

**FISH-BONE ANALYSIS**  
**ACCESS TO SAFE WATER AND SANITATION**

**PROBLEM STATEMENT:**

The ease, availability and adequacy of **access to safe water and sanitation** is a vital issue which has been taken under consideration for this Fish-bone analysis.

More specifically the global south countries are fighting much to tackle this issue of safe water and sanitation because in the large spectrum it is causing the poor health and hygiene of a mass community. There is a growing water crisis in the global south. Though Bangladesh has for many years enjoyed almost universal access to drinking water, arsenic contamination of 22 percent of the country's tube wells lowered the service coverage to below 80 percent.

In the aspects of sanitation, Bangladesh has made significant progress in reducing open defecation, from 34 percent in 1990 to just one percent of the national population in 2015. However, the current rate of improved sanitation is 61 percent, growing at only 1.1 percent annually. Still, the quality of sanitation coverage is an emerging area of concern, with more than 40 percent of all latrines classified as "unimproved." Drinking water access is widespread, but half of the drinking water consumed fails to meet water safety standards. In urban areas of Bangladesh, piped water supply reaches only about one-third of the population, and there is no systematic sewer disposal and treatment system. Only Dhaka, Bangladesh's capital city, has a sewer system, and it serves just 18 percent of the city (World Bank, 2016). In general, the mass population of this country has an inadequate access to safe water and sanitation yet.

This particular study will focus more on the urban water and sanitation condition of Khulna city and the accessibility or difficulty for the mass population of this city.

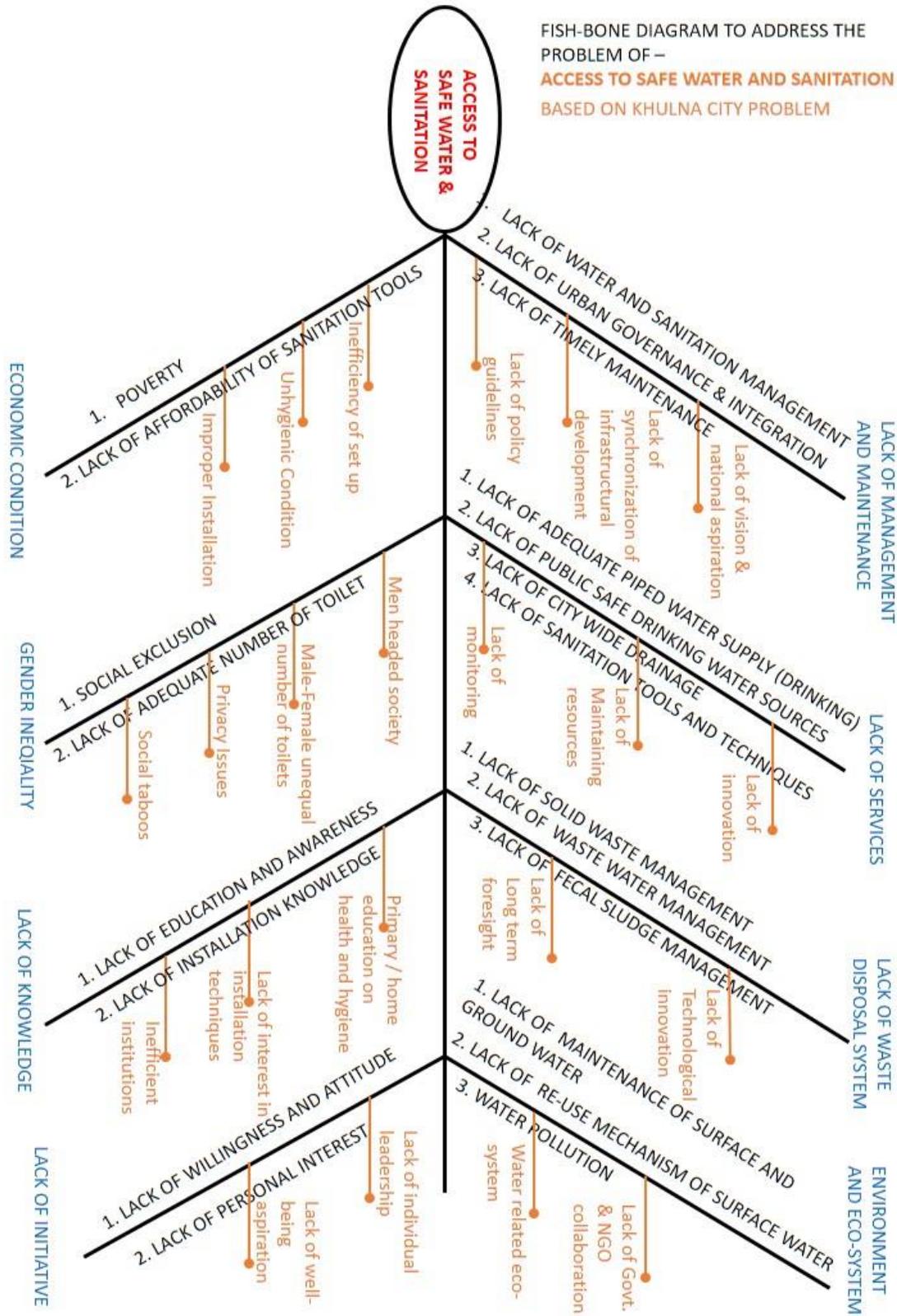


Fig:

Fish-bone diagram showing the cause-effect of access to safe water and sanitation.

The major dimensions of causes that affect the Access to safe water and sanitation are –

Broader causal areas –

### 1) Lack of management and maintenance

- Lack of general water and sanitation management – The overall countrywide management system is top-down and could not be brought till the grass root end. The KCC and KWASA development management is quite invisible in the city.
- Lack of urban governance and integration – Different government bodies who works for city development has no integrated planning. This is why sometimes they work for road construction, sometimes for gas line and sometimes for drainage construction, which is not an integrated planning and causes several hinders for development work.
- Lack of timely maintenance – There are very few infrastructures for water supply and sewage line in 3 wards of Khulna city, also KWASA worked lately for pipeline in some major areas. But timely implementation and lack of maintenance causes failure to the service.

**Lack of vision and national aspiration** to ensure safe water and sanitation to 100% of the population is a baseline factor why we still could not touch the goal, though the country is blessed with abundant sources of water. **The policy guidelines** are also table-top decisions and lacking in implementation phase. **Lack of Synchronization of infrastructural development** is already discussed, a simultaneous planning of piped water supply, sewage line, gas line, electricity line etc. should be done to achieve a sustainable networking system.

### 2) Lack of services

- Lack of adequate piped water
- Lack of safe drinking water sources
- Lack of city wide drainage network
- Lack of sanitation tools and techniques

In Khulna districts 93.7% household use improved drinking water sources. Ground water is the sole source of water supply in Khulna city, thus, highly vulnerable to climate change

impacts, mainly due to sea level rise and its subsequent intrusion to nearby aquifers. A 2009 study have shown that piped water coverage was 30%, but now it increases to 50.0% (KWASA, 2018) for installation of more than 24 Nos. Production Tube-well and two small Surface water Treatment Plant after establishment of Khulna WASA in the Khulna City. A survey of the consumers who have access to pipe water, revealed that only two-thirds of them considered the water drinkable. And only one-fourth of the latter explicitly mentioned of salinity as the reason for non-drinkability. On the service dimension, almost a third mentioned that the water supply was not adequate. On an average, households connected to the piped network enjoy water supply (about 15.0 hours per day) (KWASA, 2018). Khulna Water Supply and Sewerage Authority (KWASA) were established in 2008 to provide water and sanitation facilities within the city, and tries for increasing access to water. While KWASA's pipe water is also sourced from production tube wells, poor quality, irregularity and inadequacy forced private households to opt for ground water extraction on their own. The poor households in Khulna with no connection rely on shared public taps and a study found substantial time loss on accounts of fetching such water (ADB, 2009).<sup>1</sup> A Mega Project named 'Khulna Water Supply Project' is running under Khulna WASA to improve the water supply situation and will complete by December, 2018. ("Khulna Water Supply and Sewerage Authority," n.d.)

Lack of innovation, lack of maintaining resources and lack of monitoring all together contributed to this situation.

### 3) Lack of waste disposal system

- Lack of solid waste management
- Lack of waste water management
- Lack of fecal sludge management

People throw garbage here and there. Also the central waste management system is inadequate and improper. There 31 wards under KCC and very few of them get the service of solid waste collection. Also the waste water is overflowed in many areas especially slums have close to zero waste management which create water logging and blockages in the drainage system.

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A Baseline Study to Assess Faecal Sludge Management of Residential Premises in Selected Southern Cities of Bangladesh- November – 2014. Available at: [http://www.snv.org/public/cms/sites/default/files/explore/download/snv\\_-\\_baseline\\_study\\_to\\_assess\\_fsm\\_of\\_residential\\_premises.pdf](http://www.snv.org/public/cms/sites/default/files/explore/download/snv_-_baseline_study_to_assess_fsm_of_residential_premises.pdf)

Though people in Khulna do not defecate in open spaces on a large scale but environmentally improved toilets are also uncommon. Most individual households have their own toilet. However, very few of them are environmentally safe. Most of the households in the Khulna city have access to a toilet irrespective of its quality.

Another study reveals that only 4% toilets in Khulna are environmentally safe. However, rates of improved toilets without access to flies and with access to flies are respectively of 66% and 4%. Accessibility of flies indicates of spreading germs outside, which causes health hazards. Around 7% toilets are unimproved and 18% are shared, which are mostly belong to slums. Overall in consistence to Bangladesh, 1% is found to be open defecation in Khulna as well. In the slums, mostly use pit latrines and hanging latrines. There are some NGOs providing improved sanitation but due to mobility of the people, operation and maintenance remain in challenges. Around 10% slums people have access to improved sanitation. City Corporation in collaboration with some NGOs takes some initiatives on cleanliness and waste management. There are DWATs and composting plants. No sewerage connections are there but recently a decentralized faecal sludge management plant is being constructed, which will treat around 10% sludge of the city. There is going to be developed a city – wide sanitation plan soon.

**Lack of technological innovation** and **lack of long term foresight** is another big reason why the local government system is unaware and failing to sustainable improvement.

#### 4) Environment and eco-system

Here we mainly focus on water related eco-system, which is much affected today.

- Lack of maintenance of surface and ground water
- Lack of re-use mechanism of surface water
- Water pollution

In Bangladesh, ground water accounts for over 90% of the drinking water supply sources. Ground water in most cases does not need treatment while surface water cannot be used for drinking purposes without treatment because of pollution from agricultural, industrial, domestic and municipal sources. It has already been indicated that ground water is the main source of water

supply accounting for about 90% of the total supply of drinking water in the country. Most sources of water supply are tube wells with hand pumps and motorized pumps sunk by households, water utilities and local governments. Over abstraction of ground water is making tube wells vulnerable to falling water tables. The water levels of deep aquifers are dropping in many towns, especially in larger industrial areas in and around Dhaka. The scenario is same for Khulna as well.

Tariff for water supply varies considerably between cities. Although tariff for water should ideally cover operation and maintenance cost of the system as well as capital cost, in many cities and towns the operation and maintenance cost is not recovered. The surface and ground water should be equally maintained.

### 5) Economic condition

- Poverty
- Lack of affordability of sanitation tools

Rapid growth of urban population poses a serious challenge for the urban institutions responsible for the supply of water. Piped water supply is available only in urban areas but the coverage reaches only about 40% of the urban population. As a consequence, people have to depend on shallow hand pumps connected to each household for drinking water. In most of the city corporations and paurashavas a significant proportion of households who are connected to piped water also rely on hand pumps for drinking water as the supply of piped water is intermittent and unreliable.

Access to water is not an issue for the low income community only, the middle and upper class also have to deal with it mainly for water quality and safety because of the poor state of water pipes and water shortages across the city. However, if poor water quality confronts all, the differences between legal and illegal forms of access prevent cross-class solidarity. Sometimes people from wealthy background think that they are entitled to the services they are paying for whereas they think the slum dwellers are not equally deserving due to their incapacity and legal status. The divide is further sharpened by the rights afforded to the wealthy classes as legal citizens and paying consumers who can complain to the relevant authority. The poor have no way of solution when water is contaminated or supply is lacking. Thus, the need and perspective across classes are different and these differences make the situation more complicated in urban context.

## 6) Gender Inequality

- Social Exclusion
- Lack of adequate number of toilet

The access to water and sanitation is highly manipulated by socio-economic status, gender role and regions in Bangladesh due to its unequal social structure. Unplanned infrastructure, illegal settlements and corrupted system altogether make the path more challenging for the unprivileged people. One of the main tools of oppression in any patriarchal society is gender and that is the reality for even accessing the basic rights like water. Women's access to water is limited through their insufficient participation in the decision making and unequal and gendered division of labour. Women's identities are wrapped up with their abilities to provide sufficient quantities of good quality water for their families.<sup>2</sup> Women are responsible not only to collect water everyday but also to use and manage that regularly for household chores and for all other family members. As per MICS study, for a majority of households (88.8%), an adult female is the person usually collecting water, when the source of drinking water is not on the premises whereas adult men collect water in only 5.4% of cases. Water scarcity thus has significant gendered meanings, as women repeatedly mention their challenges to fulfil familial roles, which are linked to problems of access, quality, timing or fetching hassles including carrying heavy water pitchers and negotiating with neighbours.<sup>3</sup> In order to evaluate the access to water there is again another important aspect which is intersectionality of gender and class. Poor women's inability to obtain water for health and hygiene places them in a position that compromises their health and wellbeing compared to the women of 'formal' households where water is regularly available. This tension is a result of unplanned urbanisation and severe system loss in Bangladesh.

Women are undermined in a patriarchal society in general however, the experience among women again varies based on their socio-economic status in the society. Access to water is much easier to the women living in apartments and the rate of wastage is also high there whereas the insecurity and uncertainty of getting timely and sufficient water is a continuous psychological and emotional pressure for an urban poor women.

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<sup>2</sup>Sultana, F. 2009a. Fluid lives: Subjectivities, water and gender in rural Bangladesh. *Gender, Place, and Culture* 16(4): 427- 444.

<sup>3</sup>[http://municipalservicesproject.org/sites/municipalservicesproject.org/files/event/Sultana-Mohanty-Miraglia\\_Gender\\_justice\\_and\\_public\\_water\\_for\\_all\\_Insights\\_from\\_Dhaka\\_Bangladesh\\_Apr2013.pdf](http://municipalservicesproject.org/sites/municipalservicesproject.org/files/event/Sultana-Mohanty-Miraglia_Gender_justice_and_public_water_for_all_Insights_from_Dhaka_Bangladesh_Apr2013.pdf) pg 12

## 7) Lack of knowledge

- Lack of education and awareness
- Lack of installation knowledge

A review suggests that there is neglect for WASH in schools and healthcare facilities that undermines country capacity to prevent and respond to disease outbreaks. In terms of eradicating WASH poverty, few initiatives are at scale both in terms of policy implementation and financing provision. One of the largest gaps concerns people living with disabilities, with both policy and physical service provision falling short of what is required. Issues related to second generation sanitation such as sustainability, hygiene behaviour change and total sanitation are still major challenges. The hygienic condition of WASH facilities, particularly in public places, schools, healthcare facilities and urban slums remain in a concerning state. Political influence (i.e. bias) along with the widespread problem of corruption leads to disparities and inequalities in planning and distribution of WASH services and resources at local levels. Also people have very less knowledge of installation. The scenario of hygiene knowledge and practicing within Khulna city is not too upright. 36.47% residents of the Khulna city has used and maintained toilets in a hygienic way.

## 8) Lack of initiative

- Lack of willingness and attitude
- Lack of personal interest

It is unfortunate but true that we have **lacks in willingness and individual leadership**. Also we have huge **lack in well-being aspiration**. It is because of for a long period we are fighting poverty where basic needs are deficient. But it cannot be a strong point now why we are lacking behind all these factors.