

Summary of Non-revenue Water Management

Regional Workshop on “Capacity Development, Water Operators’ Partnerships and Financing for Non-revenue Water Management” in Central Asian countries

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It is requested to return this summary of Non-revenue Water Management in their utility along with his/her nomination and Annex-1 by 31st May 2014 or send it to p-won@unhabitat.org.pk or engrfida@gmail.com. It may be provided in English or Russian, and will be part of the workshop proceedings. Tables and figures may be included, but should be referenced in the text.

Title: NON-REVENUE WATER MANAGEMENT

Name of the Utility: KARACHI WATER & SEWERAGE BOARD

City and Country: KARACHI-PAKISATN

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Abstract (maximum 150 words)

KW&SB is responsible for managing water supply to its more than 1.05 million registered consumers in the planned areas and around 0.4 million unregistered consumers mostly living in irregular or regularized shanty settlements. Around 50% of the inhabitants live in the so called shanty settlements. Out of 1.05 registered consumer only 0.3 million pay their monthly water bill. Rest getting water without paying a single penny to KW&SB. Apart from poor collection efficiency KW&SB the other major component of non-revenue water is wastage of around 35% of the total quantity supplied from the source, only 65% reaches up to the consumer. There is a huge gap between demand and supply and it is stated that the city is getting half of its water demand. Since the city is located at around 150 km distance from the major water source it is costly to lay addition system. For such utilities it is more economical and essential to control the water loss instead of just go on laying the new infrastructure. KW&SB needs to work a lot in this area.

1. General background on the utility (maximum 200 words)

Karachi Water & Sewerage Board (KW&SB) is one of the biggest water utility in South Asia managing the water supply of a mega city of more than 20 million population. Karachi is a coastal city which gets water from two surface water resources i.e River Indus and Hub Dam. The major source is River Indus located at around 150 km away from the city ,from where around 550 mgd water is supplied. From Hub Dam only 100 mgd water is supplied but this source is dependent on rains in the catchment area of

the Dam. It has a storage capacity for only three years. Karachi is the industrial hub of Pakistan and generates around 70% of the total revenue of the country. The water demand for this industrial city is around 1000 MGD whereas the current supply from the Indus source is around 550 MGD. Out of this 550 million around 400 mgd water is available to the consumer as around 35% is wasted in the transmission losses. People are facing acute water shortage and the gap between demand and supply is widening with the passage of time as the population growth of the city is 4.5% due to influx from other parts of the city.

2. Status of non-revenue water and water loss reduction and future goals (maximum 200 words)

The huge transmission system comprise of canals, tunnels, siphons, conduits etc but unfortunately no measuring devices are installed either on the bulk transmission system or the distribution network. As a result it is not possible to measure the exact quantum of non-revenue water. However, an estimated figure based on some rough calculation show that 35% water is lost in the transmission and distribution system. In view of the limited quota of 1200 cusecs from river Indus source which has fully exhausted and the non reliability of the Hub Dam source the importance of water loss reduction and non-revenue water has increased manifolds. Further the cost of building the new infrastructure for transmitting water from the distant located source is much higher than conserving the amount of water that is being wasted due to theft for irrigation and leakages in the bulk transmission and distribution system.

In a recent meeting with the Minister Local Government, it was emphasized that KW&SB should plan to undertake a mega water loss reduction project instead of just making projects for induction of additional water in the system. The biggest hurdle in execution of such mega projects is of funding.

3. Efforts of the utility to reduce non-revenue water and water loss reduction (maximum 200 words)

Not much work has been done on non-revenue water and water loss reduction. A foreign aided project was taken up around 20 years back which brought some reduction in the water loss but the impact could not be measured as there were no measuring equipments installed on the transmission and distribution system. The only impact noticed was the improved water pressure in the system and lesser complaints from the respective project areas.

A project for installation of water meters was initiated by KW&SB few years back but it could not be executed due to some contractual issues and no political ownership. Politicians do not have much interest in such projects as such projects fetch no significant political gains. However, KW&SB is preparing a scheme for water loss reduction program.

4. Greatest challenges of the utility in addressing non-revenue water (maximum 200 words)

- The transmission system is more than 150 km long. It comprises of canals and conduits. Farmers in the vicinity of the transmission system draw water through pumps which are installed at night and removed in the morning. This theft is often in connivance with the KW&SB's field staff and the line guards. These farmers not only use money but also the political influence to continue the pilferage.
- Weak legislation and low penalty/punishment on tampering the water infrastructure. People get easily freed on bail again and again after committing the crime.
- Political interference in the operations.
- Out of 1.05 registered consumers only 0.3 million pay the monthly water bill , which is very nominal.
- Illegal hydrants installed by powerful water mafia having political backing and connection with the KW&SB's staff.
- No true accountability on illegal water connections.
- Absence of measuring system and billing not on volumetric basis but on the basis of area of the residence.
- Old and hackneyed water distribution network comprising of asbestos fiber pipe with leaking rubber ring joints.
- Due to intermittent supply with low pressure it is not possible to install water meters at the residential service connections. Even the meters installed in industrial area of remain out of order due to various reasons.

5. Knowledge and capacity needs to improve non-revenue water management: (maximum 200 words)

KW&SB would like to learn the latest and cheapest technology for measuring devices and plugging the leaking joints.

We would also like to know about the legislation for controlling the theft of water.

We would like to improve our capacity in tracing the invisible water leakages and illegal water connections.

Installation of measuring devices on such a vast system comprising of round 5000 km is a big task involving both funds and time. KW&SB is working on it but it may take few years to accomplish this task. We would like to learn if there are any short cuts and low cost procedures to measure the water flow in the transmission and distribution system.