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Title : State and Services of Private Water Tanker Operation in Kathmandu

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Background

In Kathmandu, drinking water is becoming a scarce resource due to ever growing water demand resulting from rapid growth in population and continued failure of the water utilities to meet the needs of the people. The demand of water exceeds the capacity of the water utilities and traditional water systems that were serving a significant part of the water needs of the people in the past. The scarcity of water has forced people to look for alternatives. A plethora of market solutions to water scarcity have emerged in Kathmandu, ranging from local level water vendors to tanker water supplies and bottled water. Tanker water supplies have been the oldest form of market mechanism, serving the water needs of the residents of Kathmandu for more than two decades. Volume of water transaction by the tanker operators started escalating rapidly after 2000, essentially due to shortage of water faced by all kinds of consumers, from households to commercial establishments. In this context, this study was conducted to explore the state of and services by private water tanker operation.

Objective

The objective of this study was to document and analyse the state and performance of private water tanker operation and their services to different groups of consumers. Besides, it aimed to view and analyse the perspectives of the consumers served by private water tanker operators.

Study Area

This study was undertaken in two most urbanized areas in Kathmandu Valley- Kathmandu Metropolis and Lalitpur Sub-Metropolis.

Research Methodology

This research was conducted in sequential steps; secondary data collection, identification of water extraction locations/sources, collection of information on the state of water extraction and water tanker operation, estimation of the total water supply by private water tankers and water extraction at different water extraction locations, calculation of incentive structure to the private water tanker operators, water quality assessment, documenting the consumers' profile dependent on the private tanker based water supplies and the consumers' survey and data analysis. The research tools included reconnaissance survey, detail field survey and observation, talks/ interviews with water extractors and water tanker operators, key informants' interview, structured interview to consumers and water quality tests.

Research Findings

- Supply chain of water tanker operation in Kathmandu constitutes a chain: water source owners, water extractors, water tanker operators, intermediaries as water vendors and finally consumers.
- Water sources are generally located on rural-urban intermediaries. Majority of water extractors had been using dug-wells, shallow and deep boring installations with simple water treatment plant or without any treatment.
- Water quality tests conducted at water sources in different locations revealed contamination of faecal coliform, E. Coli and minerals as ammonia, iron beyond permissible limits during the time of test.
- There were estimated 700-800 numbers of tanker trucks operating on the streets of Kathmandu valley of different capacities: small tankers (5000, 6000 and 7000 litres capacities) and large tankers (10000 and 12000 litres capacities). Tanker water transaction was found to reach to the peak for five months from February to June.

- The volume of water transaction by them was estimated to be 25.58 MLD (million litres per day) in peak (dry) season and 15.36 MLD in off-peak season. This was estimated to be 8% of the current water demand of 320 MLD in Kathmandu valley in dry season. Of this water supply by tankers, more than 90% was estimated to be extracted from groundwater resources.
- The average price of charged to the consumers for tanker load of water was found to range from 303 per m³ (small tankers) to NRs. 151 per m³ (large tankers). This price was 4 to 5 times higher than the piped water supply by Kathmandu Upatyaka Khanepani Limited (KUKL), water supply utility for the valley, for the same volume.
- Financial analysis of water tanker operations for the tanker size of 6000/7000 litres revealed that the rate of return on the capital investment is 36.3% if the all the investment is made by the entrepreneur without outstanding loan.
- Increasing acceptability of tanker water was noted among the consumers who depend on the tanker water supplies for their daily water needs. The consumers served by the water tanker operators, in general, expressed satisfaction with the water services, in terms of quality, reliability and price, provided by the tanker operators. This response of consumers is due essentially to tanker water supply relieving them from the stresses that they otherwise face due to shortage of water and no option available to them but to depend on tanker water supplies.

Conclusion and Recomendations

- The study showed the increasing acceptability for tanker water supplies and willingness to pay for higher cost for tanker water supply; which signifies that the residents of Kathmandu shall be ready to pay higher tariff for KUKL's water supply provided the reliable water services by KUKL.
- The role water tanker operation and other forms of private water service providers are expected to grow in foreseeable future, with much pronounced groundwater extraction. As such, it would be in the interest of the government and water service regulating body, Kathmandu Valley Water Supply Management Board (KVWSMB), to recognize its role in water services in Kathmandu and therefore make necessary policy and regulatory mechanisms for private water providers.
- The gist of such policy and regulatory mechanisms would be regulation of water sources and extraction of groundwater, regulation of water price, quality assurance and regulation of operation of private water service providers.

Recommendations

- Monitoring and maintenance of built infrastructure with their own participation is required so that they develop a feeling of ownership and maintain it forever.
- The settlers need to quit the attitude of indifference as this attitude is dragging them towards various health impacts.
- The government bodies and development partners needs to include 'Motivation to invest' component in their development programs.
- Adequate empowerment and participation in every aspect of urban and environmental planning need to be done by government and development partners.
- The government and development partners need to provide proper training, orientation and awareness to local actors and stakeholders. There is a need to explore the ways to reject the established indifference among the settlers and motivate them to live in good sanitary condition.