

# **Coping Mechanism for Utility Crises in Middle Income Areas of Dhaka City**

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## **Introduction**

Urban population in Bangladesh is increasing day by day because of rural poverty and hope for a better living condition in the urban areas. With the increase of urban population, a gradual decrease has been occurred in the urban facilities and opportunities. Dhaka, the capital city of Bangladesh has become unlivable mainly because of indifference, mismanagement and wrong planning continuing over the years in an uninterrupted sequence. The authorities have failed to create a situation where the citizens can live in minimum comfort both within and outside their homes. They suffer most because of the lack of necessary infrastructures, power and gas supply being highly erratic, water crisis being most common during summer, and drainage and sewer system being under-developed. Nearly one-third of the population lives having no basic amenities of life (Zahid, 2010).

There are a number of studies available on services offered by urban governments (Hossain, 2006). But there is a little work especially in case of Dhaka focusing on people's sufferings due to mismanagement of these services. Most of the researches conducted in Dhaka focused on the distressed low income group living in slums that cover 15% of the total citizens in Dhaka (Asian Development Bank, 2008). The suffering of the low middle and middle income group (the dominant income group of Dhaka city) has always been overlooked in most of the researches because of focusing on the low income group. But the extent of sufferings is different between these two groups. Where the Low income group generally suffer from health and environment related problems (Podymow *et al.*, n.d), the middle income groups, also experience an adverse impact on their day to day life due to lack of necessary utility services. These differences are particularly evident in case of Dhaka due to its unplanned growth and inhabitants' extremely divergent living standards (Bertuzzo, 2009).

Capital Dhaka is considered as the mirror of Bangladesh. If Dhaka remains energy starved, it creates wrong image for the entire country. But for various reasons, Dhaka city suffers greatly from power load shedding, gas rationing and water crisis that affect Dhaka every now and then (Saleque, 2008). Gas, water and power supply have influence on the citizen's daily life cycle and activities. If any interruption occurs, people try to handle it by occupying alternative sources and compromising their daily schedule. The poor urban management and planning have led to a very high extent of informality in its dwellers' routines (Bertuzzo, 2009). People compromise their daily schedule, because these problems are infrastructure based and they can do a little in solving these problems.

## **Objectives and Methodology**

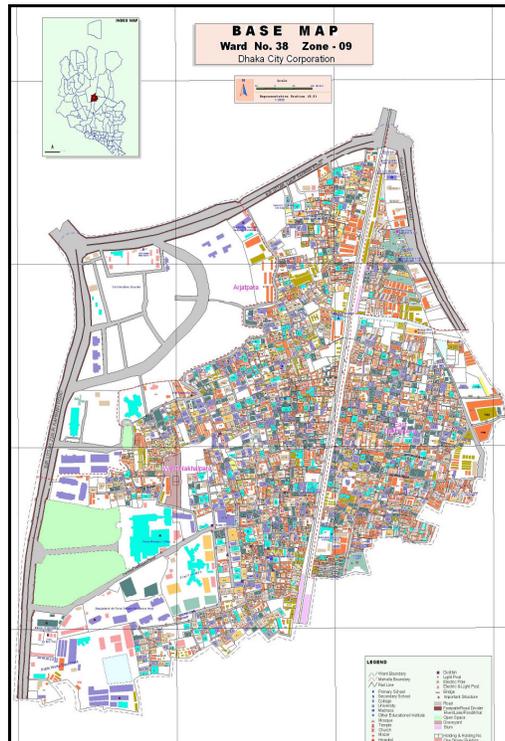
This study has tried to focus on the sufferings of the middle income communities and their coping mechanism with unavailability of these utility services. Local people are the focus of this study, because the local perspective of the same problem may differ from the global perspective. Local people may have different types of sufferings. Ward no. 38 of Dhaka City

Corporation (DCC) has been selected as the study area, because of its complete representation of a middle income dominated community and being a part of new Dhaka.

A participatory approach has been used to conduct the study to explore people's complex realities. After going to the area, a rapport has been made with the community people. A careful observation of the socio-economic condition, resource distribution, activity pattern etc has been made. A discussion about the problems of urban community services has been done with several households in the community. Then the main problems and their extent have been identified. Some common PRA relation tools like pair wise ranking method and cause effect analysis has been used to identify the main striking problems and reasons behind occurring and the effects to the people. Time related PRA tools like seasonal diagram and daily activity schedule has been used to analyze people's coping mechanism with these problems.

### Profile of the Study Area

Figure 1 shows the study area, Ward 38, which was established between 1947 and 1950 and was under Dhaka Municipality. Electricity connection, underground water supply system, gas supply came to this area during 1960-70 because of its locational importance (Tejgaon Industrial area, Tejgaon airport, MP hostel of Pakistan government were just beside this ward). In 1986, the area came under Dhaka City Corporation (DCC) just after 8 years of the establishment of DCC. The total area of the Ward 38 is 1.08 sq. km and population is 200,000. Most of the house owners are local businessmen (owners of furniture shops, sweet shops, small industries like machinery and auto shops, iron welding shops etc) and their tenants are mainly lower middle income service holders.



Source: Dhaka City Corporation (DCC)  
Fig. 1: The Study Area, Ward 38 of Dhaka City.

### Problem Identification and Analysis

Lack of gas supply has been identified as the main problem of the locality using pair wise ranking method. Crises of water and power supply have been identified as the second and third major problem in this area respectively. These three problems are the main utility based problems in the middle class communities of Dhaka (Saleque, 2008). The outcomes generated can be a quite valid representation for all the middle income communities in Dhaka city.

#### The Problem of Lack of Gas Supply

Rapid increase in population caused spontaneous residential development in this area. But the amount of gas supply has not increased simultaneously. Severity of this problem not only varies from season to season, but also has variation in the routine of daily supply. The whole area faces same severity in each particular day or season.

Table 1: Seasonal variation of lack of gas supply

Months of a year												
Months	January	February	March	April	May	June	July	August	September	October	November	December
Problem												
Lack of gas supply	●● ●● ●●	● ● ●●	● ● ●	●	●	●	● ● ●	● ● ●●	● ● ●●	● ● ●●	● ● ●●	●● ●● ●●

\*Number of circle represents severity of the problem  
 \*One circle means least severity and six circles mean highest severity  
 Source: Field Survey, January 2010

It has been seen from the seasonal diagram (Table 1) that there is a gradual decrease in the severity of lack of gas supply from January to May. From May to August, the problem increases again but does not reach the worst situation. From August to October the problem remains in same situation. From October, again there is a gradual increase in the severity of the problem and it reaches to the worst situation in December.

The reasons behind the intensity of severity of lack of gas supply are very much significant. November to January is the time of winter season. At this time, usage of gas increases because people use hot water for washing and bathing. So when the demand increases and supply remains same, the problem becomes acute. From February to May, there is no extra usage of gas. So the severity of this problem decreases. From July to August heavy rainfall occurs in this country. Drying of clothes becomes a problem in cloudy days. Many people use gas ovens to dry clothes. As a result, extra use of gas increases the severity of the problem but not severe than the winter.

#### Effects and Adjustment with Lack of Gas Supply

**Sufferings of the People (especially women) in Maintaining Daily Routine:** Women in Dhaka working or not, continue to wake up earlier than other family members in order to cook or assist children and husbands in their preparation for day (Bertuzzo, 2009). It has been seen that women are the worst sufferers of lack of gas supply. In this area, their daily routine is different from the other typical housewives of Dhaka city. Where most of the women in other areas having better availability of gas supply start cooking their lunch after 11:00 am,

the women of this area, have to finish preparing lunch before 9:00 am because after 9:00 am she will not get enough supply of gas for cooking and this situation will continue till 3:30 pm (Table 2). This can be remarked as significant change of daily routine of women due to gas unavailability.

Another factor is that they have to prepare their breakfast in the previous night as it is hard to cook both breakfast and lunch with the limited supply time of gas. It is also different from the usual daily schedule of the females of Dhaka city as they make their breakfast in the morning. Within 6:00 pm, they start making dinner. But most of the time, they do not prepare dinner as they eat the same items of lunch for their dinner. From 8:30 pm to 10:00 pm is the dinner time followed by the most of the households of Dhaka city. But dinner time is shifted to 10:30 pm as the people of this area have to wait for enough gas supply to warm food.

The daily activity of males of the locality is same as the persons of other areas of Dhaka city. The finding is that the problem of lack of gas supply does not affect (except the shift in dinner time) their daily activity. But the lives of the women are becoming painful day by day (Figure 2). If somehow they miss the chance to cook food in the morning they have to buy cooked food from the local hotels and restaurants.



Fig. 2: Women using alternative source for cooking.

### **Community Efforts**

Though lack of gas supply is the first and most severe problem in this area, the community can do a little to solve this problem as it is an infrastructure based problem. Community leaders have already knocked the government through the Ward Commissioner and tried to draw the attention of the respective authority through newspaper. But there is still no progress in the gas supply system, the situation is getting worse day by day.

Table 2: Influence of gas supply schedule on the daily activity schedule of the residents of Ward 38 in Dhaka City.

Time of a day	Daily Schedule of Gas Supply	Daily Activity Schedule of women	Daily Activity Schedule of men
5 AM	Enough for cooking	Rising from the bed and washing mouth.	Sleeping
6 AM		Start cooking and awaken children and husband.	
7 AM		Making the children ready for school; eating breakfast and finishing cooking.	Rising from the bed, washing mouth and bathing
8 AM			Eating breakfast and reading newspaper
9 AM	Decrease gradually	Getting ready and taking the children to the school and after that coming back from school.	Going to bazaar Getting ready for work and start for the working place

10 AM	Lowest supply	Sweeping and cleaning the house, washing clothes and utensils.	At working place	
11 AM				
12 PM				
1 PM		Bathing and saying prayers.		
2 PM		Bringing the children from the school		Eating lunch and saying prayers
3 PM		Eating lunch, taking rest and after that taking the children to the coaching		
4 PM	Medium supply	Staying in the coaching		
5 PM				
6 PM			Decrease gradually	Coming back from the coaching and starting cooking
7 PM	Lowest supply	Teaching the children	Watching TV	
8 PM				
9 PM		Watching TV and gossiping		
10 PM	Enough for cooking	Eating dinner and saying prayer	Eating dinner	
11 PM -5 AM		Sleeping		Sleeping

### Water Crisis and Lack of Pure Drinking Water

This problem has been ranked as the second major problem of the locality by the people. Water crisis is increasing because of illegal connections and stagnant growth of water supply system of Dhaka city. The water supplied to this area comes from Saidabad Water Treatment Plant which treats the polluted water of river Shitalakhaya. This Plant cannot purify water in a satisfactory manner. Bad odor and taste in the water are very common.

Table 3: Seasonal variation of lack of pure drinking water

		Months of a year											
Months	→	Januar	Februa	March	April	May	June	July	Augus	Septe mber	Octob	Nove mber	Decem
Problem	↓												
Lack of pure drinking water		●	●	●	●	●	●	●	●	●	●	●	●

\*Number of circle represents severity of the problem  
 \*One circle means least severity and six circles mean highest severity  
 Source: Field Survey, January 2010

It has been seen from the seasonal diagram of lack of pure drinking water (Table 3) that the lack of pure drinking water is acute during summer and rainy season, because of extra consumption of water and there is gradual increase in severity of the problem before these seasons and gradual decrease in severity after these seasons.

### Effects and Coping with the Problem of Water Crisis

#### Collecting Water from Different Sources

The people can be divided into four groups by their way of managing pure drinking water. These groups are: i) those who have own source of drinking water, ii) those who have to collect water from a common tube well, iii) those who have to buy and iv) those who boil water having no affordability to buy. It has been mentioned by the local people and the ward commissioner that around 80% people of ward no. 38 have to buy drinking water from a private distributor. All the shops and other business and social institutions regularly buy drinking water. It is a matter of fact that most of the tube wells in this area have become older and do not work properly. A small number of poor people living in the locality do not have the capability to spend extra money for pure drinking water. So they purify the supplied water by boiling. But still there is shortage of pure drinking water and people suffer very much by this problem.

#### Expense of Pure Drinking Water

A private company named Everest Drinking Water Company supplies pure drinking water in this area. The process the company followed in the distribution is shown in Figure 3. They provide a door to door service (Figure 4). They collect the water from their own deep tube well and bring them to the locality in containers by van. They distribute pure drinking water to them who have ordered for drinking water one day before. They charge Tk. 1 per litre

including all charges. They mainly distribute two sizes of containers. One of which carries 40 litres and another contains 60 litres. People who keep the container to them until next distribution they have to pay extra Tk. 5 for each container. Those who return the containers immediately, only have to pay the previous amount.

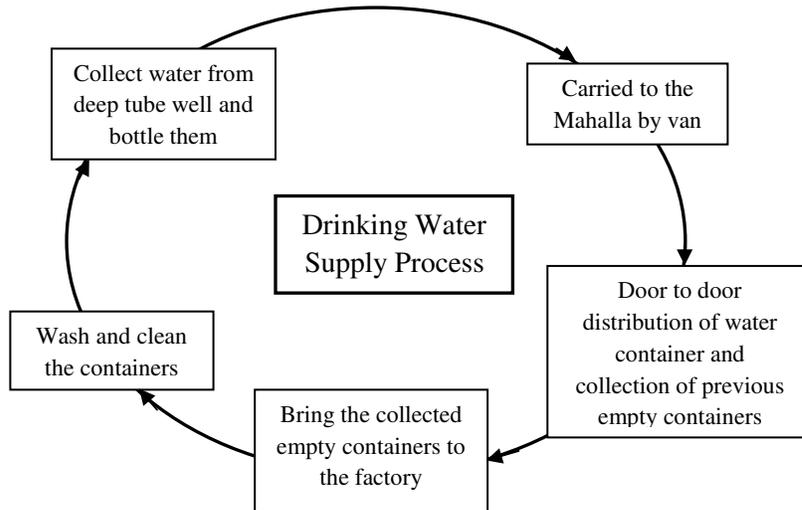


Fig. 3: Process diagram of bottled drinking water supply Company.



Fig. 4: People buying pure drinking water.

People suffer a lot as they have to depend on external sources for pure drinking water. Extra expenses have to bear by the community people as they have to buy their drinking water. For a middle income family it may cost up to Tk. 1500 per month for drinking water. They cut off their other expenses of daily necessities to bear this cost.

### Community Efforts

As there is an acute water crisis and most of the tube wells of the locality have become older, the local community has become very much conscious about this problem. At present, the local community leaders are trying to set up a deep tube well in the locality for the whole area

of ward no. 38 with the help of WASA. Barrister Wahidun Nabi, a local resident has a plot of 15 katha in East Nakhhalpara of ward no. 38. Considering the sufferings of the people and request of the elderly community people he has donated a land of 1 katha for the establishment of the proposed deep tube well. Local people have collected Tk. 5 lac to bear the expense of installing the deep tube well in the area. They hope that this well will remove the water crisis of the area.

### The Problem of Lack of Power Supply

The third major problem identified is the lack of power supply which is the common problem of all areas of Dhaka city. Every year, during warmer months in summer and rainy season, the problem becomes acute, because of increased demand in urban areas and special allocation of power to the rural areas for irrigation amidst limited supply capacity of the country.

Table 4: Seasonal variation of lack of power supply

		Months of a year											
Months	→	January	February	March	April	May	June	July	August	September	October	November	December
Problem	↓												
Lack of power supply		●	●	●●	●●	●●	●●	●●	●●	●●	●●	●	●
		●	●	●●	●●	●●	●●	●●	●●	●●	●●	●	●

\*Number of circle represents severity of the problem

\*One circle means least severity and six circles mean highest severity

Source: Field Survey, January 2010

Load shedding (rolling electricity blackouts) due to power crisis has made the lives of people unbearable. Load shedding used to happen six to seven times in this area and each time remains for 1.5 to 2 hours. Seasonal variation of lack of power supply has been shown in Table 4. It is seen that the severity of the problem is almost same in summer and rainy season, but less in winter as there is less use of electric fans and air conditions in this area.

### Effects and Coping with Lack of Power Supply

Citizens of Dhaka city are experiencing the problem of electricity crisis for a long time. People stated that due to electricity problem, their foods in the refrigerator get spoiled and studies of children are hampered (Figure 5). They have to spend more money for alternative sources. It has a bad impact in their daily life and crime in the areas has also been increased. A study in Africa, found that domestic violence in the neighbourhoods of Soweto has increased by 36% during acute power crisis in 2001-2002 (Flynn, n.d.). Most of the people use candles and rechargeable table lamps as they are the cheapest alternative sources of energy. A small number of people use power inverters (IPS). Very few people and local small industries have private generators.



Fig. 5: Children studying in load shedding

### **Use of Alternatives**

**Use of Generator Sub-line:** Recently, a new system of generator sub-line has been initiated in the locality by a local young businessman. Through this system, people are given a connection of generator during the period of load shedding. For each light (energy saving bulb) and fan the monthly charge is Tk. 150 and Tk.200 respectively. The service is available during load shedding of 6 pm to 2 am. This provision is getting very popular in this area as well as in Dhaka city because of acute power crisis.

**Extra Expense for Electricity:** Because of adopting alternative sources of electricity, people have to bear Tk. 400- 600 per month. For a middle income family, this expense is not at all acceptable. People have to adjust this with other expenses of their daily necessities.

**Community Efforts:** This problem of lack of power supply has become a common phenomenon in all areas of Dhaka city. People are trying to cope with it as they have little to do against this problem. In case of community people, there is no measure to solve this problem but to make adjustment individually with this problem.

### **Recommendations and Conclusion**

As a part of participatory approach, at first the community people were made aware of the problems and then asked how they want to solve their problems. Being unable to do much against the government provided utility services, community people have tried to provide some solutions.

For the problem of lack of gas supply, the people think that government can increase the quantity of the gas allocation in the areas experiencing this problem. For ward no. 38, and many other areas the main reason behind the problem is establishment of CNG filling stations, Ready Made Garments and small and medium sized industries surrounding the locality. So there should be separate supply lines for the CNG filling stations, Industries and the locality.

Government have to increase the hauling and production of gas to meet the increasing demand. An increase in price can be a better solution, as because of a fixed billing system (450 Tk. Per month), people of Dhaka city waste more gas than their demand of consumption to save match sticks. To prevent the wastage, the bill should be according to people's way and amount of consumption, rather than a fixed amount per month.

To solve the problem of pure drinking water, people suggested that WASA authority has to be careful in the treatment of supplied water and the quality of water should be improved. More water supply units have to be established to solve the problem of water crisis. It has been seen

in Faisalabad, Pakistan that it is possible for communities to build and finance piped water supplies, but to achieve this on any scale, needs support from the water and sanitation authority to allow the community system to draw on the official piped water network and trunk sewer (Alimuddin *et al*, 2000).

The only way to solve the problem of power crisis is to increase the production of power. More power grids have to be established to meet the ever increasing demand. Price increase is an effective way to reduce the wastage of this resource. There can be a separate pricing system for industries and local people.

The decentralization in the governmental process has been occurring in many countries, but again not always successfully, and not always accompanied by decentralized control over utility service provision (UN-HABITAT, 2003). Local government should take the responsibility of distributing utility services to the community and removing all the illegal connections. Finally, to solve the overall utility problem, the age-old network of infrastructure in gas, water and electricity supply needs drastic improvement and planned expansion.

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