

MORPHOLOGICAL ANALYSIS OF VILLAGE BILAWAL, BADHRA BLOCK, CHARKHI DADRI, HARYANA (INDIA)

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Abstract

The decision makers along with planners, policy makers and administrators feel helpless while planning the natural and social wealth of a region, in the absence of accurate information about all kinds of resources at village level. On the other hand planning is now widely accepted as a way to handle complex problems of resource allocation and decision making. For the purpose both spatial and non-spatial data is required. Remote sensing and GIS serves as a powerful tool for storage, handling, retrieving and analysis of spatially correlated data. The intention of the author is to give planning and development a more effective and meaningful direction, at micro level and to expose manifold problems after investigation of settlement systems in the geographical phenomena. Vision of the author is to become an educated and planned village and most economically developed village in Haryana and examine the site and morphology of rural settlement in the state (Haryana).

Keywords: Remote Sensing, GIS, Settlements System, Rural Settlements

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Introduction

The study of rural morphology includes all the features that combine to determine the existing forms of rural landscape. The term morphology had been used in various Sciences, like Geology, Philology, Geography and other Social Sciences. "Morphology is the study of a peculiar form, continuous spread and differentiations of rural settlement (Mandal R.B, 1948). The term morphology conceives two-fold expression- as "generic quality it views the non-existent processes, and as visual imprints it shows the man's achievement along with the organization system."(Singh K.N,1972). The study of rural morphology includes all the features that combine to determine the existing forms of rural landscape. The ground plan (external outline and internal arrangement of streets and buildings, etc., the build of structure), i.e., the dimensions, forms and materials of buildings, the street pattern, the functional structure, the physical and man-made characteristics of the sites, the historical background, the skyline, the green spots, the water bodies, the physical and cultural dominants and indeed all the elements of the rural landscape are important components of the rural morphology.(Kumar Satish.et al,2012). In the absence of updated and accurate information about all kind of resources at village level, the government and people of the nation are handicapped in planning and controlling their own destiny (Khan et al, 2005). On the other hand, it is also very difficult to make full use of natural and social wealth that lies in these areas. Besides, planning is now widely accepted as a way to handle complex problems of resource allocation at regional level (Roy et al, 2006). In the following paper, the analyses of morphology of settlements were conducted using Remote Sensing Tools and Arc GIS 10.2 Software. The emergence of remote sensing and geographic information system as a powerful tool for spatial analysis and storage has alleviated the problem by computerization of the spatial data (Ravindran, 2006). The intention of the author is to give planning and development a more effective and meaningful direction, at micro level. Indian village is dominated by religo-political structure, where the dominance of caste system plays an important role in the morphology of rural settlements (Kumar Satish.et al. 2012).

Objectives of the Study

The objectives of the present study are-

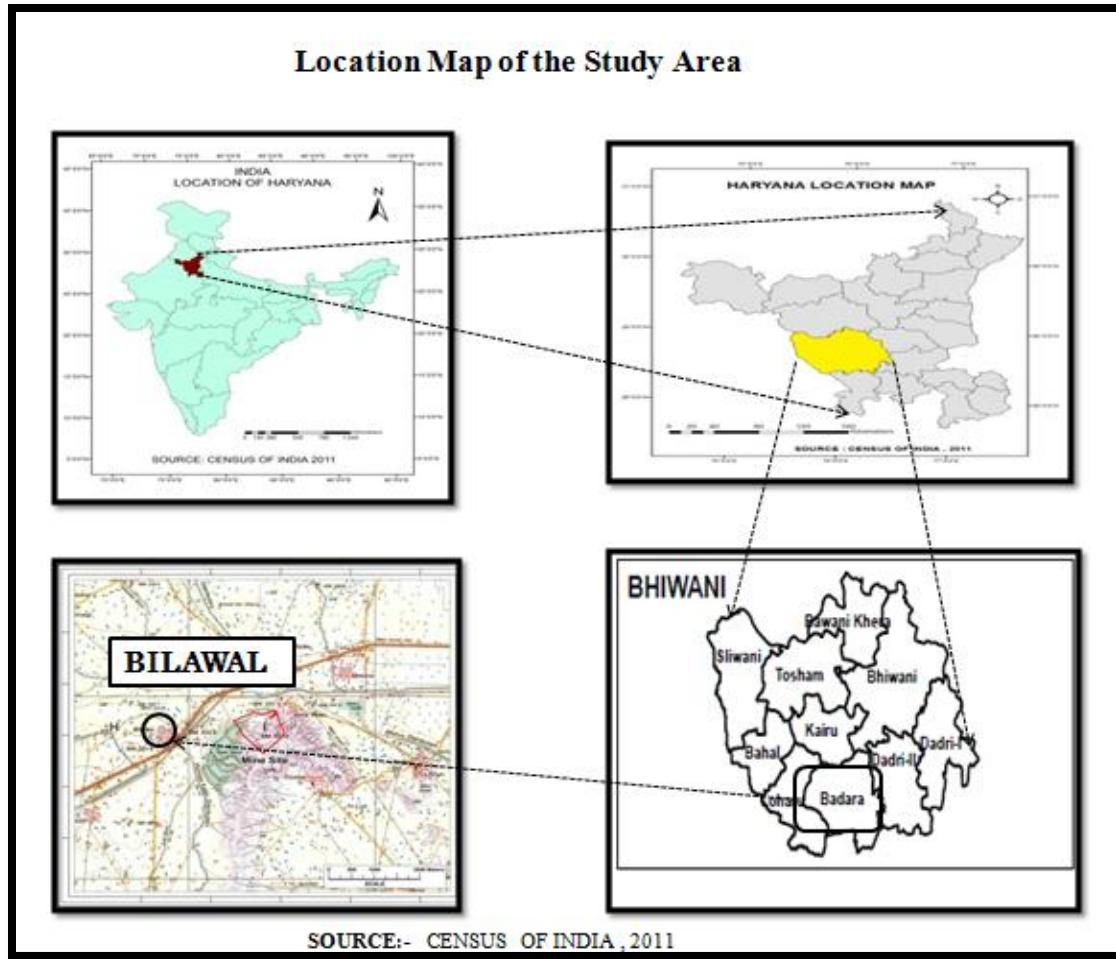
- To understand the impact of physical environment and cultural environment on the spatial distribution of population and settlements.

- To know the morphology of rural settlement in village of Haryana.
- To unleash the problems of the settlement system in the respective geographical phenomenon.
- To provide a meaningful direction for the planning at micro level.

Study Area

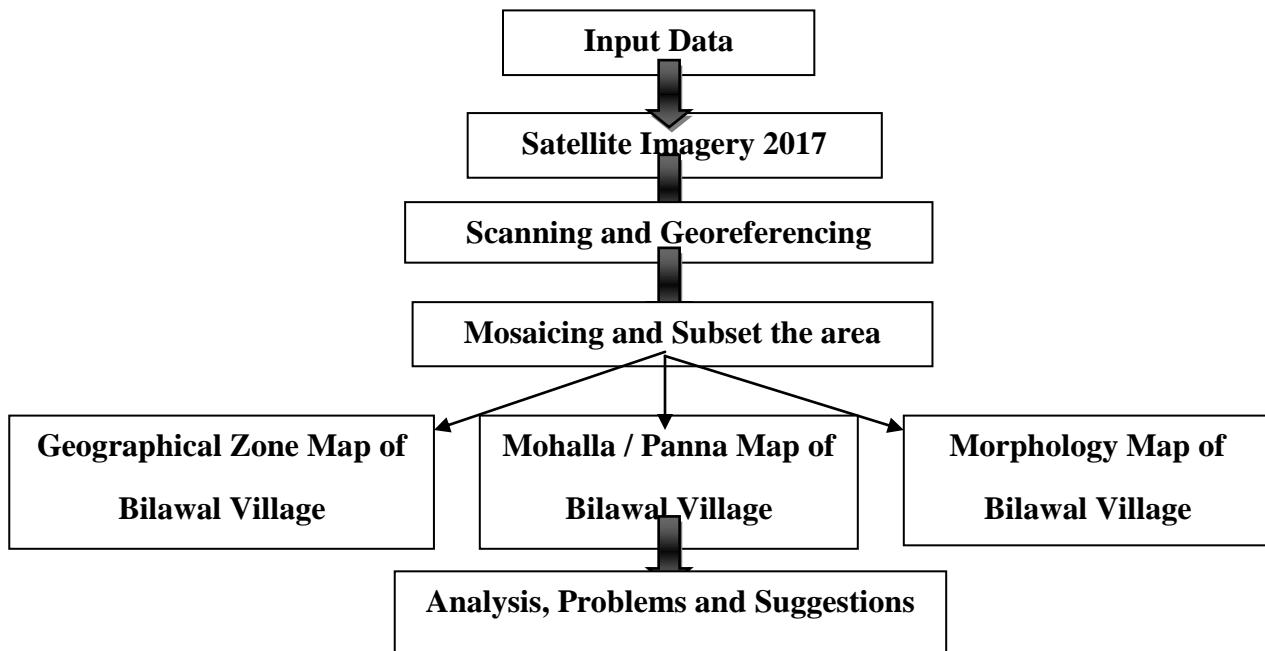
Bilawal, a small village of Haryana lies between $28^{\circ}34'28.92''$ to $28^{\circ}34'37.01''$ N latitude to $76^{\circ}4'27.86''$ E to $76^{\circ}4'40.4''$ E longitudes covering an area of 896 hectares. It is located in Badhra block of Bhiwani which has 10 km distance from Bilawal. The nearest town to the village is dadri, however its distance from district headquarter Bhiwani is 35 km. The village with the gram panchayat is the residence of 2,578 people, living in 535 houses. A significant part of the land in the village is occupied for the agricultural activities that accounts for almost 89 percent of total village land. The livelihood of almost 76% households is served from agriculture. The majority of the rural people resides in the village i.e. 97% and rest of the population resides in the dhanis (hamlets).

Figure1. Location Map of Village Bilawal



Data used Methodology:

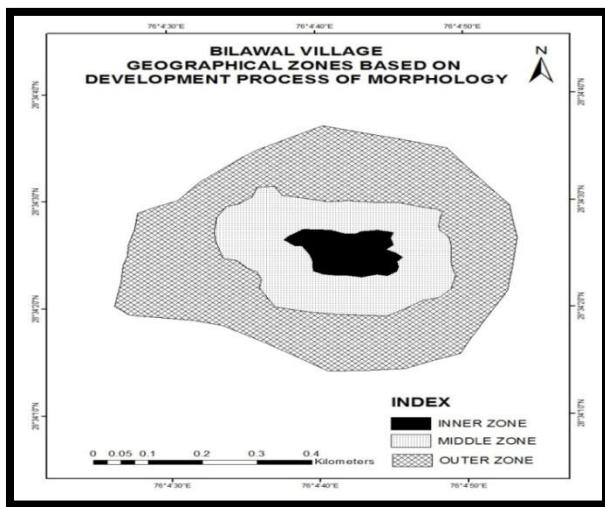
The present study uses both the Primary data sources as well as secondary data sources. The primary data includes the use of telephonic interview method, focussed group interview method and observation method, whereas the secondary data is gathered from the Survey of India toposheets from the respective departments. The study also incorporates the use of satellite images downloaded from Google Earth. The data relating to demography such as demographic characteristics, availability of various facilities, economic activities in which people are involved and the general for land use is gathered from various reports of Census of India and District Census Handbooks. Besides, it includes the suitable use of statistical bar diagrams, graphs and pie charts. Moreover, to prepare the morphological maps of village Bilawal the GIS technique has been equipped. Further, the methodology includes-



Results and Discussion

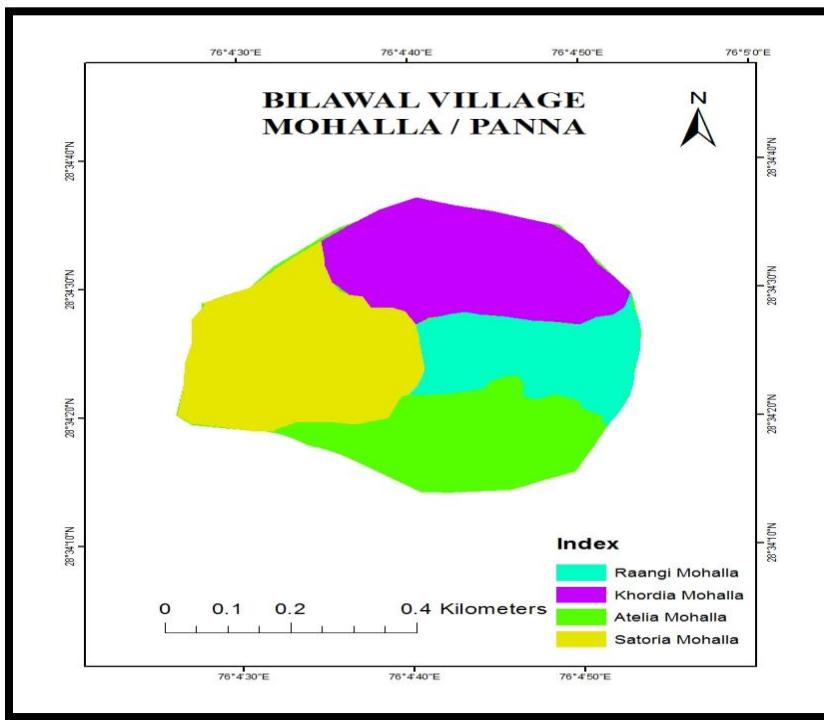
The village got its name originated from the word invitation (bulana) extended by the ruler to reside at the respective place, as told by some of the interviewed individuals whose families are dwelled in the village since past 1870s. Later with the purpose of the land settlement in the region, the ruler of native town Jind visited in this area in 1870s. On his initiation, the families of Khordia, Ateila and Saatoria also agreed to settle in the area.

Figure2. Geographical Zones of Bilawal Village



The village is the home of mainly three jat gotras that includes Janghu, Sangwan and Mahlawat, as here, these are considered as the residents from a long time in past. Some ancestors of the mahlawat jat gotra migrated from the satoor village, known by the name of saatoria in local parlance. Later the village evidenced a line of divide starting in direction east to west, which caused the Atelia moholla or known as panna located at northern side of the village and Khordia mohalla at southern side of the village, the division can be seen in the present as well. The ancestors of Janghu's jat gotra migrated from the Khorara village, now known as Bhalothia and Khordia in local parlance. Similarly, Atela Kalan is the ancestral place for Sangwans, who are now known as Atelias in local dialect. Further, it created rangi mohalla in the eastern part and Mahlawat mohalla in western part of the village. However, some of the mohallas presents evidences of people residing with different gotras in one mohalla.

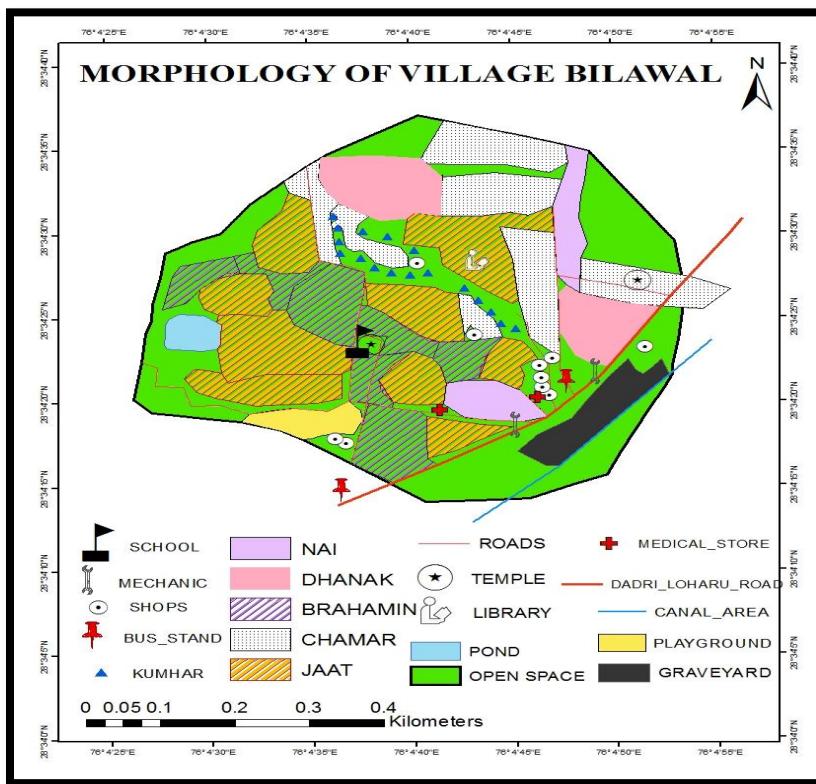
Figure3. Division of Village Bilawal in Mohalla/Panna



Other than the agricultural pursuit, some people are also engaged in the activities of trade, transportation and own business as well. The irrigation scheme for the agricultural land gets properly done and lifts up with the facility of tubewells and seasonal availability of the canal water from Loharu tehsil. The population categorized in the labor class serves at the nearby hillock of the village i.e. a part of the Aravali Hill range located about two km from the site. The village is stepping the stairs of development by opening a free library to provide free education

and free books of NCERT, CBSE, competitive magazines, stories, etc. The numbers of books currently available are almost 5000 and may increase with the high demand by students. Moreover the facility of free Wi-fi, preparatory classes for exams, basic computer classes have also been developed. The vision of the villagers is to reach the goal of 100 percent education and get economically develop.

Figure4. Morphological Structure of Village Bilawal

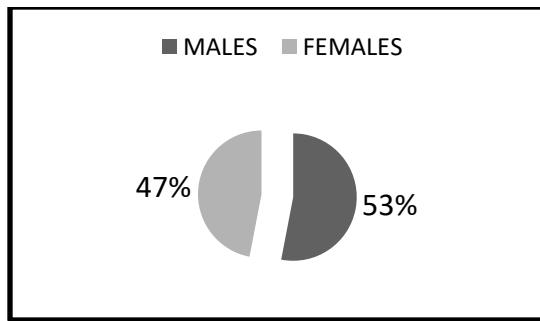


The total population of the village 2,578 comprising of 1,367 male population and 1,211 female population. The average sex ratio of the Bilawal village 886 is comparatively higher than average sex ratio of Haryana 879. Similarly as per the census 2011, the child sex ratio of bilawal is higher than that of Haryana i.e. 882 as compared to 834. The population of the village constitutes 24.44 percent of the schedule caste (SCs) population whereas constitutes no schedule tribes (STs) population.

Figure5. Population Structure of Bilawal

Table 1. Population Structure of Bilawal

Total	Male	Female



Population	Population	Population
2578	1367	1211

Table2. Literacy Rate of Village Bilawal

Total Literacy Rate	Male Literacy Rate	Female Literacy Rate
74.08%	85.43%	61.28%

According to the Census report 2011, it has literacy rate of 74.08% which is lower than the overall literacy rate of Haryana i.e. 75.55%. The male literacy rate stand at 85.43% and the female literacy rate stands at 61.28%.

Out the total population, 943 people are engaged in ----- activities. Out of these, 80.17% people are generally employed with the work for more than half of year, whereas 19.83% gets employment for less than two quarters. The occupation of these 943 workers encloses 453 as cultivators (owner and co-owner) and 106 as agricultural labor.

Figure6. Types of
Bilawal

Worker in Village

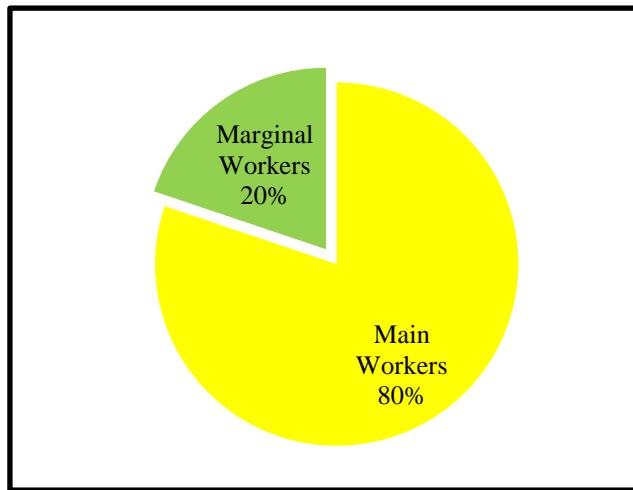


Table3. Development of Village Bilawal

Years	Events Record	Infrastructure Facility	Availability
1948	Balaji Temple	Primary Health Centre	Yes
1950-1960	Tubewell	Primary School	Yes
1970-1980	Canal	High School	No
1982-85	Electric Connection	Drinking Water Supply	Yes
2008-09	Construction of Pucca Road	Post Office	No
2012-13	Open Petrol Pump	Concrete Road	Yes
2016-17	Library Opened	Degree College	No

Overall Problems in Bilawal Village

The analysis done in the current paper reflects presence of lot of problems in the village. There is lack of credit facility in the village for the people who want to start their own small business or to improvise their technology for agriculture produce. Moreover, for the high agriculture produce the farmers are highly dependent on the use of pesticides and fertilizers which is resulting degrading health conditions. There is lack of awareness among farmers on the negative effects of the fertilizers or pesticides. Also they are not aware of the environment friendly manures and the related government programs. There is also the problem of selling crops at low prices is seen due to the presence of middlemen in the selling process. Also, there is unavailability of the standard higher secondary schools which is an essential in present era. The village does not have any proper healthcare facility and the sanitation conditions are also not good.

Conclusion and Suggestions

Conclusively, we can say that for the development of this area it is very important for government to take the necessary steps which can help the area to improvise in every way possible. In earlier times, people used to live near the pond but as government facilities related to water increased the people starting settling far from pond as well. It has been seen that the people migrated used to live in their communities only; situation has changed a bit only. The people are now moving towards preferring pucca house instead of kuchha house. It has also been seen that

the participation in secondary activities has somewhere replaced the participation in primary activities.

However, there is need for government to take necessary actions to improve the conditions of village in every aspect. The government needs to provide funds for the establishment of the health centers and higher secondary schools. Moreover, there should be done more awareness programs, camps, skits, etc. to aware the farmers about the modern environment friendly ways for high agricultural produce and knowledge about the crops according to the suitability of soil and climate. They should be encouraged to use green manure, compost and natural pesticides. The youth should be the major target of the government. They should be given some vocational training for knowledge creation, skill creation as well as employment creation. Also, the farmers should be provided credit facility with the easier access and at lower interest rates.

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