

Creating incentives to decrease waste-water in Zambia

Introduction:

Water scarcity is a major problem in arid and semiarid countries and excessive use of water also creates negative impacts on the environment. Therefore, proper water consumption is very essential for sustainable growth of any country. In this context, the Southern Water and Sewerage Company (SWSC) of Zambia has taken a step to encourage water conservation by providing the monetary benefits in terms of incentives to higher households' water consumers.

Objective and rationale:

To rehabilitate the core water supply network, rehabilitate and expand select water supply and sewage networks to peri-urban areas and improve select drainage infrastructure. To strengthen the service delivery and operational capacities between institutional structures.

Key stakeholders:

- Southern Water and Sewerage company (SWSC)
- Millennium Challenge Corporation (MCC)
- Government of Zambia

Implementation strategy:

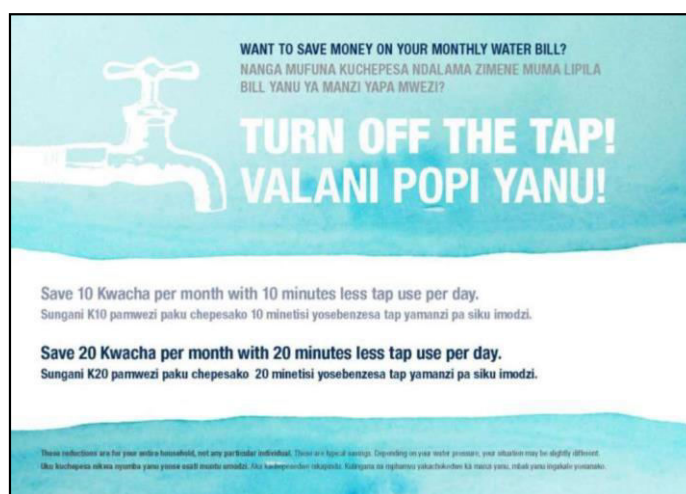
The Southern Water and Sewerage Company (SWSC) provides piped water to residents of Livingstone, Zambia. Households are billed based on monthly meter readings and charged according to an increasing block tariff. Approximately, household spent around US\$9.50 monthly for water usage. However, use of water depends on behaviour of all members in the households. It was noted that husbands paid the water bills in about 53 percent of households, and in about 80 percent, wives used more water than their husbands. The SWSC identified 1282 households for availing the benefit of this programme. A lottery system was invented by the SWSC for availing the monetary benefit. Most of households were enrolled in participating in the lottery and received information about water prices. Households that reduced their monthly water usage by at least 30 percent relative to their average water usage in the previous two months were automatically entered into the lottery. Each month, one in every twenty qualifying households won ZMW 300 (about US\$30). By encouraging households to reduce their water use in exchange for a monetary reward, the probability of winning the lottery effectively served as an increase in the price of water. To gather additional insight on household dynamics, SWSC divided in three groups on who would receive information on the lottery as follows. One-third of households, both spouses learned about the lottery. In another third of households, only the wife learned about the lottery and in the remaining third, only the husbands were informed about the lottery. In households in which only the wife or husband were informed, these individuals were also paid privately if they met the water use reduction threshold and won the lottery (individual incentive). This initiative generated an increase in a specific individual's price for water.

Impact:

Households in which only one individual was offered the chance of winning a lottery, has experienced a reduction in monthly household water consumption to 6.1 percent. This impact was even larger among households in which the lottery information was directed to the wife in household i.e., a 11.5 percent reduction in water use has been witnessed. This lottery initiative has created an incentive for wife to conserve water, otherwise, these individuals do not financially benefit from saving less water, so do not put in enough effort to conserve water.

Key challenges and Lesson learnt:

This intervention has drastically reduced excess of water consumption. Results suggests, an effective way to reduce water consumption might be to



target incentives to higher household water consumers, through technologies or in-kind rewards, rather than changing household level pricing.

Replicability and Sustainability:

While this approach is complex for replication in India, pilot areas may be taken up in States and experimented. If similar results are observed, the same may be gradually scaled up to larger areas in cities.

Fact Sheet:

Thematic area	Financial incentives for water conservation
First-year of the program	2015
Responsible institution	Southern Water and Sewerage Company
Target audience	Urban population
Coverage	Livingston, Zambia

Source: (J-PAL, 2016), (MCC, 2020)

<https://www.povertyactionlab.org/evaluation/creating-incentives-decrease-water-waste-zambia>,
https://www.povertyactionlab.org/sites/default/files/research-paper/Enviro_Externalities-and-free-riding-in-the-Household_Jack_Jayachandran_November2019.pdf