

Improving the Living Environment of Khulna City Slum Areas, Bangladesh: Impact of Basic Services

Bushra Shamsad and Sadah Shamsad

*The Centre of Urban Planning and Environmental Management, The University of Hong Kong, Hong Kong & Department of Architecture, Khulna University, Bangladesh**

Abstract

Rapid population growth in urban areas of Bangladesh, including Khulna the third largest city, caused by a heavy influx of migrants from rural areas, has led to mushrooming of slums and squatters in urban areas without any basic service facilities. As a part of urban poverty reduction and to improve the living environment of the urban poor basic services have been extended to the slum areas of Khulna city, which includes provision of water supply, sanitation, solid waste collection, drainage system, electricity etc. Even though the living environment of the slum areas has been remarkably upgraded, the overall condition is yet to be

improved. This article discusses the impact of the basic services on physical and social development of the slum areas by using comparative scenarios between before and after service provision of Khulna's slum areas. Environmental problems faced by the slum dwellers of Khulna city have also been discussed. Increasing awareness about the environmental issues among government, development organizations and NGOs who are engaged in providing services to the urban poor, raising awareness among the slum dwellers are effective ways to address the environmental problems of the slum areas which will ultimately contribute to the overall environmental improvement of Khulna city.



Introduction

Due to rapid urbanization, rural-urban migration, natural increases in population within urban areas the vast majority of the urban population are residing in slum and squatter settlements throughout the cities of Bangladesh. Nearly one third of total urban population of the country live in slums and squats. Most of these people are economic migrants from rural areas with a large number contribute to the informal sector, yet their role in economy and rights are overlooked by the formal sectors. Their suffering is manifolded in cities; inhuman living and working conditions and forced and frequent eviction by the authorities are a common phenomenon. In Bangladeshi cities high-density, unauthorised living areas of makeshift materials, without water supply, toilet facility, solid waste collection systems and electricity are commonplace.

Slum dwellers of the city are not considered as legal occupants. Thus, slum areas do not fall under the basic service delivery systems of the City Corporation. As a result these urban dwellers lead life in inhuman conditions. Addressing the poor environmental problems, a number of organizations such as UNDP, UNICEF, NGOs, and the Government have recognised the need to serve the basic needs of the urban poor through out Bangladeshi. Since 1986 the "Slum Improvement Project (SIP)" initiated by UNICEF was engaged as one of the key forms of intervention in the slums of Bangladesh, including Khulna city. SIP is a centrally conceived and community based effort to provide environmental services, primary health care and income generating credit for the improvement of both physical and social

*B Shamsad: PHD. Candidate. S Shamsad: Lecturer. The University of Hong Kong Email: bushra@hkusua.hku.hk sadahshamsad30@yahoo.com

conditions within the slum areas. The Urban Basic Service Delivery Project (UBSDP) replaced SIP in 1996, these both focused mainly on the slum community women, since women are the main victims of degraded environment in the slums, and it was predicted that goal can be achieved more rapidly by focusing on women to upgrade the slum environment.

To ensure a good quality of life in the slum areas the environmental conditions the dwellers are living in is of utmost importance. In order to obtain accurate data on the magnitude of environmental problems and to find out how the basic services provided by the projects have improved the slum environments, a detail survey has to be undertaken. This would help find ways and means to address the environmental problems of slum dweller of Khulna city. The present article discusses the impact of basic services on slum areas of Khulna city. It will also identify what needs to be done to cope with the problems faced by the slum community to sustain long-term benefit out of the basic service initiatives.

The Study Area

In spite of relevant attempts made by different nations to improve the conditions of the urban poor that are living in slums and squats the quality of life has yet to be improved. The case in Bangladesh is a good example of this. Khulna, the third largest metropolitan city of Bangladesh, is no exception of this scenario. Geographically Khulna is located at 22° 49'N latitude and 89° 4'E longitudes and occupies an area of about 46 sq. km. Presently the Khulna City Corporation (KCC) is composed of 31 wards¹ with a population density of 180 persons per hector (Environmental Maps and Workbook Project for Khulna City, 1999). Khulna gained its formal town status after the establishment of the municipality in 1884 and in 1961 it became the headquarters of Khulna division. During late 1950s and 1960s this divisional headquarter became an important centre of industrial development. In the late 1980s and early 1990s with the establishment of Khulna University and Khulna Medical College , Khulna gained additional impetus for further socio-economic and physical development.

A study by Mortuza (2000) shows that there are 172 slums located all over Khulna city. During 1992 -1999 the average annual population growth rate was 7.3 percent compared to 1 percent during 1976. At present 13 % of the city's population live in slum areas. Being the regional centre of south-western part of Bangladesh the slum population of Khulna city is expected to increase with the rate of urbanisation. There is an urgent need to pay adequate attention to improve the living environment of slum areas, which will ultimately contribute to Khulna's sustainable development for the present and the future.

Methodology

To conduct the study two types of data sources are utilised, the first is primary data i.e. field surveys conducted by the authors during 2002 in a selected slum area of Khulna city. The second data source is secondary materials, relevant to the study. A qualitative interpretative approach was followed to analyse the data gathered through multi-method data collection approaches consisting of observation, structured questionnaire surveys, household case histories and informal interviews in inside and out side the community along with relevant officials of the projects. The study slum, namely *Shonaganga slum*, has a total of 750 households with an average size of 5.8 people (UBSDP, 2000). Eighty respondents were interviewed through a random sampling method and a few focus group discussions were organized to get a real and detail present and the past picture of the study area. Information on: (1) Socio-economic background, (2) Facilities of basic services, (3) Condition of Health,

education, income along with other relevant information was collected before and after basic service provisions. A semi structured questioner interview was conducted with the relevant officials and experts and all the interviews were conducted in Bengali and translated into English prior to analysis.

The data analysis was divided into two parts, the first was the analysis, an accurate phenomenon that was observed has been developed. The second part of the analysis focused on the interpretation of the data collected. This approach was complemented by insights gained from simple quantitative analysis, for example frequencies and cross-tabulation. A combination of quantitative and qualitative data analysis was used to grasp a better understanding of the real picture that exists in the study area.

Discussion

To analyse the impact of basic infrastructure services on the slum community the discussion was divided into two parts – physical impact and social impact. For the comparison of environmental conditions of the slum area, before service and after service provisions, baseline data was collected from different sources and field surveys.

Ideally the impact of the basic services on any particular community should have been measured by comparing information from households with that of the base line information on the households. Since such base line data was not available for Khulna's slum areas the assessment followed two procedures. The first was that the assessment was done qualitatively. Comparable quantitative information showing how the slums having no basic services was available from different secondary sources and utilized to make a quantitative assessment. A significant proportion of Sonadanga slum population had lived in the area for more than 20 years and where an important and reliable source of baseline data.

The alternative method for comparative assessment is to examine the differences in household situation i.e. longer period versus shorter period of exposure to basic services. These could be termed as 'After'² and 'Before'³.

Physical Improvement of the Slum Area

Due to basic service provision of Shonadanga slum Khulna city has gone through a remarkable physical as well as social improvement, especially when compared to those slum areas which do not have any basic service facilities. This slum area has a better environment compared to non-service slum areas within Khulna city and all these credits might go to the projects for its initiatives. Impacts on the slum area due to infrastructure services have been analysed in the following sections.

Impact Due to Drainage Services

The site on which Shonadanga slum is located was once the largest solid waste-dumping sites of Khulna City Corporation (KCC) and the area is low land and every year during rainy season this area used to go under water for months. Since there was no drainage facility dwellers had to wait for dry season to come. After the provision of drainage facilities where installed the area no longer flooded, which brings many positive impacts on the community as a whole. Impacts noted was better health, change of occupational pattern, more women involvement in self-employment and clean surroundings and above all better environment.

As a result the people of the community are in better health, many water born diseases have been reduced such as skin diseases and diarrhoea. Drainage facilities have had a remarkable impact on the occupation of the community. At present community women are involved in different informal income generated work and the area remains dry most of the time throughout the year. During informal discussion most of the respondents comment that before the drainage facilities dwellers were not able to set up any informal income earning activities in this area such as Katha⁴ sewer, shop keeper, fire wood seller, match box makers etc.

Impact Due to Toilet Facility

A Toilet is one of the primary needs of a human being, but most slums huts do not incorporate sanitary facilities. Sewers are completely absent lavatory blocks on the outskirts of the slum cluster have been built but 90 percent of the dwellers are going in the open air. Most of them relieve themselves in drains, open spaces and on pavement. These were the common pictures in Shonadanga slum. Hanging latrine are the most hazardous because everything remains open and can become a cause of tremendous health degradation in the slum areas. Situations were far worst in rainy season. There was no distinction between human filth, rainwater and drains.

Environmentally, in terms of toilet facilities, the slum community is in a better position than in the past. SIP provided almost 53 toilets for the community. These toilets are hygienic and are connected with the water supply and sewerage system. There are examples of some encouraging initiatives by some dwellers who have built toilets there selves. There are several clusters, in each cluster 5 to 10 households formed a fund and raised money for the toilet construction and maintenance. These groups maintain and use their own toilets. Due to toilet facilities and to some extent proper sewerage facilities people are enjoying better health conditions and ultimately this will have a positive effect on their occupation, income, education and mental health.

Impact Due to Water Supply

Ponds and hand pumps were most peoples only source of water. Since most of the latrines were very badly maintained and were too close to tanks or water bodies that are used for both bathing, clothe washing etc. more than 80 percent of slum dwellers used ponds for bathing. One mercy was the project's water supply system, which brought back to the community a supply of water Particularly drinking water. Earlier slum community women had to walk long distances, sometimes for hours, to collect drinking water. Since the projects installed a number of tube wells and built reservoirs the dwellers are have access to water connections for drinking and other purposes. The time saved by the women can be utilized for other productive purposes e.g. more time for household activities, home based income earning activities etc.

Impact Due to Solid Waste Bins

It was unfortunate to see that there was no solid waste collection facility in the slum area. There were number of solid waste disposal bins provided by the authority, but all have been destroyed oven time by the beneficiary, this was mentioned by the dwellers and by project documents. It was observed that waste was dumped here and there within the slum area. Dwellers also have the tendency to dump solid waste in the ditches within the slum to

increase land area, which causes an unhygienic environment. Figure 1 to 4 shows the severity of solid waste in the slum areas where people dry food and dump waste next to each other.

Figures 1-4



Figure 1: Source of drinking water and water reservoir, but there is no drainage facility to dispose used water



Figure 2: Solid waste disposal, hanging latrine & drying food at the same place



Figure 3: Toilet built by community



Figure 4: Ditch & open hanging latrine

Impact Due to Roads and Footpaths

The projects constructed footpaths to facilitate access within entire area of the Shonadanga Slum. So the community has good access and links to main roads, this brings many advantages to the community and easy access to community latrine and common water sources. A significant number of community women are involved in self-employment at home. These small-scale businesses have grown because of the easy access. More NGOs and development organizations are interested in providing services to this area. It became possible because of the new footpaths for 'Prodipon', a NGO works for solid waste collection and recycling, to provide a door-to-door solid waste collection service to the community. One of the most positive aspects of the new footpaths was that it was easier to transport people to and from the hospital when needed, which has a positive impact on the community's health; especially for pregnant mothers. Fire hazard was a large problem in the slum areas due to the types of materials used for house construction and the high density. Now because of the new footpaths fire services can reach the community during a fire, which happens often, and stop the fire from escalating.

During the field visit it was observed that the community uses the footpath for multipurpose activities. The slum area is highly dense, so there are very limited open spaces within the community. Footpaths act as open courtyards where various forms of activities take place such as community meetings, children playing, drying food, and small informal income generating activities. Women use to operate many of their household activities on the footpath, such as gossiping, sewing, preparing food before cooking and many residents sat on the footpath while talking with the authors because they did not have enough space within their house.

Table 1: Physical Improvement of Shonadanga slum area due to basic services

Component	Impact
Drain	<ul style="list-style-type: none"> ▪ During rainy season no flooding ▪ Disposal of household waste water ▪ Comparatively clean surroundings ▪ Better health ▪ Increases self employment
Toilet	<ul style="list-style-type: none"> ▪ Clean surroundings ▪ Decrease in diseases ▪ Better health
Water supply	<ul style="list-style-type: none"> ▪ Reduced water born diseases ▪ Reduced time to collect water (eventually the community can utilize this time for other productive works) ▪ Saving money which earlier they had to spend to buy water from vendors
Solid waste disposal	<ul style="list-style-type: none"> ▪ Provided, but destroyed. No impact can be measured. ▪ The community's environment is highly degrading due to improper disposal of solid waste.
Footpath	<ul style="list-style-type: none"> ▪ Good communication ▪ Other NGOs and organizations are interested to provide services as access become easy in this community. ▪ Works as courtyard, especially for women for different outdoor activities. ▪ Self-employment has increased due to the provision of easy access within this area.

Social Impact on the Slum Dwellers

In the Shonadanga slum areas substantial improvement on social aspects could be seen due to project activities. Provision of basic services together with micro credit loans, education, and health care facilities have helped the dwellers improve their economic status, more opportunities for income generating activities, a higher level of education, better health and better treatment. The following section presents a detail analysis on the social impact due to project's components on the slum dwellers.

Impact on Education

The slum community appears to be more educated since the project interventions. SIP took an effective initiative, focusing on women and children, i.e. the satellite school program. A community schooling facility for women has had a remarkable attendance and now most of the women in the community can write. The lower proportion of illiterate women (47.5%) is an indication of slow gentrification process that has set in due to the improvement in results from the projects. With the improvement of the physical environment and facilities like tube wells, latrines, footpaths and drains, this slum may have attracted comparatively more educated people to reside in this slum area.

Table 2: Level of Education (%)

	Illiterate	Primary	Secondary	Higher secondary	Total
Before service	57.20	30.40	12.40	0.00	100.00
After service	47.50	36.30	13.80	2.50	100.00

Source: Field survey, 2002.

Impact on Occupation

Table 3 reveals that the projects have had a significant impact on the type of occupation of the slum dwellers. The number of housewives has reduced and the number of working women has increased. The for this might be due to better environment conditions, better health, a raised level of awareness and better knowledge compared to before the project. Another important contributory factor is micro-credit loan facility for community women. UBSDP has been giving out small loans which help the dwellers to set up small shops, buy sewing machines for a home based tailoring business, buy rickshaw (traditional man pulling three wheeler transportation used to cover short distance within city) etc. The project loan is only available to women, but field studies show that the entire household benefits.

Table 3: Primary Occupation

Types	After service delivery		Before service delivery	
	f	%	f	%
Housewife	67	83.10	74	92.5
Self employed	8	10.00	4	5.00
Wage-employed	5	6.25	2	2.50
Total	80	100.00	80	100.00

Source: Field survey, 2002.

Income Level

Significant improvements in the income level of the slum dwellers after provision of services has also been recorded. Before service provision 28.2 percent of women contributed a major to the total family income, which has now been increased to 40 percent. At the same time the level of income has also improved remarkably. Before service provision 0.20 percent of

households had an income of almost 50 USD per month, now the percentage has increased to 3.50. This is a clear indication of the project's impact on Shonadanga slum area. As mentioned, due to physical improvements and micro-credit loan facilities more women are involved in different income generating activities.

Pattern of Household Expenditure

Data was collected on expenditure patterns of the slum dwellers before or in the earlier stages of basic service delivery and compared to that of the present day. Analysis has been done on expenditure patterns of items such as food and drinks, clothing, house rent, fuel, water, education, health care, transportation, recreation and maintenance of services. Important difference, which could be attributed to the impact of the project activities, in the case of expenditure on education and health care are apparent. Table 4 and 5 below show the pattern of expenditure on education and health care.

Expenditure on Education

Increased importance has been given to educational spending is clearly evident in the slum area. Almost 56 percent of families spend from 1 to 10 percent of their income on education whereas in the earlier stages of the project this was considerably less. Increased income level, raised awareness, better environment, mingling with the project experts and school facility near to the slum area are the primary causes for the realization of importance of education.

Table 4: Household Expenditure on Education

	Nil	1-10%	11-20%	21-30%	31-40%	Total
After	28.20	56.20	13.30	1.80	0.50	100.00
Before	44.10	48.80	5.50	1.20	0.40	100.00
General	68.20	29.80	1.60	0.20	0.10	100.00

Source: Field survey, 2002 and Islam, 1996.

This increase in spending indicates that slum dwellers were not aware of health issues and before the project thus their mortality rate was higher. Table 5 shows the comparison of expenditure on health care before the project and after.

Table 5: Household Expenditure on Healthcare (in percentage of total household income)

	Nil	1-10%	11-20%	21-30%
After	6.40	89.90	3.50	0.20
Before	11.80	84.00	4.20	-
General	27.30	67.60	4.00	0.50

Source: Field survey, 2002 and Islam, 1996.

Sufferings from Diseases

Overall the health of the slum dwellers is far better than before service provision. There were some common diseases which occurred, before services, more frequently such as diarrhoea, scabies, asthma, different skin diseases, malaria etc. The child mortality rate is still very high,

but the frequency of the diseases has been reduced substantially. During informal discussion with the community, most of the respondent replied that they did not know how to treat diseases like diarrhoea, malaria etc., before the project and that since the project initiatives they are very aware about health care and environmental cleanliness. As a result slum dwellers suffer less from the various diseases.

The Place of Health Care

It is clear from Table 6 that the percentage of slum dwellers going to hospital is higher (66.4%) than before (59.8%). A significant proportion of dwellers were dependent on Kabiraji⁵ (9.3%) and homeopathy (10%), which has been reduced to 0.3 per cent and 0.4 percent. From this analysis it can be concluded that the projects have been very successfully in reaching the poor and making them understand the benefits of modern treatment.

Table 6: Place of Health Care (before and after projects)

Place/type	After	Before
At home	0.50	0.80
Hospital	66.40	59.80
Clinic	5.10	5.10
Kabiraj	0.30	9.30
Homeopathy	0.40	10.00
Allopathic	23.90	13.80
Community health worker	0.80	0.60
Others	2.60	0.60
Total	100.00	100.00

Source: Field survey, 2002 and health survey reports of the projects.

Magnitude of Environmental Problems at Present

--

Present scenario of the Shonadanga Slum area can be described as below:

1. Building materials used for *ghars* (rooms/house) are bamboo, rags, thatched, with polythene sheets etc. 90 percent of houses are made of bamboo, old tin sheets, polythene bags and other scrap materials. They are mostly single room enclosures. 12.5 per cent use mud blocks as walling materials, 72.5 per cent use bamboo mat, while 10 per cent use straw and the rest 5 per cent are without any boundary wall. As roofing material 90 per cent of the houses use *golpata* an indigenous leaf available in the locality or collected from the Sundarbans. Floor is generally by mud.
2. 84 per cent of the families live in one-room houses. The average size of room/*ghar* is between 5 to 12 sq. m. Many houses have even less area.
3. The average number of persons in a house is 5 and almost 50 per cent of the families have more than five members each. The density of these clusters is very high and there is hardly any open space. The circulation system within the community is very poor. Lanes are zigzag and very narrow. Sometimes it is very difficult to move through these streets. The *ghars* are built in such a way that sometimes it is difficult to identify an individual *ghar*.

4. Even though project has provided drainage networking, but it dose not cover the demand of entire community. A big percentage of the drainage pattern is irregular. There is hardly any storm water drain. Dirty water accumulates and stagnates by the side of drains causing inhuman conditions. Normally, the residents of *ghars* block of the drains with garbage and they do not have cleanliness practice. Sometimes, especially during rainy season each household clean drains within their periphery to protect water logging.
5. Streetlight has been provided in some clusters but there are no domestic connections, because, apart from economic factors, the building materials used are subject to fire hazards. However, hooking of illegal connections is also common.
6. 64 per cent of the houses are not adequately ventilated and 68 per cent are not properly exposed to sunlight. About 65 per cent of the household use electricity for lighting (single bulb) of which about 26 per cent are illegal.
7. The average number of one water-source user is 278.75, which is undoubtedly very high. It creates a long queue to collect a vessel of water and at same time it creates social imbalance like misunderstanding, quarrel etc. UBSDP has taken an initiative to facilitate the area with washing and bathing facility. This project provided water reservoirs and concrete flat surroundings with drainage facilities. But this facility does not mitigate the demand of whole area.
8. Toilets, provided by SIP are either in a dilapidated condition or destroyed. Thus the slum is suffering from environmental degradation in terms of toilet facility. Construction of new toilets is under way by UBSDP the second time. Average 220 people use one toilet, which is beyond imagination. While in the upper class one toilet 1 or 2 persons share.
9. Average health condition is yet to be improved a lot. 20-30 per cent are ill at one time. 40 per cent of their children are chronologically malnourished.
10. As mentioned before, there is no garbage collection and it is a common scene to see heaps of garbage and rubbish creating in-sanitary conditions. The organic portion of solid waste ferments and favour fly and mosquito breeding. The garbage in refuse attracts rats and the patronages may be conveyed to man through flies and dust.
11. Large number i.e. almost 71 per cent cook within their living rooms, thereby expose themselves to carbon-di-oxide and carbon monoxide and a fair amount of this smoke affects health of the household. Significant portion uses wood and scrap papers as fuel for cooking.

Conclusion

It is evident that the slum environment has been improved substantially due to the projects support in providing basic services. Even though projects have had a positive impact on improving the overall slum's environment of Khulna city there is still more that needs to be done. Provisions of services are far below the actual demand of the dwellers. The number of toilets is inadequate, water supply source is minimal, and provision of drainage networking does not cover the demand of the entire area and there is no solid waste disposal/collection.

Slum dwellers lack in knowledge and awareness about the environmental degradation around their surroundings. To ameliorate the environmental problems of the slum area, first of all there is a definite need to create awareness among the slum dwellers about the environment itself and the gravity of the problem and their responsibilities. There is an urgent need to involve the slum community for their own environmental improvement to sustain the project's goal in the long run in improving the living environment of the urban poor. The second priority will be to provide services that supply the actual demand of the slum community. As it is evident that in many cases the beneficiaries have destroyed many of the infrastructures, projects should train the community about the needs, utilization procedure, and maintenance of the services. Since most of the slum dwellers are rural migrant, they do not have experience of dense living and utilization knowledge of urban basic infrastructure services. Once the living environment of the urban poor is improved, the total urban environment will naturally undergo a healthy change.

Notes

¹ Ward is the lowest administrative structure of City Corporations of Bangladesh headed by ward commissioner who is elected by general people

² 'After' is used to mean the present scenario of the study area.

³ 'Before' is used to mean - beginning stage or before service provision of Shonadanga slum area.

⁴ Katha is the local term, synonymous of thin blanket made of used cloths, especially 'Sari' – traditional wear of Bangladeshi women.

⁵ Traditional treatment by using plants, leafs etc.

Bibliography

Amin, A.T.M.N. (1998), Bangladesh's Urban Basic Service Delivery Project (UBSDP): A review and potential directions for sustainability", Report has been commissioned by the UNICEF, Bangladesh.

Asian City Development Strategies (2000), "Views from the consultant on the CDS in Dhaka and Khulna", 11 & 12 July, *Fukuoka Conference*, Japan.

KCC. (1999). *Environmental Maps and Workbook for Khulna City, Bangladesh*. Sponsored by RUDO for South Asia, USAID-URP Discipline, Khulna University, Khulna, Bangladesh.

Conguill, C. L. (1999). Community infrastructure for low-income cities: The potential for progressive improvement. *Habitat International*, 23 (2), 289-301.

Hagga, Elin. (1992). Case study of the Slum Improvement project, Bangladesh. UNICEF, Bangladesh.

Islam, Nazrul (1994), Dhaka: From City to Mega city, Dhaka: Urban Studies Program, department of Geography, University of Dhaka.

Islam, Nazrul (1997), Addressing the urban poverty agenda in Bangladesh: Critical issues and the 1995 survey findings, Dhaka: The University Press Limited.

Islam, Nazrul et al (1997), "Local partnership approach for urban development in Bangladesh: A comparative study of four participatory urban development projects", Centre for Urban Studies (CUS), Dhaka, Bangladesh.

Islam, Nazrul (1996), "Urban poor in Bangladesh" Centre for Urban Studies (CUS), Dhaka, Bangladesh.

Islam, et al (1999), "Urban Basic Service Delivery Project (UBSDP) final report" Centre for Urban Studies (CUS), Dhaka, Bangladesh.

Islam, M. S. (1998), "Improving the work and living environment of urban poor: Focus on the delivery of basic urban services at community level of Dhaka city, Bangladesh" M.Sc. Thesis, Asian Institute of Technology.

- Murtaza, G. (2000), "Slum Improvement Scheme in Khulna city- A review", Khulna University Studies, Vol.2 No. 1, pp 239-244.
- Murtaza, G. (2000), "Urban poverty and its spatial consequences: A case study of Khulna city", A PhD dissertation to the Institute of Bangladesh Studies, University of Rajshahi.
- Project Proforma (1997), "Urban Basic Delivery Project (UBSDP)", UNICEF, Bangladesh.
- Project Proforma (1997), "Slum Improvement project (SIP)", UNICEF, Bangladesh.
- Shamsad, B. and Meer, M. H. R. (2002),