compact, semi – sprinkled and dispersed settlements were observed during field work. The field work observation shows that semi – compact and dispersed settlements are emerged due to following factors.

1. Semi – compact settlements in the basin have grown due to increasing pressure of population on the main or old site, which compelled the habitants to seek living outside the village. But these people do not go far from the main settlement because of social links and economic interdependence.

2. Coming up of small groups of houses for low income group people or backward class people under the government schemes during last two decades, also has resulted in semi- compact settlements.

3. Small groups of huts erected by landless workers and daily wage earners on the fringes of large compact settlements give rise to semi – compact types of settlements. Due to identical reasons similar changes also occur in settlements located in sugarcane cultivation areas (Fig. 5.7, 5.8, 5.9 & 5.10).
DISPERSED SETTLEMENT 47/1/15

FIG. 5.10
5.12 Quantitative Methods for Determining the Types of Rural Settlements in Pravara Basin :-

Use of various quantitative methods to determine the types of rural settlements is another important method for classification. Various geographers have developed these methods. Some of these significant quantitative methods are used to measuring the indices of agglomeration and dispersion.

Woeikof of Russia in 1909 devised a formula as \( K = \frac{P}{H} \), where \( K \) is the index, \( P \) is the number of inhabitants and \( H \) is the number of inhabited places. This however, gives only the average population size of rural settlements, irrespective of settlement dispersion. Kristofferson of Sweden in 1924 classified the rural settlements below 50 meter spacing as dispersed and more than 50 meter as compact. In 1926, Lefevre of Belgium used the number of houses per square kilometer grouped into classes of 1-10, 11-25, 26-50, 51-100, 101-250, 251-500, 501-1000 and above 1000 as the basis of classification and dispersion of settlement types. But this method only gives the density class of houses, and not the types of settlements.

Bernhard’s Method :-

French scientist Bernhard in 1931 devised following formula to express degree of dispersion.

\[
K = \frac{S \times M}{N^2}
\]

where \( K \) = Index of concentration  
\( S \) = Total number of houses  
\( M \) = Total Area  
\( N \) = Number of settlements
By using this formula the index of concentration for each tahsil was calculated. The calculated indices show that there is relatively high concentration of settlements in the tahsils, which are closely located along the river course in basin. The index of concentration is low in hilly tahsils i.e. western part of the basin as well as number of villages are more, which are located relatively away from the main river course, where physical conditions are responsible.

Demangeon’s Method :-

Another successful method for measuring dispersion is that of Demangeon published in 1933. He has used the following formula to express the settlement types.

\[
K = \frac{E \times N}{T}
\]

where \( K \) = coefficient

\( E \) = Rural population
\( N \) = Number of settlements
\( T \) = Total population

By applying this formula values of ‘K’ were calculated. Settlements were dispersed in the western part of the basin. This may be due to low proportion of flat land, as a result of undulating nature of relief. Wherein eastern tahsils where proportion of flat land and fertility of soil is high and the degree of dispersion is low.

Debouverie’s Method :-

A Belgian scientist, Debouverie in 1943 tried to relate regional variations of settlements with standard concept of concentration. His formula is as follows.
\[ X = K \frac{H}{L} \]

where \( X \) = Index of concentration

\( K = \text{constant} \ 0.25 \) or \( \frac{1}{4} \)

\( H = \text{Total number of dwellings} \)

\( L = \text{Number of settlements} \)

The calculated values again shows that the concentration index is high in the tahsils which are closely located along the river course. Low index of concentration found in the western and southern tahsils of the basin. Being the mountainous and unproductive land proportion is low, concentration of settlements is very low in these parts of the basin (Fig. 5.11).

### Table 5.1

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Tahsil</th>
<th>No. of villages</th>
<th>Total Area Km²</th>
<th>Total population</th>
<th>Total Houses</th>
<th>Bernhard’s Method</th>
<th>Demongeon’s Method</th>
<th>Debouie’s Method</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Nagar</td>
<td>116</td>
<td>1542</td>
<td>260796</td>
<td>51830</td>
<td>5940</td>
<td>116</td>
<td>111.7</td>
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<td>936</td>
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<td>35052</td>
<td>3713</td>
<td>94</td>
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<td>3</td>
<td>Shrirampur</td>
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<td>51530</td>
<td>3324</td>
<td>161</td>
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</tbody>
</table>

*Note – For calculating above indices tahsil as a unit was considered.*
5.13 Lorenz Curve :-

It is the graphic as well as quantitative method of measuring the deviation from the average, devised by Lorenz for measuring the inequalities in the distribution of wealth. But it can equally be applied for measuring the deviation for any frequency distribution.

Lorenz curve is actually a cumulative percentage curve. Cumulative percentages of one item are plotted against the cumulative percentages of other item. Cumulative percentages plotted along axis of Y and X. Along the Y axis, at the intersection the scale begins from zero and goes upward up to 100, it is same for X axis. When we join the zero and both values of 100 then it gives a straight line, which is possible only if the distribution is equal, this line is termed as the line of equal distribution. The actual data of total population and number of settlements in each tahsil is plotted as the graph and a curve is drawn through all the points. The distance of the curve from the line of equal distribution gives an idea of deviation in the distribution. The farther the curve, the greater is the deviation (Fig. 5.12).

Lorenz curve was drawn for each tahsil of the basin and the values of concentration were calculated. To start with, a Lorenz curve was drawn for rural settlements in the State of Maharashtra and value of ‘I’ (index of concentration) was calculated, which was found to be 0.55. This value of ‘I’ indicates that the rural settlements in the state in general are nucleated. The values of ‘I’ for Pravara basin was found to be 0.43, which is less than that for the state. This means that the settlements in Pravara basin as a whole are slightly compact.

Within the basin the value of ‘I’ were found to be low for the western and southern tahsils of the basin. Where a proportion of flat land is low and consequently low carrying capacity of land has resulted in dispersion.
PRAVARA BASIN
Index of Concentration
(BY LORENZ CURVE)

X AXIS % of Population
Y AXIS % of Settlements

Fig. No. 5-12
While the eastern and central tahsils of the basin have higher values of 'I' than that for the basin, which vary from 0.45 to 0.566. In these parts the rural settlements are nucleated due to existence of rich fertile soil and easy availability of irrigation facilities.

Lorenz Curve

Index of Concentration

<table>
<thead>
<tr>
<th>Tahsil</th>
<th>'I' Values</th>
</tr>
</thead>
<tbody>
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<td>Nagar</td>
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<tr>
<td>Rahuri</td>
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<td>Shrirampur</td>
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<td>Region</td>
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<tr>
<td>Maharashtra</td>
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</tr>
</tbody>
</table>

5.14 Site, Situation and Location :-

Site :-

Site, situation and location these three terms are interrelated but easy to be distinguished from each other. Ecological determinism is reflected through Evans –Pritchard’s Neur settlements in Sudan and by Brockmann where she attributes settlement pattern almost exclusively to site. Dickinson’s view regarding site is also more ecology oriented when he says that site embraces precise features of the terrain on which settlement began and over which it spread. Emrys Jones observes that site is the relationship between a dwelling or a group of dwelling and the
immediate physical environment. It is well known assumption that in the selection of settlement sites, man is usually guided by both the attractive and restrictive forces of physical setting, which is an ensemble of various elements, such as geology, relief, drainage, soil and natural vegetation. Blache states that “nature prepares the site and man organizes it to enable him to satisfy his desires and his needs”. So it is approved that the very concept of site is inherently cultural. Moreover, the effect of site is cultural rather than physical, since the ideal site depends on the goals, ideals and values of people and choice of the ‘good’ site whether lake, river, mountain or coast depends on this cultural definition. For scholars like Blache, Brunhes and Sauer, the term ‘site’ connotes the natural endowments in relation to their utilization by a culture group. Chisholm stressed on arable land, grazing land, water, building material and fuel as site determining factors (R.Y. Singh).

**Situation :-**

The situation is usually considered with physical and cultural conditions over a much wider area. It refers to the relation of one settlement with the surrounding settlements in the country through varied linkages as well as physical elements of the surrounding area.

**Location :-**

Location indicates the place where an object or settlement is situated, i.e. its geographical address, hence in degree, minute and seconds in reference to latitude and longitude expressing uniqueness.

**5.15 Settlement Sites**

Site is the most significant factor in developing certain patterns of settlements. Settlement sites are divided on the basis of physical phenomena,
which proves to be more attractive factor in settling process while cultural factors become determining or controlling ones. Since all sites have topographic locations, it is simply more convincing to present them with generalized categories of physiographic and cultural.

**Physiographic Sites :-**

All physiographic sites further discernible according to their relations to the environmental features: 1. hydrographic, 2. geomorphic and 3. vegetational.

**Hydrographic Sites :-**

Water is the sole and the most determining factor in occupancy. Water containing features also serves as means of livelihood, communication, defense as barriers, cultivation through irrigation, etc. Among many minor and major factors affecting hydrographic features, a few more significant are water table depth, portability of water, its volume, seasonal fluctuations, accessibility, skill of inhabitants in making use of water from different sources and nature of reservoir, spring, or tank and stream banks. So hydrographic site settlements can be of following types.

1. River bank site
2. Confluence site
3. Convex bank site / concave bank site
4. River island site
5. Stream site
6. Divergent site
7. Delta site
8. Dam site
9. Tank site / well site
10. Canal site  
11. Spring site  
12. Coastal site  

By careful observation of topographical maps of the study area several selected examples of various hydrographic site locations of rural settlements are as below.  

**River Bank Site** – Kalas, Dhandarphal, Manglapur, Ganore, Rajapur, Ashvi, Mandve  
**Confluence Site** – Nalwad, Sangamner, Jorve, Dhamori, Baragaon – Nandur, Pravara – Sangam, Mandve  
**Convex Bank Site** – Chikni, Dhad, Sade, Chikhalthan, Valan, Karajgaon, Amalner, Pacheugaon, Bherdapur, Punatgaon, Pimpari  
**Concave Bank Site** – Shilegaon, Khadambe, Pimpri, Khedale –Permanand, Manjari, Chinchban, Bahirwadi  
**Stream Site** – Tambol, Hivergaon, Koude, Shelakewadi, Khambe, Panodi, Siplapur, Khali, Palshi, Jherekathi, Dhavalpuri, Khare – Karjune  
**Dam Site** – Bhandardara, Shendi, Mulanagar  
**Tank Site** – Sadatpur, Manchi, Musalwadi  
**Canal Site** – Hasnapur, Ojhar, Chedgaon, Panaswadi  

**Geomorphic Sites :-**  

Physiography of the area plays an important role in determining the site and location of rural settlements. Varied considerations are responsible for selection of any geomorphic feature as site for the location and establishment of a settlement. Settler’s perception depending upon his knowledge acquired since generations on one hand and relative location of site on the other become decision making factors, following aspects are considered.
1. Suitability of available land for occupancy for settlement and primary production i.e. agriculture, forestry, mining, fishing, etc.
2. Suitability of size of the site in a territory
3. Contour relations according to local slope
4. Strategic situation regarding overall defense
5. Approach and accessibility linkages in relation to pathways, roads, other settlements, water and other landuse.

So geomorphic site settlements can be of following types.

1. Spur site
2. Mesa site
3. Hill top site
4. Plateau site
5. Water divide site
6. Gap site
7. Foot hill site
8. Terrace site
9. Valley bottom site
10. Plain area site

Following are the some selected examples of various geomorphic site locations of rural settlements of the study area.

**Spur Site** – Kolpewadi, Sujalpur, Jambhulban, Kuranwadi, Digrus

**Hill Top Site** – Kolyachiwadi, Thakur Pathar, Kamathwadi

**Plateau Site** – Taharabad, Gardewadi, Chinchale, Patharwadi, Wavrath, Gadakwadi, Pokhari, Varshinge, Chadharwadi, Nimbalak, Lamanwadi

**Gap Site** – Tambol, Chapadgaon, Menkhind, Ganeshkhind, Konchi

**Foot Hill Site** – Sonewadi, Manoharpur, Sayk hindi, Dhulwad, Kangar, Mahesgaon, Nimbere, Tulapur, Malunje, Kolwade, Gunjale
Valley Bottom Site – Maldad, Thakurwadi

Plain Area Site – Kharwandi, Kangoni, Hingoni, Sonai, Chanda, Nimgaon, Ousthal, Malichinchore, Khupati, Karegaon, Salabatpur

Vegetational Site :-

Some settlements are associated with suitable forests sites, forest preservation seems to have been the motto of forest settlers who even worshipped trees of varied species. This shows the affection of settlers towards life sustaining qualities of forests, forests are regarded as an integral element of primordial nature. Vegetational sites can be described as (a) forest edge site and (b) forest core site. Forest edge sites are in the areas where margins are cleared and inhabited. This may be near a spring or stream on level plain or on spurs. Such sites scatter near all types of protected or reserved forests. These lands provided easy access to woods for wood product and grazing ground and piece of tract available for construction of house, cultivation and woodcutting. Forest core sites are mostly occupied after cutting by government agencies for convenience of administration or by tribal who naturally like to live away from the civilized part of land.

Cultural Sites :-

The man made landscape presents many forms showing associations during the occupancy of a particular area. Settlements occupy such sites, which later on are so much deeply interlinked that it becomes difficult to say which preceded what. Following cultural features seem to have attracted settlers and settlements.

1. Road site
2. Cross road site
3. Railway site
4. Nodal point site
5. Forts site
6. Central location / farm site
7. Miscellaneous religious site
8. Industrial site

Proximity of road is an important point, which attracts the location of settlement. Several settlements in the study area can be classified as road site or transportation network site settlements, i.e. Nimgaon jali, Wadgaon., Konchi, Guha, Pandharipul, Handi Nimgaon.

In the irrigated parts of Shrirampur, Rahuri and Newasa tahsil several settlements have been located on farm site. These are very small settlements (Wadi) and they are mainly attracted to farm. The development of agro – industry and particularly sugar industry has offered new sites are called ‘Industrial site’ i.e. Pravaranagar, Amrutnagar, Shivajinagar, Mulanagar, Ganeshnagar.

Crossroad Site – Pandharichapur, Ghodegaon, Mukindpur, Handi Nimgaon
Railway Site – Dehere, Vambori Station, Vilad Station, Rahuri Station
Nodal Point Site – Vankute, Bhalvani, Loni, Sonai, Ghodegaon, Vadala
Fort Site – Bhanshivare, Nimgaonjali
Farm Site (New wadi) – Panaswadi, Belekarwadi, Landewadi, Ganeshwadi, Narayanwadi, Morewadi
Religious Site – Newasa, Ranjangaon Devi, Singave Tukai, Singve Keshav, Shani – Shinganapur, Vadala –Bahiroba, Malas Pimpalgaon, Deogad

5.16 Pattern of Rural Settlements :-

The village being an agglomeration of dwellings is mainstay of rural life. It is also the embryonic stage of town and its natural growth presents well defined form. The external shape of the morphological structure of settlements reveals some geometrical form as a result of definite layout of houses, streets, open space, etc. in relation to the field. The morphogenesis of settlements becomes interesting
as the forms evolve depending upon various geographic phenomena. The patterns of villages can be studied under two sub-heads (i) external form, (ii) internal layout plan. Both these aspects are closely related to various geographical and cultural conditions, such as nature of site, surface water (river, stream, dam, tank, canal, well), the nature of soil, vegetation, cover, agricultural practices and farm size. Besides these physical conditions, historical events and background, cultural traditions, arrangement of roads, houses and other cultural features are the other aspects which play an important role in moulding and shaping the village form. The geometrical form of individual houses and arrangement of roads determine the internal structure of village (Sinha, 1976).

The nucleus of rural settlement develops at the most accessible place from where the surrounding agricultural land can be easily observed (Duggal, 1967). Most of the villages are related to types of soils, agricultural techniques, layout of the field and other cultural elements such as village communication lines, temple, mosque, etc. (Singh, 1955). These factors are dynamic in character and their influence varies from one village to another.

Several scholars have described the forms of rural settlements by studying the internal layout plan as well as external shape of the villages. Mukherjee (1923) through his study of north Indian villages, described the different patterns of villages on the basis of their origin and evolution. Bowen (1926) presented an account of regional patterns of rural settlements and their characteristics in the South Wales. King (1927) followed Bowen’s ideology and studied the settlement pattern of South West Lancashire. Sainson (1935) examined the rural settlements of Somerset and remarked that ethnic difference have operated mainly through the medium of land tenure in shaping the settlement pattern.
Trewarth (1946) examined the role of physical and cultural factors in shaping rural settlements in colonial America. Ahmed (1952) while describing the rural settlement type in Uttar Pradesh, pointed out that the rural dweller settles at a minimum economic distance from his scattered field and responsible for particular form of settlement. Singh (1955) analysed the regional types and patterns of rural settlements in the middle Ganga valley. V. Nath (1962) studied the Indian village, he stressed the role of the caste and the community as factors in village form. Tamaskar (1972) makes an analysis of various patterns of rural settlements on Sagar – Damoh Plateau, where he has given more importance to physical and cultural factors. Jain (1972) has studied rural settlements of Vidarbha region and analysed the role of cultural factors in shaping the pattern of rural settlements. Apart from these important contributions, several other geographers have also contributed in the study of rural settlement patterns.

The patterns of villages in the study area have been identified after a study of village forms from toposheet and wherever possible by personal observation. The study of patterns refers chiefly to the clustered settlement hence those villages, which have compact or roughly compact types have considered for the observation. The area under study has varied physical conditions so there are several patterns of villages, which are influenced by locational, physical and cultural elements.

1. **Square Pattern** :-

The square pattern of village is generally caused by the sites having crossing of cart – tracks or roads and other cultural features. In the plain agricultural region such villages are found, having strong agglomeration. In such villages square blocks of habitations are found. Sometime these square blocks are
occupied by distinct types of communities. One of the best example of such village is Warshinde (47/I/15) in the study area (Fig. 5.13).

2. Rectangular Pattern :-

Square village pattern often turn into rectangular after growth in certain direction. It is the most common form of compact rural settlement found in fertile river valley. The general factor influencing this pattern is the rectangular form of the cultivable fields. The aggregation of rectangular buildings in the plots of the same shape, produces rectangular form of the village. Normally in a rectangular settlement the houses are facing east to west, so that they get maximum sunlight and fresh air. The measurement of the land in the area is generally based on some sort of rectangular or square unit (bigha, yard, acre), which has resulted similar field pattern. In this pattern houses are accommodated in several rows.

3. Elongated Pattern :-

The elongated pattern of the villages is a common form of the compact settlement found in the areas with certain physical conditions. Dry point villages develop along the high level surface restricted by floods or dissected topography from two sides and form elongated shape. Sometimes houses aligned along the stream for the advantage of water front and present such form.

4. Chess Board Pattern :-

A rough grid is visible in some of the villages. This pattern is a by –product of the large rectangular village. The network of lanes or streets intersects each other in a right angle and other small lanes go to interior houses parallel to the main lanes gives chess board pattern. The village lanes are wide enough to allow the passage of bullock carts, these lanes connect almost all concentration of dwellings in the settlement unit. Sometime wells are found in one corner of lane
crossing, serving a ward or the sector of the village. This pattern is normally found in plain fertile areas.

5. Circular and Semi-circular Pattern:

Circular form is related to some physical and cultural features. A circular village is normally found in a ‘Horse Shoe’ shape. This village pattern develop by maximum aggregation of certain facilities such as defense and easy accessibility from some central attraction such as temple, ponds, etc. The site of temple or well, ponds has become the central point.

Semi – circular pattern develop along the bend of streams, the crescent shape of meanders, one side of ponds. One of the best example of semi – circular pattern is Musalwadi village in the study area (Fig. 5.13). In this village, the effect of ponds resulted in construction of houses along one side of ponds, so its form looks like a semi – circular in shape.

6. Radial Pattern:

This village pattern is similar to circular pattern with slight variation in the internal as well as external structure of the layout. In such a village, a number of cart – tracks or streets and lanes radiating in character. There is a convergence point where all streets or lanes converge at the nucleus of the settlement, which is occupied by Zamindar’s or land lord’s house, or a market place, or some gram daivat temple (the Hindu gods). Most of these villages are old in origin representing the ancient aggregation of maximum possible houses under the protection of garhi, which is well situated at the center. Such forms are rough in nature, the dwellings have been constructed along the lanes and streets. Nimgaon Jali is best example of this pattern in the study area (Fig. 5.13). There are other several examples of this pattern.
7. Linear Pattern :-

The linear pattern is most common form of the rural settlement found in varied physical and cultural conditions. Such pattern develops along roads, rivers, nallas and on hill terraces. Attractive forces encourage linear growth and restrictive elements of marshy, highlands, flood boundaries prevent expansion in other sides and linear form extends along the roads, rivers or pathways. In such settlements the houses form a row all along earlier mentioned feature and develops a linear pattern, Dhonore, Songaon, Satral, Singve and Nandgaon are some of the examples (Fig. 5.13).

8. Hollow Pattern :-

This pattern of village depends due to an open or unbuilt space, a pond, high ground, temple or mosque or a number of trees occupying the central place in a settlement of compact form. In such villages people prefer to construct their houses around such features (Fig. 5.14) Vadala Mission village is best example of this pattern. In this village central location of pond gives hallow pattern.

9. Twin – Nuclei Pattern :-

The twin nuclei pattern is a group of two settlement units grown up one after another or simultaneously at a place (Ahmed E., 1971). These villages occupy similar geographic conditions but their revenue and administration are dealt separately. In study area such twin settlement pattern identified and older settlement is known as ‘Khurd’ and latter settlement is known as ‘Budrukh’. Physically they are separated by river, road, streets or ponds. Twin nuclei pattern particularly characterized in level plain of the Pravara valley. There are several examples of this pattern in the study region, such as Ashwi Bk and Ashwi Kd, Dhandarphal Bk and dhandarphal Kd (Fig. 5.14).
10. ‘L’ Pattern :-

‘L’ pattern is found at several sites where at the junction of a main road and a minor street or track, two rectangular block of houses meet at right angles to each other (Singh R.L.). The block of smaller houses represents new growth due to attractive forces applying in any side greater force and restrictive forces fixing them to extend in single direction.

11. ‘T’ Pattern :-

In some villages, a smaller limb extends towards cultivated fields at an angle to give the ‘L’ shape and a new form resembling ‘T’ shape. Such a limb also develops from a main rectangular or elongated form of village into ‘T’ shape. Chikhali is citable example from the study area (Fig. 5.14).

12. Shapeless and Amorphous Pattern :-

Shapeless, irregular agglomeration is the most common form of village pattern found in study area.

Most of the villages, grown amidst irregular physical surroundings, with hamlets having dispersion and having no definite pattern under a single nomenclature, hence amorphous pattern seems best they deserve. Vilad village is one of the examples and there are several villages of this pattern in the study area (Fig. 5.13).
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