

Water Conservation in Saudi Arabia

Distinguished guest, gentleman, Good morning to you all.

It is a great honor to be here today at his workshop. And I would like to thank SAEWA for organizing such an important and useful conference.

I would like to avail this opportunity to brief you, about the water situation in Saudi Arabia, with particular emphasis on the ministry's efforts towards water conservation and re-use of treated water.

It is common knowledge and I am sure, we all agree that water must be properly valued, conserved, re-used and when discharged, upgraded to the highest standards. Wastewater should not be "WASTED WATER"

The lack of an adequate water supply, high urban demand and the cost of potable water are the most significant forces in the implementation of water conservation and water re-use programs. In locations where adequate water supply is not available due to lack of resources, water conservation and wastewater recycling become imperative. Major opportunities for water reuse exist in industry, because globally, on an average 20% of fresh water withdrawals go towards industries. Therefore, industries should be encouraged to invest in better water efficiency, more recycling and management of water conservation.

Wastewater is perhaps the most under used resources in the region. Underused because very little of it is properly recycled. Though the public is yet to accept the re-use of recycled water for drinking purpose, there are a few other ways in which it can be effectively re-used, such as for irrigation in agriculture, homes and public parks, for industrial applications and for ground water re-charge.

As many of you might be aware, the water sector in Saudi Arabia faces so many challenges:

- The limited water resources
- The current water tariff in the kingdom is one of the lowest in the world.

- The water production and transportation cost are the world's highest
- The consumption per capita in the kingdom is above 250 liters / day
- The Non Revenue Water percentage is in the range of 30-55%
- Water coverage in Kingdom is around 90% and the sewage collection is only 45%
- Currently only a small fraction of the treated wastewater – around 6% of the total supply- is re-used

Considering these challenge, MOWE sought a radical solution to bring drastic changes to water sector performance. After studying the international practice, and identifying the critical success factor, MOWE has developed a challenging target, to bring the performance of the water utilities in Saudi Arabia, to the best international standard. We have embarked upon a challenging vision to transform the existing water sector and build a “World Class Water Utility.” By adopting this vision, the ministry is striving to accomplish the follow objectives:

- Access to good quality potable water for all
- Reasonably prices water and sanitation services, aligned with cost recovery
- Sanitation connectivity to all household and treatment and safe disposal of wastewater
- Protection of the environment and conservation of natural water resources
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- Improved organizational performance and better customer services

Ministry's Strategy

In the past water, shortages were met by adding more desalination and ground water capacities. Recently the ministry has setup new initiatives to give more emphasis on the water demand management side, and adopted several measures to improve the water utility performance and thus bridge the gap between supply and demand.

With the objective of becoming a “World Class Water Utility” in mind, MOWE has developed a Strategic Transformation Plan with the help of international consultants. This STP provides a framework and guidance for the reforms and privatization path. STP also defines institutional setting and recommends methodology to regulate the short term, and long term PPP contracts.

To achieve the objectives and to provide better services to the population, MOWE decided to involve the private sector in urban water and wastewater operations through a PPP approach. We are confident that the involvement of private operators will help to improve the overall performance in the key areas identified. In addition, the PPP contracts are expected to bring in new investment for more efficient replacements and rehabilitation of aging assets and provision of new assets.

A major step in the process of reform has already been taken by obtaining approval from the Supreme Economic Council for our privatization plan and the formation of National Water Company. This company will oversee and administer the reforms in the water and wastewater sector. As a part of reform initiative, the ministry undertook several assessment projects during the last two years. The outputs of these assessment projects indicated many shortcomings in the organizational performance.

Furthermore, work is presently underway by a world-renowned consortium of advisors regarding Riyadh city PPP's tendering. In addition, a similar PPP contract for Jeddah city is also under process and will soon be concluded.

Ministry's initiative in wastewater re-uses

In view of the situation described above, it is only natural for water agencies to pay more attention to avenues other than natural sources and desalination. The Kingdom of Saudi Arabia is no exception to this and hence the ministry, recognizing the importance of the need to recycle used water and encourage re-use has taken several important steps, which are as follow:

a) MOWE has engaged and international consultants to conduct an exhaustive study on the wastewater re-use and sludge disposal. The scope of the on-going study covers the ways to improve the treated water re-use replacing the use of underground/fresh water, identify potential re-use opportunities and study all aspects of treated water re-use, its discharge including sludge disposal methods etc, this study will cover over 200 locations in residential areas with a population of over 5000 or more, encompassing almost 80% of the Kingdom's population.

b) In a major initiatives, the ministry plans to provide 100% sanitation connectivity in the four major cities. This will be achieved by an ambitious plan through Public Private Partnership Schemes.

c) The Treated Wastewater and Re-use of Wastewater Law was issued under a Royal Decree setting standards for recycling treated wastewater for artificial irrigation, watering public gardens and recreation parks, air-conditioning, industrial purpose and any other usage.

d) Another Royal decree has been issued to regulate treated water consumption amongst large water consumers like furnished apartments and housing compounds requiring them to install wastewater treatment facilities for recycling purposes like toilet flushing, gardening, etc.

e) Apart from these, the ministry has already engaged a reputed international consultant to conduct a feasibility study for setting up large wastewater treatment plants based on BOO/BOOT schemes in Riyadh city. The scope of this study also includes identification o re-use opportunities in industries and transfer of the treated water to re-use location(s). Subsequently, similar schemes are envisaged for the other major cities.

f) Private sector involvement is expected to provide the following benefits:

- Better treated water quality conforming to international standards for various re-use applications like industrial, agriculture and other non-potable uses.
- Continuous availability of treated water to consumers.
- Preservation of the country's scarce natural resources and reduction of the burden on fresh water production / supply.
- Protection of the environment in general.

Urban Water Conservation and Public Awareness Programmes

In 2004, the ministry embarked upon an ambitious program in water conservation. Its strategy was to address the conservation issue emphasizing public awareness, motivation, incentives and supporting regulations. As part of the conservation program, the ministry launched several programmes like "free distribution of water conservation kits" to residential, government and private sectors across the Kingdom to promote efficient water use and eliminate wastage of water.

The nationwide campaign was launched through various media and targeted people from all walks of life, age groups, families, etc.

The objectives of these programmes were promoting effective use, eliminating wastage of water and creating awareness among the consulting public on the need for prudent consumption of water. In this campaign, more than 33 million conservation items were distributed to residents, public and private sector.

This conservation program received Several Awards: form the United Nations Development Program (UNDP), the International Desalination Association (IDA) and so on, recognizing the efforts and achievements towards conservation of water.

In several surveys conducted by an international consultant to assess the conservation efforts, it was found that