Local Environmental Problems of Urban Poor Areas: A Case Study

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ABSTRACT

Environmental conditions have severe impact on the livelihood conditions, health and the security of the poor (Bojö & Reddy, 2002).It is increasingly recognized that poverty and environment are correlated. Poverty affects environmental conditions and vice versa. It is because a degraded environment will greatly affect the poor. The poor tends to become poorer as the environment conditions degrade. Owing to scarcity of job, hardcore poor households of both study communities migrated to the city and live in low-lying vulnerable and unhygienic spaces where inadequate services persist. Due to these conditions they suffer during natural hazards such as flood, which expose them to health hazards that reduce their savings and productivity. Conversely because of insufficient services they pollute the neighborhood environment by illegal dumping of wastes and discharging of wastewater. The principal objective of this study was to identify the local environmental problems. The study was undertaken by acquiring primary data from the field survey by employing a structured questionnaire and gathered information with emphasis on poor and their local environment. The head of poor household or a member of each household was used as respondents. It was found that environmental problems such as improper solid waste management, drainage, housing and land title were the persistent problems in the communities.

Keywords: *Environmental problems, Rajshahi city, urban poverty*

Introduction

Poverty is described as an incapability of getting a minimum standard of living, in which condition people would never want to live in (Pigou, 1952). Poverty is a major cause of environmental degradation (Ravnborg, 2003). The assumption of a vicious circle, the relationship between poverty and environmental degradation in developing countries has long existed in the debate. The assumptions were first commenced in the statement of the World Commission on Environment and Development (WCED, 1987) but have later been repeated by many institutions (e.g., Durning, 1989; UNEP, 1995; World Bank, 1992). Due to the lack of assets, poor people were seen both as victims and agents of environmental degradation (Ravnborg, 2003). This study attempted to identify the persistent local environmental problems among poor, its causes; and proposes some feasible solutions.

Literature Review

Poverty is multidimensional and the inter-linkage between environment and poverty is undeniable. The more visible environmental problems are evident among the developing countries. The poor are the victims of the environmental degradation but they are not necessarily the polluters. They are mostly forced to face an adverse environmental shock (Rahman, 2001). Poverty reduction and environmental management represent the two most important global challenges. The poor often become the victims of environmental damage. "Environmental damage almost always hits those living in poverty the hardest" (UNDP, 1998). The Linking of Poverty Reduction and Environmental Management focuses on ways to reduce poverty and sustained growth by improving environmental management (World Bank , 2002). The extent of poverty varies from region to region and country to country. The policies of reducing poverty should be carefully

designed from national, local, and municipal realities (World Bank, 2001). Regional and international development institutions are stressing their poverty reduction program. 2.8 billion of the world's population was facing the challenge of poverty especially in the developing countries (Henninger & Snel, 2002). In Bangladesh, around half of its total population (140 million) with the highest intensity of absolute poverty lived in deprivation (Shafi, 1994). Rajshahi city was a divisional city in Bangladesh. Poverty was a burning issue in the city. Majority of the households (61%) income remained from 36-93 US$ and 69.8% households' income remained from 21 to 64 US$. Labor force was expected to increase from 299,890 in 2001 to 385670 in 2021 as well as around 27% of them would not find any job if the current trends continued (RDA, 2004).

Cities are regarded as the centers of industry and commerce. Urbanization plays an important role in economic and social development. Nearly 80 percent of the future economic growth occurred in the cities of developing countries (Bartone, 1994). In addition to economic development, growth was also associated with higher individual incomes, improved health, higher literacy, and improved standard of living (WRI, 1997). Previously, poverty was found mainly in the rural areas. Due to rural urban migration poverty was becoming an increasingly urban issue. One quarter the world's absolute poor were living in urban areas of the developing countries (World Bank, 1990).

Poverty was a major cause and effect of Global environmental problems (WCED, 1987). On the contrary, environmental conditions were greatly making an impact on the live hood condition, health and security of the poor (Bojö & Reddy, 2002). In the developing countries, urban poor suffered from serious environmental hazards (Satterthwaite, 1999). Generally they migrated towards the city in search of employment (Mbilinyi & Omari, 1996). The places where they lived were unhygienic and vulnerable (Hukka et al., 1991) and bore the shock of vulnerability and environmental damages (Jahan, 2003). They suffered from various deprivations such as lack of employment, housing, services, health facilities, education, security, social protection and discrimination. But they were not the main originator of these dreadful conditions. The contribution of the rich in degrading the environment degradation was higher than the poor. The rich were degrading the global environment that was creating problem for poor (Jahan, 2003).

The association of urban poverty and local environmental degradation have multi-dimension. Poverty influenced environment degradation (Parnell, 2000). In the same way environment also affected poverty, because a degraded environment shall greatly affect the poor. The poor tend to become poorer as the environment conditions degrade. Owing to scarcity of job, hardcore poor households of both study communities migrated to the city and live in low-lying vulnerable and unhygienic spaces where inadequate services persist. Due to these conditions they suffered during natural hazards such as flood, which expose them to health hazards that reduced their savings and productivity. Conversely because of insufficient services they polluted the neighborhood environment by illegal dumping of wastes and discharging of wastewater. People of the communities lived in low-lying vulnerable and unhygienic places where carried on paucity of required services. Due to living in low land and vulnerable of natural hazards such as flood damage resources which directly exposed their income and savings, the intensity of the poverty increased.

Methodology

The principal objective of this study was to identify the local environmental problems. A structured questionnaire survey was carried out to know the existing socio-economic and environmental dilemma of the study areas. For determination of poverty line, an income-based measurement of poverty was used as the key indicator. For an in-depth analysis, the study explored the causes and impact poverty. Two under served communities respectively known as Bustuhara (C_1) and Ramchandra Pur Shamprasharitu (C_2) were selected through purposive sampling. There were 100 and 300 families in both communities respectively. 50 families were selected as the samples from C_1 and 100 families were selected as samples from C_2. Samplings were drawn at 5% significance level. The head of poor household or a member of each household was used as respondents.

Findings

Urban poor suffered from lack of employment, housing, infrastructure, health, education and social protection. Most of them migrated from different parts of rural areas into cities for better living. The city had limited capacity to provide jobs. The migrated poor lived in unhygienic and polluted environment. They suffered from different diseases and finally lost their working capacity. Most of their income was spent for buying their daily consumed food. Only limited amount were spent for their medical treatment purpose. Limited basic educational institutions were seen in the areas. Educational costs were high and the poor were unable to bear of it. Land title was another great problem. They have been living for long time without any land title. Due to lack of land title, they could not use their land as productive assets. Their living places were located far from the city main services, so they did not get any important information at the right time. Social discrimination was also present there.

Table 1: Dimensions of Urban Poverty

Dimension	Contributing Factors	Impacts
Income poverty	Lack of employment Employment insecurity Unskilled labor Unsound health	Inability to get services Lack of housing, land Poor capital Poor health
Health poverty	Over crowded and unhygienic living environment. Polluted areas Limited health facilities and Expensive	Inability to hold a job Inability to earn.
Education poverty	Limited education facilities and expensive	Inability to get a job Inability to earn Poor education
Security	Tenure insecurity Wage and job insecurity	Inability to use house and land as source of income Physical and mental health Problems Low Learning or decrease earning opportunities
Lack of Empowerment	Isolation of communities Lack of information of jobs	Increase the intensity of poverty

Source: Field Survey.

The lack of one dimension of poverty generated others deprivation. In general poor people did not get credit for housing or business from the formal banks. Without mortgage, banks did not provide any loan. They did not own any resources for mortgage and they were deprived from the loan system. The lack of credit left them to inability to afford adequate housing. The places where they were living in were generally unhygienic and isolated from the main service system. Owing to living in unhealthy environment, they suffered from different diseases that made them unhealthy. There was also scarcity of jobs and insecure wage rate. All of these factors made them more vulnerable.

Income

The majority of households' incomes were very low. The family members of major households consisted of 3 to 5 persons. In most cases, there was only one earning member in a family. In C_1, around 40% of families income less than 1 US dollar per day and only 4% of family's income more than 46 US dollars per month. Almost the similar picture was found in C_2 (Table 2).

Table 2: Monthly Income Distribution of the HHS

Monthly Income (US $)	C_1		C_2		Total	
	f	%	f	%	f	%
<30	19	38.0	39	39.0	58	38.7
30-35	20	40.0	37	37.0	57	38.0
36-40	06	12.0	11	11.0	17	11.3
41-45	03	06.0	08	08.0	11	07.3
>46	02	04.0	05	05.0	07	04.7
Total	50	100.0	100	100.0	150	100.0

Source: Field Survey.

Saving

Saving was found to be most dangerous factor among the poor. More than 50% families had no saving and most of their incomes were spent to buy their daily consuming foods. The poor went through a critical moment during off day of work or during vulnerable time. As they lived in vulnerable places, a lot of local environmental problems existed there. Most of them lived out of city services. Inadequate services were common there.

Improper Solid Waste Management

The solid wastes are produced everyday. Improper solid waste management was a serious threat for living. It polluted local environment and created adverse impact on human health. Serious improper solid waste management problems were also seen in the study communities. For waste collection, City Corporation played a key role. Most of the daily garbage's were collected by them. But the collection did not cover the areas of C_2. C_2 was located out of flood protection barrage near the river bank of Padma which was the boundary waste collection. C_1 was located in the heat of the city and more than 84 percent of garbage was collected by City Corporation.

Daily garbage collection frequency was important to keep the local environment fresh and clean. In some areas, it was collected once a daily and in some areas it was gathered twice a day. Actually, it depended on the accessibility of road. Where the corporation transport can enter easily; there were collections. In community 2, one third of the total areas were uncovered of waste management system. Most of waste were scattered on the road and wastewater drainage. The west site of the community had good access of transport, so the wastes were regularly collected from there. On average, around one third of the regions in both areas were uncovered by waste management system.

Drinking Water

Pure drinking water was essential. The issue of drinking water for poor was becoming a vital managerial concern. Insufficient water management made their health vulnerable. They collected drinking water from three main sources, namely tube well, public tab and natural water supply.

Tube well was the key source of drinking water. In community 1, 31 households used tube well water, 20 households used public tab water and 14 households used natural supply water. The location of community 2 was out of flood protection barrage, so it was very difficult to provide them with the connection of water supply. Poor people sometimes used pond or river water for their household purposes. Water from ponds and river were dirty because wastewaters directly fall into river and ponds. They used also this water for bathing. In community 2, majority of the households used tube well water for drinking. 16 households used public tabs water. Very limited number of them used natural water supply (Table 3). The overall situation of drinking water was well due to the implementation of UNDP/GOB project.

Table 3: Sources of Water of the HHs

Sources of Water	C_1		C_2		Total	
	F	%	f	%	f	%
Tube well	31	62.0	95	95.0	126	84.0
Public tab	20	40.0	16	16.0	36	24.0
Water supply connect	14	28.0	01	1.0	15	10.0
River/pond	07	14.0	26	26.0	33	22.0
Others	03	06.0	08	08.0	11	07.0
Total	50	33.0	100	66.0	150	100.0

Source: Field Survey.

Sanitation

Poor people bore the major brunt of inaccessibility to safe water, water contamination, water-borne and water related diseases (Jahan, 2003). Over all sanitation especially latrine conditions were good due to implementation of UNDP/GOB projects. Pit sanitary latrines were provided for the poor. In community 1, 44% families used pit sanitary latrines and 56% families made use of the slab latrine. Nobody used open space for toilet purposes. In community 2, 53% families used the sanitary latrine. 42% respondents used slab latrine. Since the location of this community was near to riverbank, some of them still used the river bank open space for toilet (Table 4).

Table 4: Toilet Types of the HHs

Toilet Types	C_1		C_2		Total	
	F	%	f	%	f	%
Sanitary	22	44.0	53	53.0	75	50.0
Slab latrine	28	56.0	42	42.0	70	46.7
River bank/ open space	00	00.0	05	05.0	05	03.3
Sanitary	50	100.0	100	100.0	150	100.0

Source: Field Survey.

Housing

The provision of shelter of urban poor was important. Every year around one million people added into present existing urban population and half of them were poor and they were deprived of housing in urban environment (Islam et.al., 1997). The fundamental barriers of housing for the low-income people were (i) the scarcity of land and high cost of it (ii) Ill-formed housing finance system (iii) The government's weak policy for development of land and shelter.

Two types of housing were seen in the communities i) BSS Type- Brick Wall, Straw Wall and Roof ii) BCT Type- Brick Wall, Cement Floor and Tin Roof (Table 12). In community 1, above 50 percent of respondents' houses consisted of BSS type. This type of house was vulnerable and damage during cyclone and flood. The poor lost their houses and faced a critical moment of their live at that time. The BCT type house was less vulnerable of natural hazards.

In community 2, 58 % families had BSS type houses while 39% families lived in BCT type houses. The rest of the family's used others type of house. This type of house had very good condition for example, its floor, wall and roof were prepared by cement and rod, and hence it was less vulnerable of natural hazards.

Table 5: Housing Types of the Households

Toilet Types	C_1		C_2		Total	
	F	%	f	%	f	%
Sanitary	22	44.0	53	53.0	75	50.0
Slab latrine	28	56.0	42	42.0	70	46.7
River bank/ open space	00	00.0	05	05.0	05	03.3
Sanitary	50	100.0	100	100.0	150	100.0

Source: Field Survey.

Ownership of houses was also a significant indicator of socio-economic condition. More than 80 percent of households had their own houses and 30 percent use rental houses. Some of them migrated for a short time. These types of respondents used rented houses and left after a certain period. Only around 5 percent of HH were using government houses (Table 13).

Table 6: Ownership of House / Housing of the Respondents

Ownership of House	C_1		C_2		Total	
	f	%	f	%	f	%
Private	38	76.0	85	85.0	123	82.0
Rented	10	02.0	10	10.0	20	13.3
Govt.	02	04.0	05	05.0	07	04.7
Total	50	100.0	100	100.0	150	100.0

Source: Field Survey.

Land

Land was an important issue in urban areas. Providing a land for urban poor was very difficult. Every year, huge numbers of rural poor migrated towards the city for a better living. The city had no capacity to provide them land. Most of them were living in vulnerable places. They were living in low and hazardous places. Some of them had been living in for a long time without any land title. Most of them said that they had the land title and they were the owner of these lands where they had been living in a long time. But when the researchers cross checked the information, it was found that most of them had no land title. Overall the land ownership patterns of the poor were very bad. Majority of them had been living in for a long time or even 30 to 50 years but they had no land title. Some of respondents built pacca houses on such land but they had no ownership of the land. On an average above 80 percent of HHs was living on private land but they actually

had no land title (Table 6).

Table 7: Land Ownership Pattern

Land Ownership	C_1		C_2		Total	
	f	%	f	%	f	%
Private	38	76.0	85	85.0	123	82.0
Rented	10	02.0	10	10.0	20	13.3
Govt.	02	04.0	05	05.0	07	04.7
Total	50	100.0	100	100.0	150	100.0

Source: Field Survey.

The people without land lived in the most inhuman conditions which were in slums squatter. It was necessary to initiate special programs for the poor to provide them access to land in the city. There were some lands, which belong to the government, or various public or semi-government authorities. Maximum of land were under the government and it was possible to distribute them among these poor people through proper regulation. The location of community 2 was near to riverbank and there was lot of fallow Land which was possible to be distributed among them by adequate policy. This would play a significance role to solve the land problem.

Recommendations

Poverty was a serious problem due to limited resources and income. By using of these limited resources it was possible to solve the problems. There were a lot of environmental problems of urban poor in the communities such as improper management of solid waste, lack of waste water drainage, lack of drinking water, short of good quality housing and the lack of land title. It was possible to solve the urban poor problem by involving them in the process. It was possible to turn in these problems into positive scenario that would remove the environmental problem while simultaneously creating employment generation for the poor, which lead to the reduction of the poverty level. The following model was proposed to find an amicable solution to the persistent environmental problems faced by the poor.

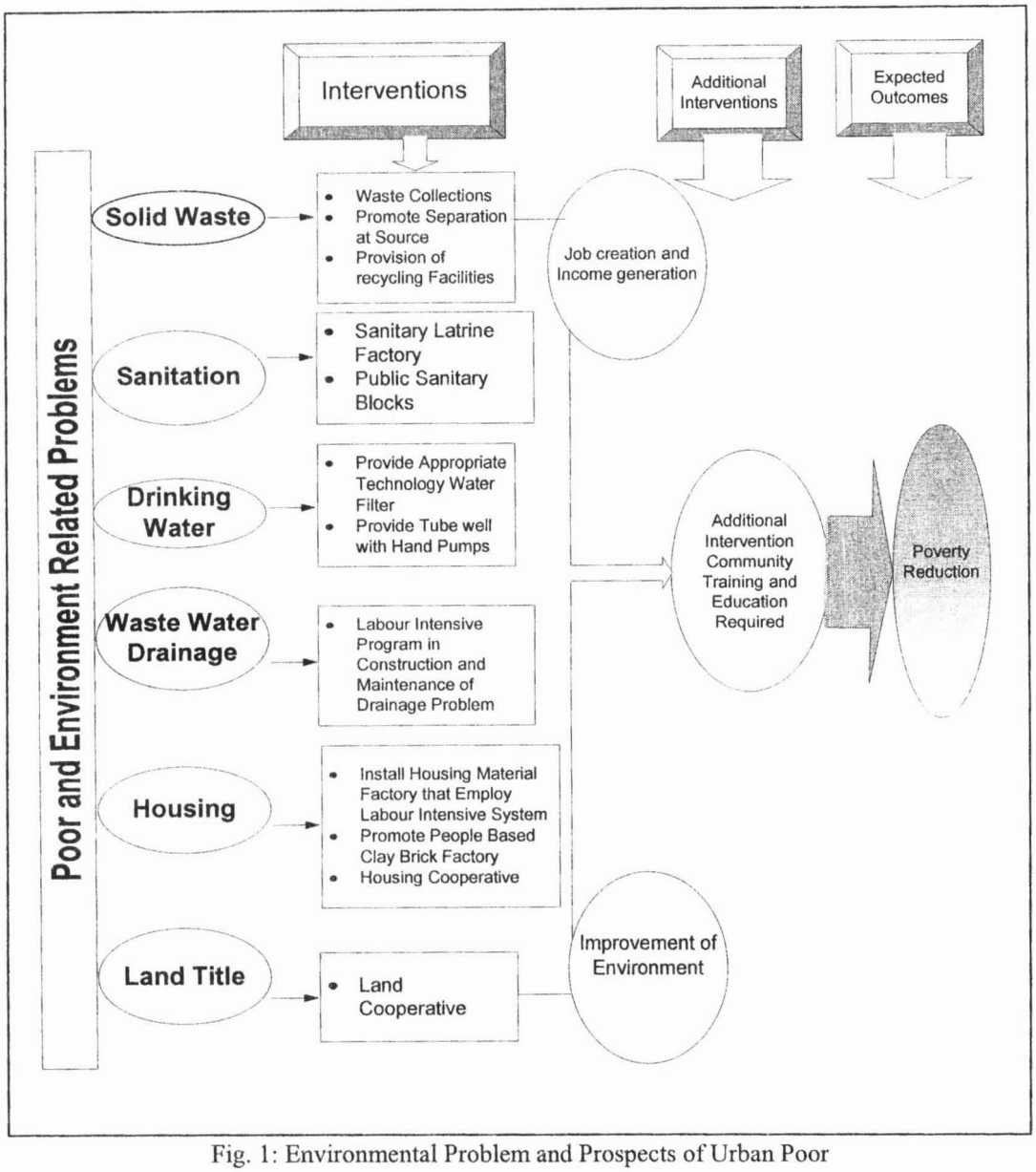

Fig. 1: Environmental Problem and Prospects of Urban Poor

Improper solid waste management was a major concern for the both study communities. It was possible to solve the problem by involving the poor for the management of solid waste into the community as well as the whole city. These would create two types of scenarios; first, environmental condition of the poor communities would be improved. And second, the poor would get jobs. When they get jobs their income would be increased and hence lead to reduce poverty. For this type of management, it was necessary to provide the community-based solid waste management or labor intensive technology to recycle or reuse the solid waste. Separation of garbage was also required for the recycling to reduce the cost of end products. Separations at the source would also promote job creation for poor communities.

Sanitation problem could be improved the by the implementation of UNDP project. Labor-intensive cheap sanitary factory would supply inexpensive sanitary goods. One or two particular communities could be selected for this factory by providing them suitable raw materials. Thus the low income group would buy the cheap sanitary goods from the block. This would solve the sanitary problem of the poor families and improve their environment. For preparation of sanitary

goods some needy poor would get the jobs that would increase their income and savings.

Pure drinking water was a grave concern not only in the study communities but also in the country. Recently in Bangladesh, there was a great problem of drinking water due to contamination of arsenic. It was possible to provide pure drinking water not only in the communities but also all over the country by providing appropriate technology that could be applied by the poor people to prepare pure drinking water. They would sell it among the communities even to the whole country. This would lead to increase their income and solved the drinking water problem.

With regards to drainage problem, it was possible to make labor-intensive drainage by involvement of the poor people. For this purpose special training among poor was required. This would provide them jobs that would in turn lead to increase of income and reduction of poverty. By building the drainage the environmental problems could be solved.

For housing problem, Labor-intensive housing factory was required to solve the problems. Some block of the communities could be nominated to prepare the low cost housing materials that the poor could easily buy it. If they were to sell it, they could earn money that would increase their income and simultaneously the housing problems of the poor would be resolved. The lack of Land title was another issue in the communities. It was possible to solve the problem through land cooperative system and providing long-term soft loan system. To convert the environmental problems into urgent issues, additional intervention training, education and awareness were required. Most of the poor communities were uneducated and unskilled as well as have a great lack of awareness.

Conclusions

The study highlighted the poverty and local environmental problems of the study area. To determine the poverty line income based on the poverty measurement has been used and around 40 percent of the household's incomes were less than 1 dollar per day. In terms of savings, nearly 50 percent households of both communities had no savings. The local environmental conditions of the communities were bad excluding of sanitation and drinking water. Overall condition of sanitation and drinking water was good due to the implementation of UNDP/GOB Project. The others situation - solid waste management, housing and land title were not good. In Community 2, there was limited solid waste management; most of it fell on the road or housing sites. People of both communities were living long time without any land title. Housing condition of the community 2 was very bad and vulnerable. Most of them were BSS type or muddy floor.

Environmental problems like improper solid waste management and lack of sanitation, drinking water, wastewater drainage, housing and land title remain in the communities. It was possible to solve these problems by stimulating poor people by providing environmentally linked jobs within their communities where the problems were persistent. This involvement would produce income generation while making also their environment circumstances better. For example, in solid waste management it was possible to involve the poor for the promotion of waste collection and separation at the source. These would generate income generation to reduce poverty in addition to improve the local environment.

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