
Water Financing Facility

LAB INSTRUMENT ANALYSIS

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The Lab is a global initiative that supports the identification and piloting of cutting edge climate finance instruments. It aims to drive billions of dollars of private investment into climate change mitigation and adaptation in developing countries.

AUTHORS AND ACKNOWLEDGEMENTS

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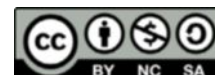


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CONTEXT

Climate change places an increased stress on developing countries' water resources over the long term as well as vulnerability to extreme events in the short term. To adapt, water utilities in developing countries need to ensure the responsible use and preservation of available water resources, and the development of sustainable water infrastructure to increase access to safe water, all while ensuring robust operational and financial sustainability of their balance sheets.

In order to meet SDG 2030 goals on water access and sanitation, existing annual investments have to increase threefold to USD 114 billion (Hutton & Varughese, 2016). 63% of the capital spending is required in Sub-Saharan African, Southern Asia, and Southeast Asia where rapid urbanization and population growth are major trends.

Private finance will need to fund a significant portion of these needs. But the water sector is traditionally not favored by private investors due to uncertainties on revenues and potential for political interference, particularly in developing countries. The sector has traditionally relied on the “three T’s” of tariffs, taxes, and transfers (in the form of grants), heightening political risks in the sector as well as restraining long-term planning (OECD 2010). Any scaled-up finance flows need to result in low carbon, climate resilient – or climate compatible – infrastructure and utilities, not only for the benefit of water access and supply for the population but to ensure any private investment is secure and viable.

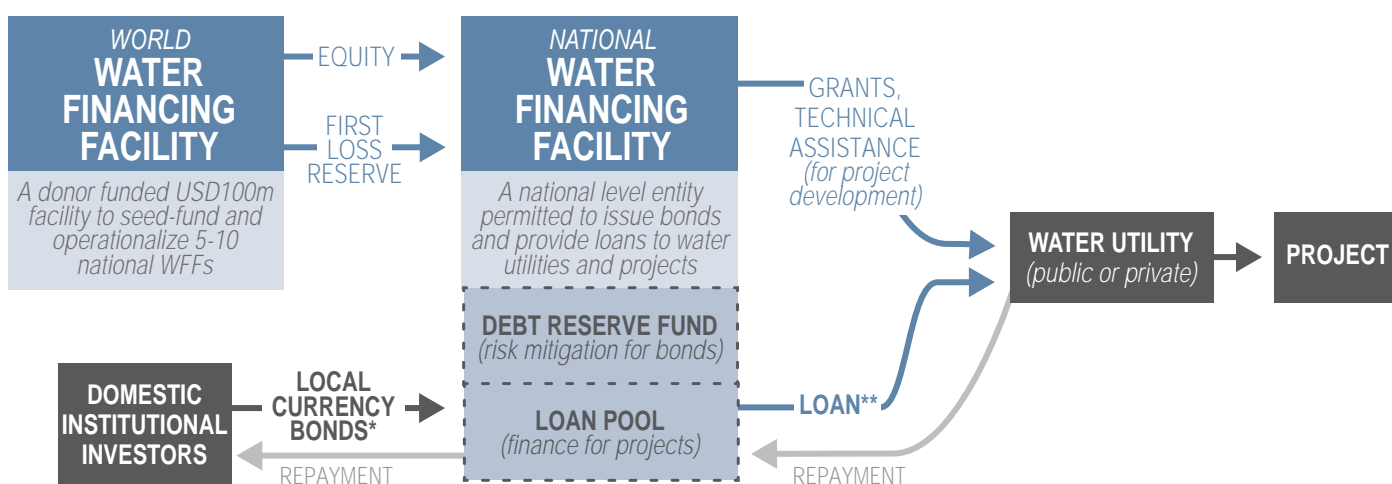
INSTRUMENT MECHANICS

The Water Financing Facility mobilizes domestic investment into climate-compatible water sector projects through the local bond market.

The Water Financing Facility (WFF) aims to mobilize large-scale private finance from the local bond market for the water sector in specific countries in support of their Nationally Determined Contribution (NDC's) towards climate adaptation and mitigation, as well as contributing to the availability and sustainable management of water and sanitation for all. It seeks to mobilize this domestic private finance with public funding and international investors to help bridge the investment, infrastructure, and sustainability gaps countries are facing.

As illustrated in Figure 1, the WFF sets up facilities at the national level that can provide long-term, lower-cost local currency loans to public or private water utilities that have little to no access to finance in the market, or solely at poor terms. The WFF loans are backed by the corporation but linked with specific water infrastructure investments that have been screened and designed to enhance climate resilience and mitigation. The WFF then leverages its blended finance capital structure to issue local currency, locally-rated investment-grade bonds to domestic institutional investors. Incomes generated by water utilities are ring-fenced to provide creditworthiness beyond the utilities' own balance sheet for the loans. National governments and local authorities may also provide a revenue pledge to the facilities' debt reserve fund to mitigate risks.

Figure 1: Overview of the World and National Water Financing Facility Concept



***Terms:** For Kenyan Pilot, aim is to issue USD 250m in local currency bonds over 5 years (1st issuance USD 25-40m); 15-20 year tenor.

****Terms:** USD 2-10m/100% of project cost, pass-through of bond rate plus spread

These national-level facilities are seed-funded by a World Water Financing Facility (WWFF), a limited liability company that enables the creation of national facilities and provides financial engineering, transaction advisory, and financial management support to them. Funded by donors, development finance institutions (DFIs), and impact investors with up to USD 112 million in public finance, the WWFF aims to centralize knowledge, expertise, and budgets to replicate and scale up 8 national-level facilities.

In many countries, only large flagship projects typically receive the attention of traditional donor or commercial investors. National Water Financing Facilities (NWFFs) will target small, medium, as well as large-scale projects and enable them to access finance at suitable terms. After identifying these projects, the NWFFs will issue bonds in appropriate sizes and frequency for the specific country market. In Kenya it is envisaged to issue a USD 30 million bond in local currency equivalent by Spring 2017 with an aim to raise a total of USD 250 million in bonds over the first eight years.

Domestic pension funds and insurance companies are the primary investor class targeted, but high net-worth individuals and international impact investors interested in investing in local bond markets would also be able to invest. The target return for the bonds is to be placed slightly higher than domestic long-term treasury bonds. The credit risk of the corporate loan pool will be credit-enhanced through a number of measures, namely a first-loss subordinate investment in the NWFF from donors. International financial institutions may provide partial credit guarantees or commercial and political guarantees in the case of export credit agencies. And, national governments may also support the debt service reserve through revenue pledges.

Integrating Climate Compatibility – Resilience, Adaptation and Mitigation

In order to address the climate compatibility challenges of the water sector, the WFF integrates climate considerations at all levels – from country selection, project selection, project design, optimization, reporting, and impact assessment.

In country selection, the level of anticipated water stress and other hazards identified through climate scenarios are assessed. The Facility would also analyze any potential increases in energy demand due to new water infrastructure and look at mitigation opportunities to resolve these issues. Local utilities are also engaged to assess the current climate integration in operations and their need for support.

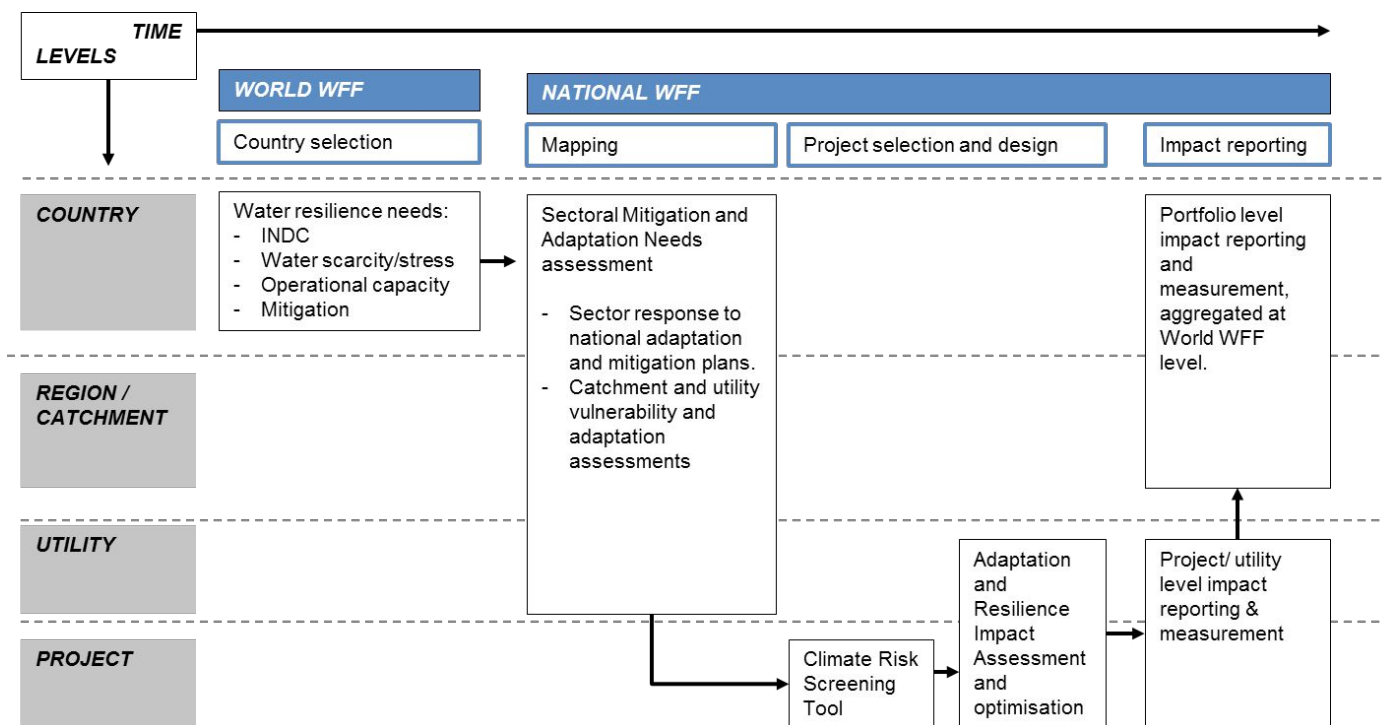
In project selection, the pipeline is mapped against the list of priority adaptation and mitigation actions in the country's NDC. A vulnerability assessment of the water sector is conducted at the national, catchment, and utility level. Projects in the pipeline

are screened for climate risks and their adaptive capacity optimized at the feasibility study stage. Prior to bond issuance, the final portfolio of projects is assessed as to whether they match the needs of the NDC priority actions and/or the vulnerability assessments.

The figure below illustrates the integration of climate considerations at various levels and stages in the implementation process.

The following analysis focuses on the innovativeness, catalytic and transformational impact and actionability of the WFF concept at the national level in developing countries with a particular reference to Kenya as a potential pilot.

Figure 2: Climate considerations integrated in World and national WFFs



INNOVATION AND RISK MITIGATION

Bond financing for the water sector is not new but has not been scaled at a national level with a view on local capital market development and more efficient use of existing donor finance flows.

INNOVATION:

A review of 12 comparable cases and interviews with experts show that some aspects of the Water Financing Facility have been previously adopted across the world.¹ In particular, several initiatives have addressed project development and policy development issues in the water sector. There are also several initiatives that deploy risk mitigation instruments to support local currency finance for infrastructure projects in lower-income countries, promoting domestic infrastructure financing and capital market development.

However, specific aspects differentiate the WFF from existing initiatives, introducing innovative applications that expand the set of financing options for water projects in developing countries:

- **WFF is focused on deal-structuring and increasing the supply of commercial finance.** Many “project preparation facilities” (like the PPIAF, the African Water Facility (AWF) or the ACP-EIB Water Project Preparation Facility (WPPF)) also focus on policy dialogues and the enabling environment. The WFF develops and finances water companies with a focus on projects’

¹ They include the African Water Facility, ACP-EIB Water Project Preparation Facility, Water Financing Partnership Facility, Croatia Cohesion Fund for Co-financing Water and Wastewater, Public-Private Infrastructure Advisory Facility, GuarantCo, Emerging Africa Infrastructure Fund, Municipal Infrastructure Investment Unit, Findeter, the Tamil Nadu Water and Sanitation Pooled Fund, Peru RPICA-backed Water investments, and Viveracqua Hydrobond.

bankability. In this context, it provides corporate funding at commercial-like rates, which encourages the local utilities to perform better than they would under concessional finance terms.

- **WFF works on national level entities.** Geographically, most of the initiatives analyzed are mandated to operate across regions. The WFF would develop multiple national facilities that focus on single countries, thus ensuring a better understanding of the local market needs.
- **WFF specifically focuses on the water sector and mitigates sector-specific risks.** Several facilities providing risk mitigation and finance solutions in developing countries are focused on infrastructure. The WFF has a specific mandate on the water sector. Existing support mechanisms for infrastructure such as guarantees more often focus on energy sector due to the availability of more bankable projects brought about by greater clarity on revenue streams associated (Zuidberg 2016).

Examples exist of institutional investment in the water sector through pooled local currency bonds, in Peru, Colombia, India, and Italy (PFI 2015; CIG 2009; Bond et al, 2012; EIB 2014). A review of these cases reveals potential lessons for a WFF including:

- **Guarantee coverage can be expected to be between 20% - 50% of the credit risk.** The 2002 Tamil Nadu Water and Sanitation Pooled Fund transaction in India was enhanced by a 50% guarantee from USAID’s Development Credit Authority while the Veneto region in Italy provided a 20% guarantee on the Viveracqua Hydrobond.

- **Pooling arrangements enable small and medium size utilities and municipalities to access finance.** Nine utilities received finance through the Viveracqua Hydrobond; 13 municipalities through the Tamil Nadu bond, while 29 received finance in the 2009 Colombian water bond issued by Grupo Financiero de Infraestructura. (CIG 2009).
- **Long term funding can range from 15 to 23 years.** The Tamil Nadu bonds were set at 15 years tenor; 19 years in the Colombian transaction; and 20 years in Italy. Different tranches ranged from 18 to 23 years in the 2011 USD 340 million bond transaction for the Taboada water treatment concession projects in Peru.
- **Ring fencing revenues can help secure local investment grade ratings.** In the Tamil Nadu bond, escrow accounts were funded by municipalities through set-asides from their general revenues. State governments also committed to divert municipal payments in case debt service reserves were depleted. In Peru, government-backed certificates with payment obligations for completed construction milestones were used in 2011 as collateral.

BARRIERS ADDRESSED AND RISK ALLOCATION: CONNECTING LOCAL INVESTORS AND WATER UTILITIES WITH LONG TERM FINANCING

The following barriers are addressed through the WFF concept.

Limited access to finance: In developing countries, water is perceived as a social good with low ability to generate commercial returns. As a result, commercial banks and capital market participants are generally unfamiliar with water projects and the credit analysis of water utilities (Bender 2015). In addition, capital markets are often insufficiently developed to support such projects (OECD 2010). In Kenya, for example,

the current investment gap for water supply and sanitation is estimated in almost USD 700million/year, but only 10% of local utilities are deemed creditworthy (Republic of Kenya, 2013). The majority of available finance for new investment originates from Official Development Assistance flows.².

- The WFF will aim to provide access to finance for local water utilities through the local capital market, primarily with the issuance of investment-grade bonds from the facility against a portfolio of loans to utilities.

Poor terms of available finance: In the water sector the tenor of available commercial loans rarely exceeds five years, not only in developing countries but also in Europe (CPI 2015). Transaction costs also impact the decisions of corporations and municipalities on issuing bonds (OECD 2010). In Kenya, corporate loans are available for five years at an average interest rate of 18.5% (Central Bank of Kenya 2016). As most water projects have long useful lives (e.g. wells, reservoirs, distribution piping, treatment facilities), long tenor financing should be made available to spread the costs over similarly long periods.

- The WFF will provide financing solutions that better match the needs of infrastructure water projects, in particular loans with longer-than market terms (up to 15 years in Kenya) and interest rates that are up to 3 percentage points lower than alternatives.

Lack of creditworthy utilities/ projects: Assembling a pipeline of creditworthy projects and serviced companies is a significant barrier in a number of developing countries. The absorption rate of domestic and external funds (i.e. the share of official commitments utilized over a given period) for the water and sanitation sectors

² Data from 2009 – 2014 has shown that 57 per cent of funding for water supply and sanitation sector had originated from donors, while 43 per cent came from the Government of Kenya (WASREB/WSP 2015b).

is respectively 54-60% and 38-48% across developing countries (GLAAS 2014)). This means that around half of committed money is effectively invested into projects. In Kenya, one of the most developed water markets in Africa, just 13 utilities are considered creditworthy (around 10% of the total) and another 27 are underperforming financially (Gakubia et al. 2016).

- In order to create a sound project pipeline, the WFF project development team will focus on the most creditworthy utilities in the sector and assist others in enhancing creditworthiness by providing technical assistance and project development to improve their financial sustainability (e.g. focusing on projects to reduce non-revenue water). A potential pipeline of projects is listed in section 4.2.

Lack of risk management capacity: The water sector in developing countries is subject to more intense commercial risks (high non-revenue water and low collection rates), contractual risk, foreign exchange risk (mismatch between costs and revenues are in local currency whilst financing is usually in foreign currency), sub-sovereign risk and political interference (OECD 2010). Local investors are also less sophisticated or experienced in evaluating risks related to corporate debt. 24 countries with rated government bonds do not have local currency corporate bonds to allocate to (Bloomberg, CPI 2016)

- In addition to assisting utilities performing their due diligence process; the WFF would include several mechanisms for credit-risk mitigation including: i) ring-fencing of revenues; ii) debt-service-reserve accounts, iii) guarantees (sovereign guarantees or by municipalities, by regional or central

authorities; v) donor reserve fund / first loss facility; vi) currency exchange swaps.

Inadequate revenue streams (tariffs): Non-revenue water (NRW) represents water that has been produced and is “lost” before it reaches the customer (either through leaks, through theft, or through legal usage for which no payment is made) and is estimated to be 30-35% on average across all countries (IBNET 2014). In Kenya NRW is above 50%. Moreover, operating cost coverage ratios of utilities show that full costs are rarely covered or not recovered at all, especially in middle-income countries where the water sector faces an increasing demand from higher economic growth rates. Lack of coverage of basic operation and maintenance costs increased from 28% to 50% between 2000 and 2010 in developing countries.

- While the WFF aims to establish in countries where there are reliable tariff systems or where ring-fencing of the debt service is possible, the ability to ensure that tariffs cover loans is subject to the local political context. In general, a focus on investments that reduce NRW as well as overall utility creditworthiness would mitigate the impact of tariffs that are too low.

Climate risk management capacity: Inability to recognize and evaluate the materiality of climate change risks and a lack of knowledge on how to manage them represent key barriers to water utilities in responding to climate change. This is particularly true for small and medium-sized enterprises (SMEs) in middle-income and developing countries (CPI 2015).

- See section 4.2

Affordability constraints: While tariffs may not fully cover utilities' costs, bill payers still tend to consider them too high (regardless of the level); nonpayment or late payment is the norm for many consumers. The overall percentage of income spent on water continues to decrease as governments are reluctant to approve higher tariffs, but costs continue to rise (IBNET 2014).

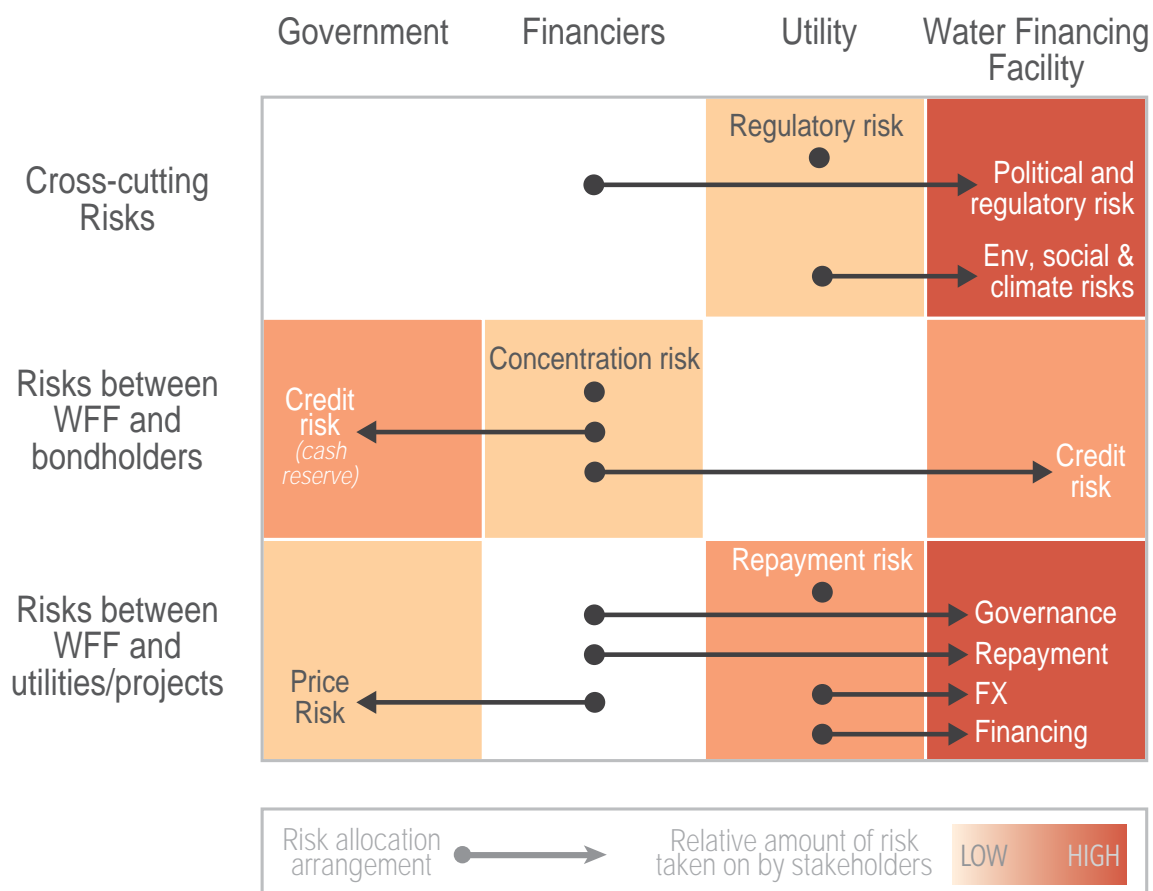
- According to our estimates, the WFF will reduce financing costs for utilities, and in turn water tariffs as a consequence (where they are fixed on a cost-recovery basis, like in Kenya). The WFF will also reduce the dependence of the water sector on international aid for development, freeing up

funds to be invested in other development activities.

As an intermediary, the WFF assumes and manages risks for investors and utilities. Government plays a supporting but important role.

In Figure 3 below, the above barriers have been translated to risks and mapped against which stakeholders bear them namely: the government, financiers such as bondholders or commercial investors in a project, water utilities and the WFF itself.

Figure 3: Risk Allocation Map among stakeholders



IMPACT

For a given project, WFF financing can improve debt service coverage by 71% and allow cost-reflective tariffs set by the utility to be stabilized.

QUANTITATIVE MODELLING

Better debt terms have multiple benefits

We have applied the preliminary financing terms of the WFF against reference financing terms for a water infrastructure project in Kenya. This results in a 23% reduction in the cost of debt over a 15 year tenor rather than a typical 5 year loan available from a local commercial bank.

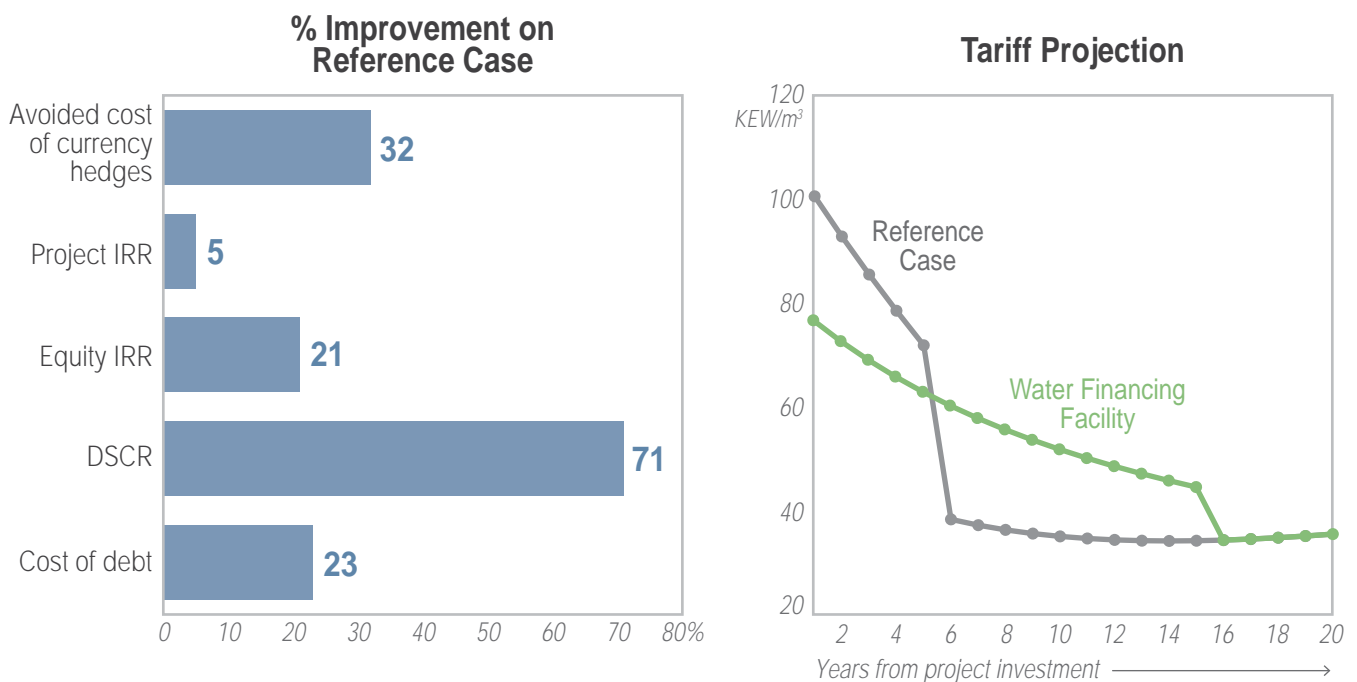
The estimated quantitative impact of these terms on a given utility and project is an increase in debt service coverage ratio by 71% and the internal rates of return are improved by 5% for the project and 21% for the utility in a standard 70/30 debt-to-equity ratio.

In addition, local currency lending means a saving of 32% in avoided costs to service a USD-KES currency swap estimated at 11%. Applying cost recovery tariff-setting formulas proposed by the local regulator (WASREB 2014) also illustrates that the burden of financing new infrastructure may be lower in the initial years of the project due to the longer term and lower interest rate of the WFF financing.

Channelling finance through a dedicated World Facility saves time and costs

The added value of channeling donor finance through a dedicated World WFF is the ability to recycle savings as the first national facilities break-even into establishing new facilities. In a scenario where eight national level WFFs are established without the added time and costs efficiencies of a dedicated centralized facility, we estimate a 60% increase in set up costs that lead to an overall need of 15% more public finance across them (see Annex).

Figure 4: Effect of Water Financing Facility on a Reference case return and tariff dynamics



ENVIRONMENTAL AND SOCIAL IMPACT

The facility adopts a step-wise approach in identifying both priority adaptation and mitigation actions in target countries and climate vulnerabilities at catchment and utility levels, and assesses bond portfolio impact against these factors .

The WFF will have positive environmental and social impacts associated with providing water infrastructure. These impacts include ensuring access to clean water and sanitation, reduced pollution, improved hygiene and health, and socio-economic development around jobs and food security.

As a central goal of the WFF, the types of projects financed will have a clear linkage to improving resilience against climate change, adaptive capacity, as well as climate mitigation potential in the water sector. A step-wise approach is integrated in how countries are selected for a national facility as well as projects, and the overall bond portfolio: The Facility will identify priority actions related to NDCs and the water sector, the climate vulnerability context of the country, catchment area, and utilities. It will assess the construction of the bond portfolio against how it addresses these priority actions and vulnerabilities.

During the project development stage, the Facility will provide assistance to ensure utilities optimize projects for adaptive capacity against a cost/benefit analysis approach.

A broad list of water utility projects may fit this pipeline:

- Construction and upgrade of water distribution networks, plus upgrading of

administration and billing to reduce non-revenue water (NRW)³

- Construction and upgrade (energy efficiency) of sewer systems
- Construction and upgrade of wastewater treatment plants, including biogas installations and reuse of sludge
- Reinforcement of river basins, including protection, and promotion of recharge
- Expansion of water reservoirs
- Renewable energy solutions for water and waste water treatment

Table 1 below maps the key priority actions in the water sector related to Kenya's NDC framework against the potential pipeline of projects currently under screening in Kenya.

PRIVATE FINANCE MOBILIZATION AND REPLICATION POTENTIAL

Pilot mobilisation

In Kenya, a pilot of the Water Financing Facility aims to catalyze USD 250 million in local currency equivalent, private climate finance in the first eight years through its bond issuance program. As the financing to utilities in the form of corporate loans is designed to match 100% of the project investment costs, no additional private co-financing is mobilized from the utility at the project level. However, it is expected that utilities availing of the WFF will be able to access increased amounts of commercial finance from local and international banks for general corporate purposes and bridge financing as required, due to increased capacity for debt service and operational effectiveness.

As currently modelled, the Kenyan WFF provides a 42% risk coverage over the portfolio from public finance actors through the World WFF's first loss support, guarantees secured from other

³ Non-revenue water represents water losses due to leakage or no payments.

Table 1: Impact assessment areas of Water Financing Facilities

Kenya NDC-related priority actions ^a	Potential pipeline projects	Relationship to NDC framework
<ol style="list-style-type: none"> 1. Mainstreaming of climate change into all water resource management plans and actions 2. Water conservation efforts including the reversal of degradation of the main water towers and rehabilitation and restoration of all water catchments 3. Increasing urban & rural domestic water supplies urban sewage services to help combat water borne diseases and associated socioeconomic impacts 4. Enhance irrigation and drainage to increase agricultural production and address water requirements for livestock production 5. Carry out effective trans-boundary water resources management 6. Carry out water resources assessment, documentation and dissemination of necessary information to stakeholders 	Tertiary sewage system (GIS)	1,3
	Water treatment plant, water mains	1,3
	Water transmission mains, water storage, sewer connections. (GIS, district metering NRW reduction)	1,2,3
	Water treatment plant, water bottling plant, water storage, distribution systems, tertiary sewage system (GIS, district metering NRW reduction)	1,2,3
	Intake, water treatment plants, transmission mains, distribution system (GIS, district metering NRW reduction, hydro, informal settlements)	1,2,3
	Water treatment plan, hydropower plant, NRW investment programme to control physical and commercial losses (High efficiency pumps, mini-hydro, GIS/GPs, district metering NRW reduction, E-M meters, software for comm. Mgmt..)	1,2,3
	Water distribution to peri-urban areas	1,3

a National Climate Change Action Plan (2013) – a National Climate Adaptation Strategy is to be published in 2016 including sector-specific actions.

multilateral organizations, and revenue pledges or guarantees provided by local governments. In addition to the grants provided for technical assistance for project development and operational expenses, the total amount of public finance mobilized is USD 120 million, representing a public-private finance leverage ratio of 1:1.3.⁴

However, over the course of 10 years, it is proposed that the World WFF help establish eight national level facilities with USD 79 million in repayable grants, USD 11 million in outright grants and USD 19 million in contingency capital. In addition to country-specific guarantees and governmental

4 Leverage calculations refer to public finance as all expenses, repayable grants and guarantees from the World WFF (USD 35m) and external providers of guarantees (USD 85m) against total bonds outstanding in the portfolio after 10 years (USD 250m). The ratio against total cumulative bonds (USD 400m) is 1:2.7. The leverage ratio of only WFF public finance excluding external providers of guarantees is 1:6.7 (outstanding bonds) to 1:12 (cumulative)

support provided, this aims to achieve a leverage ratio of 1:1.4.⁵ Not all the financing is required at the outset and a phased-in approach is described in the Implementation Pathway section.

Replication potential

The minimum requirements in the WFF for domestic capital market development alongside adequate governance of water sector actors, means that the replication potential for the concept is relatively limited to several countries in the short-term. We have identified seven country markets where a WFF may be deployed in one to two years (Tier 1), due to local bond market capacity and the water policy and regulatory framework set down by the government. Another

5 As above, the leverage is extended to 1:3.4 against total cumulative bonds; 1:8.2 when referring solely to World WFF public finance (outstanding bonds) and 1:15.6 for World WFF public finance (cumulative bonds)

Table 2: Potential country replication markets

Theme	Tier 1 Countries	Tier 2 Countries
Bond market development	<ul style="list-style-type: none"> • Existence of sovereign credit rating (S&P, Moody's, Fitch) • Existence of corporate bond market (Bloomberg) • Presence of domestic institutional investors 	<ul style="list-style-type: none"> • Presence of domestic institutional investors (denoting a private placement transaction may be feasible)
Water Sector Policy	<ul style="list-style-type: none"> • Political risk score of <7 (OECD 2016) • Policy or investment plans for water sector are agreed and implemented (GLAAS 2014) • Tariffs cover >80% of OPEX (GLAAS 2014) 	<ul style="list-style-type: none"> • Political risk score of <7 (OECD 2016) • Policy is approved but not yet fully implemented (GLAAS 2014) • Investment plans are agreed but not fully implemented (GLAAS 2014) • OPEX is defined to be covered by tariffs in Financing Plan but at <80% (GLAAS 2014)
Utility Performance	<ul style="list-style-type: none"> • Performance indicators are tracked against a baseline (GLAAS 2014) 	<ul style="list-style-type: none"> • Performance indicators agreed but not tracked (GLAAS 2014)
Countries	<ul style="list-style-type: none"> • Africa: Kenya, Morocco, South Africa • Asia: Indonesia, Thailand, • Latin America: Colombia, Panama. 	<ul style="list-style-type: none"> • Africa: Benin, Ghana, Nigeria, Senegal, Tanzania, Tunisia, Uganda • Asia: Azerbaijan, Bhutan, Fiji, Mongolia, Sri Lanka, Vietnam • Latin America: Bolivia, Honduras, Peru.

16 countries may be applicable in the medium to long term (Tier 2) given the presence of domestic investors, and emerging tariff, policy and performance tracking activities in the water sector that may be improved once the incentive of a WFF is proven.

As noted above, some markets have already experienced bond financing to the water sector, namely, Peru, Colombia and South Africa. Other countries have also featured one-off deals with private participation (higher than 50%) in financing water infrastructure since 2005 such as Indonesia, Morocco, Thailand, Ghana, Tunisia and Vietnam (PPI 2016). While regular private investment is now a feature in Peru, Colombia, and Thailand, the one-off nature of investments in other countries suggest that a WFF may fill a gap in the market. Even in the more developed markets, the additionality would have to be assessed against the needs of the water sector, particularly small

and medium-sized utilities and municipalities who lack access to capital markets in these countries.

In seven countries where a WFF may be deployed, USD 1.23 billion per year in private finance may be potentially mobilized out to 2030.

We calculate the potential to mobilize USD 1.23 billion per year in private finance out to 2030, assuming a national level WFF captures a 25% share of the incremental investment needs to meet the SDG 2030 goals in the seven identified Tier 1 countries.⁶ In Tier 2 countries, an additional USD 1.22 billion per year in private finance out to 2030 may be mobilized.

⁶ Calculated against the per capita incremental investment needs for low-income and lower middle-income countries against projected populations of countries in Tier 1 and Tier 2 (Schmidt-Traub 2015)

IMPLEMENTATION PATHWAY

The proponents of the WFF have prepared a detailed governance structure and cash flow model, along with establishing significant stakeholder engagement in Kenya to prepare the ground for a pilot (see Annex).

Table 3 presents an implementation pathway and key milestones for the World WFF and National WFFs in three phases. Phase 1 focuses on the set of the facilities and the Kenya Pilot. Phase 2 focuses on the expansion of the concept to two more countries as well as the continuation of the Kenyan facility. Phase 3 focuses on the set up of another five NWFFs. The associated costs for each phase are largely in repayable grants, with outright grants representing costs for technical assistance for project development.

In addition to the timed phases of the World WFF activities, key milestones for a typical NWFF are presented that could take up to two years to complete from a standing start, provided there is:

- Adequate data on water utilities creditworthiness; and
- Domestic investors are not restricted to invest in non-government bonds
- Adequate pipeline to be developed

Implementation risks

Implementation risks focus on political risks and pipeline, investors and donors.

Risks to implementing a WFF at a national level are primarily in the political environment, deal origination, credit structuring and securing both private and public investors.

Political risks are significant, and leadership changes could alter support for a local WFF or

supporting legislation. Depending on the state of national legislation in the water sector, incomes generated by water utilities need to be ring-fenced in order to be used for loan repayments. However, collateral can also be provided through other measures that would require no new legislation such as donor guarantees, national guarantees, or already established broad taxes.

Delays in pipeline development and deal origination may be experienced due to a number of reasons including:

- Poor governance standards among utilities may result in an increased amount of technical assistance required to help establish a pipeline;
- A sole focus on projects that increase adaptive capacity may hamper pipeline development; and
- High reliance on ODA/grant funding may reduce the amount of grant funding available for risk-sharing on the individual project investments and act as a disincentive for utilities to seek loans from the WFF.

Final considerations on where to replicate national level WFFs will largely rest on the delivery of a consistent pipeline of bankable projects from creditworthy service providers.

Attracting institutional investors may be difficult due to the following:

- Asset size may be too small due to a small pipeline;
- Transaction costs related to investing in the bond may be too significant, particularly in countries without a liquid or functioning capital market;
- Opportunity costs for investors who may invest in higher yield government bonds for a

Table 3: Implementation Pathway for a typical Water Financing Facility

Milestone	Timeline and Finance need
Phase 1: Setting up World WFF and Kenya Pilot	Grant: USD 1.12m Repayable Grant: USD 8.3m
Business Plan Development and initial funding decision (DGIS)	Year 1: Sept. 2016
World WFF and Kenya NWFF established	Year 1: Early 2017
First bond issuance in Kenya – USD30m+ equivalent	Year 1: Spring 2017
Phase 2: Expansion to 2 NWFFs	Grant: USD 2.25m Repayable Grant: USD 47.75m
2nd NWFF established and first bond issued	Year 2
Second Kenya bond issued	Year 2
3rd NWFF established and first bond issued	Year 3
Third Kenya and Second No.2 NWFF bonds issued	Year 3
Phase 3: Expansion to 5 NWFFs	Grant: USD 5.65m Repayable Grant: USD 52.5m
One NWFF established each year following the common milestones identified below	Year 4-8
World WFF reaches break-even cash flow	Year 8
Revolving profits into new NWFFs	Year 9+
Typical milestones to establishing NWFFs	Month
Country Desk Scan and Pipeline review	1
Engagement with national government, regulators, industry, investors	2
Scoping Mission and Feasibility Study incl. gap analysis, and donor alignment on efficient use of public finance	5
MoU and set up of joint steering committee with stakeholders	6
Business Plan development incl. identification of candidate projects, financial model, legal and governance	9
Enactment of any supporting mandates e.g. agreement on tariff-setting, accountability, guarantees etc.	12-15
Procurement of implementation team and establishment of WFF	13-21
First bond issuance	16-24

shorter maturity risk than those on offer from a WFF; and

- Lack of transparency and information on utility creditworthiness and governance quality.

Market making and investor outreach will need to be an important component of implementation.⁷

Meeting requirements for donors

- Additionality requirements may mean that available pool of donor capital is prioritized in low-income countries and markets where there is an absence of private funding. However, WFFs may only be viable primarily in middle-income countries with a certain

⁷ In Kenya, the bonds will seek to be allocated in the corporate bond portfolio of investors and 'Infrastructure bond' status from the Government providing tax-exempt investor returns as achieved by a USD 330 million bond issued by the Kenya Electricity Generating Company (Kengen) in 2009.

level of financial market capacity. This may reduce the available sources of donor capital with a mandate for these markets or mean that donor funds come associated with low or market rate return requirements that impact the financing model or return provided to the private sector; and

- Donor representation on the Board and Investment Committees of the national WFF that reflect their risk-taking position over other local investors may dilute or impede the perception that national WFFs are directed by local country needs and priorities.

The establishment of the World WFF calls for centralization and efficient use of donor funds to replicate eight national level WFFs. Donors with existing country-specific water or climate programs may choose to align support at the national WFF also. In both cases, donors will have a role in the governance structure of the facilities.

KEY TAKEAWAYS

In countries with growing water demand, lack of access to water and poor quality of water supply and sanitation services, Water Financing Facilities could play an important intermediary role in mobilizing domestic private finance from local pension funds and insurance companies. For utilities, the pass-through of longer term and lower cost debt than is currently available would help them implement longer term infrastructure planning, improve debt service capacity by 70%, and stabilize tariffs over the asset life. In addition, an integrated approach to ensuring climate compatibility of the portfolios through assessments against national priority mitigation and adaptation actions, as well as responding to vulnerability assessments at the national, catchment and utility levels, increases the resilience of the sector against climate impacts..

Notwithstanding the implementation risks outlined previously, the Water Financing Facility aligns with the Lab criteria in the following ways:

- **Innovative:** While the concept of a pooled bond facility in the water sector is not new, it is an innovative approach to set an intermediary for the water sector and local investors at the national level, redirecting ODA flows to more efficient uses. It can also be more adept than previous approaches at targeting local needs, for example, small and medium sized projects.
- **Catalytic:** Capitalizing a World WFF would provide a leverage ratio of 1:1.4 across eight established national level WFFs over 10 years. As a revolving fund, the facility would also allow for that ratio to increase over time. That noted, institutional investors will require

significant engagement to ensure the bonds match their requirements.⁸

- **Transformative:** An estimated USD 1.23 billion per year in private finance may be mobilized out to 2030 to meet the sustainable development goals related to climate resilient water supply and sanitation in seven identified country markets. Replication potential may be constrained due to the need to align investors, pipelines, regulatory frameworks and capital market development. This informs the view that the WFF concept can mobilize large scale, long-term domestic resources as part of the culmination of a broad approach on attracting commercial private finance also from banks and microfinance.
- **Actionable:** A funding decision on a Kenya pilot is scheduled for September 2016 with

the first bond issuance targeted for Spring 2017. Engagement is progressing in South Africa and several other countries as they come forward. Milestones in setting up a WFF may take up to two years to complete from a standing start, provided there is adequate data on water utilities' creditworthiness and domestic investors are not restricted to invest in non-government bonds.

- The proponents of the WFF have prepared a detailed governance structure and cash flow model, along with establishing significant stakeholder engagement in Kenya. In order to move forward with the concept, the pilot of the WFF in Kenya requires approximately USD 9.5 million in repayable grants to establish the facility and issue the first bonds, with USD 12.5 million of guarantees available from donors or DFIs. Another USD 50 million in repayable grants and USD 72 million in guarantees is required to expand the World WFF to two more countries over a three year period.

⁸ Leverage ratios extend to 1:3.4 when calculated against cumulative bonds issued, 1:8.2 when only for World WFF public finance provided and 1:15.6 when only World WFF public finance against cumulative bonds issued.

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KENYA PILOT PROGRESS

In April 2015, the first Kenya WFF scoping mission revealed wide interest and support for the concept and establishment of such a fund, both in terms of borrowing by the water service providers (WSPs) and in terms of sourcing capital from the domestic capital markets. All Kenyan parties including national and local government, regulatory agencies, WSPs, pension funds, banks, development partners, legal firms and investment advisors expressed this interest and support. Kenyan pension fund managers expressed concerns that the interest rate, listing, complexity, and the reliability of the issuer are of vital importance and that the lack of a new Water Act and legality of the borrowing by WSPs is of concern. As a result, the Embassy of the Kingdom of the Netherlands decided to financially support the Kenya WFF Project.

The first step, the preparation of a Kenya WFF business plan and development of a pipeline of bankable project proposals, is underway in preparation of a go/no-go decision in September 2016. If successful, the Kenya WFF would be established by early 2017 and the first bonds issued by mid-2017, likely in the order of KES 3 Billion. The goal thereafter will be one bond transaction of increasing size per year.

For the preparation of the business plan, the Kenya WFF team of experts came together in February 2016 in Kenya during a second mission.

In this mission, a Steering Committee composed of the Cabinet Secretaries of National Treasury and MoWI and the Netherlands Ambassador was created. During the third mission in April 2016 the team continued working on the organizational set-up and generated interest of the major stakeholders. The work now continues towards the Business Plan to be delivered in September 2016.

The Dutch Government, through the Netherlands Embassy in Kenya provided USD 3 million to prepare the Kenya WFF and is currently considering to provide another EUR 10 million in initial finance to start the WFFF process and establish the Kenyan pilot.

The World Bank Group Water and Sanitation Program has assigned an expert with internal budget to prepare and provide technical assistance for domestic resource mobilization and pipeline development for the Kenya Water Financing Facility.

USAID has agreed to provide a guarantee for the first issuance of bonds in Kenya. It is under discussion whether the guarantee will take the form of partial 50% coverage across the portfolio or approximately 20% full first loss coverage after a 10% reserve fund that takes the first loss. Interest has also been expressed by USAID in entering a framework arrangement with the World WFF to provide guarantees for each NWFF on a case-by-case basis.

SCENARIO MODELLING

Base Case: World WFF provides set up costs and first loss reserve for 8 NWFFs of different sizes. Operations start in year 2

No WWFF: 8 NWFFs are set up independently. Operations start in year 3. Fixed costs (legal, marketing, admin) for each NWFF are set.

DFI first: As for base case except DFI finance 100% of first 2 years to demonstrate. Operations start in year 2.

	Base case	No WWFF	DFI first
World WFF expenses/working capital	12,048	N/A	14,014
Equity for NWFF set up	13,237	36,275	37,978
First loss reserve: repayable grants used in initial years	11,500	9,000	0

First loss reserve: Commercial first loss in later years	34,344	36,750	38,440
Repayable Grants: World WFF public capital needs	71,129	82,025	90,432
Outright grants: TA for project development	10,000	10,000	10,000

Contingency	19,000	21,911	24,156
Total WWFF Public Finance	100,129	113,935	124,588
Local authorities	84,480	79,530	84,480

DFI guarantees	192,000	180,750	192,000
Public finance total	376,609	374,215	401,068
Private finance mobilized (outstanding portfolio)	920,000	848,750	862,500
Private finance mobilized (cumulative transactions)	1,660,000	1,452,500	1,660,000
Projects financed #	102	94	96
Year of breakeven	9	11	11
Leverage: total public finance	1.44	1.27	1.15
Leverage: WWFF public finance only	11.93	9.35	8.54

Leverage: portfolio outstanding	12.93	10.35	9.54
Leverage: cumulative deals done	3.41	2.88	3.14
% More Repayable Grant needed	-	15.32%	27.14%
% Savings on set up	-	-63.51%	-19.63%
% more projects financed	-	-7.74%	-6.25%
% Leverage ratio	-	-12.11%	-20.26%
% less private finance mobilized	-	-7.74%	-6.25%