CHAPTER 4

FACTORS INFLUENCING THE LOCATION OF RURAL SETTLEMENTS IN THE GANCA-YAMUNA DOAB
Site is the relationship between a dwelling or a group of dwellings and the immediate physical environment — a minor feature of the landscape, a raised hillock, a level terrace or a proximity to spring. The location of a village is the expression of a combination of physical and cultural factors of the area concerned.

Location is undoubtedly a paramount factor for human establishments which indicates where a house should be built or a village be located.

The Ganga-Yamuna Doab is no doubt a land of agricultural farms and villages which are the pioneer settlements. In the real sense of the term they are the originators of the urban centres. According to the stages in the development sometimes they increase or sometimes they decrease in size. At times they tend to create new sites for the satellite villages. In the Upper Doab region village Bahadarpur in district Meerut is the living example of such a village. Here a new settlement is being created at a distance of hardly one kilometre from the original site of the old settlement.

At places the cultivable farms are widespread where the farmer and his family reside with the labourers engaged in farm activities.

The location of villages in the Ganga-Yamuna Doab is the result of physical and cultural factors. The location of the villages in the Doab region is directly the result of the combination of factors of relief, water supply, road transport and religious beliefs and superstitions. All these factors either individually or in combination have exerted a controlling influence on the location of rural settlements in the Ganga-Yamuna Doab. An attempt has therefore been made to analyse the influence of such factors on the location of rural settlements in the area concerned.

RELIEF

In the Ganga-Yamuna Doab there is a close relationship between the relief features and the location of rural settlements. Dispersion increases in direct proportion to the ruggedness of the surface of the land. 2

Dispersed settlements are more characteristic of the hilly region of the Ganga-Yamuna Doab and compact rural villages of the plains.

(a) The Sub-Himalayan Region

In the Sub-Himalayan tract most of the settlements are sprinkled in the Dun Valley and on terraces facing the sun in comparison to the rugged peaks of the Siwaliks which abut towards

the plains. The mountains serve as a means of defence and fortification because of their topographical value but even then are far behind so far as the location of villages is concerned in the plain areas of the Doab region.

In the hilly region of the Doab the river valleys, terraces and spurs offer the most favourable locations for rural settlements. The villages are situated on such locations which are free from land slides and avalanches. The terraced fields and spurs provide the most common site for rural settlements. The fields extend from the Valley bottom to the ridges and it is convenient for the peasants to look after their fields from a mid-way location. On such midslope sides the climate is neither too cold as on the ridge tops nor too sultry as in the Valley bottom. The wide Valley bottoms are therefore the areas which attract a large number of villages in the region.

Villages and hamlets tend to avoid the low lying areas liable to inundation and seek dry points on a mound or elevated piece of land.

Cattle sheds are located close to the houses generally on the lower altitudes. But on the high altitudes these stand away from the village. Such cattle sheds are known as chhanis. (Plate 4).

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The Dun Valley is about 75 km. long and 25 km. wide. It is the most fertile, well irrigated and densely populated part of the Sub-Himalayan Region of the Doab. Bairagiwala, Aduwala and Kunja Grant are the ideal examples of the mountain villages in the Sub-Himalayan Region of the Ganga-Yamuna Doab (Fig. 16).

Thus, in the Dunes, varying topography, and elevations and slopes have determined the location of the habitations. In most cases the houses are scattered over fields but in cases especially large sized villages there is a central nucleus. In the hilly region the settlements are characteristically scattered, isolated units are sprinkled over the narrow strips of arable land on the steep hill slopes. Nucleated settlements occur only on the foot of the hills.

The mountain villages have their locations either in the valleys or ridges or on the mid-slope spurs and have mostly terraced pattern. In mountainous areas the ridges are devoid of settlements as they are either too steep or covered with snow. The settlements are located near a spring or a rivulet. In a corner of the village or at some distance from the village on the gentle slope, a place is selected as Panchayati land for the purpose of celebrating festivals like Deepawali, Dussehra, Holi.

4 Panchayati land is that land where group of people collect for special purposes.
and harvesting fairs. Here the people of all castes and creeds assemble together to celebrate the festivities and generally a temple is erected either in the centre of the village or near the village site.

Thus in the Sub-Himalayan Region with the exception of the Dun Valley, the settlements are few and dispersed owing to ruggedness of the relief means of communication is difficult and agriculture is precarious in this area.

(b) The Alluvial Plain

The alluvial plain of the Ganga-Yamuna Doab provide favourable sites for rural settlements.

The Upper Doab region is well suited for the location of rural settlements owing to the alluvial nature of the plains with immense irrigation facilities. Tisang, Bhumia, Kakrauli and Tisal lie in Muzaffarnagar district, Belani, Kurali, Kanahi, Solana and Rithani in Meerut district and Bhojpur, Chhajaula, Mota, Rausa, Yaqubpur and Chhapraula in Ghaziabad district provide good examples of plain villages in the Upper Ganga-Yamuna Doab.

(c) The Khadar lands

The Khadar lands of the Doab are not well suited for the location of rural settlements as these lands are susceptible to floods. During the months of rains, the rivers overflow their banks and make the location of settlements vulnerable. As such
the Khadar lands of the rivers Ganga, Yamuna, Hindan and the Kali have sparse settlements. The village of Behta Ballu on the right bank of the Ganges in Farrukhabad district in the Middle Doab region, Bahloolpur and Chaukhandi on the right bank and Haibatpur on the left bank of the Bhuriya river, Salorpur Khadar on the right bank of the Hindan river, Ataur on the left bank of the Hindan river in Ghaziabad district and Khanpur Gazhi on the right bank of the Ganges river in Meerut district may be cited as notable examples of the Khadar villages in the Upper Doab region. In the Lower Doab region Samopur and Ahrri on the right bank of the Ganges river provide the suitable examples of the Khadar villages.

However, in Khadar lands which are subject to floods during the wet monsoon months the settlements are on the nearest levee or high mound to escape from the flooded waters. Thus the Khadar areas of the Doab region are the places where the villages are located farther apart. The Khadar lands are sparsely populated. The floods have a great check on the location of rural settlements in such areas.

(d) The Bhangar lands

The Bhangar lands provide better living conditions and suitable sites for the location of rural settlements.

Of course some of the well developed villages are seen over the entire Bhangar lands of the Upper and the Middle Doab where the high lying level land provides the most important
explanation for the location. Still southwards in the Lower Doab region the villages are smaller in size than in the North and are located closer to each other. Muradpur and Jhazina in Ghaziabad district in the Upper Doab, Mahadespur and Ahmad Ganj in Farrukhabad district in Middle Doab and Barha and Maheshpur in Fatehpur district in Lower Doab are the suitable examples of the Bhanger villages in the Ganga-Yamuna Doab region. (Fig. 17, 18, 19).

It will thus be seen that there is a close relationship between the relief features and the location of rural settlements all over the entire region.

WATER SUPPLY

Water being most necessary to men, animals and crops, man settles where it is easily and in large quantity available.5

Water supply is one of the most important and paramount factor in determining the location of rural settlements in the Ganga-Yamuna Doab.

The region is potentially quite rich in ground water resources. The permanent water table generally lies between 60-90 m. deep while temporary water table depth is 30 m. with wide spatial and seasonal variations. The temporary water table

bears significant relationship with the relief, geological structure and existing water channels as rivers in khadar tracts show in general higher water table, while the heavy clay belts of the Bhanger have lower water table. 6

In the district of Meerut about 20 percent of the wells show a water table at less than 3.3 m. and in over 70 percent of the wells the water table is between 3.3 and 10 m. The wells lying in the zones of high and low water table respectively are highly localised. The high water table wells are in the vicinity of the rivers while those with lower water table are near the canals. 7

The deciding factor in the location of settlement sites in the alluvial plains of Ganga-Yamuna Doab is primarily the proximity and effectiveness of fresh water supply. No other single factor has so much influenced the location of rural settlements as water. Wherever a well with good and fresh water supply exists, it has attracted the location of a village or a hamlet.

The location and distribution of the rural settlements in the Doab region are well illustrative of the regional geographical influences. Some of the largest clusters of the


villages are however found in the Upper Ganga Canal irrigated area of Muzaffarnagar, Meerut, Ghaziabad and Bulandshahr districts.

In areas irrigated by wells in the Middle and the Lower Doab comprising the districts of Aligarh, Agra, Mathura, Meinpuri, Etah, Etawah, Farrukhabad, Kanpur, Fatehpur and Allahabad, most of the settlements are compact and the size of the village is dependant on the supply of water from the wells.

Rivers also play an important role in the location of rural settlements in the Ganges-Yamuna Doab. They provide water for drinking purposes and for irrigation of crops. They are a good source of water supply for the entire region.

In the Upper and the Middle Doab region wells and canals both play a significant role in determining the location of villages while in the Lower Doab region wells demonstrate the site of rural settlements and control them to a large extent.

Again, irrigation exercises a great influence on the location of rural settlements in the Ganges-Yamuna Doab. In the canal irrigated areas of the Upper Doab region the settlements are located close to the canals.

The wells and tube-wells are equally important as far as the irrigation of the cultivable land is concerned. All over the Doab the wells as well as tube-wells are spread over the whole area. The settlements are huddled together in the vicinity of these wells which provide them easy and better living conditions.
In the Lower Doab where the staple diet of the people is rice, water is of the highest importance. When the monsoon is weak or it fails, the only solution is to find water to irrigate the rice fields. Wells predominate in the Lower Doab region. These wells influence the location of villages to a large extent. While in the Upper and the Middle Doab region irrigation by canals is more important but at the same time wells and tube-wells have also exercised a great influence on the location of villages in the Upper Doab region.

Village ponds are also a great source of water supply for drinking purposes for the cattle, construction of houses and minor irrigation facilities in the nearby cultivable land. There is hardly a village without a pond in the entire Doab region. The ponds are the centres of rural activity where women come to fetch water and men to water their cattle. A few trees are grown near the tank to provide shelter against the scorching heat of the sun. Thus these tanks become ideal places for village gossip. 8 (Plate 5)

The ponds also provide building material for the kachha houses of the villages. During the summer the ponds which have dried up provide mud for the construction of huts. The mud

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is mixed with straw and is plastered on the walls by the people themselves. Mostly the work of plastering is done by women and children of the house. At the time of important festivals like Deepawali, Holi and Id the houses are plastered with yellowish clay which is generally found in the vicinity of these ponds mixed with cow dung and finally white washed with lime. This activity is prevalent almost in every village of the Doab region.

In the Sub-Himalayan region the villages are located near the perennial springs or water holes which exert a controlling influence in finding suitable sites for the establishment of rural settlements.

It will thus be seen that the availability of water has influenced the location of rural settlements in the Ganges-Yamuna Doab to a large extent. The settlements are localised in the areas where conditions of water supply are easier and hence more villages are situated in the areas where availability of water is easy and convenient.

ROAD TRANSPORT

Reads are important in the location of a new settlement or in increasing the importance and size of the pre-existing settlement. In many cases recently, with the establishment of regular bus transport, reads have acted as a factor for the growth of twin village type settlement. In the Ganges-Yamuna

Doab such examples are common. Village Saidpur in Ghaziabad district may be cited as a typical example. This village lies along the road between Mohiuddinpur and Kharkheuda. The village has just spread by the roadside. Schools, cattle sheds, shops have been established and are developing along the roadside. (Fig.51)

Rural settlements assume a linear pattern on the roadside. The roads not only affect the location of settlements but also influence the layout of the settlement too. Thus the villages get their linear shape on the roadside. Bainsi in Muzaffarnagar district, Mohiuddinpur and Jani in Meerut district and Duhej and Simbhaoli in Ghaziabad district are other examples where linear pattern has developed on the roadside.

There is a close relationship between the road pattern and the location of villages in the Ganga-Yamuna Doab. Throughout the entire region as the distance from the roadside increases, the number of villages consequently decreases. The villages are huddled together near the roadside. There is a gradual fall in the number of settlements with the gradual increase in the distance from the road.

In general more than fifty percent villages are located in the distance range of two kilometres from the road in the Ganga-Yamuna Doab region (Fig.8,9).
ACCESSIBILITY OF SETTLEMENT BY ROAD (SAMPLE AREA DEHRADUN DISTRICT).

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2 KILOMETRES

ABOVE 2 KILOMETRES

CANAL

ROADS

RIVER

SETTLEMENT

SOURCE: SURVEY OF INDIA SHEET NO 53 F

FIG. 8
The maximum number of villages are located in the distance range of 2 km. from the roadside in the Sub-Himalayan region of the Doab (Fig. 6) The same position is found in other physical regions of the Doab. In the Upper, Middle and Lower Doab too the above mentioned position is repeated. Very few villages can be seen where the distance from the road is six kilometres or above. There is an abrupt fall in the number of settlements as the distance from the roadside increases. (Fig. 9)

RELIGIOUS BELIEFS AND SUPERSTITIONS

Religious beliefs and superstitions also exert an important influence on the location of rural settlements in the Ganga-Yamuna Doab. The villagers have strong superstitions about the location of the settlements. A new site for a house is generally avoided as far as possible lest it should prove inauspicious. However the houses can be built on a new site only after the sanction of the priest has been obtained. Village Gods are supposed to reside on the outskirts of the villages.

Moreover the ancestral site of a house is usually regarded as sacred unless the family is in decay. Extension of a settlement on the south and west is also forbidden, the two directions being considered inauspicious.

ACCESSIBILITY OF SETTLEMENT BY ROAD
(SAMPLE AREA FARRUKHABAD DISTRICT)

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SOURCE: SURVEY OF INDIA
SHEET No 54 M/6

FIG. 9
To safeguard the prosperity of the settlement and to avoid evil spirits from their houses and villages people take recourse to many kinds of religious practices. In the Sub-Himalayan Region a village has its own God or Goddess. The central part of the village is dedicated to the temple of the village deity. Beside the temple of the village deity there is the temple of Durga the great goddess. In the Himalayan region the people appear to be more superstitious. At times Hawan is performed at the time of the first entry into a newly built house.

Each village has its own place of worship either within the village or very close to it and sometimes midway between two villages. It is worthwhile to mention that the places of worship are generally located either on high grounds or on the river banks. Rivers enjoy a special sanctity for Hindus. It is believed that sins are washed away by bathing into a sacred stream. Most holy of all is the 'Mother Ganga'. All along its banks are places of pilgrimage visited by numerous pilgrims. 12 (Plate 2).

The religious minded people have staunch faith in the existence of God or deity which sometimes is the root cause of all settlement. 13

11 Hawan means recitation of religious hymns.
Thus religion has acted as a great force for nucleation of settlement. With religious beliefs there are many superstitions which forbid the inhabitants to construct their separate dwellings away from the main site of the village or beyond the village boundaries. It is commonly held that within the village boundary, life is protected against diseases and calamities by the particular village God. Further the ancestral site of the dwelling is sacred and remains unchanged from generation to generation. 14