

Knowledge Exchanges on Integrated Urban Water Management

Briefing Note 1—January 2019

Addressing urban water challenges through South-South knowledge exchanges that promote integrated approaches

How can knowledge exchanges help Ethiopia, Ghana, and Indonesia—all of which face similar complex urban water challenges—learn from Brazil?

Summary

For several years, a team of urban and water specialists has been **promoting more integrated approaches to addressing complex and inter-connected urban water challenges**. Based on concrete demands from Ethiopia, Ghana, and Indonesia after a Technical Deep Dive (TDD) on Integrated Urban Water Management (IUWM)¹ in Japan in September 2017, the IUWM team initiated a series of South-South Knowledge Exchange (SSKE) activities. The Exchanges aim to raise awareness among stakeholders and actors from the three countries on the potential benefits of the IUWM approach and to build their capacity to implement

more integrated solutions. The knowledge exchanges, funded by the South-South Facility (SSF), the Global Water Security and Sanitation Partnership (GWSP), and several country-level programs, are concentrated around four events: an exchange visit to Brazil to learn from operational experiences followed by three in-country workshops to bring together local stakeholders and discuss the application of integrated approaches in development projects. To increase stakeholder engagement and the dissemination of progress and results, an online platform and a series of briefing notes are being developed and disseminated at specific events.

This is **the first Briefing Note on the SSKE events, describing the outcomes of the June 2018 knowledge exchange visit to Brazil**. Twenty-three country representatives and nine World Bank staff from Ethiopia, Ghana, and Indonesia – including two Ministers, a Deputy Minister, and a Mayor—three Brazilian and international experts, and four organizing Bank staff visited the two Brazilian cities of São Paulo and Teresina. São Paulo is a mega-city that has addressed serious urban water issues—from water scarcity and flooding to informal settlements and water supply,

1. The IUWM Technical Deep Dive was organized by the Tokyo Development Learning Center (TDLC), a program in the World Bank's Social, Urban, Rural, and Resilience Global Practice (SURR GP), and co-financed by the Water GP's Water Partnership Program (WPP).

What is Integrated Urban Water Management (IUWM)?

Integrating urban and water considerations through a holistic planning approach allows cities to prioritize investments in pursuit of a livable, greener, competitive, and more resilient city. This can be realized at the investment or project level by involving stakeholders of linked or affected sectors, as well as at a programmatic level by developing a holistic masterplan or framework with different stakeholders. Economic analyses can be used to show the often positive medium- to long-term impacts of integrated solutions, and financial analyses to identify different options for securing additional funds, such as through private sector involvement and revenue increases.

IUWM is not a new concept; its principles have been outlined elsewhere before and are referred to in a variety of ways.² The IUWM approach can help developing countries sequence and prioritize integrated activities and investments under a common holistic vision or strategy aimed at addressing challenges. However, it is important to note that IUWM is not a framework or methodology that can or should be applied to all cities indiscriminately.

sanitation, and pollution—through several projects over a couple decades. Teresina, meanwhile, is a medium-sized town that integrated several (sub-) sectors in the urban area at project level. Both cities clearly showed how integration beyond the traditional borders between sectors and active stakeholder involvement can lead to significant additional benefits for urban inhabitants.

The **main takeaways from action plans formulated by the three participating countries during the exchange in Brazil** are related to:

- The benefits of long-term vision and an integrated strategy;
- Active community collaboration and stakeholder engagement;
- Approaching the city as an ecosystem within the larger water basin;
- The need for inclusive and pro-poor service provision;
- The role of champions to move the IUWM agenda forward locally; and
- The presence of concrete opportunities in each country to apply integrated principles in projects—countries are counting on World Bank support to achieve this.

These and other relevant aspects will be the focus of the follow-up in-country workshops planned for 2019.

2. The concept of Integrated Urban Water Management has for example been illustrated as Cities of the Future (IWA) and Water Sensitive Cities (Wong 2009) and referred to with different acronyms (e.g. Sustainable Drainage Systems (SUDS), in the United Kingdom, or Water Sensitive Urban Design (WSUD), in Australia).

Ethiopia, Ghana, and Indonesia: Urban Water Challenges

The three countries participating in the knowledge exchange visit to Brazil face severe urban water challenges that are interconnected, urgent, and complex, and which involve several (sub-) sectors and public and private stakeholders. While these countries each have a set of unique local characteristics and issues, they face several common challenges:

- The impact of rapid urbanization (often in informal settlements) and overall underinvestment in infrastructure, combined with uncoordinated urban planning, has negated the potential growth and development benefits of rapid urbanization. With low levels of service coverage and unreliable piped water supply services, many households and commercial and industrial entities rely on groundwater as their main water source. In all three countries, inefficient solid waste collection and management is contributing to the pollution of streams and deterioration of drainage infrastructure, resulting in more flooding.
- Land use changes have led to a deterioration of water quality and depletion of aquifers. Cities that rely on rivers as their main water source face issues with increased turbidity and sediments that often disrupt treatment processes. On the other hand, cities that rely on springs and groundwater sources face reduced flow capacity. Absence of adequate wastewater management and treatment has also contributed to the pollution of many rivers by domestic and industrial waste, as well as groundwater contamination.
- Climate change is increasing disaster risks. The poorest and most marginalized populations tend to live in high-risk areas prone to flooding, landslides, sea level rise,

and water shortages during drought, compounding their vulnerability.

- Limited capacity at the local level hampers implementation. Funding levels often do not match the increased responsibilities of local authorities, which combined with complex administration structures and overlapping government agencies results in duplication and gaps in the delivery of their mandates.

Brazilian Experiences: São Paulo and Teresina

In the past 10 years, the **Municipality of Teresina** has focused efforts on implementing an IUWM program in Lagoas do Norte, an environmentally and socially vulnerable area of the city inhabited by 100,000 of the city’s 840,000 residents. The area was subject to frequent flooding and it lacked critical urban services, including water supply and sanitation. With support from a World Bank loan, the city implemented the first phase of an integrated investment program that focused on developing drainage, water supply, sanitation, urban planning and infrastructure (such as roadways, parks, and recreational and cultural spaces), and on improving public services. The program’s second phase is currently under implementation, replicating the benefits and expanding the geographical reach of the program to all the residents of Lagoas do Norte, incorporating lessons from the first phase.

During the exchange visit, city officials provided firsthand knowledge about the impact and challenges of implementing integrated urban water interventions and communicated their decision to adopt an integrated model for most of the city’s infrastructure investments going forward. In addition, the participants were able to concurrently see the drastic change brought by the implementation of the first phase by visiting the areas where the project has not yet intervened, which provided a visual “before project” scenario and a vivid illustration of the intervention’s positive impact. Throughout the visit, participants commented on

PHOTO 1. Dense upgraded slums along the Guarapiranga Reservoir, São Paulo, Brazil



Source: © Illuminati Films/World Bank. Further permission required for reuse.

the impressive community involvement brought about by the municipality.

The **Metropolitan Region of São Paulo (MRSP)** is home to close to 20 million inhabitants and represents 19.4 percent of Brazil’s national economy. The water resources of this sprawling metropolitan region have been strained by dramatic population growth, unplanned land use, and rapid industrial development. These trends have contributed to rising pollution in drinking water reservoirs, growing water scarcity, and flood vulnerability. These challenges have been further exacerbated by inadequate provision of urban services and inefficient water use, setting a tall order for water management authorities.

Over the past three decades, in response to the pressing need for municipal and sectoral collaboration, São Paulo has developed its own IUWM approaches, working around a complex institutional structure involving a large and diverse set of institutions and local governments. During the exchange visit, participants learned from the city’s vast body of knowledge and experience of what has and hasn’t worked in these efforts. The São Paulo water and wastewater management company (SABESP), the Municipality of São Paulo, and the State Government (through the Secretariat of Sanitation and Water Resources) are the key players in coordinating and moving IUWM programs and initiatives forward. Officials of these organizations presented the integrated slum upgrading program developed for the shores of the Guarapiranga reservoir, the *Córrego Limpo* (Clean Stream) Program and the *Pacto das Águas* (Water Pact).

Relevance of Brazil Experiences

Participants called the knowledge exchange visit to São Paulo and Teresina “Inspiring and eye-opening,” “relevant for ongoing projects,” and a “very good showcase that every poor city/town [can have a] bright future.” In São Paulo, the participants valued the city’s long-term commitment to achieve results, a commitment that was institutionalized through innovative laws and policies and under challenging and complex conditions requiring the involvement of several different institutions, stakeholders, and—crucially—local communities. In Teresina, government officials from Ethiopia, Ghana, and Indonesia appreciated their visits to the new multi-purpose park that serves as a buffer during high-water episodes and is also enjoyed by the local communities for cultural and recreational activities, which the participants got a glimpse of during the site visits.

Brazil’s experience with rapid unplanned urbanization and IUWM has proven to be very relevant to Ethiopia, Ghana, and Indonesia. These countries—along with many others, especially in Africa and East Asia—have a large number of rapidly growing medium-sized cities that need to focus on integrated

PHOTO 2. Learning from Brazilian experts during the knowledge exchange visit to Brazil, June 2018



Source: © Illuminati Films/World Bank. Further permission required for reuse.

urban water planning and investments in order to leapfrog to sustainability while providing better services and quality of life to their citizens.

The Brazilian and international experts accompanying the event emphasized the importance and relevance of learning from a country like Brazil, which faces and has overcome similar challenges to the cities represented by the delegations. Presentations also included experiences in solving urban water challenges through the integrated planning of nature-based infrastructure throughout the city, and recent work in reclaiming slum areas through community engagement and natural solutions in Indonesia and Fiji.

Next Steps

During the exchange visit, each country team prepared an action plan summarizing their key takeaways, elements applicable to their own context, critical activities for follow-up, and a timeline, as well as the need for World Bank support in implementing the IUWM agenda. The main takeaways from these action plans are summarized as follow:

- A well-defined governance structure, with active collaboration and integrated planning across sectors is key to ensuring buy in from all stakeholders and facilitating inclusive local development.

- The city can be approached as an ecosystem with its own water cycle that is linked to the water basin the city is located in.
- Community participation plays a crucial role in the success of resettlement and the protection of water sources and the urban environment more broadly. In the end, it is the affected community that will pay—either for better services after resettlement or for damages in the old unsustainable setting.
- Clear mechanisms for cost recovery, a long-term financing scheme, and approaches specific to the poor are needed for sustainable and inclusive service provision.
- It is important to identify champions to move forward the IUWM agenda and its many activities locally.
- There are concrete opportunities in each country to apply the principles of the integrated approach in ongoing and pipeline projects.
- World Bank support is needed in terms of technical support, capacity building, and increased financing through Bank projects.

The World Bank will address the last point by organizing national workshops, planned for 2019, in the three participating countries. The workshops will provide an opportunity to tailor learnings and discussions to each country's specific challenges and focus on the application of integrated principles in development projects, ensuring that the experiences from the SSKE and the expertise of the resource people are best leveraged for each context. The next Briefing Note on the IUWM SSKE events will describe the activities and results of the first of the three in-country workshops.

To maximize knowledge sharing between the three countries and Brazil (and beyond), the IUWM team will also facilitate a multi-stakeholder multi-country dialogue between the study tour and national workshop participants, Brazilian and other global experts, and Bank staff through an online platform. The IUWM team envisions the platform to become an active hub for knowledge sharing on IUWM and foresees it growing beyond the proposed countries and involved experts into a IUWM Community of Practice.



© 2019 International Bank for Reconstruction and Development / The World Bank. Some rights reserved. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. This work is subject to a CC BY 3.0 IGO license (<https://creativecommons.org/licenses/by/3.0/igo>). The World Bank does not necessarily own each component of the content. It is your responsibility to determine whether permission is needed for reuse and to obtain permission from the copyright owner. If you have questions, email pubrights@worldbank.org.