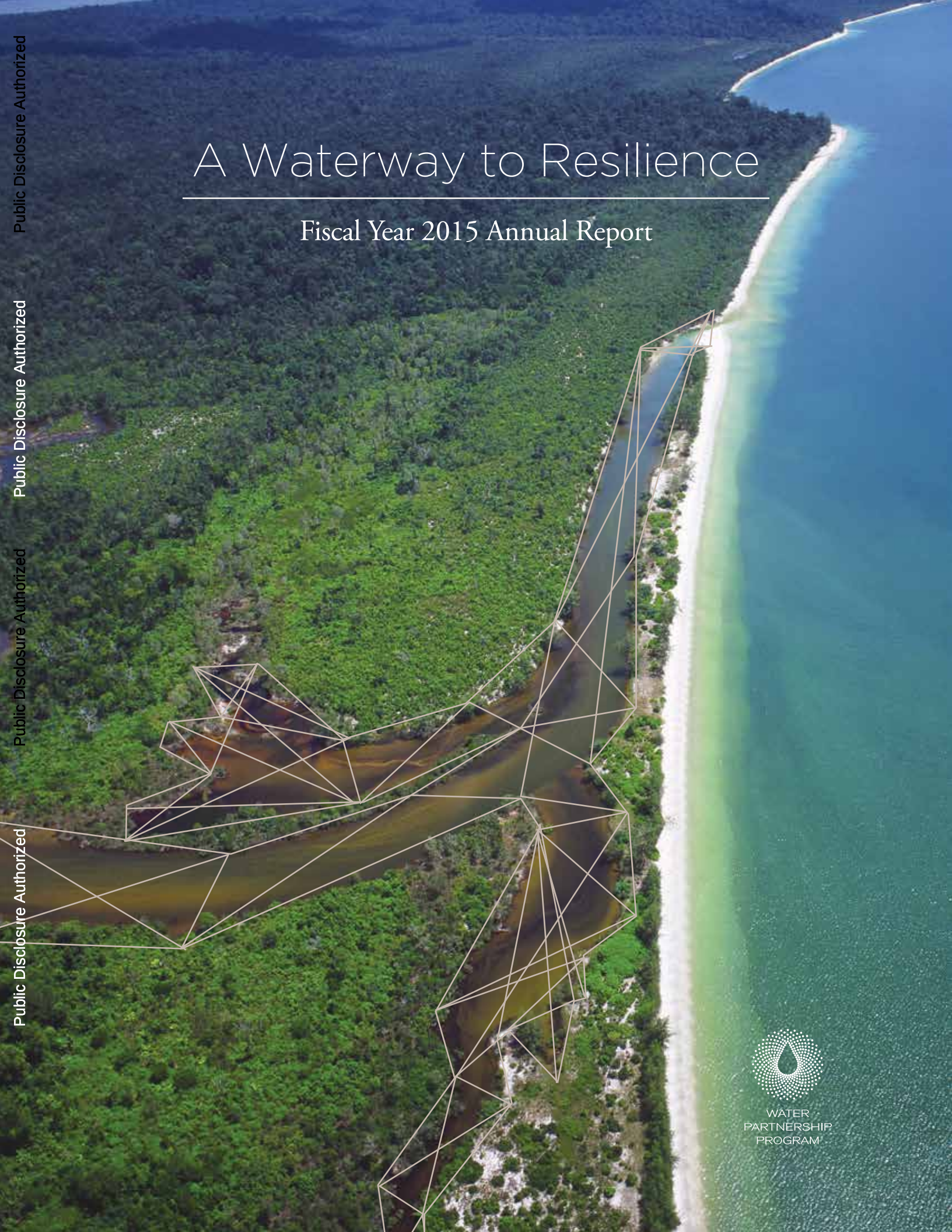
A Waterway to Resilience

Fiscal Year 2015 Annual Report



WATER
PARTNERSHIP
PROGRAM

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This report is available on the WPP website (go to http://water.worldbank.org/wpp/AnnualReport2015.html).

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LIST OF ACRONYMS

AGWA	Alliance for Global Water Adaptation
CESAN	*Companhia Espírito Santense de Saneamento* (Espírito Santo Water and Sanitation Company, Brazil)
CIWA	Cooperation in International Waters in Africa
DANIDA	Danish International Development Agency
DAWASA	Dar es Salaam Water and Sewerage Authority
DAWASCO	Dar es Salaam Water and Sewerage Corporation
DFAT	Department of Foreign Affairs and Trade (Australia)
DfID	Department for International Development (United Kingdom)
DGIS	Directorate-General for International Cooperation (the Netherlands)
DHMS	Department of Hydro-Met Services (Bhutan)
DRM	Disaster Risk Management
DSS	Decision Support System
ESMAP	Energy Sector Management Assistance Program
EU	European Union
GFDRR	Global Facility for Disaster Reduction and Recovery
GP	Global Practice
GSG	Global Solutions Group
ICs	Indigenous Communities
IDA	International Development Association
IFC	International Finance Corporation
IRENA	International Renewable Energy Agency
IWRM	Integrated Water Resources Management
MDG	Millennium Development Goal
NASA	National Aeronautics and Space Administration
O&M	Operations and Maintenance
PJT	*Perum Jasa Tirta* (for-profit river basin corporation in Indonesia)
PMA	Program Management and Administration
PPIAF	Public-Private Infrastructure Advisory Facility
QBS	Quality-Based Selection
RS	Remote Sensing
SAWI	South Asia Water Initiative
SONEDE	*Société Nationale d'Exploitation et de Distribution des Eaux,* (National Public Water Supply Utility, Tunisia)
SDG	Sustainable Development Goal
SE4ALL	Sustainable Energy for All
TTL	Task Team Leader
USACE	United States Army Corps ofEngineers
USDMA	Uttarakhand State Disaster Management Authority
WB	World Bank
WBG	World Bank Group
WET	Water Expert Team (WPP)
WGP	Water Global Practice (World Bank)
WPP	Water Partnership Program
WRM	Water Resources Management
WSP	Water and Sanitation Program
WSS	Water Supply and Sanitation
WUA(s)	Water User Association(s)

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FOREWORD

The adoption of the Sustainable Development Goals (SDGs) is an ambitious step toward poverty eradication in all its forms. These global goals aim to shift the world onto a sustainable and resilient path by 2030 – a journey we will collectively take towards protecting the dignity and equality of each person. To get there, we need to expand our funding from billions to trillions, leveraging every grant dollar to crowd in public and private investment. The World Bank Group (WBG) is eager to be a major driver and implementer of this agenda in its client countries.

Water permeates much of the SDG agenda, from sustainable services to enhanced agricultural productivity and more resilient cities. Water is a short-term and a long-term risk to global growth. Whether in shortage or excess, water variability presents new challenges, and as each year passes, new pressures emerge. In many of the poorest countries, a changing climate and changing demographics have compounded, leaving more people more vulnerable to more frequent extremes.

The World Bank's Water Global Practice (WGP) was established in 2014 to confront this complexity. Based on the tenant that water security should be everyone's business, the WGP decided to move beyond the traditional lens to embrace *Water Writ Large*, linking improved water management and the services it delivers as an input to achieving the SDGs in other sectors. This new approach requires a coalition of traditionally disparate disciplines around a common goal – a water-secure world that balances the demands of various water users, while ensuring that no one is left behind.

The WGP is endowed with the Water Partnership Program (WPP) as a critical tool for implementing this philosophy. The WPP has allowed us to shape global water policy through partnerships with innovators, which informs our investments and provides us with the tools we need to anticipate the needs of the future. By combining analysis, capacity building and knowledge exchange in one platform, the WPP positions the WGP to tackle complex water issues by taking global knowledge to the local context.

I am pleased to introduce this Annual Report "***A Waterway to Resilience***" which highlights the program's progress and results and shows how it is supporting the WGP in its ambitious vision. During Fiscal Year 2015 (FY15) the WPP focused resources in three areas: building resilience; going beyond traditional service delivery; and using integrated approaches to confront complexity. Each WPP-funded activity makes a unique contribution to our clients' sustainability.

Our partners and WPP donors - the governments of the Netherlands, United Kingdom, Denmark and Austria - are making a true difference with their support. We are also proud to announce that the government of Switzerland joined the WPP shortly after the beginning of FY16. We look forward to stronger collaboration and to directing our planet toward a water-secure future.

Sincerely,

Jennifer Sara
Director
Water Global Practice

EXECUTIVE SUMMARY

Water Writ Large and the New SDGs

The year 2015 was a turning point in water's history. The Millennium Development Goal (MDG) for improved water access has been met—5 years ahead of schedule—but 2.5 billion people still lack access to improved sanitation, a figure far behind the target. The Sustainable Development Goal (SDG) 6, adopted in September 2015, calls for universal access to water and sanitation and stretches far beyond access to ensure proper resource management, from both the local and transboundary perspectives, including efficient use, pollution control, and ecosystem services.

The impacts of climate change are being felt primarily through water. Adapting to a new reality of extremes— from a lack of water to serious flooding— requires a paradigm shift in the way we view, manage, and use water resources. If done properly, adaptation may also bring about the resilience needed to guard countries against climate-related impacts for centuries to come.

For the first time, the World Bank (WB) is organizing itself around the same principle, termed "water writ large." The WB brings a link between the resource itself and the services it delivers, as well as an input to achieving SDGs in other sectors. Water has become one of the Bank's 14 new Global Practices (GPs)—the pillars of a new business model that ensures the integration of the best global knowledge within lending operations.

The Bank now systematically consolidates global knowledge and experience and keeps up on development trends in five main fields. The new structure, embodied in five thematic Global Solution Groups (GSGs) in the Water Global Practice (WGP) (irrigation, hydropower, water supply and sanitation (WSS), water economics and poverty, and water resources management (WRM)), ensures external and internal lessons learned are incorporated into project designs and integrated across the Bank's six regions.

The WB is strategically and tactically positioned to serve as an implementation arm of the Water SDG in the face of complexity and uncertainty. By strengthening the core of our delivery system, the WB helps client countries devise more integrated solutions that build resilience in the face of complex water challenges and growing uncertainty.

The WPP: From Traditional to Transformational

The Water Partnership Program (WPP) is working to end poverty and boost shared prosperity through support to investments and analytical work in the water sector. A partnership between the WB and the Governments of the Netherlands, the United Kingdom, Denmark, and Austria, Switzerland became a WPP partner in Fiscal Year 2016, the WPP is helping client countries enhance water security by mainstreaming climate-resilient growth and pragmatic approaches into WRM and WSS. The WPP remains committed to its initial goal—providing water security for all—by continually building on the experiences of its partners to expand its repertoire of tools and methodologies.

The WPP has evolved from single-country interventions on either WSS or WRM, to more integrated framework solutions that address *multiple* water uses at the city, basin, or regional level. The evolution of the program is strongly driven by its donors and the changing needs of clients, who are now looking to the WB for more sophisticated and comprehensive solutions. Today, the new structure of the WGP is well aligned with the delivery model of the WPP, which, by focusing on WRM interventions has pioneered a water writ large approach to addressing multi-sector challenges.

The WPP moves from *traditional* to *transformational*. WPP activities add value to many of the WGP's operations by creating the space and time needed to deal with challenges as they arise. The WPP provides a solution to fixed budgets and schedules of a typical lending operation and offers flexibility in the face of new challenges or demands by helping teams find world-class expertise, and low-cost and innovative ways to improve design and implementation.

Theory of Change

The WPP's value added is manifested through three types of interventions:

- *Getting the best ideas on the table.* The program supports global partnerships that foster collaboration between academia, industry, client governments, donors, and International Financial Institutions.
- *Driving creative thinking and make ideas that work replicable.* The WPP supports global knowledge generation and exchanges through study tours, events, and peer-to-peer learning.
- *Delivering innovation in a big way.* The WPP teams with the brightest people in the best organizations to design new tools for task teams and clients, and to take best practices from developed countries and contextualize them for developing countries.

Long-term investments in partnerships and global initiatives yield targeted improvements in policies, institutions, and project designs at the activity level. These individual improvements can potentially influence a $22 billion and growing water portfolio. When Bank projects have better outcomes, as a result of WPP support, the projects' beneficiaries ultimately benefit from enhanced water security.

WPP Phase II Results (July 2012 – June 2015)

- **168** activities completed, of which 94 by the WPP and 74 by the Water Expert Team (WET)
- **58** countries across all six Bank regions supported
- **154** Bank projects influenced, involving a combined loan amount of **$13.7** billion
- **133** Bank projects benefited from an improved design
- **26.5** million people benefited from improved water services or water resources management
- **86%** of all targets expected to be met by the end of the program (June 2016)
- **4 Global Initiatives** showing clear influence on Bank operations and country-financed programs

The WPP shapes the knowledge architecture of the practice through the GSGs. From an organizational perspective, the WPP resides in the Global Programs Unit of the WGP, and its goals have influenced the shape and scope of the GSGs. Knowledge produced and lessons learned in the implementation of WPP activities feed back into the design of operations and the strengthening of global partnerships, creating a virtuous cycle of improvement in outcomes with each iteration (see figure 1). By integrating the WPP at the core of the WGP, successes are more easily scaled up or replicated globally.

Through this same theory of change, the WPP influences country-funded programs. By working upstream with clients on policies, strategies and institutional arrangements, the contributions of the WPP are relevant far beyond the influence of the World Bank's individual operations. This year's report also highlights the broader impacts of the ***Decision Tree Framework, the Science of Delivery in Urban WSS Initiative***, and the ***Complex Water Systems Initiative***, each with contributions to the WGP's global knowledge agenda and several country-level pilot programs.

Report Outline

This Annual Report summarizes the WPP Phase II activities implemented and results achieved during the Bank's fiscal year 2015 (June 2014 – June 2015).

Chapter 2 offers three select themes supported by the WPP this year: *building resilience; beyond traditional WSS;* and *confronting complexity.*

- **Building Resilience:** Bolstering client capacity to adapt to climate change through more robust investments, policies, and institutions;
- **Beyond Traditional Water Supply and Sanitation (WSS):** Helping service providers become more efficient and sustainable on the path to universal access; and

- **Confronting Complexity through Integration:** Directing resources to areas with complex hydrological systems to help clients use integrated planning models for Water Resources Management (WRM).

Chapter 3 focuses on the results and presents the progress made as of June 2015 toward each WPP indicator target (targets have been set for June 2016), providing illustrative activities for each. The chapter also provides a qualitative summary of the overall impact and influence of the program, both within and outside the Bank, which are not perfectly captured in the *quantitative* results framework.

As of June 2015, **35 of the 44 indicator targets** had been met or are likely to be met by the close of the program's second phase in June 2016. This figure represents 80 percent of the WPP Phase II targets.* A few targets are likely not to be met and were discussed with the donors in 2015.

While the **results framework** reflects many of the outcomes and outputs of WPP activities, the program as a whole also yields qualitative outcomes beyond what is presented quantitatively in the results framework. This applies particularly to the program's added value in two distinct areas: (i) As an incentive to coordinate activities across practices within the Bank, by co-funding activities with trust funds for climate change, water resources, energy, or disaster risk ($2.5m total); and (ii) As an influence beyond the Bank, through global uptake of the outputs from WPP's Global Initiatives (see box 1). A financial summary is provided in Annex 1, and the full results framework is presented in Annex 2.

* This percentage excludes "to-be-determined" indicators as of June 2015.

CHAPTER 1

INTRODUCTION

1.1 Background

1.1.1 Mile Marker: 2015

The year 2015 was a turning point in water's history. The Millennium Development Goal (MDG) for improved water access[1] has been met—5 years ahead of schedule—but 2.5 billion people still lack access to improved sanitation, a figure far behind the target. While many countries have made significant advances, others have been hindered by rapid urbanization or are still unable to reach marginalized groups. Having met one goal but not the other, and with varying degrees of success across regions and even within countries, gives the world cause for reflection.

Last year was also the warmest year on record.[2] The impacts of climate change are being felt primarily through water—illustrated by the lack of water to irrigate crops and generate power at one extreme, and serious flooding that destroys economies and promotes the spread of disease at the other extreme. In fact, one quarter of the world's population already live in countries with physical water scarcity, and in just two decades this number is expected to double. Adapting to this new reality of extremes requires a paradigm shift in the way we view, manage, and use water resources. On the bright side, if done properly, adaptation may also bring about the resilience needed to guard countries against climate-related impacts for centuries to come.

Most prudently, the global goals of 2015 have graduated to a new degree of ambition. First, Sustainable Development Goal (SDG)[3] 6, adopted in September 2015, calls for universal access to water and sanitation, which means figuring out how to reach everyone, wherever they may need it—from the urbanite to the agrarian, from homes to schools. Second, Goal 6 stretches far beyond access to ensure proper resource management, from both the local and transboundary perspectives, including efficient use, pollution control, and ecosystem services. Finally, the SDGs as a whole position wider water management as a means to achieving the goals that would shift the world onto a more sustainable and resilient path by 2030. For instance, managing water while targeting vulnerable populations in planning for urban resilience plays a critical role in reducing the number of deaths and economic losses caused by water-related disasters in cities (SDG 11, target 5). In the agricultural sector, planning for climate change preparedness requires strategies to better manage water resources under extreme weather conditions, including severe floods and droughts, to be able to increase productivity while developing more resilient agricultural practices (SDG 2, target 4).

1.1.2 Reconfigured for Resilience

At the same time, and for the first time, the World Bank (WB) is organizing itself around the same principle, termed "water writ large," to help countries see water for what it is: a link between the resource itself and the services it delivers, as well as an input to achieving SDGs in other sectors. Water has become one of the Bank's 14 new Global Practices (GPs)—the pillars of a new business model that ensures the integration of global knowledge with the architecture of operations and financial resources offered to client countries.

The Bank now consolidates the knowledge and experience of 350 staff into a single Water Global Practice (WGP). Moreover, all staff are mapped to Global Solutions Groups (GSGs), a network through which they give and take knowledge and delve deeply into one of four topics. GSGs keep up on development trends in their field and ensure external and internal lessons learned are incorporated into project designs. By strengthening the core of our delivery system, we are strategically and tactically positioned to serve as an implementation arm of the Water SDG, and to support the other SDGs through which water flows.

Our new structure is already changing the way we deliver to our clients. Teams working on irrigation, hydropower, flood protection, water supply and sanitation (WSS), water economics and poverty, and water resources are under one management structure and integrated across the Bank's six regions. Clients can tap expertise on a number of water-related areas through the same project or team, and draw on best practices from any region in the world. This means our solutions are growing more integrated, just as our clients' needs are growing more complex.

1. Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.
2. Since 1880, when record keeping began.
3. The *Sustainable Development Goals (SDGs)*, officially known as "Transforming our world: the 2030 Agenda for Sustainable Development," are a new, universal set of goals, targets and indicators that UN member states will be expected to use to frame their agendas and political policies over the next 15 years.

Today's broader view of water with its myriad links—underpinned by the design of both the new WGP and the new SDGs—is changing the game. Water writ large asks countries to unbundle a knot of challenges to understand how improving their water management could help them achieve other development outcomes as well. By extension, it opens the door to more integrated, robust, and sustainable solutions that build resilience in the face of uncertainty.

1.2 About the WPP

1.2.1 What We Do

The Water Partnership Program (WPP) is a partnership between the WB and the governments of the Netherlands, the United Kingdom, Denmark, and Austria, working together to end poverty and boost shared prosperity through support to investments and analytical work in the water sector. Water security is enhanced in Bank client countries by mainstreaming climate-resilient growth and pragmatic approaches into Water Resources Management (WRM) and WSS. In 2015, the WPP turned 6 years old. It remains committed to its initial goal—providing water security for all—by continually building on the experiences of its partners to expand its repertoire of tools and methodologies.

In July of 2012, Phase II of the WPP began, which entailed an expansion of the program's initial scope—meeting immediate client demands—to also include long-term global initiatives that help clients prepare for the future in areas such as climate change, disaster risk management, and pressing energy, food, water nexus challenges. The program has also evolved from single-country interventions on either WSS or WRM, to more integrated framework solutions that address multiple water uses at the city, basin, or regional level. The evolution of the program is strongly driven by its donors and the changing needs of clients, who are now looking to the WB for more sophisticated and comprehensive solutions. Today, the new structure of the WGP is well aligned with the delivery model of the WPP, which, by focusing on WRM interventions has pioneered a water writ large approach to addressing multi-sector challenges.

1.2.2 From Traditional to Transformational

For our clients, development can be a sluggish journey toward growth, filled with unforeseen obstacles. WPP activities add value to many of the WGP's operations by creating the space and time needed to deal with challenges as they arise. The fixed budget and schedule of a typical lending operation offer limited flexibility in the face of new challenges or demands (think sudden increase in climate-related impacts; lack of data; institutional changes). The WPP adds significant value to a project by finding low-cost, innovative, and alternative ways to improve design and implementation.

The niche of the WPP is its ability to provide the best possible knowledge, science, skills, and solutions at the right time to ensure that development programs are steered in the right direction and that project task teams have the tools to respond quickly and adequately to water sector challenges. With WPP funds, a team can introduce innovative or proven methodologies, consult world class experts, establish strong alliances, take an integrated approach, and think outside the box.

1.2.3 Theory of Change

Since the creation of the WGP, the WPP has moved from serving as a trust fund satisfying regional demands, to a centralizing force that helps direct the thinking of the practice in new areas like climate change, disaster risk management, and cross-sector integration. The partnership thus both responds to the challenges of today and anticipates those of tomorrow. The WPP's value added is manifested through three types of interventions, each taking the client from traditional to transformational ways of thinking:

- First, to get the best ideas on the table, the program supports global partnerships that foster collaboration between academia, industry, client governments, donors, and IFIs.
- Second, to drive creative thinking and make ideas that work replicable, the WPP supports global knowledge generation and exchanges through study tours, events, and peer-to-peer learning.

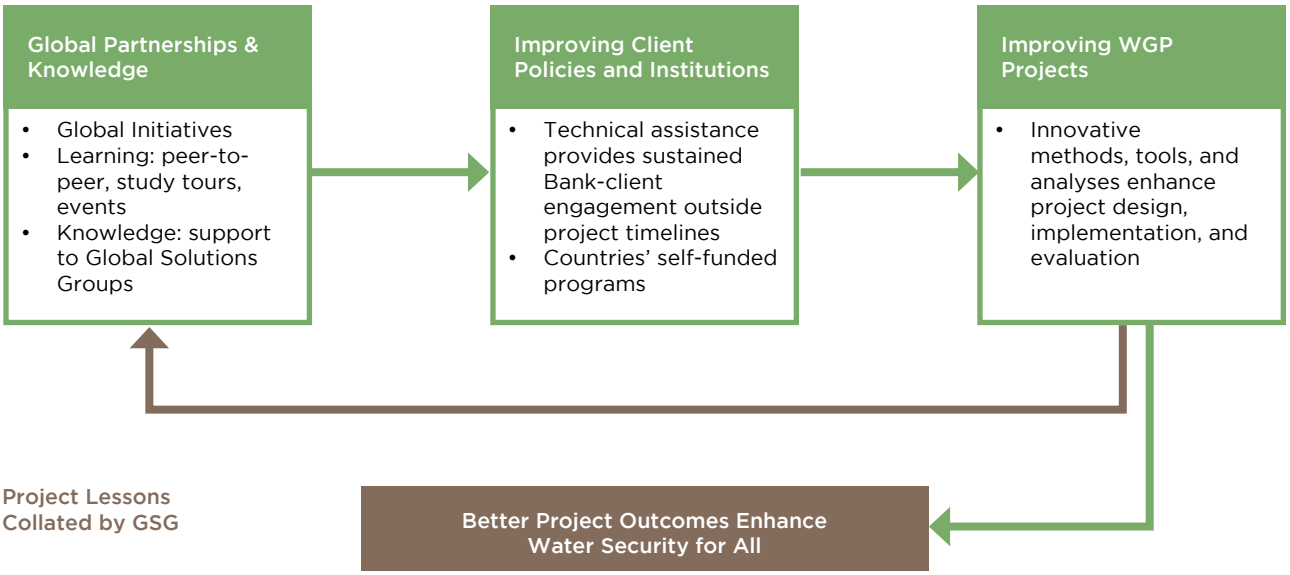
- Finally, to deliver innovation in a big way, the WPP teams with the brightest people in the best organizations to design new tools for task teams and clients, and to take best practices from developed countries and contextualize them for developing countries. Analytical work often jump-starts much-needed investments and informs their design and implementation. The WPP consistently uses the Bank's lending programs to pilot and scale up new approaches surfaced through both operational and analytical experience.

These kinds of interventions are depicted in Figure 1. To summarize, long-term investments in partnerships and global initiatives yield targeted improvements in policies, institutions, and project designs at the activity level. These individual improvements influence a $22 billion and growing water portfolio. When Bank projects have better outcomes, as a result of WPP support, the projects' beneficiaries ultimately benefit from enhanced water security.

In addition to influencing the Bank's portfolio, the WPP shapes the knowledge architecture of the practice through the GSGs. From an organizational perspective, the WPP resides in the Global Programs Unit of the WGP, and its goals have influenced the shape and scope of the GSGs. Now more than ever, knowledge produced and lessons learned in the implementation of WPP activities feed back into the design of operations and the strengthening of global partnerships, creating a virtuous cycle of improvement in outcomes with each iteration (see figure 1). By integrating the WPP at the core of the WGP, successes are more easily scaled up or replicated from one side of the globe to the other.

Through this same theory of change, the WPP influences country-funded programs. For example, the WPP's Thirsty Energy initiative is influencing the way China and Morocco conceptualize water use in energy on a national scale (see box 1), with future impacts on large-scale investments in the energy sector. By working upstream with clients on policies, strategies and institutional arrangements, the contributions of the WPP are relevant far beyond the influence of the World Bank's individual operations. This year's report also highlights the broader impacts of the Decision Tree Framework, the Science of Delivery in Urban WSS Initiative, and the Complex Water Systems Initiative, each with contributions to the WGP's global knowledge agenda and several country-level pilot programs (see Chapter 2).

Figure 1 – Knowledge in Implementation



Box 1 - WPP's Influence beyond the Bank

The Decision Tree Framework (see Section 2.1) is informing the design standards of the Climate Bond Initiative; being used by the IFC in the design of its hydropower portfolio; and has been used by the United States Army Corps of Engineers to draft new guidelines for water engineers. Moreover, other IFIs have asked the Bank to present the framework to see how it can be used in their institutions, and it has become part of the core guiding principles promoted by the Alliance for Global Water Adaptation (AGWA).

The Thirsty Energy initiative (see Section 3.3) is being used to incorporate potential water constraints into China's upcoming 5-year energy plan (2016–20). In Morocco, the initiative is being used to formulate a road map to identify key investment and planning opportunities. While this influence at the national level extends to governments and private entities involved in water and energy, it also has the potential to affect regional and global thinking on nexus issues. In addition, the Thirsty Energy team has provided inputs to the United States Department of Energy, the International Renewable Energy Agency (IRENA), the Clean Energy Ministerial, and Sustainable Energy for All (SE4ALL), and continues to build a very strong alliance with the private sector.

WPP PHASE II ACTIVITIES HAVE BEEN IMPLEMENTED IN 58 COUNTRIES

CHAPTER 2

THEMATIC HIGHLIGHTS

In FY15, the WPP focused resources on three critical topics that will help advance the SDG agenda:

- **Building Resilience:** Bolstering client capacity to adapt to climate change through more robust investments, policies, and institutions;
- **Beyond Traditional Water Supply and Sanitation (WSS):** Helping service providers become more efficient and sustainable on the path to universal access; and
- **Confronting Complexity through Integration:** Directing resources to areas with complex hydrological systems to help clients use integrated planning models for Water Resources Management (WRM).

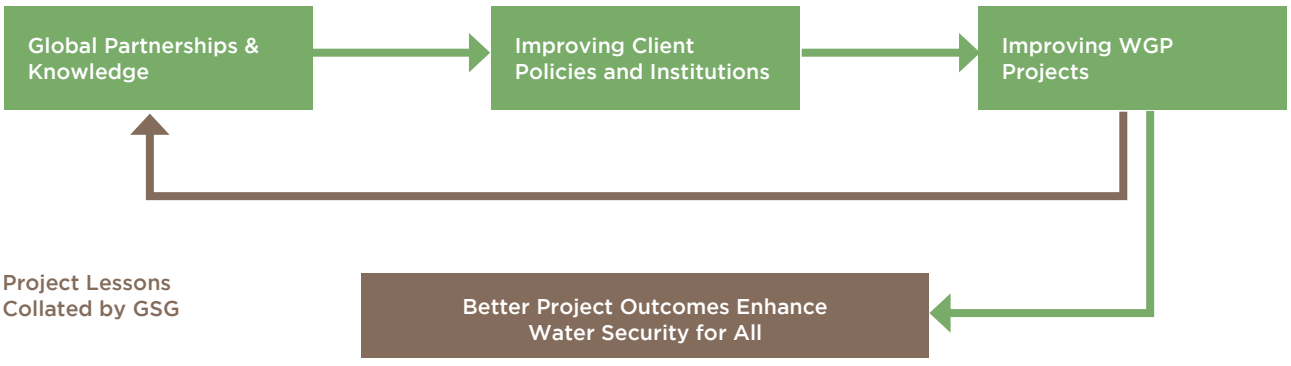
This chapter showcases select results and impacts related to work in these priority areas for FY15. Table 1 outlines the strategic relevance of the activities summarized in this chapter, and indicates how WPP funds were catalyzed to make progress toward three specific objectives. Within each topic, WPP-funded activities utilized the WGP's full suite of instruments depending on specific client needs, including: piloting of analytical frameworks designed under WPP Global Initiatives; technical assistance on institution building; codification of best practices from developed to developing countries; study tours; south-south knowledge exchange and just-in-time support from global experts.

The activities described in this chapter both pull from and contribute to the WGP's Global Solutions Groups for Water Supply and Sanitation and Water Resources Management/Water Security. WPP fuels a large part of the WGP's "knowledge in implementation" approach as described in the WGP's Theory of Change (see figure 1). Thus, lessons learned are already feeding back into the WGP's centralized knowledge architecture to improve the next generation of project designs and refine the tools available to task teams and clients.

Table 1 – FY15 WPP Strategic Focus

FY15 Priority Topic	Global Initiative Piloted	Objective	Strategic Focus
Building Resilience	Decision Tree Framework	Taking clients from reactive to proactive in managing risk	Climate-sensitive project areas
Beyond Traditional WSS	The Science of Delivery in Urban WSS	Addressing both the supply and demand side for sustainable WSS	Utility managers and marginalized communities
Confronting Complexity	Complex Water Systems (CoWS)	Using integrated planning models to address multiple challenges	East Asia & Pacific Region as testing ground for global scale-up

Figure 1 (summary version) - Knowledge in Implementation



2.1 Building Resilience

Climate change and water are intrinsically connected. Climate change is already hitting the water cycle, causing more intense and frequent floods and droughts. The exact impacts vary from locale to locale, as does the degree of uncertainty to adapt to the future climate without compromising the development needs in the short term. Countries are demanding more reliable tools to manage the risks and reduce the vulnerabilities associated with a changing climate so they can maximize the benefits of water planning and investments. Adaptation means securing water for people and the economy by preparing institutions, designing the right policies, and making sure that investments help communities and cities better prepare for natural disasters.

Toward the building resilience agenda, the WPP is helping take clients from reactive to proactive approaches to managing disasters and risk using a range of instruments at different planning stages. First, the WPP is rolling out a major analytical piece on climate change – taking theory to practice to build resilience into project design in Nepal, Mexico and Lebanon. An alternative methodology – Decision Making under Deep Uncertainty - was used to save nearly $600 million in Peru (see Chapter 3, Outcome 3). Second, global best practices in institutional and policy design are supporting forward thinking disaster preparedness and risk reduction in Brazil, India, and Bhutan. This first generation of just-in-time support on disaster preparedness will feed into the learning of the GSG on WRM to better inform future piloting, replication and scale-up.

2.1.1 Building Investments: From Theory to Practice

The World Bank (WB) requires that every International Development Association (IDA) project incorporate climate risk in the respective country's priority investments. Following this mandate, the WPP spearheaded the creation of the Decision Tree Framework,[4] a tool developed in partnership with academia, to determine whether project designs are robust to climate risks.

The tool looks to a robustness-based, bottom-up evaluation as an alternative to previous top-down approaches to climate risk assessment, moving beyond the use of downscaled global circulation models (GCMs), which are often of limited use to support practical policy decisions. It brings together advanced economic modeling to identify the potential benefits, or best-preferred investment alternatives, based on a systematic assessment of climatic and non-climatic risks.

Three applications of the Framework, published in 2015, are highlighted here:

- In Nepal, to assess the pre-feasibility project design options and costs of an installed hydropower capacity of 335 MW in the Upper Arun Hydropower Project (UAHP), and a basin-scale analysis for the Koshi Basin Hydropower Development Project that considered five existing dams, including the UAHP, to confirm the proposed investment options.
- Mexico is now ready to use the framework to assess the resilience of its largest aqueduct system, supplying water to more than 6 million people (see box 2).
- In Lebanon, a rapid assessment and analysis served to identify the future climate scenarios that would fill the water supply gap for Greater Beirut (see Outcome 4, Chapter 3).

2.1.2 Science Meets Investment in Nepal

Hydropower currently provides over 90 percent of Nepal's total electricity, and demand is outstripping supply, particularly in the dry season, when energy production declines by 60 to 75 percent. Climate change will likely pose significant problems for hydroelectric generation given the projected increase in the temporal variability of rain between seasons, resulting in more severe and frequent floods and droughts.

The application of the Decision Tree Framework to the UAHP has helped to identify robust investment portfolios that meet conditions in which performance is maximized over a range of plausible futures.

4. For an elaborate explanation of this new tool, see "Confronting Climate Uncertainty in Water Resources Planning and Project Design – The Decision Tree Framework."

Mana, Uttarakhand, Himalayas, India. Photo: Danielle A. García/World Bank

The assessment identified robust investments (that is, those that perform acceptably well over a range of plausible futures) considering the total annual electricity generation, including both firm (guaranteed) and energy produced in the dry season, as well as environmental flow impacts, urban and agricultural water supply, and flood alleviation (for storage schemes). The approach quantifies how different portfolios of hydropower assets (their scheme, capacity, operating policies) have an impact on the trade-offs between these performance metrics. Although this exercise explored hydropower investment options at the project- and basin-level, it also facilitated planning at the national level.

2.1.3 Building Institutions: Decision Support Tools

In response to recent deadly floods across India, the WPP is supporting the preparation of a Local Resilience Action Plan for cities in Odisha and an early warning system for the State of Uttarkhand. Both tools take an integrated approach to understand the risks and vulnerabilities to future water-related hazards, looking at a combination of variables—ranging from glacial melt and river morphology to changing land use patterns and urbanization. In Brazil, the WPP is supporting a national drought framework and risk reduction program.

The WPP is also aiding in the rapid development of two nascent organizations: the Uttarakhand State Disaster Management Authority (USDMA), in India, and Bhutan's Department of Hydro-Met Services (DHMS). Both newly formed agencies need to deliver on their mandate to provide better hydromet services like forecasting and early warning systems, and the WPP is bringing global expertise to bolster capacity and plan the required capital investments.

2.1.4 Working at the Core of the Himalayas

In June 2013, the State of Uttarkhand in India experienced a one-time cloudburst flood event resulting in over 6,000 deaths, leaving over 200 villages with crop and property damage,

Kedarnath, a town at 3,500 m (11, 750 ft) above sea level near the Chorabari Glacier in Western Garhwal Himalaya, the head of the River Mandakini, was the area worst affected by the floods of June 2013. Thousands of people were killed and thousands (mostly pilgrims) were reported missing or stranded due to the landslides.
Photo: Danielle A. García/World Bank

and displacing 75,000 people. The force of the deluges and landslides reshaped the newly formed river pathways, changing flow patterns. Now, flood models need to be continually updated to reflect rapid changes and newer distributions of flood risks, as well as social and economic vulnerabilities across the state.

The WB is helping the newly created USDMA to better understand the morphology of the Mandakini and Alakhnanda Rivers through a US$250 million project for post-disaster reconstruction and preparedness. The project includes financing for a decision support system for disaster risk management, based on, hydrometeorological data, topography, geology, land use, and current and future infrastructure (such as dams) in the context of the impact of climate change on glaciers and water flow variability.

Through the WPP, the WB is helping USDMA build a Google Earth Engine (GEE) platform to provide an up-to-date data catalog that can support responsive analysis. Streaming satellite imagery available in GEE can quickly and cheaply generate flood vulnerability maps for immediate planning and decision making in the wake of a flood event, at least while more precise hydrologic models are being developed. This platform is combined with a social vulnerability assessment that provides actionable information on where to focus disaster resilience efforts, especially when dealing with regions undergoing rapid land use change, like Uttarakhand, through both urbanization and geomorphic changes. The platform's accessibility and the fact that the browser-based model can be adjusted set a new approach for risk modeling—one that is adaptable to different levels of technology and data management requirements.

2.1.5 Monitoring the Skies in Bhutan

Bhutan is a mountainous country situated in the southern slopes of the Himalayan range. Its location, climate, and topography make the country highly prone to a variety of hydrometeorological hazards. Flooding is a recurrent phenomenon, especially during the monsoon season. Given the number of existing hydropower plants and the ongoing construction of many others, natural dam formation and dam bursts (often accompanied by the release of huge volumes of water) pose a severe risk to hydropower plants, farmlands, and human settlements.

Through the WPP and the South Asia Water Initiative (SAWI), the WB supported the DHMS of the government of Bhutan to improve its strategic plan for DRM and climate resilience through the modernization of its hydrometeorological services network. The activity advanced an assessment of the country's needs and priorities, a review of its existing observation and forecasting systems, and the design of a modernized end-to-end early warning system.

A detailed analysis[5] was undertaken for two pilot basins/catchments to show how risk resilience can be improved through better forecasting and the use of early warning systems. The study results will help identify priority areas for Bank support through a subsequent lending program.

2.1.6 Resilience and Rapid Urbanization in Odisha

In early August 2014, heavy rains triggered floods in the northern Odisha, affecting over 3.3 million people, and destroying 320,000 hectares of cropland, clearly showing the need for immediate action on flood risk management. Odisha is one of the poorest states in India and climate change is expected to deepen poverty in Odisha if capacity and resilience in key sectors are not bolstered. Bhubaneswar, Odisha's capital, is rapidly urbanizing—today's population of 1 million is likely to be double that size by 2025.

The WB, through its WPP, is working with the state government and other donors to reinforce resilience in Greater Bhubaneswar through the Odisha Disaster Recovery Project as well as other urban development projects. Three action plans—one for the State of Odisha and two for the cities of Bhubaneswar and Cuttack—provide an in-depth vulnerability and hydromet risk assessment. In Bhubaneswar this work was expanded to include a technical, institutional, and financial gap analysis for the poor districts and then used to formulate a Local Resilience Action Plan (LRAP) that is now being developed to assess the risk of natural hazards, the vulnerability at state and city levels, and the policy capacity to respond adequately to those risks and vulnerabilities.

2.1.7 Weather Extremes Touch Land: A Paradigm Shift for Brazil

One of the most severe multi-year droughts in decades has plagued Northeast Brazil for the past 5 years. Residents have long lived under challenging climatic conditions, which are further exacerbated by an increasing population and corresponding water demand.

At the request of Brazil's Ministry of Integration, the WGP is assisting the government of Brazil in building a proactive drought management framework[6] to better anticipate drought events and to guide relief measures more effectively.

The program is divided into two tracks: (i) enhancing the government's capacity to manage droughts through a national and state drought policy framework and dialogue; and (ii) implementing a regional pilot program in the Northeast. Preparedness measures are intended to increase resilience through a robust monitoring, early warning, and forecasting data system; detailed risk assessments, identifying type of risk and vulnerable population; and risk reduction and disaster response programs. These elements taken together underpin the shift from the current crisis-type management of droughts—characterized by a reactive approach—to a more proactive risk management and drought preparedness system (see figure 2).

5. *Modernizing Weather, Water, and Climate Services: A Road Map for Bhutan.*

6. *Living with the Semi-Arid and Proactive Drought Management in Northeast Brazil: A New Perspective* (Água Brasil series # 90527).

Figure 2 – Drought Preparedness in Implementation

Three Pillars of Drought Preparedness

1. Monitoring and forecasting/early warning

Foundation of a drought plan
Indices/ indicators linked to impacts and action triggers

Feeds into the development/ delivery of information and decision-support tools

2. Vulnerability/resilience and impact assessment

Identifies who and what is at risk and why

Involves monitoring/ archiving of impacts to improve drought characterization

3. Mitigation and response planning and measures

Pre-drought programs and actions to reduce risks (short and long-term)

Well-defined and negotiated operational response plan for when a drought hits

Safety net and social programs, research and extension

Source: Gutiérrez, A.P.A., N.L. Engle, E. De Nys, C. Molejón, and E.S. Martins. 2015. Living with the Semi'Arid and Proactive Drought Management in Northeast Brazil: A New Perspective. Água Brazil Series. World Bank Group.
Note: These three pillars support a paradigm shift from reactive crisis management to more proactive approaches to drought events.

Vitoriano Alves, Cruzeta, Northeastern Brazil. Photo: Mariana Ceratti/World Bank

Other activities supported include a multi-sectoral impact assessment and a vulnerability analysis of the current drought. These activities will enable a more coordinated and systematic response to droughts and the development of a long-term mitigation strategy. A report published in 2015 furthers the dissemination of the Brazil case study, by documenting the analyses carried out, as well as the preparedness measures and approaches used at the national and subnational levels.

2.2 Moving from the MDGs to the SDGs: Beyond Traditional WSS

Providing universal access to improved WSS services is more complex than it sounds. Moving from the MDGs to the SDGs will require making leaps beyond traditional approaches to WSS to reach the marginalized – whether in rural or informal urban areas – and to build more efficient systems that ensure sustainable and high quality service delivery for all in the long-term.

Box 2- Climate Resilience in Complex Water Systems

The Cutzamala system supplies water to more than 5 million inhabitants of Mexico City and is one of the largest and most complex systems in the world. The WB's WGP is supporting the Basin Organization of the Valley of Mexico (OCAVM) in developing a diagnostic tool and an integrated plan for the system and its basins. As part of the diagnostic assessment, several threats to the existing infrastructure and basins were identified and OCAVM asked the WB for assistance in implementing an approach to identify vulnerabilities, conduct a climate stress test for infrastructure, and prioritize investments. In response, the WPP is finalizing a work plan that will implement the Decision Tree Framework for climate uncertainty in the Cutzamala system as one element of a long-term strategy for the sector.

We must shift our thinking to fill the service gap; we must invest in building up both the potential demand for and supply of services. Bringing longtime marginalized groups into formal provision requires taking a new look at why and how they are disenfranchised, and how governments can work with service providers so the latter perceive these groups as a new market that, once tapped, can bolster sector sustainability and improve services for all. Governments can improve WSS service delivery by institutionalizing universal access goals through policies and planning, while relying on service providers to offer more services to more people by operating more efficiently.

Toward service delivery for all, the WPP is building on its Science of Delivery in Urban WSS approach to bringing knowledge into operational design. First, the WPP is tackling the supply side of the WSS equation, by guiding clients to improve sector sustainability, shifting the focus to building more energy-efficient infrastructure, and creating more efficient utility operations. Work in Tanzania, Tunisia and Brazil is being informed by a collection of new analytical work and global best practices. Efficiency programs in infrastructure and utilities can lead to cost-savings and thereby make it easier to build the capacity needed to jump-start a series of service improvement programs, including extending services to the poor. Second, the WPP is tackling the demand side of the WSS equation – or the art of delivery – by building the tools needed to mainstream gender in project design and implementation, and studying the delivery models that work best for indigenous communities.

2.2.1 The Science of Delivery: Utility Performance Improvements

Under its Science of Delivery in Urban WSS Initiative, the WPP began codifying best practices in utility improvements and piloting models for bringing the best new knowledge to the field. An analysis of Bank support to Urban WSS uncovered a greater need for self-financed improvements that utilities could leverage as a starting block for bigger reforms toward financial sustainability. One of the areas identified is energy efficiency. Energy is generally the largest input to water and wastewater treatment and conveyance, which is why shifts in energy costs are a key concern for water operators as they strive to provide sustainable services.

The WPP has since promoted this agenda through two avenues: A Guidance Note for TTLs and implementation of recommendations in Brazil. Parallel technical assistance to utilities in Tanzania and Tunisia on financial planning and management are feeding back into the toolkit for the Science of Delivery to inform new project designs through the GSG. Through its utility work the WPP is leveraging the know-how and co-funding provided through other Bank trust funds, and catalyzing south-south knowledge exchange to help utilities learn directly from their peers (see Chapter 3, Outcome 2).

2.2.2 Energy Efficiency: From Guidelines to Piloting

In 2015, the WPP co-published a technical note[7] that provides guidance to utility managers on energy recovery in wastewater treatment. The note is geared to the specific needs of densely populated urban areas in East Asia but is likewise relevant for any developing country. The note includes:

- A review of operating costs in wastewater treatment plants, the link between energy consumption and specific types of technology, and the potential for energy generation;
- Case studies presenting a wide range of wastewater-to-energy options for developing countries, for both retrofit and greenfield investments;
- A simple assessment tool for quick quantification of operational expenditure-related implications of wastewater-to-energy facilities, and for making a preliminary design of such a facility's major components; and Identification of existing constraints that require attention and factors that need to be in place when considering investments in energy generation.

The Guidance Note is gaining traction in several countries, including In Brazil, where only 38 percent of the sewage collection is treated before discharge, partly due to the high cost of the electricity needed to run treatment plants. The WSS sector throughout Brazil is dedicated to improving energy efficiency to reduce costs, and the Bank is supporting these efforts through a $225 million loan to bolster energy efficiency in the Espírito Santo Water and Sanitation Company (CESAN).

WPP funds enabled the project team to explore various methodologies that allow energy to be integrated into the decision-making processes

7. *Wastewater to Energy: A Technical Note for Utility Managers and Decision Makers on Urban Sanitation in East Asian Countries.*

for capital investments and operations. First, aimed at short-term improvements, CESAN's performance was benchmarked against similar utilities in Europe and Brazil, and an analysis of operational and control strategies for existing plants were conducted. The resulting recommendations, including specific operational changes for three of the utility's largest plants that use three very different technologies, were well received by the government and are being incorporated into the design of the ongoing Bank-financed project. CESAN was encouraged to use its existing capacity to make the suggested improvements. Second, aimed at long-term efficiencies, several options for energy generation and wastewater reuse have been explored and are being shared with the government.

This activity also allowed the team to secure an additional $80,000 from the Energy Sector Management Assistance Program (ESMAP) trust fund to extend the analysis to other wastewater treatment plants run by CESAN.

2.2.3 Fixing the Institutions that Fix the Pipes

Between 2000 and 2014, only 15 percent of Tanzania's population gained access to improved WSS and the country missed achieving the MDG. The government's commitment to ramping up progress toward universal access is part of its Development Vision 2025, but the country's existing water institutions are ill-prepared to make this happen. In the capital, WSS services are governed by a lease contract between the operator, the Dar es Salaam Water and Sewerage Corporation (DAWASCO), and the asset holding company, the Dar es Salaam Water and Sewerage Authority (DAWASA). These institutions are fairly young and have little capacity to meet rising demands for more and better services. The Bank's planned Second Water Sector Support Project will invest $225 million to strengthen DAWASA and DAWASCO, improve their operational efficiency, and bring access to more of the city's residents. The project's strategy is to link WRM with service delivery, which will require strong coordination and data-sharing mechanisms across different agencies.

A specialist sourced by the Water Expert Team (WET) gave the core reform team advice on capacity building needs with an implementation plan that includes:

- A study tour to Durban, South Africa, to see first-hand how the city manages bulk water distribution, followed by a detailed risk analysis of Dar es Salaam's raw water sources;
- Training on capital investment and asset management planning and procurement for DAWASCO; operational management training for DAWASA;
- Business plan preparation for both entities;
- Capacity building on performance improvement planning for both entities aimed at self-financing the improvement programs to gain efficiencies.

The WPP is also supporting the national water utility of Tunisia (*Société Nationale d'Exploitation et de Distribution des Eaux,* (SONEDE)) in its development of a road map to reach financial equilibrium by 2016. The study, co-funded by the WB's Public Private Infrastructure Advisory Facility (PPIAF), aims to help SONEDE, one of the few corporatized utilities in the region with a full cost-recovery tariff, to finance future infrastructure improvements on the back of increased revenues. A Steering Committee that includes line ministries and key donors was appointed to monitor and supervise the study implementation throughout its 14-month timetable and provide guidance on the financial model, scenarios used, and prioritization of recommendations. The Committee has reviewed the draft and a final report will be issued in early 2016. The project team is also collaborating with the European Union's (EU) Tunis office to ensure consistency between the institutional recommendations drawn from the EU's organizational audit of SONEDE and this study.

2.2.4 The Art of Delivery: Reaching the Marginalized

While the supply side of the access equation can come down to a scientific diagnosis of a utility's performance, the demand side is much more of an art: understanding why certain groups remain unserved or underserved and how best to meet their needs. The WPP has been supporting new analyses and tools to help TTLs understand barriers to entry and the specific needs of women and indigenous communities.

While indigenous communities (ICs) represent 7–10 percent of the population of Latin America, they are 2.7 times more likely to be extremely poor and 50 percent more likely to lack access to basic sanitation. While these groups are often excluded from mainstream WSS services, their diverse delivery models can be improved and possibly replicated or shared across countries.

A young boy fetches water from a well near his home in Juliana, in the Amazon region of Brazil, near Manaus. Photo: Julio Pantoja/World Bank

We now know that the adoption and use of WSS systems is lower and slower in ICs, partly due to geographic dispersion, and partly due to their sociopolitical structures, which exist alongside the mainstream governance structures in a given country or city. This means ICs' needs are not taken into account within country-level resource allocation and prioritization processes. In essence, their political exclusion also leads to economic exclusion, as illustrated by their inability to benefit from investments in public goods like WSS.

In anticipation of the call for universal access to clean water, the Bank's Latin America and Caribbean Region (LCR) set out to understand the unique attributes of ICs with regard to their demand for, use, and adoption of WSS services. The task team is looking to develop a common participatory framework and a set of principles (a toolkit) to guide stakeholder engagement processes in ICs to ensure that those vulnerable groups are duly taken into account in the design, development, operation, and maintenance of WSS systems.

So far, seven field visits have been made to Latin American countries where the WB or other organizations have supported the provision of WSS services to ICs: Panama, Paraguay, Argentina, Nicaragua, Colombia, Peru, and Bolivia. A wide range of stakeholders, from central governments to NGOs and indigenous organizations, were interviewed during those field visits to extract practical lessons from individual WSS projects.

Preliminary findings across a range of interventions point to three key principles for success: respect, ownership, and sustainability. Some of the critical aspects identified are customs and norms concerning water in nature; traditional views of sanitation and on climate change adaptation; involvement of all individuals in the identification and design of solutions, as well as in the construction of new infrastructure; and the use of traditional authority structures for decision-making and operations and maintenance (O&M). A common thread that emerged through all stakeholder interviews was that those institutions lacking a special approach for dealing with ICs were very interested in the final product and its recommendations to inform future strategy. The toolkit will be used to help clients (among other ways, through eight active Bank projects) achieve universal, sustainable access to clean water, something especially important for society's most marginalized.

2.2.5 The Next Generation: Gender and Water (writ large)

Women and men access and use water and sanitation in different ways, and while the costs and benefits are well documented, countries still fail to address these differences in their policy formulation and planning. Even development institutions and donors, many of whom even have a mandate to design gender-informed projects, have made little progress in measuring project outcomes by gender to better inform the design of the next generation of interventions.

Moreover, the gender impacts of broader WRM—including irrigation, hydropower, and DRM—have not yet been sufficiently studied. This knowledge gap expands to even more critical issues such as control over resources, land ownership, decision making, job opportunities, as well as the physical protection of children, and families and their health.

A global gender portfolio review of projects from the period 2000–14, funded by the WPP, revealed that only 4 percent of water projects (including water and sanitation and WRM) are gender-informed. Given these results, the report highlighted the need to build WB Task Team Leader (TTL) capacity to understand how and where gender considerations are critical for project outcomes, and to give

TTLs practical tools for designing relevant interventions.

To respond to this challenge, the WPP is developing a program that complements the ongoing work of the WSP on this important topic, by supporting the WGP through four new activities:

1. A gender-inclusive approach to sanitation is being promoted through a Menstrual Hygiene Management (MHM) note for integration in rural water, sanitation and hygiene (WASH) programs;
2. A Toolkit for Mainstreaming Gender in Water Operations was published in 2015, and is being used as a guide to help task teams know when and how to incorporate gender elements within each stage of the project cycle.
3. A number of gender checklists for TTLs working in WSS are being piloted at design, implementation, and evaluation stage;
4. A project concept has been developed for a Women, Girls and WRM Initiative, which builds on the Toolkit (#2 above) and helps teams access the global experience and local expertise needed to make gender a major design principle of water projects.

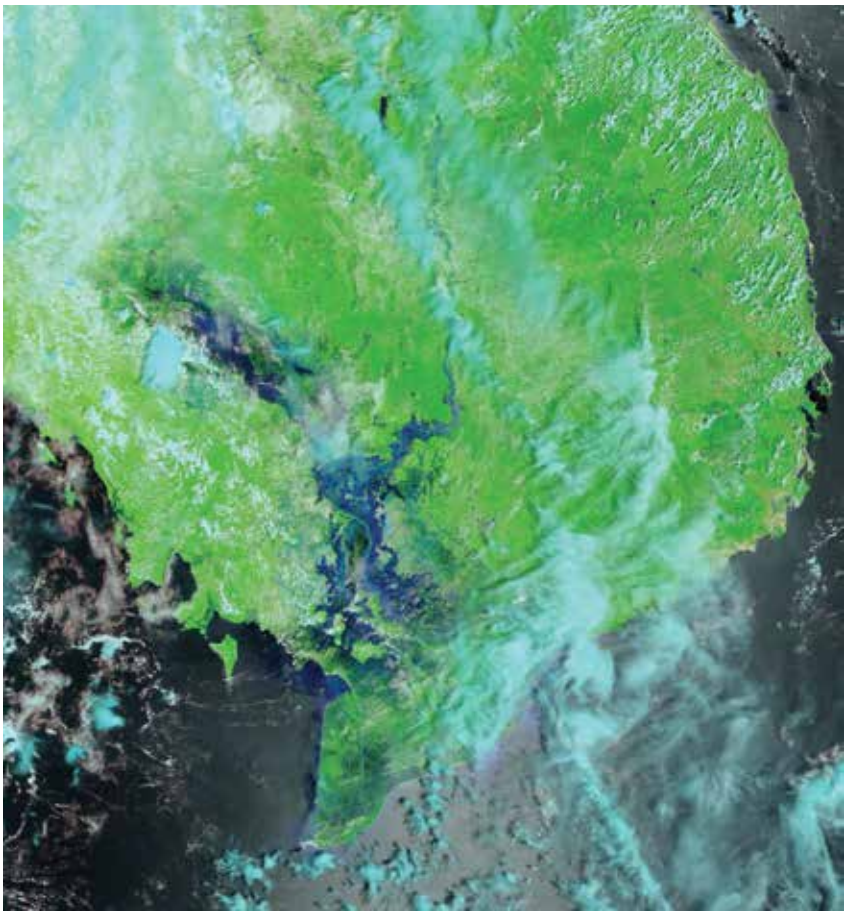
These four activities taken together are building the knowledge base TTLs need to help them mainstream gender in Bank projects. The activities focus first on building awareness of the issues—both among clients and Bank teams—and then provide the tools needed to make inroads into gender-sensitive programming. The gender series is a response to the pragmatic recommendations and findings of the 2015 gender portfolio review and, as such, is providing quick and practical ways to improve the World Bank Group (WBG) performance in terms of gender outcomes.

2.3 Confronting Complexity in WRM through Integrated Approaches

Many countries are up against unique physical characteristics that compound their institutional, financial, and technical challenges in water resources planning and management. They need extra resources to help them think through the best operational structures, planning mechanisms, and financing schemes on the path toward greater resilience. The WPP's Global Initiative on Complex Water Systems (CoWS) brings together in-house global expertise to provide additional, high-level hydrological support in "water resource hot spots" around the world—that is, river basins, cities, and deltas—where water challenges are constraining shared growth and exacerbating extreme poverty, and where traditional solutions are failing because the issues are increasingly complex.

Many of these hot spots are in the East Asia and Pacific Region (EAP), which includes eight megacities (populations over 10 million) despite the fact that 50% of the total population is still living in rural areas. This highly urbanizing region is also where 70% of natural disasters occur, making water management, especially resilience, a major challenge for maintaining current levels of growth. The archipelagos of Indonesia and the Philippines need to conduct water resources planning in an integrated fashion across a multitude of basin sizes. They are looking to the WB for lessons from other countries on systematic and cost-effective approaches. Other countries in East Asia, like China or Vietnam, have to deal with growing numbers of water users within a basin or delta, which adds to their already troublesome erosion and flood risks. Each unique environment requires a customized, multi-disciplinary, and long-term view toward integrated WRM.

The people in Woukpokpoe village have benefited greatly from Benin's national CDD project. They now have access to safe, clean water. Photo: Arne Hoel/ World Bank



Annual floods after Monsoon rains in the Mekong Delta. Jesse Allen, Earth Observatory using data obtained from the MODIS Rapid Response team.
Photo: NASA http://eoimages.gsfc.nasa.gov/images/imagerecords/13000/13982/terra_mekong_21sep04_250m.jpg

Box 3 - Integrating for Resilience in the Mekong

The WPP has for several years supported the government of Vietnam toward developing a new Mekong Delta Plan. The year 2015 saw the publication of two major outputs, produced in collaboration with the government of Australia's Department of Foreign Affairs and Trade (DFAT), which are already being used to improve investment planning across numerous sectors:

- *Mekong Delta Atlas and User Guide:* Facilitates stakeholder dialogue by visualizing baseline and risks
- *Investment Review Report:* Outlines broad, subregional strategies aligned with the Delta Plan and identifies low-regret subprojects to be financed through WB loans.

The WPP also supports complementary capacity building on planning, including the Mekong Delta Forum, which was held in February of 2015 and convened representatives from the central government and 13 delta provinces to discuss development challenges for the key subregions in the Delta.

Toward confronting these complexities, the WPP is incubating a variety of instruments in EAP, including: The roll out of CoWS in the Philippines; institution building in Indonesia; a data visualization tool in Vietnam (see box 3); documenting best practices in participatory planning in China; and regional knowledge exchange on global best practices in Integrated Urban Water Management. The suite of tools deployed in EAP will be assessed to inform the Water Security GSG's future support in complex environments across the globe.

2.3.1 Complex Geographies: Indonesia and the Philippines

The Philippines comprises more than 7,000 islands, and more than 400 unique river basins, including 20 major basins with an area of more than 1000 km2, which are also major drivers for economic development. The increased pressure on water resources in recent years has exacerbated conflicts over competing uses of water for irrigation, hydropower, urban water supply, and fisheries.

The government is committed to implementing its Integrated Water Resources Management (IWRM) approach, adopted in 2004, and has prioritized the development of master plans for each river basin. Efforts to reform the water sector through IWRM took off in 2011 with the creation of an interagency committee on the water sector. But without national guidelines on how to implement the IWRM planning process, local organizations lacked the direction needed to properly integrate national planning or projected climate change risks into their basin development plans.

As a pilot under its CoWS Initiative, the WPP supported the development of National IWRM Master Plan Templates and Guidance, which are being used to develop individual master plans for a range of river basins across the Philippines. At the same time, the task team is providing training to build the capacity of various basin and national agencies responsible for IWRM, as a precursor to the newly planned center for excellence and regional training hubs that will scale up the technical assistance. Moreover, two pilot river basins have been selected to develop investment plans using the IWRM methodology, and they will be the first to link the new planning mechanisms to investment loans.

The WPP is also funding work in Indonesia, a mountainous country comprising 6,000 islands, where most river basins are relatively small and have steep gradients.The country is organized around 33 public river basin management organizations (RBOs) covering 63 "river territories." Due to the government's concern about the effectiveness of existing public sector arrangements through the RBOs and budget constraints for O&M, the central Directorate General for Water Resources (DGWR) under the Ministry of Public Works (MoPW) in Indonesia asked the WB to support a study to identify which models were most effective and could be rolled out across the country.

With WPP funding, the Bank team looked at two pilots in Java and Sumatra that use Perum Jasa Tirta (PJTs), a for-profit river basin corporation set up as an alternative river management and operations model, through special government regulations. PJTs are responsible for bulk water supply, O&M of river infrastructure and flood control works, and water quality monitoring. They are allowed to make a profit from the bulk water services they provide to hydropower stations, water utilities, and industry users.

A report entitled *Toward Efficient and Sustainable River Basin Operational Services – River Basin Operational Management Study in Indonesia*

Harvesting irrigated fields. Indonesia. Photo: Curt Carnemark / World Bank

assessed the new approach. The study revealed that the PJT model has been financially sustainable on a pilot basis and recommended that the model be rolled out systematically, setting up eight to 12 new PJTs to ultimately cover the entire country. The study advocates for a more integrated operational approach to basin management and improved regulation of the PJT model; more competition and bidding among agencies, a common approach for all river infrastructure O&M; and improvements in tariff setting, asset management, and financial reporting and management. More in-depth studies have been planned.

2.3.2 Citizen Engagement for Integrated Management

The rivers and floodplains that have historically fed China's vast population are at risk of flooding and soil erosion, leaving farming communities economically and physically vulnerable. China is one of the countries most affected by severe floods and soil erosion, particularly in the areas upstream of its seven major river basins; its experience pioneers the way for many developing countries. Participatory, integrated watershed management has proven to be a critical model for strengthening community resilience to floods. The WB-funded Xining Flood and Watershed Management Project has helped communities in Xining Municipality overcome such challenges. Under the project, which includes 17 subwatersheds and 68,000 farmers in 44 villages, all stakeholders were asked to participate in the design, supervision, and O&M of the works—ranging from gully improvement, construction of check dams, country roads and terraces, and planting of trees to the procurement of cattle. Nearly 20 percent of the project's beneficiaries are ethnic minorities, requiring a close look at property rights, safety, and sustainable land use practice to protect the surrounding ecology. Upon the successful completion of most of the major subprojects, and with Xining Municipality becoming a model of river management for Qinghai Province, WPP funds were used to summarize the project's best practices in the fields of integrated flood and environment management and participatory watershed management. The report looks at some of the key factors of success, including equity issues related to project benefit distribution, monitoring and evaluation methods used, and how to scale up pilot projects.

2.3.3 Learning from the Dutch about Integrated Urban Water Management

To meet WB clients' demand for innovative and practical solutions to flood risks, the WGP with the financial support of the WPP gathered 25 decision makers and practitioners from Bangladesh, China, the Philippines, and Vietnam, as well as 10 Bank staff on a study tour to the Netherlands to learn about integrated urban water management practices.

Many developing countries in EAP lack the tools, expertise, and instruments to factor the potential impacts of adverse natural events into their investment decisions. The countries that participated in the study tour are among the most affected by climate-related impacts; they also have densely populated coastal cities that can learn a lot from the Dutch experience in flood management. The study tour included site visits that allowed the participants to see Dutch approaches first-hand, as well as working sessions and presentations followed by discussion on specific challenges and approaches. The participants were encouraged to take into account the lessons learned during the study tour when designing and implementing existing and future projects.

"We have really come to realize that solving the climate change challenge requires integrated planning and innovative approaches. Working with partners such as the World Bank and the Netherlands bring this knowledge and innovation to the forefront of our efforts in flood management, which many developing countries can learn from."

Maria Belen Andaya-Eusebio, Mayor of Pasig City in the Philippines and participant of the Integrated Urban Water Management study tour (October 2014)

Learning Session Spatial Planning and Integrated Urban Water Management in Amsterdam, The Netherlands. Photo: Macha Kemperman / World Bank

CHAPTER 3

DELIVERING RESULTS

3.1 How We Measure Success

The Water Partnership Program (WPP) Phase II results framework translates the program's objectives into two principal impacts: (i) vulnerable populations have been provided with an enhanced quality of life; and (ii) climate-resilient green growth has been made possible through water-smart development. The first impact represents the program's progress toward social and human development goals, while the second represents the program's goal toward economic growth coupled with sustainable development. The full results framework is presented in annex 2. These two impacts signify the ultimate, long-term goals that the program promotes. The results framework deconstructs these ambitious impacts into six measurable outcomes. In turn, each of those outcomes is systematically monitored over time through eight indicators and 43 sub-indicators,[8] measured against individual targets.

Section 3.2 provides a summary of progress made on each of the eight indicators, along with qualitative examples. In the course of Fiscal Year 2015 (FY15: July 1, 2014 – June 30, 2015), the WPP made significant progress on its 44 sub-indicators, with one year remaining to reach the final targets. The program has already met 17 targets and is on track to meet another 18 by the close of Phase II, at the end of June, 2016. Thus, 33 of the 44 targets, or 80 percent, are likely to be met (which increases to 86 percent if the three to-be-determined indicators are taken into account) given there is one year remaining for progress to be made across all sub-indicators.

A few indicators are, for various reasons, unlikely to be met by the end of the program. Some of these were stretch targets, given the short timeline and demand-driven nature of the program, others have proven difficult to monitor, given the variety of indicators used in the tracking system of Bank projects. Sub-indicators that are likely not to be met are found under indicator C (Web-Based Outreach and Use of WPP Publications; indicator G (Physical and Natural Assets Protected); and indicator H (Beneficiaries). These are detailed further in this chapter.

As the current results framework is the first framework ever implemented to monitor WPP results, it was to be expected that not all indicators would yield the results foreseen. These experiences have yielded valuable lessons, and the WPP team is working with Monitoring & Evaluation (M&E) experts within the WGP to ensure that these lessons will be taken into account in the design of future results frameworks and monitoring systems.

The WPP also has a broader and more influential impact on the global water dialogue; an impact that is not necessarily measured by the more quantitatively oriented results framework. Section 3.3 provides several examples of the WPP's influence in building networks within the Bank and leveraging global partnerships beyond the Bank, examples that illustrate the WPP's more enduring, institutional impacts that are helping lay the foundation for the Bank and its partners to deliver on the Sustainable Development Goals (SDGs).

3.2 Overview of Fiscal Year 2015 Results

3.2.1 Outcome 1: WPP Strategic Funding Mobilized

The combination of targeted WPP funding and high-quality activities that deliver results has made the WPP an effective tool for fighting poverty (Indicator A: Funding Mobilization). The WPP strategically uses its funds to target the world's poorest region, Africa, and ensures that the quality of its activities attracts the best global implementing agencies by promoting quality-based procurement. The quality of WPP activities is also measured by the crowding in of other Bank and external funding sources, including bilateral aid from WPP donors themselves, which totals $4.2 million under Phase II. Three of the four sub-indicators for indicator A have been met, while the fourth (A3) experienced a 100 percent increase during FY15.

Crowding in New Expertise

In FY15, an additional $1.2 million in WB co-funding was secured, which is critical to the cross-fertilization of ideas between GPs, by combining trust funds with project funds that bring in sector-specific expertise. For example, support to building hydromet services in Bhutan was done in concert with the South Asia Water Initiative (SAWI); Brazil's wastewater-to-energy study leveraged $80,000 in financing from the Energy Sector Management Assistance Program (ESMAP) to conduct the same study for other treatment plants; and the Complex Water Systems Initiative is receiving nearly $400,000 in co-funding from Bank projects, the International Finance Corporation (IFC), SAWI, and CIWA. Other activities

8. Originally 45 sub-indicators, but two were removed in 2015 following discussions with donors (see indicator I under outcome 6).

receive co-funding from the WSP and the PPIAF. One quarter of the initial target of $10 million has been met. This was a stretch target given that alignment with other programs' priorities is uncertain and limited by TTL interest in tapping into other funding sources. The design for targets for this type of indicator will be re-evaluated in future results frameworks.

Table 2 – Indicator A: Funding Mobilization

(A) Strategic use of WPP activity funds	Target	Results	
		June 2014	June 2015
1) Percentage of the value of approved WPP activities in Africa (%)	30%	51%	54%
2) Percentage of the value of firm contracts (in PRO window) adopting QBS procurement (%)*	50%	94%	84%[9]
3) Bank internal co-funding for WPP activities ($)	$10m	$1.3m	$2.5m
4) External co-funding for WPP activities ($)	$1m	$0.67m	$1.7m

* Quality-Based Selection (QBS) includes 90 percent quality or more, and sole-source contracts.

Co-Creating Solutions

A recent decision to restructure the irrigation sector in Vietnam requires a broader view to improve WRM in the Mekong Delta, where siltation challenges are expensive to resolve. A WPP activity supporting the finalization of the Vietnam Law on Water Hydraulics has leveraged the financial, technical, and strategic advice of the Dutch with regard to delta management. Through a cooperative agreement with the government of the Netherlands, the government of Vietnam learned about new dredging and soil embankment strategies under WPP-funded workshops that support technical knowledge exchange. By bringing in Dutch global experts and technologies, the WPP is leveraging the knowledge of its donor partner's institutions, while influencing a $100 million Bank investment for rural development in the Mekong. Following this experience, the client is implementing a pilot soil bank creation project, also bolstered by bilateral support from the Netherlands for technical assistance. And the Vietnamese government is currently carrying out a feasibility study to see if the pilot can be scaled up.

3.2.2 Outcome 2: Knowledge and Operational Tools Created, Disseminated and Used

The WPP leverages the knowledge and learning tools of the WGP to ensure that our clients and our staff are able to apply cutting-edge tools and information to their operations. First, WPP events, from global workshops to local training sessions, build the capacity of government agencies and private firms around the world (Indicator B: Events and Training Supported). Second, the program manages on-line communications about WPP's work on the WB's water website[10] and also publishes global and project-based studies and reports to further the dissemination of best practices (Indicator C: Web-based Outreach and Use of WPP Publications).

This year, the WPP has reached 3,000 people through learning events, on track to reaching an additional 1,000 people to meet the target by next year. Of these event participants, 77 percent indicate that they are likely to apply the knowledge learned in their work, surpassing the target of 70 percent. Under indicator B, three sub-indicators have already been met and the remaining two are on track. In FY15, WPP publications represented nine out of the top 10 WGP downloads in FY15, with one third of the downloads happening in developing countries.

Global Networking: Utility CEOs Learn from Their Peers

In 2014, a total of 15 CEOs of water utilities in urbanizing areas of Africa participated in an intense 3-day course on how to turn utilities around by improving performance and financial sustainability. This Leadership Course for African Water Utility CEOs was held in Cape Town, South Africa, and designed and managed through a WPP-grant.

The course highlighted the experiences of former utility CEOs from Durban, South Africa, and from the National Water and Sewerage Company in Uganda, all of whom had had to manage complex political economies while reforming their utilities. Being able to learn directly from peers fostered an honest dialogue about critical reform challenges and enabled

9. This number includes contracts procured through (a) a selection process whereby technical quality was given at least 90% weight; and (b) single-source selection.
10. See http://www.worldbank.org/en/topic/water.

"It was inspiring to hear about the problems we face from someone who has overcome them. It shows you it can be done and gives you access to the resources to do it."

Kombo R. Kombo, CEO of Mombasa Water and Sewerage Company and participant in African Water Utility Reform Course

Workshop session: "Dam Security Management Challenges and Risk Reduction". Montevideo, Uruguay
Photo: Sala de Medios, Presidencia de la República de Uruguay http://www.presidencia.gub.uy/sala-de-medios/fotografias/dinagua

Table 3 – Indicator B: Events and Training Support

Indicator	(B) Events and training supported by WPP	Target	Results	
			June 2014	June 2015
Sub-Indicators	1) Number of Participants (#)	4000	1102	2984
	2) Percent of Participants that indicate they are likely to apply knowledge in their work (%)	70%	51%	77%
	3.1) Number of agencies/firms represented by Participants (#)	200	205	236
	3.2) Percent of Govt. Agencies (%)	60%	49%	44%
	3.3) Percent of Private firms (%) *	40%	51%	56%

* Percent of private firms includes universities & think-tanks and CBOs & NGOs (resp. 12% and 2%, June 2015)

participants to take home lessons from real-life cases and implement credible solutions. By linking this knowledge with task teams developing and implementing WB loans, the course bolstered the capacity of champion reformers while at the same time bringing new knowledge into the design and operation of existing Bank projects.

Stakeholders Devise Strategy for Dam Safety

The WPP also supports events aimed at strengthening the design of a project through participatory planning and the use of global best practices. As Uruguay is looking to develop a policy framework to underpin a new Dam Safety Regulatory Framework, the WPP supported a seminar on dam safety in May 2014, which was part of a larger capacity-building effort for members of the government, the private sector, and academia.

Government officials from nine different agencies, including the Ministry of Housing, Land Planning and Environment, and 120 participants from private partners in agribusiness, irrigation, and dam construction and operations, as well as NGOs and civil society joined the conversation to develop the new strategy for Uruguay.

Participants discussed the findings of a dam safety preliminary evaluation and learned about the experiences of Spain, Argentina, and Brazil, and best international practices for the implementation of dam safety regulatory frameworks. WPP funding enabled the project team to engage more stakeholders in critical legal framework discussions and to identify various roles in implementing the framework around risk management and economic development at the national level.

Changing the Way We View Water and Agriculture

The year 2015 saw the publication of a WB flagship entitled *How to Assess Agricultural Water Productivity? Looking for Water in the Agricultural Productivity and Efficiency Literature*, which was launched at the Agricultural and Applied Economics Association, 2015 AAEA & WAEA Joint Annual Meeting, held July 26–28, in San Francisco, California. The meeting hosted 1,300 professionals from around the world working in agriculture and broadly related fields of applied economics. The report is the first of its kind. It contributed to the debate around the use of single- versus multi-factor approaches to consider water aspects in

agricultural productivity and efficiency. Its key finding is that most studies either incorporate field- and basin-level aspects but focus only on a single input (water), or they apply a multi-factor approach but fail to tackle the basin level. It suggests more research should target agricultural water productivity that duly takes into account multiple inputs and basin-level issues.

3.2.3 Outcome 3: Plans and Strategies Designed and Capacity Enhanced for Improved WRM and Service Delivery

The WPP pushes the envelope by providing new ways of tackling pressing water challenges. WPP funds can be a vital resource for clients who need the space and time to develop sound, integrated strategies, policies, and investment plans for the future (Indicator D: New Plans and Strategies Promoted). Strategy development also offers Bank staff an opportunity to work arm in arm with client counterparts, introducing them to new ideas from other countries and regions, and building their capacity in new areas, be it urban planning for adaptation, expanding WSS services to new areas, or building hydromet service capabilities (Indicator E: Capacity Enhancement).

Under Component 3, the WPP nudges clients to be better prepared—with the right institutional capacity and the right investment projects—for the next challenge. Under Phase II, in pursuit of the targets for indicator D, the WPP has supported the development of 21 new strategies, policies, or plans, 18 of which involve competing water uses, and 16 of which are non-water strategies that incorporate water. One sub-indicator has already been met and significant progress has been made with the other three indicators, which can be considered on track. Only at the end of the program will the WPP be able to report on Indicator D.3 (Budget Allocated for Policy/ Strategy Implementation).

Indicator E demonstrates how the WPP helps Bank teams build capacity across a number of emerging themes, from emergency preparedness to irrigation management. As of June 30, 2015, four of the seven sub-indicators had been met, and two were on track. One is to be accounted for at the closing of the program.

Table 4 – Indicator C: Web-Based Outreach and Use of WPP publications

(C) Web-based outreach and use of WPP publications	Target	Results	
		June 2014	June 2015
1.1) Downloads per document after announcement (#)	300	692	509
1.2) Percent of downloads from developing countries (%)	50%	31%	41%
2.1) Downloads per flagship document after announcement (#)	2000	1721	1464
2.2) Percent of downloads from developing countries (%)	50%	21%	31%
3) Percent of visitors of the WPP website that visit at least 2 pages (%)	40%	66%	TBD
4) Average quality assessment scoring of WPP knowledge products by client country governments (and WET products scoring by Bank project teams)	4 out of 5	4.6	4.6

Table 5 – Indicator D: New Plans and Strategies Promoted

(D) New plans & strategies promoted by WPP activities in client countries	Target	Results	
		June 2014	June 2015
1.1) Number of non-water Policies/ Strategies that incorporate water (#)	10	9	16
1.2) Number of policies/strategies accounting for competing water uses (#)	40	6	18
2.1) Number of Policies/ Strategies endorsed by a client agency (#)	30	6	12
2.2) Number of policy or strategy investment plans endorsed by clients (#)	15	9	10
3) Budget Allocated for policy/strategy implementation ($)	$150m	TBD	TBD

Planning for Resilience Saves Lima $600 Million

Lima is one of the largest metropolitan areas in Latin America and also the second largest desert city in the world. Rapid population growth and climate change are placing additional pressures on water resources, posing a significant threat to water security.

Recognizing the need for action, SEDAPAL—Lima's water utility—has developed a multi-billion dollar master plan to implement 14 large and diverse infrastructure investment projects between now and 2040. However, questions remained about the design, reliability, and sequencing of the

Table 6 – Indicator E: Capacity Enhancement[13]

Indicator	(E) Capacity enhancement	Target	Results June 2014		Results June 2015	
			Actual	Planned	Actual	Planned
Sub-Indicators	"1.1) Early Warning Systems (EWS) installed (#)"	8	1	3	2	6
	1.2) (Upon installation of EWS), relevant threat information is disseminated to stakeholders on a timely basis (Yes/No)	90% Yes	100% Yes	NA	TBD	TBD
	2) Operational water users associations created / strengthened (#)	20	1448	2344	2589	6510
	3) Government Agencies (#) with strenghtened capacity to address:	33	15	73	54	97
	3.1) Climate change /WRM (*)	5	0	45	32	68
	3.2) Water Security	8	0	16	15	16
	3.3) River Basin issues	20	15	12	7	13

* WRM numbers added for June 2015

proposed investments in the face of "deep uncertainty"[11] to ensure both "no regrets"[12] and maximum future adaptability.

The WGP, through its WPP, has bridged this knowledge gap with a comprehensive study that draws upon the Decision Making under Deep Uncertainty (DMU), a state-of-the art method to reduce deep uncertainty and minimize risks. The study helped SEDAPAL revise its master plan by identifying the projects to be implemented first, and preparing adaptive future activities, that is, activities defined in a way that can be adjusted in response to evolving conditions.

The analysis found that certain investments representing only 75 percent ($2 billion) of the proposed total cost of the master plan actually still made it possible to meet the water reliability targets to the same extent as when implementing the full $2.7 billion investment plan. This method saved the city over $600 million and has drastically changed the originally proposed master plan, ultimately improving reliability at a lower cost than projected.

Working at the Nexus: Non-Water Strategies Incorporate Water

The WPP supported the preparation of a national irrigation strategy (2016–25) to restore Georgia's position as agricultural exporter. Approval by the Cabinet of Ministers is expected in June 2016. The strategy—which aims to improve the efficiency and effectiveness of irrigation infrastructure and expand the area irrigated—includes proposals for tariff structures, regulatory structures, management models, and rehabilitation and modernization of the existing infrastructure. It also emphasizes the need for more modern data collection and transmission systems to monitor the changes in water flows resulting from the rehabilitation investments.

Cost Recovery in Irrigation: Building the Capacity of Armenia's WUAs

In Armenia, agriculture is the main livelihood of rural communities and it is highly dependent on irrigation. Under the water sector reforms of 2002, water users associations (WUAs) were established. Currently, 42 WUAs are responsible for about 195,000 ha (or 94 percent of the 208,000 ha of irrigable lands in Armenia). A WPP-financed activity provided a comprehensive review and strategic plan to enhance the effectiveness of WUAs in Armenia as they struggle to be financially sustainable. Over 100 people attended a workshop in June, 2015, to learn about operational improvements and opportunities to increase efficiency and cost recovery as outlined in the strategic plan. The WUA strengthening process will soon be scaled up as part of a national strategy for the irrigation sector.

11. Conditions where the parties to a decision do not know or do not agree on the system model(s) relating actions to consequences or the prior probability distributions for the key input parameters to those model(s).
12. In this context, "no regret" strategies aim to maximize the positive and minimize the negative outcomes of climate risk management for communities and societies in climate-sensitive fields such as water resources, food security, agriculture, and health.

13. The WPP funded a road map towards modernizing weather, water and climate services in Bhutan, including Early Warning Systems, but no project has been defined at this moment to implement the road map. More information on this activity can be found in section 2.1.

3.2.4 Outcome 4: Downstream Loans Supported through Improved Design and Implementation

The WPP leverages the Bank's water portfolio by improving the design of projects and building client capacity during implementation (Indicator F: Amount of Bank Lending Influenced and Additional Funding Leveraged through WPP Activities). Through these interventions, the WPP influences project outcomes in a big way. Most major outcomes are measured through core Bank indicators, some of which are included in the WPP results framework. For example, Indicator H (under Outcome 5) aggregates the number of beneficiaries, while Indicator G (Physical and Natural Assets Protected) measures progress made in terms of environmental and ecological outcomes.

By the end of FY15, the WPP had influenced the design of over 130 Bank projects, a figure 30 percent higher than the target. New WPP activities influenced an additional $3.5 billion in WB investments and another $5.5 billion if total project costs are also taken into account. As to indicator F, one target has already been met, two are on track, and one will be reported on at the close of the program.

Indicator G has shown less progress, as little demand has been generated from project teams working on environmental programs that protect natural assets like freshwater, biodiversity, or forests. While the sub-indicator for reduction in aquifer pumping is on track, the remaining six sub-indicators are unlikely to be met.

However, several activities that support other indicators demonstrating protection of natural assets are not covered by the results framework (see box 4). These activities include the treatment of 5 million m^3 of wastewater to make it suitable for agricultural use; the removal of 17,410 tons of pollution load by wastewater treatment plants; and a reduction in flooding and erosion risks that benefits 33,888 ha of land.

Table 7 - Indicator F: Bank Lending Influenced/Leveraged

Indicator	(F) Amount of Bank lending influenced & additional funding leveraged through WPP activities	Target	Results	
			June 2014	June 2015
Sub-Indicators	1) Value of (WB) investments supported ($)	$15b	$10.2b	$13.7b
	2) Total project value of influenced investments in which the Bank is involved ($)	$25b	$15.3b	$20.8b
	3) Value of additional investments (in which WB is not involved) ($)	$500m	TBD	TBD
	4) Number of projects designs improved through a WPP activity (#)	100	71	133

A Pragmatic Design Change for Lebanon's $474 Million Dam

Lebanon has significant water resources per capita relative to other countries in the Middle East, but growing water use and climate change will require greater storage capacity to be able to meet local demand, which is predicted to increase fivefold between now and 2025.

The construction of the Bisri Dam—as part of the $474 million WB Lebanon Water Supply Augmentation Project aimed at improving water supply services for 1.6 million people—will be one of the largest dams in Lebanon and will allow closing the water supply gap of Greater Beirut. The WPP WET's support was pivotal to the design of the project by providing the expertise necessary to assess the reliability of the projected water availability, taking into account climate change and based on international good practices as well as local circumstances and constraints (especially related to data availability). Two quick assessments were conducted to generate the plausible hydrological scenarios under climate change and project robustness tests were conducted to review the dam flooding design and identify the stress points susceptible to potential failure brought on by climatic and non-climatic factors. As a result, the design of the dam was altered to reduce its capacity from 150 m^3 to 125 m^3 to reflect the revised flow projections that take into account the expected climate change impacts, thereby saving significant project costs.

Finding a Cheaper Solution for Disaster Preparedness

In preparing a $75m Weather and Climate Services Project, the government of Bangladesh found a lack of readily available data for coastal hydrometeorological monitoring and hazard modelling, which was required for understanding the country's deltaic ecosystems. Elevation data—one such key set of information—were scattered across different government departments and not being consistently collected.

Table 8 – Indicator G: Physical and Natural Assets Protected

Indicator	(G) Physical and natural assets protected	Target	Results June 2014		Results June 2015	
			Actual	Planned	Actual	Planned
Sub-Indicators	1) Coastline and freshwater under biodiversity protection (km)	1200	0	0	0	0
	2.1) Area brought under enhanced biodiversity protection (ha)*	1 m	0	0	1,955	2,205
	2.2) Number of studies incorporating ecosystem valuation (#)	7	0	0	0	0
	3) Water Storage capacity increase (m^3)	12 b	0	0	0	0
	4) Aquifer pumping reduction (m^3 /yr)	20 m	14.3 m	20.6 m	20.6 m	16.2 m
	5) Areas provided with irrigation / drainage services (ha)	2 m	93 k	700 m	395 k	1.1 m
	6) Hydropower generated (MW)	3000	16	285	26	885

* Core Sector Indicator: Areas restored or re/afforested (ha)

A consultancy arranged through the WET and funded by the WPP recommended improved coastal topography in preparation for the start of the project. With collaboration from the Bangladesh Meteorological Division (BMD), the WET specialist mapped and classified different regions along the coast of Bangladesh. Priority areas for data collection were next selected, and cost-effective, pragmatic approaches for gathering data recommended, such as sonar sensors rather than the better but also more expensive LiDAR technology or comprehensive bathymetric surveys. An accompanying report outlines how the new data should be stored, analyzed, and used to design disaster risk reduction interventions.

The consultant also recommended a satellite feasibility study prior to the start of the project, which is now being undertaken by the government in parallel with project preparation.

3.2.5 Outcome 5: Vulnerability Reduced via Pro-Poor and Gender-Sensitive Interventions

When it comes to impacts, the WPP's most direct success is measured by the number of people reached via individual activities (Indicator H: Beneficiaries). Such projects are active in areas where nearly 2 billion of the world's poorest are living (sub-indicator 1), four times more than the original target. WPP activities support WB projects that have benefited over 26 million people under Phase II (sub-indicator 2.1). Moreover, these projects, once completed, will benefit 50 million people, of which half are women and more than a third of their target population are vulnerable. Overall, for Indicator H, two of the sub-indicators have already been met or are on track, while the other three will probably be met or at least show significant progress during the program's last year of implementation.

Box 4 - Additional Project Outcomes: Physical and Natural Assets Protected

- **Water Reused:** 5 million m^3 per year of treated wastewater available for agricultural use
- **Environmental Quality Improved:** 17,000 tons per year of pollution loads removed by wastewater treatment plants
- **Flood-Prone Areas Protected:** 3,400 hectares benefiting from reduced flooding or erosion risks

Sifting grain. India.
Photo: Ray Witlin /World Bank

Table 9 – Indicator H: Beneficiaries

Sub-Indicators	(H) People benefiting from projects supported by WPP activities	Target	Results June 2014			Results June 2015		
			Actual	Women (%)	Planned	Actual	Women (%)	Planned
	1) Target Population in project area (#)	0.5 b	1.21 b	NA	NA	1.28 b	NA	NA
	2.1) Actual beneficiaries from the project (#)	100 m	12.9 m	48	27.1 m	26.58m	NA	57.66m
	2.2) WSS beneficiaries (#)	35 m	12.0 m	53	17.4 m	19.8m	49.8	37.6m
	2.3) Water users with new/improved irrigation & drainage services (#)	30 m	0.7 m	36	0.8 m	927k	40.3	3.5m
	2.4) Other WRM beneficiaries (#)	35 m	0.1 m	51	8.9 m	5.8m	46	16.4m

Joint IFC-World Bank Partnership Supports Small and Marginal Farmers

Average agricultural productivity levels in West Bengal are low in comparison to those of the more advanced agricultural states in India. Under several components of the West Bengal Accelerated Development of Minor Irrigation (WBADMI) Project, valued at over $378 million, the WB is working to enhance agriculture-based rural livelihoods by boosting the yields of agriculture, horticulture, and fisheries.

WPP funding was used to launch an innovative, joint WB-IFC task team to provide support on the knowledge agenda toward improving the performance of minor irrigation systems in the project area, groundwater development, and the organization and operation of WUAs and commodity groups. The team is advising on potential markets and value chains, how to enhance community-led WRM, and how to assist target beneficiaries trying to diversify into higher-income and less water-intensive crops.

First, the team conducted a rapid assessment of project sites, in which WUAs used a participatory approach to identify crop segments, and selected a preliminary set of five districts for support. The team next outlined potential interventions to raise the production of small and marginal farmers. These interventions will become part of the project design and are expected to be replicated in other agricultural competitiveness projects in states such as Rajasthan, Maharashtra, and Assam.

The WPP support will be instrumental in making long-term project outcomes more sustainable, among others, by improving the economic water productivity of small farmers. More than 160,000 people are ultimately expected to benefit from this project, with 40 percent of farmers in the area adopting better production techniques.

3.2.6 Outcome 6: Water Mainstreamed in Other Sectors

The WPP was designed to work from within other sectors to ensure that water resources are properly accounted for in energy, agriculture, urban, and environmental programs. The WPP's Global Initiatives are used to ensure that other sectors are brought into the process from the very beginning, so that a common understanding of water's role can be developed and specific tools be designed that will work within the parameters of the other sectors. WPP funds also provide incentives at the activity level for experts from various backgrounds to collaborate, and the WPP has been instrumental in building platforms for cross-sector dialogue and joint publications. This mainstreaming was originally measured through indicator I (Cross-Sector

Table 10 – Indicator I: Cross-sector mainstreaming

Indicator	(I) Cross-sectoral mainstreaming of WRM	Target	Results	
			June 2014	June 2015
Sub-Indicators	1) Guidance Notes created including an assessment on improvements required in Operational Policies for specific sectors (#)	5	2	2 (plus 2 in draft)
	2) Guidance Notes for specific sectors endorsed by respective Sector Board (#)	4	NA	NA
	3) Agreement by Operational Policy and Quality Department (OPCSPQ) to move forward on modernization of Operational Policies for mainstreaming of WRM (# of sectors)	2	NA	NA

Mainstreaming), with the aim of influencing the Bank's internal operational policies in other sectors. With the creation of the new WGP, this measure for mainstreaming is no longer appropriate, but the work continues through various channels, as summarized above and detailed in section 3.3.

In the wake of the changes made to the Bank's organizational structure, sub-indicators 2 and 3 are no longer feasible or relevant for measuring this outcome. Rather, the WPP will continue to qualify its contribution to other sectors by completing five guidance notes (sub-indicator 1) and exploiting opportunities to work across the new GPs in its global, regional, and country-level activities. The WPP is on track to meet one sub-indicator of indicator I and the remaining two have been removed from the overall framework, bringing the total number of sub-indicators down from 45 to 43.

3.3 Impacts – WPP's Broad Influence on the Global Dialogue

In addition to the impacts the WPP has in client countries through individual activities at the country level, the program, now in its fourth year of implementation under Phase II, is emerging as a big contributor to the global dialogue on water security. WPP's Global Initiatives, as well as its strategic use of global and country-level activity funding toward other sectors that incorporate water, contribute to a higher-level impact that is not necessarily visible in the results reported in section 3.2.

This section provides select examples of the WPP's influence in building networks within the Bank and leveraging global partnerships beyond the Bank. It illustrates the program's more enduring, institutional impacts, which are helping build the foundation needed to enable the Bank and its partners to deliver on the SDGs.

3.3.1 Influencing Within the Bank: An Incentive to Coordinate

The WGP is strengthening the Bank's skills and knowledge on water-related issues and providing "water writ large" approaches to development challenges. When all staff involved in an activity works under one management, sharing experiences and knowledge across water subsectors is easy, but working across other sectors—like urban, energy, or environment—can be prohibitive in terms of time and resource requirements. Fortunately, the WPP influences initiatives undertaken across the Bank in three major ways.

Firstly, many WPP activities are carried out in partnership with other trust funds, and therefore act as a mechanism to provide incentives for cross-GP collaboration toward integrated approaches and solutions. As detailed in chapter 3, indicator A, the WPP has leveraged more than $1.2 million from various trust funds, including SAWI, CIWA, PPIAF, the WSP, and ESMAP.

Secondly, the WPP has been a critical factor in funding a cross-GP institutional arrangement that provides a platform for integrated thinking and program design across GPs—the Integrated Urban Water Management Knowledge Silo Breaker. In 2016, the Silo Breaker will produce its first joint output, a Guidance Note on Integrated Urban Water Management, with the aim of building joint operational work in several countries.

Finally, the WPP has its strongest impact on the Bank's other GPs through the conception and design of some of its major Global Initiatives. For instance, the Global Initiative for Disaster Risk Management is being implemented in collaboration with the WB's Global Facility for Disaster Reduction and Recovery (GFDRR). The initiative aims to meet the growing demand for hydromet and climate services to help mitigate risks and reduce people's vulnerability and exposure to water-related hazards. The team is currently conducting an in-depth assessment of national hydrological services

(NHS) in two pilot countries, and designing a road map to modernize the NHS with a view to: (i) helping users access the available information; (ii) helping users interpret and use that information; and (iii) informing the planning and decision-making processes underlying cost-effective investments toward a climate-resilient development. The work is cross-sectoral by nature, and relevant to agriculture, energy, transport, health, and particularly WRM at the national, regional, and international levels.

Similarly, the WPP's Global Initiative on Remote Sensing (RS) responds to the demand from Bank teams for (i) innovative tools and approaches to improve long-term investment planning in water and other sectors; and (ii) practical information on the potential use of RS technologies to improve data coverage and availability to enhance decision making across all water subsectors. RS can cover large areas or support ground-based (in situ) measurements when available data are scarce or unreliable. RS technologies have myriad applications, such as flood and drought risk management, DRM, evapotranspiration mapping, irrigation and rainfed systems' management, conjunctive surface and groundwater analysis and management, regional and transboundary river basin planning and management, water quality management, and delta and coastal area management. The team has already worked across the Bank to understand the applicability in other sectors, which resulted in a guidance tool for the use of RS technology products for particular tasks. In the next phase, this multi-sectoral team will provide funding to help mainstream RS technologies into Bank operations.

Under each of these three arrangements, members of water teams leverage new expertise, learning much in the process and then folding those lessons back into the practice via the Global Solutions Groups (see figure 1 in chapter 1). They also have the time and incentives to change the way other sectors address water and to provide the water expertise needed to properly design a project in energy, environment, DRM, or agriculture.

3.3.2 Influencing Beyond the Bank

While WPP Global Initiatives are primarily designed to mainstream global best practices in Bank operations, in the process of consulting with and building on external knowledge, they have also made a significant mark on the global dialogue.

First, the Decision Tree Framework (see section 2.1) is the product of 2 years of collaboration between the Bank, the Alliance for Global Water Adaptation (AGWA), Conservation International, the United States Army Corps of Engineers (USACE), and the University of Massachusetts. Two publications[14] resulting from this work and global interaction have been disseminated widely and been in high demand from other institutions. The initiative is now informing the design of standards being formulated by the Climate Bond Initiative, is being used by the IFC in the design of its hydropower portfolio, and has been used by the USACE to draft new guidelines for water engineers. Moreover, other IFIs have asked the Bank to present the framework to see how it can be used in their institutions, and it has become part of the core guiding principles promoted by the AGWA.

Second, Thirsty Energy, an initiative that showcases the practical use of evidence-based operational tools for development, has evolved into an external guide that is being used by energy sectors in China and South Africa to incorporate water considerations into their sector planning. In China, the National Energy Agency is working with Thirsty Energy to incorporate potential water constraints into the upcoming 5-year energy plan (2016–20). In Morocco, the methodology is being used to formulate a road map to identify key investment and planning opportunities. This influence at the country level extends to governments and private entities working on water and energy, and could influence regional and global thinking on nexus issues. The team has also provided inputs to the United States Department of Energy, IRENA, the Clean Energy Ministerial, and SE4ALL, and continues building a very strong alliance with the private sector.

14. See Confronting Climate Uncertainty in Water Resources Planning and Project Design: The Decision Tree Framework; and Beyond Downscaling: A Bottom-Up Approach to Climate Adaptation for Water Resources Management.

ANNEX 1

FINANCIAL SUMMARY WPP PHASE II (JULY 2012 – JUNE 2015)

Table A1 – Overview of Donor Contributions to the WPP - Phase II

Contributions to WPP	Donor Currency	Amt pledged (donor curr.)	Amt pledged (USD)	Amt received (USD)
Austria	EUR	4,000,000	5,515,200	5,515,200
Denmark (DANIDA)	DKK	20,000,000	3,522,245	3,522,245
Netherlands (DGIS)	USD	12,500,000	12,500,000	12,500,000
United Kingdom (DFID)	GBP	12,000,000	19,001,850	19,001,850
Total Phase II Contributions				40,539,295
Balance Phase I Contribution				4,558,165
WPP Total			**40,539,295**	**45,097,460**
	Administration fee (2%)			(810,786)
	Investment Income			259,025
	WPP Total Funds			**44,545,698**

ANNEX 1

FINANCIAL SUMMARY WPP PHASE II (JULY 2012 – JUNE 2015)

This annex provides financial information about the second phase of the WPP on donor contributions, approvals, disbursements and commitments of activities, and program management and administration costs. This financial report covers a 36-month period, from July 2012 to June 2015.[15] From Phase II inception until June 2015, a total of 163 activities (including 74 for WET) were approved for a total amount of $24.1 million. From July 1, 2014 through June 30, 2015 (the Bank's Fiscal Year 2015, FY15), 69 new activities were approved, amounting to $9.8 million.

The program's overall approvals represent 76 percent of the total allocation approved under the different windows. When proposed activities and program management are included, the total amount increases to $33.4 million, representing 75 percent of the total available contribution to the program. Most approved activities are currently under implementation—only 19 WPP and 32 WET activities had been closed by the end of June 2015.

Donor Contributions to the WPP

Total donor contributions to the second phase of the WPP amount to $40.5 million. In November 2013, the WPP welcomed the government of Austria as its fourth donor, joining its three existing donors: the Netherlands' Directorate-General for International Cooperation (DGIS), the United Kingdom's Department for International Development (DfID), and the Danish International Development Agency (DANIDA). As detailed in table A1, the WPP Phase II contributions equal $45.1 million when including the $4.6 million remaining balance from WPP Phase I, all of which was received as of June 2015. After deducting the 2 percent administration fee and adding the earned investment income, this leaves an available balance of $44.5 million. In June 2015, the Bank and DGIS reached agreement on an additional contribution of $6.3 million, and discussions with DfID on further funding were ongoing. However, since these funds were received after June 2015, they are not taken into account in this financial summary.

Overview of the WPP Allocations and Activity Portfolio

Since the inception of its second phase, the program has disbursed $11.8 million through 163 activities. During FY15 only, $6.8 million was expended. Including commitments, the program has used $15.8 million (of which $8.1 million or 51 percent in FY15 alone), which increases to $17.9 million when program management and administration expenditures are taken into account. Table A2 and figure A1 show the current allocations, pipeline, approval status, and expenditures of the six regional windows and six global windows—including the new window created to temporarily support activities

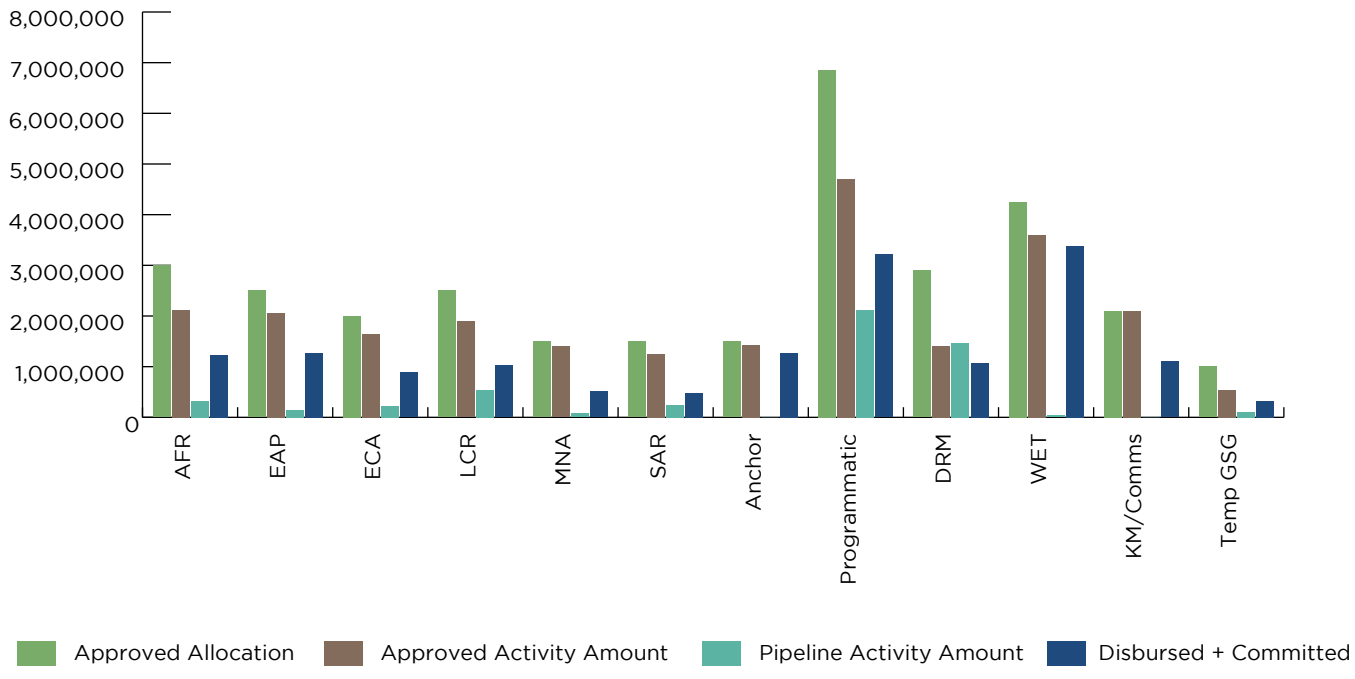
15. To provide clear and accurate data, all WPP Phase II financials are included in this report. The second phase of the program officially started in July 2012, so this financial report gives figures for activities undertaken from that date onward. However, since donor funds were received at the beginning of 2013, most activities only started after the first quarter of 2013—only the WET services were continued from July 2012 due to the specific nature and high demand from the regions, using remaining WPP Phase I funds.

Table A2 – WPP Phase II Financial Overview (as of June 30, 2015)

Window	Approved Allocation	Pipeline Activities		Approved Activities					% of Allocation Approved	% of Approved Disb/ Comm
	Approved Allocation FY13&14	Draft	Under revision	Approved Amount	Disbursed	Commit-ted	Disbursed+ Committed	No. of Act.	% of Allocation Approved	% of Approved Disb/ Comm.
AFR	3,000,000	80,000	240,000	2,122,145	684,770	544,807	1,229,576	7	70.7%	57.9%
EAP	2,500,000	-	150,000	2,060,787	704,411	571,686	1,276,097	14	82.4%	61.9%
ECA	2,000,000	150,000	70,000	1,641,957	691,271	194,786	886,058	13	82.1%	54.0%
LCR	2,500,000	150,000	385,000	1,894,487	906,659	115,913	1,022,572	15	75.8%	54.0%
MNA	1,500,000	75,000	-	1,400,000	369,124	142,657	511,781	6	93.3%	36.6%
SAR	1,500,000	240,000	-	1,254,315	403,532	83,198	486,729	6	83.6%	38.8%
Anchor	1,500,000	-	-	1,422,389	1,133,813	138,721	1,272,534	10	94.8%	89.5%
Program-matic	6,850,000	1,488,278	634,500	4,702,151	2,276,167	935,201	3,211,368	10	68.6%	68.3%
DRM	2,900,000	1,020,000	450,000	1,404,139	928,384	142,873	1,071,257	5	48.4%	76.3%
WET	4,250,000	35,000	-	3,598,351	2,682,513	703,194	3,385,707	74	84.7%	94.1%
KM/ Comms	2,100,000	-	-	2,100,000	959,976	144,677	1,104,653	n/a	100.0%	52.6%
Temp GSG	1,000,000	105,200	-	538,200	75,993	246,000	321,993	3	53.8%	59.8%
TOTALS	31,600,000	3,343,478	1,929,500	24,138,920	11,816,613	3,963,712	15,780,326	163	76.4%	65.4%

Note: AFR = Africa; EAP =East Asia and Pacific; ECA = Europe and Central Asia; LCR = Latin America and Caribbean; MNA = Middle East and North Africa; SAR = South Asia; DRM = Disaster Risk Management; WET = Water Expert Team; KM/Comms = Knowledge Management/Communications; GSG = Global Solutions Group.

Figure A1 – WPP Phase II Financial Overview (as of June 30, 2015)



Note: AFR = Africa; EAP =East Asia and Pacific; ECA = Europe and Central Asia; LCR = Latin America and Caribbean; MNA = Middle East and North Africa; SAR = South Asia; DRM = Disaster Risk Management; WET = Water Expert Team; KM/Comms = Knowledge Management/Communications; GSG = Global Solutions Group.

of the Global Solutions Groups (GSGs) until the new GSG windows have been set up. The number of activities per window is also indicated.

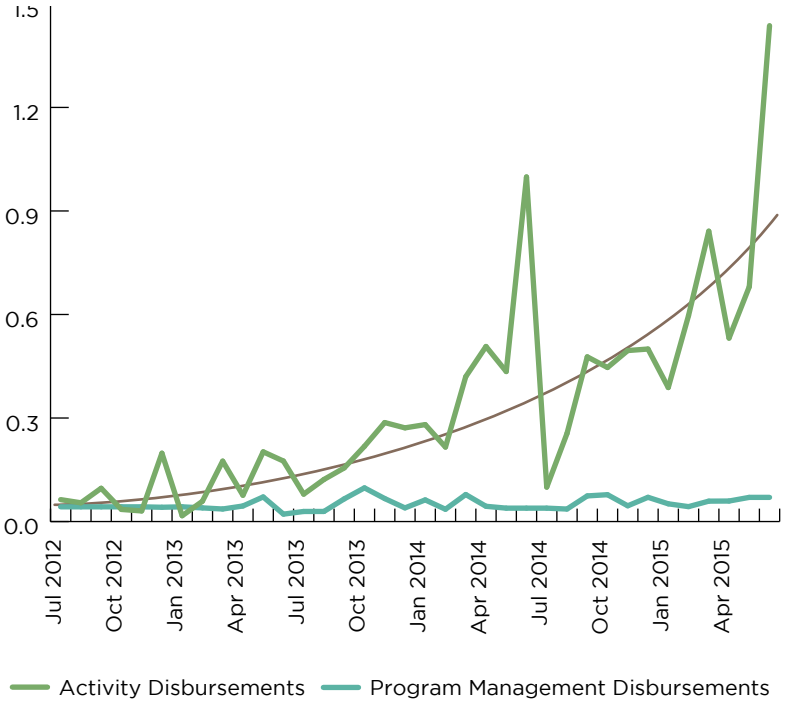
As can be seen in these figures, on average, 80 percent of the regional allocations has been approved for activities, while the regional implementation rate is relatively low (37–62 percent, average 52 percent). The global windows show an approval rate of 74 percent, boosted by mid-year increases of global allocations, and a higher implementation rate of 75 percent.

The average activity size amounts to $170,000 for the regional windows, and $288,000 for the global windows (excluding the WET window, for which the average activity budget is about $27,000[16]). Compared to WPP Phase I, in which average activity size was less than $140,000,[17] the Phase II activities are relatively larger.

Program Management and Administration Costs

Program Management and Administration (PMA) costs refer to the costs incurred by the WPP Team and the Bank's Technical experts who provide strategic advice and support. These include expenditures on general program management, M&E, and donor coordination, among others. Total PMA disbursements and commitments under Phase II from inception to June 30, 2015 make up about 12 percent of total disbursements and commitments—down from 15 percent at the end of June 2014. While significantly higher than the WPP cap on PMA costs of 9 percent, the costs to date are justified by the program's front-end needs. As is common in trust-funded programs, much of the initial expenses are primarily derived from program management and administration, related to the design and setup of the program structure and procedures. Moreover, although the *official* start date of the second phase of the WPP was July 2012, the main donor contributions only arrived at the beginning of 2013. Only then could teams start preparing their window work plans, which are required before any activities can be proposed. This is illustrated in figure A2, which shows relatively low activity disbursements in the first year of the program, but exponential growth of this figure since July 2013. As this trend is expected to continue, PMA costs will decrease further relative to activity costs over the coming years. The program has set limitations in the financial systems to ensure that PMA spending cannot go above 9 percent of total Phase II contributions.

Figure A2 – WPP Activity vs. PMA Disbursements (July 2012 – 2015)



16. This figure does not include WET management and administration costs.
17. This figure does not include activities under the Expert Support Teams window.

ANNEX 2

WPP PHASE II RESULTS FRAMEWORK

Table A3 – WPP Phase II Results Framework (Part I of 2)

Objective	**Poverty Reduction through Improved WRM and Service Delivery,---- and Climate-Resilient Green Growth**								
Impact	**Climate-resilient green growth enabled through water-smart development**						**Vulnerable populations provided with an enhanced quality of life**		
Outcome	WPP strategic funding mobilization		Knowledge and operational tools created, disseminated and used				Plans & strategies designed and capacity enhanced for improved WRM and service delivery		
Indicator	(A) Strategic use of WPP activity funds		(B) Events and training supported by WPP		(C) Web-based outreach and use of WPP publications		(D) New plans & strategies promoted by WPP activities in client countries		(E) Capacity enhancement
		Target:		**Target:**		**Target:**		**Target:**	**Target:**
Sub-Indicators & Targets	1) Percentage of the value of approved WPP activities in Africa (%)	30	1) Number of Participants (#)	4000	1.1) Downloads per document after announcement (#)	300	1.1) Number of non-water Policies/ Strategies that incorporate water (#)	10	1.1) Early Warning Systems (EWS) installed (#) 8
	2) Percent of the value of firm contracts (in pro-grammatic window) adopt-ing QBS procurement (%)	50	2) Percent of Participants that indicate they are likely to apply knowledge in their work (%)	70	1.2) Percent of downloads from developing countries (%)	50	1.2) Number of policies/strategies accounting for competing water uses (#)	40	1.2) (Upon installation of EWS), relevant threat information is disseminated to stakeholders on a timely basis (Yes/No) 90% Yes
	3) Bank internal co-funding for WPP activities ($)	10 million	3.1) Number of agencies/firms represented by Participants (#)	200	2.1) Downloads per flagship document after announcement (#)	2000	2.1) Number of Policies/ Strategies endorsed by a client agency (#)	30	2) Operational water users associations created /strengthened (#) 20
	4) External co-funding for WPP activities ($)	1 million	3.2) Percent of Govt. Agencies (%) 3.3) Percent of Private firms (%)	60 40	2.2) Percent of downloads from developing countries (%)	50	2.2) Number of policy or strategy investment plans endorsed by clients (#)	15	3) Government Agencies (#) with strenghtened capacity to address: 33
					3) Percent of visitors of the WPP website that visit at least 2 pages (%)	40	3) Budget Allocated for policy/strategy implementation ($)	150 million	3.1) Climate change 5 3.2) Water Security 8 3.3) River Basin issues 20
					4) Average quality assessment scoring of WPP knowledge products by client country governments (and WET products scoring by Bank project teams)	4 out of 5			

(2) Confirmation of feasibility of indicator pending (3) Budget of $10 million per investment plans endorsed (2.2)

Table A4 – WPP Phase II Results Framework (Part 2 of 2)

Objective	Poverty Reduction through Improved WRM and Service Delivery,---- and Climate-Resilient Green Growth							
Impact	**Climate-resilient green growth enabled through water-smart development**					**Vulnerable populations provided with an enhanced quality of life**		
Outcome	Downstream loans supported through improved design and implementation				Vulnerability reduced via pro-poor and gender-sensitive interventions		Water mainstreamed into other sectors	
Indicator	(F) Amount of Bank lending influenced & additional funding leveraged through WPP activities		(G) Physical and natural assets protected *		(H) People benefiting from projects supported by WPP activity		(I) Cross-sectoral mainstreaming of WRM	
		Target:		**Target:**		**Target:**		**Target:**
Sub-Indicators & Targets	1) Value of (WB) investments supported ($)	15 billion	1) Coastline and freshwater under biodiversity protection (km)	1200	1) Target Population in project area (#)	0.5 billion	1) Guidance Notes created including an assessment on improvements required in Operational Policies for specific sectors (#)	5
	2) Total project value of influenced investments in which the Bank is involved ($)	25 billion	2.1) Area brought under enhanced biodiversity protection (ha)	1 million	2.1) Actual beneficiaries from the project (#):	100 million		
	3) Value of additional investments (in which WB is not involved) ($)	500 million	2.2) Number of studies incorporating ecosystem valuation (#)	7	2.2) WSS beneficiaries (#)	35 million	2) Guidance Notes for specific sectors endorsed by respective Sector Board (#)	4
	4) Number of projects designs improved through a WPP activity (#)	100	3) Water Storage capacity increase (m^3)	12 billion	2.3) Water users provided with new/improved irrigation & drainage services (#)	30 million	3) Agreement by Operational Policy and Quality Department (OPCSPQ) to move forward on modernization of Operational Policies for mainstreaming of WRM (# of sectors)	2
			4) Aquifer pumping reduction (m^3/yr)	20 million	2.4) Other WRM beneficiaries (#)	35 million		
			5) Areas provided with irrigation / drainage services (ha) 6) Hydropower generated (MW)	2 million 3000	2.5) For 2.1 to 2.4: Women (%) 2.6) For 2.1 to 2.4: Vulnerable (%)	50 (*) 35		

(2) Confirmation of feasibility of indicator pending (3) Budget of $10 million per investment plans endorsed (2.2)

* For all sub-indicators: some of these are new WB core-indicators (easy to track in the future), but not all. For some indicators, it is quite likely that only a couple of Bank projects will be tracking them, and the WPP cannot guarantee that it will be requested to support these projects.

Due to these uncertainties, the WPP proposes to evaluate these indicators & targets after 2 years.

The following assumptions were made to determine the targets of the sub-indicators:

1) est. 4 Bank projects protecting 300km each

2.1) WPP Phase I: 1 project, 0.5 million ha; estimate for WPP Phase II: 2 projects

3) Estimate of TWIWA hydro team: 2 large storage projects per year, average 3 billion m^3 storage per project. 50% support by WPP Phase II.

4) WPP Phase I: 1 project, 10 MCM; estimate for Phase II: 2 projects

5) WPP Phase I: 2 projects, 0.43 million ha; estimate for Phase II: 8 projects.

6) 2002-2012: 800 MW/yr in WB projects, FY11-12 1,600 MW/yr. FY13-16 estimate: 1,500 MW/yr, of which 50% supported by WPP.

(*) % female of direct beneficiaries is core sector indicator for WB projects, which allows for detailed specification.


WATER
PARTNERSHIP
PROGRAM


WORLD BANK GROUP
Water