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Transformation of a Rural Homestead in a Rural Settlement: A Case Study of Ullahpara Upazila

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Masud Ur Rashid*

Abstract: Rural architecture in rural settlement of Bangladesh, while predominant floodplains, has its diverse characteristics as regards planning, use of materials and locations. The basic component of this rural architecture in rural settlement is the extended family homestead. This study concentrates on the changing patterns or the transformation of the selected rural homestead in a rural settlement. For the research study, the authors selected own (first author) rural homestead in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh. The overall research study conducted here is focused on the comparative analysis of the selected homestead features of two different eras in terms of traditional spatial settings, materials, different cultural, social and economic factors etc. Here the authors had to consider a proper field survey for the presentation on comparative description of the selected homesteads along with their plan layout, sketches, photographs, tables, charts and descriptive writings which will help us to find out the influencing factors and importance of the spatial settings of the rural settlement that guides the transformation of the specific homestead.

Keywords: Homestead, Rural Homestead, Rural Settlement, Spatial Settings of Homestead, Transformation.

1. Introduction

In Bangladesh, there is an overall hierarchical pattern within rural settlements. It begins with a *gram* (village) usually established on raised land, composed of a number of *padas* (settlements or neighborhoods). Each *pada* consists of a number of *badis* (homesteads), which in turn are comprised of several *ghars* (dwelling units of individual households for an extended family) and ancillary buildings.

A traditional rural 'Bengali house' (Figure-01) is an inheritance from the past that exists in the present and has a potential for the future. The traditional house in its basic form is a cluster of small 'shelters' or 'huts' around a central court-yard called the '*Uthan*'. Different huts are constructed for different functions; such as, the outer house (Out-house or *Baithak Ghar*); the inner house (Dwelling unit or *Ghar*); the kitchen; the cattle-shed. For larger houses there appear two more huts- the store house (fuel storage, granary etc.) and the rice husking shed or the '*Dheki Ghar*'. The basic layout of a traditional Bengali house has basically two zones without considering the changes of locations, materials, climates etc and their impact on



Figure-01: A traditional rural 'Bengali house, (Source: Hasan, D.M., 1985)

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the house forms. All the activities of a house are arranged by following these zones (Hasan, 1985). These zones are called;

1. Formal zone (male, outer part of the house)
2. Family zone (female, inner part of the house).

These zones have been organized on the basis of social, cultural, religious and climatic considerations, which are representing a 'Bengali' society.

A homestead is a socio-spatial manifestation of peoples dwelling in the rural settlement. It connotes an identity of a household as well as a property with tangible boundary. A typical morphological feature of the rural homestead or *bari* (Figure-02) is the arrangement of a number of closely spaced single-storied (or occasionally double-storied) one to two roomed rectangular buildings (*ghors*) around a square or rectangular open courtyard (*uthan*). There is usually a single row of buildings around a courtyard. In the process of making a homestead, a pond is excavated to obtain soil for raising the land; a backyard pond with bathing steps (*pukur ghat*) can be found in many large homesteads. The pond provides for rearing ducks and fish, and for bathing - a frequent purification ritual in this tropical land (Ahmed, 2006).

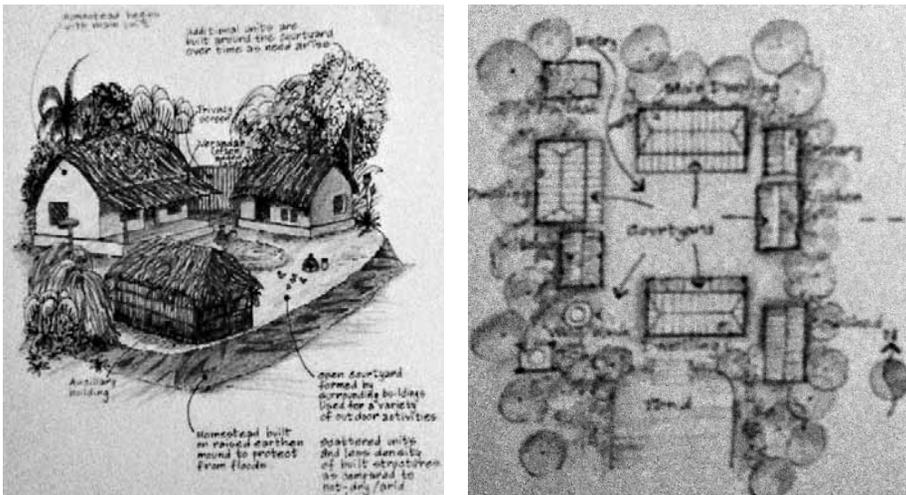


Figure-02: A typical morphological features of Bangladeshi rural homestead. (Source: Ahmed, 2006)

As a process of transformation, the traditional rural homestead or *bari* began to change both structurally and in the use of materials. The transformation or changing patterns of rural homestead is influenced in terms of traditional spatial settings, materials, different cultural, social and economic factors etc. Homestead transformation has made essential and helpful contributions in improving the homestead's conditions in many ways. Such as, through homestead transformation owner-occupiers can increase house size and gain considerably more space, including more habitable space. They achieve higher social status, as well as improving their living conditions.

This research study is focused on the comparative analysis of the selected homestead (first author's own rural homestead in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh) features of two different eras in terms of the above influencing factors.

2. Aim and Objectives of the Study

2.1. Aim:

The aim of this research study is to explore and present the changing patterns or the transformation of the selected rural homestead, first author's own rural homestead, in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh.

2.2. Objectives:

- i. To explore and present the changing patterns or the transformation of the selected rural homestead in a rural settlement.
- ii. To present a comparative description of the selected homestead along with its plan layout, sketches, photographs, tables, charts and descriptive writings.
- iii. To analyze the present conditions of this rural homestead by taking adequate photographs.
- iv. To present an in-depth comparative analysis of the selected homestead features of two different eras in terms of traditional spatial settings, materials, different cultural, social and economic factors etc.
- v. To find out the influencing factors and importance of the spatial settings of the rural settlement that guides the transformation of the specific homestead.

3. Methodology of the Study

To ensure the quality of the research study and compiling the changing patterns or the transformation, the authors selected own (first author's) rural homestead in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh. The reasons behind the selection of that particular homestead are easy accessibility to collect information, data, photographs etc. required for comparative analysis.

The methodology of this research study is primarily based on an empirical survey and consequently the research method progressed through qualitative data collection / observation and field survey. The research progresses according to the following sequential stages:

3.1. Literature Survey:

- ◆ To explore a contextual study of the rural homestead especially the selected rural homestead in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh.
- ◆ To understand the historical overview of the rural homestead along with rural settlement of Bangladesh.
- ◆ To investigate and understand the influencing factors and importance of the spatial settings of the rural settlement that guides the transformation of the rural homestead in Bangladesh.

3.2. Field Study:

- ◆ To study present conditions of the specific rural homestead in a rural settlement through field survey and photographic survey.
- ◆ To collect or examine the comparative description and analysis of the selected homestead features of two different eras in terms of traditional spatial settings, materials, different cultural, social and economic factors etc.

3.3. Exploring Activity:

- ◆ To present the transformation of the selected homestead, the author had to prepare necessary drawings including plan layout, sketches, tables, charts of the selected homestead on the basis of field study which have been presented in this paper.
- ◆ To accomplish the findings over the factors affecting transformation of the selected rural homestead in the rural settlement based on the environmental factors and the socio-economic factors in order to relate the transformation process.

4. Context of the Study

Ullahpara is an upazila in Sirajganj District (Figure-03), Rajshahi Division, Bangladesh - some 68 miles (or 109 km) North-West of Dhaka, the country's capital city. It is known as the gateway to North Bengal, since the Dhaka-Rangpur and Dhaka-Rajshahi highways intersect at Hatikumrul in Ullahpara. Ullahpara with 69,479 households and an area of 414.43 square kilometres (160 sq miles) located in between 24°12' and 24°26' North latitudes and in between 89°24' and 89°38' East longitudes, was built on alluvial soil deposited by the Padma, Jamuna and other rivers. It is bounded by Raiganj upazila on the North, Shahjadpur upazila on the South, Kamarkhanda and Belkuchi upazilas on the East and Bhangura and Tarash upazilas on the West. The average annual high temperature is 35 °C (95 °F), and the average low is 21 °C (70 °F). Annual average rainfall is 170–190 centimetres (67–75 in); (Banglapedia).



Figure-03: The map of Sirajganj District showing Ullahpara upazila. (Source: anglapedia)

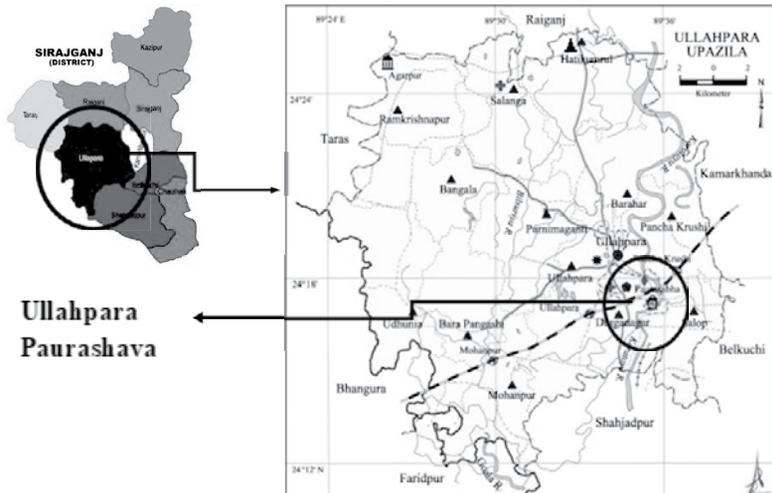


Figure-04: Map of Ullahpara upazila showing Ullahpara Paurashava. (Source: Banglapedia)

The selected rural homestead (first author's own homestead) for this study is situated at the Ullahpara Paurashava (Figure-04) of Ullahpara upazila in Sirajganj district, Bangladesh. Ullahpara Paurashava consists of total nine (9) wards (Table-01) and the selected homestead is located in ward number three (3) named Jhikira (Part) Dakshin. Some important data regarding Ullahpara Paurashava are stated bellow in Table-02 & 03 and Figure-05, 06 & 07.

Table-01: Ward numbers including villages in the Ullahpara Paurashava.

Ullahpara Paurashava		
Sl. No.	Ward no.	Village name
01	Ward-01	Baraya, Sreekola.
02	Ward-02	Bakua (Part) Uttar, Jhikira (Part) Uttar.
03	Ward-03	Bakua(Part)Purbo, Jhikira (Part) Dakshin.
04	Ward-04	Bakua(Part)Pachim.
05	Ward-05	Bhattokawak Part, Ghoshganti.
06	Ward-06	Bhatta Kawak, Kawak, Nabagram.
07	Ward-07	Ashrayan, Bamangram, Char Sreefal Ganti (Part), Enayetpur (Part), Nayanganti, Shibpur.
08	Ward-08	Nayanganj Bazar, Mawar Gachha, Singho Ganti (Part), Sreefal Ganti.
09	Ward-09	Enayet Pur, Guchhagram, Ghatina.

(Source: Bangladesh Bureau of Statistics, 2011)

Table-02: Area, household, population and density by residence and community of the Ullahpara Paurashava at Ullahpara Upazila.

Administrative Unit Residence Community	Area (acres)	Total Households	Population			Population Density (sq.km.)
			Total	In Households	Floating	
Ullahpara Upazila total	101082	123864	540156	539832	324	1320
Ullahpara Paurashava		10526	47693	47639	54	
Ward no-03 total		1388	6484	6471	13	
Jhikira (Part) Dakshin		980	4487	4487	0	

(Source: Bangladesh Bureau of Statistics, 2011)

Table-03: Distribution of household, population by sex, residence and community of the Ullahpara Paurashava at Ullahpara Upazila.

Administrative Unit Residence Community	Households				Population			Sex Ratio
	Total	General	Institutional	Others	Both Sex	Male	Female	
Ullahpara Paurashava	10526	10387	8	131	47693	24169	23524	103
Ward no-03 total	1388	1329	2	57	6484	3416	3068	111
Jhikira (Part) Dakshin	980	944	2	34	4487	2324	2163	107

(Source: Bangladesh Bureau of Statistics, 2011)

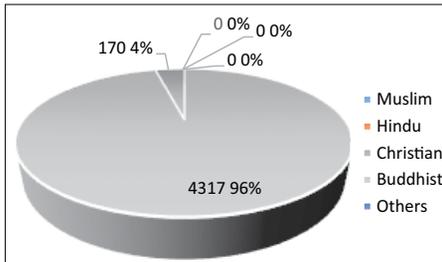


Figure-05: Distribution of population by religion of the Ullahpara Paurashava at Ullahpara Upazila. (Source: Bangladesh Bureau of Statistics, 2011)

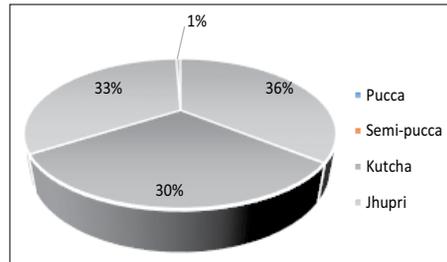


Figure-06: Percentage distribution of general household by type of structure of the Ullahpara Paurashava at Ullahpara Upazila. (Source: Bangladesh Bureau of Statistics, 2011)



Figure-07: (Top) Google map of the Ullahpara Paurashava at Ullahpara Upazila; (From bottom left) Starting point of Ullahpara bi-pass, Ullahpara bi-pass road, Ullahpara Paurashava entry road. (Source: Google earth image and Author's photographs)

5. Contextual Limitations of the Research

This research is focused on the changing patterns or the transformation of the selected rural homestead (first author's own homestead) in a rural settlement of Ullahpara Paurashava of Ullahpara Upazila in Sirajganj district, Bangladesh. For comparative analysis of the selected homestead features of two different eras, the authors had to collect and draw necessary information and drawings, and take interviews (for documents of before twenty years). Some data or information about the situations 20 years age and collected through interviews seems to be not absolute. These may be considered as contextual limitations of this study.

6. Comparative Spatial Settings of the Homestead

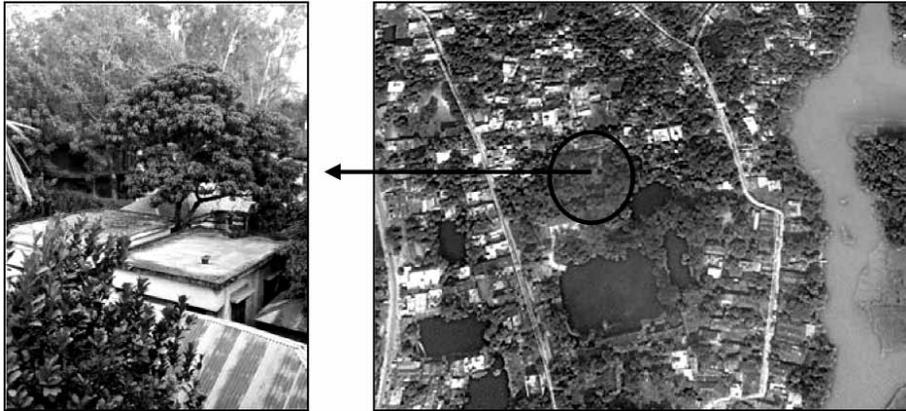


Figure-08: Selected rural homestead, located at village Jhikira (part-dakshin) in Ullahpara Paurashava. (Source: Author's photograph and Google earth image)

This research study is focused on the selected rural homestead, mentioned earlier, (Figure-04, 08). The comparative spatial settings of the selected homestead of two different eras; (before 20 years and present) are explained here with layout plan, sketches, tables, charts, photographs etc.

6.1. Organization of homestead:

Truly the layout plan of homestead 20 years ago has been shown in Figure-09 & Figure-10. The closely spaced rectangular single-storied buildings are organized around a rectangular open courtyard. Basically, cluster type organization was used for this homestead. Through transformation process at present day, two new one-storied buildings are constructed in the front side (entrance area) of the homestead by demolishing the old structures (Figure-09 & 10). The organization type remains unchanged except the entrance space, which turned narrower towards the internal open courtyard (Figure-09 & 11).

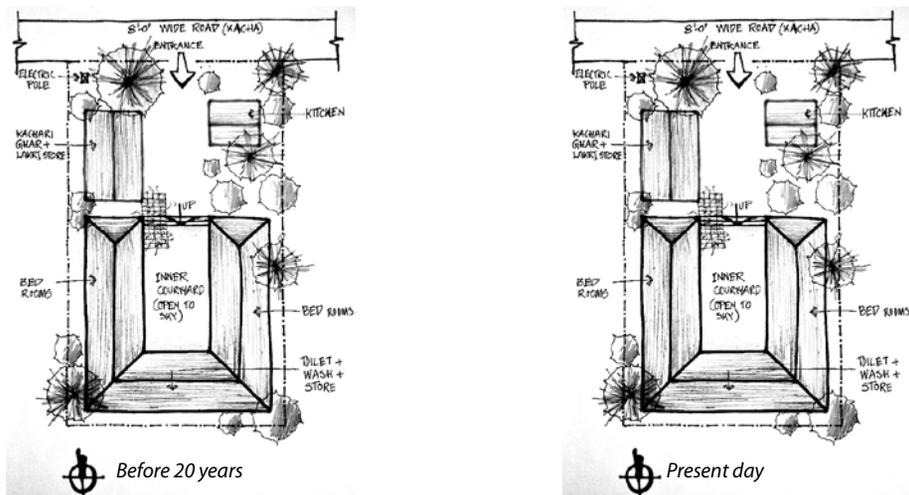
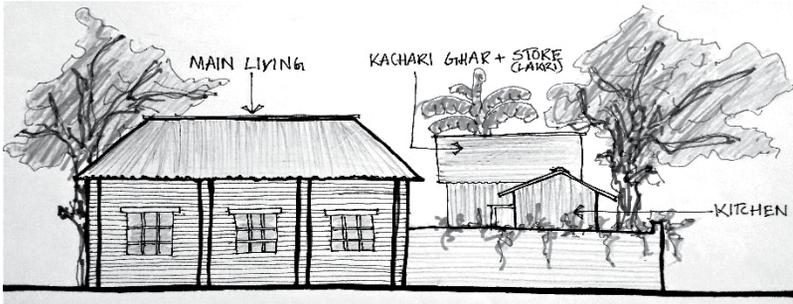


Figure-09: Layout of the selected rural homestead showing the organization transformation between two eras. (Source: Prepared by the authors).



Before 20 years



Present day

Figure-10: East side elevation of the selected rural homestead showing the organization transformation between two eras. (Source: Prepared by the authors).

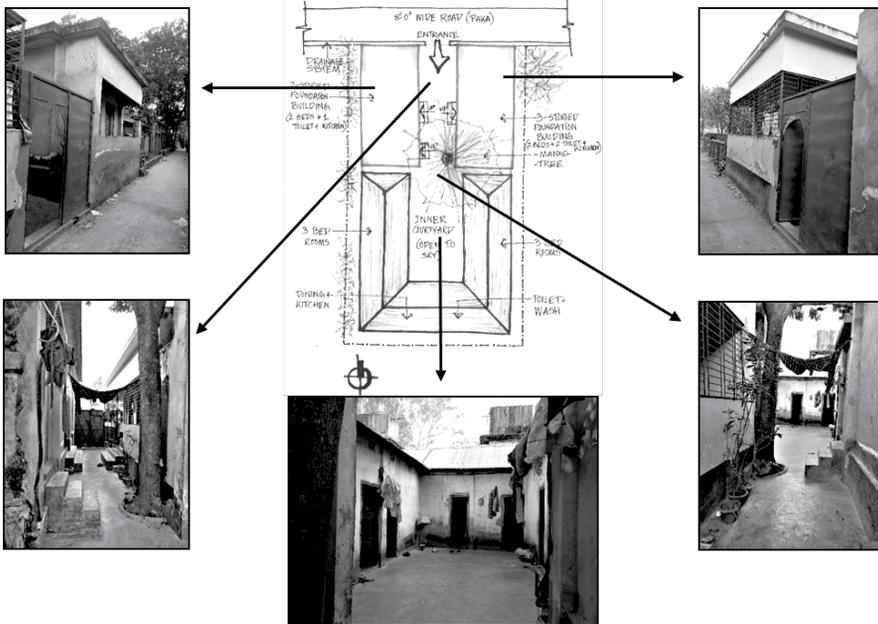


Figure-11: Spatial organization of the selected rural homestead in the present era. (Source: Author's photographs)

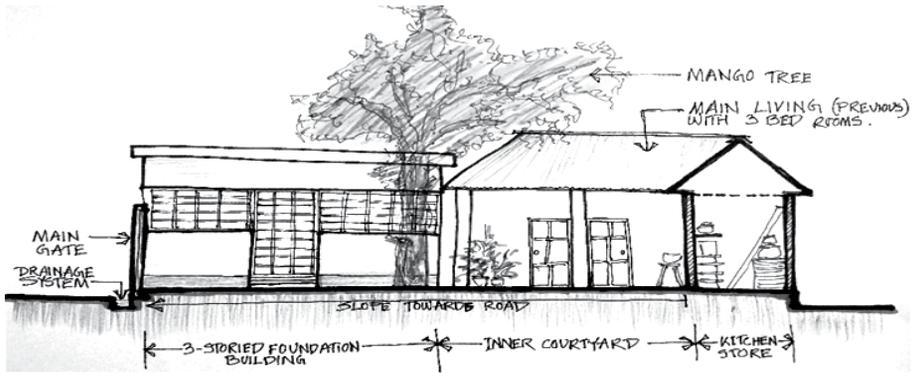


Figure-12: Section through the inner courtyard of the selected rural homestead in the present era. (Source: Prepared by the authors)

6.2. Organization of homestead's land:

20 years ago, land was sufficient to organize the homestead in a traditional way with the common features like kachari ghar, open courtyard, lakri store, granary store, main living etc. (Figure-09). As a part of transformation process, at present era, the traditional homestead features are not kept exactly it was. The land scarcity is the main issue through the new constructed buildings (Figure-09 & 11).

Therefore it is said that, twenty years ago such large amalgamated structures were not used, rather small fragmented structures were used. The small fragments have been used in the recent times taking the advantage of better quality wall and roofing materials.

6.3. Plinth:

The plinths of the selected homestead is pucca in both eras for the sake of permanency. But the plinth height of the new building is high (Figure-11 & 13) by considering flood.



Figure-13: High plinth in the newly constructed buildings. (Source: Author's photographs)

6.4. Boundary wall:

Homestead is organized in such a way that the boundary wall, as a symbol of property demarcation, by wall or fencing is not required. But at the west side of the homestead, a small height brick wall is found in an insignificant way to use as boundary wall (Figure-10 & 14). The fact is in earlier fence was used as boundary enclosure, now it is done by brick walls.



Figure-14: West side brick boundary wall. (Source: Author's photographs) →

6.5. Construction materials:

In the previous era, brick wall with cement plaster was used for wall construction and CI sheet for roof in the main buildings. Also CI sheet was used to construct the wall and roof of the Kachari ghar, lakri store and kitchen (Figure-09). In the present era, brick wall with cement plaster for wall construction and RCC roof is used to construct the new two buildings of the homestead (Figure-11 & 13).

From the above it is better to express the difference between the two is – earlier (20 years ago) wall was constructed of brick and lime mortar, roof with C.I. sheet. Now these are done with brick and cement mortar and roof with R.C.C.

6.6. Sanitation system:

In the old sanitary system low water closet was constructed in a room with detached or semi-detached manner, where pit made of burnt-clay ring was used as septic tank. Separate tube-well, for water supply purpose, inside bathroom (Figure-15) was installed. In the new two building's sanitary system, modern water closet with wash basin is used including bathing facility inside the toilets (Figure-15) and overhead water tank (Gaji) is installed for water supply. Which is practiced in urban architecture not in rural architecture.



Previous era

Present era

Figure-15: Sanitation system of the homestead showing comparison between two different eras. (Source: Author's photographs)

6.7. Formal zone & Family zone:

Kachari ghar and the entrance area of the homestead were previously considered as the formal zone (Figure-09). But in the present situation, there is no definite formal zone in the homestead (Figure-09). Internal courtyard, main livings, kitchen, storage, toilet etc. are the main part of the family zone of this selected homestead (Figure-09, 12 & 16). This is the private zone of the homestead.



Figure-16: Kitchen, store & internal courtyard of the homestead considered as family zone. (Source: Author's photographs)

6.8. Climatic consideration:

Buildings of the homestead of two different eras are constructed with the consideration of climate where shading device was used. Here the traditional building orientation is followed for the previously constructed buildings which are introverted towards the open to sky courtyard (Figure-11).

6.9. Religious consideration:

The practice of maintaining privacy and female's separation from the formal zone is seen here. Considering as the Muslim family, here females work in the family zone is seen (Figure-16). Sometimes privacy is hampered because of the absence of definite formal zone for the construction of new two buildings in the entrance area of the homestead (Figure-09).

7. The Rural Settlement as a Guiding Factor

The growth of the most rural settlements in Bangladesh can be characterized as 'natural', and not 'planned'. These were developed without any formal professional planning input. This implies that in most cases settlements evolved here mostly according to possibilities offered and constraints imposed by topography, climate, natural features, and availability of available materials. Increased human intervention on the environment, changed settlement patterns. Broadly classified, there are two main types of settlement: amorphous and elongated-linear. The amorphous type, could be clustered or scattered types on high land. The linear type is built on high land along natural levees of rivers or water channels and roads. However, even within and in proximity to linear settlements, there is dispersion which depends on the nature of the surrounding land (Sultana, 1993).

Here the village, Jhikira (part) dakshin, is considered as the reference for rural settlement for the study. In fact it is acted as an indirect guiding factor for the selected homestead.

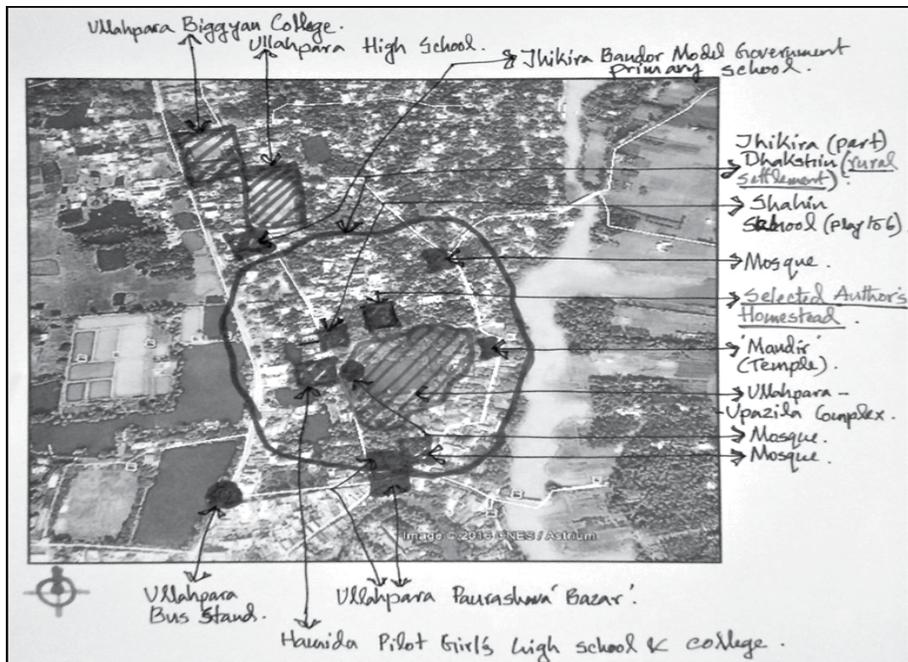


Figure-17: Jhikira (part) Dakshin as rural settlement with some important functions.
(Source: Prepared by the authors from Google image)



Ullahpara upazila complex



Ullahpara upazila complex mosque



Ullahpara upazila complex pond



Ullahpara Biggiyan college



Hamida Pilot girl's school & college



Jhikira Bondor Model primary school



Shahin School.



Waqtia Mosque



Ullahpara model thana jame mosque



Gopal Geo temple



Jhikira (part) Dakshin bazar



Jute storage buildings

Figure-18: Some important structures of Ullahpara Paurashava including Jhikira (part) Dakshin as rural settlement (Source: Author's photographs)

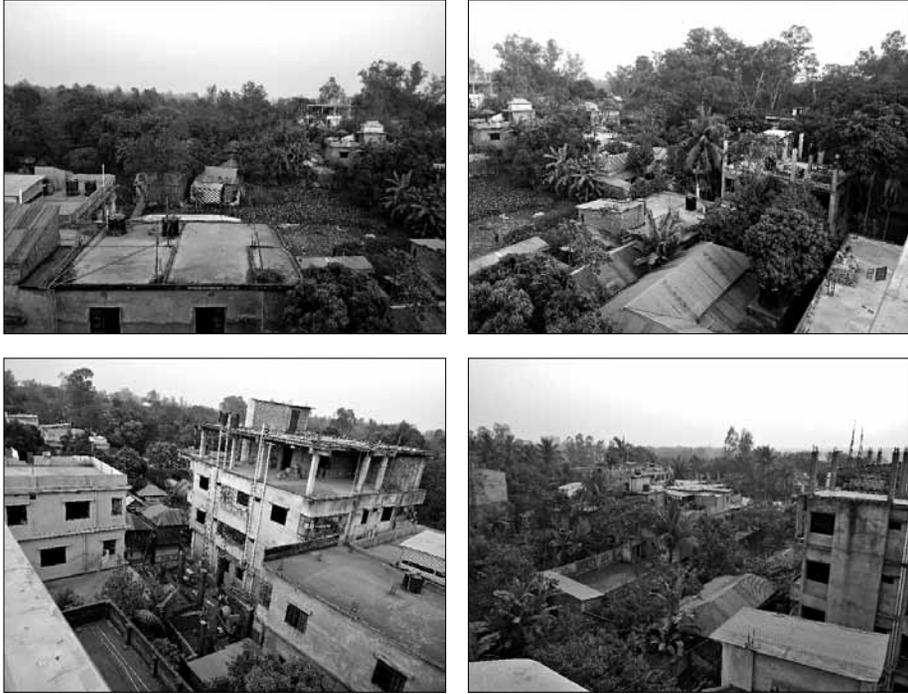


Figure-19: The rural settlement pattern where the selected rural homestead is located.
(Source: Author's photographs)

In recent times, the rural settlement in Jhikira (part) Dakshin has changed drastically in points of traditional spatial settings, materials, different cultural, social and economic factors etc. Also modern technology has changed the traditional spatial settings (Figure-19).

Both types of rural settlements are found here. The linear type is built along the natural levees of branch of Korotoa River. In this rural settlement, the better-off people build their homestead in a larger scale either demolishing the previous homestead or adding new buildings in the previous homestead. It happens so because of land scarcity. They use brick wall with cement plaster and weather protected paint and RCC roof with RCC column-beam structure for construction. Poorer people build their new homestead or add new structures to their previous homestead by using brick wall with cement plaster, CI sheet for roof, CI sheet for both wall and roof etc.

Some examples of other rural homesteads owned by the poor, middle income, higher-middle income and better-off people with their spatial settings, elevations and aerial views are stated here in this study section (Figure-20, 21, 22 & 23). This study will help to create a clear idea about the scenario regarding the changing patterns or transformation of the rural settlements in the area.

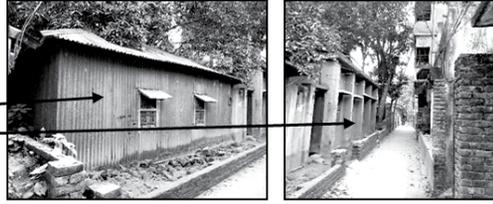
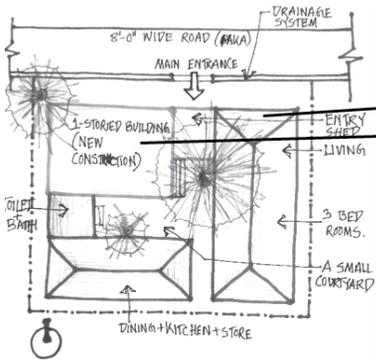


Figure-20: Plan with spatial settings and front elevation of a middle income people's rural homestead in the rural settlement. (Source: Prepared by the authors)

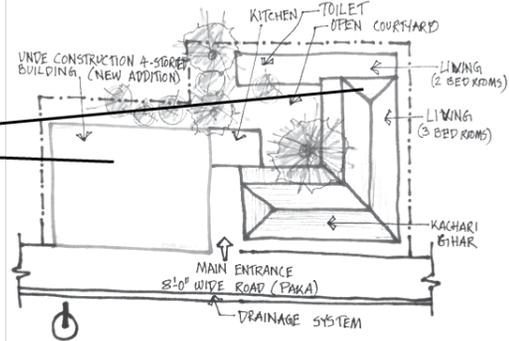


Figure-21: Plan with spatial settings and aerial view of a higher-middle income people's rural homestead in the rural settlement. (Source: Prepared by the authors)

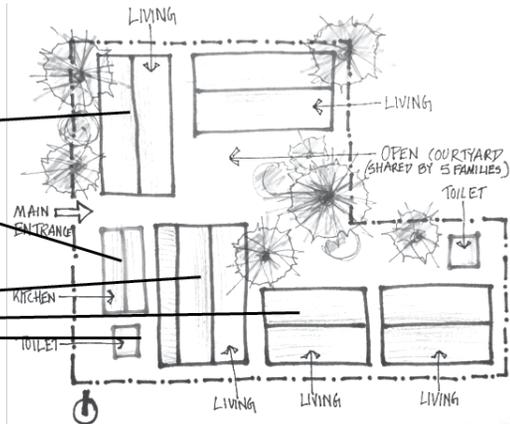
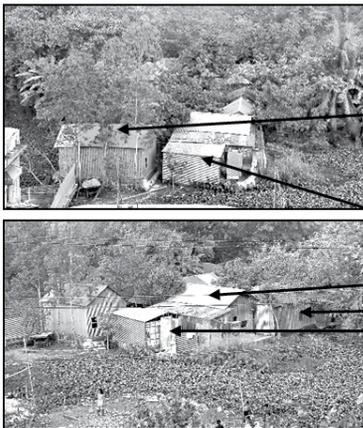


Figure-22: Plan with spatial settings and aerial views of a poorer rural homestead consists 5 families in the rural settlement. (Source: Prepared by the authors)

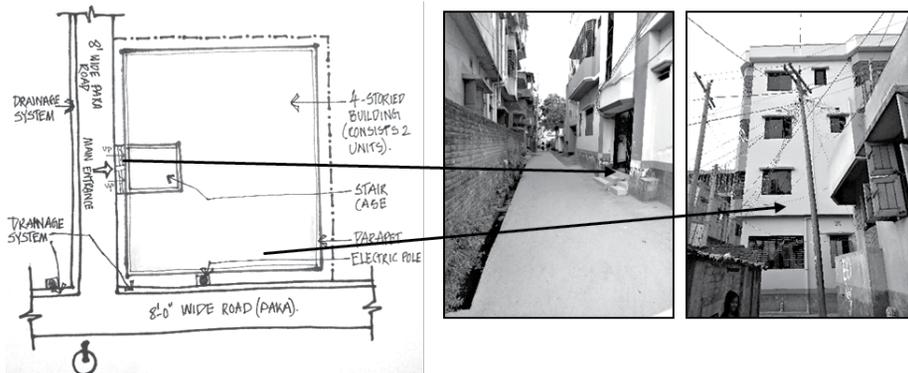


Figure-23: Plan with spatial settings and aerial views of a better-off (higher income people) rural homestead in the rural settlement. (Source: Prepared by the authors)

8. Factors Affecting Transformation of the Homestead

In Bangladesh the rural homesteads are built with the traditional or indigenous knowledge, technology and materials. The houses vary from region to region according to the needs, culture and profession of the people.

Two factors for the diversification of the forms of rural houses are:

1. Environmental factors (climate, soil condition, amount of rainfall, vegetation etc.).
2. Socio-economic factors (economic status, social hierarchy, availability of construction materials, religious beliefs, rituals etc.). (Hossain, 2008)

As a process of transformation, the selected rural homestead changed both structurally and in materials. The transformation or changing patterns of rural homestead is influenced or affected by environmental factors and socio-economic factors. Such transformations have been found essential and helpful in improving the homestead's conditions in many ways. These factors have been briefly explained below:

8.1. Environmental factors

Quantity of rainfall:

The quantity of rainfall and wind determine plinth height, overhang of roof, sun-rain shed, use of gutter, drainage on land etc. (Figure-24).



Figure-24: High plinth of the new constructed two buildings of the selected homestead compare to the previous buildings of that homestead. (Source: Author's photographs)

Soil condition:

Soil condition or its bearing capacity determines the weight of the building material to be used and also determine the width of the walls or thickness of the slab or height of the selected homestead as well as the other buildings of the rural settlement (Figure-25 & 26).

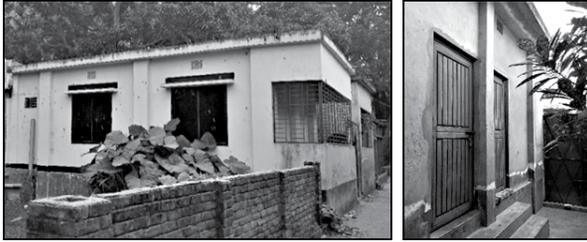


Figure-25: The new constructed two buildings of the selected Homestead showing columns-beams. (Source: Author's photographs)



Figure-26: The column-footing foundation system in the rural Settlement. (Source: Author's photographs)

Vegetation:

At the present day, among the selected rural homestead a mango tree is considered as the main vegetation which is the environmental factor for affecting homestead transformation. Before 12~15 years ago, this mango tree was planted by the first author's grandfather (who is no more) in the specific place of the rural homestead. During the construction of the new two buildings as latter addition to the homestead, this mango tree was not cut down rather it is preserved as memory of the first author's grandfather (Figure-27). Now this mango tree cast shadow which is beneficial for the family zone of the homestead and also give fruits to serve the people of the homestead.

One significant point is, in Bangladesh sentimental factor like ancestor's memory of times determine the existence and growth of some vegetation.

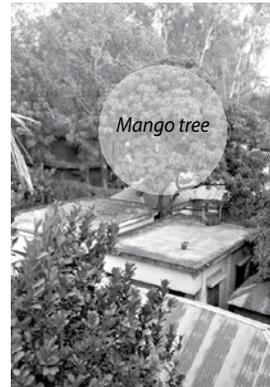


Figure-27: The mango tree as vegetation of the homestead. (Source: Author's photographs)

8.2. Socio-economic factors

Economic status:

In this research study, transformation of the selected homestead is largely affected by the economic status as socio-economic factors. Need of more spaces in the homestead was growing with the increasing number of members of the homestead's families. The new two buildings are constructed to accommodate the increasing demand of spaces for the family members (Figure-09). Therefore, through this homestead transformation, owner-occupiers now able to increase house size and gain considerably more space, including more habitable space. This transformation is possible because of the increasing affluence of the owners.

Social hierarchy:

Through transformation of the selected homestead, owner-occupiers get benefit of the increasing economic status. That's mean, they achieve higher social status as well as improving their living conditions which is also help to balance the overall position in the field of social hierarchy.

From the above it is better to said that the owners can express their affluence through transformation. This transformation may happen in design, internal facilities, fixtures etc.

Availability of construction materials:

The characteristics of homestead can be recognized by its roofs and walls. These are subjects to change with the variations of availability of materials and technologies. At previous era, Brick was used as building wall and C.I. sheet was used as building roof for its availability and durability against the warm-humid weather and the heavy rain. But at present era, for construction of the two new buildings, modern construction techniques with modern equipment and materials were used because of their availability. Such as; column-footing foundation system for three-storied foundation buildings, R.C.C. for building roof, weather proof plastic paint etc. (Figure-25).

Therefore, the financial ability of the owners is considered as a crucial reason behind the selection of expensive building materials.

Religious beliefs and rituals:

Religious beliefs and rituals are important factors that affect and sometimes guide the homestead transformation. Due to religious regulations (Muslim), the selected homestead is introvert in nature. In the homestead, the orientations of the sleeping mats, beds and toilets etc. honor the 'Kiblah'.

9. Conclusion

Transformation of any homestead is a spontaneous and natural process. And it is apparent for the rural homestead in any rural settlement. From the above circumstances, it is said that, through transformation the spatial settings with other important features of the selected homestead are changed along with some socio-economic factors and environmental factors. This changing pattern or transformation is a continuous process which is influenced and affected by the rural settlement. And also the rural settlement is affected by this transformation process.

The various factors that help and enhance this transformation has been discussed in details in this paper. These have mostly done on the basis of the author's studies on a particular homestead. So, these should not be taken as 'general' or common for entire Bangladesh. But it cleans up some process of transformation depending on changing situations. The paper reveals that more studies on similar aspects should be conducted in other regions of the country.

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