

## VILLAGE INFRASTRUCTURE DEVELOPMENT IN BANGLADESH AND THE IMPLICATIONS FOR HOUSING GROWTH AND RURAL ENVIRONMENT

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### Introduction

Village infrastructure development in rural Bangladesh is accelerating the urbanization process. This also facilitates housing growth and changing the rural environment (Hasan and Kadir, 2000). There is huge housing shortage in Bangladesh, but the situation is worse in rural areas. In rural Bangladesh, most of the houses are some sort of temporary shelters or makeshift structures, which are vulnerable to natural disaster (Hasan, 1999). Still, majority of the people in rural areas live in their own houses. However, in recent times due to land less ness, marzinalization and natural disasters, home-less rural people are increasing staying in government lands such as embankments, roads, many are migrating to cities and some are moving to more vulnerable areas like emerging islands in the Bay of Bengal (Hasan, 1998). However, infrastructure investment and increased pace of economic activities in rural areas of the country are also facilitating the growth of modern houses. These houses have better facilities and amenities than traditional rural houses, and the affluent rural elite mainly builds these houses. Simultaneously with these developments, congestion, overcrowding and environmental degradation have gradually appeared in the landscape of the countryside of Bangladesh.

### Methodology

This paper through an empirical survey, investigated the implications of infrastructure investment on rural housing development and village environment. The empirical data is from Rampal Upazila Headquarters of Khulna Region. 100 households were surveyed through random sampling. Questionnaire survey and observation survey were the key analytical tools in the study. This paper mainly studied the impact of three major type of infrastructures e.g. *roads, electricity and telecommunication facilities*. The environmental implications in this paper mainly include solid waste management, water supply, sanitation, sewerage, and density of development including room crowding. The survey was conducted in January, 2000.

### The study area

Rampal is the third most populous Upazila of Bagerhat district, which became a police station in 1892 and upgraded to an Upazila in 1983. Rampal Upazila is located 30 kilometers from Khulna Metropolitan City and 320 kilometers southwest from the capital city, Dhaka. It is one of the largest Upazila of Bagerhat District, occupies an area of 335.46 square kilometers including 14.89 square kilometers of river area. It is located between 22°30' and 22°41' north latitude and between 89°32' and 89°48' east longitudes. It is very close to Mongla seaport and the Sunderban mangrove forest. Batiaghata, Paikghacha and Dakope Upazila of Khulna District bound the study Upazila in the west, Fakirhat Upazila in the north, Morrelganj and Bagerhat Upazila in the east and Mongla Upazila in the south. The area of the Upazila is around 280 square kilometers. The Upazila comprises of 10 unions, 117 mauzas, and 135 villages.

### Key study findings

This paper investigated the implications for three major types of infrastructure development e.g. roads, electricity, and telecommunication facilities in Rampal Upazila. In the study area, the Local Government Engineering Department (LGED) developed a large number of roads. Many of the previously developed roads were asphalted (metalled), and a few more new roads, basically *herring bone bond* were completed. The people themselves connecting them with wider roads built a number of new lanes and paths. Regarding electricity, Rampal Upazila is covered by the Rural Electrification Board (REB). At present, 30% of the villages of the Upazila are covered by this agency. These are mainly the villages adjacent to the Upazila Headquarters. In villages without electricity, the use of generator is becoming more common. In Rampal Upazila, telecommunication facilities are basically limited within the Upazila Headquarters. These are gradually being extended to outlying villages. The use of mobile phone has become very commonplace. This is increasingly being used for communication in remote areas. The study findings, particularly the implications for infrastructure investment are now discussed below:

It is found from the research that houses are developing fast in the study area in a much more modern process. Instead of traditional courtyard houses, a large number of tin-roof row houses have developed alongside roads and footways. From this study, it is found that 20% of the surveyed houses have flat RCC roof. Regarding wall materials, the survey found that 55% of the houses had 5" brick as outer walls, 22% had thatch or golpata and 8% had GI Sheet. 52% of the surveyed houses had electricity connection from REB lines. These are mainly the affluent households.

Near the Upazila center, a tendency is found among households to let out one or more rooms for other purposes, especially for shops. These shops are of various types and sizes. Among the surveyed houses, 20% had rental units. Of them, tenants occupied 9% of the surveyed houses. House rent was relatively cheap, between 500 Taka to 1400 Taka.

Regarding rural environment, this paper investigated access to safe water and different facilities for solid waste disposal, sanitation and sewerage. Solid waste disposal facilities in the study area were relatively better. There was sufficient number of collection points (dust-bins) for solid wastes in the study area, which were regularly emptied by upazila parishad workers. But still here and there, pockets of rubbish were springing up. There are no piped water supply facilities in Rampal Upazila headquarters. A few Government employees use tube-wells, ponds, canals and rivers. The surveyed houses still use tube-well as their main source of drinking water. 60% of the surveyed houses had their own tube-wells and the rest used public tube-wells for drinking water. Sewer lines are basically open drains in the study area. In the surveyed households, 65% latrines were found to be sanitary. The rest of the latrines are non-sanitary or kutchra. From the study, it is found that almost all the houses had their toilet facilities separated out from the main structure.

As discussed, the study surveyed 100 houses in Rampal Upazila Headquarters. Of these houses, 40% are less than 5 years old, 45% houses are between 5 to 10 years old, and only 15% houses were found to be older than 50 years. So it can be said that the rate of housing development in the study area was quite high. In the study area, room as well as house occupancy was found to be high. Average room and house occupancy in the study are respectively 7.5 persons and 3.1 persons respectively. 39% of the houses had one room, 42% had two rooms and the rest (19%) had more than two rooms.

In Rampal Upazila, rising land prices, reduced size of land parcels increased population etc. led to congestion and environmental degradation. It is found that 95% of the surveyed houses had no kitchen garden. There were very few trees around the houses. Each and every household tried to maximize the use of lands. Narrow lanes, muddy walkways, piled up garbage are normally found around the houses. These are creating a slum like situation. It appears that within a very short time, the phenomena of slum formation will be clearly visible in many rural areas of the country like Rampal Upazila. The apparent prosperity of a group of people can be attributed to shrimp farming. The people who live here as tenants are mainly involved in different activities related to shrimp culture such as middleman, broker, and supplier of fish fry. The use of mobile telephones is mostly found in tenant households. 15% of the surveyed

households had telecommunication from Telephone and Telegraph (T&T) Board. Whereas, all the tenants are owners of mobile phones.

### Conclusions

The findings of this study provide a changing scenario of rural housing and environmental condition in the new millenium. Infrastructure investment and concomitant economic development has facilitated housing development and changing the environment. The traditional courtyard houses of rural Bangladesh is vanishing rapidly and is being gradually replaced by detached and row houses made of modern building material. Simultaneously traditional building materials are also used. These houses are safer and comfortable compared to the traditional houses. But still some of the traditional values are maintained such as the detached toilet, separated from the main structure. The formation of rural slum is clearly found from this study. The density of development as well as room crowding has increased in the study area. Some of the utility facilities such as water supply, sanitation, electricity connection and sewerage facilities are improving while overcrowding and congestion led to environmental deterioration. The findings of this paper thus clearly indicate that infrastructure investment and accompanying economic activities in the case study area, have widened the gap between the rich and the poor and caused environmental degradation. This paper suggests that effective land use planning for rural areas of Bangladesh could alleviate some of the problems related with infrastructure investment, economic development and rapid population growth. Interactive cooperation between the Government and NGOs can help distribute *khas land* (government owned fallow land) among the rural land-less. Social forestry development, as has been undertaken in many rural areas of Bangladesh, should be forcefully introduced in the study area. Production of local building materials such as bricks, tiles and RCC poles can be undertaken on community ownership basis (where households can provide labor), which could bring down their cost within the affordable limit of the rural poor.

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