

## **Relation between Environment and Forms of Settlement : A Systematic Geographical study of Old Shahabad District of Bihar**

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### **Abstract :-**

Shahabad district which was an important district of Bihar. At present, Shahabad district divided under four districts Bhojpur, Rohtas, Buxar and Kaimurint the south western part of present Bihar State. This study area has a predominately rural background. At present some signs of urbanization are visible in the region. The outline of human habitats is also seen here. The organizational structure of bounded space may be divided into two ways :- Residential organizational system and agricultural organizational system. Discussion of this region is also found in the mythological Vedas and puranas. Since ancient times, The distribution of settlements in the region was shaped by both natural and cultural forms.

In present research paper an attempt has been made to analysis the shap characteristics of village of old Shahabad districts. The form and pattern was firstly initiated by “Singh R.L.” in his classic work dealing with the layout of villages in the middle Ganga valley. Other Geographers have also done research work on the rural settlements of the area. Rectangular village which are the common form of rural settlements of the study are are visible in most of the area. From the time of the Aryan civilization the outline of the rectangular village was started. Religious beliefs were fully taken care of in the size of the villages and the structure of the houses.

Another important form is the checker board in which the two sequences of rural settlements are expanded by cutting each other to right angles. The shape of square villages are located on the intersections of roads. In the Holland centre village,The rural settlements around the village are wide and the centre is hollow. In which the form of public temple or pond or well etc. Can

be seen. Cross shape villages are mostly found in the flat region of the plateau. It is known that some part of the Shahabad region is also a plateau region.

Elongated, oblong and line village is a common feature of the settlements in this study area. In which the expansion of rural slums is restricted at one end of the village while the order of expansion continues at the end. Polygonal villages have the shape of a large number of polygon groups. Their externally are hexagonal, octagonal. The villages in the fan village are located on one side of the focal point. Often in the shape of a fan. The alignment of the lanes converges at a focal point. Circular villages are generally missing from the low lying areas and plains which are the habitat of compact clusters.

Thus it can be seen in the study area that various forms of rural settlements are found in this area. Which indicates rural diversity.

## **Introduction :-**

The rural settlement, is a relatively small and simple agglomeration of such buildings at a favorable and convenient site. They are spread over a given rural landscape in different patterns. Although every settlement has its individuality and wears a personality of its own, yet by and large, the distribution, pattern and types of rural settlements are governed by the interacting attractive and restrictive forms of both natural and cultural phenomena. In the selection of settlement sites, man is usually guided by both the attractive and restrictive forces of physical setting. In initial stages, settlement is primarily influenced by the environmental factors and further by the stage of socio-economic development and culture of human groups.

The organizational structure of bounded space may be divided into two ways:- residential organization system and agricultural organizational system. In the former system persons of different castes live together and are related or inter-dependent to each other for their socio-cultural needs, while in the latter system they cooperate with each other in agricultural activities. These two systems are associated with the inhabited site and village territorial limit respectively, so the shape analysis of inhabited site and village territorial limit will be useful the analysis of consequences of socio-economic feasibility.

## **Study area :-**

In present research paper an attempt has been made to analyze the shape characteristics of villages of old Shahabad district. The district consists of the new districts of Bhojpur, Rohtas, Buxar and Kaimur. It extends from 83°19' to 84°15' East longitude and 24°31' to 25°46' North latitude and comprises an area of 4406 sq. miles (11311 sq. km.) This portion of land consists of physiographic diversity like southern hilly area, Northern Ganga diara areas and the

alluvial plains. It is bounded by rivers almost for the whole of its perimeter and only for a small distance of about sixty kilometers out of its whole perimeter of over 1200 kilometers. The study area does not possess a natural barrier. In the North, the river Ganga separates the region from Gazipur and Ballia districts of U.P. and from Saran district of Bihar. In the East the river son separates it from the districts of Patna, Jahanabad, Aurangabad in the South again the same river separating it from Palamu and Garhwa districts of Jharkhand province and on the west it has districts of Gazipur, Mirzapur, Banaras etc. of U.P.

## **Objectives :-**

Main objectives of the present study are following :-

1. The study highlights the changes in the characteristics of the rural settlements.
2. The study also find out the evolution of rural settlements during early historic periods, medieval period, British period and post-independence years.
3. The study also considers the spatial variation in changing settlement characteristics.
4. The study highlights geographical factors responsible for determining types and pattern of rural settlements in study area.

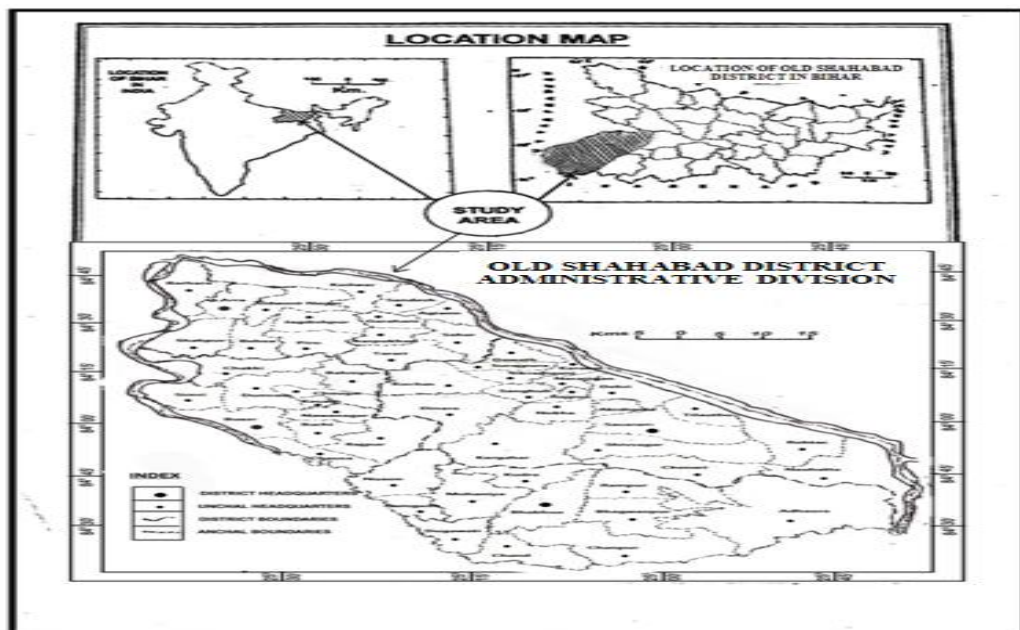
## **Data and Methodology :-**

The study of Nature requires both primary and secondary data. In the present Investigation some villages of different areas would be selected using purposive sampling technique. Primary data concerning rural settlements would generate with the help of questionnaires and intensive field works. Secondary data would be collected from published census hand book, unblished census data from census office, published historical books, Vedas, Purans, News paper etc. Primary and secondary data would be processed and analyzed. Suitable maps and diagrams will be constructed for different types of data.

## **Discussion :-**

In present research paper an attempt has been made to analysis the shape characteristics of villages of Old Shahabad District. The form or pattern was firstly initiated by Singh in his classic work dealing with the layout of villages in the Middle Ganga valley<sup>1</sup>. Such types of works have been made by several Indian Geographers like Ahmad<sup>2</sup> Singh<sup>3</sup> Singh<sup>4</sup> Singh<sup>5</sup>r Singh<sup>5</sup>

For the present discussion, the pattern of village sites has been considered which signifies the close arrangements of houses which are the resultants of various physico-cultural factors.



## RECTANGULAR VILLAGES:

Rectangular is the most common form of villages in all the areas where the settlements are agglomerated and compact. Rectangular villages fall within two main categories, villages which are rectangular both in external outline and in the inner arrangement of lanes and houses, fall within the first category. The second category includes such villages as are rectangular only in their out-line, but do not conform to any rectangular plan in their inter morphology. Besides there are a large number of villages which do not have a perfect rectangular pattern, but largely conform to it.

OLD SHAHABAD DISTRICT SETTLEMENT PATTERNS			
<p>A<sub>1</sub></p> <p>LWARIA</p>	<p>A<sub>2</sub></p> <p>KIRHIRI</p>	<p>A<sub>3</sub></p> <p>LAHTHAN</p>	<p>A<sub>4</sub></p> <p>BABHINIAOR</p>
<p>B<sub>1</sub></p> <p>SISWAR</p>	<p>B<sub>2</sub></p> <p>MAUNI</p>	<p>C<sub>1</sub></p> <p>PASAIN</p>	<p>C<sub>2</sub></p> <p>BASUHARI</p>
<p>D<sub>1</sub></p> <p>MALHIPUR</p>	<p>D<sub>2</sub></p> <p>PUSHAULI</p>	<p>E<sub>1</sub></p> <p>KARCAHAR</p>	<p>E<sub>2</sub></p> <p>THAKURI</p>
<p>A<sub>1</sub>-B<sub>2</sub> - RECTANGULAR A<sub>3</sub>-A<sub>4</sub> - CHESSBOARD B<sub>1</sub>-B<sub>2</sub> - HALLOW RECTANGL C<sub>1</sub>-C<sub>2</sub>- L SHAPED</p>		<p>D<sub>1</sub>- CIRCULAR D<sub>2</sub> - LINEAR E<sub>1</sub> - LINEAR E<sub>2</sub>-RCULAR</p>	

Rectangular form, in the first place, appears related to the nature of terrain and physical characteristics of sites. Where ever the surface is relatively level and the agricultural conditions are uniform, the land is parceled out into rectangular or square mauzas. compact villages occupying a part of the mauza and generally located at the centre of it, form as it were, an inner rectangular. A very obvious relationship is discernible between the shape of the cultivated fields which surround the villagers. This is particularly true of the adjoining part of the country is bigha which is a square unit. The square measurement of land has led to the evolution of similar pattern of fields. Almost all the field are rectangular in shape, and their boundary lines roughly run north-south and east-west. Villages, paths and cart-tracks sited on the field-bounds conform to the field pattern. A rectangular plot is easier to design and measure. Such a plot means least strain on bullocks i plough-turning. In rural set up where every-thing is made subservient to cultivation, the tendency is not to disturb the plough able shape of the most fertile fields adjacent to dwellings. This accounts to a great extent for the common rectangular form of the village.<sup>6</sup>

Rectangle and square are some of the most symmetrical figures perfected by human genius, with the Aryans who developed a sound knowledge of geometry at the dawn of civilization, rectangle and square appear to be the most favored figures. A good many things of the Aryans culture are rectangular or square in shape. Brahma or the creator is chaturanan or four-mouthed. This leads to the ideas of four-cornered universe. The Vedic Mandap (Canopy), shrines, Haven Kund (Fire-pit for rituals) and Kshetras (territories) are all square in shape. The Aryan house are four-cornered, four-walled and rectangular structures. Rectangular villages, thus appear to have been a heritage of the past. In the Slip sutras and other ancient treaties on sculpture numerous village plans have been detailed. Most of those plans are rectangular or square in shape.<sup>7</sup>

A rectangular plan is easier to design achieve and maintain. Expansion of a rectangular village, either on one or on all sides is not likely to distort the original shape. "In such a frame maximum clustering within minimum of species facilitated".<sup>8</sup> "In the Mansar references have been made to eight common plans of villages all of which are rectangular. Numerous plans of the Aryan villages and towns discussed by Kautilya contain four principle gates dedicated to four principle Gods"<sup>9</sup> The eastern gate was dedicated to Brahma, southern to Indar (the sun at noon) western to Yama (Lord of death or the setting sun ) and northern to kartikeya (the war Lord). In a compact village, the dwellings are built adjacent to one another. The grouping of dwellings which are rectangular ultimately leads to the evolution of rectangular villages. There is something instinctive about a rectangular plan. Human body when lying prostrate occupies a rectangular piece of land. This, perhaps, led to conceive the idea of designing rectangular beds, sleeping rooms and houses. Every movement in our daily life is expressed and understood with reference to the cardinal points of the compass. It is therefore, one of the basic urges of man to refer the position of his house, lane and door to the cardinal points of the compass. In almost all the communities, there are certain commonly accepted rule to place one's body while sleeping. Among the Hindus, it is believed to be in auspicious and irreligious to lay one's head in the north. Hence, if the walls are aligned with the four cardinal points, it will be easier to decide which way and where to lay one's head. Superstition also helped the villages develop rectangular shape.

North-south elongation of a house and courtyard is referred. An east-west elongation is believed to be highly inauspicious and is avoided. This naturally facilitates the north-south elongation which converted many square villages into rectangular ones.

There are as stated earlier, two aspects of a rectangular village plan, the external and the internal. The external plan refers to the rectangular outline of the villages. Internal plan refers to the arrangement of buildings and lanes. Generally the inner arrangement of lanes and houses in a rectangular village corresponds to the external form. In a large number of rectangular villages, the lanes are however crooked and houses are haphazardly placed. In such villages the outer form may be rectangular but the inner pattern is irregular.

## **CHECKER BOARD PLAN**

In some of the large rectangular villages the layout assumes checker board or rough grid-iron plan. The village morphology is composed of a number of rectangular blocks, separated by parallel lanes running north-south and east-west and cutting one another at right angles. Several factors have helped the evolution of a grid plan. In large villages, to facilitate the movement of population and agricultural commodities, a large number of lanes are required. The principal lanes are usually the continuation of the village Cart-tracts.

## **SQUARE VILLAGE:**

Square villages are less frequent than rectangular villages. They appear to be the result of some limiting factors that restrict the elongation of villages.<sup>10</sup> Quite often, square villages are bounded by such restrictive features as waterlines, tanks, or groves. Most of the square villages are located at the inter-section of village-roads or Cart tracts. The morphology of such villages is usually divided into four parts, each one of them appearing as a separate square.

## **HOLLOW- CENTRE VILLAGE PLAN:**

A large number of villages particularly on the northern slope of the plateau near plunge pool have a morphology which is hollow from within. The hollow represents partially or wholly inbuilt space in the heart of the village. This open space assumes various shapes, but frequently it is either circular or square. The hollow space appears to have various origin. In certain villages, a temple, a tank or a public well might be seen in the central open area. In others, the open space functions as a meeting ground or fair or market place. In tribal villages the open spaces are generally the sites of akhara. In Hindu villages a peepal tree is usually planted in the open space beneath which is situated the shrine of Brahma. Here, in olden days, the village council was to meet to deliver justice and all concerned were to take oath by Brahma. Sometimes mound or a rocky exposure may be seen occupying the central unbuilt space. In the areas of old settlements the mounds are usually the remains of the houses of some ancient chief of landlords. Shergarh is the burning example in the study area. Some times the unbolt space is occupied by ponds of irregular shapes. These ponds have probably resulted from the age-long excavation of the earth for building houses.<sup>11</sup> In almost all cases the open space serves as the central place for the village community and is the point of convergence in the village morphology.

## **CROSS- SHAPED VILLAGE:**

Cross-plan villages are quite frequent and are seen in all such parts of the plateau where the settlements are relatively agglomerated. Cross-plan is more common in the areas of linear settlements. Cross-shaped villages are generally found at the inter-sections of village roads or cart tracks.

A large number of villages have four square plan. Two cart tracks intermeeting each other divide the village morphology into four perfect squares put together.

## **ELONGATED, OBLONG AND LINEAR VILLAGES:**

Elongation is a general characteristic of the grouping of settlements in this study region. Elongation is noticeable both with agglomerated and dispersed settlements. "This is mostly due to the influence of the site. Natural or cultural features in the site are such as have either restricted the growth of the village in some directions or fostered its extension in others".<sup>12</sup> Oblong villages are generally seen along some important roads where the road serves as the main street of the village. In addition to roads, river-banks, canals, tank-sides, foot lines of hills and long narrow interfluves also act as elongating factors. Such natural or cultural features have led to the elongation of villages in all parts of Kaimur plateau region.

## **POLYGONAL VILLAGES:**

A large number of clusters have polygonal shape. Their outer form is commonly pentagonal, hexagonal and octagonal "A form intermediate between the circular and rectangular. The villages have natural growth prompted by their growing population and the nature of the physical terrain. If the available space at the settlements accommodates itself in whatever space is available. This results in the distortion of shape. Consequently a square or rectangle is converted into a polygon.

## **FAN PLAN:**

Such villages as are situated on the one side of a focal point frequently assume a fan-shape. The external form is generally semicircular or triangular, the alignment of lanes is convergent at the focal point and the layout is radial. The focal points are usually a river-bend, a tank, a road terminus or a road turning.

## **CIRCULAR VILLAGES:**

Circular villages are generally missing from the lowlying areas and plains which are the habitat of compact clusters. On the other they are frequently met with in the areas of relative dispersal, particularly in the areas of open-loose clusters. A few circular villages are noticeable in the areas of compact settlements also particularly in the southern part and the top of the plateau.

A large number of clusters have oval shape. Oval-shaped clusters are frequently located on elongated divides.

## **Conclusion/Finding/Suggestion :-**

Rural settlements of old Shahabad plain or areas lying between the two rivers Son-Karmnasa provide morphological features slightly different from the rural settlements of the hilly areas known as Kaimur plateau mostly consist of relatively dispersed settlements. The form of settlements include rectangular, circular, chessboard, linear, hollow rectangle, L-shaped etc. patterns. The old Shahabad district has little topographic variations but micro physiographic conditions caused by unequal depositions of silt or loam, changing courses of the river, formation of marshy land, lake, diara, area, human interference influence morphological features of rural settlements slightly different from other areas. The rural settlements of different areas of old Shahabad district reveal considerable variations in conditions. In the northern part of Diara land and in the southern Kaimur Plateau. The density of village is very low (<30 village per 100 km<sup>2</sup>) having larger areal size (73.08 km<sup>2</sup> per villages) while Son Ganga plain records very high density of village (760 villages per 100 km<sup>2</sup>) having smaller areal size (1.88 km<sup>2</sup> per villages) specially in Charpokhari, Harhi, Karakat, Dawath, Karagahar, Kudra and Bhabhua blocks. The highest village density (64 villages per 100 km<sup>2</sup>) with lowest areal size of village (1.57 km<sup>2</sup> per village) lies on Bhabhua block followed by Karakat, Charpokhari, Kudra, Dawath and Itarhi etc. And lowest village density (11 village per 100 km<sup>2</sup>) with highest areal size (9.05 km<sup>2</sup> per village) is found in Adhaura block. At the regional average, the ratio of village density as well as the areal size comes to about 43 villages per 100 km<sup>2</sup> and 2.35 km<sup>2</sup> per village in the study region.

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