

2018 ANNUAL REPORT



HOSTED BY
WORLD BANK GROUP
Water

LOCAL INNOVATIONS FOR GLOBAL WATER SECURITY

WATER SECURITY PARTNERSHIPS
FOR PEOPLE, GROWTH, AND
THE ENVIRONMENT

2030WRG 2018 HIGHLIGHTS



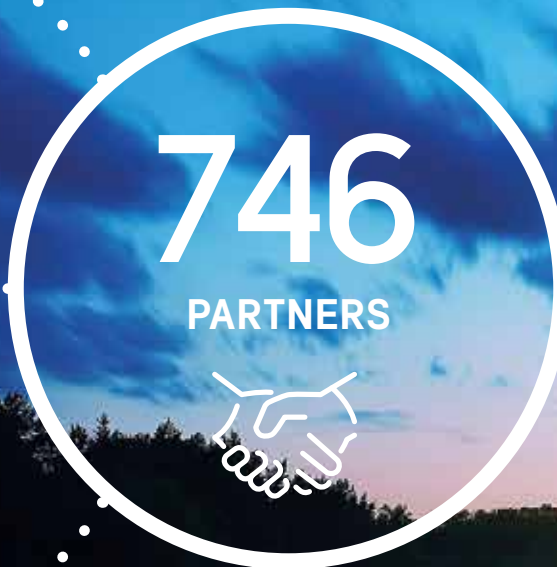
308
PRIVATE
SECTOR



154
GOVERNMENT



284
CIVIL SOCIETY
ORGANIZATIONS



14
COUNTRIES/
STATES

THESE PARTNERSHIPS HAVE TOGETHER:

- identified **76 priority areas of work**
- developed 108 concept notes
- used these concept notes to create 72 final proposals
- 61 of these projects, programs, reforms, and financing mechanisms are currently under implementation.
- The **total value of financing** for water-related programs facilitated by 2030 WRG and partners is **over \$444 million**.
- The program helped avoid 152 million cubic meters freshwater abstraction
- 2030 WRG and partners **helped reduce 233 million cubic meters of discharge of untreated waste water**
- **14,000 cubic meters of cost-effective water storage** was increased

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MESSAGE FROM THE CO-CHAIRS

Safeguarding water for future generations

Water is one of the most critical sustainability challenges facing the environment, society and business. Water is essential to life but it is in short supply in many places around the world. Looking ahead, as populations and consumption grow, the world's already strained water resources will be stretched even further to secure the food as well as sanitation that society demands. More broadly, water scarcity will have a significant negative impact on economic growth and societal prosperity with all the implications that this entails.

Importantly, the water challenge is one that we can act on now to deliver impact. It thus behooves us all to work today to safeguard water resources for future generations. This requires a broad perspective with initiatives that can contribute to comprehensive and credible, and sometimes, disruptive solutions. And it requires a partnership mindset: it is clear that water cannot be managed alone and that the response to the water challenge must be stakeholder-inclusive, bringing social, economic and environmental benefits to local communities.

The 2030 Water Resources Group is today a credible example of such a partnership mindset. 2030 WRG focuses on local contexts, where it supports country-level collaboration between governments, business and civil society to achieve water security. Its growing track record stewarding multi-stakeholder platforms from dialogue to action and impact has shown significant results in FY18. A total of 746 partners (308 from the private sector, 154 from government, 284 from civil society/other) participating in 14 countries/states have created working relationships across stakeholders and helped to break down traditional silos to establish platforms that survived changes in government.

2030 WRG is committed through its approaches to breaking down silos across sectors and actors in maximizing financing for development to ensure better water resource management to help meet the Sustainable Development Goals. The new hosting arrangement under the World Bank brings valuable strengths to 2030 WRG—including strong government relationships, depth of water expertise and projects, and shared opportunities for resource mobilization to guide these efforts.

Paul Bulcke
2030 WRG Governing Council Co-Chair
Chairman of the Board of Directors, Nestlé



MESSAGE FROM THE CO-CHAIRS

Collective action to manage and sustain water resources

Water is at the core of sustainable development and is critical for socio-economic progress, healthy ecosystems and for human survival. It is vital for reducing the global burden of disease and improving people's health, welfare and productivity. The physical world of water is closely connected to the socio-political world, with water often a key factor in managing risks such as famine, migration, epidemics, inequality and political instability.

The world is not on track to achieve the Sustainable Development Goal on water and sanitation, according to the recent SDG 6 Synthesis Report 2018. Water pollution is worsening, water and sanitation lack funding, governance structures are weak and fragmented, agriculture is putting enormous stress on water resources, institutional and human capacity constraints across the water sector are hampering progress, and ecosystems and their services are in continuous decline.

Solving these issues requires more effective policies and inclusive strategies, additional and innovative forms of domestic and international financing, community participation in decision-making, efficient long-term human and institutional capacity, and smarter technologies.

The World Bank Water Global Practice, with a \$30 billion portfolio, and its partners are committed to strengthening the water sector and supporting service delivery in developing countries across the globe. Addressing big and complex challenges such as global water insecurity will also require global collective action and a change in mindset as to how we collectively value water. We need more partners in different sectors and across value chains to be part of this effort—from the public sector, private sector and civil society.

We see significant opportunities to collaborate with the private sector and scale innovations. I am excited for the World Bank Group to support the efforts of the 2030 Water Resources Group in growing its network of multi-stakeholder platforms that bring together the private and public sectors as equal partners for dialogue and collective action. As such, these platforms can function as test beds that can effectively push innovative solutions. I look forward to continuing to work with 2030 WRG and many of our current partners and invite others to join us in the movement towards global water security.

Laura Tuck
*2030 WRG Governing Council Co-Chair
Vice-President for Sustainable Development,
World Bank Group*

A photograph of a man with a grey beard and mustache, wearing a white turban and a blue and white plaid shirt. He is crouching in a rice field, holding a bundle of rice seedlings in his hands. The background is filled with tall green rice plants. A blue semi-transparent box is overlaid on the left side of the image, containing white text.

**THE TRACK RECORD
OF THE 2030 WATER
RESOURCES GROUP'S
(2030 WRG) IN
STEWARDED MULTI-
STAKEHOLDER PLATFORMS
(MSPs) FROM DIALOGUE
TO ACTION AND IMPACT
IS GROWING AND HAS
SHOWN SIGNIFICANT
RESULTS IN FY18.**

EXECUTIVE SUMMARY

The track record of the 2030 Water Resources Group's (2030 WRG) in stewarding Multi-Stakeholder Platforms (MSPs) from dialogue to action and impact is growing and has shown significant results in FY18.

A total of 746 partners (308 from the private sector, 154 from government, 284 from civil society/other) participating in MSPs in 14 countries/states, have created working relationships across stakeholders and helped to break down traditional silos to establish MSPs that survive changes in government.

The year focused on the smooth transition from being hosted by the IFC to the World Bank Water Global Practice. As part of the transition, Kristalina Georgieva, CEO of the World Bank Group, appointed Laura Tuck, Vice President for Sustainable Development, as Co-Chair of the 2030 WRG Governing Council, to serve together with Paul Bulcke, Chairman of Nestlé. As 2030 WRG welcomed new Steering Board Members, the year offered the opportunity to revisit work program priorities as well as 2030 WRG communication efforts. This new and revised Annual Report aims to focus more on impact and innovation stories, showcasing collective action and partner contributions.

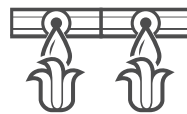
pledging offtake support to farmers adopting drip irrigation. The government is exploring the possibilities for replication of the Ramthal business model in community-based irrigation schemes along a corridor approach covering 650,000 hectares.

Working with the **Maharashtra** Water Resources Regulatory Authority (MWRRA) in **India**, 2030 WRG is supporting the development of tradable and target-based Wastewater Reuse Certificates (WRCs), backed by Blockchain-IoT technologies, for adoption amongst large industries or industrial parks and urban municipalities. The engagement will start with the top 20 water-consuming industrial companies. Innovative, cutting-edge technologies such as Blockchain are expected to create a newer set of resilient institutions with improved transparency and accountability and minimal regulatory intervention.

2018 HIGHLIGHTS

In **Bangladesh**, the Greater Dhaka Watershed Restoration workstream's implementation plan of the Gazipur City Corporation's Integrated Wastewater & Fecal Sludge Management project was approved by the Cabinet Committee Economic Affairs (chaired by the Minister of Finance) for Public-Private Partnership (PPP) implementation. This will be the first public utility project of its kind in Bangladesh to be implemented on a PPP basis. Implementation of this project will help reduce the flow of wastewater in the Gazipur Tongi Zone and the Greater Dhaka Watershed northern region, potentially benefitting 20 million people.

In the **State of Karnataka, India**, the twin issues of low water efficiency and poor livelihoods were tackled with 2030 WRG's Ramthal drip irrigation project, one of the world's largest fully-automated micro irrigation projects. This first-of-its-kind project, with a total investment of US\$130 million, puts the farmers' interest at the core of the initiative. The project covers 24,000 hectares of irrigation area command area and reaches 15,000 beneficiaries in 30 villages. An agreement has been signed between over fourteen companies and government,



THE 2030 WRG'S RAMTHAL
DRIP IRRIGATION PROJECT
AREA REACHES

24K
HECTARES



REDUCING FRESHWATER
ABSTRACTION BY

24Mm³

In **Mongolia**, 2030 WRG led a multi-stakeholder process in 2017-18 to develop standards for reusing treated wastewater for different uses such as car washing, fire-fighting, urban gardening (all in Ulaanbaatar) and dust suppression in mining industries, based on international best practices. The standard was discussed and officially approved for implementation by government. With the approval, treated wastewater will be counted as a new source of industrial water supply in areas where water access is limited.

In **Vietnam**, 2030 WRG conducted a series of stakeholder dialogues and roundtable discussions to gauge public, private and community perspectives on the gap in water resources management and potential solution areas, linked to water pollution prevention and agricultural water use efficiency. These dialogues identified opportunities for collaborative models and policy revisions to accelerate water security planning and implementation.

In **Mexico**, the objective of the 'PPPs for Agri-water Infrastructure' Initiative is to analyze the opportunities for PPP formation. Important milestones include the development of business cases and feasibility studies for five potential PPP irrigation projects, policy recommendations to support PPPs and capacity-building workshops.

In **Peru**, 2030 WRG and partners created the Blue Certificate, an initiative led by Peru's National Water Authority (ANA), to encourage companies to assess the water footprint of their processes and become water-responsible companies. ANA is expecting to save 79,000 cubic meters of water and reuse 137,000 cubic meters of water per year as a result. So far, more than \$1.3

million will be invested by the companies involved in the certification process and 30,000 citizens are expected to benefit from these investments. Shared value projects valued at \$2.8 million will directly benefit 9,233 persons and 20,000 indirectly through the efficient use of domestic water, the improvement of rural irrigation efficiency and the reuse of wastewater in public spaces, as well as a positive promotion of a sustainable water culture.

In **Brazil**, support was provided to São Paulo State Government and SABESP, a Brazilian water and waste management company owned by São Paulo state, for the development of studies and proposals for pilot projects that integrate urban water management functions and promote environmental and landscape recovery of polluted rivers and streams in the City of São Paulo. Such projects could include the installation of compact Waste Water Treatment Plants in flood control reservoirs and water bodies and the recovery of the Anhanguera stream in the downtown capital.

In **Ethiopia**, three stakeholder workshops have been held with the public sector and private sector/civil society advisory groups, to gather input on the development of a Multi-Stakeholder Platform (MSP) in Ethiopia and the development of a hydro-economic analysis process.

In **Kenya**, the Climate Smart Irrigation Facility works to increase water use efficiency and accelerate water productivity improvements in agricultural cultivation, particularly with smallholder farmers. As part of this initiative, an Irrigation Financing Facility (IFF) is being rolled out in partnership with IFC and has progressed to the piloting phase. The pilot project will work with a portfolio of approximately 500 out-growers, alongside

PERU'S BLUE CERTIFICATE
INITIATIVE ENCOURAGES
COMPANIES TO BE MORE
WATER- RESPONSIBLE
AND WILL SAVE

79K

CUBIC METERS OF
WATER PER YEAR

PERU'S NATIONAL WATER
AUTHORITY WILL REUSE

137K

CUBIC METERS
OF WATER
PER YEAR

AMOUNT OF INVESTMENT IN
THE CERTIFICATION PROCESS
BY PARTNERING COMPANIES

\$1.3M

equipment suppliers, off-takers, and two commercial banks to provide access to credit, training and agronomic support to smallholders who require irrigation systems. The estimated financing to be facilitated by the loan facility could translate to \$1 million of investment by the pilot farmers into irrigation solutions.

In **South Africa**, the Strategic Water Partners Network was awarded the 2018 State-of-the-Art Partnership of the Year Award in the clean water category at the 2018 Partnership for Growth (P4G) Summit in Copenhagen as part of a global showcase of innovative private-public partnerships that have made a significant impact in driving sustainable development and climate action.

LOOKING FORWARD

While each country or state is different, there are many commonalities across the 2030 WRG Multi-Stakeholder Platforms (MSPs). For 2019 and beyond, there is power in bringing lessons learned and sharing innovative approaches across the 2030 WRG MSPs. 2030 WRG plans to focus on three key areas:

- **Transforming Value Chains:** With approximately 80% of water withdrawals accruing from agriculture, most of the MSPs in 2030 WRG countries include agri-water workstream. This is an area where 2030 WRG brings depth of expertise in improving water-use efficiency; and by implication other resource efficiencies within an enterprise or value chain – particularly energy. 2030 WRG has a strong focus on developing public-private partnerships (PPPs) to enhance the productive use of agri-water, reducing run-off pollution, and increasing farm productivity and income.
- **Promoting Circular Economies through Wastewater Treatment and Reuse:** With a focus on cross-sectoral water issues and private sector participation for effective water resource management, a key area that cuts across various 2030 WRG countries/states is wastewater treatment and reuse, aimed at advancing circular economy solutions. 2030 WRG focuses on identifying PPP opportunities, and enhancing government spending capabilities. This can be done through green bonds and blended finance for instance. And by bringing in best-practice technological solutions and financing models, implementing demand-side efficiency measures,

supporting both a reduction in freshwater use, mitigating the impacts of untreated wastewater, and energy recovery and production..

- **Water Security and Resilience Planning:** 2030 WRG is also focusing on helping countries develop water security and resilience planning capabilities through different approaches and methodologies, including: the development of hydro-economic analysis and multi-criteria investment prioritization systems, oriented at pursuing water security and resilience; supporting reforms in water allocation regimes to provide for greater water security and legal certainty under greater variability and uncertainty; integrating nature based solutions in water resources management to support climate change adaptation processes; and supporting the private sector in their efforts to develop more robust water risk and water stewardship practices.

The new hosting arrangement under the World Bank brings valuable strengths to 2030 WRG—including strong government relationships, depth of water expertise and projects, and shared opportunities for resource mobilization to guide these efforts. 2030 WRG is committed through its approaches to breaking down silos across sectors and actors in maximizing financing for development to ensure better water resource management to help meet the Sustainable Development Goals.

1 CHAPTER 1 | PARTNERS IN ACTION

Collaboration and Country Leadership to Strengthen Water Security

In this chapter, we share how members of the Multi-Stakeholder Platforms (MSPs) used their competitive advantage to turn challenges into opportunities to create win-win situations that can help narrow water supply and demand gaps. Through these innovation stories, we highlight the importance of multi-stakeholder collaboration, the critical implementation role our partners play, and results to date.

Key focus areas:

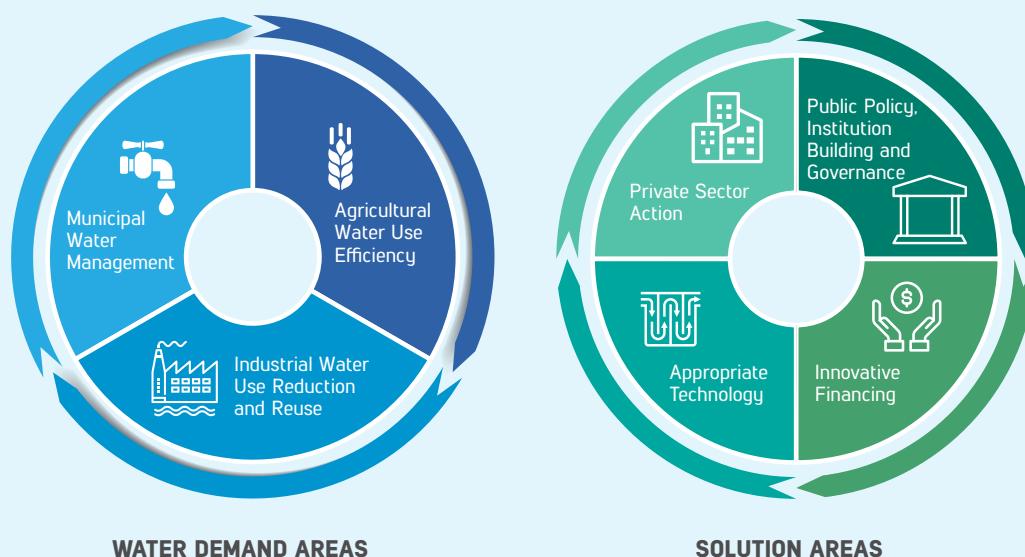
- Agricultural water use efficiency
- Industrial water use reduction and re-use
- Municipal water management

Cross-cutting solutions implemented by partners with 2030 WRG facilitation/support:

- Public policy, institution building and governance
- Private sector action
- Innovative financing
- Appropriate technology

Country partners—governments, businesses, and civil society groups—are the driving forces in setting priorities, and in identifying, implementing, and scaling innovative solutions. A key priority is ensuring all stakeholders have a voice and are included in the process. These innovation stories come directly from the work of the MSPs, shared in a new story-telling approach for 2030 WRG to highlight the impacts of the work of all stakeholders involved in shaping a better water future for all.

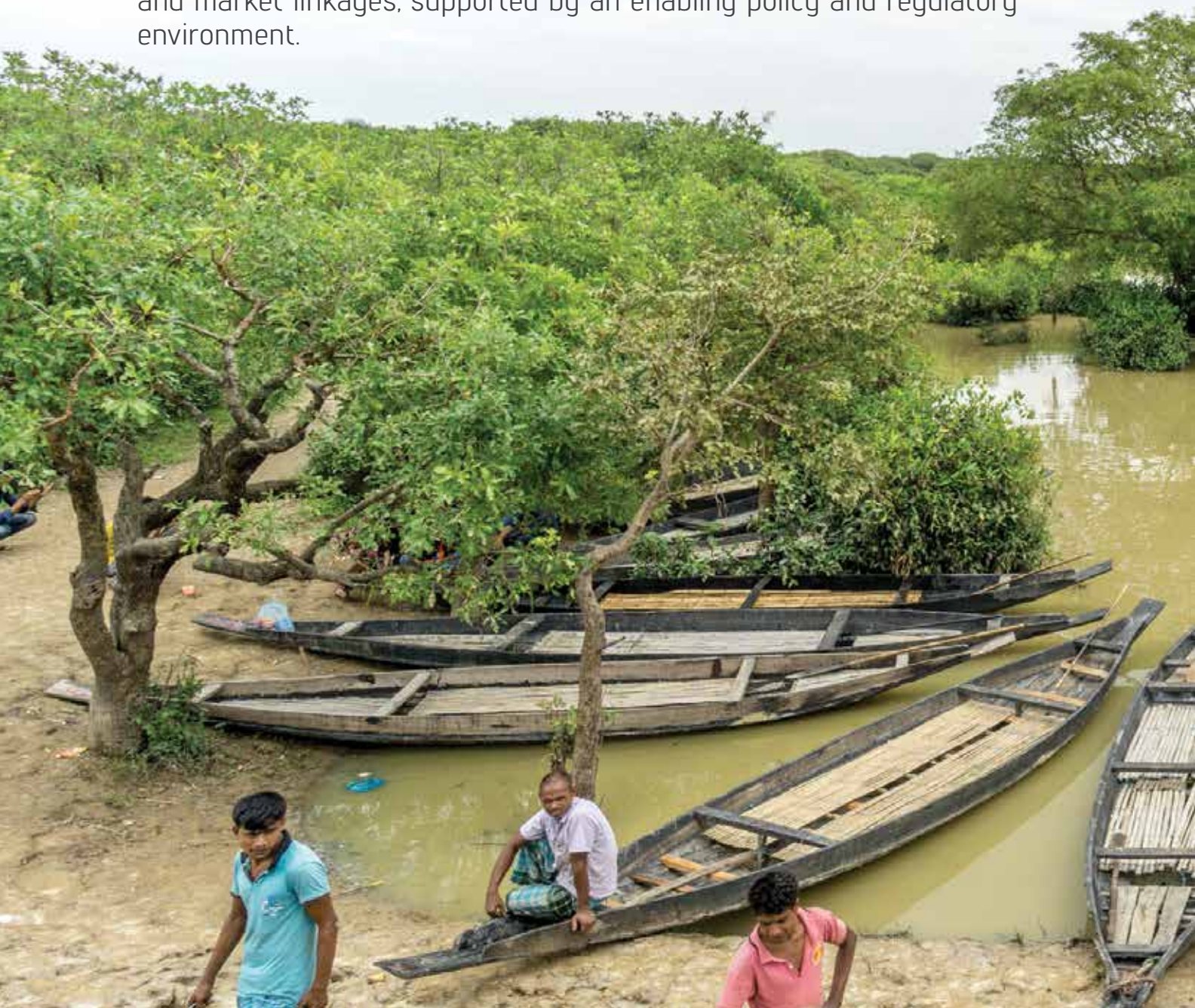
We would like to thank all the Country Program Multi-Stakeholder Platform members for their hard work, dedication, commitment and unwavering support given to the 2030 WRG. They have been the driving forces for the innovation stories you will read in this publication. Our collective action will drive opportunities for innovations to scale and replicability. We look forward to continuing this journey with all of you in the coming years.





CHAPTER 1.1 | AGRICULTURAL WATER USE EFFICIENCY

2030 WRG works on improving agricultural water-use efficiency in most of its partner countries. We help develop public-private partnerships to enhance the productive use of agri-water, increasing agricultural water savings, reducing run-off pollution, and increasing farm productivity and income. 2030 WRG's programs include a combination of water-efficiency solutions, infrastructure development, local water governance, good agricultural and sustainability practices, and market linkages, supported by an enabling policy and regulatory environment.







24K

HECTARES OF
IRRIGATION
AREA

COUNTRY INNOVATION STORY | INDIA, KARNATAKA

Linking Farmers to Water and Market Growth

Rakesh Singh, Principal Secretary to Government, Water Resources, Karnataka and Maheshwar Rao, Secretary to Government, Agriculture, Karnataka on behalf of the MSP members

The Challenge

The state of Karnataka has the second lowest rainfall in India. It has long been a water-stressed state and is still grappling with constrained supply of water vis-a-vis growing demand. The water stress is even more acute in the northern districts of Karnataka where rainfall is 40 percent lower than the state average. Previous studies by 2030 WRG have highlighted the urgency of promoting agricultural water efficiency because the water demand-supply gap there is set to double by the year 2030. Inaction could lead to devastating impact on the livelihoods of farmers in such water stressed areas.

The Bagalkote district in the north of Karnataka is characterized by dry and hot climate, strong winds and an average rainfall of 562mm. The area is covered with medium deep and deep black soils, with pH varying from 8.3 to 9.6, and low organic content. Given such conditions, only irrigated dry (ID) crops with low commercial value were previously grown in the region. These included fall crops, known locally as kharif crops, such as maize, jowar, sunflower, and black gram, and winter crops, known locally as rabi crops, such as jowar, safflower, and bajra. Bi-seasonal crops such as cotton and chilies have also been grown there.

Farmers in the area also struggle with poor canal efficiency, limited water supply, and low incomes. To address these

challenges, the Government of Karnataka, in partnership with 2030WRG, is supporting water efficiency through private sector participation and value-chain approaches to create a win-win situation for farmers, off-takers, infrastructure and technology service providers, and the government.

The Solution

To tackle the twin issues of low water efficiency and poor livelihoods, 2030 WRG initiated the Ramthal drip irrigation project, which is one of the world's largest fully-automated micro irrigation projects. This first-of-its-kind project, with a total investment of US\$130 million, puts the farmers' interest at the core of the initiative. The project covers 24,000 hectares of irrigation area command area and reaches 15,000 beneficiaries in 30 villages.

The project—which uses 2.77 TMC (Thousand Million Cubic) feet of backwaters—takes a comprehensive approach to off-farm and on-farm infrastructure by integrating pumps and pipelines for bulk water supply with fully automated drip irrigation systems at the farm level. The resulting improvements in water efficiency have enabled twice the amount of land to be irrigated with the same quantity of water. The infrastructure component is delivered through design-build-operate-transfer (DBOT) contracts with two private sector entities, Jain Irrigation and Netafim, who will operate and maintain the system for the next five years.



2030 WRG initiated the Ramthal drip irrigation project.

The project covers 24,000 hectares of irrigation area command area and reaches 15,000 beneficiaries in 30 villages.

RAMTHAL DRIP IRRIGATION

\$130M

PROJECT INVESTMENT

THE PROJECT
REDUCES FRESHWATER
ABSTRACTION BY

24Mm³

REACHING

15K

BENEFICIARIES



To create buy-in from local farmers, the project formed farmers' Water User Societies to provide classroom and field training on fertigation and efficient use of water.

Such an advanced system of water delivery requires the cultivation of high-value crops to recover investments in the infrastructure. For this purpose, we have facilitated forward linkages and a stable environment for the promotion of high-value crops, along with assured water supply and greater water efficiency. 2030 WRG has facilitated the creation of four-way MoUs among private sector companies and the state government departments of Water Resources, Agriculture and Horticulture. This partnership is one of the first instances of such close collaboration among various government departments in the state.

Progress to Date

The opportunity to procure high-value crops from the area has received a positive response from the private sector, who see the benefits of direct procurement from farmers and reliable production made possible by assured water supply. As a result, fourteen MOUs for collaboration have been signed so far with private companies.

Encouraged by the success of Ramthal, the government is keen to support the replication of such sustainable models in partnership with farmers and the private sector. Under the Karnataka MSP, we have conceptualized the Drip-to-Market Agro Corridor (DMAC) program, which is a large-scale initiative to connect drip-irrigated areas with market opportunities. DMAC adopts a holistic approach that combines the objectives of sustainable channels for offtake of farm produce, with improved farmer livelihoods, economies of scale for infrastructure, agricultural extension, mechanization, and finance facilitation. Additional projects in Koppal, Singatalur, Poorigali, and Savanur are currently in the pipeline.

PROJECT IMPLEMENTATION UNIT (PIU)



The PIU—which comprises government and private sector experts—will facilitate the implementation of the DMAC vision and sustain market linkages.

To institutionalize this approach, a Project Implementation Unit (PIU) is being established through a government budget allocation of US\$1.5 million. The PIU—which comprises government and private sector experts—will facilitate the implementation of the DMAC vision and sustain market linkages. Over the next three years, the PIU will facilitate robust institutional mechanisms; develop self-sustaining market mechanisms for storage, transport, exchange and trade platforms; and coordinate agricultural activities for assured farm outputs and improved economic returns to the farmers as well as agribusiness companies.

Key Lessons

- The Ramthal and DMAC experiences exemplify the need for trust-based collaboration among different stakeholders such as multiple government departments, private agribusinesses and technology companies, and farmers.
- Regular dialogues enabled by the Karnataka MSP have helped to sustain the momentum towards improved agricultural economies and to articulate the business case for each stakeholder group.
- The combination of micro irrigation-based projects and market linkages has given farmers defined incentives to sustain water use efficiency. We hope to accelerate such collaborative efforts in other regions through the MSP in the future.

COUNTRY INNOVATION STORY | KENYA

A collaborative approach to catchment management: The Mount Kenya Ewaso Water Partnership

George Kobia, Chairman, MKEWP and Chief Officer, Water and Sanitation Ministry, Meru County; Topper Murray, Chairman, Mount Kenya Growers Group; and Stanley Kirimi, Program Coordinator, MKEWP on behalf of the MSP members



THERE IS POTENTIAL FOR
1,578Mm³
 OF WATER STORAGE IN THE
 CATCHMENT, BUT EXISTING
 FACILITIES TOTAL ONLY
10Mm³

The Challenge

Access to water in the Upper Ewaso Ng'iro North Basin of Kenya is a perennial flashpoint that pits smallholder farmers and commercial-scale agricultural operations in the upper catchment against pastoralist communities downstream, who face severe water shortages during the bi-annual dry seasons. When the rains stop, resident and immigrant pastoralists drive their cattle into the upper catchment in search of water and grazing land. As the herds move higher into the basin, they damage crops and property, endangering livelihoods, and stoking discontent that can erupt into deadly violence.

It has become nearly impossible for catchment residents to access sufficient water throughout the year due to increasingly unpredictable rainfall, inadequate water storage infrastructure, an over-reliance on surface irrigation, and increasing rates of illegal, unmetered withdrawals from water tributaries. All of which are exacerbated by increasing demand driven by a rapidly expanding population. The catchment straddles five counties. Although there are several different institutions with responsibility for water issues, they are weakly linked. Furthermore, none is capable of single-handedly addressing the complex web of competing interests at play.

The Solution

Launched in 2016, the Mount Kenya Ewaso Water Partnership (MKEWP) is an institutional innovation rooted in our belief that effective water management requires collective deliberation and action. When we bring people together, we create the opportunity to see the situation through our neighbors' eyes. We can then move beyond rumors, address grievances, and overcome our challenges collectively.

The MKEWP brings three counties in the region together with approximately 70 other partners to manage shared water resources more effectively.

The partnership is spearheaded by the County Governments of Laikipia, Meru and Nyeri and the Mount Kenya Growers Group with support from the Kenya 2030 WRG. The partnership is hosted by the Laikipia Wildlife Forum, a 20,000-strong membership organization.

Our members contribute to the partnership's success in different ways.

The three county governments coordinate with each other, support projects in kind, and help raise local water management issues up the political agenda. Our collaboration sends a strong message at a time when other counties nationwide are fighting to "own," and be able to charge for, water resources that flow across county lines.

Our private sector members take the lead in adopting water-efficient technologies, helping demonstrate their effectiveness to smallholder farmers who must be very careful in their choice of investments.

And our civil society members are using their networks and relationships of trust to advocate for access to finance and improved market linkages for smallholder farmers with financiers and service providers and work directly with farmers to implement sustainable water technologies that not only conserve water but also improve farm productivity.

Progress To Date

We mobilized our members to participate in the development of the latest Nyeri, Laikipia and Meru County Integrated Development Plans, which are five-year plans outlining county development goals that inform the national budgeting process. As a result, the plans address critical concerns around borehole drilling, rain water harvesting, conservation and protection of water catchment areas, and for the first time, river scouting—a process through which members of Water Resource User Associations (WRUAs) patrol and report any irregularities. In one county, the total budget allocation for the water sector was increased fivefold as a result of these efforts.

We have also launched six programs focused on increasing the capacity of the WRUAs, which are voluntary associations of water users, riparian land owners, and other stakeholders who collectively manage common water resources and report to the national Water Resources Authority. One example is the Irrigation Acceleration Platform (IAP), supported by SNV (an international non-profit development organization from the Netherlands), which provides access to finance for smart-water technologies and facilitates outside investment in local sustainable water systems for a more dynamic and innovative sector. Another project, supported by the Nordic Development Fund, trains WRUAs and water service

Launched in 2016, the Mount Kenya Ewaso Water Partnership (MKEWP) is an institutional innovation—bringing three counties in the region together with approximately 70 other partners helping to manage shared water resources more effectively.

providers on water resource monitoring alongside the development of community and household infrastructure to support more sustainable water use, such as common intakes, farm-level water storage, and water metering.

Key Lessons

Effective water resources management requires participation and ownership by all stakeholders, at all levels. For meaningful participation and ownership to happen, stakeholder relationships must be built on a foundation of trust. Taking the time to facilitate these should be a strategic priority.

Basin communities are already feeling the impacts of climate change. Sustainable water use and catchment protection measures like household-level water capture, rainwater harvesting and conservation help mitigate the impacts of erratic and unpredictable rainfall and help protect our water-based economy.

When introducing a new technology, such as water storage, to an unfamiliar audience, it is important to prove that it works. Farmers find much more value in practical demonstration projects that showcase real-time solutions to common agriculture and livelihood challenges than in meetings, seminars, and workshops. To be effective however, practical demonstrations must be backed by easily accessible finance for locally-appropriate solutions and technology.

Water investments are key in supporting water resource management and both private and public stakeholders should prioritize sustainable financial models to manage the shared resource.

COUNTRY INNOVATION STORY | INDIA, MAHARASHTRA

Improving Women Farmer Livelihoods through Linkages between Agriculture and Water: Examples from Maharashtra

Afreen Siddiqui Sherwani, Maharashtra State Focal Point for UNDP India, on behalf of the MSP members

INDIA'S
WOMEN FARMERS
PRODUCE

70-80%
OF FOOD CROPS

The Challenge

More than two-thirds of India's population live in rural areas. Their livelihoods and future development depend on agriculture and its allied sectors. Of this population, 75 percent are women farmers. Together, women farmers produce 70–80 percent of all food crops and 90 percent of dairy products in India. These women farmers carry out most of the back-bending tasks, which includes preparing the land; selecting seeds; preparing, sowing, and transplanting seedlings; applying manure, fertilizers, and pesticides; and harvesting, winnowing, and threshing ripe crops. Despite their hard work, they remain economically disadvantaged. Although women constitute about 30 percent of the agricultural labor force, only 13 percent of Indian women own land. They earn less than men and are typically underrepresented in rural organizations and institutions. They are also poorly informed about their rights in areas such as land ownership and have limited access to information and public resources. Such disadvantages prevent them from having an equal say in decision-making processes and reduce their ability to participate in collective actions through organization such as agricultural cooperatives or water user associations.

The Solution

According to the Food and Agriculture Organization (FAO), women—when given access to training and resources such as improved variety of seeds, on-farm water use, and high-quality fertilizers—can improve agricultural productivity by 20 to 30 percent. In the State of Maharashtra, where agriculture plays a central role for rural women, there is an opportunity to improve the livelihoods of a significant number of women through interventions that can help them improve their farm productivity. Several civil society organizations such as Swayam Shikshan Prayog and Yuva Mitra in the state have already created exemplars of improved participation of women in agricultural production systems. In parallel, private sector companies such as Happy Roots and Sahyadri Farms have also begun their own initiatives to promote women entrepreneurship by connecting women farmers to resources such as on-farm water and market opportunities. Furthermore, Government support through women-friendly policies has given impetus to projects centered around women's livelihood. In recognition of Maharashtra's rich experience in women empowerment in rural India, 2030 WRG and United Nations Development Programme (UNDP) India's Maharashtra teams came together to develop the "Gender and Water in Agriculture and Allied Sectors" publication.

The case studies presented in the study aim to shed light on how public-private partnerships can help women farmers increase their farm productivity, which in turn

leads to improved livelihoods. They are based on knowledge gained through several stakeholder consultations and field missions. The examples show that in the state of Maharashtra women have been empowered through increased income and access to training, including training about on-farm water use efficiency. These case studies feature projects and programs spearheaded by partners such as Sahyadri Farms, Happy Roots, Yuva Mitra, MAVIM (a Government Undertaking), and Swayam Shikshan Prayog. Each organization is working with different implementing partners to pilot innovative financing models and train women farmers on efficient water use and post-harvest management. Together, these organizations' programs have benefitted over 50,000 women in Maharashtra. Based on the learnings from the case studies, a set of policy prescriptions have been proposed in the document for public, private, and civil society stakeholders in the agriculture and water sectors.

Progress To Date

The publication is expected to launch in February 2019 at a high-level private sector roundtable where the case studies will be presented to a diverse group of stakeholders who can help scale up these projects and programs. The intention is also to set up platforms that focus on policy, training and advocacy, knowledge sharing, and demonstration projects with key components including gender, water, and agriculture.


Key Lessons

- There is always scope and opportunity to increase efforts to address women in agricultural production systems despite the seemingly large number of stakeholders who work on these issues.
- Our interaction with women farmers during the process of compiling the case studies opened our eyes and gave us insights into their enterprising work. We observed that when women were given access to training and resources, they have the decision-making power and managerial ability to bring change to their communities.
- Such knowledge products provide stakeholders with the ability to make informed decisions on resource mobilization.
- The diverse perspectives captured in the case studies can help bring innovation and enhance collaboration between partners.

COUNTRY INNOVATION STORY | MEXICO

Developing Agri-water Infrastructure PPPs in Mexico

Francisco Mayorga, Leader of the Consejo Consultivo del Agua A.C. (CCA) Agri-water Committee on behalf of the MSP members



AGRICULTURE
USES UP TO
76%
OF TOTAL WATER
CONSUMPTION

The Challenge

In Mexico, irrigation infrastructure has suffered from very steep disinvestment in both new projects and in terms of conservation and maintenance efforts. Reasons include severe cutbacks in government budgets, lack of inter-institutional coordination, a perverse agri-water tariff regime, and the absence of an enabling environment for private participation. The result is a very negative impact on water productivity and overall agricultural output. Bearing in mind that agriculture uses up to 76 percent of total water consumption, mobilizing investments in the sector is a policy priority and represents an important opportunity for a keen private sector.

The Solution

The CCA and CONAGUA launched the first phase of the PPPs for an Agri-water Infrastructure Initiative that enables multi-stakeholder dialogue to address the challenges and opportunities for PPPs in the sector. The initiative focused on the development of business cases, financial feasibility studies and quick environmental assessments of five potential PPP projects. The dialogue harnessed the participation of water authorities (at a federal and local level), government-led agricultural financing institutions, private banks, specialized consultants, the World Bank, the IFC, and the irrigation water users. This mixed composition of stakeholders enabled us to assess the five potential projects from a very comprehensive and realistic perspective.

Progress To Date

The first stage of the initiative produced comprehensive business cases and feasibility studies of five potential irrigation PPP projects. It also produced some examples of the actual institutional designs and financial models required for each of the projects. The multi-stakeholder dialogue process also supported the development of criteria to help identify and assess the potential of prospective irrigation PPP projects. This, in turn, can help government and other stakeholders begin to integrate potential PPP project portfolios.

The initiative also helped to develop policy recommendations to create a more enabling environment for PPP formation in the irrigation sector. More importantly, it facilitated a productive and open dialogue with the irrigation water users with the participation of the National Association of Irrigation Water Users. The results of the first stage of the initiative paved the way for the implementation of the second stage and is oriented at supporting the actual implementation and transaction of two of the projects identified in the first stage: the Valley of Guadalupe Project (in the State of Baja California) and the el Carrizo Project (in the State of Jalisco).

Key Lessons

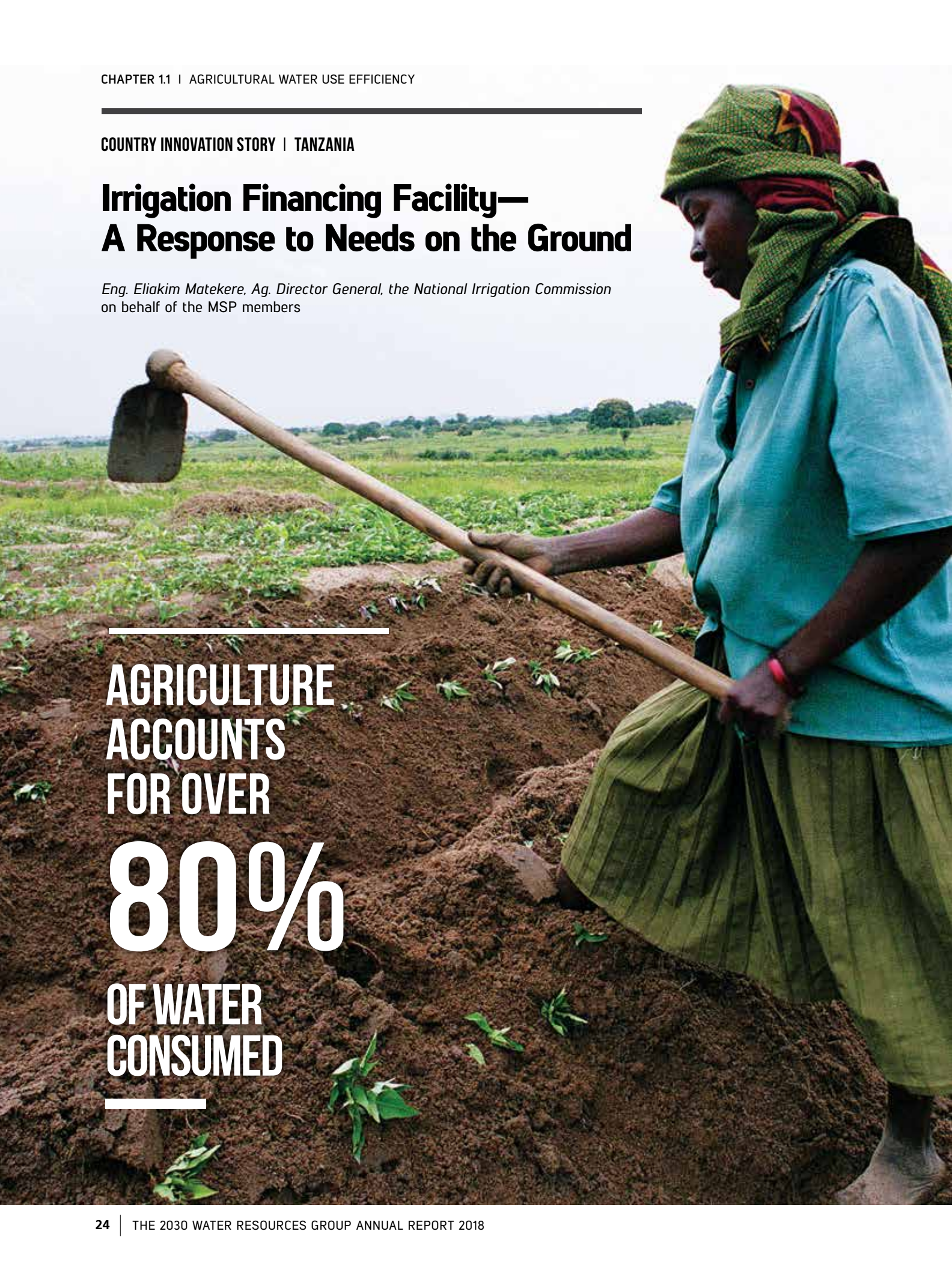
- Irrigation projects with the greatest PPP potential are mostly the ones that will produce high value agricultural produce and in situations where value chains are clearly established. There may be other situations where produce has low market value (e.g., sugar cane), but a strong local demand drives-up the market.
- Cost recovery uncertainty and risks require to be mitigated through special financial guarantees or reserve funds. The current legal framework provides some resources to ensure the repayment of tariffs, but social mores regarding the value/price of agri-water may affect the implementation of the rule of law.
- PPP projects have greater chance of being implemented successfully in the presence of strong, well-established and financially-fit water user organizations.
- The private sector's stakeholders that wish to be involved in the PPP projects have to be oriented not only at the construction and operation of the PPP project, but ideally they should be involved either in the provision of other added-value services, should be specialized in the agri-water sector, and probably should have a stake along the value chain.
- Potential PPP projects should be evaluated using comprehensive methodologies and should entice inter-institution coordination amongst the water, rural development, and environmental authorities in order to ensure that projects are successful and avoid any externalities.
- It is necessary to develop the institutional capacities in different government institutions dealing with the agri-water infrastructure sector to create a more enabling environment for irrigation PPPs. Also, socialization of these types of schemes amongst the irrigation water users is a key element in the creation of such enabling environment.

COUNTRY INNOVATION STORY | TANZANIA

Irrigation Financing Facility— A Response to Needs on the Ground

*Eng. Eliakim Matekere, Ag. Director General, the National Irrigation Commission
on behalf of the MSP members*

AGRICULTURE
ACCOUNTS
FOR OVER
80%
OF WATER
CONSUMED



The Challenge

Agriculture in Tanzania accounts for over 80 percent of water consumed and most of the irrigation approaches in use—gravity, open canal, and flooding—are extremely inefficient, resulting in up to 45 percent water losses. While Tanzania is endowed with 29.4 million hectares of irrigable land, only 461,326 hectares is currently under irrigation. Equivalent to just 1.6 percent of total irrigable area, crops produced on irrigated land contribute nearly a quarter of the national food requirement at present. The National Irrigation Master Plan calls for putting 700,000 hectares under irrigation by 2025 and up to 1 million hectares by 2035.

Smallholder and emerging farmers, who account for a majority of agriculturalists in the country, have limited access to financing for irrigation technologies. Although smallholder and emerging farmers are strongly interested in irrigation financing, they lack the qualities of a credible investee. They are ill-equipped to conduct comprehensive business planning, identify appropriate sources of finance, prepare compelling financing proposals, and negotiate loan terms. On the supply side, the high costs of identifying investment-ready farmers are a key constraint for financiers that want to provide irrigation financing to smallholder and emerging farmers.

Even when the above-mentioned barriers have been addressed, such investments require a high degree of confidence in the market. As such, strong sales records or offtake agreements with buyers and processors are also needed. Reducing the risks regularly associated with financing small-scale commercial agriculture is critical to achieve the country's ambitious irrigation targets while ensuring that precious water resources are used efficiently and sustainably.

The Solution

Public and private financiers are offering blended models to serve farmers previously unable to access the required financing. Now that such models exist on the supply side, there is a pressing need to better organize the demand for financing. Recent stakeholder consultations indicate an opportunity to accelerate the flow of bankable proposals coming from smallholder and emerging farmers.

To close the financing gap, Tanzania 2030 WRG, in collaboration with Financial Sector Deepening Trust (FSDT), Tanzania Agricultural Development Bank (TADB), National Irrigation Commission, Tanzania Horticultural Association (TAHA), Private Agricultural Sector Support Trust (PASS), and Rikolto (a farmer empowerment international NGO), is establishing an irrigation financing facility to link smallholder and emerging farmers with financiers. The initiative will develop a portfolio of irrigation projects matching existing financing mechanisms. It will reduce coordination and transaction costs by leveraging the partnership's extensive network of public and private stakeholders to identify, prioritize, incubate, and package irrigation financing

opportunities that meet the requirements of funding sources.

Progress To Date

In 2016, Tanzania 2030 WRG and FSDT completed a study on *Market Analysis and Options for Water-Productive Financing in Tanzania*. The study provided insights on different market segments—subsistence farmers, semi-commercial and commercial smallholder farmers, emerging medium-sized farmers, large farms, and estates companies—and financing options through different potential financiers and their products.

The partnership then mobilized stakeholders from the private and public sectors, and civil society, and conducted a series of workshops on financing for irrigation development, which took place in Dar es Salaam, Arusha, and Iringa between 2016 and 2018. Various financing models were analyzed, and discussion outcomes served to formulate priorities and next steps for Tanzania 2030 WRG moving forward.

A study was commissioned in 2018 to propose a scalable advisory process designed to deliver a portfolio of bankable irrigation project proposals that private sector suppliers can then invest in, essentially matching supply and demand for each project. Planning is underway to test the model with partners at the sub-national level with the intention of a subsequent national rollout.

Key Lessons

- Qualified demand for irrigation is dispersed and uncharted. Such conditions, combined with the relative disconnect between target farmers and financial institutions, make identifying bankable irrigation projects challenging.
- Creating a market for smallholder financing requires full value-chain readiness from farmers, farmer support organizations, input suppliers, and financiers. Until the market is fully functional, the 2030 WRG partnership will help carry out such a function.
- Irrigation cannot be considered in isolation. In addition to field-level irrigation solutions, successful commercial farm operations require a combination of complementary conditions. These include but are not limited to: land and water permits; bulk water supply and storage infrastructures that ensure that the irrigation system can be fed with water through cropping periods; knowledge (farming practices, business acumen, and financial literacy); use of complementary technologies (good seeds, fertilizers, etc.); and reliable market channels and conditions (transport infrastructure, market linkages). Mitigating credit default risk within the context of irrigation financing therefore requires adequate due diligence in all these areas.

CHAPTER 1.2 | INDUSTRIAL WATER USE REDUCTION AND REUSE

2030 WRG identifies public-private partnership opportunities in industrial sectors, bringing in best-practice technological solutions and financing models, and implementing demand-side efficiency measures through wastewater treatment and reuse. We also work with governments, the private sector, and civil society to develop tariff structures for industrial water use.

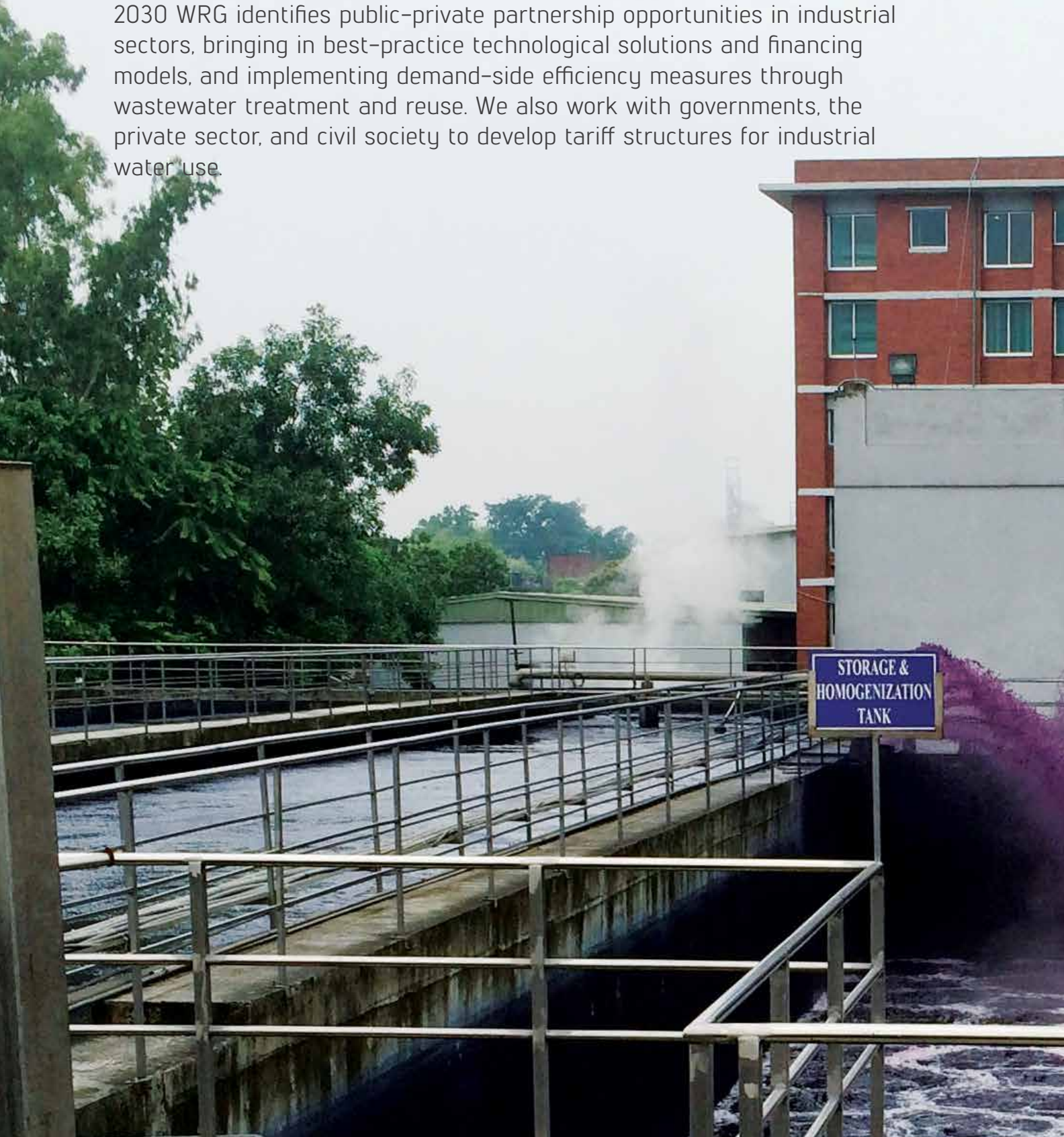




Photo credit: World Bank Group

COUNTRY INNOVATION STORY | PERU

Scaling up to Reduce Corporate Water Footprints in Peru

Walter Obando, Head of ANA, the Peruvian National Water Authority, on behalf of the MSP members

APPROXIMATELY
\$45.7B

OF INVESTMENT IS
REQUIRED BY 2035
TO MEET PERU'S
WATER NEEDS

The Challenge

Peru is among the top 30 countries that suffer from chronic water stress and water scarcity. Water stress is predicted to become critical by 2025 although the country has 159 river basins. Even though the government has responded by increasing infrastructure projects with significant investments in the construction of large dams and inter-basin transfers, there is still insufficient infrastructure and the investment done has not been duly accompanied with measures to increase the efficiency of water use and adequate management.

Approximately \$45.7 billion of investment is required by 2035 to meet Peru's water needs. Key in this endeavor is private sector investment since public finance is limited. Deep political instability in the past years has been challenging. A general lack of awareness with regard to water scarcity among the population has resulted in inaction and inefficient water use. Private companies need to become more efficient in the use of water within their operations and value chains and in leading change among collaborators, partners, clients and suppliers.

The Solution

The Blue Certificate initiative is a current 2030 WRG engagement in Peru and was created in 2016 to work jointly with the National Water Authority (ANA), SDC or COSUDE, NGO Agualimpia and private companies with the purpose of addressing the lack of awareness among the private sector about water scarcity and the importance of water measurement and efficient management in all sectors.

The main objective was to encourage private sector companies to develop corporate social responsibility in water projects improving watershed conditions. Companies that assess and reduce the water footprint of their processes are awarded the Blue Certificate, which is an award granted by the ANA as a government recognition. This encourages companies to implement water footprint reduction measures in their operations and to develop shared value strategies with the community.

Companies are awarded the Blue Certificate if they develop a Water Footprint Assessment, commit to developing a Water Footprint Reduction Project, and implement a Shared Value Project in collaboration with the watershed communities. The projects need to be active for at least one year before a comprehensive audit can take place and, if proven successful, a Blue Certificate is then officially awarded by ANA.

Progress To Date

While initiated in 2016, the Blue Certificate has taken time to evolve and develop. It has been very well received in the private sector and already 13 companies have been certified or are in the process of being certified. All of them are members of the 2030 WRG Steering Committee.

As a result, ANA expects to save 79,000 cubic meters of water and reuse 137,000 cubic meters of water per year. So far, more than \$1.3 million will be invested by the companies involved in the certification process and 30,000 citizens are expected to benefit from these investments. Shared value projects valued at \$2.8 million will directly benefit 9,233 persons and indirectly another 20,000. Projects currently include the efficient use of domestic water, the improvement of rural irrigation efficiency, the reuse of wastewater in public spaces and the promotion of an improved water culture.

The initiative constitutes an innovation oriented to strengthen the relationship between the public and private sectors to promote good practices in sustainable water use and management. The Peruvian Government Procurement Entity (OSCE) has recently joined the initiative by granting additional points in all public bids to companies who have been awarded the Blue Certificate.

Key Lessons

- Effective water resources management requires education and the promotion of campaigns to raise awareness about the consequences of water scarcity.
- Adequate water use and management requires the participation and ownership by all stakeholders, at all levels.
- The State plays a fundamental role in promoting the efficient use and management of water by creating programs and campaigns oriented to provide formal recognition for corporate responsibility.
- Synergy between public and private sector is needed to effectively address water resources challenges.
- Benefits for companies to get certified include: business sustainability, increased competitiveness, strengthening of the corporate image with business clients and suppliers, reduction of operating costs for water consumption and the strengthening of community relations.

Adjacent photo: A Quechua woman is going home after a day passed working in salt pans of Moray. The process of extracting salt places a lot of stress on Peru's river basins.

COUNTRY INNOVATION STORY | SÃO PAULO, BRAZIL

Watershed Based Plans for Industrial Reuse of Effluents from Public Wastewater Treatment Plants

*Ricardo Borsari, São Paulo State Minister of Sanitation and Water Resources
on behalf of the Brazil multi-stakeholder partners*



The Challenge

In some metropolitan areas of the State of São Paulo under water stress, domestic supply and economic activities compete for limited natural water stocks and for drinking water from the public systems. In the face of the increasing water scarcity, Brazilian law requires that domestic supply is prioritized, and thus companies can become more vulnerable to risks and losses. Such challenges need to be dealt with through integrated actions by the public and private sectors and civil society.

The Solution

Water reuse is a strategy to help reduce the competitive pressure on water availability and the risk of exposure to water crises in water-stressed river basins. Some urban and industrial activities do not require high-quality water, and they could reuse effluents from municipal waste water treatment plants (WWTPs) instead of taking water from surface and ground sources or using drinking water from the public supply. In the State of São Paulo, state and city authorities, public and private sanitation concessionaires, representatives of the industrial sector and NGOs have shown increasing interest in promoting investments in reuse projects for such non-potable purposes. However, watershed-based discussions, studies, and plans are necessary, since the industrial reuse of domestic effluents is not applicable or feasible in all situations. Effluent quality standards, logistical costs, legal compliance, workers' health risks, and new business and financing models are all important aspects to be assessed by reuse studies and plans.

Progress To Date

2030 WRG succeeded in building common ground with the São Paulo State Department of Water Resources and Sanitation (SSRH), the São Paulo State Environmental Agency (CETESB), and the Committee and Agency for the Piracicaba, Capivari, and Jundiaí Rivers Basins (PCJ) Committee and Agency on the necessity for watershed-based reuse plans, and the inclusion of water reuse guidelines into the river basin plans, the regional economic-ecological zonings, and the local sanitation plans under elaboration or revision. 2030 WRG helped stakeholders such as the SSRH, the PCJ Committee and Agency, the UN Global Compact and the ArqFuturo NGOs, the National Association of Sanitation Engineers, and other water management-focused institutions to organize seminars and workshops with strong participation of public authorities and sector representatives, aimed at debating the opportunities and hurdles for water reuse projects

for urban and industrial purposes. The International Seminar "Water shortage and reuse as part of the solution" represented a cultural change milestone at the high-level staff of the State government. The Rio Water Week 2018 event brought together global experts and enterprises to discuss water management-related issues under the UN SDG framework.

2030 WRG worked together with the PCJ Committee and Agency, especially with the Technical Chamber for Water Conservation in Industry, in the preparation of a detailed Terms of Reference for a regional study on industrial reuse, which is currently under procurement process. This attracted the interest of the State Sanitation Company (SABESP), that is prospecting water reuse clients and intends to support new investments in the Alto Tietê river basin.

Key Lessons

- It is crucial to work in close contact with existing water management institutions and their representatives in a bottom-up process. By listening to our local and regional stakeholders, we can better understand their challenges and needs, and engage with them to build consistent and consensual solutions.
- It is important to identify opportunities for public and private investments and partnerships at the watershed-based level, which align to the water reuse guidelines set by regional and local plans.
- Building common ground for innovative projects, such as the industrial reuse of domestic effluents from WWTPs, takes time because it involves negotiating demands and adjusting expectations of stakeholders from different sectors.
- Fruitful cross-sector collaboration and coordination could be replicated for other river basins with similar conditions and opportunities, but the effectiveness of the institutional arrangements should be tested locally.

Adjacent photo: San Pedro Hydroelectric Plant, built on the Tiete River

CHAPTER 1.3 | MUNICIPAL WATER MANAGEMENT

2030 WRG convenes stakeholders to assess the status of municipalities' water usage and incentivize them to reduce leakages. We also support private sector participation to improve municipalities' performance in managing their wastewater, including identifying opportunities for its reuse and recycling.



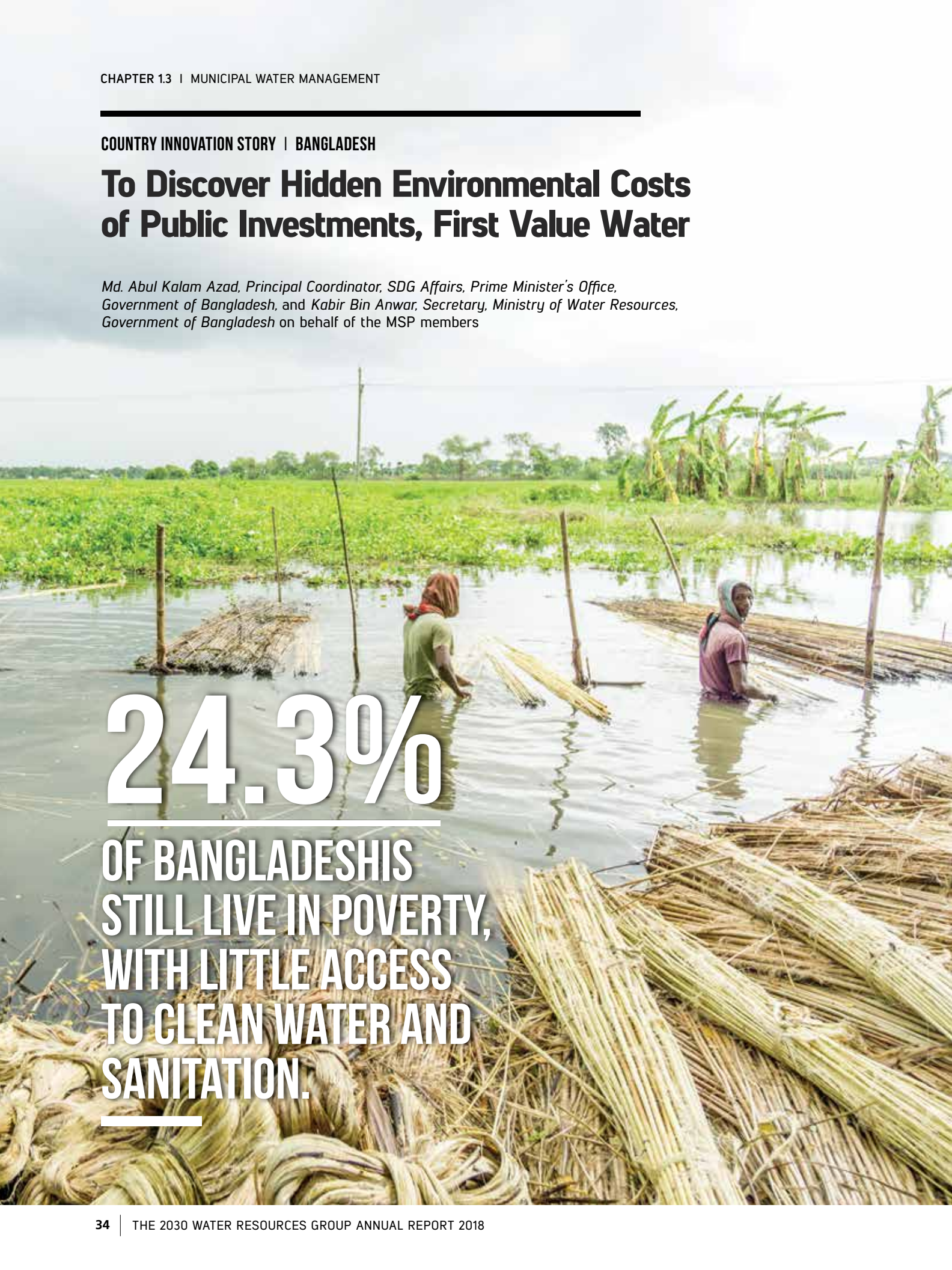


Photo credit: World Bank Group

COUNTRY INNOVATION STORY | BANGLADESH

To Discover Hidden Environmental Costs of Public Investments, First Value Water

Md. Abul Kalam Azad, Principal Coordinator, SDG Affairs, Prime Minister's Office, Government of Bangladesh, and Kabir Bin Anwar, Secretary, Ministry of Water Resources, Government of Bangladesh on behalf of the MSP members



24.3%

OF BANGLADESHIS
STILL LIVE IN POVERTY,
WITH LITTLE ACCESS
TO CLEAN WATER AND
SANITATION.

The Challenge

Although Bangladesh's economy has been growing at a steady pace, 24.3 percent of Bangladeshis still live in poverty, with little access to basics such as clean water and sanitation. Substantial investments in long-term socio-economic development is needed to improve the livelihoods of people in Bangladesh.

To prioritize public investments, the Government of Bangladesh developed a set of guidelines that all proposals for public investment, which are known as Development Project Proposals, must follow when they are submitted to the Planning Commission of the Ministry of Planning for approval.

These proposals require economic and financial analyses to assess the profitability and impact of each investment on the wider economy, society, and environment. While there are guidelines that address certain environmental issues such as GHG emissions, none exists for water. As a result, the full economic and environmental impacts of some investments are grossly under-represented; what initially looks like an attractive investment may actually be a poor investment once the costs of water are taken into consideration.

The Solution

To evaluate the full impact of any given public investment, the cost of water must be factored into the formal decision-making process. In order words, the cost of water must be included in every Development Project Proposal. The Bangladesh Water Multi-Stakeholder Platform, of which 2030 WRG is the secretariat, is helping the Government of Bangladesh to identify and develop a set of conversion factors civil servants could use to estimate the cost of water in the form of shadow prices when preparing their proposals. The shadow prices will be developed along the principles of Valuing Water, which has been prioritized as global action to achieve sustainable water resources management by the UN and the World Bank High Level Panel for Water, of which the Honorable Prime Minister of Bangladesh is a member.

Convinced of the benefits of this approach, the Government of Bangladesh now requires every line ministry and government agency to include a shadow price for water when submitting their investment Development Project Proposals to the Ministry of Planning.

During MSP meetings facilitated by 2030 WRG, members from the private sector indicated that their decision-making process could also be enhanced by factoring in the economic value of water. Accordingly, the MSP expanded their project scope to include the development of conversion factors that private sector companies could use to guide their investment decisions.

Adjacent photo: People processing jute in Dhaka Bangladesh.

Progress To Date

The Prime Minister's Office of Bangladesh has prioritized the principles of Valuing Water in its agenda, and the MSP is currently supporting the Honorable Prime Minister's initiative on the UN High-Level Panel on Water.

In recognition of the merit of 2030 WRG's Valuing Water in Bangladesh position paper, which contained concrete and instructive pilot studies, the MSP decided to form a multi-stakeholder High-Level Valuing Water Committee. The committee, chaired by Mr. Abul Kalam Azad, Principal Coordinator, SDG Affairs of the Prime Minister's Office, aims to discover further applicability of the position paper.

A multi-stakeholder Technical Valuing Water Committee, chaired by Professor Dr. Md. Rezaul Rahman, Bangladesh University of Engineering and Technology (BUET), was later formed to support the High-Level Valuing Water Committee based on its technical understanding of the Valuing Water principles and the current decision-making processes.

Once these three entities: the High-Level Valuing Water Committee, the Technical Valuing Water Committee, and the Water Resources Planning Organization, agreed on the significance of including the Valuing Water principles in their decision-making processes, 2030 WRG helped them develop the *Proforma for Study Proposal on Developing Operational Shadow Prices for Water to Support Informed Policy and Investment Decision Making Processes*. This proposal will be submitted to the Ministry of Water Resources for onward processing, finalization, and funding.

Key Lessons

- To transform a new concept—such as the inclusion of valuing water principles into a formal decision-making process—into reality, it is crucial to understand key characteristics of the decision-process, including the roles of various departments and the usage of existing documents and guidelines. It also requires re-thinking the boundaries of water resource management areas to include projects that are not directly related to water but may have an impact on water resources and thus bound by the same Development Project Proposal guidelines.
- As the concept of valuing water is new and complex, extensive stakeholder consultations and education are essential to secure stakeholder buy-in. Such a process requires patience and consultations on multiple hierarchical levels.
- Successful policy reform requires strong ownership of all concerned government agencies.
- High-level support from the Prime Minister's Office, in combination with detailed investigations of bureaucratic processes and ground support are necessary for the success of this innovative project.
- Identifying sound and practical solutions require knowledge transfer between public and private sectors and civil society.

COUNTRY INNOVATION STORY | INDIA, MAHARASHTRA

Harnessing Disruptive Technologies for Circular Economy Solutions in Maharashtra

K.P. Bakshi, Chairman, Maharashtra Water Resources Regulatory Authority and Prasad Modak, Executive President, Environmental Management Centre on behalf of the MSP members

LESS THAN
50%
OF MAHARASHTRA'S
WASTEWATER
IS TREATED.

The Challenge

While the number of mega urban clusters (more than 5 million inhabitants) in India have remained constant, the number of smaller urban clusters (less than 0.5 million inhabitants) have grown by a quarter since the 2011 census. The choices and development pathways of these new urban inhabitants and institutions will have a profound impact on their sustainable future and economic growth. Approximately 600 million people in India live under acute water stress, while scientific assessments indicate that by 2030 the country's water demand is projected to be twice the available supply. Circular economy solutions in water that focus on reduction, re-cycling and re-use of water are possible pathways to help mitigate the risks from urbanization and climate change. An assessment by the Federation of Indian Chambers of Commerce and Industry (FICCI) estimates that approximately half-a-trillion dollars worth of economic value can be unlocked through Circular Economy business models in India by 2030. Source augmentation and water treatment in urban centres are identified as top-priority opportunities for addressing water security challenges. However wastewater treatment is not a priority for most urban centres. Even in the mega urban clusters such as Mumbai, Pune and Nashik in Maharashtra, despite substantial investments, no more than 50 percent of wastewater is treated.

The Solution

Promoting treated water reuse and supply augmentation requires responsive incentives and a conducive regulatory environment. 2030 WRG identifies four pathways to achieve circularity in urban water use: *first*, maximizing the use of water treatment assets in urban centres; *second*, targeting policy-regulatory enforcement for achieving water security goals in multiple sectors; *third*, Maximizing Financing for Development (MFD) through private sector financing and deployment of disruptive technologies; and *fourth*, creating the right fiscal and institutional incentives through a system of tradable permits. Working with the Maharashtra Water Resources Regulatory Authority (MWRRA), 2030 WRG proposes the use of tradable and target-based Wastewater Reuse Certificates (WRCs) backed by Blockchain-IoT technologies for adoption, among large industries or industrial parks and urban municipalities. The initial focus will be on the top 20 water-consuming companies in the industrial sectors and park.

Progress To Date

The Government of Maharashtra has a stated objective towards wastewater recycling and reuse. In line with this goal, the State Water Commission has set a target of 30 percent wastewater recycling for the municipal corporations. Maharashtra Pollution Control Board (MPCB), with the

support of the State government is preparing a policy which would mandate the reuse of wastewater generated from the Common Effluent Treatment Plants (CETPs). Through this process, the Maharashtra Industrial Development Corporation (MIDC) is expected to cut supply of fresh water to the industries by 20 percent. These policy initiatives though laudable, are not sufficient to incentivize the large-scale adoption of treatment, and reuse of wastewater in urban centers.

With the dawn of innovative, open data platforms, the possibility of establishing robust, market-exchanges has gained significance in the water sector. High-fidelity information and data points that capture parameters such as water quality and water reuse can help governments design responsive regulatory measures, and help businesses reduce their costs sustainably. Innovative, cutting-edge technologies such as Blockchains, are expected to create a newer set of resilient institutions with improved transparency and accountability and minimal regulatory intervention.

Wastewater Reuse Certificates are premised on the requirement of setting clear water recycling targets. Based on the water recycling targets set, the entities achieving and exceeding the target will accrue credits and can sell their WRCs to the ones underachieving their target. Four specific use-case or business scenarios that cover large industries and industrial parks, urban local administrations and municipalities, residential complexes and gated (closed)-communities, and urban-to-agriculture wastewater flows are being developed that will further improve the understanding on benchmarks, WRC standards, trade protocols and policy environment. The WRCs as an innovative tool has established and fostered cross-sectoral partnerships with a new genre of *Fintech*-service providers including IT companies and start-ups, imparting an enhanced understanding of our shared water challenges.

**MAHARASHTRA'S
GOAL IS TO HAVE**

30%

**OF INDUSTRIAL
WASTEWATER
RECYCLED**

Adjacent photo: Andhra Lake at the hill range of the Thokarwadi Dam in Nilshi, Maharashtra

COUNTRY INNOVATION STORY | MONGOLIA

Strengthening Urban Water Management

Mrs. T. Bulgan, General Director, Department of Green Policy and Strategic Planning, Ministry of Environment and Tourism and Mr. L. Erdenbulgan, Head of Water Resources Division, Ministry of Environment and Tourism on behalf of the MSP members



**MONGOLIA
RECEIVES ONLY
378 mm
OF RAINFALL
ANNUALLY**

The Challenge

Mongolia receives only 378 mm of rainfall annually, which is a mere fraction of a global average of 900 mm. The country also has limited surface water sources, making its management a critical aspect in supporting economic activity. The effects of water scarcity are felt exponentially in urban areas where growth is concentrated. This is especially so for Ulaanbaatar, which alone represents about 70 percent of total potable water consumption in the country. Limited treatment of wastewater and low water use efficiency further diminish water availability. Studies by 2030 WRG indicated that the city will likely face a water demand–supply gap by 2030, with industry bearing the brunt. This will not only hurt companies that depend heavily on water for their businesses, but also the people whose livelihoods are tied to the operations of those companies.

The Solution

In response to this situation, 2030 WRG partnered with Mongolia’s Ministry of Environment and Tourism, the private sector, and civil society stakeholders to initiate a series of integrated regulatory and governance interventions to improve urban water management. Instead of treating urban water management challenges as isolated issues, this series of interventions addressed key bottlenecks throughout the entire water value chain. Until then, there had been no attempts to use such a comprehensive approach to urban water management.

The first phase of work sought to improve urban water management issues through the Water Pollution Fee Law (WPFL). However, successful implementation remained elusive five years after the law was established. This was largely due to an overly complex model for estimating pollution charges, especially within a context of limited technical and implementation capacity. While the private sector supported WPFL in principle, it had serious concerns about its feasibility precisely because of such limitations.

To help the Mongolian government improve the implementation of WPFL, the Mongolia 2030 WRG team shared best practices from relevant countries, highlighting simple water pollution fee models that incorporate economic incentives for pollution reduction and employ a simpler methodology to measure pollution in wastewater discharge. Based on this exercise and extensive analysis of local data to inform applicable charges, a preferred model was identified and contextualized for Ulaanbaatar. Once agreed with the private sector, the model was embedded in a revised license and discharge permit for water use and wastewater discharge. This model would be applicable to all consumers in the city.

The second phase of work addressed the issue of low water use efficiency. While potential reuse of treated wastewater in large industry and power plants in Ulaanbaatar was

recognized as an effective means of optimizing freshwater use, the lack of standards to support reuse had been a hurdle in implementation. Working closely with the Ulaanbaatar Mayor’s office—and drawing upon established international practice—appropriate standards were proposed for large industrial water users that can potentially reduce their freshwater consumption by using treated wastewater. It is expected that the adoption of the WPFL will further promote the practice of water reuse among large water users such as power plants and beverage companies. It will also encourage them to treat wastewater on site for supply to willing offtakers, thereby avoiding not only network discharge fees, but also pollution fees. To complement the wastewater reuse measures, sector stakeholders under 2030 WRG’s multi-stakeholder platform have recently initiated a review of water tariffs, which is a key regulatory instrument to incentivize wastewater reuse and promote judicious use of freshwater.

Progress To Date

The revised WPFL, which incorporates the proposed fee model, has been approved by a working group of Mongolia’s national cabinet. Adoption is expected to avoid discharge of over 61.2 million cubic meters of inadequately treated effluent into the Tuul river annually. Meanwhile, it has catalyzed innovation in small-scale onsite wastewater treatments systems. A model of institutional settings and engineering solutions that enables normal operation of wastewater treatment that is contextualized to Mongolia’s conditions is currently being piloted in the market.

The Mongolian Agency for Standard and Metrology approved the “National Standards for Treated Wastewater Reuse” in June 2018, paving the way for the offtake of 50 million liters of treated wastewater daily from Ulaanbaatar’s central wastewater treatment facility, including wastewater from two nearby power plants. An investment of approximately US\$300 million is planned for the development of infrastructure that will enable the reuse of wastewater for power plants.

Key Lessons

- Adapting regulatory and governance instruments to locally relevant conditions can remove hurdles for effective implementation of legislation and institutional systems necessary for effective urban water management.
- Alignment of incentives and clear demonstration of impacts are key to driving implementation.
- Inclusive dialogue that involves the government at all relevant levels, the private sector, and civil society representatives is necessary for forging consensus on difficult and complex issues like building institutions and policies for effective urban water management.

COUNTRY INNOVATION STORY | MONGOLIA

Multi-Stakeholder River Basin Governance

Battulga Namjilmaa, Director of River Basin Management Division, Mongolian Ministry of Environment and Tourism; Nomin Ganbaatar, Director of Freshwater Resources and Nature Conservation Centre; and Batimaa Punsalma, Director of Tuul RBMSP Council on behalf of the MSP members

**LACK OF WATER
FOR SOCIAL
AND ECONOMIC
DEVELOPMENT
POSES A
SUBSTANTIAL RISK
OF CONFLICTS
BETWEEN LOCAL
COMMUNITIES AND
INDUSTRIAL WATER
USERS.**

The Challenge

Mongolia is a region marked by semi-arid to arid climate and low precipitation. The country is projected to experience significant gaps in water supply and demand in two economically significant areas: Ulaanbaatar, the capital city of Mongolia, and the southern Gobi region, Mongolia's mining hub. In view of Mongolia's growing population and prominent—but water-intensive—mining sector, Mongolia's water demand is expected to exceed supply capacity by the year 2021. Lack of water for social and economic development poses a substantial risk of conflicts between local communities and industrial water users.

To overcome such water challenges, the Mongolian government introduced the Mongolia Water Law in 2012. The law aims to promote integrated water resources management (IWRM) as a key framework for hydrological planning and implementation. Because rivers are an important source of water in Mongolia, the legal framework mandates each of Mongolia's 29 River Basin Authorities (RBA)—which are part of the government—to be monitored by a multi-stakeholder River Basin Council (RBC) that comprises representatives from the private sector and civil society at the basin level. Although formalized by law, the RBCs were not functioning effectively.

The Solution

Collectively, members of the Mongolia 2030 WRG MSP identified the lack of clarity on the establishment, composition, financing and operation of the multi-stakeholder RBCs as the key constraint for their efficient functioning. Insufficient knowledge among stakeholders about RBC guidelines further complicated the situation. Accordingly, 2030 WRG helped establish a MSP workstream on Capacity Building and Collaboration among stakeholders in Mongolia to tackle such issues.

Building on the successful operational model of the MSP that 2030 WRG enabled at the national level in Mongolia, 2030 WRG replicated the model at the local river basin level and reformed existing RBCs by establishing river basin MSPs. Such an approach has never been used before.

In addition to forming river basin MSPs, 2030 WRG also supported capacity building and coaching on river basin governance for a range of stakeholders, ensuring effective stakeholder participation and river basin planning and implementation. Building on our experience in river basin MSPs, we are currently supporting collaboration among the National Water Committee and river basin MSPs at the national level.

Progress To Date

Since the time when the partnership between the Government of Mongolia and 2030 WRG was officially

launched in 2013, 2030 WRG has conducted numerous comprehensive and targeted analyses to help chart a path towards water security in the country. The findings from such studies have helped inform key decision makers in Mongolia on appropriate policy reforms and implementation.

The revised guidelines on reformation of existing RBCs into RB MSP Councils were officially accepted by the government as an official administrative act on March 13, 2018. These guidelines cover critical issues such as the establishment of the River Basin MSP Council, the facilitation of stakeholder participation in the planning and implementation of basin-level IWRM plans, collaboration and engagement with basin authorities, financing of the Councils, and identification of stakeholder responsibilities.

With the strengthened policy framework, stakeholders are now keen to accelerate implementation of the proposed guidelines, particularly strengthening involvement of stakeholders in the implementation of river basin management plans and sustainable water resources management. 2030 WRG has successfully collaborated with the Swiss Agency for Development and Cooperation (SDC) for this purpose. Under the partnership, three river basin councils in South Gobi, Orkhon, and Ulaanbaatar regions were selected for capacity building to strengthen water governance. In addition, the partnership has increased collaboration between local RBCs, RBAs, and the national government (Ministry of Environment and Tourism) in Mongolia.

Before the adoption of the new guidelines for River Basin MSP Council development, a total of 14 RBCs had been established in Mongolia according to the earlier guidelines. The MET successfully collaborated with 2030 WRG on implementation of new guidelines and by December 2018, 10 new RBCs were successfully established, and 14 RBCs were reorganized according to the MSP concept. This accomplishment will in turn lead to deeper collaboration between the National Water Committee and RB MSPs at the national level.

Key Lessons

- Supporting inclusive and active stakeholder participation is key to successful river basin management and governance. It is important to facilitate knowledge sharing and networking within the basin, and beyond, so that stakeholders can learn from and support each other. It is also important to inform stakeholders about the availability of transparent data that can facilitate their decision-making process.
- Even where relevant policy frameworks may exist to promote collaboration between the public and private sectors and civil society, limited implementation capacities can prevent progress.

COUNTRY INNOVATION STORY | PERU

La Enlozada Waste Water Treatment Plant in Arequipa, Peru

Julia Torreblanca, Vice President of Corporate Affairs, Cerro Verde Mining, a member of the 2030 WRG Peru Steering Committee, on behalf of the MSP members



The Challenge

Arequipa, a city with over a million inhabitants, sits in the Atacama Desert in southwestern Peru. The Atacama Desert is one of the world's most arid places, and the people and businesses in Arequipa and its surrounding area must share water from the Chili River that runs through the city because it is the main source of water in that area. To ensure that the needs of the local population and their economic activities such as agriculture, industry, and mining are met, water from the Chili River is discharged from the Aguada Blanca dam at an average rate of 10 m³ per second throughout the year.

Just 20 miles away from the city of Arequipa lies the Cerro Verde Mine. It is the world's seventh largest copper mine and is the source of the livelihoods of many people who work in the mine and its surrounding area. Because mining companies have traditionally been seen by local communities as both competitors for and polluters of limited water resources, tensions between mining companies and local communities often run rife. Because of such tensions, it is often difficult for mining companies to obtain social license from local communities to operate their mines.

In 1994, Sociedad Minera Cerro Verde S.A.A., a private mining company, started mining for copper in the Cerro Verde Production Unit. Back then, Arequipa had only one wastewater treatment plant. The plant dated back to the 1960s and could only treat wastewater at a rate of 0.1 m³ per second; this represents a mere 10 percent of the wastewater produced by its population. The remaining wastewater was carried out in five collectors and discharged downstream of the Chili River, thus jeopardizing the health and wellbeing of the communities and farmers downstream who depend on the Chili River for their water. SEDAPAR, the water utility company of Arequipa, had plans to build a wastewater treatment plant to resolve this longstanding problem, but over 10 years after their initial plans, the plant remained unbuilt due to budget limitations.

In 2012, Sociedad Minera Cerro Verde wanted to expand its operation there, but needed more water. Although Chili River's regulated system still had capacity thanks to dams built and co-financed by Cerro Verde and EGASA, the city's generation company, Cerro Verde evaluated different options that included requesting Peru's National Authority of Water (ANA) for more fresh water from the Chili River. The company had to come up with a solution to balance their water needs and those of the surrounding communities. Without such a solution, the surrounding communities were unlikely to accept its request for additional use of water resources.

The Solution

While searching for alternative sources of water, the company considered surface water from the river and underground water. However, they also considered a less conventional water source: Arequipa's wastewater.

Using the city's wastewater had three major advantages. First, its mining operations will not further tax Arequipa's limited freshwater supply. Second, it will reduce the amount of untreated wastewater that flows into, and pollutes, the Chili River, thus protecting the health and wellbeing of communities who live and work downstream of the Chili River. Third, it presents an opportunity to transform the city's wastewater from a pollutant that needs to be remediated to a source of water—a key industrial input—for their mining operation. If the company could implement such a solution, they would be able to receive a social license to operate from the surrounding communities and clean the river, benefiting the population of Arequipa.

After extensive consultations with the authorities, civil society, and community leaders who represented the local communities, it was determined that building a new wastewater treatment plant would be a suitable first step. Accordingly, up to 14 alternatives were considered, including the alternatives for the plant's location and technologies such as activated sludge, RAFA systems, and stabilization ponds. However, none of those were acceptable to the local population. The team went back to the drawing board and presented a final proposal that included the construction of a plant in a 12-hectare area outside the city behind a mountain range. This location was chosen to avoid inconveniencing residents and to allow the diversion of treated wastewater towards the mining operation zone. To accomplish this, wastewater from the city would be pumped to a height of 220 meters over four kilometers.

The project was strongly socialized among the authorities and civil society leaders, and the local communities eventually accepted Sociedad Minera Cerro Verde's request to carry out their project under certain specified conditions. In exchange, the company would be provided with an annual average of one cubic meter per second of water, which is the amount it needed for its expansion project. The remaining treated wastewater, which had to comply with the quality standards of treated effluent, would then be discharged into the Chili River.

This final proposal was deemed favorable by Water Utility Company (SEDAPAR), authorities, farmers, social leaders and communities, and the company began the construction of the La Enlozada Wastewater Treatment plant in 2013. The plant, which officially began its operation in December 2016, was designed to treat 100 percent of the wastewater discharged into the river up to the year 2043. The feasibility and engineering studies, as well as the construction of the plant, were entirely funded by the company due to successful negotiations between representatives from civil society, the company, the government, and SEDAPAR.

Adjacent photo: *Farmer harvesting of agricultural products, Arequipa Peru/Bigstock.*

In addition to the construction of this wastewater treatment system, the company also shouldered the responsibility of operating and maintaining the plant at no cost to the users. In total, the company made an investment of US\$5.3 billion for the construction of the second concentrator plant and Enlozada plant, which itself required US\$540 million.

Progress To Date

Until recently, there was no policy for the recycling of wastewater in Peru. There were also no guidelines for the reuse of treated wastewater. Sociedad Minera Cerro Verde's proposal to recycle wastewater was an innovation that led to the government's development of new regulations that promote the participation of private companies to drive solutions for health problems caused by water and environmental pollution.

Although the treatment plant has only been operating for two years, its benefits are already being felt. Water quality of the Chili River has already improved drastically and aquatic and wildlife are now returning to the river. Because of the improved water quality, communities living downstream enjoy better health. Farmers living downstream also experienced better quality of life as they are able to produce and export more crops.

Since the operations of the treatment plant started, there has been strict compliance with the parameters specified in the new regulations. Such results are now regularly reported and audited by the relevant authorities that include, but are not limited to, the Water Authority and Housing Ministry. The decision and negotiation of the representatives of SEDAPAR—which was owned at that time by over 32 district mayors who have since been replaced by eight province



mayors—played a key role when assessing the proposal and evaluating the benefits of the plant at a time where the Peruvian National Government was especially concerned about health problems related to the quality of water.

Key Lessons

- The participation of private companies can reduce the economic, social, and environmental burden of water resources and wastewater management.
- The creation of a multi-stakeholder working team that comprises representatives of all the institutions involved encourages ownership during the decision-making process. This in turn leads to better outcomes.
- It is important to consider non-traditional sources of water. If treated properly, wastewater could be used to satisfy the needs of industrial water users. This could reduce, and possibly eliminate, the need for industry to tap into limited freshwater supply.
- Public-private initiatives can be leveraged to improve the health and wellbeing of communities.
- Water resources management projects that directly impacts a population's wellbeing should always involve the population's direct participation.



COUNTRY INNOVATION STORY | PERU

Private Sector Action Increases Cajamarca Drinking Water Supply

Mercedes Castro, 2030 WRG Peru MSP Chair, and Director and General Manager of NGO Agualimpia on behalf of the MSP members



Photo credit: Bigstock.

The Challenge

Cajamarca is a city in Peru's northern highlands, in the Andes Mountains. There is a shortage and inequitable supply of potable water given the urban sprawl, lack of planning and the insufficient, ancient and inadequate infrastructure. The latter produces non-visible water leaks, water consumption is not billed, pipes break, and consequently, there are water shortages. The Water Authority for Cajamarca's (EPS SEDACAJ) supply of drinking water covered as of 1998 only 83 percent of the population of Cajamarca on an average of 17 hours per day in urban areas and of 2.5 hours per day of supply in rural areas. The problem the project addresses is of vital importance given it has a direct impact on the health and well-being of the population.

The Solution

The Water Program for Cajamarca, started in 2012, tries to address the shortage and inequitable supply of potable water in Cajamarca with the purpose of creating a synergy between different actors to improve the availability of potable water for the city of Cajamarca. The Program led by the Mining Company Yanacocha, the Municipality of Cajamarca and the Water Authority for Cajamarca (EPS SEDACAJ) focuses on improving the water treated in the plants, increasing storage, expanding and improving distribution, increasing the hours of supply, reducing the loss of potable water and achieving synergies with other projects that will improve the potable water system for the region increasing the supply of water for the population.

The program consists of 11 integrated infrastructure projects to improve the supply and availability of potable water in the city and a project oriented to educate and develop capacities in the management of potable water with the population of Cajamarca. The total direct investment is more than US\$13 million.

Projects include: expansion of the river Grande pipeline towards the water treatment plant, expansion of the pipeline to the reservoir, improvement of the pipeline from River Ronquillo to the water treatment plant, expansion and improvement of the water treatment plant, project for reduction of potable water loss, construction of a reservoir, installation of primary pipelines network, installation of

secondary pipelines network, project for computerization of water cadaster, project for environmental and hygiene education and the donation of land for the construction of a new water treatment plant.

One of the most important projects is the innovation in the treatment of potable water managed by the Municipality of Cajamarca, through the installation of automated compact modular plants that purify the water through a new treatment system called Dissolved Air Flotation (DAF).

The program is developed in line with the National System of Public Investment and has transferred its competencies to the company providing potable water services and ensures that it operates sustainably.

The intervention strategy has been the public-private stakeholders' articulation supported by 2030 WRG, where our country representative was a member of the Board of Yanacocha's Foundation, with well-defined roles for the achievement of the objectives and the institutional strengthening of the EPS (Water Authority) of the city of Cajamarca (SEDACAJ) through the closing of technical production gaps, and the development of capacities for the population for efficient water management and use.

Yanacocha is an active member of one of the 2030 WRG working groups in Peru, namely the Blue Certificate working group—where the company has been able to relate and work with other key partners and prioritize their investments for the duly execution of the water program.

Progress to Date

- The treated water in the "Santa Apolonia" and "El Milagro" Water Treatment Plants has increased by 60 percent to 380 liters per second.
- Hourly continuity has increased between 8 and 10 hours in the southern sector of the Mollepampa neighborhood.
- 3 km of new raw water lines were installed to the drinking water treatment plants.
- 10 km of primary networks were installed in Mollepampa.
- 11 km of secondary networks were installed in Cajamarca.
- The number of domiciliary connections has increased by 26 percent.
- US\$120,000 have been recovered for potable water not billed for losses.
- The percentage of drinking water losses in the system has been reduced from 29 percent to 24 percent
- The storage capacity of potable water has been increased by 1,500 cubic meters.
- The sanitation education program has certified 60 teachers through the implementation of the methodological guide "Let's take care of water through healthy practices" since 2016.

The next steps in relation to the water program for Cajamarca is the transfer of assets and support during the implementation to the Provincial Municipality of Cajamarca, as well as managing further projects with the public sector to shorten the gaps in access to drinking water.

Key Lessons

- The results show that collaboration between private companies and local authorities is effective in the reduction of the economic, social and environmental burden in relation to water and wastewater works in the country.
- By participating in 2030 WRG's Multi-stakeholder Platform, the Yanacocha Foundation was able to engage with other key actors. This helped to prioritize investments in the water sector.
- Multi-stakeholder working groups that include representatives from all the relevant institutions, including civil society, with a range of technical, educational and managerial expertise, allows decision making to be very effective and sustainable.
- Collaboration between the multi-stakeholder partners often require a substantial lead-time in the process of developing and implementing the partnership but pays off significantly ultimately reduces costs for the benefit of the population.
- The technology that is being implemented is innovative, since it is laying the foundations for automation in the control of flows and pressures in the supply system. Additionally, it innovates in the potable water treatment system through the implementation of a new intelligent system that treats and clarifies water through the injection of micro air bubbles which is called Dissolved Air Flotation Treatment (DAF).
- These projects enable the direct involvement of people in efforts to improve water management.
- Projects are always strengthened when duly accompanied by an education campaign and the development of capacities for the population and the Authorities.

COUNTRY INNOVATION STORY | SOUTH AFRICA

The ‘No Drop Program’—Incentivizing and Facilitating Municipalities to Reduce Water Leaks

Moloko Raletjena (Scientist, Municipal Water Use Efficiency, Department of Water and Sanitation), Marlene van der Merwe Botha (Managing Director, Water Group Holdings and implementation team leader) and Willem Wegelin (Director, WRP Consulting Engineers and water loss implementation team expert) on behalf of the MSP members

The Challenge

Non-revenue water (NRW) in South Africa is a big problem. Approximately 41 percent of municipal water does not generate revenue. While figures vary between service providers, average physical losses in municipal systems are estimated to be around 35 percent, against a global best practice of about 15 percent. As a result, municipalities are losing around ZAR9.9 billion (about \$710 million) each year.

How did we find ourselves here?

Post democratic South Africa prioritized new infrastructure to meet the needs of a long-underserved and marginalized population. The institutional and financing environment that developed as a result incentivizes huge capital investments rather than maintenance. By the government’s own admission, water resource management suffers from an overreliance on building new infrastructure at the expense of investing in the maintenance of what already exists. In this environment, under-resourced municipalities have had no incentive to pursue systematic investigation of water loss trends.

At the same time, lessons drawn from efforts to address NRW in other countries tell us that at a local level NRW-reduction projects tend to be very small. Structuring them is very time-consuming and incurs high coordination costs for participating entities, whether they be government or private sector.

Addressing NRW is therefore not merely a case of fixing leaky pipes. A strategy to effectively and sustainably address NRW would need to shift conventional, state-centric and centralized water resource management planning focused on building new water infrastructure and exploiting new resources, towards a more comprehensive strategy that prioritized demand reduction and reuse strategies.

If NRW-reduction programming could be incentivized on a larger scale, it would be the first step towards realizing economies of scale that would not only be more efficient in terms of use of resources, but would also unlock new, more lucrative opportunities for private sector participation, helping to expand business and create jobs.

The Solution

The No Drop program is a collaboration between the DWS and SWPN to do just that. It is an incentive-based regulatory innovation that incentivizes municipalities to act on NRW and provides a national baseline of reliable data to catalyze private-sector participation in the space.

On the surface, the No Drop program is a water use efficiency rating system aimed at municipalities to encourage performance excellence through a rewards and penalties system. A simple scorecard assesses and ranks municipalities on water losses, revenue collection and water use efficiency. Municipalities can be compared to each other and their performance evaluated against the requirements of the law and best management practice.

Below the surface however, the process of completing the assessment is a capacity development exercise intended to catalyze appropriate assessment, development, and resourcing of NRW and WDM initiatives at municipal level.

The complete No Drop assessment was adopted into South Africa’s regulatory framework and a comprehensive No Drop audit of all 152 municipalities, including South Africa’s eight metropolitan municipalities (metros) was carried out in two phases in 2012/13 and 2013/14.

Progress to Date

The results of the assessments were a clear call to action for water stakeholders. A municipality that achieved >90 percent No Drop score was knowledgeable of their current status in terms of water conservation and water demand management (WCWDM). In total, 30 percent of the water supply systems assessed obtained more than 50 percent No Drop Score, with a balance of 70 percent attaining less than 50 percent No Drop score. None of SA’s eight metros received No Drop Certification (>90 percent No Drop score).

In the intervening period, the No Drop program has proven extremely effective in improving the water conservation discipline of municipal water services. It has catalyzed collaboration on Water Conservation and Water Demand Management (WCWDM) and created new opportunities for private sector participation.

With the introduction of the No Drop program in 2014, the KwaZulu Natal regional office of the DWS, working together with Umgeni Water, integrated WCWDM into a forum for municipalities in that region. The forum uses the No Drop program as their basis for benchmarking and capacity building.

The uMhlathuze Municipality has used these regulatory and capacity development efforts to accelerate their own WCWDM program. In 2014 the municipality issued a “Reduction of Non-Revenue Contract,” leading to a reduction of NRW from 48 percent to 30 percent to date. The city now plans to focus its efforts on individual zones. Plans are in place for the SWPN and its partners to scale up these efforts.

There have been important legislative impacts as well, with a number of municipalities updating their bylaws to strengthen WDM. Legislative amendments include penalties for illegal connections, water restrictions during drought periods, and limits on monthly household consumption, among others. Some municipalities have also provided training on the WDM aspects of the by-laws.

There has also been a significant shift in terms of the conventional thinking about NRW at the national level.

The most recent National Water and Sanitation Master Plan (NWSMP) specifically recognizes the importance of innovation in addressing WCWDM challenges—a significant shift from the conventional top-down approach of a decade past.

Although the original intention was for the No Drop assessment to be undertaken on a yearly basis,

organizational challenges within DWS and a lack of appropriate allocation of budget funding has meant that no No Drop assessments or audits have been completed since 2015.

Despite this, some of the DWS Regional Offices have continued to support and mentor municipalities in their region to complete the assessments on a regular basis.

The DWS, in collaboration with the Ministry of Environment and Food of Denmark, also recently developed No Drop Guidelines which provides detailed descriptions of the No Drop process, the assessment criteria, and how to address each criterion. This is a valuable guideline and will greatly assist municipalities to prepare for the audits, which will be reinstated in 2018/19 as per the NWSMP.

Key Lessons

- The SWPN used a small investment of cash and time inputs of partners to take the No Drop from being an idea to a regulatory tool that was applied by government in about 12 months. Such rapid policy development, testing and deployment was enabled by the participatory nature of the SWPN process.
- Beyond being a tool for regulation, the No Drop program developed management instruments (that municipalities use to plan for and assess progress in their Non-Revenue Water management) and that the national water authority and other stakeholders use as basis for public and private funding motivations. The program also provided the first information base that is audited and credible to both the public private sector; catalyzing partnership.

“The desired state of operations should be based upon the service outcome expected, and not necessarily on detailed aspects of operations. This principle supports the regulatory approach of setting standards within the limits of regulatory enforcement capability and affording operations management the opportunity of optimization through innovation.”

(NWSMP, 2018)

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CHAPTER 2 | VISION AND MISSION

2030 WRG envisions “a world with water for growth, people, and the environment.” Our mission is “to help countries achieve water security by 2030 by facilitating collective action between government, the private sector, and civil society,” with government firmly in the lead.

The 2030 Water Resources Group (2030 WRG) is a public, private, civil society partnership hosted by the World Bank Group. The partnership supports country-level collaboration designed to unite diverse groups with a common interest in the sustainable management of water resources.

Our global partners include bilateral agencies and governments (Swiss Development Cooperation, Swedish Development Cooperation, the governments of Hungary and Israel), private companies (Nestlé, PepsiCo, Coca-Cola, Dow Chemical, Ab InBev), development banks (IFC, World Bank, African Development Bank, Inter-American Development Bank), INGOs and IGOs (UNDP, GGGI, GWP, the World Economic Forum, BRAC and IUCN). The 2030 WRG was launched in 2008 at the World Economic Forum and has been hosted by The World Bank Group since 2012.

Contributing to the Global Agenda

2030 WRG is committed to contributing to the SDGs. This commitment is not just to the goals that specifically target water, but also to those that depend on water. When it comes to climate action, 2030 WRG is helping countries to develop water security and resilience planning capabilities through different approaches and methodologies:

- The development of hydro-economic analysis and multi-criteria investment prioritization systems, oriented at pursuing water security and resilience;
- Supporting reforms in water allocation regimes to provide for greater water security and legal certainty under greater variability and uncertainty;
- Integrating nature based solutions in water resources management to support climate change adaptation processes; and
- Supporting the private sector in their efforts to develop more robust water risk and water stewardship practices.



Our work contributes in various ways to the goal to end poverty through a strong focus on improving the livelihoods of small farm holders, for example. Our programs also contribute to building sustainable cities and protecting the marine environment and terrestrial ecosystems as we focus on producing more food with less water, cleaning up rivers, and improving the treatment of wastewater and industrial effluents.

The SDGs include a strong call for various kinds of partnerships to contribute to their implementation, particularly among governments, the private sector, and civil society. 2030 WRG contributes directly to Goal 17 and in a way sets an example for other platforms on how to mobilize actors across sectors for action.

Amplifying Women's Voices in Water Resources Management

Women play a central role in managing and safeguarding water resources. But too often, they are not invited to the table when water resources management decisions are being made. As a result, their voices are not heard, and their interests not represented.

To ensure that our work truly benefits men and women, 2030 WRG strives to do the following:

- Exercise gender awareness when we conduct our initial analysis in new countries of engagement—we actively seek feedback from stakeholders to identify interventions that may impact women disproportionately.
- Ensure adequate representation in 2030 WRG's multi-stakeholder platforms—we encourage women to voice their concerns and take on leadership roles so that their interests are represented. We also seek their ideas about how water resources could be managed to serve their unique needs.
- Use a gender-inclusive approach during program implementation—we take great care to design projects that reduces the risk of unfair gender bias.

The World Bank Group's gender strategy (FY16–23)*—which is the World Bank Group's most ambitious gender strategy to date—helps guide 2030 WRG's program design and implementation.

Measuring our Impact

Our mission is to help countries close the gap between water demand and supply by 2030. It is very important that we build strong partnerships and understand how decisions are made in the countries in which we operate. Not only do we want to know whether our programs are successful and impactful, but also why. This will help inform us to better design the programs with our partners, and more effectively replicate and scale our efforts.

2030 WRG's work is centered around our theory of change and results framework. We use these inputs to determine the desired outputs, outcomes, and eventual impact. Clear indicators are associated with each step, focusing on concrete, measurable results.

Our output indicators cover the following areas:

- Number of hydro-economic analyses
- Establishment of multi-stakeholder platforms
- Inclusiveness and effectiveness of the multi-stakeholder platform
- Number of priority areas agreed

* Source: <http://documents.worldbank.org/curated/en/820851467992505410/pdf/102114-REVISED-PUBLIC-WBG-Gender-Strategy.pdf>

The outcome indicators focus on:

- Stakeholders' attitudes on water
- Preparatory arrangements for the implementation of programs and policies
- Funding allocated
- Investments generated
- Programs under implementation
- Stakeholders' involvement

The impact indicators are based on real changes on the ground:

- Improved water resources management policies and governance
- Reduced fresh water abstraction (increased water efficiency)
- Reduced discharge of untreated/polluted wastewater
- Increased cost-effective water storage.

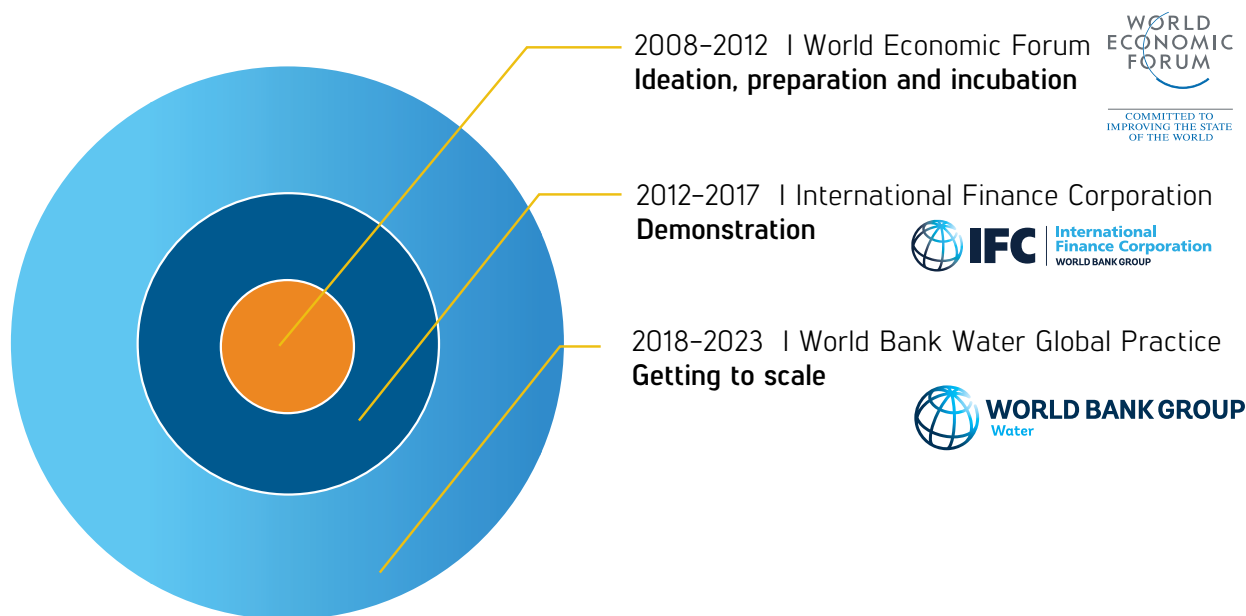
It is important to recognize that 2030 WRG facilitates change driven by local stakeholders. As a non-implementing entity, we realize that this is a dynamic and often non-linear process that involves actions and interactions among stakeholders at many levels. This process can take a long time to unfold, and it is hard to attribute the results to any one organization or program of activity.

We can demonstrate, however, that in our countries and states of engagement, 2030 WRG has elevated water security to a higher level on the agenda than it was before. We have achieved commitments from the highest levels of government in Bangladesh, Karnataka, and Maharashtra, for example, where MSPs are chaired by the Prime Minister's or Chief Minister's offices. 2030 WRG has helped to build trusted working relationships across traditional silos, both within government—for example in Peru, where two ministers and three vice-ministers sit on the MSP steering board—and across government, business, and civil society. The sustainability of the MSPs is also key as these are not convened for the sake of dialogues alone. The institutions involved in the MSPs are committed for the long term in changing the way water is managed and this transcends political interests. In Kenya, Mongolia, Peru, South Africa, and Tanzania and the three Indian states, the MSPs continued with changes in governments.

2030 WRG will continue to re-examine its monitoring and evaluation framework to ensure that it remains up-to-date and reports on the changes happening at all levels.



CHAPTER 2.1 | 2030 WRG ORIGINS AND EVOLUTION



Ideation, preparation

In 2008, leaders from business, government, civil society, and academia participating in the World Economic Forum's Global Agenda Council on Water Security identified two critical needs in the water sector: greater recognition of water's economic value, and the need for greater and more meaningful interaction between the public and private sectors in the way water is managed. The International Finance Corporation (IFC), the private sector arm of the World Bank Group, and the Forum joined forces, recognizing the opportunity to look at water's fundamental role in the economy.

An informal consortium made up of IFC, The Barilla Group, The Coca-Cola Company, Nestlé, New Holland Agriculture, SABMiller, Standard Chartered Bank, and Syngenta commissioned a toolkit that stakeholders could use to compare the impact, cost and achievability of a range of different measures and technologies, thus providing the fact base needed to underpin solutions. This group later became known as the 2030 Water Resources Group (2030 WRG).

The World Economic Forum began to engage stakeholders across sectors and socialize a new way of thinking—firstly about water as a resource with enormous economic impact and value, as well as a human right and environmental necessity, and secondly about the role of the private sector as part of the solution, not only part of the problem.

2030 WRG then issued a 2009 report *Charting our Water Future* with its key message that any strategy to achieve water resource security must be a joint effort—integrated with broader economic decision making—by governments, investors, NGOs, and water users in agriculture, industry and cities. The report and its headline figure—that global demand for water would outstrip supply by 40 percent by 2030—brought champions together for the kind of cross-sector conversation and action the report called for. The governments of Mexico, South Africa, and the state of Karnataka in India, which had engaged in the process of developing the report, were three of the first.

Incubation

By the end of 2009, the World Economic Forum was convinced to take on the role of facilitating the kind of conversation and action outlined in *Charting our Water Future*. IFC, Nestlé and the Forum agreed to incubate the 2030 WRG concept within the Forum headquarters in Geneva, with its official launch in Davos in January 2010. Founding members included Nestlé, PepsiCo, The Coca-Cola Company, IFC, the Swiss Agency for Development and Cooperation (SDC), and WWF.

The initial goal was to demonstrate in three countries how collaboration among public, private, and civil society actors could encourage governments to accelerate the often difficult reforms needed to manage water resources sustainably as a key enabler of long-term development and growth. 2030 WRG's ACT model—analyze, convene, transform—emerged in mid-2010 and has been evolving ever since.

The World Economic Forum facilitated the experimentation process and offered access to senior leaders and the ability to be nimble and flexible, try different things, and see what would work. At the same time, though, the group aspired to grow, support country stakeholders from dialogue to action, and eventually influence others in the water community to adopt a similar approach. On-the-ground implementation capacity became essential. At the Forum's annual meeting in Davos in 2012, it was agreed that 2030 WRG would enter a new, more formal phase at IFC at its headquarters in Washington, DC, in July 2012.

Demonstration

When 2030 WRG moved to IFC, a more formal governance structure was created. Its highest governing body, the Governing Council, composed of principal-level people from partner organizations sign off on the group's strategic direction and make key decisions, but also influence the broader global agenda on water. Members of the Steering Board are senior practitioners from the same organizations who provide significant amounts of time and input—on preparing for, participating in, and following up on frequent meetings, and additional time making connections in relevant countries and supporting their principals in their global agenda roles.

During 2030 WRG's time at IFC, from 2012 to 2017, the group engaged in nine new countries and states: Bangladesh, Kenya, the Indian states of Maharashtra and Uttar Pradesh, Mongolia, Peru, Tanzania, Ethiopia, Vietnam, and the Brazilian city of São Paulo. The group also re-engaged in the Indian state of Karnataka and in Mexico, where new administrations had taken power. In the last few years of this period, 2030 WRG also began to see dialogue turn into action at a much greater rate, as stakeholder collaboration in-country matured. From 2015 to the end of June 30, 2018, the number of approved proposals from country MSPs jumped from 15 to 66, the number of preparatory arrangements formalized jumped from 12 to 58, and the number of projects being implemented jumped from 5 to 61.

Getting to scale

During an extraordinary meeting of the WRG Governing Council in June 2017, the strategic decision was made to host 2030 WRG in the World Bank Water Global Practice from January 2018. This move is an appropriate next step for the organization, reflecting its journey from being a "positively disruptive" pilot project within the IFC to a different but important public-private-civil society program leveraging the wider World Bank Group's reach and retaining its innovative multi-stakeholder model. IFC remains a committed partner at global and national levels to 2030 WRG, helping the private sector engage in strategic dialogues on water resources management.

The Future

As outlined in the 2018–2023 Strategic Plan, 2030 WRG's ambition is to support 25 countries by 2023 and to inspire other countries to take a similarly inclusive, collaborative, cross sector approach.

The partnership between the World Bank Group and 2030 WRG brings opportunities to both parties. 2030 WRG's deep and constructive engagement with country MSPs and the Water Global Practice's existing relationships with countries and water-related stakeholders will be mutually enriching. In addition, the partnership will benefit from potential links with World Bank financing sources, opening possibilities for each country program. Improved links with the private sector, the World Economic Forum, and additional multi-stakeholder platforms will support policy dialogue and stakeholder engagement.

The Water Global Practice lending program stands at about \$24.5 billion—11 percent of total World Bank lending. Its large and diverse portfolio in lending and knowledge exchange provides 2030 WRG with an opportunity to develop its operational expertise and technical knowledge. The required compliance with World Bank policies, procedures, and quality assurance expands 2030 WRG's capacity to predict and manage any environmental, social, or financial risks.

The World Bank Group benefits from 2030 WRG's expertise in recognizing and mobilizing the private sector as a critical constituency. This will help the Global Practice deepen its understanding of and experience in shaping the political economy of water sector reforms and strengthen its relationships with influential water users who can innovate and demonstrate new models of water security.

CHAPTER 2.2 | APPROACH AND KEY PRINCIPLES

Approach

Although water scarcity is a global concern, its effects are more likely to be felt locally. And although water scarcity affects everyone in water-stressed community, not every member of the community will experience its effects in the same way. A smallholder farmer who toils in her fields may lose her crops because of erratic or insufficient rainfall. A beverage bottling plant may fail to reach their production target because they do not have access to enough freshwater. A local government water agency may not be able to adequately provide their community's freshwater needs.

A clear understanding of such characteristics of water scarcity guides our work in each country we are in. Accordingly, we have adopted an approach that focuses on the need to ACT:



Analyze:

Every water challenge exists within a specific context. 2030 WRG works with local partners to develop peer-reviewed studies that will provide much-needed data that can be shared with their stakeholders. Having reliable and credible data enables us, our partners, and their stakeholders to raise awareness about the urgency and scale of their shared water challenges. It also gives them a common point of reference that makes dialogue—the starting point of collaboration—possible. Crucially, it gives them a basis to prioritize issues and formulate solutions that fit their unique needs.



Convene:

Large and complex issues such as water security cannot be tackled without the commitment of all relevant stakeholders. Solutions are only sustainable when the voices of all stakeholders are heard. Using a macro view, 2030 WRG conducts detailed stakeholder analyses to identify key decision makers in the public sector, private sector, and civil society that can help create change. We bring them to the table and coordinate the efforts of stakeholders—many of whom have never had the opportunity to work together. Through these multi-stakeholder platforms (MSPs), stakeholders can engage in joint dialogue, build trust, and co-create solutions that they can feel ownership for.



Transform:

Ultimately, overcoming complex water challenges require fundamental transformation in the way governments, companies, and communities act. Based on the outcomes of our studies and meetings we convene, we draft concrete proposals to help stakeholders implement innovative solutions and build lasting policies, institutions, and processes that can help them increase water efficiency and decrease pollution. In doing so, we help our partners build a water secure future for them, their communities, and the future generations.

Key Principles

Our work touches the lives of many people and can have huge impacts for communities, businesses, and countries. Four key principles guide us as we live out our ambitious mission to help countries achieve water security by 2030.

Principle 1: Inclusivity

We believe everyone whose lives will be affected by projects we facilitate should have their voice heard. We strive to create truly inclusive multi-stakeholder platforms by bringing all legitimate stakeholders to the table. By providing a neutral and open platform, we ensure that everyone's interest—including women, minorities, and other vulnerable populations—are represented during the decision-making process. Only then can the solutions that emerge be fair, lasting and impactful.

Principle 2: Transparency

Credible information is necessary to promote a broad understanding of the issues at hand. Equipped with reliable data, key decision makers in the public and private sectors and civil society can then exercise educated judgement. Furthermore, transparency engenders trust—a key ingredient in every partnership. We make all our information freely available to our partners and their stakeholders on our website encourage our partners to do so too.

Principle 3: Accountability

Solving complex problems like global security demands leadership from every relevant stakeholder, and leaders at every level need to be accountable for their actions and decisions. 2030 WRG's Code of Conduct governs our secretariat, multi-stakeholder platform chairs, personnel on temporary assignment, and corporate and non-corporate members. We are dedicated to delivering on our commitments, and we encourage and support our partners to do the same.

Principle 4: Integrity

We understand that our work together with our partners can have lasting impact on the environment and the lives of people. We believe the work we do matters, and we hold ourselves to the highest levels standards of integrity, ethical behavior, and good business practices. Similarly, we expect our counterparties to meet these standards to do the same. Our due diligence process helps us identify, evaluate, and document integrity risks. Suspected fraud or corruption can be reported directly at 800-831-0463 or via email at investigations_hotline@worldbank.org.

3

CHAPTER 3 | 2019 STRATEGIC PRIORITIES

While each country or state is different, there are many commonalities across the 2030 WRG Multi-Stakeholder Platforms (MSPs). For 2019 and beyond, there is power in bringing lessons learned and sharing innovative approaches across the 2030 WRG MSPs. 2030 WRG plans to focus on three key areas where governments, private sector, civil society, academia, and others can come together to drive action to reduce global water demand and contribute to the Sustainable Development Goals.

Transforming Value Chains

With approximately 80 percent of water withdrawals accruing from agriculture, most of the MSPs in 2030 WRG countries include an agri-water workstream. 2030 WRG brings depth of expertise in improving water-use efficiency and, by implication, other resource efficiencies within an enterprise or value chain—particularly energy. 2030 WRG has a strong focus on developing public-private partnerships (PPPs) to enhance the productive use of agri-water,¹ reduce run-off pollution, and increase farm productivity and income. 2030 WRG approaches include a combination of water-efficiency solutions, infrastructure development, local water governance, good agricultural and sustainability practices and market linkages, supported by an enabling policy and regulatory environment. 2030 WRG is helping to advance the use of drip irrigation and similar approaches, as well as to build out financing schemes that support innovations and bankable projects. This is an area where 2030 WRG will bring together its efforts across countries and states to provide leadership in addressing water and food security.

Promoting Circular Economies through Wastewater Treatment and Reuse

With a focus on cross-sectoral water issues and private sector participation for effective water resource management, a key area that cuts across various 2030 WRG country and state programs is wastewater treatment and reuse, aimed at advancing circular economy solutions. 2030 WRG focuses on identifying PPP opportunities, enhancing government spending capabilities (e.g., through green bonds, blended finance), bringing in best-practice technological solutions and financing models, and implementing demand-side efficiency measures to support both a reduction in freshwater use, mitigating the impacts of untreated wastewater, and energy recovery and production. 2030 WRG is fostering collaborative action across sectors in several countries on the reuse of treated wastewater, particularly by overcoming legal, regulatory, and institutional barriers. As a tied focus, 2030 WRG works with governments, the private sector, and civil society to develop tariff structures, incorporating key aspects such as Polluter Pays principles and incentivizing a shift towards greater reuse. This is closely tied with advancing the concept of valuing water, and thus overall this thematic area is a space where 2030 WRG provides thought leadership for the promotion of new approaches as we move toward more circular economy.

¹Water consumption in agriculture through evapo-transpiration and lost return flows.

Water Security and Resilience Planning

2030 WRG is also focusing on helping countries develop water security and resilience planning capabilities through different approaches and methodologies, including: the development of hydro-economic analysis and multi-criteria investment prioritization systems oriented at pursuing water security and resilience; supporting reforms in water allocation regimes to provide greater water security and legal certainty under greater variability and uncertainty; integrating nature-based solutions in water resources management to support climate change adaptation processes; and supporting the private sector in their efforts to develop more robust water risk and water stewardship practices. This is an area where 2030 WRG being hosted by the World Bank Water Global Practice also can bring significant advancements through the depth and reach of World Bank initiatives on water security and resilience.

The road ahead toward 2030 will require much more collaboration across stakeholders to reduce conflicts, promote social and environmental well-being, and ultimately make sustainable water management the underpinning of healthy economies. Through these strategic priorities, 2030 WRG aims to bring in more partners, expand to more countries and help drive toward on-the-ground change.

4

CHAPTER 4 | COUNTRY PROFILES

Country profiles are short snapshots of our country engagements. They provide a brief overview of the work streams and share key highlights of 2018 achievements.



2030 WRG COUNTRY ENGAGEMENTS IN 2018

Today we are working in 14 countries/states. Our multi-stakeholder platforms include 746 partners from governments, private sector and civil society. They have established 46 working groups who together have developed 72 proposals for programs or policies, of which 61 are already being implemented. In our countries we bring together a high level of representation across key decision makers from government, private sector, and civil society.



14

COUNTRIES/
STATES



46

WORKING
GROUPS



72

PROPOSALS





80%

OF BANGLADESH'S WATER IS USED FOR CULTIVATION

BORO RICE, A HOUSEHOLD STAPLE, IS AN
EXTREMELY THIRSTY CROP, REQUIRING

3-4,000

LITERS OF WATER
PER KILOGRAM



TO DYE AND WASH COTTON CLOTHES FOR
THE GARMENT INDUSTRY, IT TAKES...

1,500B

LITERS OF WATER
PER YEAR

COUNTRY PROFILE | ASIA | BANGLADESH

BANGLADESH

THE WATER SECURITY CHALLENGE

Bangladesh, a small land-stressed country is home to approximately 160 million people. Rapid population growth has created considerable water-related issues in the country, as have the two biggest drivers of economic growth—agriculture and textile manufacturing.

Eighty percent of Bangladesh's water is used for cultivation, of which 75 percent is extracted from groundwater. Notably, Boro rice, a household staple, is an extremely thirsty crop. In fact, growing one kilogram of Boro rice requires 3,000 to 4,000 liters of water.

The success of Bangladesh as the second largest garment exporter comes with environmental costs. Every year, approximately 1,500 billion liters of water are used to dye and wash cotton and clothes for the garment industry. Furthermore, the country's water supply agencies draw 78 percent of water supply for both domestic and industrial uses from underground.

Improper waste disposal in urban centers has caused water and sanitation issues in Bangladesh. Untreated wastewater in industrial areas has resulted in severe health risks for communities in the surrounding areas. Despite the government's best efforts, there is scope for improvement in legislation, policy framework, and institutional capacity.

LOCAL PARTNERS DRIVING ACTION

The 2030 WRG Bangladesh program's overall goal is to improve water resources management in the urban, industrial and agricultural sectors through collaborative transformative actions. In December 2015, following the high-level approval by the Prime Minister of the Bangladesh Water Multi-Stakeholder Partnership (BWMSP), 2030 WRG worked to establish the National Steering Board under the leadership of the Cabinet Secretary (the highest-ranking civil servant in the government). The National Steering Board of the BWMSP comprises high-level stakeholders from the public and private sectors and civil society. Representation from the public sector includes the Cabinet Secretary, the Principal Secretary, and representatives from various government ministries that deal with water resources, including the Ministry of Water, Ministry of Industries, Ministry of Environment, Ministry of Land, Ministry

of Shipping, and Ministry of Agriculture. In addition to national government agencies, stakeholders from the public sector include local government officials. Representation from the private sector includes Mr. Mahbubur Rahman, President, the International Chamber of Commerce (ICC) who co-chairs the Steering Board and other key agencies such as the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), as well as multinationals such as H&M, Coca-Cola, and Nestlé. Civil society partners include organizations such as BRAC and the Bangladesh University of Engineering and Technology (BUET). All activities under the Bangladesh program transpire upon receiving recommendation and guidance from the Steering Board. Under BWMSP's mandate, four separate workstreams were formed to develop better water management practices with support from 2030 WRG:

- **The Agriculture Water workstream:** chaired by the Secretary of the Ministry of Agriculture aims to promote efficient irrigation processes;
- **The Water Governance and Sustainability workstream:** chaired by the Secretary of the Ministry of Water Resources;
- **The Greater Dhaka Watershed Restoration workstream:** chaired by Secretary of the Ministry of Local Government of Rural Development and Cooperatives; and,
- **The Industrial Water and Wastewater workstream:** chaired by the Secretary of the Prime Minister's Office.

THE ROLE OF 2030 WRG

The Bangladesh Program kick-started its activities in 2014–2015 with the three key publications:

- "Water Governance in Bangladesh – Challenges and Opportunities Around Policy, Institutional Function and Implementation for a Sustainable Water Future," March 2015
- "Consolidation and Analysis of Information on Water Resources Management in Bangladesh" in May 2015
- "An analysis of industrial water use in Bangladesh with a focus on the textile and leather industries" in May 2015

Subsequent stakeholder consultations led to the formation of the Bangladesh Water MSP with a quasi-legal status when it was approved by the Prime Minister and was officially gazetted in December 2015. Resolutions of the MSP Steering Board thereafter held considerable weight and influence in driving the water agenda in Bangladesh.

2030 WRG's pre-transaction advisory work, including advocacy for private sector participation facilitated by the MSP continues to play a key role in catalyzing a paradigm shift in the public sector's traditional approach to solving the water challenges of Bangladesh.

2018 HIGHLIGHTS

- Water Governance and Sustainability (WGS) workstream successfully facilitated the drafting and the gazetting of the Bangladesh Water Rules 2018. Putting these Rules into practice will contribute significantly towards improvement of Integrated Water Resource Management and achieving the SDG6 targets. Also, the work-stream successfully prioritized water valuation for immediate action of the government in collaboration with the private sector. The government has approved an initiative to establish and pilot a new water valuation framework. Further, the work-stream supported the government to approve an online Water Clearance System for Water Resources Planning Organization (WARPO) for expediting approval of Water Clearance for public and private sector projects.
- The Greater Dhaka Watershed Restoration workstream's implementation plan of the Gazipur City Corporation's Integrated Wastewater & Faecal Sludge Management project was approved by the Cabinet Committee Economic Affairs (chaired by the Minister of Finance) for Public-Private Partnership (PPP) implementation. This will be the first public utility project of its kind in Bangladesh to be implemented on a PPP basis. Implementation of this project will help reduce considerably the flow of wastewater in the Gazipur Tongi Zone and the Greater Dhaka Watershed northern region benefitting 20 million people.
- The Industrial Water and Waste-Water workstream, chaired by the Secretary, Prime Minister's Office has launched an initiative on formulation of Green Economic Zone Guidelines for Bangladesh Economic Zones Authority (BEZA). The initiative has been endorsed by the National Steering Board in October 2018. The new guidelines are to be implemented on a pilot basis for the Textile Economic Zone in Mirsharai, Chittagong.

THE BANGLADESH DELTA PLAN 2100 WAS APPROVED BY THE GOVERNMENT OF BANGLADESH ON 4TH SEPTEMBER 2018. IT AIMS TO IDENTIFY AND PRIORITIZE INFRASTRUCTURE INVESTMENTS, PRIMARILY RELATED TO WATER AND AIMED AT ENSURING ATTAINMENT OF SUSTAINABLE DEVELOPMENT GOALS. 2030 WRG PLAYED A SIGNIFICANT ROLE IN THE DELTA PLAN BY SUPPORTING THE DRAFTING OF ITS INVESTMENT PLAN WHICH PRIORITIZES INVESTMENTS IN THE WATER SECTOR FOR THE NEXT 15 YEARS.

- Under the guidance and supervision of the Agriculture Water workstream, the "Introducing Water Efficient Technologies" (IWET) project which is being implemented by Bangladesh Water Partnership (local chapter of Global Water Partnership) and funded by The Coca Cola Foundation completed its first year. By training 10,000 farmers on water saving irrigation technologies this project is expected to reduce the demand for irrigation water by approximately 20 percent.
- The Bangladesh Delta Plan 2100 was approved by the Government of Bangladesh on 4th September 2018. It aims to identify and prioritize infrastructure investments, primarily related to water and aimed at ensuring attainment of sustainable development goals. 2030 WRG played a significant role in the Delta Plan by supporting the drafting of its investment plan which prioritizes investments in the water sector for the next 15 years.

KEY PARTNERS

BANGLADESH



600M

PEOPLE IN INDIA FACE HIGH TO EXTREME WATER STRESS



COUNTRY PROFILE | ASIA | INDIA

INDIA

THE WATER SECURITY CHALLENGE

- 600 million people in India face high to extreme water stress.
- Climate change, urbanization, land use changes, and catchment degradation are worsening the impacts of droughts and floods, resulting in increased water stress and insecurity for agricultural, industrial and domestic users.
- Planned development benchmarks will require twice the available supply to meet the needs of energy, agriculture, and manufacturing by 2050.
- Extremely high levels of Non-Revenue Water (water losses) and lack of water treatment infrastructure plague the urban centers as India's urban population is expected to undergo a 65% increase by 2050.

LOCAL PARTNERS DRIVING ACTION

In India, 2030 WRG is working in the states of Maharashtra, Karnataka and Uttar Pradesh, as well as on priority themes at the national level. The India programs bring together numerous stakeholders in structured dialogue processes through the formation of multi-stakeholder platform Steering Boards and thematic workstreams. The Steering Boards of the three state engagements alone comprise various heads of organizations and high-level decision makers, collectively totaling 22 senior representatives from public sector, 19 from private sector, and 15 from civil society. The Steering Boards are supplemented by extensive stakeholder participation at the workstream level.

**LACK OF WATER TREATMENT INFRASTRUCTURE
PLAGUE INDIA'S URBAN CENTERS AS THE URBAN
POPULATION IS EXPECTED TO UNDERGO A**

65%

INCREASE BY 2050

Each of the state-level Multi-Stakeholder Platform (MSP) Steering Boards is chaired by the respective Chief Secretary, the highest-ranking bureaucrat. In Karnataka, Ravi Narayanan, Chair of the Asia Pacific Water Forum, representing a combination of private sector and civil society perspectives, serves as the MSP Steering Board Co-Chair.

Key highlights of 2030 WRG's partnerships at the state level in India include:

Maharashtra

The Maharashtra program comprises three workstreams chaired by steering board members, with extensive participation of stakeholders from government, private sector and civil society:

(a) Water and Livelihood Security for Rain-fed Agricultural Areas

Chaired by the Principal Secretary, Department of Agriculture, the workstream aims to drive livelihood security in the most vulnerable parts of the state through a combination of policy strengthening and private sector engagement models. The Maharashtra Cotton Water Platform Initiative, chaired by the Project Director, Project on Climate Resilient Agriculture, Department of Agriculture is supporting policy analysis to identify water use efficiency levers in cotton, working in tandem with World Wide Fund for Nature (WWF) and IDH – The Sustainable Trade Initiative.” A dashboard for assessing the magnitude of current challenges and impacts from project interventions is currently under design in the state. Various global and local apparel brands, financial institutions and civil society partners engage in the workstream.

**IN INDIA, 2030 WRG IS
WORKING IN THE STATES
OF MAHARASHTRA,
KARNATAKA AND UTTAR
PRADESH, AS WELL AS ON
PRIORITY THEMES AT THE
NATIONAL LEVEL.**

(b) Command Area Water Productivity

The workstream is chaired by the Principal Secretary, Water Resources Department (WRD) and aims to achieve water use efficiency through the creation of PPPs for off-farm and on-farm infrastructure, as well as market linkages. A Project Implementation Unit has been set up for this purpose by the government, which is establishing linkages with the National Bank for Agriculture and Rural Development, and Tata Trusts for funding support and relevant expertise.

(c) Wastewater Reuse and Management

Chaired by the Maharashtra Water Resources and Regulatory Authority (MWRRA), the workstream aims to support wastewater recycling and reuse within the urban and industrial sectors. One of the pioneering initiatives ongoing under the workstream is the concept of Tradable Wastewater Reuse Certificates, targeting 20 large industries or industrial parks and 10 large municipalities in the pilot phase. This initiative aims to create tradeable permits for wastewater reuse.

Karnataka

The Karnataka workstreams, chaired by steering board members, in which several other partners participate include:

(a) Agri-Water Efficiency

Chaired by the Principal Secretary, Water Resources Department, the workstream aims to contribute to water use efficiency at scale, while developing replicable frameworks for market-driven solutions

and public-private-community participation models. The workstream has supported one of the world's largest community drip projects, as well as new financing mechanisms for adoption of water efficient technologies. A number of agribusiness companies are engaged in the workstream for the design of initiatives with a robust business case for action.

(b) Urban Water

Chaired by the Additional Chief Secretary, Urban Development, this workstream aims to facilitate better urban water management for key Karnataka cities. 2030 WRG has supported the adoption of a policy framework for wastewater reuse in the past under this workstream and is currently working towards designing Public-Private Partnership (PPP) opportunities for circular economy solutions, as well as strengthening the enabling environment to support reuse of treated wastewater in peri-urban agricultural areas.

(c) Industrial Water

This workstream is chaired by the Principal Secretary, Commerce and Industries Department. Together with World Business Council for Sustainable Development (WBCSD), 2030 WRG serves as the secretariat of the workstream, facilitating collaborative industry partnerships and benchmarking for circular economy solutions in the use of industrial water. Key participants include representatives from industry associations and academia (e.g., Indian Institute of Science), among others.



**2030 WRG IS
SUPPORTING
WASTEWATER
RECYCLING AND
REUSE WITHIN
URBAN AND
INDUSTRIAL
SECTORS ACROSS
EACH OF ITS STATE
INITIATIVES IN INDIA.**

Photo credit: World Bank Group

Uttar Pradesh

The workstreams in Uttar Pradesh with multi-stakeholder participation include:

(a) Bundelkhand workstream

Chaired by the Chief Secretary, Government of Uttar Pradesh, the workstream aims at increasing water access and storage at scale, while developing integrated micro irrigation models and market mechanisms for offtake. 2030 WRG prepared a vision document for Bundelkhand with endorsement from the Chief Minister and has coordinated inputs from Israeli experts for an integrated action plan for the region. Separate task forces that engage stakeholders on *reservoir rejuvenation and irrigation* have already made significant progress in the state. A first-of-its-kind mapping of traditional reservoirs at the project site has revealed insights into the costs versus benefits of reservoir rehabilitation in Bundelkhand. 2030 WRG is working towards designing Public-Private Partnership (PPP) opportunities for micro-irrigation, market-offtake and crop diversification, as well as dashboards for monitoring and integration of stakeholder initiatives.

(b) Ganga Tributary Management workstream

This workstream is chaired by the Principal Secretary, Urban Development & Clean Ganga. Along with the network partners, including India-EU Water Partnership, 2030 WRG convenes technical expert meetings and facilitates discussions for integrated river basin management at tributary scale in the Hindon basin. Representatives from industry associations, civil society and academia (IIT) are participants. Task forces on data harmonization and dashboard development, as well as tributary

governance, have been established. Programs and projects with positive impact on the water system are being designed.

India national

In addition to the above state-level engagements, 2030 WRG has worked on key thematic priorities at the national level, under an MOU with the Ministry of Water Resources, River Development and Ganga Rejuvenation:

(a) PPPs for Wastewater Treatment and Reuse in the Ganga Basin

The Ganga river basin in India is home to some 450 million people. Population growth and rapid urbanization in the Ganga basin have placed unprecedented stress on water resources, leading to seasonal water shortages and water pollution. At the start of the engagement, estimates suggested 78 percent of wastewater was untreated nationally, of which 8,000 million liters per day of untreated wastewater was flowing directly into the River Ganga. Combination of these factors called for a comprehensive response. The World Bank, 2030 WRG and the IFC PPP Team worked closely, and complementarily, at national, state, and sub-basin level to help mobilize the financing and policy reform needed to reduce untreated wastewater discharge and promote efficient water use across key sectors in the basin. 2030 WRG supported a pilot PPP for Mathura-Vrindavan, including pre-feasibility assessments, hybrid annuity model options, cost-benefit-risk analysis, centralized vs decentralized solutions, etc. In addition, it supported alignment between the center, state and municipality. The combined efforts of the World Bank Group resulted in the first wave of three PPPs, with IFC as transaction advisor. The development of the hybrid annuity model also won the

World Bank Sustainable Development Vice President's Award this year. An additional nine PPP projects have been sanctioned by the government.

(b) Water Accounting

2030 WRG supported the development of a blueprint of water accounting at the national level in India, initiated in the backdrop of the Cauvery water sharing dispute between the states of Karnataka and Tamil Nadu, bringing together central government stakeholders, water sector experts, international organizations, industry representatives, enablers, and academia. A cadre of central government officials from the Central Water Commission, Central Ground Water Board, National Institute of Hydrology and others have been trained on IHE-Delft's Water Accounting Plus methodology, using remote sensing technology for the development of water accounts, and funded by the World Bank's National Hydrology Project. This methodology is being replicated in the state of Maharashtra. In addition, 2030 WRG partnered with the National Mission for Clean Ganga, the India-European Union Water Partnership, and GIZ for the development of dashboards and indicators for Ganga municipal and industrial wastewater.

THE ROLE OF 2030 WRG

2030 WRG started its engagement in India through the development of the National Water Resources Framework

Study, a report initiated at the request of the erstwhile Planning Commission as a feed into the 12th Five Year Plan. Simultaneously, it worked on a hydro-economic analysis on the agriculture sector in Karnataka to identify environmentally sustainable and economically viable solutions to the state's irrigation challenges.

Since then, its partnership has expanded into full-fledged multi-stakeholder platforms (MSP) in the three states of Karnataka, Maharashtra, and Uttar Pradesh, as well as strategic and impact-driven engagements at the national level.

The MSP Steering Boards are convened regularly, and the platforms are also used by the Chief Secretaries to initiate collaborative projects cutting across line departments. 2030 WRG has been valued for its ability to deliver quality outputs to the partners with short turn-around times, related to innovative policies, implementation guidelines, prioritization frameworks, programmatic concepts, and replicable PPP models.

2030 WRG engagements with the national government continue to remain strong and responsive, building upon the earlier work on PPPs for wastewater treatment and water accounting. The Ministry of Water Resources (MoWR) appreciates 2030 WRG's expertise in establishing and operationalizing multi-stakeholder partnerships in the water sector. Tapping into 2030 WRG expertise, the national government has expressed keenness to work



TO TACKLE THE TWIN ISSUES OF LOW WATER EFFICIENCY AND POOR LIVELIHOODS, 2030 WRG INITIATED THE RAMTHAL DRIP IRRIGATION PROJECT, WHICH IS ONE OF THE WORLD'S LARGEST FULLY-AUTOMATED MICRO IRRIGATION PROJECTS.

Photo: World Bank Group



THE GOVERNMENT IS EXPLORING THE POSSIBILITIES FOR REPLICATION OF THE RAMTHAL BUSINESS MODEL IN COMMUNITY-BASED IRRIGATION SCHEMES ALONG A CORRIDOR APPROACH COVERING 650,000 HECTARES.

together and replicate the MSP approach across several states. 2030 WRG priorities and objectives are also aligned strongly with the priorities of the Water Global Practice of the World Bank, enabling inter-operability and coordination in the three states.

Ultimately, the 2030 WRG works to support, compliment and strengthen the efforts of the partner governments to develop and achieve a water secure future, and enable a sustainable growth pathway for socio-economic development and environmental protection.

2018 HIGHLIGHTS

Drip-to-Market Agri Corridor (DMAC) in Karnataka

The facility works to increase water use efficiency and accelerate water productivity improvements in canal command areas through innovative market-driven contracts.

- To tackle the twin issues of low water efficiency and poor livelihoods, 2030 WRG initiated the Ramthal drip irrigation project, which is one of the world's largest fully-automated micro irrigation projects. This first-of-its-kind project, with a total cost of US\$130 million, puts the farmers' interest at the core of the initiative. The project covers 24,000 hectares of irrigation area command area and reaches 15,000 beneficiaries in 30 villages. Memoranda of Understanding (MoU) have been signed between over fourteen companies and government, pledging offtake support to farmers adopting drip irrigation.
- The government is exploring the possibilities for replication of the Ramthal business model in community-based irrigation schemes along a corridor approach covering 650,000 hectares. The corridor targets investments in post-harvest infrastructure creation, warehousing and transport, and logistics



Photo credit: World Bank Group/Karnataka, India

management, to create an agribusiness hub in the north of Karnataka.

Wastewater Reuse Certificates (WRCs) in Maharashtra

2030 WRG has identified four pathways to achieve circularity in urban water use; first, maximizing the use of water treatment assets in urban centers; second, targeting policy-regulatory enforcement for achieving water security goals in multiple sectors; third, Maximizing Financing for Development (MFD) through private sector financing and deployment of disruptive technologies and fourth, creating the right fiscal and institutional incentives through a system of tradable permits.

- Working with the Maharashtra Water Resources Regulatory Authority (MWRRA), 2030 WRG is supporting the development of tradable and target-based, Wastewater Reuse Certificates (WRCs) backed by Blockchain-IoT technologies for adoption, amongst large industries or industrial parks and urban municipalities. The engagement will start with the top 20 water-consuming industrial companies.
- Innovative, cutting-edge technologies such as Blockchain are expected to create a newer set of resilient institutions with improved transparency and accountability and minimal regulatory intervention.

Reservoir Restoration in Bundelkhand

A comprehensive mapping of water reservoirs has been completed for Jhansi to prioritize investments and decision making to rejuvenate sub-surface water reservoirs, and to monitor progress.

- Preliminary assessments indicate the potential for dramatic increases in water access and availability (~50%) with median investments ranging from USD 2,500 to 5,000 per reservoir. Multi-stakeholder workshops have been held in Lucknow, Jhansi and Bandha with active participation from the government, private sector, civil society and academia. As a result, design of an integration program is already underway. Collaboration with the Government of Israel is under development for the implementation of an action plan.

Data-driven Dashboards for Decision Support

The government partners in Maharashtra, Karnataka and Uttar Pradesh requested 2030 WRG support to design and institute data-driven dashboards for monitoring and investment prioritization in urban and industrial water reuse (Karnataka and Hindon) and rainfed areas (Bundelkhand).

- Dashboards that capture performances on a composite set of 100-plus indicators have been prepared to track and support decision variables

PRELIMINARY ASSESSMENTS INDICATE THE POTENTIAL FOR DRAMATIC INCREASES IN WATER ACCESS AND AVAILABILITY IN BUNDELKHAND (~50%) WITH MEDIAN INVESTMENTS RANGING FROM US\$2,500 TO 5,000 PER RESERVOIR.





2030 WRG HAS SUPPORTED A BLUEPRINT FOR WATER ACCOUNTING IN INDIA, AIMED AT DRIVING WATER USE EFFICIENCY, WATER QUALITY MANAGEMENT AND BLENDED FINANCE AND COST RECOVERY PRINCIPLES IN THE WATER SECTOR.

in rainfed areas of Maharashtra. The indicator set comprises of agro-climatic, agronomic and socio-economic parameters that help optimize crop choice decisions.

- In Uttar Pradesh, 2030 WRG supports the development of a database tracking the investments and activities in Bundelkhand against set targets for water productivity and conservation/storage. The tool provides a single window solution to track project progress and the investment hotspots using a multi-stakeholder approach.
- Data harmonization efforts in Hindon, coordinated by 2030 WRG along with partners such as the Indo-EU Water Partnerships, Netherlands Embassy and the Urban Development Department of the Government of UP attempt to improve data quality for regulatory enforcement in the Hindon basin.
- Working with the Urban Development Department in Karnataka, 2030 WRG designed an investment prioritization tool for the water sector. It helps understand three key components, namely, the value chain in water, the urban water context and institutions in Karnataka, and the general approach to preparation of projects. The Urban Development Department will be mainstreaming the tool in future project appraisals for investment in urban water. The tool also includes a set of best cases from global scenarios and has been test run with government-sponsored datasets.

PPPs for Wastewater Treatment in the Ganga Basin

The first PPPs for wastewater treatment and reuse in the Ganga basin have been launched through strong World Bank Group collaboration, addressing one of the flagship projects of the Government of India in the water sector.

- The World Bank Group's engagement on the development of an innovative Hybrid Annuity Model won the World Bank's Sustainable Development Vice President's Award in June 2018. The model supports financing and sustainable operations & maintenance (O&M) of wastewater treatment plants in the Ganga basin with private sector participation. The engagement involved collaboration across World Bank, IFC and 2030WRG, taking the model from concept to implementation. Under this initiative, the 2030WRG has played a critical role in changing the mindsets of government leaders towards the role that private sector can play through pioneering PPP transaction models.
- 2030 WRG initiated a PPP demonstration project for the cities of Mathura-Vrindavan through multi-stakeholder discussions and pre-feasibility studies to assess the project scope, partnership approaches, and hybrid annuity-based PPP options for the development of sewage treatment and reuse infrastructure. Additionally, it supported stakeholder consultations on circular economy solutions—particularly with the local refinery for reuse of treated wastewater—as well as alignment among different levels of government, namely the central government, the state government, and the municipality.
- These catalytic efforts to support a shift in the mindset of key government decision-makers towards PPP solutions, along with parallel engagements of the World Bank Group, resulted in the government retaining the International Finance Corporation (IFC) in early 2017 as transaction advisors for the first three PPPs under the national flagship Clean Ganga program in Mathura, Varanasi, and Haridwar.
- The government signed the first two concession agreements with private companies in October 2017, with the third one finalized in June 2018.

National Blueprint for Water Accounting

2030 WRG was approached by the Ministry of Water Resources, River Development and Ganga Rejuvenation (MOWR) to support objective and transparent decision-making on demand-side management of water resources.

- 2030 WRG has supported a blueprint for water accounting in India, aimed at driving water use efficiency, water quality management and blended finance and cost recovery principles in the water sector.
- Through an extensive multi-stakeholder process, the blueprint was ratified for adoption. A capacity building module was launched for central government officials from Central Water Commission, Central Ground Water Board, National Institute of Hydrology and others based on IHE Delft's remote sensing technology. Funded by the World Bank's National Hydrology Project, the training focused on the development of water accounts for the economically significant Cauvery Basin.

2030 WRG also supported the development of dashboards and indicators for Ganga industrial and municipal wastewater, partnering with the National Mission for Clean Ganga, the India-EU Water Partnership and GIZ.

KEY PARTNERS

INDIA (National, Uttar Pradesh, Maharashtra, Karnataka)





40%

OF THE TOTAL
POPULATION IS
SUPPLIED WITH
UNSAFE DRINKING
WATER

Photo credit: André Künzelmann, UFZ

MONGOLIA'S GROUNDWATER RESERVES
ARE DETERIORATING —

80%

OF MONGOLIA'S WATER CONSUMPTION
COMES FROM GROUNDWATER.

COUNTRY PROFILE | ASIA | MONGOLIA

MONGOLIA

THE CHALLENGE

Extremes in seasonal runoff, local stress and chronic deficits threaten economic development in key sectors in **Mongolia**. Rainfall varies widely across regions, leading to dangerously high groundwater dependence. Climate change multiplies stress, with an 18 percent increase in heavy rainfall in humid areas and shrinking ice cover elsewhere.

Increasing water consumption—driven by rapid urban population increase and economic activity—is placing severe demands on Mongolia’s groundwater supply. Consequently, groundwater reserves are deteriorating—the source of approximately 80 percent of Mongolia’s water consumption. The extractive industry, which accounts for 87.5 percent of Mongolia’s total export revenue, and manufacturing activities pollute existing groundwater, further depleting available water resources and increasing the risk to economic output. Up to 40 percent of the total population is supplied with unsafe drinking water, a trend which has continued for the last 3 years.

Ulaanbaatar, the capital city, and home to roughly half the population, is equally at risk from water scarcity. In the high demand scenario, approximately 43 percent of the total water demand in the capital city of Ulaanbaatar is estimated to be unmet by existing supplies by 2030.

LOCAL PARTNERS DRIVING ACTION

The 2030 WRG Mongolia Partnership was launched in 2013 at the request of the President of Mongolia to enable sustainable water resources management in the country. The Government of Mongolia partnered with 2030 WRG to establish a multi-stakeholder platform at the national level, the Steering Board of which is chaired by the State Secretary, Ministry of Environment and Tourism (MET). The platform focuses on three priorities: (1) reducing water demand and augmenting supply, (2) improving water valuation and developing incentive mechanisms for sustainable water management, and (3) supporting stakeholder collaboration and capacity building. Under these strategic themes, key partners have come together in thematic working groups to drive needed reforms.

THE ROLE OF 2030 WRG

The 2030 WRG has brought together public, private, and civil society stakeholders at the national, sectoral, and river basin levels to promote sustainable water solutions

on the foundation of 2030 WRG’s guiding principles—inclusivity, transparency, accountability, and integrity. The 2030 WRG multi-stakeholder platform in the country is serving as an innovation engine to drive needed policy, regulatory and institutional reform, and implementation of water efficiency and circular economy solutions to future proof the economy against water-related risks.

2030 WRG is currently working on critical themes of national priority, including wastewater treatment and reuse; river basin governance; and incentive-based water sustainability.

2018 HIGHLIGHTS

- **Enabling the legal environment of wastewater treatment and reuse**—Chaired by Ms. T. Bulgan, Head of Green Development Policy Planning Department, MET; Co-chaired by Mr. L. Erdenebulgan, Head of Water Resources Division, MET.

Although the Mongolian government introduced several laws and guidelines to preserve water resources through integrated water resources management, such regulations were ineffective in curbing water pollution and promoting wastewater treatment and reuse. Implementation of wastewater reuse was also weak due to an underdeveloped legislative environment and the lack of knowledge in global best practices. In this context, 2030 WRG supported a legal and operational framework of wastewater management at the national level. Within the framework, 2030 WRG has supported a new tariff model for water pollution, introducing polluter pays principles and economic incentives, to drive greater wastewater treatment. Through assessments and analysis, 2030 WRG has also developed guidelines on implementation of the law. These amendments support the avoidance of discharge of over 61.2 million cubic meters of inadequately treated effluent into the Tuul river.

In addition, 2030 WRG led a multi-stakeholder process in 2017–18 to develop standards for reusing treated wastewater in different uses such as car washing, fire-fighting, urban gardening (all in Ulaanbaatar) and dust suppression in mining industries, based on international best practices. The guiding principle behind the standard is that the treatment level for reuse of wastewater depends on the end use, ensuring cost-effective wastewater treatment and fit-for-purpose reuse.

The standard was discussed and officially approved for implementation by government at two levels, namely the Mongolian Technical Committee of Environmental Standards, which approved the standards on June 15, 2018 and the Mongolian National Technical Committee on Standardization, endorsing the draft on June 21, 2018. With the approval, treated wastewater will be counted as a new source of industrial water supply in areas where water access is limited. Within the framework of this workstream, 2030 WRG is currently assessing demonstration projects for implementation. By spearheading the development of standards based on best practices of wastewater treatment, recycling, and reuse, 2030 WRG provided the Government of Mongolia with a critical tool to implement key national priorities and policies, including the national water program and the policy on Green Development.

- **Improving water valuation and incentives for water efficiency**—Chaired by Ms. T. Bulgan, Head of Green Development Policy Planning department, MET.

Building upon its interventions on wastewater treatment and reuse, particularly to support implementation of projects, 2030 WRG, at the request of the MSP, is supporting a multi-stakeholder process to develop a practical, simple and effective system for water supply tariff in the urban areas of Mongolia,

focusing on Ulaanbaatar. The water tariff system will be guided by the following objectives:

- Resource use efficiency: incentivizing careful use of fresh water and encouraging wastewater reuse
- Social equity: enabling fair access to fresh water to different segments of consumers
- Sustainability: targeting recovery of operational costs to facilitate sustainability of assets and services

To achieve a more appropriate balance between social, financial and environmental objectives, the team is assessing potential tariff structures, accounting for the specific context of Ulaanbaatar, as the capital city and development hub.

In addition to tariff reform, 2030 WRG is promoting other instruments for water sustainability, particularly through private sector action. Although the Mongolian Water Law (2012) includes economic instruments, such as water service charges and water usage fees, their current design does not provide adequate incentive to drive water stewardship. With the aim of promoting water use efficiency and circular economy solutions, 2030 WRG supported an assessment of potential incentives and regulatory reform in



Photo credit: World Bank Group

REVISED GUIDELINES ON RIVER BASIN GOVERNANCE, BASED ON A DETAILED ASSESSMENT SUPPORTED BY 2030 WRG AND THE WORKSTREAM'S RECOMMENDATIONS, WERE ACCEPTED BY THE GOVERNMENT AS AN OFFICIAL ADMINISTRATIVE ACT ON MARCH 13, 2018.

Photo credit: André Künzelmann, UFZ

the Mongolian mining sector. The assessment and subsequent stakeholder dialogues highlighted the need to implement non-financial incentives through the initiation of an award to recognize corporate good practices.

The Mongolian platform is supporting the design of the Golden Drop, a prestigious award to recognize leading industry partners on their water stewardship efforts, while encouraging companies to innovate further and develop state-of-the-art practices in water management. 2030 WRG is engaging with key stakeholders to design the award, particularly the Ministry of Environment and Tourism, the Mongolian National Water Committee, the Mongolian Mining Association, Mongolian Chamber of Trade and Commerce, water users, and environmental non-governmental organizations. The award will be based on a robust nomination and selection framework to give it credibility nationally and internationally. The workstream is in the process of finalizing the guidelines for the award.

- **Strengthening water governance at river basin level**—Chaired by Mr. N. Battulga, Head of River Basin Administration Division, Ministry of Environment and Tourism.

With the successful application of the multi-stakeholder platform mechanism at the national level

in Mongolia, 2030 WRG has extended it to the local river basin level for inclusive, impact-oriented and integrated river basin management planning. For this purpose, 2030 WRG supported the reform of existing river basin councils into river basin multi-stakeholder platform councils. Revised guidelines on river basin governance, based on a detailed assessment supported by 2030 WRG and the workstream's recommendations, were accepted by the government as an official administrative act on March 13, 2018.

To help operationalize the guidelines, the Swiss Agency for Development and Cooperation (SDC) provided financial support to implement the guidelines within three river basin councils in South Gobi, Orkhon and Ulaanbaatar regions. Activities include capacity building of stakeholders on the revised guidelines; operationalization of the councils; and collaboration between local river basin multi-stakeholder councils, government-led River Basin Authorities (RBAs), and the national government (MET) in Mongolia. As an outcome of the intensive collaboration and intervention with MET and other workstream members, and as an endorsement of the relevance and value of the approach to local stakeholders, the engagement was extended to other regions such as the western and eastern aimags and all 24 river basin MSP councils in Mongolia have been operationalized in the course of this year.



Photo credit: André Künzelmann, UFZ

KEY PARTNERS

MONGOLIA



A high-angle photograph of a wooden boat on a body of water. The boat is filled with a large pile of coconuts, some green and some yellow. A person is sitting on the boat, holding a rope. The water is dark blue, and there is some debris floating around. The text is overlaid on the right side of the image.

VIETNAM'S
AGRICULTURE
SECTOR USES

80%

OF WATER IN
THE COUNTRY

COUNTRY PROFILE | ASIA | VIETNAM

VIETNAM

THE WATER SECURITY CHALLENGE

- Rapid economic development is the greatest pressure on Vietnam's water resources. Economic growth risks slowing down due to lack of availability of good quality water and mounting problems of water pollution and related environmental impacts, unless urgent actions are taken. Pollution-related impacts may lead to a 3.5 percent reduction of the national GDP by 2035 under a business-as-usual scenario.
- Water resources are already coming under stress, manifesting in gaps between supply and demand in certain locations and seasons. The river basins generating 80 percent of Vietnam's GDP are all expected to face water stress in the dry season by 2030. South Eastern River Cluster river basin, a severely water stressed basin, is projected to experience a 28 percent water gap in the dry season by 2030.
- Competition between sectors is growing. Rising demand for water from the urban, industrial and hydropower sectors is competing with the agriculture sector, which currently uses 80 percent of water in the country.
- Climate change will further exacerbate the situation, causing variability in water availability across regions and seasons. In addition, Vietnam is a country prone to natural disasters with high water-related costs of disaster, amounting to as much as 1–1.5 percent of GDP over the last two decades.

LOCAL PARTNERS DRIVING ACTION

Vietnam is a relatively new country engagement for 2030

WRG. Under this partnership, 2030 WRG has engaged stakeholders from government, private sector and civil society in identifying key water-related challenges in the country, starting with the formation of a multi-stakeholder Advisory Board to guide its hydro-economic assessment in the country.

Following the analysis, 2030 WRG has facilitated a series of meetings, roundtable discussions and focused group discussions with representatives from government, private sector and civil society to prioritize focus areas and solutions, and to prepare for the launch of thematic workstreams. There is strong interest from public sector, businesses and civil society organizations to engage in these workstreams.

THE ROLE OF 2030 WRG

2030 WRG initiated its Vietnam program following demonstrated interest from the Government of Vietnam in the multi-stakeholder partnership approach. In 2017, 2030 WRG conducted a hydro-economic analysis of key water sector challenges, highlighting the water demand and supply gaps in four key river basins that make up 80 percent of Vietnam's GDP and proposing a set of technical solutions to close the water gaps. Additional water-related challenges, including groundwater over-exploitation, water pollution, deteriorating water infrastructure, emerging water use conflicts and increasing drought and flood events are posing threats to socio-economic growth.

Building upon the 2030 WRG hydro-economic analysis, the World Bank Group is finalizing a Study on Water Governance in Vietnam, with technical support and stakeholder alignment facilitated by 2030 WRG. The water governance report confirms threats to the water security of Vietnam and points to the areas that need additional

**POLLUTION-RELATED IMPACTS
MAY LEAD TO A**

3.5%

**REDUCTION OF THE NATIONAL
GDP BY 2035**

**THE SEVERELY STRESSED
S.E. RIVER CLUSTER BASIN, IS
PROJECTED TO EXPERIENCE A**

28%

**WATER GAP IN THE DRY
SEASON BY 2030.**

**RIISING DEMAND FOR
WATER FROM THE
URBAN, INDUSTRIAL AND
HYDROPOWER SECTORS
IS COMPETING WITH THE
AGRICULTURE SECTOR, WHICH
CURRENTLY USES 80% OF
WATER IN THE COUNTRY.**

IN 2018, 2030 WRG CONDUCTED A SERIES OF STAKEHOLDER DIALOGUES AND ROUNDTABLE DISCUSSIONS TO GAUGE PUBLIC, PRIVATE AND COMMUNITY PERSPECTIVES ON THE GAP IN WATER RESOURCES MANAGEMENT AND POTENTIAL SOLUTION AREAS.



Photo credit: World Bank Group

investment and policy intervention, such as water pollution control, improving the water productivity of irrigated agriculture, and integrated planning and implementation of climate resilience strategies. 2030 WRG is proposing two workstreams that are in alignment with the World Bank policy recommendations, namely: (1) agriculture water productivity enhancement, and (2) water pollution management.

The 2030 WRG team is in the process of establishing the workstreams with multi-stakeholder working groups. The workstreams will develop project concept notes and proposals to implement solutions; identify third-party implementers; mobilize financing for project implementation; and monitor project progress, resolving key bottlenecks as required. As a first step in this direction, the 2030 WRG has facilitated multi-stakeholder dialogue on potential policy interventions for the agriculture and urban-industrial sectors, with the aim of strengthening the policy framework to support sustainable water resources management.

2018 HIGHLIGHTS


In 2018, 2030 WRG conducted a series of stakeholder dialogues and roundtable discussions to gauge public, private and community perspectives on the gap in water resources management and potential solution areas. These dialogues identified opportunities for collaborative models and policy revisions to accelerate water security planning and implementation.

Private sector roundtables were organized with participation of key global and domestic private sector partners. The roundtables, structured as thematic dialogues, highlighted critical gaps in implementation and brainstormed on possible solutions:

Agriculture Water Productivity Enhancement

A number of agribusiness companies, including producers, off-takers, input suppliers, and equipment providers participated in the roundtable to discuss the challenges and possibilities for increasing water efficiency in agriculture. Critical areas highlighted included the following:

- Supply chain-driven water stewardship in key value chains, such as rice, coffee, pepper and sugarcane:** The suggestion of promoting alternate wet and dry practice in rice cultivation, as well as potential technological solutions, builds upon the recommendations of the 2030 WRG hydro-economic assessment for water gap closure in the Mekong Delta and aligns with the ongoing activities under IFC's Sustainable Rice Platform. In the coffee value chain, there is a need to balance quality of the product with sustainable practices and higher income for farmers. While Vietnam ranks among the top exporters of coffee globally, the sector is facing increasing water stress, especially in the Central Highlands. Targeting sugarcane smallholder farmers with interventions for livelihood improvement, along with good water

A woman wearing a traditional conical hat and a checkered shirt is standing in a rice field. She is holding a bundle of rice seedlings. The field is filled with rows of young rice plants. In the background, there are tall bamboo trees and a wooden structure.

**PROMOTING ALTERNATE
WET AND DRY PRACTICE
IN RICE CULTIVATION,
AS WELL AS POTENTIAL
TECHNOLOGICAL
SOLUTIONS, BUILDS UPON
THE RECOMMENDATIONS
OF THE 2030 WRG
HYDRO-ECONOMIC
ASSESSMENT FOR WATER
GAP CLOSURE
IN THE MEKONG DELTA.**

Photo credit: Bigstock

management practices, was highlighted as a third potential area of focus.

- **Financing and implementation models for irrigation infrastructure:** With low/no payment for water use in agriculture, farmers currently have no incentive to invest in water-efficient irrigation technology. Stakeholders highlighted the need to define the business case for irrigation infrastructure, particularly in areas prone to water shortages, such as the Central Highlands. With the identified business case, financing models for smallholder farmers with in-built credit risk mitigation measures need support.
- **Certification for responsible water use:** A potential entry point to incentivize behavior change in farmers towards water-efficient practices is through the creation of consumer demand. There is currently no certificate or standard for responsible water use, covering water-efficient practices and responsible use of fertilizers and pesticides. Such a standard could promote a shift in practices if certified farmers emerge as preferred vendors.

Water Pollution Management

The roundtables included participation of water utilities, industrial park developers, and textile businesses. The discussion centered on the need for incentives and mechanisms to promote water conservation, wastewater treatment and reuse. Key opportunities highlighted included:

- **Greening of Eco-Industrial Parks Initiative:** Since current enforcement of regulations linked to environmental compliance is weak, a certification

scheme or index could be supported to assess and create transparency on compliance of industrial parks. This could also drive procurement decisions of buyers of industrial output, as they may shift procurement from non-compliant to compliant industrial parks.

- **Enabling and Incentivizing Centralized Effluent Treatment Plant (CETP) Operations:** Existing regulations do not account for circular economy solutions and polluter pays principles for industrial CETPs, leading to insufficient treatment and reuse. In addition, businesses have no incentive to properly treat/reuse wastewater as the regulation makes no distinction between tariff applied for different pollution loads and type of effluents, as well as between freshwater supply and wastewater discharge. In this context, the regulatory framework can be strengthened to enable and incentivize CETP operational excellence and reuse, along with an appropriate tariff system based on polluter pays principles to support overall treatment efficiency.
- **Supporting Appropriate Wastewater Pricing for PPPs:** Only 12% of municipal wastewater is currently collected and treated. The current wastewater charge is not scientifically determined for different types of wastewater and pollutants and is set as a percentage of water supply. Regulations could be amended to make this sector more sustainable and financially attractive, e.g. ring-fencing of wastewater charges, payment assurance/ guarantee from the government if wastewater charges are inadequate to cover costs, particularly to bring in private sector participation in the sector and mobilize finance for wastewater treatment plants.



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KEY PARTNERS

VIETNAM





MEXICO'S
AGRICULTURE SECTOR
CONSUMES

76%

OF AVAILABLE
WATER

COUNTRY PROFILE | LAC | MEXICO

MEXICO

THE WATER SECURITY CHALLENGE

Mexico's average water supply has dwindled from more than 18,000 M³/year in 1950 to about 3,980 m³/year in 2017. In the Greater Metropolitan Region of the Valley of Mexico, it is expected that water availability will be 136 m³/person/day by 2030, putting at risk the region's water security. Groundwater represents the source for 37 percent of national water consumption and yet 106 aquifers—out of 635—are being overexploited. Mexico City's aquifer—representing approximately 70 percent of its source of water—is being overexploited by 50 percent more than its replenishment rate. As a result, certain regions in the city are sinking up to 50cm/year, causing damages of up to US\$1,000 million every year.

There are two major drivers for the high demand for water in Mexico—agriculture and urbanization. Agriculture plays an important role in economic development in Mexico. It represents 8.4 percent of GDP and supports income generation and poverty alleviation. However, agriculture is extremely water intensive in Mexico. In fact, Mexico's agriculture sector consumes 76 percent of available water. Furthermore, disinvestment in irrigation infrastructure and unsustainable agricultural water practices have led to low water productivity in the sector.

Approximately 80 percent of Mexico's population lives in cities. As urbanization increases, competition between water users will also intensify. Drawbacks in water utilities' performance affect drinking water provision, especially in peri-urban and rural areas and also, wastewater treatment as only 20 percent of wastewater is treated. Climate change adds great uncertainty, exacerbating an already complex combination of challenges.

LOCAL PARTNERS DRIVING ACTION

2030 WRG is a member of the Consejo Consultivo del Agua A.C. (CCA), which is Mexico's water advisory council. A national level multi-stakeholder platform (MSP) that has been existence since the year 2000, the CCA comprises members of the private sector, interest group associations, commercial chambers, universities, non-governmental organizations, water utilities, and private individuals.

The CCA's role is endorsed by the National Water Law as an independent and inclusive entity of civil society and was created to enable social participation and to provide advice to Mexico's President and the National Water Commission (CONAGUA). The CCA is governed by an organizational charter and is chaired by a President, elected by a General Assembly, and is run by a small Secretariat. A steering board, on which 2030 WRG sits, closely assists the CCA's President.

The CCA operates through different thematic committees, each led by a committee leader and supported by technical secretariat. The thematic committees implement different initiatives that have specific objectives and activities. 2030 WRG has helped to create four thematic committees and each has launched a respective initiative, including: the Public-private-partnerships (PPPs) for Agri-water initiative, the Green Infrastructure Solutions initiative, the Water Security and Legal Certainty initiative, and the Toluca Water Security Initiative, which is a joint initiative with the Toluca Business Council that is known locally as Consejo Empresarial del Valle de Toluca (CEVAT).

MEXICO'S AVERAGE WATER SUPPLY WAS MORE THAN

18,000m³

A YEAR IN 1950s



IN 2017, CALCULATIONS HAVE MEXICO'S WATER SUPPLY AT

3,980m³

A YEAR

THE ROLE OF 2030 WRG

2030 WRG entered into an agreement of cooperation with the CCA in 2015 and became a full CCA member that same year, a process that benefited from the support of Nestlé-Mexico. This situation conveyed 2030 WRG with all the rights and responsibilities of a CCA Member. 2030 WRG then initiated a dialogue process with other CCA members to identify a set of policy priorities that could be addressed by thematic committees and the launching of specific initiatives. As the dialogue continued, the task ahead was to support the establishment of thematic committees by identifying key figures within the CCA who are outstanding experts and professionals that could lead each of them. Each of the leaders then invited other CCA members, as well as other special external invitees, to participate in the committees to start open and inclusive policy dialogue, help draft the initiatives' concept notes, and support the implementation of initiatives through collective action. The 2030 WRG plays the role of technical secretariat for each of the thematic committees, assisting the thematic leaders in their responsibilities, providing high-level technical advice and by providing also some logistical support.

2018 HIGHLIGHTS

The PPPs for Agri-water Infrastructure Initiative's objective is to analyze the opportunities for PPP formation. Important milestones include:

- The development of business cases and feasibility studies for five potential PPP irrigation projects
- Policy recommendations to support PPPs
- Capacity-building workshops

The Green Infrastructure Solutions Initiative's objective is to create a more enabling environment for nature-based solutions. Important milestones include:

- The enablement of multi-stakeholder policy dialogue
- The drafting of a CCA position paper
- The identification of potential areas for nature-based solutions projects in Mexico City's hinterland and in support of the World Bank's water resilience approach in the region

The Water Security and Legal Certainty Initiative's objective is to provide policy recommendations to strengthen the Mexican water allocation regime and enable water stewardship practices. Important milestones include:

- The enablement of multi-stakeholder policy dialogue
- The drafting of a CCA Position Paper and a Policy Recommendations Document
- The socialization of the World Bank's water resilience approach with the private sector.

The Toluca Water Security Initiative's objective is to support sustainable groundwater and wastewater management. Important milestones include:

- The establishment of the Toluca multi-stakeholder groundwater management committee
- In collaboration with the World Bank, the development of a comprehensive diagnosis of the Lerma River wastewater management, following a circular economy approach

KEY PARTNERS

MEXICO



CONSEJO EMPRESARIAL DEL VALLE DE TOLUCA A.C.

CCAs membership-base is comprised by the following entities and individuals:

President and former-Presidents:

Dr Jesús Reyes Heróles President of the CCA, former Secretary of Energy, former Director of PEMEX, former Ambassador to the United States / Mr Carlos Fernández, former owner and CEO of Grupo Modelo / Mr Gastón Luken, businessman and ex-President of Pronatura Noroeste / Mr Manuel Arango, Honorary President and Founder of the CCA, businessman and philanthropist

Government Institutions:

Comisión Nacional del Agua, CONAGUA / Sistema de Aguas de la Ciudad de México, SACMEX / Other government institutions participate and convene when necessary –even though they are not members of the CCA

Private Sector Companies:

Actia / Agua de México / Agua, Servicios e Inversiones de México / BAL-Ondeo (SUEZ-Environment and Grupo Peñoles) / CEMEX / Constellation Brands Mexico / Deloitte / Femsá S.A. de C. V. / Grupo Bal / Grupo Carso / Grupo Coca-Cola Company-Mexico / Grupo GUTSA / Grupo ICA / Grupo Modelo (Anheuser-Busch InBev) / Grupo Heineken-Mexico / Grupo Lala / Grupo México-Infraestructura / Grupo Nestlé-México / Grupo Peñafiel / Grupo Rotoplas / Impulsora de Empleo y Negocios de América Latina / MABE S. A. de C.V. / Proyectos Estratégicos e Integrales / Veolia-Water

Interest Group Associations:

Asociación Nacional de Empresas de Agua y Saneamiento, ANEAS / Asociación Nacional de Usuarios de Riego, ANUR / Cámara Nacional de la Industria de la Construcción, CMIC / Cámara Nacional de la Industria de la Transformación, CANACINTRA / Confederación Revolucionaria de Obreros y Campesinos

Academia:

Universidad Nacional Autónoma de México / Instituto de Ecología, UNAM / Instituto de Ingeniería, UNAM / Universidad Autónoma Metropolitana / Instituto Politécnico Nacional, IPN / Instituto Tecnológico de Monterrey, ITESM

Non-governmental Organizations:

Cantaro Azul / Centro Mexicano de Derecho Ambiental A.C. / Consejo Nacional de Industria

Ecologistas A.C. / Consultores de Educación Desarrollo y Capacitación A.C. / Fundación Mexicana para la Educación Ambiental A.C. / Instituto de Asistencia en Investigaciones Ecológicas A.C. / World Wild Fund-Mexico

International Organizations:

2030 Water Resources Group

Private Individuals:

Mr Salomon Abedrop, former Deputy Director of CONAGUA, financial consultant / Ms Regina Barba, Environmental Consultant / Mr Francisco Covarrubias Giatán, former Undersecretary of State for Urban Development / Mr José Ángel Gurria (Secretary General, OECD) / Mr César Herrera Toledo, former Deputy Director of CONAGUA / Dr Blanca Jiménez Cisneros, Coordinator of Water Treatment and Re-Use, at the Engineering Institute, UNAM (and Director of the Division of Water Sciences and Secretary of the International Hydrological Programme (IHP) / Mr Francisco Mayorga Castañeda, former Secretary of State for Agriculture / Mr Rodolfo Ogarrio, former Executive Director of CCA, Executive Director of Fundación Mexicana para la Educación Ambiental / Mr Bernardo Sepúlveda Amor, former Secretary of Foreign Affairs and former International Court of Justice Judge / Mr Eduardo Vázquez, former Executive Director of CCA, Mexico City Water Fund Manager

The CEVATs membership comprises:

Barcel / Bonafont / Bosch / CACSA / Cervicería Cauhtemóc / Cervicería Modelo / CINASA / Compañía / Harinera Los Angeles / Coca-Cola Femsá / Chrysler / Detto / Dupont / Editorial Cigome / Gates / Gelita / General Motors / Grupo Bimbo / Holiday Inn Express / Kellogg's / KHS / Marriot Courtyard / Nalco / Nestlé / O'Donnell Competitive / Polioles Poliuretanos / Reciclagua / Roche / SC Johnson / SafMex / Sealed Air / Signa / Tecnológico de Monterrey



2.7M

PERUVIANS HAVE
NO ACCESS TO
ADEQUATE
DRINKING WATER

ALTHOUGH PERU HAS 159 RIVER BASINS AND
AN OVERALL PER CAPITA AVAILABILITY OF

68,321m³

PER CAPITA

PERU SUFFERS FROM WATER
SCARCITY

LIMA, THE CAPITAL HOME TO MORE THAN

10 Million

WHERE A THIRD OF THE COUNTRY'S
POPULATION LIVES

COUNTRY PROFILE | LAC | PERU

PERU

THE WATER SECURITY CHALLENGE

Peru is among the top 30 countries that suffer from chronic water stress and water scarcity. Although it has 159 river basins and an overall per capita availability of 68,321 cubic meters per person per year, these resources are very unevenly distributed throughout the country because of the uneven spatial distribution of water resources. The country is divided into three major drainage basins: the Pacific and Atlantic basins and Lake Titicaca.

Out of Peru's total population of 30 million people, approximately 7.4 million live in rural areas. About 2.7 million of them have no access to adequate drinking water, and about 6 million Peruvians do not have access to adequate sanitation facilities. Lima, the capital home to more than 10 million people, where approximately a third of the country's population lives, is located in the Pacific basin and is characterized by an arid climate with very low rainfall (on average 9 mm annually), and is affected by extreme water shortages, especially during the dry season. This coastal area is a semi-arid area where rainfall is practically nonexistent and depends for its water supply on some 53 rivers, half of which carry only seasonal flow.

Furthermore, there are untreated mining effluents, insufficient wastewater treatment, unrestrained dumping of municipal and industrial solid waste, and indiscriminate use of agrochemicals that further limits the availability of fresh water supply throughout the country. This has increased the over-exploitation of groundwater resources reserves.

LOCAL PARTNERS DRIVING ACTION

2030 WRG and IFC in Peru signed an agreement with the National Authority of Water (ANA) and the Ministry of Agriculture in April 2013 to formally establish a relationship to promote dialogue and collaboration as well as private sector participation on water resources management in the country.

The Steering Committee of the Multi-Stakeholder Platform (MSP), formed in 2014, comprises 25 members and serves as a sounding board for discussion and for the creation of working groups to implement agreed concept notes, programs and execute projects. Initial members included the former President of Peru, Pedro Pablo Kuczynski. During his tenure, he appointed Mercedes

Castro, former Peru Sherpa to the UN High-Level Panel on Water, to represent him as the Chair of the MSP Steering Committee. He also appointed five ministers to serve on this Committee. With a change in government in 2018, the MSP changed several governmental representatives, including the Minister of Environment, the Minister of Mines and Energy, the President of the National Authority of Wastewater services (SUNASS) and the Chief of the National Authority of Water (ANA). The vice ministers of Environment and Mines and Energy are also members of the Steering Committee. Other prominent members include representatives of the private sector, academia, NGOs and international organizations.

The Steering Committee established the following working groups:

- **Works for Taxes**, accelerating infrastructure investments;
- **Adaptation to climate change and green infrastructure**, promoting green infrastructure with private sector and government;
- **Water Responsible Companies**, raising awareness on water issues and private sector action through collaboration with government;
- **Guidelines for Dialogue processes to engage with local stakeholders in conflict areas**: to create Shared Value Platforms in mining areas.

THE ROLE OF 2030 WRG IN PERU

2030 WRG is playing a key role both in supporting decision makers and relevant stakeholders in creating the right incentives for sustainable water use, whilst promoting wide alliances to recognize that water is a limiting factor but also an opportunity for development in Peru.

In 2018, 2030 WRG continued to convene transparent and high-level participation from government, private sector and CSOs in ongoing dialogue on a range of topics. These included policy considerations, private sector action and water stewardship, social impact and community participation, and financial incentives, among many others. Due to the participation of high-level government stakeholders and decision makers from various ministries, a range of topics can be tabled and discussed beyond the scope of water, truly making the MSP a unique cross-sectoral platform.

2018 HIGHLIGHTS

Works for Taxes

Created in Peru in 2008, Works for Taxes is an innovative approach to accelerating infrastructure investment. It allows private firms to “pay” their income taxes in advance through the execution of public works projects. By accepting infrastructure projects in lieu of future taxes, national, regional, and local governments can forego mobilization of public funds and reduce the burden on government budgets, as the private sector assumes the upfront costs and management of new infrastructure projects. The mechanism’s success derives from its ability to align public and private sector incentives for better quality projects and more efficient use of funds. Works for Taxes has great potential for replication in other emerging market countries with similar obstacles to infrastructure investment. Colombia enacted a law to launch Works for Taxes in November 2017. Within a month, 28 firms related to food, beverages, insurance, banking, tax auditing, cement, basic sanitation, legal services, mining, and oil have expressed interest in participating. The government plans to prioritize investments in water, sanitation, energy, health, education, and roads. In 2018, the Works for Taxes in Peru mobilized \$14 million in projects and has a total investment portfolio of \$400 million for projects in water and sanitation.

Groundwater Management and Monitoring Services Tariff

2030 WRG supported the National Authority of Wastewater Services (SUNASS) to develop a groundwater abstraction tariff for industrial users and assisted the National Water Authority (ANA) to develop a prioritization investment system. 2030 WRG has supported SUNASS, the water services regulator, responsible for determining the tariff to be levied by water utilities, in developing the methodology for the design and implementation of the tariff system.

Through internalizing the opportunity cost of groundwater and making non-agricultural groundwater users accountable for their water use, the incentive pricing features provides a means to reduce pressures on groundwater-dependent ecosystems (such as wetlands in the valleys of rivers Rimac and Chillón). It also helps mitigate pressures over surface water resources, using groundwater as a buffer resource, especially in the Pacific watersheds (with 1.8 percent of surface runoff, more than 60 percent of the country’s population and 80 percent of national GDP).

Although there are examples of groundwater tariffs in other countries, the Peruvian system can be considered unique because the way the tariff structure is designed, as it links to ground water management plans, reflecting a best practice that could potentially be replicated in other countries.

Blue Certificate

2030 WRG and its partners created the Blue Certificate, an initiative led by Peru’s National Water Authority (ANA), to encourage companies to assess the water footprint of their processes and become water-responsible companies. Companies are awarded a certificate if they fulfill three criteria: (1) develop a Water Footprint Assessment following ISO 14046; (2) commit and accomplish water footprint reductions; and (3) set out and implement a program of shared value with the communities in the watersheds in which they work. In 2018, UNACEM, Nestlé, Buenaventura and Celepsa were awarded Blue Certificates with an additional seven companies to follow: Camposol, Fenix Power, Esmeralda Corp., CITE-Ica, Ferreycorp, Agrícola Cerro Prieto and Southern Peru Copper Corporation.

ANA is expecting to save 79,000 cubic meters of water and reuse 137,000 cubic meters of water per year as a result. So far, more than \$1.3 million will be invested by the companies involved in the certification process and 30,000 citizens are expected to benefit from these investments. Shared value projects valued at \$2.8 million will directly benefit 9,233 persons and 20,000 indirectly through the efficient use of domestic water, the improvement of rural irrigation efficiency and the reuse of wastewater in public spaces, as well as a positive promotion of a sustainable water culture.

Shared Value Platform

2030 WRG co-leads the Shared Value Platform with ProNatura and IFC. In Peru, more than 50% of potential projects in the mining sector are paralyzed and associated with socio-environmental issues, particularly related to water resources management. The establishment of such a platform will ensure minimum infrastructure and basic needs coverage for the local population where access to water and sanitation is a top priority. The development of productivity chains in these areas of influence has the potential to generate a more sustainable economy. 2030 WRG will help organize a Steering Committee with high level representatives of the Executive Branch, International renowned experts on Sustainability and Peruvian leaders for this specific initiative of the MSP.

KEY PARTNERS

PERU



An aerial photograph of São Paulo, Brazil, showing a mix of urban and industrial landscapes. In the foreground, there's a large industrial facility with several large, white, spherical storage tanks and a network of pipes. To the left, a gas station with several pumps is visible. The middle ground is filled with dense residential buildings, mostly multi-story apartment complexes. In the background, the city continues to rise on hills under a dramatic, cloudy sky with warm, golden light, suggesting sunrise or sunset. The overall scene illustrates the complexity of urban infrastructure and land use in a major Brazilian city.

21%

OF BRAZIL'S
POPULATION
RESIDES IN
SÃO PAULO

Photo credit: Bigstock

COUNTRY PROFILE | LAC | SÃO PAULO, BRAZIL

SÃO PAULO, BRAZIL

THE WATER SECURITY CHALLENGE

The state of **São Paulo** is the most populated, urbanized, and industrialized state in the country. It comprises 21 percent of Brazil's population and 32 percent of the national GDP. Water stress is an increasingly blunt reality in the São Paulo macro-metropolitan area, especially in the metropolitan areas (MAs) of São Paulo and Campinas.

Historically, given the lack of investments in sewage collection and treatment, and the widespread pollution of water bodies in urban areas, local authorities were forced to continually seek protected springs to guarantee drinking water for their cities. However, the increasing demand for water—especially in the critical basins of the Alto Tietê and the Piracicaba, Capivari, and Jundiaí (PCJ) rivers—can no longer be satisfied by natural supply, all of which have been already explored, or included in the installed capacity. Despite the existing and planned inter-basin transfers, consumption will still exceed water availability. The severe drought in 2013–14 severely affected urban water supply and economic activities in State of São Paulo; the state's water crisis requires urgent attention and integrated action.

LOCAL PARTNERS DRIVING ACTION

The State Department of Water Resources and Sanitation (SSRH) and 2030 WRG signed a Memorandum of Understanding (MoU) in July 2017 to design and implement initiatives aimed at promoting water security in the state. Cross-sectoral coordination resulted in the formation of two main work streams: (1) industrial reuse of effluents from public wastewater treatment plants (WWTPs), and (2) integrated urban water management. Together with the State Sanitation Company (SABESP) and the PCJ Rivers Basin Committee and Agency, 2030 WRG's WWTP workstream is working to assess the potential for investments in water reuse projects in the metropolitan areas of São Paulo and Campinas. The integrated urban

water management workstream is providing support to the partnership between the São Paulo City Government (PMSP), SABESP, and other institutional players. This workstream intends to enable alternatives to accelerate the environmental recovery of polluted urban rivers and streams in the city of São Paulo, which receive huge loads of sewage and solid waste, especially from low-income neighborhoods not served by sewage collection networks. Projects to retrofit urban hydraulic infrastructures will incorporate an innovative and integrated approach that combines drainage and flood control with water treatment, solid waste management, and urban landscape recovery.

2018 HIGHLIGHTS

- Organization of a seminar and workshop to discuss the opportunities and hurdles for investments in water reuse projects in Brazil, especially in the State of São Paulo, to improve industrial reuse of effluents from WWTPs in the PCJ rivers basins.
- Elaboration of a report that synthesizes the feedback from the public during the aforementioned workshop, and the creation of a Terms of Reference (ToR) for a regional study on industrial reuse for the PCJ basins.
- Support to the State Department of Water Resources and Sanitation and the organization of an international symposium to discuss water reuse as part of the solution for water security issues in Brazil.
- Support to the São Paulo City Government and SABESP for the development of studies and proposals for pilot projects that integrate urban water management functions and promote environmental and landscape recovery of polluted rivers and streams in the City of São Paulo. Such projects could include the installation of compact WWTPs in flood control reservoirs and water bodies and the recovery of the Anhanguera stream in the downtown capital.

Photo: View of the Sao Caetano city in São Paulo metropolitan region.



KEY PARTNERS

SÃO PAULO, BRAZIL



Photo credit: Carlos Alkmin (CarlosAlkmin.com.br)

**DROUGHT IN THE
AWASH BASIN
COULD CAUSE GDP
TO DROP BY UP TO**

20%

Photo credit: *Bigstock*

COUNTRY PROFILE | AFRICA | ETHIOPIA

ETHIOPIA

THE WATER SECURITY CHALLENGE

Ethiopia has an apparent abundance of water, but it is unevenly distributed between seasons, years, river basins and highland and lowland regions. As a consequence, there is localized scarcity at points in space and time. While Ethiopia is a low-income country with the ambition to achieve the middle-income status by 2025, water scarcity will affect sectors of the economy in several ways. Agricultural output is highly sensitive to variations in water availability. Reports show that accounting for knock-on impacts in other sectors, drought could cause GDP to decline by 20 percent in the Awash Basin which hosts a large concentration of industrial and agricultural production compared to the other eleven basins. On the other hand, Industrial production in Ethiopia, which is almost exclusively reliant on groundwater, is less susceptible to fluctuations in availability, but also subject to limits on sustainable withdrawals over the long run.

LOCAL PARTNERS DRIVING ACTION

In December 2017, the Planning and Development Commission (PDC and formerly National Planning Commission) formally invited 2030 WRG to jointly coordinate and undertake analytical work in form of a hydro-economic analysis (HEA) in collaboration with the Ministry of Water, Irrigation and Energy (MoWIE) to provide insights into the 15-year planning strategy for Ethiopia.

To kick-start the HEA-process, 2030 WRG engaged with various relevant stakeholders and established two advisory groups to guide the HEA process. The hydro-economic analysis aims to provide input for the economic development strategies, and basis for exploring opportunities for the public sector to engage with the private sector in addressing water resource management challenges in Ethiopia.

- **The Public Sector Advisory Group**—chaired by PDC and co-chaired by the MoWIE, comprised of other Federal ministries and Commissions such as The Ministry of Agriculture; Environment, Forest and Climate Change Commission, The Ministry of Industry and Trade, and The Ministry of Urban Development and Construction.

- **The Private Sector and Civil Society Organizations Advisory Group**—under the co-chairmanship of a private sector company (Nestlé Waters Ethiopia) and a civil society organization (Solidaridad) comprised of other development partners such as USAID, Italian Cooperation, Dutch Water Authorities, IWaSP/GIZ, SIWI, and private sector partners such as H&M, Coca Cola, Luna Exports, Dow chemicals, Diageo, Yirgalem textiles factory, Heineken, Horn of Africa Regional Environment Centre (HOA REC) and Cotton, Textile and Horticulture associations.

THE ROLE OF 2030 WRG

2030 WRG has facilitated several national-level dialogues to further develop the hydro-economic study through its advisory groups. The objective of this study is to serve as a high-level guide on existing and future water resource management challenges, and opportunities in addressing water security through a multi-stakeholder approach.

2030 WRG aims to facilitate joint action by engaging public-private and civil society stakeholders in improving water resources management and demonstrating that effective water resource management can be achieved through cross-ministerial collaboration and collective action.

2018 HIGHLIGHTS

Since April 2018, three stakeholder workshops have been held with the public sector and private sector/CSO advisory groups separately, to gather input on the development of an MSP in Ethiopia and the development of a hydro-economic analysis.

In addition, 2030 WRG actively engaged with MoWIE and other stakeholders to develop a common national platform to address selected water resources management issues in Ethiopia. In June 2018, 2030 WRG worked closely with MoWIE to conduct national meetings to refine the issues and open discussion to jointly develop implementable programs.



Photo credit: World Bank Group

COUNTRY PROFILE | AFRICA | KENYA

KENYA

THE WATER SECURITY CHALLENGE

- 30 percent gap between water demand and practically available water supply by 2030.
- Climate change, deforestation, unsustainable consumption behaviors, and catchment degradation are worsening the impacts of droughts and floods, resulting in increased water stress and insecurity for agricultural, industrial and domestic users.
- Planned development benchmarks will require more water to meet the needs of energy, agriculture, and manufacturing and competition for water is increasing.
- Water loss remains a major challenge in urban areas, with commercial and physical losses accounting for about 42 percent of total water.

LOCAL PARTNERS DRIVING ACTION

Currently, a total of 100 partners are involved in the Kenya 2030 WRG Multi-Stakeholder Platform (MSP). The Kenya 2030 WRG governing board is co-chaired by Hon. Simon Chelugui, Cabinet Secretary of the Ministry of Water & Sanitation and Vimal Shah, Chair of BIDCO Africa. The Kenya MSP is evenly balanced with 7 government partners, 5 representing the private sector, and 5 civil society organizations.

2030 WRG Kenya MSP has three workstreams, each of which is chaired by an MSP steering committee member, in which other partners participate:

- **Agricultural Water Management workstream** that includes:
 - Climate Smart Irrigation Facility chaired by the Principal Secretary of the State Department of Irrigation
 - Mount Kenya Ewaso Water Partnership chaired by Eng. Maina, Agriculture Chief Officer, Water and Sanitation Services, Laikipia County
- **Industrial Water Management workstream** that includes the Kenya Industrial Water Alliance (KIWA), chaired by the Kenya Association of Manufacturers.
- **Urban Water Management workstream** led by State Department of Water Services and the Water Services Regulatory Board.

THE ROLE OF 2030 WRG

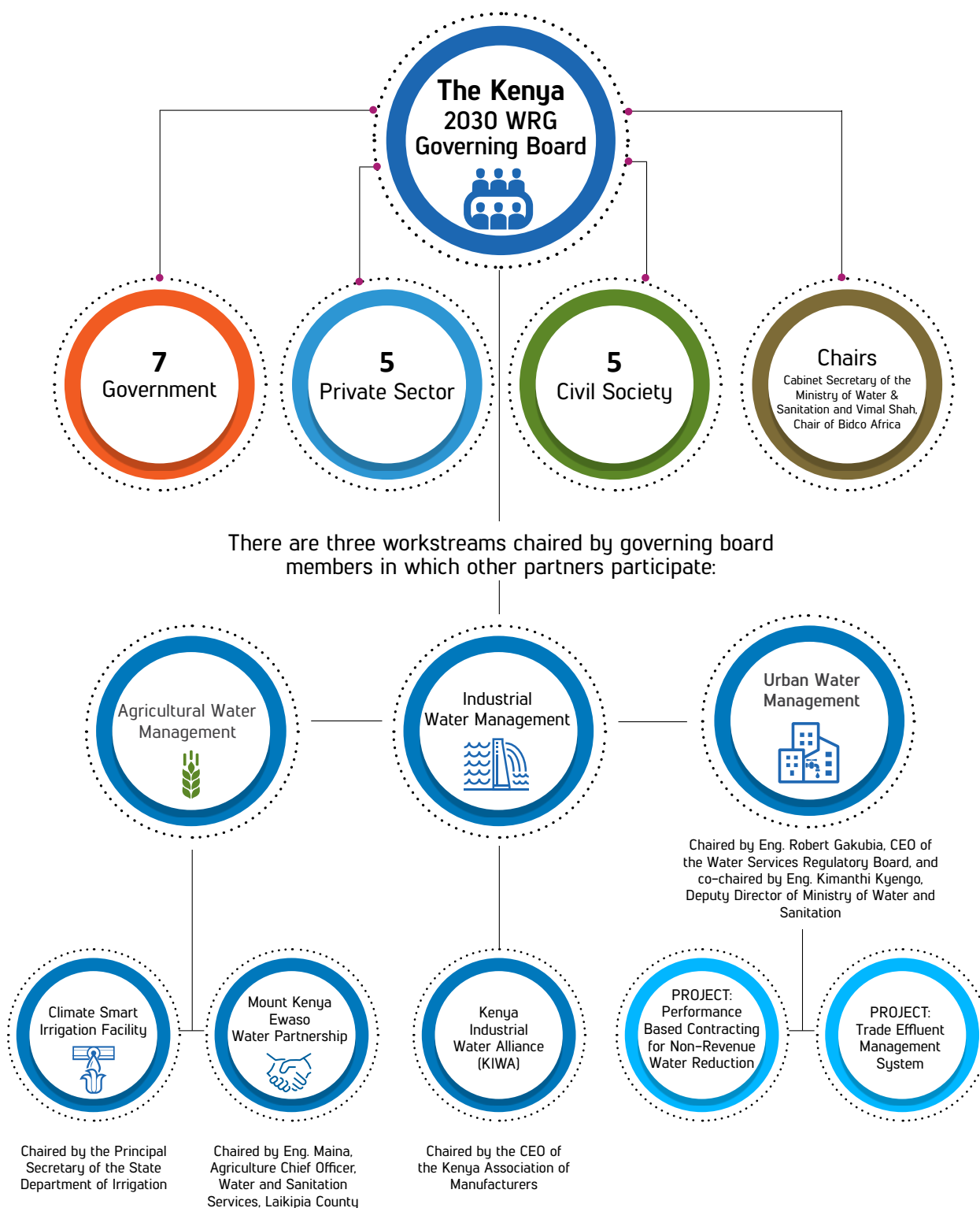
2030 WRG began supporting multi-stakeholder collaboration in Kenya in 2014 by invitation of the government, starting with a hydro-economic analysis that identified a possible water supply and demand gap of 30 percent by 2030. This analysis created a sense of urgency that helped bring stakeholders together. Consultations resulted in the creation of a national multi-stakeholder platform comprising a national governing board and three thematic focus areas in 2015.

Operationalization of the partnership coincided with a process of devolution creating additional operational complexity and a need for coordination between national and county governments. To address this, 2030 WRG prioritized alignment with the devolved government structure and channeled engagement into two tracks: the national-level governing board, where the national government provides strategic direction in line with national objectives, and the thematic working groups, where varied mandates are more effectively aligned, and county governments can directly address issues of relevance to their specific constituencies.

Despite a far-reaching Cabinet reshuffle in early 2018, the Government of Kenya's commitment to the governing board and workstreams has persisted without interruption, reflecting a strong mooring within the various ministries and county governments.

The day-to-day focus of the 2030 WRG is to facilitate the efficient and effective functioning of the governing board and working groups. 2030 WRG provides secretariat support to the partnership; develops project concept notes and proposals to implement solutions; identifies third-party implementers; mobilizes financing for project implementation; and monitors project progress, resolving key bottlenecks as required.

LOCAL PARTNERS DRIVING ACTION



2018 HIGHLIGHTS

Agricultural Water Management Climate Smart Irrigation Facility

- An Irrigation Financing Facility (IFF) is being rolled out in partnership with IFC and has progressed to the piloting phase. The pilot project will work with a portfolio of approximately 500 out-growers, alongside equipment suppliers, off-takers, and two commercial banks to provide access to credit, training and agronomic support to smallholders who require irrigation systems. The estimated financing to be facilitated by the loan facility could translate to \$1 million of investment by the pilot farmers into irrigation solutions.
- In collaboration with the National Irrigation Board, the Ministry of Agriculture and Irrigation, County Governments, and the World Bank, the agricultural water workstream is exploring the replication of IFF business model alongside other farmer-led irrigation approaches in community-based irrigation schemes.

Mount Kenya–Ewaso Water Partnership (MKEWP)

With over 70 member organizations, the partnership works to mitigate conflicts between upstream and downstream water users, develop water storage infrastructure and strengthen institutional frameworks to effectively manage water abstraction.

- MKEWP is in the process of piloting a Water Resource User Association (WRUA) Agency model as a mechanism to capacitate WRUAs to work together with the Water Resource Authority, serving as agents on the ground to ensure equitable and effective management of water resources at the basin level.

Industrial Water Management Kenya Industrial Water Alliance (KIWA)

The alliance addresses water-related risks to industrial growth by developing joint solutions for efficient industrial water use and management.

- KIWA is working in partnership with the Kenya Association of Manufacturers (KAM), the Water Resource Authority (WRA), and the Ministry of Industry, Trade and Cooperatives to develop an online platform to improve reporting, data collection, and benchmarking of industrial water use. The aim is to promote investment in water management and pollution prevention by facilitating access to finance and technological solutions within manufacturing industries.

Urban Water Management

The working group supports technical and financial innovations to reduce urban water losses and expand water access and treatment.

- The working group is working in partnership with the Water Services Regulatory Board (WASREB) and the World Bank Water Global Practice to support the development of five performance-based contract (PBC) demonstration projects to showcase the impact-potential of partnerships between water utilities and the private sector for reducing non-revenue water (NRW).
- In collaboration with Nairobi and Nakuru Counties, the working group is developing a trade effluent management system based on the Polluter's Pay Principle (3P). The 3P mechanism aims to encourage commercial and industrial water users to pretreat their effluent water before discharge or treat it re-use. The objective of this market-based instrument is to promote compliance of discharge regulations among trade customers and increase investment in technologies for pretreatment and recycling of waste water before discharge to the effluent system.



KEY PARTNERS

KENYA (KENYA 2030 WRG GOVERNING BOARD MEMBERS)



KENYA (KIWA MEMBERS)



Mount Kenya Ewaso Water Partnership (MKEWP)

In addition to the above-listed partners, there are approximately an additional seventy partners that comprise the Mount Kenya Ewaso Water Partnership.

The background of the entire image is a warm, golden-yellow sunset or sunrise over a savanna. In the foreground, the silhouettes of three wildebeest are visible, grazing or standing in a field. To the left, the branches of a tree are silhouetted against the bright sky. The overall mood is serene and natural.

61%

OF OVERALL WATER
USE IS DRIVEN BY
IRRIGATION

WHICH HAS WATER
LOSSES OF ABOUT

30%

COUNTRY PROFILE | AFRICA | SOUTH AFRICA

SOUTH AFRICA

THE WATER SECURITY CHALLENGE

- 17 percent gap between water demand and practically available water supply by 2030.
- Agricultural water demand, which accounts for 61 percent of overall water use, is driven by irrigation which has water losses of about 30 percent.
- The mining sector contributes 18 percent to South Africa's GDP however, it also contributes to water pollution and generates excess mine water and acid mine drainage (AMD) with high levels of contaminants.
- An estimated 37 percent of the water in South Africa's municipal systems is non-revenue water; a value of around 7 billion South African rand (US\$500 million) annually.

LOCAL PARTNERS DRIVING ACTION

The Sustainable Water Partners Network (SWPN) includes approximately 100 partners, including:

- 12 international organizations
- 37 public sector organizations
- 6 financial institutions
- 35 private sector partners
- 10 civil society partners

SWPN includes six thematic working groups in which other partners participate:

- Agriculture Supply Chain Working Group chaired by Felix Reinders, Agricultural Research Council
- Effluent and Waste Water Management Working Group chaired by Nandha Govender, Eskom
- Water Use Efficiency and Leakage Reduction Working Group chaired by Monako Dibetle and Andre Robins, Nestlé
- Sanitation Working Group chaired by Faith Lawrence, GIZ
- Skills Development and Transformation Working Group chaired by Martin Ginster, Sasol
- Water Stewardship Working Group chaired by William Moraka, SALGA and Mongezi Vet, Exxaro

THE ROLE OF 2030 WRG

In 2010, 2030 WRG published *Charting Our Water Future*, which highlighted that competing demands for water would be a considerable global challenge in future. The document used case studies on four countries, including South Africa, to provide a global perspective on the scale of the water challenge. The publication helped to focus attention and elevate the subject of the water gap up the agenda of stakeholders in South Africa.

In an effort to combat South Africa's pressing water concerns, Edna Molewa, South Africa's former Minister of Water and Environmental Affairs, requested 2030 WRG help to set up a neutral and transparent multi-stakeholder platform to meet the government's strategic objectives for water.

The network, inaugurated in November 2011, brings together senior government representatives, leading private sector corporations, and other key stakeholders to discuss South Africa's water challenges. It is the "go-to" multi-stakeholder platform for government and business to address the country's most pressing water issues: improving water efficiency and reducing leakage, managing effluent and wastewater, and managing agricultural and supply-chain water.

The SWPN Steering Committee provides the overall strategic direction and is made up of the DWS, 2030 WRG, key companies, civil society and invited organizations such as the World Wildlife Fund (WWF) South Africa. The SWPN partnership is hosted by the NEPAD Business Foundation (NBF).

The projects coordinated through the SWPN's six thematic working groups have led to implementation of the No Drop program to reduce water losses in municipalities, a Mine Water Coordinating Body in the Mpumalanga Coalfields to drive sustainable mine water management, and the roll out of an irrigation management system in large irrigation schemes to reduce water losses.

The SWPN has thus established itself as a leading vehicle to foster collaboration across government, industry and civil society; a way of working that has proven to be exemplary across sectors and borders. This role of the SWPN is now formally identified in the National Water Resources Strategy.

2018 HIGHLIGHTS

SWPN was awarded the 2018 State-of-the-Art Partnership of the Year Award in the clean water category at the 2018 Partnership for Growth (P4G) Summit in Copenhagen as part of a global showcase of innovative private-public partnerships that have made a significant impact in driving sustainable development and climate action.

Agricultural Supply Chain (ASC) Working Group

Improving equity in water access for irrigation schemes and efficient water use.

- **Vaalharts Irrigation Scheme Upgrade**

The SWPN is supporting the National Agricultural Marketing Council (NAMC) to secure financing for the upgrade of the Vaalharts, South Africa's oldest and largest irrigation scheme covering over 35,000 ha.

- SWPN has unlocked infrastructure upgrade investments worth R7 million. The upgraded scheme has the potential to achieve water savings of approximately 40 million m³/annum.

- **Water Administration System (WAS) Project**

The WAS is an automated water management tool for irrigation schemes to manage their water usage, water distribution and water accounts.

- To date, the initiative has reduced freshwater abstraction by 55 million m³ per year across nine irrigation schemes, equivalent to about 2 percent of the water gap between water supply and demand (of 2.7 billion m³ per year) anticipated in 2030.

Effluent and Waste Water Management (EWWM) Working Group

Expanding the re-use of treated effluent and waste water in local municipalities.

- **Mine Water Management (MWM) Project**

The MWM is a three-phase approach to address water pollution problems caused by mine-impacted waters.

- A Mine Water Coordinating Body (MWCB) was established to coordinate regional planning and management of mine impacted water. Based on its success to date, the Mineral Council of South Africa plans to replicate the model in other mining areas. Various mining companies have made financing commitments to the MCWCB for the next three years.
- MWCB, together with the Water Research Commission of South Africa and private companies within the mining sector, are carrying out a project to use saline mine water treatment for agriculture. A maize crop was planted in September 2017 with the first results on crop growth expected in the first quarter of 2018. A substantive evaluation of the pilot requires about 24 months.

Water Use Efficiency and Leakage Reduction (WELR) Working Group

Addressing municipal and industrial water losses.

- **No Drop Programme Phase 2**

The No Drop Programme is a water use efficiency rating system aimed at municipalities to encourage performance excellence through a rewards and penalties system. The No Drop is a simple scorecard that assesses and ranks municipalities on water losses, revenue collection and water use efficiency.

- All municipalities in South Africa have been assessed using the three most essential KPAs of the No Drop scorecard (3 percent No Drop data)
- All eight metropolitan municipalities have been audited against the full scorecard with seven KPAs

KEY PARTNERS

SOUTH AFRICA



EMBASSY OF DENMARK
South Africa





THERE HAS BEEN A

60%

DECLINE IN
RENEWABLE
FRESHWATER
RESOURCES
BETWEEN 2002
AND 2015

COUNTRY PROFILE | AFRICA | TANZANIA

TANZANIA

THE WATER SECURITY CHALLENGE

- 60 percent decline in renewable freshwater resources available annually per person between 2002 and 2015
- Continued population growth is likely to reduce water availability even further from 1,608 m³ per capita per year in 2015, to around 1,400 m³ by 2025, according to government projections.
- Irrigation, which accounts for over 82 percent of water abstracted, will create additional demand for water; withdrawals are expected to double by 2035 as a result of the government's objective to increase agricultural production.
- Although Tanzania is relatively well endowed with water resources, a variable and changing climate, limited technological choices, and constraints on infrastructure and investment present a challenge for effective water resource management development.



THE ROLE OF 2030 WRG

Tanzania 2030 WRG was officially launched in October 2013. A preliminary hydro-economic analysis commissioned by 2030 WRG showed that cooperation across all sectors would be required if the country is to make sufficient water available to meet the demands of a growing population and an ambitious development agenda. A sufficient and reliable supply of water is a necessary precondition to expand the manufacturing sector, increase hydropower generation and intensify agricultural production in line with the nation's goal of achieving middle-income status by 2025.

The analysis laid out the business case for sustainable water resource management and identified opportunities for engagement across the public and private sectors. It highlighted the most critical water resources challenges, identified the links between economic performance and water availability, and clarified existing and future constraints which would need to be overcome. As a result, Tanzania 2030 WRG aligned its efforts behind three priority thematic areas: (i) water use efficiency, (ii) water sources protection and (iii) cross-sectoral collaboration.

Tanzania 2030 WRG has since founded three multi-stakeholder partnerships—one national level platform and two geographic focused initiatives—to bring water users, policy-makers, and businesses together to address their shared water challenges: the National Multi-Stakeholder Forum, the Kilimanjaro Water Stewardship Platform (KWSP), and the Great Ruaha Restoration Campaign (GRRC), respectively.

2018 HIGHLIGHTS

National Multi-Stakeholder Forum

The forum is the outcome of sustained collaboration between Tanzania 2030 WRG and the Ministry of Water to bridge the coordination gap between the various authorities engaged in water resources management. It fosters collaboration for the development of a more efficient and sustainable water resource management sub-sector and works to unlock opportunities for expanding business and improving local livelihoods through strengthened engagement with the private sector.

- In 2018, 2030 WRG supported the Ministry of Water to convene its second meeting, bringing together over 80 participants from a mix of public, private and civil society organizations, to chart a path towards the development of water-smart infrastructure to support sustainable growth in Tanzania.

Kilimanjaro Water Stewardship Platform (KWSP)

A partnership platform for the co-development, coordination, and implementation of joint catchment management solutions.

- KWSP and partners carried out various catchment conservation initiatives including: tree planting to restore clear-cut riparian areas; reconstruction of irrigation canals and community management of water; and the identification and registration of riparian land to enable legal protection of water sources from encroachment.
- KWSP, together with the International Water Stewardship Program (IWaSP) and the local Water Users Association under the Catchment Management and Restoration Workgroup of the KWSP, supported the Pangani Basin Water Board to carry out an inventory of water permits which found that 62 percent of water abstractions in the area were illegal. Over the course of the inventory exercise, the Pangani BWB collected a total of TZS 10.3 million (US\$4.6K) in outstanding fees—a much needed first step to break out of a cycle of non-payment and underfunding that prevents it from carrying out its mandated functions.
- In cooperation with TAHA and Rikolto, KWSP carried out an assessment of existing irrigation financing products and technology solutions to develop an investment case for increased financing by commercial lenders for farmer groups within the catchment—smallholder, emerging, and commercial farmers, individual, and cluster/co-ops. The findings will feed into the development of a dedicated irrigation financing facility for smallholder farmers.

Great Ruaha Restoration Campaign (GRRC)

The GRRC is a partnership-facilitation mechanism that brings together public, private, and civil society actors to address the water crisis in the Great Ruaha.

- GRRC worked closely with government counterparts on the downscaling of the basin Integrated Water Resource Management Development Plan (IWRMDP) to scale priorities and activities down to the catchment level. Based on these priorities, the campaign developed and endorsed a concept note to take the partnership forward.

Irrigation financing facility—A Joint KWSP & GRRC Initiative

KWSP and GRRC, together with the Financial Sector Deepening Trust (FSTD), Tanzania Agricultural Development Bank (TADB), and the Private Agricultural Sectoral Support (PASS) are developing a project that would generate a pipeline of irrigation projects in Tanzania, targeting the commercial smallholder and emerging farmer segments. Once its full ambition is realized, the initiative will see a substantial increase in smallholder farmer's access to irrigation solutions. This will be achieved by firstly, identifying and incubating qualifying irrigation projects so that they are ready for financing by the public and private sector; and second, improving stakeholder coordination in smallholder agricultural value chains which are inhibited by high transactional costs.

KEY PARTNERS

TANZANIA



5

CHAPTER 5 | GOVERNANCE

Governing Council

2030 WRG's governance structure comprises a Governing Council, Steering Board, and Secretariat. The Governing Council consists of 19 senior executives of development partners, who guide the strategic direction of 2030 WRG.

The Annual Report reflects the fiscal year 2018 (July 1, 2017 to June 30, 2018). The Governing Council members list reported here reflects an updated version as of December 1, 2018.

2018 Governing Council Members

- Paul Bulcke (Co-Chair), Chairperson of the Board, Nestlé
- Laura Tuck (Co-Chair), Vice-President Sustainable Development, World Bank Group¹
- Akunwumi Adesina, President, African Development Bank
- Inger Andersen, Director-General, International Union for Conservation of Nature
- László Balogh, Deputy State Secretary, Ministry for National Economy, Government of Hungary
- Eli Cohen, Minister for the Economy and Industry, Government of Israel
- Stephanie von Friedeburg, Chief Operating Officer, IFC
- Ross Hamilton, Interim Chair, Global Water Partnership²
- Carin Jämtin, Director-General, Swedish International Development Cooperation Agency
- Andrew Liveris, Chairperson and CEO, The Dow Chemical Company
- Luis Moreno, President, Inter-American Development Bank
- Muhammad Musa, Executive Director, BRAC³
- Mads Nipper, CEO, Grundfos
- Gugile Nkwinti, Minister of Water and Sanitation, South Africa⁴
- Indra K. Nooyi, Chairperson and CEO, PepsiCo
- James Quincey, President and Chief Executive Officer, The Coca-Cola Company⁵
- Frank Rijsberman, Director-General, Global Green Growth Institute
- Manuel Sager, Director, Swiss Agency for Development and Cooperation
- Richard Samans, Head of the Centre for the Global Agenda, Member of the Managing Board, World Economic Forum
- Achim Steiner, United Nations Development Programme

¹ Laura Tuck has been appointed to serve on the Council by Kristalina Georgieva, CEO World Bank Group.

² Ross Hamilton succeeded Oyun Sanjaasuren.

³ Muhammad Musa succeeded Sir Fazle Hasan Abed KCMG.

⁴ Gugile Nkwinti succeeded Nomvula Mokonyane.

⁵ James Quincey succeeded Muhtar Kent.

Steering Board

The Governing Council appoints the members of the Steering Board, which oversees the management of 2030 WRG. The Board reviews and submits the strategic plan and budget annually to the Governing Council. The Board also supervises the Secretariat, and approves its plan, budget, and proposed country programs, supervises funding and resource development within countries, and comments on 2030 WRG's work program.

2018 Steering Board Members

- Dominic Waughray (Co-Chair), Head of Public-Private Partnerships, Member of the Executive Committee, World Economic Forum
- Jennifer Sara (Co-Chair) Senior Director, World Bank Water Global Practice⁶
- Roberta Barbieri, Vice President, Global Water and Environmental Solutions, PepsiCo
- Maria van Berlekom, Head of Unit, Global Cooperation on Environment, Department for International Organisations and Policy Support, Swedish International Development Cooperation Agency (Sida)⁷
- James Dalton, Director a.i., Global Water Programme, International Union for Conservation of Nature⁸
- Balázs Heincz, Deputy Head of Department for Water Diplomacy and the Danube Region Strategy, Government of Hungary⁹
- Karin Krchnak, Program Manager, 2030 WRG¹⁰
- Yechezkel Lifshitz, Deputy Director General, Energy Infrastructures & Water Resources, Government of Israel
- Isabella Pagotto, Senior Adviser/Senior Programme Manager, Global Programme Water, Swiss Agency for Development and Cooperation
- Morten Riis, Group Public Affairs Director, Grundfos
- Ulrike Sapiro, Global Senior Director Water Stewardship & Sustainable Agriculture, The Coca-Cola Company¹¹
- Lisa Schroeter, Global Director, Trade and Investment Policy, The Dow Chemical Company
- Milagros Rivas Saiz, Manager, International Finance Corporation
- Monika Weber-Fahr, Executive Secretary, Global Water Partnership¹²
- Ghislaine Weder, Head, Economics and International Relations, Nestlé

⁶ Jennifer Sara succeeded Guangzhe Chen.

⁷ Maria van Berlekom succeeded Ana Gren.

⁸ James Dalton succeeded Mark Smith.

⁹ Balázs Heincz succeeded István Joó.

¹⁰ Karin Krchnak succeeded Anders Bernzell.

¹¹ Ulrike Sapiro succeeded Michael Goltzman.

¹² Monika Weber-Fahr succeeded Rudolph Cleveringa.

CHAPTER 5 | GLOBAL PARTNERS

Our Global Donors and Partners 2018

Multinational
companies

Bilateral
donors

Development
banks

INGOs and IGOs



Incubated within



Hosted by



CHAPTER 5.2 | FINANCIAL REPORT

2030 WRG Financial Reports prior to Fiscal Year 2018 are included in 2030 WRG Annual Reports. The following provides the additional information for Fiscal Year 2018, unaudited.

Income & Co-Financing

Donors Contributions through the World Bank Group Trust Fund (TF)

Donor Name	Total Contributions Amount Amount in \$	FY18 Contributions Paid-in Amount in \$
Swiss Agency for Development and Cooperation (SDC)	7,438,323	199,973
Swedish International Development Cooperation Agency (Sida)	7,574,550	
Global Green Growth Institute (GGGI)	600,000	
Hungary – IFC Partnership Fund	1,799,407	
Public-Private Infrastructure Advisory Facility (PPIAF)	170,000	
Total Contributions from Public Sector through Trust Funds	17,582,280	199,973
PepsiCo Foundation	5,000,000	
Grundfos Holding A/S	2,500,000	500,000
Nestlé SA	3,999,980	1,000,000
Dow Chemical Company	500,000	
The Coca-Cola Company	5,750,000	1,000,000
Total Contributions from Private Sector through Trust Funds	17,749,980	2,500,000
GRAND TOTAL	35,332,260	2,699,973

CHAPTER 5.2 | FINANCIAL REPORT

FY18 Co-financing facilitated by 2030 WRG's Multi-Stakeholder Platforms (MSP)

Donor Name	In-kind Contributions (\$US)	Parallel Contributions (\$US)	Total (\$US)
International Finance Corporation (IFC)	1,000,000		1,000,000
Facility Support from Government of Mongolia	39,108		39,108
Government of Kenya	195,000	115,300	310,300
Government of South Africa	163,056	414,328	577,384
Government of Mongolia		150,000	150,000
Government of Tanzania		227,490	227,490
Government of Bangladesh		33,500,000	33,500,000
Government of Karnataka		131,538,000	131,538,000
SDC Mongolia		200,000	200,000
India-EU Water Partnership		235,000	235,000
Bangladesh Economic Zones Authority (BEZA)		600,000	600,000
The Coca-Cola Foundation		200,000	200,000
H&M		77,000	77,000
WB National Hydrology Project		234,733	234,733
WBCSD		51,700	51,700
Karnataka Urban Water Supply and Sewerage Board		81,500	81,500
Syngenta		14,000	14,000
GRAND TOTAL	1,397,164	167,639,051	169,036,215

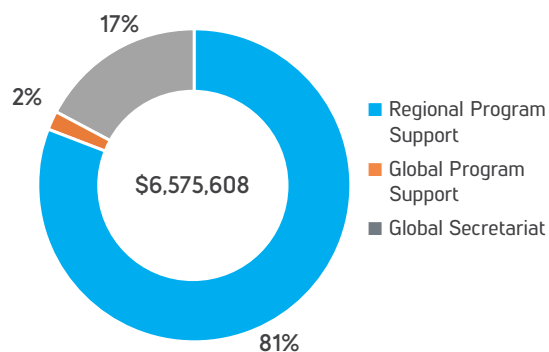
Expenditures

The 2030 WRG Program expenses and expenditures were met using resources carried over from Fiscal Year 2017, as presented to the Governing Council Meeting of January 2018 (approximately US\$5.1 million due to the transition period).

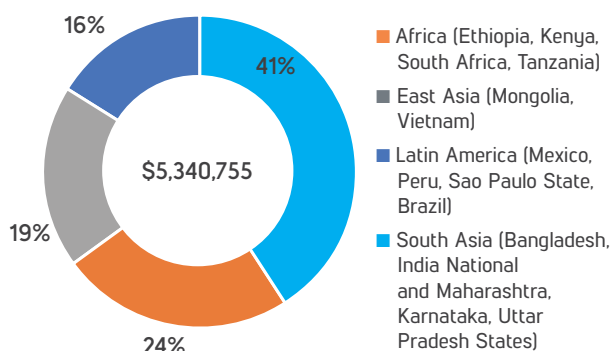
2030 WRG FY18 Expenses and Expenditures

Regional Program Support	Expenses
Africa	1,274,551
East Asia	1,015,691
Latin America	873,478
South Asia	2,177,036
Total	5,340,755
Global Program Support	Expenses
Communications	51,813
Knowledge products	60,564
Conference & workshops	1,612
Total	113,988
Global Secretariat	Expenses
Staff salary and benefits	756,322
Travel Costs	173,178
Consultants	56,804
Other Expenses	114,562
TF Admin Fees	19,999
Total	1,120,865
GRAND TOTAL	6,575,608

FY18 Total Expenses by Type of Activities



FY18 Program Support Expense by Region



The 2030 Water Resources Group Annual Report
January 2018
Production: Alida Pham, 2030 WRG
Design: Corporate Visions, Inc.
Printer: Mosaic Printing

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