IWRM TOOL - B2.01

Public sector water utilities

Public sector water utilities provide water supply services and/or wastewater and sanitation services under the control of governmental entity, typically a municipality. Public waterworks provide water and sanitation services to most of the world's urban population, outpacing both private sector providers and community-based organizations. Public sector water utilities are generally labelled as inefficient, plagued with financial, operational, and institutional constraints, resulting in poor service delivery. This tool provides an overview of these challenges and suggestions for possible reforms to improve the efficiency of public sector water utilities.

Types of Public Sector Water Utilities

According to the estimations, the majority of the world's urban population relies on public sector water services. In OECD countries, for instance, approximately 80% of residents are connected to public utilities (Pérard, 2009). In developing countries, this share is even higher and accounts for 93% of the urban dwellers (Marin, 2009). While providing drinking water service and/or wastewater services as all types of water utilities, public waterworks are under public control with varying levels of autonomy. This is reflected both in ownership structure and management models applied. The latter allows to distinguish state-owned and municipal utilities, while the former helps identify three management systems fully or partially related to the public sector (EurEau, 2020):

- Direct public management: the government/municipality is entirely in charge of service provision and its management.
- Delegated public management: the government/municipality owns the utility's assets and delegates management, operations and maintenance to a state-owned company (Joffe, Hoffman and Brown, 2008).
- Delegated private management: the government/municipality subcontracts their duties to private companies (Tool B2.02).

Additionally, public water service providers vary in terms of scale, ranging from network-based services to decentralised water supply in remote rural areas, including wells, boreholes and water trucking used in the emergency context (Van der Helm et al., 2017).

Characteristics of Public Water Utilities

The first two of the aforementioned types of utilities have a number of characteristics that are crucial for understanding the complexity of public water supply and sanitation. First, water industry functions within the public sector are classified as a natural monopoly. Nature of costs (abundance of sunk costs) hinders the transition of public water utilities to a competitive market that would have a negative impact on the economies of scale (Pérard, 2009). Second, the sector supplies public and merit goods that are believed to be provided irrespective of consumers' ability to pay. Third, water infrastructure and timely maintenance of the system is indispensable for housing, industrial and commercial developments, which would require specific attention and regulation. Finally, it is a highly capital-intensive sector with long payback periods (Morrell, 2017) starting from 7-10 years with the possibility of extension up to 30 years (Rees, 1998). These features are necessary for conceptualising the criticism faced by the public sector water utilities.

Challenges faced by public waterworks

In 1990s, many governments commenced reforms of their urban water supply and sanitation services justified by inefficiencies of the public waterworks (Marin, 2009). Miscellaneous types of inefficiencies within public water entities may be identified. These inefficiencies are stated below:

Financial: Sustainable water supply strategy states that service providers should fully cover their operations and maintenance costs, as well as have access to investment funds in order to be able to improve and expand their services (Tool D2.02; Tool D2.03) (World Bank, 2017). There is a significant number of examples from across the globe demonstrating the opposite insofar as the gap between funding opportunities and the demand for water infrastructure is concerned. For instance, the Zambian public water sector used to have extremely low-cost recovery and little investment for network expansion prior to the sector reforms in 1994 (Chitonge, 2011). Jamaican National Water Commission faced serious challenges from its establishment in 1980 when public water supply was insufficiently financed due to infrequent tariff adjustments (Ehrhardt and Janson, 2011). Overall, tariff revenues are insufficient and do not generate cost recovery. Additionally, tariff structure of public water utilities does not motivate resource conservation. Equity and fairness are not always guaranteed when affordability for poor households is not taken into account.

Operational: Operational inefficiencies often derive from financial ones. Lack of investments present in the public sector restrains maintenance and enlargement of the system. As a result of low service coverage, only a portion of the urban population has access to services, especially given peaking urbanization rates in developing countries. 1 billion people around the world, predominantly in developing countries, receive water that is available for fewer than 24 hours throughout the day which is creating the problem of intermittent water supply (Kaminsky and Kumpel, 2018). In addition, non-revenue water indicators are high due to leakages and poor asset management in general (Chiplunkar, Seetharam, Kheong, 2012).

Institutional: State or municipality-owned water enterprises may experience political interventions and struggle for political advantage, as well as vested interests (Rees, 1998). Public utilities may be vulnerable to interference by corrupt policymakers when they,

for instance, divert money from public budgets, which exacerbates both aforementioned inefficiencies (Tool B1.05) (Transparency International, 2008). Inconsistent institutional frameworks tend to negatively impact the performance of public water utilities regardless of enforced regulations in the sector (Berg, 2013).

Possible Reforms: Utility of the Future Model

In order to improve the efficiency of public sector water and sanitation companies, the Utility of the Future model (Fig. 1) may be implemented (World Bank, 2021). Following this model, a utility provides qualitative services in a highly efficient manner also staying innovative, inclusive, market-, and customer-oriented.

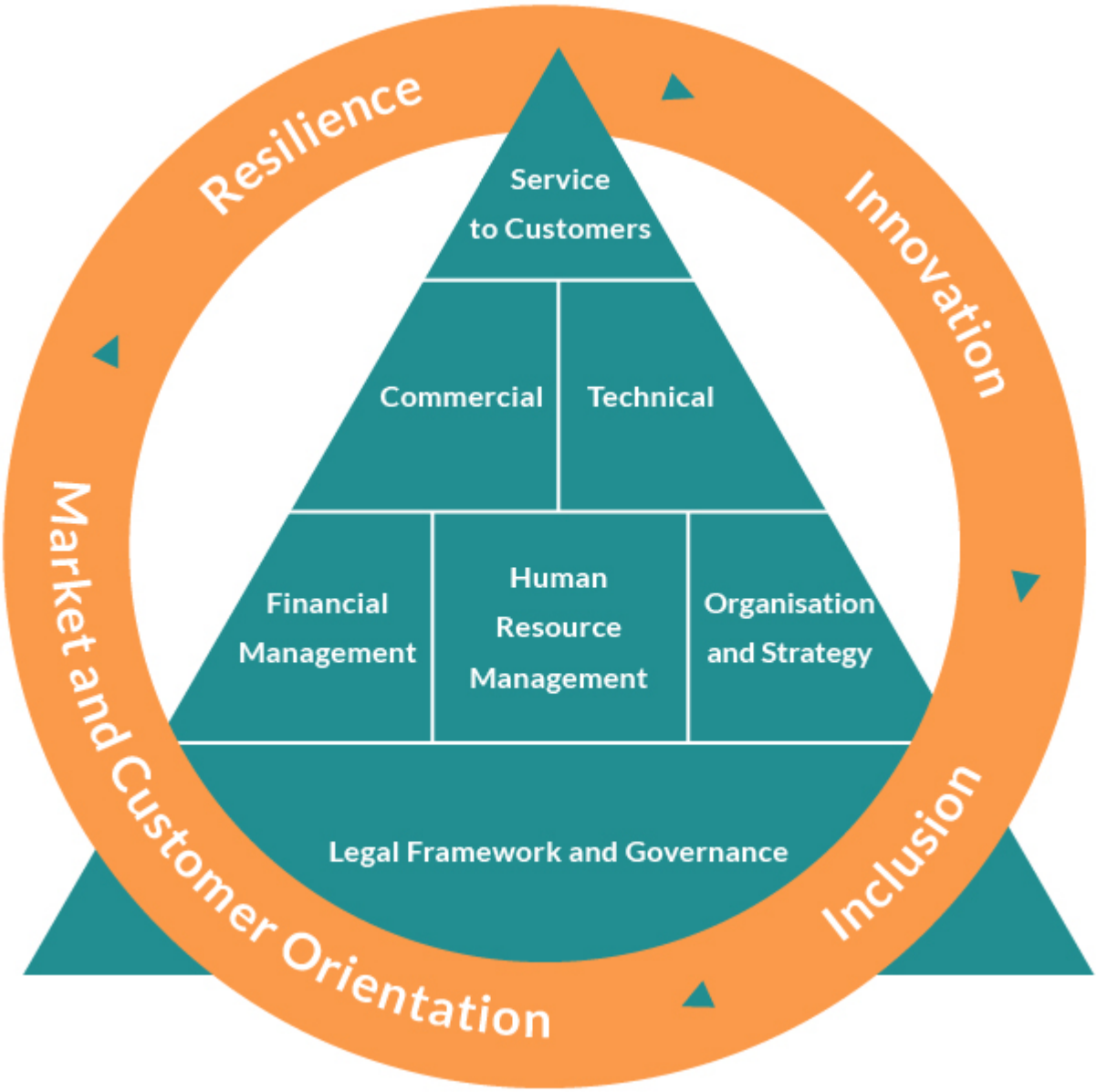

Figure 1. The Utility of the Future Model (Adapted from the World Bank, 2021)

Reforms in public water utilities sector may focus on (Van Ginneken and Kingdom, 2009):

- Private sector participation-corporatisation: Public-private partnerships are successfully transforming the public water supply sector in the developing world when the number of investors is growing, and risks are equally allocated between partners (Marin, 2009). However, this approach is not ubiquitously relevant. Some studies empirically demonstrate that no statistically significant proof of underperformance of the public sector than the private one was found in relation to water utilities (Kirkpatrick, Parker and Zhang, 2006). Instead, an alternative corporatisation approach may be used when a utility is transformed into a public organisation with a corporate identity. The board of directors, in this case, acts as a "middleman" between utility management and the owner (the state or a municipality), the autonomy of the utility increases and diversification of ownership eliminates the risk of politicized decision making (Van Ginneken and Kingdom, 2009).

- Benchmarking: Performance agreements or benchmarking provides access to comparative information identifying the areas that can be improved in public sector water utilities (OECD, n.d.). For instance, the International Benchmarking Network for Water and Sanitation Utilities (IBNET) is the world largest database of utilities performance data.

- Consumer accountability: The process of reaching high consumer involvement has several essential building blocks. First, provision of accountable information, such as annual reports. Second, organising consultations to obtain users' opinions, which can also be replaced by more formal participation, such as the provision of voting rights (Van Ginneken and Kingdom, 2009). For instance, in Non-revenue Water Reduction Programme in Colombo, the city employed a manager solely responsible for processing consumer complaints, which improved the efficiency of the programme (Chiplunkar, Seetharam and Kheong, 2012).

- Capacity building: Providing training for personnel are important for gaining new skills during the career in the public water sector. However, capacity building as a means of delivering services efficiently and effectively is often overlooked by the public sector work culture.

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Thematic Tagging
Urban Water services

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