Water Infrastructure Finance Constraints:
Shared lessons from Africa and Europe
This paper builds on the lessons learned from the authoring partners and provides recommendations to help direct further efforts to unlock barriers to providing sustainable financing solutions for water infrastructure globally.

The financing and development of water infrastructure is foundational to achieving the world’s Sustainable Development Goals (SDGs). Recent studies have raised the alarm that, despite efforts, the global community is not on track to achieve the water and sanitation targets outlined in SDG 6. Funding gaps to meet water infrastructure needs are present globally, and the estimated investment to achieve SDG 6 targets requires a “threefold increase in existing levels of investment (SIWI, 2018).”

The Organisation for Economic Co-operation and Development (OECD) projects that global financing needs for water infrastructure will range from 6.7 trillion USD by 2030 to 22.6 trillion USD by 2050 (2018). The African water infrastructure landscape is also afflicted by inadequate investment. In this context, as well as research on this theme undertaken in Sweden and OECD countries. This comparison and contextualization between European and African experiences was first presented during the 2018 World Water Week Showcase ‘Water Finance Constraints: Africa and Sweden’ (August 2018) which included a dynamic World Café discussion with key experts and project sponsors adding further insights from African and European contexts.

Challenges identified are typically project identification, prioritization, and preparation; resulting in slow development and implementation of water infrastructure projects. Specifically, challenges were identified across the following broad areas:

- **Insufficient long-term capital planning.**
- **Tariff setting challenges,** and
- **Human resource management challenges.**

### Challenge: Insufficient Long-Term Capital Planning

The water sector has two distinct professions streams, technical and financial, that are critical for the successful delivery of sustainable services. Whilst the engineering functions typically engage in long-term planning, it is increasingly important for the finance functions to improve long-term capital planning. Best practice in financial governance requires the consideration of a range of alternative procurement and financial structuring options that will support the development of financially sustainable utilities.

The identification and prioritization of projects, within a long-term planning scenario, should be considered both from a technical and financial perspective. The initial evaluation process of all projects, regardless of a proposed procurement methodology, should be based on an economic cost-benefit analysis. Projects should then be prioritized, whilst the feasibility process will assist with an early evaluation of a relevant procurement process.

It is fundamental in this evaluation process to consider the life-cycle cost of a project. The outcomes of the life-cycle cost evaluation process will lead to better decision making regarding the most appropriate procurement option, be it a traditional procurement, Public-Private-Partnerships (PPPs) based procured project, or other. Alternative procurement methodologies including PPPs, performance-based management agreements, affermage, lease, design-build-operate and maintenance contracts represent tried and tested options, including in the African context. The special purpose companies inherent to PPP transactions, similar to traditional procured infrastructure during the financial structuring phase, make use of blended finance solutions ensuring value for money required by the project sponsors. Today, most African countries, according to the World Bank, have either PPP policies and/or a PPP Act which has nurtured significant progress towards improved understanding and regulatory certainty by all relevant actors (Vallee, 2018).

Additionally, water utilities find it increasingly difficult to take on debt to finance infrastructure developments. Creditworthy water utilities need to fully apply the principles inherent to long-term capital planning. This in effect translates to finance directors strategizing and operationally making use of a variety of financial instruments that may include both on-balance sheet and off-balance sheet financial products. Long-term loans and bond instruments represent on-balance sheet exposures whilst export credit facilities, provided by the export credit agencies, represent a good example of an off-balance sheet financial structuring facility. Add a mix of grants, government, and or external grant funds into the structuring package and the utility has a well-structured blended finance solution. The KIFFWA-Miradari Bulk Water Supply Project Case Study (see box) illustrates the benefits of long-term capital planning and blended financial structuring to ensure financial sustainability.

### Challenge: Sustainable Tariff Setting

The 2018 Global Water Leaders Group in partnership with Arup’s world-wide water tariff survey indicated a 3.8 per cent year-on-year increase in water tariffs (Global Water Leaders Group, 2018). Wastewater prices specifically are rising faster than water prices globally, pushing bills up around the world. Basic guaranteed water standards must be affordable to all persons to respect and advance the human right to water while sufficiently recognizing and accounting for the diverse values of water (economic, environmental, cultural, social etc.).

Sustainable tariff setting remains a highly complex and politically charged issue. If tariffs are placed as a level high enough to be cost reflective and provide an income stream for continued investment in water networks then, typically, water use per consumer drops — leading to an eventual drop in revenue for the water utility. If the tariffs are raised further to offset the drop in water use, then resentment amongst consumers can grow, leading to resistance to high prices at the political level. Likewise, if tariffs are set too low, then user fees do not cover the operational and or capital costs of the water utilities leading to the failure of the utilities and or the water utilities inability to deliver proper services to all of its communities including the poor. These tariff challenges also have a direct influence on the credit-worthiness of utilities and represent a key reason why utilities are often unable to qualify for debt from both commercial and development high enough to be cost reflective and provide an income stream for continued investment in water networks then, typically, water use per consumer drops — leading to an eventual drop in revenue for the water utility. If the tariffs are raised further to offset the drop in water use, then resentment amongst consumers can grow, leading to resistance to high prices at the political level. Likewise, if tariffs are set too low, then user fees do not cover the operational and or capital costs of the water utilities leading to the failure of the utilities and or the water utilities inability to deliver proper services to all of its communities including the poor. These tariff challenges also have a direct influence on the credit-worthiness of utilities and represent a key reason why utilities are often unable to qualify for debt from both commercial and development

**Case Study Solutions:**

**KIFFWA-Miradari Bulk Water Supply Project**

**Contributed by:** Joseph Muralitaba, CEO, Kenya Innovation Finance Facility for Water (KIFFWA)

The KIFFWA-Miradari is a bulk water supply project intended to deliver on 4 Sustainable Development Goals – SDG 1 (no poverty), SDG 2 (zero hunger), SDG 6 (clean water and sanitation) and SDG 13 (climate action). The project was initiated purely as a bulk water supply project to address the water supply gaps of the local water utility. The initial feasibility study proved technical feasibility but the project failed to attract investors due to a single digit projected internal rate of return.

This challenge was addressed by structuring the project to include additional irrigated agriculture and red meat components. To further augment the financial return, a blended financing model was introduced including a convertible grant in the project development phase, technical assistance for project structuring, and a long-term loan in the construction phase. These measures enhanced the return to double digits and helped attract investors to enable the project to proceed. AEWPP has partnered with the KIFFWA-Miradari Project to address the capacity challenges within the Taveo water utility in structuring and negotiating the bulk water supply agreement between the Private Party and Taveo to ensure long-term financial sustainability of the utility. AEWPP has also assessed the project and its institutional structure to augment the creditworthiness and attract financial investors.

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1 For further details on this event as well as supporting reference and summary documents please visit: [https://www.aewpp.org/waterfinance-week](https://www.aewpp.org/waterfinance-week) or [https://www.aewpp.org](https://www.aewpp.org)
Furthermore, these challenges are exacerbated by inefficient financial management, specifically referring to the billing and collection of tariffs. Technology now makes it possible for utilities to improve their financial governance and to collect an increasing percentage of bills issued.

Emerging from a severe drought in 2018, the city of Cape Town, South Africa, recently saw strict water restrictions placed on consumers and a substantial increase in tariffs. However, it has proven politically difficult to lock in tariff changes in consumer behaviour through long-term price increases. The policy of the city government is that prices will revert to roughly their pre-drought level once the dams reach 85 per cent capacity. Expectations are that many other mega cities will need to grapple with similar challenges in the near future. It is clear from Cape Town’s experience that water tariff solutions need to be coordinated and complemented by other types of policy instruments (laws, public awareness, standards).

### Case Study Solutions:

**Songwe River Basin Development Cooperation**

**Contributed by:** Eng. Gabriel M. Kalinga, Head of Interim Secretariat of Songwe River Basin Commission (Tanzania/Malawi)

Kasumulu is a small town located within the area of the Songwe River Basin Development Programme (SRBDP) on the Tanzanian side at the border with Malawi. Water supply services in the community are poor due to mismanagement and an aging water supply infrastructure. The current system was designed to be used for 30 years and it is now 34 years old with significant deterioration. The water tariffs applied within the community were set by Energy and Water Utility Regulatory Agency (EWURA) of Tanzania in 2010. The water users committee currently resists the establishment of a new water tariff regime, as well as making payments at the existing tariff rate, claiming that the water supply infrastructure should be improved by the government first before constituents are required to pay for the water related services. Furthermore, the user committee holds that water should be considered ‘a free gift from God’ accessed freely as a social good.

In collaboration with the Climate Resilient Infrastructure Development Facility (CRIDF) the Tanzanian Government is now undertaking a prefeasibility study towards improvement of the water supply infrastructure and identifying additional water sources. This study is an intermediary measure being advanced as a complement to the long-term measures to be implemented under the SRBDP once the Lower Songwe Dam and Hydropower Plant Project are completed. Under the SRBDP water supply projects for small towns around Kasumulu (Tanzania) and Songwe (Malawi) will be implemented, tapping water from the Lower Songwe dam reservoir after producing hydropower (180.2MW).

The Songwe River Basin Development Programme (SRBDP) is a 10-year programme with integrated industrial irrigation, water supply, and hydropower schemes which jointly aim to enhance food and energy security for the basin communities in the context of the overall socio-economic development of Malawi and Tanzania. The SRBDP and specifically its Irrigation and Drainage scheme participants will be required to pay a fee for water provided from the new dam through the canals being planned. It is unsure what the level of these fees will be, but it is important for the project transaction advisors to consider both the economic and social parameters. Calculating these fees and communicating the importance of cost recovery to stakeholders, through a fee structure, is critically important. The AEWPP is working with the SRBDP in developing a commercially sound business model for the agri-businesses that will underpin the irrigation schemes along the Songwe River.

The Songwe River Basin Development Cooperation aimed to balance these economic and social valuation considerations around water tariffing as described in the included case study (see box).

### Challenge: Human Resources management

The water sector is struggling with human capacity deficits at all levels (municipal, national, regional, and global), resulting in challenges to manage water infrastructure and undertake long-term strategic planning. The water sector has proved difficult to attract the needed skills and competencies both in developing and developed country contexts. Many intersecting factors contribute to this challenge.

High levels of retirement have been seen across all ranks and skill sets in the sector, often responded to with tra-
African EU Water Partnership Project – 2019

The below recommendations are drawn from practical engagements of the authoring bodies in supporting water infrastructure development in Africa and Sweden, as well as recommendations from stakeholders elevated during the public discussions at SFWT’s World Water Week 2018 in relation to the three challenges discussed in this issue paper.

- Increase human resource management capacity for long-term capital planning at the level of the responsible government entity to evaluate life-cycle project costs and utilize and manage alternative procurement processes.
- Ensure integrative long-term planning around the three sources of finance for water supply, tariffs, transfers and taxes, to enable the continued expansion and maintenance of water networks.
- Establish tariffs reflective of the values of waters (economic, environmental, social, cultural) while ensuring basic guaranteed water standards for all.
- Mainstream new technologies to improve asset management and financial governance of water utilities.
- Increase private sector participation in the delivery of water infrastructure and related services through long-term performance-based contracting.

References:


The Africa-EU Water Partnership Project (AEWPP) is a joint undertaking by the European Union, the African Ministers Council on Water (AMCOW) and the Government of Sweden through Sida that aims to enhance the financial viability of water infrastructure projects in Africa by making more public and private capital accessible for water-related infrastructure projects and encouraging and supporting African governments to invest in water governance through capacity building. AEWPP is financed by the European Commission and project implementation is assigned to the Stockholm International Water Institute (SIWI).

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About SIWI
Stockholm International Water Institute (SIWI) seeks to strengthen water governance for a just, prosperous and sustainable future.

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