

Up-gradation of Informal settlement: A Review of Comparative Evidence of Khulna and Kathmandu

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ABSTRACT

The urban population of developing countries is increasing at an alarming rate. As a consequence, an alarming feature of this trend is an explosion of informal housing development especially in cities of developing countries. In recent times, a great deal of significance has been come forwarded to the informal housing sector. The general features of informal housing are insecurity of tenure, low standard of infrastructure and services. Housing with high standards and job absence within their catchments areas have played a vital role regarding shifting ownership to the middle-income group. The total study was composed of four major phases. In the first phase theories and policy context, adaptive up-gradation by people was studied covering international context, regional context and local context, and the second phase field study was conducted on informal settlements of Khulna city, Rupsha Char Slum. This phase was focused on gathering information about existing socio-economic context and physical condition, building process indigenous adaptive measures, up-gradation scopes of the settlements. Data was collected by observing and interviewing the community and physical mapping by the residents. In third phase information was collected under the same criteria and by the same process, which was followed in Khulna, from an informal settlement in Kathmandu, Nepal called Pathivara squatter. Lastly, in this study, a realistic and feasible policy guideline was given based on the learning from the field research and studies on theories and policy context and also informal housing practice, outlook and approach in developing countries and their changing patterns towards this sector has been deliberated.

Key Words: Informal housing, up-gradation, urban governance, tenure security

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INTRODUCTION

Undoubtedly, informal housing sector development is the crude outcomes of some substantial issues always witnessing in cities of developing countries. Among them, high rate of population in-migration to the city, lack of public investment in housing, adoption of misguided and often western based urban planning policies (O'Hare et al., 1998). All projections reveal that the urban population in Third World countries will increase at an

alarming rate in the coming years. The worrying feature of this tendency is the propagation of informal settlements mostly in city areas (Sethuraman, 1985). According to (Sivam, 2014), developments criteria of informal housing are unlawful and consisted of illegal colonies and squatter settlement. Such types of housing are commonly developed because of a high dearth of legal housing in the market. The most general characteristics of informal housing are tenure insecurity issues, low standard of infrastructure and services. However there is core regional multiplicity regarding their appearance, these settlements are largely categorized by informal or insecure land tenure, insufficient access to basic services and facilities and both social and physical infrastructure and housing finance (Tsenkova, 2009). The brutal outcomes of rapid growth in population and the varying socio-economic outline especially in developing countries have caused in an acute absence of housing for a large number of low-income households (Sivam, 2014). Informal housing and other unauthorized settlements have a severe negative impact over development and expansion of cities frequently in developing countries. As a developing country like Bangladesh is suffering from informal urban housing problems with its highly increasing urbanization rate. Bangladesh has among the highest urbanization rates in the world and the capital city Dhaka is expected to be one of the ten largest *mega cities* by 2010 (Ahmed, 2007). A large number of informal settlements occur across the world, echoing the point that 28 percent of all households possess insecure tenure. It is hard to define these population centers as they represent a wide variety of characteristics.

Informal settlements are typically comprised of economically depressed or migrant people living in crowded settlements with or without legal rights to the land they live upon (Rashid, 2009). Such settlements without proper rights to the land are usually called squatter camps. These groups are generated for numerous reasons, comprising both economic stresses and population expansions. Informal settlements are crucial performance indicators of a country and countless government units concerning their capability to control poverty (Huchzermeyer, 2008). At present, approximately 35% of the population of the six major divisional cities lived in the slum, though they did so on only 4% of the land area of those cities. The total slum population across the cities was over 5.4 million as of 2006 (Sikder et al., 2015). Conversely, urban poverty is becoming more pervasive in Nepal. The poverty rate is improvising highly mostly in urban areas, whereas it is decreasing in rural parts (ADB, 2013; UNDP, 2014). There has been a noticeable improvement in the rural Human Development Index (HDI) value between 2006 and 2011, while the urban HDI value has remained constant (UNDP, 2014). Urban poverty rates vary substantially across Nepal where urban areas in the hilly ecological zone are the least poor with a poverty incidence of 8.7 percent. This rises to 22 per cent in urban areas of the Tarai, whereas Kathmandu has a poverty rate of 11.5 percent (CBS, 2012). Informal settlements are a relatively new phenomenon in Nepal, and there is a poor understanding of the overall context of slums and squatter settlements (UN-Habitat, 2013).

The main objective of this study is to discuss informal housing practice and approach of changing patterns towards this sector in developing countries.

The specific objectives are:

- To identify the approaches that aim to address urban development imbalances represented by slum dwellers.
- To understand upgrading informal settlements through people's design, two informal settlements in Khulna city, Bangladesh and Kathmandu city, Nepal.

STUDY AREA

Urbanization is creating land scarcity and inadequate infrastructure in the urban area. This ongoing process helps to expand the informality in this city. Though Khulna city's growth has slowed, in recent years with the closure of some industrial units, but it has remained a place of commercial and industrial importance since the 1960s. As a result, it is experiencing both optimum poverty and unauthorized physical growth in the informal sector. The recent statistics indicate that about 19.5% of the urban populations are living in slums and informal settlements, while 538 clusters have been identified all over the Khulna city alone (Census of slum and floating people, 2014). We are considering one site in Khulna, Rupsha char slum.

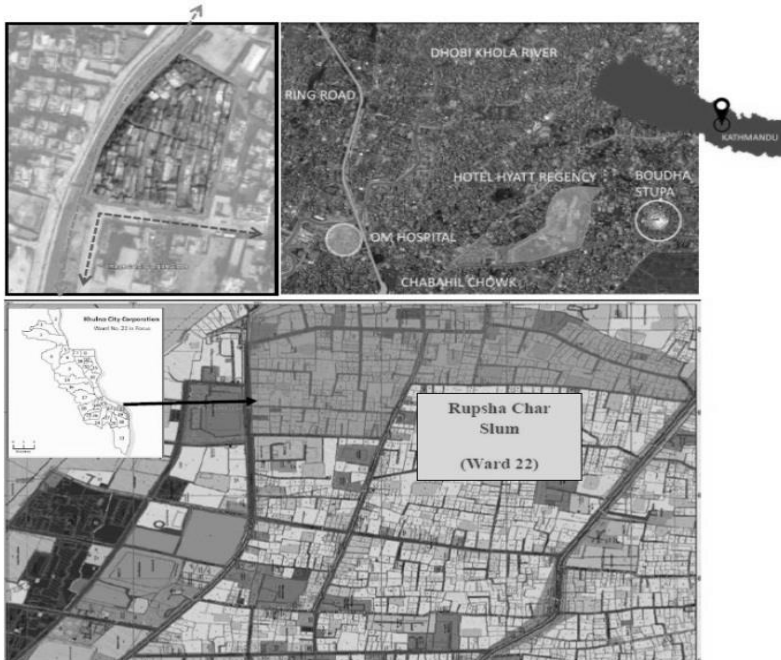


Figure 1: Location of study sites, Nepal (Pathivara) and Khulna (Rupsha char slum) Source: Author, 2017 and adapted & updated from Khulna Development Authority (KDA) base map, 2014

There were forty (40) numbers of informal settlements in Kathmandu valley. Pathivara is one of the informal settlements situated on the bank of Dhobikhola River established in 1993 on government land. Considering first squatter settlement in Kathmandu valley with 2 acres area that contains 164 numbers of households. At the end, we can comprehend a summary that indicates the differences of studying different context. Traditionally these settlements are vulnerable due to many natural disaster and unplanned urbanization. But, there has been an adaptation to changing climate, urbanization, socio-economic condition. People are adapting individually to their household, lifestyle, and settlements instead of community-based approach. There is a lack of integration in this process of adaptation. So, scope of integrated up-gradation in this settlement is there, which will ensure adaptation by people's design.

METHODOLOGY

Theoretical understanding of the study has formed the interpretive global view of intervention. Apparently the study relies on the ontological dimension where (i) there are multiple realities, (ii) reality can be explored, and constructed through human interactions,

and meaningful actions, (iii) many social realities exist due to varying human experience, including people's knowledge, views, interpretations, and experiences, (iv) discover how people make sense of their social worlds in the natural setting through daily routines, discussions and writings while interrelating with others around them; such types of writings could be text and visual images. So, this study follows qualitative research through case study approach of data collection because slum up-gradation studies require households to freely express their perspectives, aspirations, and motivations in their day to day survival strategies. By inductive reasoning, this case study approach will help to identify the vulnerable issues of slum dwellings and also redressing different forms of capital that work as resilient factors for the community. From the socio-economic concern, feedback of the stakeholders will be accommodated by content analysis in descriptive format. And regarding built environmental aspect, spontaneous physical reformation of the study area will be analyzed by spatial mapping. So, semi-structured questionnaire survey will be designed to gather information about political, economic and socio-spatial transformation regarding adaptive capacity enhancement of the beneficiary.

ANALYSIS AND DISCUSSIONS

Physical Pattern of the Settlement

In the 1930s the growth of informal settlement in Rupsha is the historical outcomes of structural progressions. Economic hardship led people to migrate from different underdeveloped areas to the city in search for livelihoods. In the first phase of the 1930s, the Rupsha Ferry Pier (*Rupsha Ghat*) used to be the major rural-urban-link point across river Rupsha. In the primary stage, a small number of insolvent appeared in the lately formed land (*char*) in search for better livelihood possibilities. They started living on the desolate land with the socio-economic support from the KBCA in exchange of religious and social engagement. In the later part of the 60s, new colonizers gathered at scale with the speedy industrial progression in Khulna mostly the labors from the Dada Match Factory and Rupsha Shipyard. In the later part of '80s, Khulna became a central node for export-oriented industries, and gradually Rupsha became the hub of fish processing industries.

The slum at present covers an area of 6.13 acres bounded by BWDB embankment (locally called WAPDA Road) and Rupsha river on the east, CARITAS and LGED office premises on the west, Rupsha Notun Bazar on the north side and Rupsha bus stand on the south apparently (Haque et al., 2014). About 15,876 people live in 3,700 households with unauthorized construction, and inadequate basic services such as sanitation, drainage, electricity, water supply etc. (CUS, 2006). There are 40 numbers of informal settlements in Kathmandu valley, Nepal. Pathivara is one of the informal settlements on the bank of Dhobikhola River covers a total area of 2 acres. The Number of households is 164.

Built Environment

The settlement is spread in a linear rectangular structure along the river-bank. It suffers from a severe lack of spaces for basic technical and social infrastructure. The settlement is almost covered with built forms except for a large pond at the rear middle part of the settlement (see figure 02). The spatial morphology is very distinctive with the consistently dispersed single story (65%) and double story (35%) row houses (10 to 18' height) alongside narrow (mostly 3 to 6' wide pedestrian lanes) circulation spines created from the main communication line i.e., The Rupsha Stand road. There are few clusters of houses found in the relatively larger single plots within the row houses, which are developed around a small

common service space. The upper section of the internal circulation spines get narrower and at some instances almost covered with the extension of spaces from both side over the path at the upper level. On an average, the area is about 4.5' below the level of Rupsha Stand road. Particularly, the settlement is largely of residential practice with a severe dearth of necessary community facilities, infrastructures, trees, and open spaces.

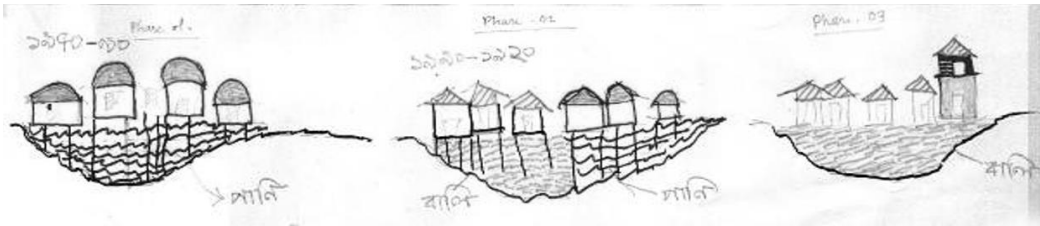


Figure 2: Physical development of Rupsha char slum (Source: Mapping through Community Participation, 2016)

Dwelling Condition (Tenure Security)

The Rupsha slum is partly owned by the government and partly by a religious organization – the Khulna Baptist Church Association (KBCA). There is a dispute going on about the land ownership between KCC and KBCA. Land ownership is claimed by both the bodies and they are treating the land accordingly. In the 1985 KBCA has recorded the land from the Settlement Office and formed a Mission Charitable Trust of five members who declared non-transferable ownership for the dwellers. While since 90s KCC has given entitlements of holdings and been collecting holding tax from different size of plots. Recently, KBCA has leased-out part of the land for private use (to make park). Regarding this contradictory status of ownership constant fear of eviction remained among the dwellers. It is observed that the status of land tenure is a major determinant of the degree and extent of adaptation.

Figure 3: Documents for tenancy of Pathivara Settlement (Source: Author, MSCHS Studio 2017)

In Pathivara Slum, the dwellers have no conventional legal rights of land, only the identification of possessing permission is required by the local authority for claiming household right. A Household ID is provided by the local authority. The Owner must go through the *Pathivara Tol Sudhar Samiti* to transfer possession 15 % of the selling money has to

be paid to the *samiti* equally by the seller (7.5%) and the buyer (7.5%). Seller will be no longer the member of *samiti*. The buyer added as a member of the *Samiti*. Community Co-operative Committee has some rules-regulation for registering & protecting tenancy. According to deeds, they can vertically extend their houses.

Built Form Condition

Considering both the row and cluster type developments of dwelling units are built on the inner lanes, and bi-lanes except any setback from the common pedestrian (and also non-motorized vehicle e.g., van carrying goods) flow spine or from the adjacent built forms on the other three sides of the unit. The built forms are of mainly three types – single story, double-story, and built form on stilt (Figure 4). Such a unique built environment with houses accessed directly from the common circulation space has created a serious deficiency in the living condition as it lacks necessary hierarchical spaces to support different socio-spatial and cultural needs of any healthy dwelling. The household in two-story built form can better adapt disaster situation taking resort to the upper floor. Flood water gets into most of the houses situated in the lower part of the settlement. Building the upper story is primarily driven by the need of the extended family. Nonetheless, it is also affected by climatic consideration, and is an instance of a proactive adaptive measure. The built forms on stilt are safer from flooding and water logging.

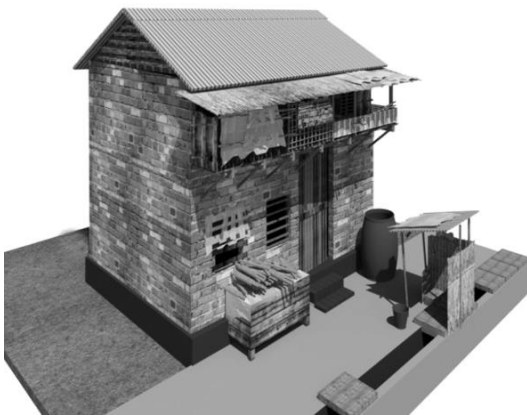


Figure 4: Existing build-up form of Rupsha char slum (Source: Author, MScHS Studio 2017)

Materials of the built form are predominantly brick, mud, tin and *Golpata* in the roof makes an indigenous look. Concrete casting roof is scarcely seen in this settlement. Brick casting wall without plaster is manifested as very weak in structure as it will break down in the natural disaster. Earth filled floor lead an environmental disorder in the dwelling unit. A few built forms are made by the brick wall, and *Golpata* in the roof and mud filled floor. However, the common scenario of built form is homogenous where tin shade roof with polythene on the window used as a curtain, brick casting wall, and *Golpata* fencing.

Ventilation & Lighting

Row house systems in this slum deliver very poor ventilation and lighting system. A limited household has a window at the front wall, side window, however, absence in the household. The only door is the main medium to get access to transform light and air into the dwelling unit. Normally, the absence of adequate ventilation and lighting makes dwelling unit suffocated in all season particularly in the summer season.

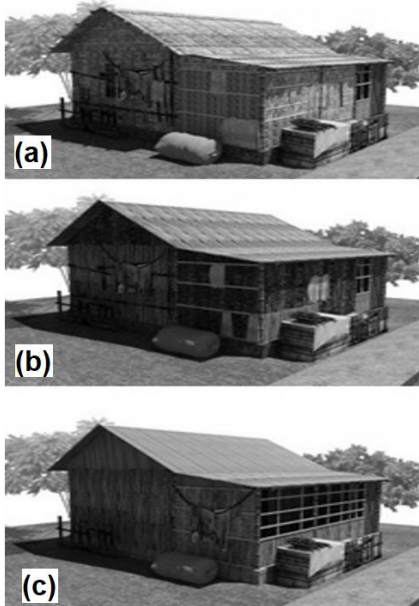


Figure 5: a.1st phase, b.2nd phase c.3rd phase (Source: Author, MScHS Studio 2017)

Its same size plot is distributed however the household size would be. Its twelve hands a plot and unit size are twelve hands by eight hands approximately it could be 100-120 square feet. Their main material for the roof is 1.Polythene, 2.Golpata, 3.C.I.Sheet (all they are used together in the transitional phase, polythene & tarpaulin is used for water resist during rainy period.) plinth is 1.Mud, 2.Mud in Brick border, 3.Cement plaster on Brick base (Polythene is used under muddy plinth & plinth is covered by it in rainy period) enclosure is 1.Sack, cloth sheet, Polythene, Tapeline 2. Bamboo sheet, 3.C.I.Sheet & the main structure are made of Bamboo, Shirish wood/ with covering maitta oil (Cross bracing, Katla of Sundari wood, wooden or bamboo). Their overall built form condition is shown in figure 5.

In Pathivara Slum, average household size is 100-150 sqft. (1/2 bed rooms, kitchen, toilet, and foyer is the common layout of all household.) Occupancy Rate 1.37 sqft (4 people per household. Sheared wash area with tube well facilities for 4/5 household. Dwelling units of the settlement can be categorizing in four types regarding physical condition.



Figure 6: Morphology of Pathivara (Source: Author, MScHS Studio 2017)

House of Bamboo Fencing, Polythene Façade, Polythene Roofing, and Thatched Roof. 2) C.I. sheeted Façade, C.I. Sheeted Roof, Brick Plinth, 3) Brick Façade with plaster and C.I shaded roof. 4) Vertically Extended, Brick façade, Concrete Roof.

Spatial Organization

The settlement is formed with a series of row houses, with few clustered houses within the rows. Inadequacy of domestic space has constrained the creation of better living environment in both the configuration. However, dwellers have maximized the social logic of both typologies exploring dynamic arrangements of multiple activities. For instance, in row houses the circulation spine is used as an extension of their house where they perform semi-private activities and neighborhood social contact. In a double story dwelling unit, most of the cases, services, and bed are found at the lower level, while the upper level comprises bed and storage spaces with a small semi-outdoor space (veranda). In some cases the kitchen is found on the upper story with bed and storage. These varying configurations are shaped mainly by climatic considerations (comfort and hazards) as well as the cultural preferences of individual households depending on the size of the family, age of the family with regard to the relative positioning of entry, services (kitchen and bath) and bed space, four types of configurations are common in the dwelling units.



Figure 7: Outdoor space used as kitchen and income generating space of Rupsha char slum household (Source: Author, MSCHS Studio 2017)

In the single story, single space built form, most cases the service space is found in the front part of the house followed by bed space inside. Keeping kitchen outside the house at the entry point allows the female members are doing kitchen related works (cutting, washing) right on the doorstep. While in some cases the kitchen is found outside the house, by the side of the lane. Regarding flooding, water logging, and heat stress, moving kitchen at the upper level is an effective strategy, while considering heat stress only, putting kitchen near the door or outside at the entry point appears to be effective. Some of the households use the dwelling unit for income generating activities, such as tailoring, fish processing, *katha* sewing, carpentry, handicraft, etc.

In Pathivara, dwellers are involved with spatial practice like the living room, community space, and economic activity. Outdoor spaces used for washing, bathing, petting animals and small poultry firm). Social space produced by dwellers in front of their foyer and dining space. Upper portions of the toilet are used for the household store. The community people

make temporary walkways putting the brick on the lanes. Narrow steers are used for circulation, and drying cloths. Wider streets are used as community space, shops, farming, storage, and other multiple purposes.

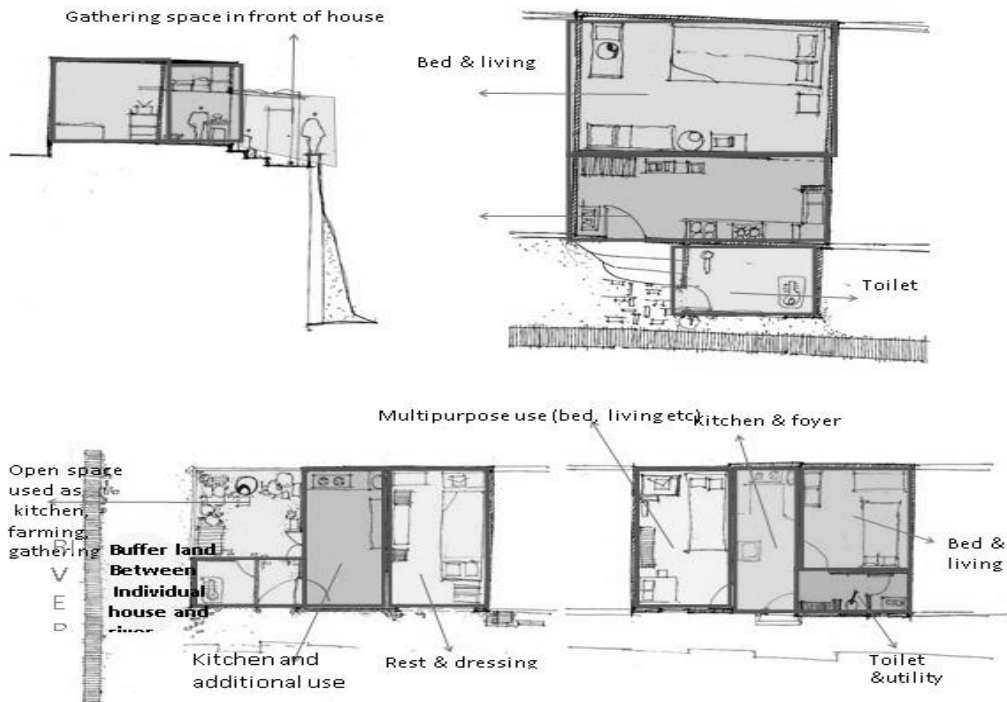


Figure 8: Spatial organization of household units of Pathivara Pathivara (Source: Author, MSCHS Studio 2017)

Infrastructure, Service & Utilities

Street Networks

The settlement is accessed directly from the Rupsha Stand road through six narrow pedestrian lanes (*Goli*) (Figure 06). Several narrow bi-lanes separated from these primary lanes with dead-ends which obstruct emergency evacuation. The internal lanes are paved with low quality based concrete, while the bi-lanes are mostly of brick soling. Some bi-lanes are of compiled of mud and brick soling, and a rare number of concrete pavement. Formerly the lanes and bi-lanes were of mud (*Katcha*) and used to become isolated during seasonal rain. Most of the lanes and bi-lanes are paved by the international development organization, despite a poor condition which serves well during regular weather condition. However, accessibility gets disrupted during heavy rainfall and tidal flooding. The community people make temporary walkways putting the brick on the lanes.

In pathivara, the settlement is accessed directly from the *Gopi Krishina Marga* road through 3 to 3'6" wide, narrow pedestrian lanes (*Goli*) (Figure 06). Numerous narrow bi-lanes branched out from these primary lanes with dead-ends and *Dhovikhola* river-oriented which inhibit emergency evacuation. The lanes are 50% paved with brick & stone chips laying poor quality concrete, brick, and, while 50% bi-lanes are mostly of kacha.

Drainage

The internal drainage system of the settlement comprises two types of drains – primary drainage lines i.e., box-culvert, and secondary drainage lines i.e., open drains. The primary drainage flows through the box-culvert alongside the BWDB ridge, which goes across the settlement dividing out beside the Yakub Goli.



Figure 9: (a) Water jar for drinking purpose and (b) single deep tube well is used as household chores (Source: Author, MSCHS Studio 2017).

The secondary drainage is along the lanes and bi-lanes adjacent to the houses. Narrow open drains on equal sides of the primary lanes endure along the bi-lanes (mostly on one-side) in maximum part of the settlements. Nevertheless, some narrow bi-lanes are not linked with drains. In general, both the lanes and drains are in poor condition. The drainage system is not well integrated and does not have a proper hierarchy needed for effective drainage. However, being located on the river bank existing drainage system works well in the higher areas where flood water and water logging do not last longer than 3/4 hours. But due to flooding of open drains the post-flood and water logging period becomes highly risky for health especially for children.



Figure 10: Covered drain and open drain used as waste water discharge of the Rupsha char community (Source: Author, MSCHS Studio 2017)

In *Pathivara*, a complete drainage network covers the area where household drains connected to the pit. Storm water flows to the river creates erosion without proper drainage. Solid waste discharge towards the river (Dhopi Khola), developed individual household. Solid waste discharge towards the river (Dhopi Khola) developed by Authority. No containment, i.e., pits or septic tanks. Most of the toilets are connected to the sewerage lines, and sewerage lines are directly connected to the river for disposal.



Figure 11: Water discharge scenario in Pathivara (Source: Author, MScHS Studio 2017)

Water Supply

The water line from WASA and deep tube well at the neighborhood level is the main source of drinking water in Rupsha slum. Though the tube well is installed for fresh water to 1000 feet deep as it hardly provides fresh water rather it supply saline water. It has been examining that only 600 feet deep tube well can permit the fresh water yet this practice has not presented at *Muslim goli*. Dwellers, however, get fresh water from community mosque is located at the outside of the slum to drinking and cooking purposes. Bathing water has been taken from the self-tube well and water line. Only two tube wells are presented at *Muslim goli*, whereas total 42 tube wells installed at entire slum area. No personal water supply line or tube well is manifested in this area. In *Pathivara*, two supply drinking water sources from the government are provided for the community. 30% people get water from water tank by paying 50 rupees. 70% people get drinking water by buying water jar containing 20 liters and pay 40 rupee. Bathing water is used from the individual tube well placed inside in the household.

Electricity

Electricity is provided by PDB in this settlement. They have to pay the electric bill as per dwelling unit not by house hold. The electric meter is not provided in every household. The household which has not the meter they get the electric line from next door neighbor and share the monthly bill by using the electric fixture like fan, light, etc. In monthly, they pay the bill 300-400 taka on average. Electric connection is the provider to the settlement by the Government-owned Power Supply Department. Every household has their meter. Each family has to pay 600-700 rupees monthly as the electric bill.



Figure 12: Electric Poles of Pathivara (Source: Author, MSCHS Studio 2017)

Waste Management

Waste water disposal system in the slum is somewhat properly managed by the community by providing drainage by UPPR at the neighborhood level. Household waste water is thrown to drain and waste water from toilets thrown to neighbor's pond. In the course of overflowing the sludge and contaminated water in toilets it becomes come out to the open drain and lane is making environmental pollution.



Figure 13: Adjacent water body of a selected street is used as household waste dumping area (Source: Author, MSCHS Studio 2017)

Water logging, on the other hand, in the period of flood and pouring, the lanes became overflowed and cleared very quickly through the drainage system to pond and finally to Rupsha river. Community makes a committee to maintenance waste disposal system is hiring sweeper in every six months for cleaning up the sludge of toilets.

In *Pathivara*, a complete drainage network covers the area where household drains connected to the pit. Storm water flows to the river creates erosion without proper drainage. Solid waste discharge towards the river (Dhopi Khola) developed by the authority with no containment, i.e., pits or septic tanks. Most of the toilets are connected to the sewerage lines, and sewerage lines are directly connected to the river for disposal.

Sanitation System

The neighborhood is provided toilets by UPPR, NABOLOK, and CARITAS. Dwellers use the inadequate community toilets for regular use. One toilet for every ten households approximately makes a long queue during morning office hour, when daily laborers remain in a hurry. Personal toilets, however, is a very unusual case in this slum. Only 4 to 5 family has personal toilets with inadequate space and unhygienic environment. Septic tank is not presented in this slum. The *chari system* is used for taking sludge from toilets disposing the contaminated waste to pond and drain.

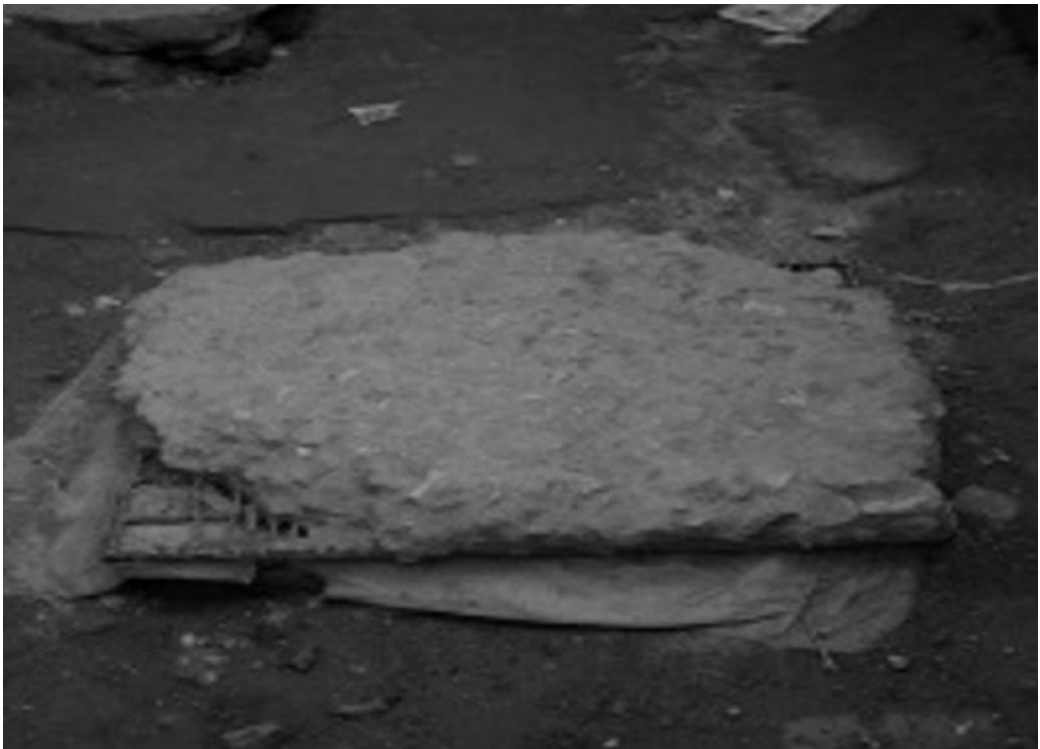


Figure 14: Inspection chamber (Source: Author, MScHS Studio 2017)

In *Pathivara*, most of the household has their toilet. Those who don't have own toilets go for the rental house. Every household has the pipe line to dispose of solid waste into a tunnel. Inspection chamber for every two households is located in front of a household. No septic tank found there.

Construction

The household use a wide variety of construction materials for building houses depending on –availability of materials; affordability of the family; climatic hazards; and climatic comfort. In case of dwelling units, most of them are temporary (*katcha*) construction built with organic materials such as bamboo, wood, golpata, thatch, mud, and found materials such as plastic sheets, jute sack, hardboard, paper, etc. Twenty Energy efficient cookers are designed and delivered by NGOs at a very economy rate for the slum tenants having the member position in the community clusters guided by the concerned NGO. The cooker is like a closed container with a piped outlet to release fume in the air outside the indoor pace.

Some units are semi-permanent (*semi-pucca*) built with the combination of permanent material (such as brick, tali, and concrete) and organic materials. Most of the cases, double story house either extend the upper floor toward the bi-lanes or put structural members stretched for the future extension.



Figure 15: Slum dwellers houses repairing process (Source: Author, MScHS Studio 2017)

In *Pathivara*, the households use almost similar construction materials for building houses depending on –availability of materials; affordability of the family; climatic hazards; and climatic comfort. Most of the dwelling units are permanent construction built with brick, concrete materials with roof top temporary materials like C.I. sheet, asbestos. The main construction labor mainly hired from the immediate neighborhood. Every family members act as a helper in the course of construction. For joining the family members in the construction phase, dwellers can save their money. Consequently, they get more knowledge and technical person into their neighborhood.

Maintenance

In pathivara, anticipating disaster effects, and depending on affordability, households choose building materials more permanent over temporary ones. In general, the households have developed unique ways to reduce heat stress through – use of maximum perforation in walls, open windows without a shutter, partially open ceiling and roof to allow ample cross-ventilation; and use of heat absorbing materials. At the lower level, they use durable materials such as brick so that it withstands flood and water logging. They use the sloped roof for better drainage of rainwater. To minimize damage and loss of life during the storm, they use lightweight materials, particularly for overhead construction. In general, own skills about construction help them to the maintenance of their household, as like the plinth, partition wall, roof, etc. Every five years the building materials, and distemper work are needed to be repaired.

CONCLUSION

A multi-level adaptive up-gradation framework is necessary that works at national, state, city, and neighborhood level and brings together the State, private and civil society sectors. The institutional and political interest to conceive and execute these sets of actions is weak or non-existent in most cities and states. This will need to be built, incentivized, and linked to existing initiatives. Bottom-up mobilization of communities will be crucial to adaptation and resilience that protects the interests of the poor and vulnerable. Though the settlements studied differ in many contexts; there are common phenomena to be addressed. The intermediations in informal settlements' adaptive up-gradation require a more rational and tactical focus to: (a) shift away from disorganized efforts, (b) exploit long-term impact, and (c) make certain of efficient use of resources.

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