

Adopted Community Strategies to Offset Utility Crises in a Middle Income Locality of Dhaka, Bangladesh

Shaila Jamal^{1*} Sonia Rahman²

1. Masters Student, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Bangladesh
2. Masters Student, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Bangladesh

* E-mail of the corresponding author: s.jamal2005@yahoo.com

Abstract

Because of the spontaneous growth of Dhaka city, the utility crisis is increasing day by day. Therefore problems in utilities are considered centrally with respect to the economy and environment of Dhaka. But the local aspects are totally different from the central viewpoint. In this paper, two most prominent utility crises in Dhaka (i.e. the supply of gas and water) have been explored with their impacts and people's coping mechanism with these problems has been documented. The local people have been found adopting various alternative measures, even compromising their daily life cycle to make an adjustment with these problems.

Keywords: Dhaka, utility service, gas, water, coping, daily routine.

1. Introduction

Urban population in Bangladesh is increasing day by day because of rural poverty and poor peoples' hope for a better living condition. 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 un-livable mainly because of indifference, mismanagement and lack of proper 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 is highly erratic, water crisis is most common during summer, drainage and sewer system is extremely under-developed. Nearly one-third of the population lives having no basic amenities of life (Zahid, 2010).

There are lots of studies 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 only 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 experience an adverse impact on their day to day lifecycle 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 reason Dhaka city suffers greatly as power load shedding, gas rationing and water crisis badly affects the city every now and then (Saleque, 2008). Citizens' daily life cycle and activities are greatly influenced by gas and water supply. If any interruption occurs people try to handle it by occupying alternative sources and compromising their daily schedule. It has been seen that this kind of poor and unsuccessful urban utility service management have led to a very high extent of informality in its dwellers' routines (Bertuzzo, 2009). People make compromises by themselves because they can do a little physical change in solving all these infrastructure based problems.

2. Objective and Methodology

In this study it has been tried to focus on the sufferings of the middle income communities and their adopted strategies with unavailability of these utility services. Local people are the focus of this study because the local perspective of the same problem may differs from the central perspective. Local people may have different types of sufferings and can adopt coping mechanisms according to their traditional knowledge. 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 research 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 has been conducted with several households in the community about the problems of urban community services. Then the main problems and their extent have been identified. Some common PRA (Participatory Rural Appraisal) relation tools like pair wise ranking method and cause effect analysis have been used to identify the main striking problems and reasons behind occurring and the effects to the people. PRA tools are usually used in rural areas. But this research is unique, because as to the authors' best knowledge, for the first time these tools are used in case of urban areas. Time related PRA tools like seasonal diagram and daily activity schedule have been used to analyze people's coping approaches with these problems. A brief description of the PRA tools used in this study has been given below (according to Kumar, 2002):

Pair wise ranking method: This PRA method is a very popular one helps in arriving at people's priorities and preferences. It has been used to find out the preferences of people and also used to understand decision making processes and the factors that influence the people's decisions. Through the pair-wise ranking method, the hierarchy of the problems identified by the local people are established and thus the preference is understood.

Cause effect analysis: The Cause Effect analysis is also known as *fishbone* diagram. It focuses on the causal factors of a phenomenon, activity, or problem, and the effect there of. The main application of it is to identify the causes and effects of a problem or phenomenon and to present the inter-linkages between causes and effects, which help in arriving at an in-depth understanding of a particular topic, and provide scope for analysis and subsequent action by the local people.

Seasonal diagram: This tool is also called seasonal calendar, seasonal activity profile or seasonal analysis that has been used for temporal analysis across annual cycles, with months or seasons as the basic unit of analysis. It reflects the perceptions of the local people regarding seasonal variations on a wide range of items. It have been used to explore what happens during the year and when. Quantification and depiction of magnitude of the various activities adds to their utility and richness.

Daily activity schedule: It is also referred to as daily schedule, daily activity profile, daily routine or 24 hour method which is used to explore the activities of an individual, group or community on a daily basis. It enhances an understanding of who does what, when and for how long in the community. It also increases gender sensitization, and creates an awareness about who is responsible for what activities in the community and why.

3. Profile of the Study Area

Ward no. 38 was established between 1947-50 under Dhaka Municipality. Electricity connection, underground water supply system, gas supply were initiated to this area within 1960-70 because of its locational importance (Tejgaon Industrial area, Tejgaon airport, MP hostel of Pakistan government were just beside this ward¹). In 1986 the area came under Dhaka City Corporation (DCC) just after the 8 years of the establishment of DCC. The total area of ward no. 38 is 1.08 sq. Km and population is 200,000. Survey result shows that most of the house owners are local businessman (owners of furniture shops, sweet shops, small industries like machinery workshops and auto shops, iron welding shops etc) and their tenants are mainly lower middle income service holders.

4. Problem Analysis

4.1 Problem Identification

At first, several interviews with the local people have been performed to sort out the major problems faced by the

community. Then through pair-wise ranking method, lack of gas supply and water crises have been identified as the major two utility based problems in this area. As these problems reflect 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.

4.2 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 not only varies from season to season but also has variation in routine of daily supply. The whole area faces same harshness in each particular day or season.

It has been seen from the seasonal diagram (Figure 2) 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 not reaches the worst situation. From August to October it remains in same situation. From October again there is a gradual increase in the severity of the problem and it reaches to its worst in December.

The reasons behind the intensity of severity of lack of gas supply are very much predictable. The existing supply is not proportional to the current demand of the inhabitants. From November to January (the time of winter season), usage of gas increases because people use hot water for washing and bathing. So, when the demand increases and supply remains the same (which is also not proportional), 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 and gas stoves to dry clothes. Again extra use of gas increases the severity of the problem but not that much severe than the winter.

4.2.1 Effects and Adjustments with Lack of Gas Supply

4.2.1.1 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 preparations for the day (Bertuzzo, 2009). It has been seen from this research that women are the worst sufferers of gas supply shortage problem. In this area, their daily routine is different from the other usual housewives of Dhaka city. Where most of the women in other areas having available 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 that time they will not get enough supply of gas for cooking and this situation continues till 3:30 pm (Table 1). This is a significant change of daily routine of women due to gas unavailability.

Another factor is that they have to prepare their breakfast at previous night as it is hard to cook both breakfast and lunch within the limited time of gas supply which differs from the usual daily schedule of the females of Dhaka city who 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 most of the households of Dhaka city. But the time is shifted to 10:30 pm as the people of this area have to wait for enough gas supply to warm their foods for dinner. Besides, the daily activity of males of the locality is as 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. Some have to bear extra cost to use other means of cooking like electric stove, oil burning stove, wood stove and electric appliances. If somehow they miss the chance to cook food in the morning, most of the time they have to buy cooked food from the local hotels and restaurants.

4.2.1.2 Community Efforts

Though supply shortage of gas is the first and most severe problem in this area, the community can do a little to this as it is fully infrastructure based and supply service is solely dependent on government authorities. 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.

4.3 Water Crisis and Lack of Pure Drinking Water

This problem has been ranked as the second major problem of the locality by the people. Through assessing the opinions of the community leaders, it has been known that 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 where the water of river Shitalakkhaya is treated, has many industries beside it. This Plant cannot purify the polluted water in a satisfactory manner. Bad odor and taste in the water are very common.

It has been seen from the seasonal diagram of lack of pure drinking water (Figure 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.

4.3.1 Effects and Coping with the Problem of Water Crisis

4.3.1.1 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 their own source of drinking water (personal tube well), 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 on 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.

4.3.1.2 Expense of Pure Drinking Water

A private company named “Everest Drinking Water Company” supplies drinking water in this area. They provide a door to door service. 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 the day before. The supply process has been described in Figure 4 with the help of a diagram. 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 with 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.

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.

4.3.1.3 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 (Dhaka Water Supply and Sewerage Authority). Barrister Wahidun Nabi, a local resident has a plot of 10800 sq. feet 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 720 sq. feet for the establishment of the proposed deep tube well. Local people have already collected Tk. 500,000 to bear the expense of the tube well establishment. They expect that this tube well will remove the water crisis of the area.

5. 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. Unable to do much more against these government provided utility services, community people have tried to give 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 (uncovered by cause-effect analysis) behind the problem is establishment of CNG filling stations, Ready Made Garments (RMG) 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 consumption demand to save match sticks. To prevent this wastage, the charge should be according to people's way and amount of consumption rather than to pay a fixed amount per month.

To solve the problem of lack of pure drinking water people suggested that Water and Sewerage Authority (WASA) of Dhaka have to be careful in treatment of supplied water and thus the quality improvement. 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).

Distribution of responsibilities among different government institution 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), which also clearly understood by the older leaders of the community from their lifelong experiences. The community leaders suggested that local government should take the responsibility of distributing utility services to the community and removing all the illegal connections. Strict law enforcement is necessary to remove all mismanagement in utility service distribution. To solve the overall utility problems the age-old infrastructures and distribution system of gas and water need drastic improvements and planned expansions and also people should be more and more careful about using these scarce natural resources.

References

- Alimuddin, Salim, Hasan, A., Sadiq A. (2000). Community Driven Water and Sanitation : The Work of the Anjuman Samaji Behbood and the Larger Faisalabad context. IIED Working Paper 7 on Poverty Reduction in Urban Areas, IIED London.
- Asian Development Bank (2008). Dhaka Water Supply and Sanitation. Manila, ADB.
- Bertuzzo, E.T., (2009). Fragmented Dhaka : Analysing Everyday life with Henri Lefebvre's Theory of Production of Space. Franz Steiner Verlag, Germany.
- Flynn, M.F. (n.d.). The Electricity Crisis in Soweto. Available: http://www.queensu.ca/msp/pages/Project_Publications/Series/4.htm accessed on 15th April, 2010.
- Hossain, M. S. (2006). Urban Poverty and Adaption of the Poor to Urban Life in Dhaka City, Bangladesh. Available: <http://unsworks.unsw.edu.au/vital/access/manager/Repository/unsworks:1080> accessed on 15th April, 2010.
- Kumar, S (2002) . *Methods for Community Participation*. Vistaar Publications. New Delhi.
- Podymow, T., Turnbull, J., Islam, M.A. and Ahmed M. (n.d.). Health and Social condition of Dhaka Slums. Available: <http://www.isuh.org/download/dhaka.pdf> accessed on 6th January, 2010
- Saleque, K.A. (2008). *Integrated Planning for Dhaka City*. Available: <http://www.energybangla.com/index.php?mod=article&cat=SomethingtoSay&article=28> accessed on 15th April, 2010.

United Nations Human Settlements Programme (UN- HABITAT). (2003). Water and Sanitation in the World's Cities. London.

Zahid, S.H. (2010). Dhaka, The Second Worst city. Available: http://www.thefinancialexpress-bd.com/more.php?news_id=92750 accessed on 15th April, 2010.

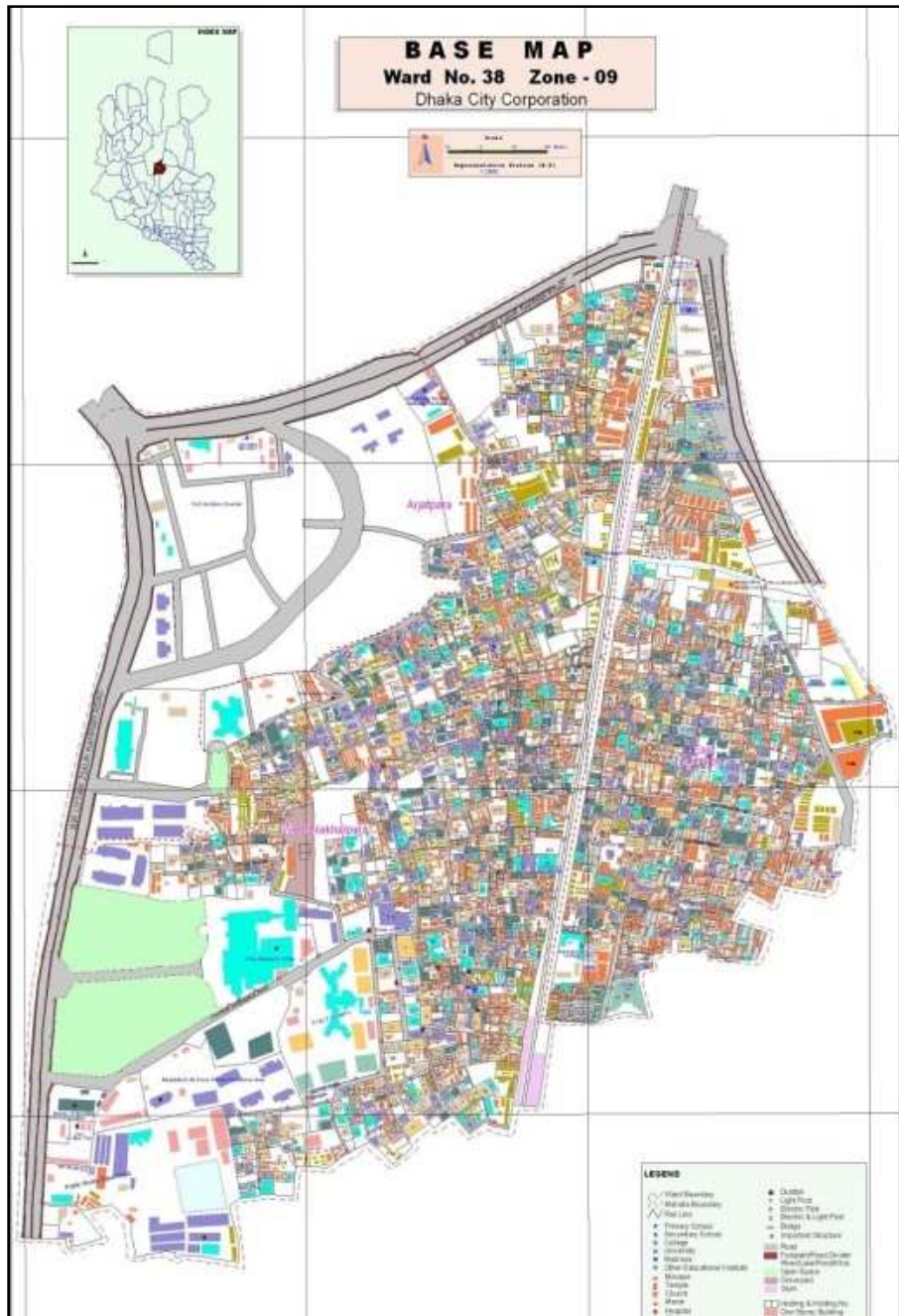
Notes

Note 1: Tejgaon industrial area is a very big industrial area of Dhaka before Bangladesh's independence from Pakistan in 1971. Tejgaon Airport was the only airport in Dhaka at that time.

Table 1: Influence of gas supply schedule on the daily activity schedule

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	
			Going to bazaar	
9 AM	Decrease gradually	Getting ready and taking the children to the school and after that coming back from school.	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		
3 PM		Eating lunch, taking rest and after that taking the children to the coaching		
	Medium supply	Staying in the coaching		
4 PM				
5 PM				
6 PM	Decrease gradually	Coming back from the coaching and starting cooking	Coming back home and getting fresh	
7 PM	Lowest supply	Teaching the children	Watching TV	
8 PM				
9 PM		Watching TV and gossiping		
10 PM			Eating dinner	
	Enough for cooking	Eating dinner and saying prayer		
11 PM - 5 AM		Sleeping	Sleeping	

Source: Field Survey, January 2010



Source: Dhaka City Corporation (DCC)

Figure 1: Map of ward no. 38

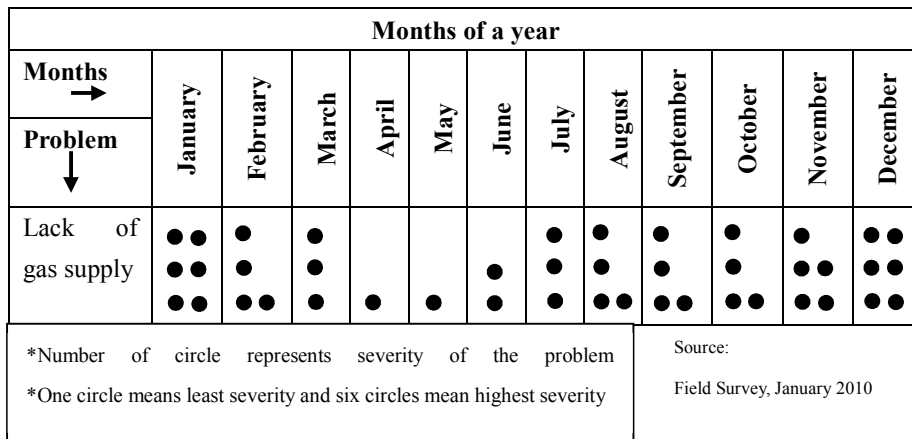


Figure 2: Seasonal variation of Lack of gas supply

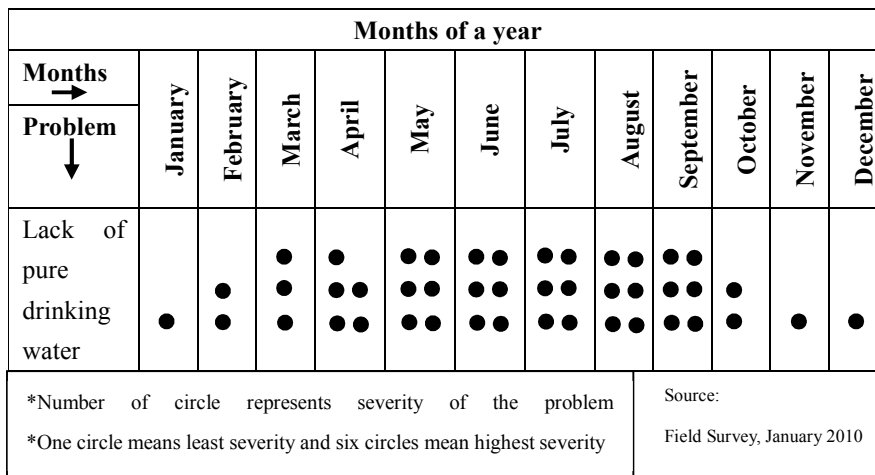


Figure 3: Seasonal variation of Lack of pure drinking water

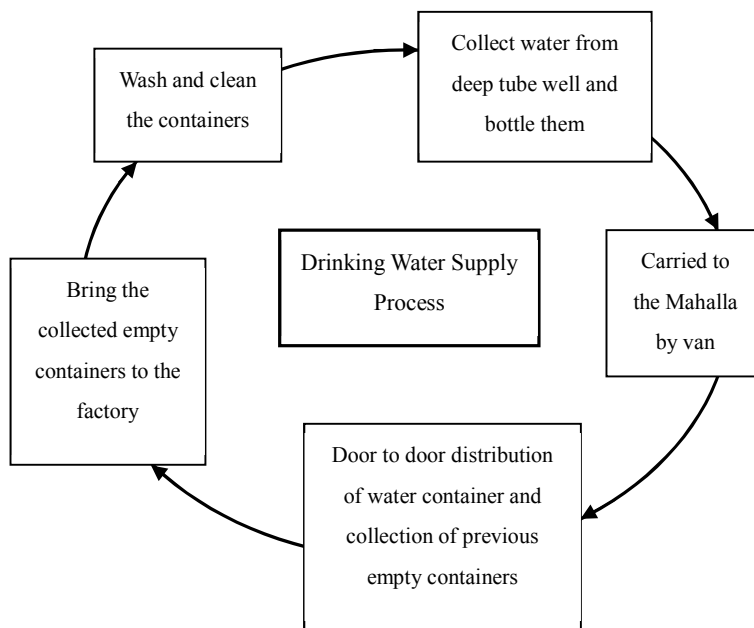


Figure 4: Process diagram of bottled drinking water supply Company

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:

<http://www.iiste.org>

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** <http://www.iiste.org/Journals/>

The IISTE editorial team promises to review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

