

Water Scarcity in Lyari Town -Real or Manmade: A Case Study

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Abstract: Water is a basic necessity and a continue source of life. We need water for agriculture, generating power and to run industries. As water is so essential for life, it must be ensured that everyone has access to it.

This paper analyzes water scarcity in Lyari town and it explores the factors, which have deprived the Lyariites from this basic facility.

It was presumed that only the service providers are responsible for water crisis in the town. However, the study shows that there are other related factors like: supply of less water; socio political conditions of the area; poor infrastructure; water stealing; less revenue generation; contamination of water which have resulted in this water crisis.

It is a qualitative research. Data for this research has been collected through structured questionnaire by conducting interviews and focused discussions Also extensive literature search has been undertaken. The study ends with a list of recommendation on the basis of the results deduced.

Keywords: Karachi Water & Sewerage Board, Elected representatives, Town Municipal Administration, Millennium Development Goals

1. INTRODUCTION

Throughout the world, people need effective and efficient delivery of drinking water. However, 18 per cent of the world's population, lack access to safe drinking water [1]. Basic needs of water go beyond what we need to drink or ingest food for daily survival. It also includes the need for water to maintain a basic standard of personal and domestic hygiene sufficient to maintain health. Hence, water is a genesis and continuing source of life.

The system of provision of water structure varies in different countries according to their sociopolitical, economical, cultural conditions [2]. Every country has its specific division of responsibilities between the different tiers of governments and other organizations.

The responsibility of water supply lies with different institutions in different countries. In Karachi, water supply is the function of Karachi Water and Sewerage Board. Lyari is one of the eighteen towns of Karachi The water supplied to the town is 14 MGD in response to the demand of 20MGD. The shortfall in demand and supply of water in the

town is 6MGD. Thus, the water supplied to the town is less than the actual demand [3].

This research study investigates the issue of water crisis in Lyari town in order to understand the issues related to demand and supply of water, supply systems and issues of water distribution process.

2. LITERATURE REVIEW

The water needs of more than six billion people living on earth are not being met. Currently, 1.1 billion people lack access to a safe water supply. By 2025, there will be approximately 3.5 billion people living in communities without an adequate supply of freshwater.

Countries where the supply of water is greater than 1,700 cubic meters per person are considered to have 'sufficient' water. Countries between 1,000 and 1,700 cubic meters per person are said to be 'under stress'. Those with less than 1,000 cubic meters per person are regarded as being in a state of 'water scarcity' and those below 500 cubic meters per person face 'absolute water scarcity'. By 2025 it is predicted that Earth will find itself amidst a dangerously low water supply. In 1997 the United Nations did an assessment that determined that one third of the world's population lives in countries where the current water situation is under moderate to high stress. This stress can be attributed to many factors such as population growth, increased industrial water use, agriculture, and environmental degradation.

Worldwide, five million people die every year due to diseases spread through contaminated water. The numbers of people suffering from water-borne diseases is much higher and difficult to quantify. These numbers are increasing, as sources of surface water and groundwater are becoming increasingly contaminated [4]

The people who lack adequate water supplies are the poorest in society. Despite the fact that promises have been made during the past 10 years and that the right to access water has been internationally recognized as a human right, one sixth of the world population is still without minimum level of water needed.

The Millennium Development Goals (MDGs), identified in the 2000 United Nations Millennium Declaration, reflect the commitment of the world community to work together and reduce global poverty [5] The MDGs Target calls for the world, to halve the proportion of people without sustainable access to safe drinking water by 2015. As per Asia Water Watch 2015 Pakistan's urban water supply coverage stands at 95 per cent in 2002, covering 48 million people. However, this coverage is likely to be 92 per cent in 2015 . It means only 74 million people, will have access to safe drinking water.

Waterborne diseases are on the rise in Pakistan. This increase has resulted from the unplanned growth of the city and the inability of the government to meet the growing demand for potable water. Children and women in rural areas are the main victims of water contamination, because they largely stay home and are ignorant of the dangers of drinking polluted water [6]. Poor water supply and sanitation infrastructure are the main reasons for outbreaks of water-related ailments in the country.

A report by 'Nature', an NGO, operating in Pakistan says contaminated water accounts for about 250,000 child deaths annually. These numbers are difficult to verify but the United Nations Children's Fund (UNICEF) estimates that almost 60 percent of all child deaths in the country are caused by impure drinking water.

The diseases spread by water can be categorized as follows:

- Firstly, there is direct impact of consuming contaminated water - this is known as 'waterborne disease' and includes diarrhoea, typhoid, viral hepatitis A, cholera, and dysentery.
- Secondly, there is effect of inadequate quantities of water being available for personal hygiene or the of unhygienic practices which contaminate water and cause diseases. Without enough water, skin and eye infections (including trachoma) are easily spread, as are the faecal oral diseases. These diseases are known as 'water-washed diseases'.
- Thirdly, there are 'water based diseases' and "water-related vector-borne diseases" in which the aquatic environment provides an essential habitat for the mosquito vectors and intermediate snail hosts of parasites that cause human diseases. Malaria, schistosomiasis, lymphatic filariasis, and onchocerciasis are examples of these diseases.

- Fourthly, there is chemically contaminated water such as water containing excessive amounts of arsenic or flouride. Some contaminants are added to drinking water as a result of natural processes and some due to human activities such as industry and mining [4]. Poor communities, especially in urban fringe areas, are particularly susceptible to dangers from polluted water from a variety of sources due to lack of or poorly enforced regulation of water pollution.

2.1 PROFILE OF KARACHI

Karachi is the largest coastal city in Pakistan and the capital of the province of Sindh. Karachi has now become the seventh largest city of the world and its population is around 14 million. After the inception of Devolution Plan 2001, now Karachi is a district and is divided into eighteen towns [7]

With the issuance of new Ordinance the KW&SB has been devolved to the City District Government Karachi .The board has been reconstituted with City Nazim as its Chairman. The demand of water in Karachi is 650 MGD, and the water supplied is 554.2 MGD. Thus, there is a gap of about 95.8 MGD between supply and demand [8] The per capita water supply in Karachi is around 28 gallons per day.

2.2 PROFILE OF LYARI

Lyari town has a population of 6,07,992, with Karachi's oldest settlement. It is divided into eleven Union Councils [9] .The water supply in the city is at large the function of Karachi Water and Sewerage Board. So far operation and maintenance is concerned it is the responsibility of the towns. Thus in Lyari, the Town Municipal Administration Lyari maintains the water supply system.

The demand of water in Lyari Town is 20 MGD against which 13 MGD water is being supplied. However, this 13 MGD also does not reach the area due to the fact that it is illegally taken by other towns from the entrance point leaving behind about 10 MGD of water only to the town.

3. ISSUES OF WATER CRISIS

Mainly the issues of water crisis are categorized into short supply to Karachi which results into short supply to Lyari town, leakages, and poor maintenance of supply systems.

The demand of water in Lyari Town is 20 MGD, while 13 MGD water is being supplied to the town. The water shortage is mainly because of the gap in demand and supply.

The water supplied to the town is not according to the health standards. Water diseases are wide spread due to unhygienic water supply, hence about 50% of the patients are with water borne diseases. The doctors informed that most common diseases spread due to water contamination in the town are diarrhoea, cholera, and dysentery.

The water supply pipelines were laid decades back, and most of them have outlived their utility. Due to being old and obsolete, the pipelines have rusted and expired the designed life period and do not have the capacity to sustain the water pressure.

Thousands of illegal connections have been taken by the residents of the locality particularly by the politically and socially influential people. Thus, direct puncturing of main trunks is a day to day business in the area. There are also a number of encroachments over the water distribution lines as people have constructed galleries and walls over the water supply lines.

The valve operation is improper and instances of valve tempering are common in the area. Most of the times, mob of people gets involved in taking the KW&SB valve operation staff into hostage for many hours and operates the valve as per their wish resulting the acute shortages in the tail end areas. The meters fixed for measuring distribution of water are insufficient in numbers and many are out of order.

The target for water tax to be collected in Lyari town is Rs.350 million per annum. The water tax collection is much less, an amount of Rs.170 million was collected in the financial year 2004-2005.

4. RESULTS AND FALL OUT

Through the data analysis and investigation the following major factors have been found to be responsible for water scarcity and other issues related to water supply management:

Against the actual demand of 20MGD water, 13 MGD water is supplied to Lyari Town. Thus there is a gap of 7 MGD water at source, which has caused water scarcity in the town.

About 3 MGD water is stolen from the entrance point in Lyari by other towns, which leaves behind only 10 MGD water. Apart from this, the residents of the locality particularly the politically and socially influential people have taken thousands of illegal connections from the main line.

The water provided to the town is not distributed properly. In some Union Councils like UC 8, UC 9 and UC 10, water is available nearly round the clock. Valve tempering is also a major reason of water shortage in the area. Another aspect is

that the valve men are also involved in taking bribe and bhatta from the people specially shop owners and operate the valves, as desired by them.

Lyari does not have well a planned infrastructure. In most of the areas even the water tankers, which are used to fill the gap, cannot reach the locality. The encroachments over the water distribution lines have created a permanent problem in the repair and replacement of pipelines.

The water tax collection in the town is much less than the actual, due to which the revenue generation in the sector is much low.

The water distribution lines are old and obsolete which have outlived and expired the designed life period and do not have the capacity to sustain the water pressure and results in leakages and water becomes contaminated and ultimately causes water borne diseases. A case study in this regard is as follows::

Mr. Hasan is a resident of Chakiwara, Lyari town since fifteen years. He works in a Garment factory on daily wages. He has got four children, two boys and two girls. Three of them are school going and study in a government school. His younger daughter Saba is three years old.

When, Saba was one year old. Hasan and his family used to drink tap water without boiling it. For, a week the tap water was muddy and had some smell. The family kept on using the same water. Hasan's wife complained his husband. He went to the town office and informed the officials about the situation.. He was informed by the officials that his complaint had been registered and will be redressed when his turn comes, which could take two to three days, This incident occurred in April 2004.

The very next day Saba suffered from severe diarrhoea and became ill. Hasan took her to the nearby clinic where she was given some treatment and sent home. Her condition became worst and by evening she fainted. She was taken to the Civil Hospital, Karachi where she was kept in emergency. When he came home he saw that his elder son and daughter were also having high grade fever and stomach ache. He hurriedly got them treated from the nearby clinic, where they were injected and kept for two hours. He left the children with his neighbors and rushed back to the hospital. The doctors said that it was due to contaminated water that her daughter had suffered from bacterial infection. Saba remained in the hospital for six days.

Later on, it was known that seepage had occurred between water and sewerage line, which were closely laid, due to which the water had become contaminated. There are many cases like this.

5. CONCLUSION

The study aimed to investigate the issue of water scarcity in Lyari town and to probe the reasons of water crisis in the area. The study was carried in a short span of two months. Although the time span was short, but tried to cover all the aspects of the issue. Interviews and focus discussions were conducted with the stakeholders and many parts of Lyari town were visited to get a true picture

The study reveals that the water crisis in Lyari town is genuine. The residents of the town are desperate of the situation. Their hue and cry is natural as they are deprived of the basic necessity of life. A number of factors are responsible for this pathetic situation, such as: mismanagement of water supply authorities; malpractices of concerned staff; poor infrastructure and socio political conditions of the area.

Thousands of people have suffered so far due to provision of contaminated water. It is high time for the authorities to look into the issue and chalk out a comprehensive plan to resolve the water crisis in Lyari. Water is a basic necessity and deprivation of it is having negative socio economical effect on the inhabitants of the town.

6. RECOMMENDATIONS

Based on the research findings, the following steps are recommended in view of the research findings to overcome the scarcity and streamlining the water supply management in Lyari Town: -

i. Monitoring

The Karachi Water & Sewerage Board should evolve a proper system to check the water theft. A mechanism for continuous monitoring and evaluation of the water supply system needs to be introduced. It may include developing performance indicators for personal, machines, water supply, lines, connections, encroachment and water hygiene.

ii. Security

Security may be provided to the operating staff at the pumping stations and valve centres, particularly at Bihar colony, Lea Market, Atmaram, Shah Waliullah pumping stations and at the valves of Mira Naka at Mirza Adam Khan, Degree College at Faqeer Muhammad Khan road, Kishti Chowk, Agra Taj and Gharib Shah valve at Kumarvara road.

iii. Water Purification

A system for water purification may be made to ensure supply of clean water to the town and prevention of water borne diseases. A systematic water purification mechanism should be established such as use of chemicals at main source and treatment of water in pipelines as it is being done in several Asian countries.

iv. Community Mobilization

The community may be mobilized, involved to participate in making the water supply system effective. The community members should be given representation in water supply monitoring team at KW&SB and Lyari town levels.

v. Enforcement Of Law

Already existing laws may be enforced for preventing crimes like water stealing, taking of bribe and bahatta by valve men, encroachment etc. Besides, new administrative rules may be introduced in future if it is needed. The case can be registered on the government recommendation of the area councilors, water supply officials, and members of monitoring teams.

vi. Up gradation of Infrastructure

The old pipelines, which are a major cause of water leakages, may be repaired and in case where repair is not possible they may be changed. The equipment and machinery which has become outdated may be replaced and new technology be used.

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