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**Tehran Water conservation demonstration project in Nasim residential
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Abstract

Tehran's population has skyrocketed over the past 20 years placing severe stress on existing water resources. In addition, as the standard of living increases, the per capita consumption of water also increases. Indeed, the demand for water is beginning to exceed the existing nearby sources of supply. To add further to concerns, recent studies on the potential impact of long-term climatic changes indicate that conditions will be harsher with lower rainfalls and longer dry-periods. These are all pointers to the urgent need for research into options for the management of water resources in the Tehran region.

While augmentation of water supply continues to be a top priority, it is also important to explore the other side of the supply-demand equation - methods of making water use more efficient. In this regard, it is noted that the Islamic Republic of Iran, as a member of the Kitakyushu Initiative for Clean Environment, is an active supporter of the Johannesburg Plan of Implementation which calls for States to develop water efficiency plans by 2005 and introduce measures at all levels for improving the efficiency of water infrastructure.

The demonstration project, supported by RCUWM-Tehran and co-funded by ESCAP and UNEP International Environmental Technology Centre (UNEP IETC), is part of the process to establish a city-wide water efficiency plan for Tehran. The project involves a two-pronged approach to trial a range of measures including in-house water savings and storm water capture and reuse which, if proven successful, could form the basis for a city-wide water management plan for the city. It is noted that there are a range of other measures, such as financial incentives and legal/regulatory measures, but due to the limited time frame available, focus under this project is on technical and public awareness measures. The immediate aim of this pilot project is to demonstrate that a range of measures could be combined into an effective means of reducing in-house water use and increasing available water supplies in urban areas which, when applied across the city, could result in measurable and cost-effective means to improve water-use efficiency and lead to the deferral of the need for costly supply augmentation.

Tehran water conservation pilot project was carried out in order to measure the real domestic water consumption pattern and assess the effectiveness of water consumption reducers and separate apartment meters and cultural measures effects in Tehran city.

Approach & Site Selection Criteria

- ❖ Similarity in the conditions of the blocks of Nasim complex.
- ❖ The possibility of installing separate apartment hot and cold water meters.
- ❖ Variety in socio-cultural aspects of the participants (education, income, age, behavior...).
- ❖ Cooperation of the directing managers of Nasim complex.
- ❖ Existing and access to consumption history of the complex.
- ❖ Location and accessibility of the complex to THRWW district no 3 building.

(Pilot site) spec.:

- Nasim residential complex:
- Address: Tehran South of Pole-Gisha, Patris st., Nasim st.
- No. of buildings (Blocks): 4 total no. of apartments: 120 (30*4)
- Cultural activities area: Block no. 1 (30 apartments)
- Control group area: Block no. 2 (30 apartments)
- Retrofit activities area: Block no. 3 (15 apartments reducers installed, 10 apartments low consumption taps installed)

Summary of findings:

- ❖ Net effect of Social measure 5% (after discounting 3% seasonal effect)
- ❖ Net effect of Technical measure 14% (after discounting 5% social effect)
- ❖ Understanding of water use pattern helps in prioritizing effort to save water
- ❖ Priority focus should be on kitchen sink and shower/bath facilities as biggest users
- ❖ Toilet and hand wash basins are of secondary significant
- ❖ Average forecast for retrofit measures in Tehran City will result in 185 M m3 reduction in demand
- ❖ Effect is 3-year deferral of supply upgrade works
- ❖ \$10,000's saving in capital expenditure

Ongoing work, the next steps

- Secure budget for 6 pilot schemes
- Conduct longer studies to confirm seasonal effects
- Scale up public education and retrofit campaign to city-wide level
- Monitor Nasim to see if changed water use habits permanent

Identification of key gaps in promoting win-win initiatives and practical solutions to overcome such gaps in the projection of the plan to Tehran province

Difficulties

Convincing households to change consumption behavior and participate in water conservation measures and continue of the new conservation behaviors

Solutions

14 different effective cultural, supervision and incentives measures like broadcast and advertise of brochures, set up of water exhibitions ,print recommends in water bills , meetings and distribution of small

gifts

Participation of other organizations like the city councils in water conservation measures	Follow up measures by TPWW Co.
Promoting NGOs participation in cultural measures	Incentive measures like rewards, certificates for university students, etc
Lack of approvals on water conservation measures	Prepare 5 year action plan and submit the government
Limitation of funds for 5 year action plan on water conservation measures of Tehran Province	Search new financial resources, foreign funds ,participation
Low quality or substandard ness of some water conservation devices i.e. showers and flash tanks	Follow up by TPWW Co, define and approval of national standard code or certificates
High prices of water conservation devices	Define and follow up approvals for water friendly devices be government subsidized

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