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CHALLENGES AND PROSPECTS OF URBAN WATER SUPPLY IN PAPUA NEW GUINEA

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Key Points

- Access to clean and reliable water supply is necessary for healthy and productive life, and remains a key feature of Papua New Guinea's development agenda.
- Significant reforms have been initiated to improve management and delivery of water supply throughout the country including urban centres.
- Urban water sector is faced with critical challenges relating to policy implementation, customary land rights, increasing demand, water loss and aging infrastructure.
- Strong political support, private sector participation and robust performance incentives of state-owned water utility companies hold great prospect to addressing these challenges.

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Access to safe and reliable water supply is necessary for healthy and productive life in Papua New Guinea (PNG). It remains a key development agenda for the National Government to effectively provide and expand access of this vital service throughout the country. In particular, it is becoming more important for the urban centres given the ever growing population from the on-going rural-urban drift and rapid pace of urbanisation. Approximately 13 percent of PNG's total population resides in urban centres. This proportion has the tendency to increase, which means that the need for water for daily sustenance and economic prosperity will rise, exerting pressure on the existing capacity of water delivery system. There is abundance of water resources in the country where supply for urban consumption are sourced. Main ones are fresh running streams (surface) and the ground (bore). Sourcing, treatment and supply of water is mainly undertaken by State-Owned Enterprises (SOEs), that is, Water PNG Limited and Eda Ranu, while in few towns, the town authorities take on the responsibility. With a view to improve reliability, accessibility and affordability of water services, the National Government initiated important reforms in the urban water sector. This includes the merger of Water PNG Limited and Eda Ranu for provision of water services in Port Moresby which is yet to be concluded. However, there remain challenges that impact management and delivery of water supply in major towns and urban centres in the country.

The challenges

In a recent study, Kutan and Sofo (2020) identified a number of the challenges that critically impact access to, and supply of water in PNG's urban centres. The main ones are the following:

- **Limited prospect in policy implementation.** In 2015, the National Government introduced the Water Sanitation and Hygiene (WaSH) Policy which aims to promote improvement in delivery of quality, safe and reliable water and sanitation services. One of the key proposals of the WaSH Policy is the establishment of National Water, Sanitation and Hygiene Authority (NWSHA) whose responsibility would include policy planning, coordination and implementation of the WaSH Policy. The policy was regarded as much needed reform responding to prevailing issues such as low government prioritisation of the water sector, absence of credible political leadership, non-existence of dedicated body for planning and coordination role, and lack of funding support to the sector (Brown et al., 2015). However, the proposed NWSHA is yet to be established. In addition, the prospect of policy coordination across different players in the sector who are also the key implementors of the WaSH Policy seems dull. This is compounded by the risks of duplication in institutional functions and policy misalignment.
- **Conflict of landowners' interest.** Sourcing water for urban consumption often takes place on customary land. Experience has shown that land tenure issues under customary ownership remains a recurring development constraint in PNG. This often stems from widespread customary rights and tradition that land ownership implies resource ownership, including that of underground and fresh surface water. This can provoke conflict between local communities, and water utilities and municipal authorities, posing risks to extraction, storage and distribution of water for urban provision. A case in point is the perennial tussle between Eda Ranu and Koiari landowners of Sirinumu (Sogeri) where water for the Port Moresby system is drawn from. Recently the landowners threatened to shut down the water service should Eda Ranu and the National Government fail to respond to their compensation demand for use of their resources (*Post Courier*, 2018).
- **Increasing demand.** The demand for water is increasing, driven not only by its natural characteristics of sustaining livelihoods but by the increasing pace of urbanisation. Port Moresby, Lae, Rabaul and Goroka, for example, epitomises a thriving municipal hub with increasing movement of people and industrialisation. Many urban residents have built houses on the outskirts of towns and

cities where most of the land is still under customary ownership. This has triggered demand for basic amenities, namely water and electricity. However, water utilities are constrained to expand services into these areas (*The National*, 2018). This compels residents to resort to alternative water sources besides reticulated water such as bore water, rainwater and water from private sources. Where there is a high demand for reticulated water, there is also a risk of water loss.

- **Water loss.** Non-revenue water (NRW), a popular term used to describe water loss, constitutes leakages from water supply pipelines, water usage from non-metered connections, illegal connection and theft. Kutan and Sofe (2020) highlighted the struggles of water utilities to effectively trace and account for the losses from production (volume of water produced) to water taps (volume of billed consumption). On average, the NRW stands at approximately 52 percent which is much higher relative to international benchmark. The problem is exacerbated by deteriorating water supply system and mushrooming of uncontrolled settlement within peri-urban areas of the municipalities and towns. The consequence of NRW is the loss of revenue by water utilities to sustain operations or invest in infrastructure to improve water provision in urban centres.
- **Uncontrolled settlements putting pressure on water use.** The sprawling urban population in PNG is a natural phenomenon, triggered largely by the alarming rural-urban drift in a bid to access improved social services and better employment prospects. This is compounded by the cultural obligations to attend to extended families by way of providing accommodation for relatives coming from rural areas. The increase in population constrains dwelling spaces within urban jurisdictions, and so the spillovers find their way encroaching and squatting illegally on peri-urban areas. The increasing demand for water use by residents of settlements puts further pressure on existing capacity of water utility companies to provide adequate access to reticulated water. In unfavourable cases where access is constrained, settlers resort to pipe tampering or illegal connection to access drinking water to survive in the cities and towns.
- **Infrastructure gap.** A critical issue confronting the state water utility companies is the aging and dilapidated water infrastructure for catchment, storage, treatment and supply mains. Besides refurbishing of water treatment facilities in recent times, most of the water infrastructure network in the country were constructed during the pre-and post-independence era. Taking Port Moresby as a case in point, the last major upgrade on

the National Capital District Commission water and sewerage network was carried out in early 1970s where back then the population was a fraction of today's figure (Brown et al., 2015). To date, these infrastructures are now past their operational efficiency and capacity to adequately meet the increasing usage of water in urban centres. As discussed earlier, escalating water demand means high water consumption, which in turn strains capacity of dilapidated water supply infrastructure.

- **Absence of private sector.** The State water utility companies who provide the essential water service operate within an environment that exhibits natural monopoly characteristics, where substantial costs are incurred to construct facilities for sourcing, storage, treatment, distribution and retailing of water. This may act as barrier for entry of potential players from the private sector where their participation could potentially foster competitive market and efficiency. The country's consumer watchdog and economic regulator, the Independent Consumer and Competition Commission (ICCC) indicated that there is limited prospect of new entrant given the capital intensive nature of the water sector (*Post Courier*, 2020). Where private sector is absent and SOEs dominate provision of essential infrastructure and services, the role of economic regulation is critical to promote efficiency and welfare improvement. Kutan and Sofe (2020) found that, however, there is a real struggle to enforce regulatory requirements to ensure fair pricing and service improvement in water provision.

Prospects

The challenges associated with urban water supply also present opportunity for renewed focus on potential solution for improved outcome in urban water supply. The prospect for enhancing management and delivery of the essential water service can be realised through strong political support as has been the case with other successful implementation of reforms in the country. The recently announced SOEs Reform Package supported by the development partners is a step in the right direction with regard to improving efficiency and financial performance of the SOE water utilities. In addition, for successful implementation of the WaSH Policy, the government must ensure that implementing agencies have necessary resources, appropriate managerial skills, and information.

To address the inherent issues associated with customary land ownership, the Government should continue to support the reform process initiated by the National Land Development Program. Considering the importance to better manage the NRW and protect the precious water resources, the state water utility companies will need to be boosted with

sufficient capacity and effort to identify and fix water loss. More importantly, private sector participation should be encouraged in segments of water supply where feasible to enable sourcing of capital needed for the infrastructure investment as well as to drive efficiency in service delivery. In this regard, implementations of public private partnership and community service obligation policies are critical. Further, there should be strong performance incentives for state water utilities, enforced by the ICCC to ensure competitive tariff setting and efficient service standards.

Concluding remark

Access to clean and reliable water supply will remain an integral part of human livelihood and economic prosperity. Understanding the issues relating to policy implementation, customary land issues, increasing demand, water loss, aging water infrastructure and related challenges could help chart a new way forward. In particular, public sector reforms, private sector participation and robust performance incentives of state-owned water utilities could prove instrumental in alleviating the challenges confronting the urban water supply.

References

- Brown, A, Nott, T., and Shaw, D. (2015). *WaterAid PNG Country Program Evaluation*. Final Report. Melbourne: WaterAID.
- Kutan, L. and Sofe, R. (2020). *Urban Water Supply in Papua New Guinea: Overview of the Challenges* (PNG NRI Discussion Paper No. 173). Port Moresby: Papua New Guinea National Research Institute.
- Post Courier*. (2020, February 5). ICCC clears water utilities merger. Retrieved from <https://postcourier.com.pg/iccc-clears-water-utilities-merger/>
- Post Courier*. (2018, June 22). Koiari LO's give 48 hours deadline or city suffers. Retrieved from <https://postcourier.com.pg/koiari-los-give-48-hour-deadline-city-suffers/>
- The National*. (2018, March 11). Eda Ranu survey points out problems. Retrieved from <https://www.thenational.com.pg/eda-ranu-survey-points-problems/>

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