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# RESULTS IN THE LATIN AMERICA & CARIBBEAN REGION



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# RESULTS IN THE LATIN AMERICA & CARIBBEAN REGION

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## FOREWARD

A focus on development results is at the heart of the Latin America and Caribbean Region's approach to delivering programs and policy advice with partners in middle-income and low income countries alike. Through knowledge, convening activities, and financial services we strive to help people across the region create better opportunities and build a better future for themselves, their families and their country. Documenting, measuring and evaluating results of what we do, helps us and our partners to engage more effectively, learn from our experiences and apply lessons to the design and implementation of future interventions. This collection of result stories shows our continuous efforts to adopt and integrate technical analysis, timely policy advice, and a variety of financial instruments into programs that are aligned with client priorities. Results show the increased demand and the effectiveness of peer-to-peer learning, have led to a scaling up our support for South-South exchange activ-

ities and the use our convening power to support successful partnerships and mobilize additional resources to finance development work.

We hope that our focus on results through integrated services and better monitoring and evaluation will help countries achieve faster their national development goals.

Hasan A. Tuluy  
Vice President



# CONTRIBUTING TO SAFER MOBILITY THROUGH BETTER INSTITUTIONS

## CREATION OF THE IBERO-AMERICAN ROAD SAFETY OBSERVATORY PROJECT

This project supported efforts to place road safety on the political agenda in the Latin American and Caribbean region. The project supported the creation of an innovative virtual platform, the Ibero-American Road Safety Observatory (OISEVI), which 22 countries use to exchange experiences and develop statistics to design effective policy solutions. In Argentina, the pilot country for reform, the results were important improvements in road safety indicators.

### CHALLENGE

In Latin America and the Caribbean, traffic accidents are the leading cause of death for people between the ages of 15 and 44. By 2020, this fatality rate is expected to increase by approximately 50 percent, in the absence of targeted road safety initiatives. Low and middle-income countries worldwide experience over 90

percent of road-related traffic fatalities even though they are home to only 48 percent of the world's registered vehicles. The economic costs of these deaths range from 1 to 3 percent of total gross national product (GNP). To address this global public health crisis, in 2011, the United Nations declared the "Decade of Action for Road Safety," with the goal of stabi-

lizing and reducing the forecast level of road traffic fatalities by half, by 2020. This commitment is expected to save 5 million lives worldwide and 325,000 lives in the Latin American and Caribbean region alone.

### SOLUTION

The Bank facilitated exchanges between Argentina and Spain to give Argentina the necessary



guidance to establish quality baseline data (the absence of which is a key challenge for the region) to track progress and inform subsequent road safety policy decisions.

This project resulted in the inclusion of Argentina in the widely respected International Road Traffic and Accident Database (IRTAD), an aggregated database in which international accident data are continuously

collected. This successful knowledge-sharing experience, coupled with Bank assistance to create the Argentine National Road Safety Agency (ANSV), transformed the country into a model for the region.

## RESULTS

While it is too early to assess the impact of this project at the regional level, it is important to note that the collection of quality baseline data will be instrumental in determining progress towards the UN's goals and also critical at the time to inform policy decisions in Latin-American countries for improved road safety management. Furthermore, there are important intermediary results

in Argentina, which are indicative of impact that will later be found in the rest of the region as well. These include:

- A 15 percent reduction in average driving speed between 2009 and 2012.
- A 50 percent reduction in drunk-driving rates between 2009 and 2012.
- A 43 percent increase in seat belt usage between 2009 and 2012.
- A 19.5 percent increase in the

use of helmets between 2009 and 2012.

- A 10 percent reduction in traffic fatalities (observed between 2008 and 2010 alone), which translates into a reduction of 492 deaths.
- A 15 percent reduction in fatality rates (number of dead per million veh/km) in selected demonstration corridors between 2010 and 2012.



In response to requests from other client governments in the region, the Bank scaled-up efforts to link 22 countries throughout the region to create the OISEVI. The Bank provided financial and technical support to deliver the initial framework and web-based platform that facilitates data transfer, sharing, analysis and links participating countries to IRTAD's resources. At the regional level, the launch of the Observatory ensures the availability of data that will support regional monitoring and evaluation efforts and will be critical for the design and implementation of effective results-based programs.

## BANK GROUP CONTRIBUTION

A US\$50 million Bank loan assisted the Argentine government's creation of the ANSV and fostered knowledge sharing between Argentina and

Spain. Follow-up financing will implement a regional Observatory project in the form of grants from the Global Road Safety Facility (GRSF), a global partnership program administered by the Bank, operational supervision budgets of over US\$350,000 from the Bank, and joint financing from the Spanish Government's Ibero-American cooperation funds (through the Ministry of the Interior).

## PARTNERS

The Bank facilitated partnerships for knowledge-transfer, funding, and political support with the following:

- The governments of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Spain, Guatemala, Honduras, Mexico, Nicaragua, Panama, Portugal, Puerto Rico, Dominican Republic, Uruguay and Venezuela

provided support from the highest levels of government with particular leadership exhibited by Spain, Argentina and Mexico.

- The Ministry of the Interior of Spain.
- The International Transport Forum with the Organisation for Economic Co-operation and Development (OECD); essential knowledge-sharing activities through IRTAD.
- Civil society organizations; collaboration to place road safety at the forefront of the political agenda.

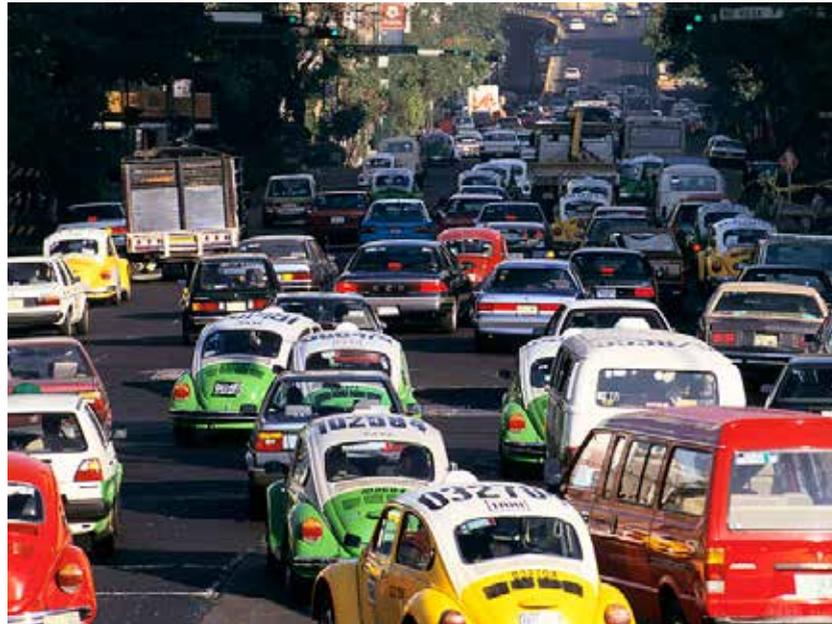
## MOVING FORWARD

This is the first project of its kind in the region and will most likely lead to subsequent initiatives using similar models in other regions. The GRSF is interested in replicating this project in Africa and Asia. The next phase of this project will serve to utilize baseline statistics that now exist

thanks to the Observatory to measure the region's compliance and progress towards the UN's Decade for Action Road Safety indicators and goals. The results of this evaluation and analysis will subsequently guide future road safety efforts in the region and beyond.

### **BENEFICIARIES**

Monica Gangemi, who lost her daughter in 2007 to a fatal traffic accident in Rosario, founded the non-profit organization "Compromiso Vial por Ursula y Carla" through which she works to improve road safety. According to Ms. Gangemi:



"The Observatory is so important. The press uses OISEVI's data for statistics on road safety; they used to use data from a non-profit because official data didn't exist. OISEVI helps to explain the logic behind the numbers. When do we count the number of victims? Every 30 days? How do we compare to other countries? The OISEVI gives the figures the publicity and legitimacy they didn't have before, and empowers us as citizens to make demands based on real data."



3.9 million people in northeast Brazil benefited from new and rehabilitated reservoirs, water conveyance facilities, guaranteeing drinkable water, increased agricultural production from irrigation, institutional reforms, and economic decentralization.

## BETTER WATER SUPPLY FOR NORTHEAST BRAZIL

### CEARÁ INTEGRATED WATER PROJECT

The state of Ceará in northeast Brazil has been improving rural and urban populations' health, resilience and economic conditions since 2000, drawing upon Bank funding and expertise. It has one of the most robust water resources management systems in Brazil, considered a pioneer and example. This project benefited 3.9 million people with new and rehabilitated reservoirs; water conveyance facilities, guaranteeing drinkable water; increased agricultural production from irrigation; institutional reforms; and economic decentralization.

#### CHALLENGE

Most of the state of Ceará is in the semi-arid "sertão," where mean rainfall is less than 800mm per year. However, rainfall variability is among the highest in the world, falling mostly in the first half of the year, while the second half is generally dry. Ceará is among the poorest in

Brazil, as the semi-arid climate and its recurrent droughts traditionally allowed only precarious subsistence farming and extensive animal grazing. These conditions precipitated major outward migration. The rapid growth of the Fortaleza Metropolitan Region during the last 70 years was due in large part to this rural exodus.

Reservoirs were the traditional response to droughts for more than 100 years, but they were built and operated in an ad-hoc fashion. Until the early 1990s, storage was insufficient and managed inadequately, without integration within or between river basins, and water distribution was lacking.

In addition to the state's low levels of human development, providing water to the increasing population of Fortaleza Metropolitan Region was a serious challenge. The adoption of new water management policies between 1987 and 1996, before the National Water Law (1997), helped make Ceará the pioneer of water resource management in Brazil.

The project is the third Bank-financed project to assist the state of Ceará in the implementation of modern policies, planning, and management tools to overcome the impact of recurrent droughts.

#### APPROACH

This project sought to

- Increase sustainable water supplies for multiple uses.
- Improve efficiency of the integrated water resources management system.

- Decrease vulnerability of poor populations to cyclical drought through improvements in the institutional, legal and administrative managerial frameworks with emphasis on participatory management mechanisms.
- Rehabilitate and construct new hydraulic infrastructure aimed at the integrated management of river basins.
- Develop and consolidate sustainable cost recovery, management, operation and maintenance of systems for hydraulic infrastructure.
- Integrate environmental policies with water management policies.
- Stimulate multiple use, efficient and shared management of Ceará's water resources through organization and strengthening of river basin committees and water user associations.
- Implement and propagate more effective water use and management technologies, and education, information and training of the general public and water users aimed at efficient water use, demand management, and reduction of waste.
- Promote improved management of soil and vegetation in tributary watersheds to enhance water conservation, minimize erosion and maximize natural water storage mechanisms.
- Advance the adequate management of critical micro-basins and groundwater resources, through increasing vegetated area, and controlling run-off and erosion, developing aquifer management and recharge zone plans.



The project increased guaranteed water supply dramatically through building eight new reservoirs.

## RESULTS

The project supported improvements through several key outcomes:

- **Water supply.** The project increased guaranteed water supply from 10,333.36 million m<sup>3</sup> in 2000 to 1,692.69 million m<sup>3</sup> in 2011, from eight reservoirs built by the project.
- **Water security.** The project increased water for human consumption to the Fortaleza Metropolitan Region from 6.62 m<sup>3</sup>/sec in 2000 to 13.21 m<sup>3</sup>/sec in 2011 through three new reservoirs and a river basins integration canal. This ensures water security for the Fortaleza Metropolitan Region, which, during the project period, grew from about 1 million to 3.6 million inhabitants. Out of the current 3.6 million inhabitants, an estimated 6 to 10 percent are extremely poor.

- **Financial sustainability:** The project improved operation and maintenance cost recovery and bulk water distributed by the state's newly formed water company, from 70 percent of operations and management costs recovered and 6.92 m<sup>3</sup>/sec in 2000 to 100 percent of costs recovered and 17.45 m<sup>3</sup>/sec in 2011.
- **Innovative management.** The project implemented new management tools and strengthened the state's water resources management system via permits (from 2,000 permits in 2000 to over 5,000 granted in 2011), water tariff policies in all sectors, initiation and support of river basin committees in all 12 state river basins (with the creation of nine new committees and 44 reservoir management commissions from 2000 to 2011), real-time

data for reservoir operations and dam safety rules and procedures, and groundwater management plans.

- **Innovation and replicable micro watershed management.** From 2000 to 2011, recovery of 523 hectares of degraded area, reforestation of 2,949 hectares, recovery and preservation of 1,803 hectares of riverine vegetation in four micro watersheds targeted by the micro watershed management pilot project within PROGERIRH.

## BANK GROUP CONTRIBUTION

The original Bank lending was for US\$136 million. The Bank provided additional financing of US\$103 million in 2009 to scale up the activities, bringing the total lending to US\$239 million.

## PARTNERS

Bank financing was complement-

ed with US\$492.8 million of state counterpart funds, leading to a total project cost of US\$730 million over the period of 2000 to 2011. In addition, the federal government provided additional funds to complement the interventions in the water resources sector with construction of dams, pipelines and canals for water supply and irrigation.

#### **MOVING FORWARD**

Over the past years, the state has become more aware of the water quality and sources of pollution in the reservoirs. More attention is being given by the Government to water quality issues, including through a more integrated planning of land and water use at the basin level and broader intersectoral coordination. The Ceará government is also now working on the design of the Ceará Water Belt, a gravity-fed conveyance system of approximately 1,300 km length

and flow rate of 30 m<sup>3</sup>/s, which is expected to cover 100 percent of water demands for human consumption, industry, tourism and irrigation by 2040.

#### **BENEFICIARIES**

The reservoirs built under the project benefited an estimated population of about 300,000 in rural areas. Poor rural communities were also benefited by the increase of vegetated area, and control of run-off and erosion in critical micro-basins. The urban population of the Fortaleza Metropolitan Region benefited with expanded and more reliable water supply. The project assures water supply during drought periods to the Fortaleza Metropolitan Region, with an estimated beneficiary population of 3.6 million, of which an estimated 6-10 percent are extremely poor.

BRAZIL

## **PUBLIC-PRIVATE PARTNERSHIP AND THE SÃO PAULO METRO LINE 4 EXPERIENCE**

### **SÃO PAULO METRO LINE 4 PROJECT**

With Bank support, the state of São Paulo has steadily improved the quality and long-term sustainability of the public transport network in the São Paulo Metropolitan Region. By interconnecting the existing subway, commuter rail, and bus networks, the 12.8 km underground Metro Line 4, the first phase of which began operations in 2011, has improved the mobility and accessibility of over 650,000 passengers per day, most of whom are low-income users.

#### **CHALLENGE**

In recent years, São Paulo's peripheral areas have attracted new residents, but they have struggled to generate stable employment growth—resulting in unequal wealth distribution and lack of access to job opportunities. Despite an existing 270 km rail network,

the lack of integration between the Metro and the suburban trains has discouraged more rail trips in favor of buses and automobiles, thereby creating heavy congestion during peak hours, significantly increasing travel times, and contributing heavily to atmospheric pollution and fuel consumption. The

urban poor faced high fares, an overly crowded commute at peak hours, and long and inconvenient journeys to and from work (2.5 hours/day) from the peripheries to the urban centers.

#### **SOLUTION**

The Metro Line 4 Project was

designed to address the need for new public transportation infrastructure, while protecting the city from cost escalation and operating subsidies. This was achieved with the innovative use of turnkey and concession contracts to the private sector. As a link between the suburban railway and the Metro network, the Line 4 catchment area is not limited to the neighborhoods di-

rectly served by its stations, but also attracts a significant number of users from the underserved periphery of the city. Because of the good connection between Line 4 to the rest of the public transport network and employment centers in the central and western parts of the city, 20 percent of the trips on Line 4 begin in the outer districts of the eastern part of São Paulo, which

are among the poorest areas. As a result, Line 4 is a tremendous advancement in the accessibility of jobs, health, and education centers for residents from the low-income communities on São Paulo's periphery.

### RESULTS

According to Infrastructure 100: World Cities Edition (KPMG,

2012), Line 4 is among the 100 most innovative infrastructure projects in the world. The projects were selected by specialists based on their scale, feasibility, complexity, innovation and impact on society. Through its focus on decreasing congestion and improving accessibility for the urban poor through the engagement of the private sector, this project has helped to support improvements in several key outcomes:

- The six stations began operations gradually between May 25, 2010 and September 15, 2011. Line 4 was moving over 650,000 passengers per day after one year in full operation with a strong growth trend. Few metro lines in the world carry as many passengers per kilometer.
- In part because of Line 4, the share of Metro trips in the region increased

from 16 percent in 2001 to 19.3 percent in 2011. This increase is a significant achievement considering the rapid growth in motorization during this period that is highly correlated to rising incomes.

- Line 4 greatly improved travel times, convenience, and reliability on very heavily traveled corridors. A trip between Luz Station (center) and Vila Sonia (western periphery) used to be made only by car on congested corridors or by bus with multiple transfers; it now takes 30 percent less time, on average (between Luz Station and Butantã).
- The integration with municipal and inter-municipal bus lines was entirely achieved on all six stations of Phase 1.
- The project introduced an innovative structure with an operating concessionaire

established by a consortium of private companies and a turnkey contract signed in 2003 for the construction of civil works

### BANK GROUP CONTRIBUTION

The Bank provided a loan of US\$209 million in 2002. Due to currency devaluation in the past decade, the Bank provided additional financing of US\$95 million in 2008. Over US\$15 million of this loan was for technical assistance for the management and oversight of the project, as well as financial and costs studies.

### PARTNERS

The Bank's US\$304 million loan was complemented by US\$304 million from the Japan Bank for International Cooperation (JBIC) and US\$922 million from the São Paulo state government for the civil works.



São Paulo's Line 4 metro is among the 100 most innovative infrastructure projects in the world.

An estimated US\$246 million investment was made by private sector investors (operating concessionaire) in the rolling stock and systems. In addition to jump-starting a public-private partnership for the construction of a new subway line under a turnkey contract and an operating concession (a major reform supported by the project), the project helped to create the enabling environment to attract private sector investment for future projects in urban transport.

### **MOVING FORWARD**

A Bank loan for US\$130 million was approved in 2010 for Line 4 Phase 2, which will complete the 12.8 km line and add five stations for a total of eleven stations. This loan was matched by financing from the JBIC for

an amount of US\$130 million. The state and the private sector concessionaire are providing counterpart funds.

### **BENEFICIARIES**

Line 4 benefits hundreds of thousands of users every day with significant reductions in travel times—30 percent, on average, for the most common origin-destination pair. As one user put it, Line 4 reduced his travel time by 40 minutes and he now leaves his car at home during the week. Not only did his commute become shorter, but it contributed to reduced traffic congestion in the city. There was also considerable public support for the expansion of Line 4 and the Metro system overall, even more so after the success Phase 1.

## **IMPROVING FISCAL SPACE THROUGH ADMINISTRATIVE REFORMS: STATE PENSION REFORM IN BRAZIL**

### **STATE PENSION REFORM TECHNICAL ASSISTANCE PROJECT II**

Building on past government reforms and Bank-supported projects, upgrades to state public employee pension registers, public servant censuses and the integration of state-level information with national registers were extended to additional states and government branches. At least US\$26.2 million in annual potential savings were identified through the detection of incorrect or fraudulent pension claims.

### **CHALLENGE**

In the early 2000s, the fiscal burden associated with publicly funded pensions was one of the key macroeconomic challenges facing Brazilian federal and state governments. Expenditures within the public sector workers' pension system often reached 30 percent of the total payroll, and between 2000

and 2004, the deficit of Brazil's public pensions totaled at least 5 percent of gross domestic product (GDP).

While constitutional amendments in 1998 and 2003 reformed significant elements of the public pension system, such as minimum retirement ages, wage and benefit caps on

current pensioners, pension deficits were still expected to grow in the following years. Additional changes were needed to improve the fiscal situation, but political conditions were not suitable for another major reform of the pension system. Thus, the government decided to reduce pension deficits through improvements in



Between 2000 and 2004, the deficit of Brazil's public pensions totaled at least 5 percent of GDP.

the administration of public pension systems.

**SOLUTION**

The project was designed to extend upgrades of states' executive branch pension registries—funded by the first State Pension Modernization Project—to additional states and government branches. Imple-

mentation required significant coordination efforts between the Social Security Ministry, states' authorities, and the firms hired to carry out the public servant and pensioners censuses and the cadastre upgrade process. The information obtained through the states' cadastre upgrades made it possible to verify databases and design processes

to cross-check with the federal government's pension database, to identify several types of irregular claimants, including individuals who were reported to have died, or who were actively linked to multiple positions.

**RESULTS**

The project resulted in important developments. By December

2011, pension registries in various branches of 15 states were upgraded, 43 institutions or branches of state government were involved across these states, and 325,884 public servants' records were updated. For the four states reporting results at project completion, by December 2011, annual potential savings are estimated at US\$26.2 million. In addition,

89 percent of the public servants whose records were updated, are in these four states. Management of public sector pensions is more transparent. The completion of the cadastre upgrade exercise included publicity and required all public servants and retirees to re-register and present their records. This contributed to sending a clear signal to all stakeholders

that the states were active in the fight against corruption.

**BANK GROUP CONTRIBUTION**

The Bank contributed US\$4.71 million through a technical assistance loan to the project, matched by counterpart funding of approximately US\$7.0 million. The project built upon a series of past projects supporting



Dissemination of Cadastre Upgrade Results in Brasilia - Newspaper Correio Braziliense (October 2011). On the cover: "Ghost workers had a cost of R\$37 million to GDF (Federal District Government)" and article: "Ghost workers removed from their salary."

pension reforms. Among others, these projects included the State Pension Systems Reform Technical Assistance Project and the Municipal Pension Reform Project, each for US\$5.0 million.

### **PARTNERS**

The project was entirely funded by Bank funds.

### **MOVING FORWARD**

The realization of potential savings will require states to implement corrective measures to remove the irregular claimants identified in the cadastre upgrade, which may include judicial processes. The government has informally expressed an interest in expanding the pension registry upgrade to the executive branches of states not covered in the project. While the Bank will not participate in a follow-up operation, it believes that the government now has

the resources and expertise necessary to undertake such work independently.

### **BENEFICIARIES**

State governments that participated in the program and were able to validate their pension data for public workers benefited significantly from the project, creating much needed fiscal space through reduction of fraud and corruption. Public officials enrolled in the public employee pension system also benefited from having pension funds analyzed and actuarial problems delineated. The eventual removal of irregular claimants identified through this project from the pension database will benefit residents and taxpayers from participating states by reducing unwarranted pension payments and enabling resources to be channeled into other activities.



When developing the concept for the Chile Infrastructure for Territorial Development project, special emphasis was given to low cost, self-financing approaches to rural infrastructure interventions closely linked to income generating uses, as a way to maximize the social impact of the investments

# EXPANDING RURAL INFRASTRUCTURE FOR TERRITORIAL DEVELOPMENT IN CHILE

## INFRASTRUCTURE FOR TERRITORIAL DEVELOPMENT PROJECT

To further the Chilean government's decentralization efforts and expand rural infrastructure into the highly dispersed and hard-to-reach rural populations, this project developed a novel territorial approach, linking the proposed infrastructure to its productive use. The project delivered significant benefits to poor indigenous communities lacking basic infrastructure and services. More than 45 territorial development framework plans were created, 250 rural infrastructure projects financed, and 27 productive initiatives undertaken. An estimated 320,000 residents in rural communities benefited from better and more productive use of the infrastructure and empowerment through increased participation in the decision making process. The institutional set-up of the program is now expanding to include additional regions, with full national coverage expected by the end of 2015.

### CHALLENGE

Under the previously existing institutional set-ups and social and economic evaluation methodologies, it was not possible

to adapt project designs to the realities of dispersed populations and small settlements. The challenge was to put in place an effective system to attend

the unmet demand of dispersed rural communities through a multi-sector and multi-layered institutional setting, focusing on the sustainability and the

productive and social impacts of existing infrastructure investments as identified through a highly participatory approach.

### SOLUTION

The project provided technical assistance to develop the concept of territorial development framework plans (planes marco de desarrollo territorial), including the development of the underlying methodology in which the plans are funded. When developing the concept, special emphasis was given to low cost, self-financing approaches to rural infrastructure interventions closely linked to income generating uses, as a way to maximize the social impact of the investments.

The project shows the increased impact of multi-sectoral investments that provide a full package of demand-driven infrastructure services, linked to productive

activities, which bring greater efficiency, complementarity, and sustainability of services through cross-sectoral service bundling based on a territorial development approach. The project's approach also offers important insights into the process of decentralization in Chile, as it reflects the importance of the territorial planning processes, participatory approaches, and social capital dimensions in order to tailor the pace and scope of the decentralization process to particular needs.

### RESULTS

The main results achieved through this project were:

- The Ministry of Social Development formulated and adopted the new methodology for the economic evaluation of rural infrastructure subprojects to be included in territorial development framework plans.

- The project supported the mobilization of funds, other than the loan proceeds, for the financing of 27 productive activities under the program. Initiatives included studies, training and irrigation.
- The project supported the preparation of 45 territorial development framework plans (which also identified productive activities) covering 185 territories, plus the financing of 250 infrastructure subprojects: 158 road subprojects, 65 water subprojects, seven sewage subprojects, 12 energy subprojects, six information and communication technology (ICT) subprojects and two port subprojects.
- The project supported effective mechanisms to guarantee the sustainability of the investments.

In more general terms, the project contributed to important institutional changes, including:

- Strengthening the coordination of different government agencies for the delivery of rural infrastructure services;
- Acting as a catalyst for the mobilization and coordinated actions of different government programs to support the development of small enterprises;
- Enhancing the capabilities of local and community actors for planning and implementing productive activities, while maximizing the use

of available institutional resources;

- Actively and effectively supporting the improvement of the legal and regulatory framework of the rural water and sanitation sector;
- Revision of the classification of rural roads; and
- Introduction of new policies in the area of telecommunications for reaching dispersed rural areas with coverage and relevant content of new communication technologies.

### **BANK GROUP CONTRIBUTION**

The Bank contributed US\$50.26 million in financing towards a total project cost of US\$90.26 million. The national and local governments allocated an additional US\$75 million to the program for infrastructure and productive initiatives.

### **PARTNERS**

The Bank has primarily worked with the Sub-Secretariat of Regional Development as its project partner, and the regional management units. The Ministry of Planning and Coordination

was also an important part of the project's success, particularly in the development of the integrated evaluation methodology. Other important partners were the Ministry of Public Works and Transport, the Sub-Secretariat of Telecommunications, and the National Commission for Indigenous Populations.

### **MOVING FORWARD**

The program has become a well-established mechanism for the delivery of sustainable infrastructure to rural areas. Demand in new regions is exploding. The program began as a pilot covering five regions, added three new regions during implementation. This year, four new regions have been incorporated, and the program has budgetary allocations that are even higher than when the loan was under implementation. It is expected to reach full national coverage by the end of 2015.

### **BENEFICIARIES**

The project benefited inhabitants of the participating rural communities. An estimated 320,000 people benefited from a better and more productive use of the infrastructure and the empowerment of their members through increased participation in the decision making process. The project delivered significant benefits to poor, indigenous communities lacking basic infrastructure and services. Specific subprojects contributed to improving the quality of life in these communities by removing bottlenecks to productive activities and making indigenous territories more habitable. The project was also instrumental in the issuance of legislation that removed obstacles to public investments within indigenous peoples' territories.



Left: Beneficiary Indigenous Populations in Maicolpue - Region of Los Lagos (Credit: Veronica I. Raffo, WB Task Team)



Right: Potable water projects enable the production of cherries, blueberries and raspberries for export. Region of Maule (Credit: Veronica I. Raffo, WB Task Team)



Rural potable water project in Lumahue, Commune of Nueva Imperial  
(Credit: Jose Vicente Zevallos, WB Task Team)



CHILE

## URBAN TRANSPORT REFORM: THE SANTIAGO EXPERIENCE

SANTIAGO URBAN TRANSPORT TECHNICAL ASSISTANCE PROJECT

Drawing partially on the project-financed technical assistance activities, the Chilean government improved the efficiency and sustainability of the Santiago urban transport system, also known as Transantiago. Improvements included illuminated bus stops, colored-coded bus lanes, improved environmental standards, and improvements in bus services to reduce transfers, increase coverage, and avoid interference with the street markets.

### CHALLENGE

By the end of the 1990s, Santiago's transport system was suffering from serious problems, including (1) increased car ownership and use, (ii) declines in public transport, (iii) deficiencies in the organization of the bus system (fragmented bus ownership, competition by operators for passengers,

informality and lack of professional management, and lack of integration between the buses and the metro system), (iv) limited coordination on transport issues at the metropolitan level, and (v) high bus-related accident and air pollution levels.

### SOLUTION

In 2000, the government

published the 2000-2010 Santiago Urban Transport Plan. This plan envisaged the transformation of the public transport system. Its unprecedented scope and complexity applied to the city as a whole and affected all public transport modes. The World Bank supported the implementation of the Santiago Urban Transport Plan through



The Santiago Urban Transport Project helped the Government of Chile to establish a foundation for a more efficient and sustainable urban transport system. The results achieved included more stringent environmental standards for public transport vehicles and changes in bus services to reduce transfers, increased coverage, and avoiding interference of the bus system with the operation of street markets.

a technical assistance loan, which helped in the implementation of the public transport reform arrangements and provided guidance and advice to support this difficult process of transformation.

### RESULTS

The project helped the government of Chile to establish a foundation for a more efficient and sustainable urban transport system. The results achieved included:

- Illuminated bus stops in the suburbs, which make the system safer (2011 – 2012).
- Colored bus lanes to reduce incursion by cars and speed up bus travel (2011 – 2012).
- More stringent environmental standards for public transport vehicles, which in 2011 led to 19.9 percent less particulate matter emissions and 1.7 percent less NOx emissions compared to 2010.

- Changes in bus services to reduce transfers, increase coverage, and avoid interference of the bus system with the operation of street markets (2010-2012).
- Thorough knowledge about the operation of bus depots and terminals and guidance for improvements.
- More robust transport planning tools.
- Organizational improvements within the Executive Secretary of the Committee of Ministers for Urban Transport in Metropolitan Santiago (Transantiago-SE), the entity in charge of the bus system (2010 - 2012).
- Preparation of the basis for the transformation of Transantiago-SE into a more autonomous and independent entity (2006 – 2012).
- An understanding of the financial situation of bus operators and some initial

enhancements to Transantiago's financial and payment system (2012).

### BANK GROUP CONTRIBUTION

The Bank provided US\$2.37 million to finance the activities.

### MOVING FORWARD

The Bank will continue to support the government in the transport sector through the Joint Study Program, which, in fiscal year 2012, financed a study related to road and congestion pricing and value capture from transport investments. A follow up study is envisaged for fiscal year 2013.

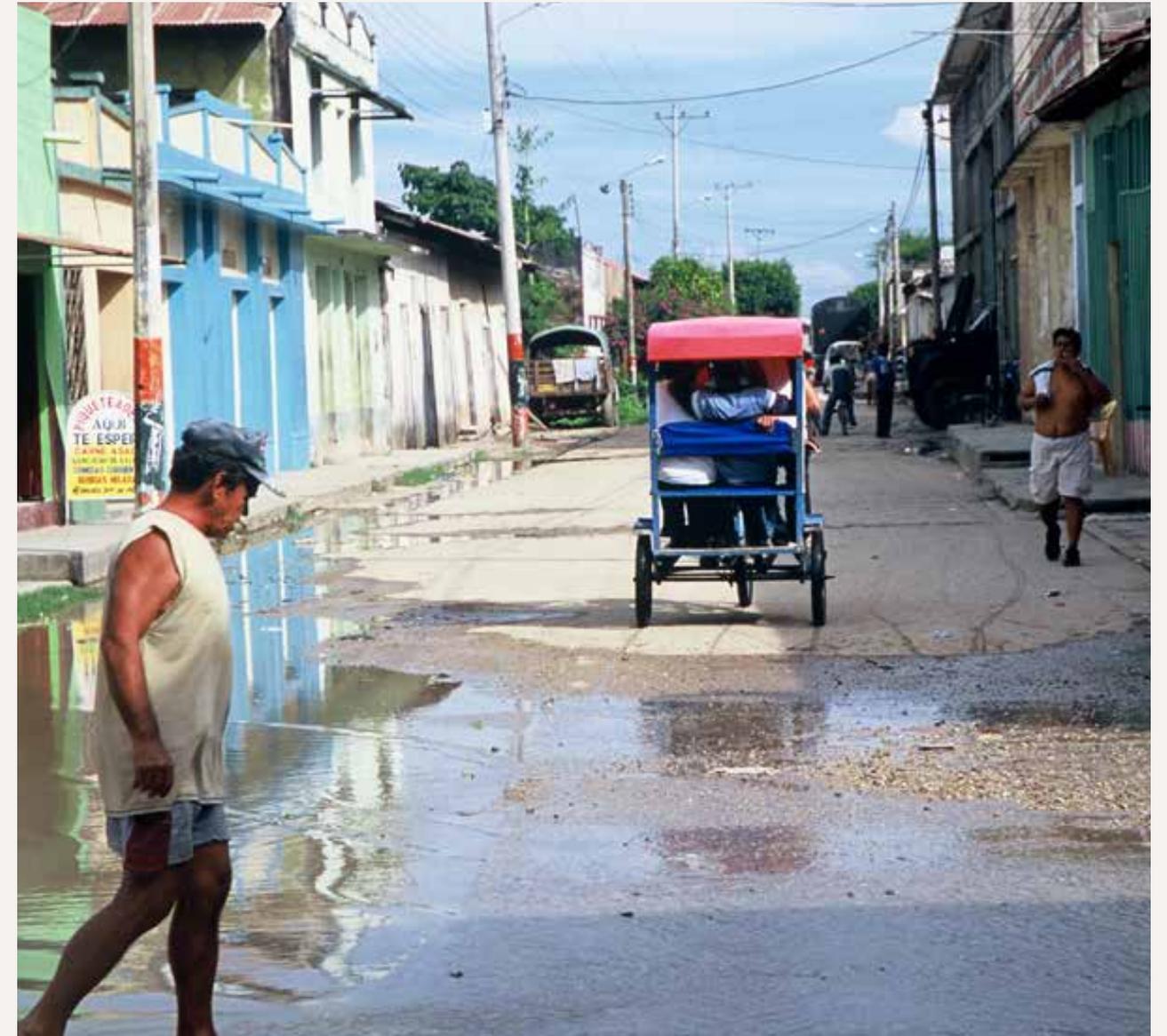
### BENEFICIARIES

The primary target group included about 4 million public transport users, who are typically people with lower incomes. Because of reduced externalities from public transport, the

primary target group included residents making trips to and within the city, regardless of the transport mode, and all inhabitants of the city. The secondary beneficiaries were Transantiago-SE, the project implementation agency, and the Transport Planning Secretariat (SECTRA). These agencies benefited from capacity strengthening, improved analytical tools, improved data, and information.



Public transportation on Apoquindo Avenue, Santiago, Chile, South America



Beginning in 1996, the Government of Colombia adopted the National Urban Transport Program (NUTP) centered on the development of Bus Rapid Transport investments in Colombia's largest cities.

# COLOMBIAN CITIES: MORE LIVABLE, GREEN, AND INCLUSIVE

## INTEGRATED MASS TRANSIT SYSTEMS AND SUPPORT TO THE NATIONAL URBAN TRANSIT PROGRAM PROJECT

Public transportation in Colombia was traditionally perceived as inefficient, unsafe and polluting. Beginning in the mid-1990s, the Colombian government embarked on a program focused on the development of bus rapid transit (BRT) investments in the country's largest cities.

### CHALLENGE

For many years the streets of large Colombian cities were battle grounds. Due to lack of adequate regulations, public transportation routes were awarded to private sector companies which acted as intermediaries, handing over the routes to individual bus owners and operators. These transport entrepreneurs, acting almost as if they were franchises, would recruit drivers to collect profits

at any cost. At the same time, drivers were faced with the harsh reality of urban transport in shifts of 14 hours or more without any working benefits. These perverse incentives resulted in a fierce competition for passengers in the streets while collecting fares, dodging pedestrians, outmaneuvering competing drivers on the same route, and simply surviving a relentless urban transport war.

### SOLUTION

Beginning in 1996, the government adopted the National Urban Transport Program (NUTP) centered on the development of BRT investments in Colombia's largest cities. The investment strategy targeted high quality, bus-based rapid urban mobility at a fraction of the cost of rail systems, concession arrangements for service provision (bus operation and fare collection) and measures

to strengthen the institutional and regulatory weakness that permeated the sector.

Over the years, this Bank-financed program has been complemented by a comprehensive knowledge and convening services program that seeks to build the knowledge base of the government of Colombia and municipal governments to,

- Plan, operate and assure the financial sustainability of integrated public transport systems.
- Devise travel demand management strategies and promote walking and cycling.
- Better coordinate land-use with transport demand.
- Mainstream issues of road safety, gender and universal accessibility in public transport.

### RESULTS

As of end of 2012, five of the six Bank-financed BRT systems are operating: Transmilenio-Bogotá, Megabus-Pereira, Transmetro-Barranquilla, Metroplus-Medellin, and Metrolinea-Bucaramanga. The most famous is Bogotá's Transmilenio, conceived in 1998, and which served as a model for the roll-out of the other BRT systems. Transmilenio currently has 87 km of segregated bus lanes in operation, 115 stations, and carries close to 1.7 million passengers per day—approximately 28 percent of the city's public transport demand. Since its inception, delegations from more than 20 countries, including China, India, Vietnam, South Africa, Kenya, Finland and the United States have visited Colombia to learn about the program.

### BANK GROUP CONTRIBUTION

The Bank has established a long-term partnership with the government of Colombia to support this radical change in the urban transport sector. This engagement dates back to the mid-1990s. Since then, more than eight operations have contributed to the technical, operational and institutional reform of the transport sector. More recently four lending operations totaling US\$1.1 billion support the NUTP in the construction and operations of BRT systems in six cities: Bogotá, Barranquilla, Bucaramanga, Cartagena, Medellin and Pereira. The investment lending operations include:

- Integrated Mass Transit System Project (US\$250 million), including two additional financings (Additional Financing I for US\$207 million, Additional

Financing II for US\$300 million), and support to the National Urban Transport Program Project (US\$350 million).

- Bogotá Urban Transport Project (US\$65 million).
- Bogota Urban Services Project (US\$100 million).
- Bogota Urban Services First Additional Loan (US\$30 million)

## PARTNERS

Colombia's urban transport program has also received financing from the Inter-American Development Bank (IADB), and the Andean Development Corporation (CAF). The IADB is currently financing the BRT in Cali, and the CAF has financed Bogotá's Transmilenio Suba corridor and will help implement Cucuta's system.

More than 20 trust funds have complemented the Bank's knowl-

edge services agenda. These multi-year engagements have sought to build the knowledge base of the central government and of the governments of Bogotá and other cities to, among others, (i) strengthen capacity for analyzing urban mobility and options to improve planning, management, operations and financial sustainability of integrated public transport systems, (ii) strengthen capacity for planning and implementing travel demand management strategies and non-motorized modes, (iii) provide how-to guidance for the implementation of possibilities to better coordinate land-use with transport demand and promote transit-oriented development, (iv) assess and revisit tariff policy issues, particularly pertaining to affordability, accessibility, and how-to guidance for the implementation of targeted public transport subsidies, and (v) mainstream issues of road safety,

gender and universal accessibility in public transport.

## MOVING FORWARD

Challenges remain to consolidate the sustainable urban mobility policy that Colombia embarked on more than a decade ago.

The most pressing concern is the need to move forward with the full integration of public transport systems, since amidst the new systems, traditional public transport buses still operate. As cities move towards this full integration of public transport services, issues of accessibility and affordability become crucial to guarantee that the most vulnerable population is served. Furthermore, in an era of unprecedented urbanization and motorization, demand management schemes become crucial policy considerations, so that auto users actually pay for the costs they impose on society.

The Bank will continue to

## BRT's Beneficiaries



“Transmilenio gave me many good things. First of all, it takes me everywhere quickly, even though people complain that it's too crowded. The trip is really fast. Second, there's the comfort of having a guide tell me which bus to take. Third, the bus makes fixed stops as part of an itinerary; the other buses would see I was blind and assume I was going to get on to sing or beg. They also have elevators that help a lot...”

Luis Rincon, Blind User of Transmilenio. (Taken from the book *Transport on a Human Scale*. The World Bank)



“I was a bus driver for 13 years, but I've worked the last five months as a bus operator. Before that, my job was very stressful, especially because the work day was very long. I complied with the owner's passenger limit and, after 310 passengers, the profits belonged to me. I made sacrifices to get them. Now, my life has changed 100% because I work for three hours, rest for one, and then I continue until I complete eight working hours. I have time for myself, my family, to go to the doctor, to study. Also, society now views me in a different light, and no longer looks down on me as before. Now I have goals set for myself: owning a house and having a well-established family.”

John Jairo Mina Vidal, Bus Operator (Taken from the book *Transport on a Human Scale*. The World Bank)

support this agenda by mobilizing its financial, knowledge, and convening services to work towards more livable, green and inclusive Colombian cities.

**BENEFICIARIES**

According to the latest data, riding Bogotá’s Transmilenio

results in average time savings of 32 percent (20 minutes) per trip compared to the traditional bus system. This represents a savings of more than 10 hours per month for the average rider. Transmilenio has also been able to abate 1.9 million tons of carbon dioxide equivalent (Mt

of CO2e) between 2001 and 2010. The system has scrapped more than 2,100 old buses since its inception; decreased accident rates by 90 percent in the corridors where the system operates; and reduced noise levels by 3-10 decibels.

Stages of Urban Transport Sector Engagement in Colombia			
	Initial Engagement The Foundations (1996 - 2003)	Strengthening Urban Transport Policies (2004 - 2010)	Mainstreaming Sustainable Urban Transport Policies (2011 - )
Knowledge Services	<ul style="list-style-type: none"> <li>• TA to Transmilenio</li> <li>• Support to Transmilenio’s Urban Transport Forums</li> </ul>	<ul style="list-style-type: none"> <li>• Communication Strategy BRTs Implementation</li> <li>• Road Safety Training</li> <li>• Universal Access BRTs</li> </ul>	<ul style="list-style-type: none"> <li>• Regulatory Framework for Integration</li> <li>• Integrating Spatial Planning</li> <li>• Travel Demand Management</li> <li>• Targeted Subsidies</li> <li>• Mainstreaming ICT</li> </ul>
Financial Services	<ul style="list-style-type: none"> <li>• Bogota Urban Transport Project</li> <li>• Colombia Regulatory Reform Project</li> <li>• Bogota Urban Services Project</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Mass Transit Systems Project &amp; First and Second Additional Loans</li> <li>• Bogota Urban Services Project Additional Loan</li> </ul>	<ul style="list-style-type: none"> <li>• Support to the National Urban Transit Program Project</li> <li>• CTF to Support Urban Transport (proposed)</li> </ul>
Convening Services	<ul style="list-style-type: none"> <li>• Partnership with Embark</li> </ul>	<ul style="list-style-type: none"> <li>• Infrastructure Workshop</li> <li>• BRT Operation Launch Workshop</li> </ul>	<ul style="list-style-type: none"> <li>• Partnership with Singapore on TDM</li> <li>• Partnership with ITDP on non-motorized transit</li> <li>• South-South collaboration with China on BRT development</li> </ul>

Graphic (Colombia SD Team)

EL SALVADOR

# EL SALVADOR WORKS TO PROTECT NATURE AND PEOPLE

EL SALVADOR PROTECTED AREAS CONSOLIDATION AND ADMINISTRATION PROJECT

With Global Environment Facility (GEF) support, the Protected Areas Consolidation and Administration Project updated the National Strategy and Action Plan for consolidating and managing the Natural Protected Areas System, and tested it in two pilot protected areas. The project prevented deforestation and promoted regeneration on over 20,207 hectares. Both pilot protected areas were delineated, and land tenure conflicts were reduced. Training and alternative livelihood investments benefited local solidarity groups and cooperatives, and strengthened their support for biodiversity conservation.

**CHALLENGE**

By 2005, most lands under the Natural Protected Areas System were still “paper parks” with an inadequate legal framework or physical protection and no managed buffer zones. Only a fraction was legally declared and demarcated. The institutional

structure governing these lands was confusing and even though the Ministry of Environment (MARN) was responsible for the entire system it had legal title to a mere 7,070 hectares. The quality and type of environmental goods and services, biodiversity resources as well as the number

of human settlements, were not well known, complicating their management and prioritization.

Refinement of the National Strategy for the Natural Protected Areas System, definition of priorities and greater stakeholder consensus on this

strategy and on conservation, were essential. The Ministry of Environment lacked the legal tools to manage and consolidate the Natural Protected Areas System, to address the sensitive issue of human settlements in protected areas, and to clarify land tenure and resolve invasions of state-owned, unoccupied lands.

A methodology was needed to identify illegal and legal settlements within protected areas and regularize the latter. Finally, the Ministry's acute resource limitations threatened its ability to consolidate the Natural Protected Areas System.

### APPROACH

The project's two main activity streams were inter-dependent, the idea being that delimitation, demarcation, implementation of management plans and regularization of park residents,

would feed into innovative legal, policy, and strategic goals and instruments essential to the Natural Protected Areas System's long-term sustainability.

The project was to be partially blended with the second phase of the Bank-supported Land Administration Project whose massive collection of land-related data would constitute a foundation for large-scale conservation including the consolidation of protected areas, and development of a strategy for addressing irregular settlement within them.

The project was also highly innovative in seeking to demonstrate the viability of protected areas' residents continuing to live productively within areas subject to environmental conservation and restriction while assuming a direct role in conservation.

### RESULTS

The Protected Areas Consolidation and Administration Project helped to conserve El Salvador's globally-significant biodiversity by strengthening the Natural Protected Areas System and effectively pilot-testing a management strategy in two pilot protected areas through the following outcomes:

- An updated strategy and action plan was finalized by 2012 using project-generated inputs and experiences including the Protected Areas Rationalization and Prioritization Study completed in 2011, the Management Plans leading to 24 alternative livelihood demonstration investments in the pilot protected areas' benefiting over 2,700 poor park residents, and the field regularization activities;
- Global Environmental Facility (GEF) Tracking Tool



Alternative livelihood demonstration investments benefited over 2,700 poor park residents.

scores of 48 in mangroves and 58 in forested areas (Bahia de Jiquilisco) up from 26 and 15 respectively in 2005; and 58 in forest areas and 35 in aquatic (San Diego-Las Barras) up from 37 and 2 respectively in 2005, indicated improved protected areas' management;

- Biodiversity benefits were established on 20,027 hectares by 2012 compared to 12,400 ha in 2005, including the regeneration of over 7,600 hectares of additional forest cover;
- The project delimited 68 terrestrial areas and one marine/aquatic area. It transferred to MARN and declared as protected areas by 2012, up from zero in 2005.
- In the San Diego-Las Barras pilot area, 90.5 percent was free of land tenure conflicts by 2012 (Bahia de Jiquilisco field surveys were completed

but not yet analyzed by closing).

The Protected Areas Consolidation and Administration Project Actual total project costs were US\$4.9 million, comprising GEF funding of US\$4 million and government contribution of US\$0.9 million, about 28 percent of which was expected at appraisal under the blended operation with the Land Administration Project II, and about 36 percent of the counterpart amount following cancellation of the Land Administration Project II. Lower costs were due to (i) over-estimation of areas to be covered by field regularization activities, (ii) the non-completion of certain activities. Subcomponents 1.2 (legal and institutional framework) and 1.3 (public dissemination and awareness campaign) were a fraction of anticipated (11.3 percent and 8 percent respectively) due to

non-performance, and (iii) time ran out and the Bank did not approve a second extension of the closing date to complete activities. Component 2 costs were about 17 percent higher, and administrative costs were 28 percent lower than expected.

### **PARTNERS**

The project was a partnership with the government of El Salvador through its Ministry of Environment. The planned formal collaboration of other government agencies with the ministry was limited once the LAP II was cancelled, but technical and other forums were established in the final year with experienced sector agencies including the National Registry Center and the Salvadoran Institute for Agrarian Transformation. The Ministry of Environment has also taken steps to forge closer working relationships with the Ministries



San salvador city in the morning.

of Agriculture, Tourism and Fisheries to broaden the political and technical foundation supporting the Natural Protected Areas System.

### MOVING FORWARD

No immediate follow-on or scaled-up operation is planned given the government's current priorities and the Country Partnership Strategy 2010-2014. El Salvador is however, increasingly embracing the global climate change agenda on both mitigation and adaptation. This includes participation in the Bank's Forest Carbon Partnership Fund helping the country develop a vision for managing and monitoring its forest resources and to prepare for forest carbon transactions, to which this project's achievements have direct relevance. The Ministry of Environment is also seeking funding from the Reducing Emissions from Deforestation in

Developing Countries fund for a program to restore eco-systems and landscapes in Bahia de Jiquilisco.

### BENEFICIARIES

The project's beneficiary pool was broadly-defined and inclusive, identified by a participatory social assessment, but did not set specific beneficiary targets or disaggregate beneficiaries by gender. In San Diego-Las Barras the livelihoods of local groups were being affected by excessive growth of water lilies in the Metapan Lagoon, interfering with navigation, tourism and fishing. The project taught residents how to extract the lilies to reduce density, promote normal habitat and boat traffic, and use the lily material to make craft items and soil fertilizer. Jose Mauricio de Paz, President of the Cooperative Association of Fish Production, Isla de Mendez (Bahia de Jiquilisco) said:



“Once armed conflict ended in El Salvador, many fishermen – about 120 just in our area – started using explosives as an easy way to fish, but it killed everything and over time the fish disappeared. Our complaints to authorities were unsuccessful. Finally, the Naval Forces recommended we contact the Ministry of Environment which linked us up to productive opportunities under the project. They trained us to use better, safer fishing methods which increased our catch and allowed the fish to regenerate”.

GRENADA

## MORE CLASSROOMS PLUS BETTER TRAINED TEACHERS EQUAL BETTER EDUCATION FOR GRENADA

GRENADA EDUCATION DEVELOPMENT PROJECT

Between 2004 and 2011, Grenada improved both the equity of access and quality of its secondary education program. With Bank support, the project successfully expanded secondary schools with the addition of 420 school places, increased enrollment in three underserved areas by an average of 10 percentage points, provided instructional materials, trained counselors and teachers, and helped to increase the Caribbean Examinations Council pass rates by 6 percentage points.

### CHALLENGE

Access to education in Grenada was inequitable with transition rates to secondary education in the three underserved parishes averaging 51 percent. The quality of secondary education was deficient, teachers' qualifications were poor, and instructional materials were not sufficient

to support student-centered learning approaches. Some secondary schools were overcrowded. Student violence in schools contributed to high dropout rates.

### SOLUTION

The project supported the priorities identified in the

Strategic Plan for Education and Development, which sought to achieve universal secondary coverage. The plan focused on improving the quality of learning, in particular in the areas of literacy and numeracy. It also concentrated on school improvement through construction and rehabilitation of education



Transition rates to secondary education in the proportion of students sitting Common Entrance Examinations in the three underserved parishes improved by an average of 10 percentage points between 2004 and 2008.

Student from St. Paul's Government School in Grenada Photo Credit: Nazumi Takeda, World Bank

infrastructure following Hurricane Ivan, as well as student-led school improvement projects.

### RESULTS

The project contributed to improved equity of access and quality of secondary education.

Key outcomes included:

- Improvement of transition rates to secondary education in the proportion of students sitting Common Entrance Examinations in the three underserved parishes by an average of 10 percentage points between 2004 and 2008.
- Improvement in the proportion of students passing at least five subjects (including Mathematics and English) at the Caribbean Examinations Council from 13 percent in 2004 to 19 percent in 2008.
- Introduction of a new curriculum policy, which is better

aligned with the Caribbean Examinations Council, and meets the diversified learning needs of students.

- Improvement of the availability of textbooks and other instructional materials for 3,000 students.
- Placement of trained counselors and peers counselors in all secondary schools leading to reduced school violence and improved attendance based on information from focus group discussions with counselors, school principals and education officers.
- Improvement of educational resources (including reading materials, work books and instructional DVDs) to enhance the teaching of numeracy and literacy at the primary level to ensure better preparation for secondary education through provision of heavy duty printers and personal computers for

the Ministry of Education Materials Production Unit

### BANK GROUP CONTRIBUTION

The Bank provided funding of US\$8 million (US\$4 million IDA and US\$4 million IBRD) in 2004. In 2008, an additional US\$1.9 million grant was provided to allow for implementation of activities that had been curtailed when funds were reallocated to address the emergency rehabilitation following the passage of Hurricane Ivan.

### PARTNERS

Close collaboration with the United Kingdom's Department for International Development (DFID), during design helped to provide funding for a number of the quality enhancing activities. Bank funding was complemented by US\$10 million from the European Commission.

## MOVING FORWARD

The project reiterates government commitment to reforms and initiatives addressed under the project, many of which have been institutionalized under the strong leadership of the Ministry of Education. Grenada continues to participate actively in the review of the Education Strategy by the Organisation of Eastern Caribbean States (OECS), which will guide future development of

education in the region. Grenada is also addressing the challenges of school infrastructure maintenance through a monthly subvention to schools.

## BENEFICIARIES

Around 2,000 students benefited from the increased number of schools and set-up of school shades and canteens. Teachers benefited from training in literacy and numeracy and

the increased availability of resources. Students developed a greater interest in mathematics and reading. One student from St. Paul's Government School enthused "I now love math and reading."



Grenada Education Development Project  
Peer Counselors Photo Credit: Nazumi  
Takeda, World Bank



St. Georges, Grenada

# INCREASING WATER SUPPLY AND PROMOTING SANITATION AND HYGIENE IN RURAL HAITI

## RURAL WATER SUPPLY AND SANITATION PROJECT

Drawing upon expertise and funding from the Bank and the State and Peace Building Fund (SPF), Haiti has delivered access to clean water to more than 33,000 Haitians in rural areas, and improved sanitation conditions with the construction of school latrines for 3,700 students and teachers in six communities.

### CHALLENGE

At the time the project was designed, in 2006, limited resources (outside of the metropolitan area) for water supply in Haiti were mostly used for urban water supply in secondary towns. For lack of funds, the Ministry of Health's rural water units were small and inactive. There was also no institutional home for sanitation. Without an

institutional presence in rural areas and with little knowledge about levels of coverage and needs, it was thus difficult to prioritize investments, which were carried out in a piecemeal manner and did not necessarily reach the neediest citizens. Local communities did not maintain infrastructure well and many rural water systems were managed by water committees

often consisting of unpaid volunteers elected by the community. The performance of water committees varied widely, but most water committees seemed to not perform their functions adequately and collected insufficient funds for operation and routine maintenance.

### SOLUTION

The trust fund and the associated Bank grant were designed to address the challenges of bringing water supply to rural areas in a sustainable way and increase access to and use of water supply and sanitation services in participating rural communities. Communities were identified by evaluating their willingness to pay for water services (by the volume) and by using a participatory approach providing communities with a series of choices, including choice between different water service levels (house connection or water kiosk) and choice in the tariff structure and level (covering only operating costs and basic maintenance, or including a reserve for major maintenance). Project-financed activities targeted approximately 50,000 people, which represent 20 percent of the population of the

participating communes.

This project's key innovation is the introduction of a professional management model involving local water operators selected by the community to operate, maintain and manage the water supply systems based on a contract signed with the communities. Furthermore, the project promoted cost recovery, metering, and the use of water kiosks instead of standpipes, as well as gravity-fed piped systems to minimize potential technical issues. Where pumping was necessary and cost-effective, the project gave a strong preference to renewable energy, such as solar.

### RESULTS

The project focused on (i) increasing the sustained and effective use of safe drinking water in participating communities, (ii) improving use of sanitary and hygienic practices

in participating communities, and, (iii) strengthening the capacity of the implementing agency, local water committees, and professional operators in cooperation with local government. The program helped support improvements in several key outcomes:

- The construction of eight rural water supply piped systems in the Sud Department providing potable water to 33,700 people between 2009 and 2011. Works are still under progress with SPF grant funds and include:
- The construction of three-water supply piped systems for an additional 10,500 beneficiaries; and
- The drilling of 14 boreholes to bring potable water to 6,500 people. It is estimated that these works in the Sud Department will be completed by July 2013.
- The construction of school



Member of CCPC, Beaumont, Grande Anse Photo Credit: Michel Matera, WB

latrines for 3,700 students and teachers and the promotion of sanitation and hygiene in six communities, covering approximately 30,000 people, in 2012.

- The introduction in 10 communities of a successful professional management model involving local water operators. These operators and community water committees were trained to operate, maintain and manage the water supply systems, as well as in basic financial management and community relations. This aspect of the project was initiated in 2009 and is still ongoing.

#### **BANK GROUP CONTRIBUTION**

The \$5 million SPF Grant was awarded in November 2008 to complement the \$5 million Bank Grant signed on February 15, 2007 and closed

on December 31, 2011. Both grants financed project activities through the National Directorate for Drinking Water Supply and Sanitation (DINEPA).

#### **PARTNERS**

There is a strong partnership among key development partners in Haiti's water sector. The Rural Water Supply and Sanitation program's philosophy (professional operator management model) is shared by the Inter-American Development Bank (IDB) with whom periodic meetings are held to coordinate investments, analytical work and lessons learned.

#### **MOVING FORWARD**

As a result of the successful implementation of the professional operator management model for rural water supply piped systems and its implementation, DINEPA is exploring the feasibility of scaling up this approach at the national level. A national workshop is being organized to draw lessons learned from the program and identify the path forward. The project is exploring the idea of facilitating professional operator exchanges with countries in Africa where a similar management model has been successfully put in place. The project team has been collaborating with the Water and Sanitation Program in this regard.

#### **BENEFICIARIES**

At project closure in November 2013, it is estimated that 50,000 people will have received improved water supply services as a result of the project. The project also financed the construction of school latrines for 3,700 students and teachers. The project team is currently designing beneficiary surveys with DINEPA in order to evaluate further the impacts of the water supply and sanitation interventions. Beneficiary communes included Arniquet, Cavaillon, Chantal, Coteaux, Chardonnières, Fond des Nègres, Fond Tortue, Ile à Vache, Maniche, Simon, all in Sud Department, and St-Michel des Nippes, Nippes Department

## SUPPORTING RECOVERY AND REDUCING VULNERABILITY TO NATURAL DISASTERS IN HAITI

### EMERGENCY RECOVERY AND DISASTER MANAGEMENT PROJECT

The Emergency Recovery and Disaster Management Project improved disaster preparedness and reduced vulnerability at the local level in Haiti. The project established 76 Communal Civil Protection Committees (CCPC), covering more than half of the 144 communes. In addition, the project successfully implemented 130 small-scale disaster mitigation works, based on community-based disaster risk assessments.

#### CHALLENGE

In 2005, Haiti was emerging from a period of political conflict. The country was facing tremendous development challenges, including high exposure and vulnerability to natural hazards. Widespread poverty, extensive deforestation and overall land and watershed degradation further exacerbated

the country's vulnerability. One year earlier (May 2004), flash floods and landslides in Belle-Anse and Fonds-Verrettes affected more than 100,000 people and claimed more than 1,000 lives. Storm Jeanne (September 2004) caused flash floods affecting 300,000 people in the region between Cap Haïtien, Port-de-Paix and Gonaïves.

More than 3,000 people died as a result of the flooding.

#### SOLUTION

Although the project was prepared as an emergency project, it aimed to balance structural and non-structural interventions to address the country's high vulnerability to



School rehabilitated in Roseaux, Grande Anse Photo Credit: Michel Matera, WB

natural disasters. The structural interventions focused on the rehabilitation of drainage and irrigation systems, schools, health clinics and community centers affected by flooding—initially in Fonds-Verrettes, Belle-Anse and Gonaïves. After the additional financing in 2008, the project supported similar interventions in other departments.

The non-structural interventions focused on strengthening the institutional capacity of the Directorate of Civil Protection and the Permanent Secretariat for Disaster Risk Management as well supporting local risk management. At the local level, the Bank's supported the government's efforts to move from the ad-hoc nature of community engagement in disaster response and preparedness towards a more productive systematic approach to community engagement. The Bank used the community driven development

approach to establish communal civil protection committees and implement small-scale risk mitigation works.

## RESULTS

The main results achieved include the following:

- Community-level disaster preparedness and response capacity strengthened through the establishment, training and equipping of 76 community civil protection committees. Communal civil protection committees, covering approximately 1.3 million people. These committees played a crucial role in receiving and assisting displaced people from the capital after the January 2010 earthquake, and have facilitated the delivery of humanitarian assistance from the international community.
- Institutional and technical entities supporting the

national disaster risk management system strengthened and operational, including the capacity to manage disaster preparation and response activities better.

- Rehabilitation and/or reconstruction of prioritized small-scale public infrastructure in areas affected by natural disasters identified and completed.
- Local risk maps and emergency contingency plans prepared for 76 communities.
- Approximately 130 small disaster mitigation works successfully implemented.

## BANK GROUP CONTRIBUTION

Following the clearance of arrears in early 2005, the government was ready to receive support. The Emergency Recovery and Disaster Management Project was the first Bank project prepared since 1997. The total

cost of the project was US\$19.4 million; US\$12.0 million under the original project and US\$7.4 million under the additional financing approved in 2008. This funding was distributed among reconstruction and risk reduction in areas affected by floods, institutional strengthening and local risk management.

## PARTNERS

There was a close and strong collaboration with other development partners supporting the disaster risk management agenda in Haiti, in particular with United Nations Development Programme, the Inter-American Development Bank (IADB), the Office of U.S. Foreign Disaster Assistance, and the European Union, which ensured their efforts were complementary. These partnerships exploited synergies among partners and avoided duplication of efforts. Moreover, the project's convening role and

close partnerships provided an important framework that is expected to continue to guide multilateral engagement in the disaster risk management area.

## MOVING FORWARD

A new grant aims to consolidate gains in the area of local risk management and institutional strengthening. The approval of this grant has allowed for a smooth transition and ensured continued support to the communal civil protection committees established by the project. The Bank is also strengthening the national policy dialogue to advocate for a stronger Civil Protection Directorate (DPC) and to support the reform of the national disaster risk management system, while exploring ways to integrate disaster risk management in an upcoming development policy operation.

The project's main beneficiaries were the people affected by the 2004 floods. Residents of the affected regions of Belle-Anse, Fonds-Verrettes and Gonaïves benefited from the rehabilitation of affected public infrastructure. The project also targeted the communities where communal civil protection committees were established and government staff were working with the project implementing agencies.



Team PPS winners of App Contest Grand Prize

JAMAICA

## CREATING EMPLOYMENT SOLUTIONS FOR YOUNG JAMAICANS IN THE VIRTUAL ECONOMY

YOUTH EMPOWERMENT VIA ICT SOLUTIONS AND THE CREATIVE INDUSTRIES

Designed and implemented in four months, with less than US\$200,000, Digital Jam 2.0 is an initiative to promote Jamaican youth employment in the virtual global economy. Concrete results include over 4,000 young people being employed on online platforms, the establishment of funds to support start-ups in the app economy, the commercialization of apps, a number of internships with leading Caribbean telecom companies, offers of scholarships for winners to a Master's program at Howard University in Washington, DC, and mentorship programs from national and international companies operating in the IT sphere.

### CHALLENGE

Jamaica has about 800,000 young people between the ages of 12 and 35, approximately 34 percent of the population. In the coming years, job creation will not come from traditional sectors (agriculture, tourism

and manufacturing) due to competitiveness disadvantages vis-à-vis other countries and because of issues of scale, the country's insular nature, the high cost of energy and high levels of crime and violence, among other issues. Previous

approaches to solving the unemployment problem have concentrated on skills development, but vocational education training programs have reported limited success. Much less attention has been given to the linkages with the labor market,

facilitating students' transition into it once they graduate. Furthermore, unemployment and underemployment are endemic in all socio-economic groups – including people with secondary and tertiary degrees. Finally, Jamaica cannot borrow from international lending institutions given its very fragile macroeconomic situation. Looking for solutions outside of the box was necessary to respond to one of the client's most pressing problems: youth unemployment.

## **SOLUTION**

Digital Jam 2.0 promoted solutions to high youth unemployment in Jamaica with new opportunities in the global virtual economy (microwork and e-lancing) and the booming “app economy.” Microwork is a form of distributed work being performed online and generally paid by the micro task (image-tagging, data mining) that

can be performed by people who do not need high technical skills. E-lancing refers to the range of free-lancing professions that can be performed online where the product can be compressed in a file format. Digital Jam 2.0 hosted a marketplace with the participation of about 40 national and international companies leaders in the IT sector, giving an opportunity to youths to interact directly with businesses in that sphere

## **RESULTS**

Digital Jam 2.0 was launched in June 2012 and saw the participation of 2,000 young Jamaicans in a series of competitions (app contests and a hackathon on the sports industry), workshops, training on mobile software development, and presentations by industry leaders as well as successful young Jamaicans who are currently working online. In addition, Digital Jam 2.0 has

provided young people in Jamaica the stage to showcase the capacity, talent and commitment necessary to be “game changers” for the economy and drivers of a knowledge-based society.

- About 4,400 new Jamaican youths working on microwork and e-lancing platforms.
- The establishment of a funding window for start-up companies from the Ministry of Industry, Investment and Commerce.
- Commercial interest expressed by investors in acquiring apps completed as part of Digital Jam 2.0.
- Eight internships at leading telecommunication companies in Jamaica and the Caribbean.
- Two full MA fellowships at Howard University offered to app competition winners.
- Winning apps showcased at Jamaica House at the London

Olympics in August 2012.

- Mentoring by Microsoft Jamaica and MobileWorks in the Silicon Valley of the winning applications.
- An agreement with University of Technology for incubating app development start-ups in collaboration with their Technology Incubation Center.
- Partnership with US Agency for International Development (USAID) to implement a pilot project in the digital creative industries.
- Requests from the Development Bank of Jamaica, The Grace Kennedy Financial Group, the Jamaica National Building Society, and Microsoft Jamaica to submit proposals for funding of specific activities, including the incubation of app development companies led by young Jamaicans, the facilitation of payment to microworkers via

mobile-banking solutions, and the digitalization of government records and a move to e-government.

## **BANK GROUP CONTRIBUTION**

The World Bank provided roughly US\$200,000 of technical assistance to design and implement this program.

## **PARTNERS**

Additional resources were provided by Flow Columbus Business Solutions, the JNBS Group, Landline Internet Mobile and Entertainment Services (LIME), USAID, Microsoft Jamaica, Research in Motion (RIM) Blackberry, Telegens, and Kariblink. These consisted in about US\$100,000 in cash, prizes for competitions, air-time on television and radio stations, connectivity costs, and the renting of the event facilities. A strong endorsement was given

by the government of Jamaica including the Minister of Youth and Culture, the Minister of Industry, Investment and Commerce, and the Minister of Science, Technology, Energy and Mining. Partnerships were also established with industry leaders, including key companies from the Silicon Valley such as Samasource, Microworkers, MobileWorks, Freelancer (from Australia), Soundtracker, Wildfire Interactive, and 500 Startups.

## **MOVING FORWARD**

Digital Jam 2.0 has sparked a lot of interest from a number of partners. Private sector partnerships are emerging between national and international players to establish microwork hubs in Jamaica. These will be fully funded by the private sector. The Bank and USAID are negotiating an externally funded output agreement to continue raising awareness about

opportunities for work online and, in particular, in the niche of creative industries. The government of Jamaica has requested the establishment of Digital Jam as a yearly event and the Bank is currently seeking options to make it happen. Bangladesh and Russia have expressed interest in replicating the event.

### BRT's Beneficiaries

“We truly believe this is the way forward for Jamaica, and the World Bank is certainly creating the momentum.”

Marcelle Smart, Country Manager, Microsoft Jamaica

“The World Bank has provided tremendous support in envisioning the event, bringing appropriate partners together, and facilitating our participation. Future support of this nature would be welcome.”

Anand Pramod Kulkarni, CEO, Mobileworks

“We had the opportunity to interact and learn with the game changers from Silicon Valley. It has also inspired our young people to have more confidence in entrepreneurship, by opening our eyes on ways in which we can use our skills and talents, offering first class IT services to the world, right here from our Jamaican IT hub.”

Roxanne Wanliss, a 25 year old participant from Kingston.



Cheering for app contest winners in plenary room.

### MEXICO

## MEXICO MOVES TO RESULTS-BASED PROCUREMENT SYSTEM

### MEXICO PROCUREMENT REFORM PROJECT

Beginning in 2009, the Mexican government modernized its procurement methods, eliminating obsolete regulations and building in methods for transparency. The government also created an online platform to ensure transparency and ease of access, while reducing execution time by as much as 95 percent. Within three years, small and medium enterprises increased their participation in the federal procurement system by 36 percent, and the government saved US\$1 billion.

#### CHALLENGE

Despite having the world's 11th largest economy, Mexico has a difficult history in the disbursement of public works and services to its citizens. In 2009, the procurement system was overregulated, focused heavily on the administrative function, and based primarily on legal regulations. Public procurement accounted for 40 percent of

the federal budget (around 10 percent of gross domestic product, GDP), and the cost of inefficiency was estimated at between 10 and 14 percent per year. Lack of transparency also allowed corruption to flourish. Additionally, the electronic procurement system was outdated and incapable of improving transparency, generating competition, or streamlining

processes. Procurement staff lacked both knowledge and professionalism.

#### SOLUTION

In 2007, a procurement report by the Bank provided an in-depth assessment of Mexico's procurement system and offered critical recommendations. Since 2011, a dedicated team of policy analysts in the Bank's procure-

ment unit used a combination of knowledge and convening services to play a key role in the reform process. Through a number of conferences, closed events, and dedicated access to global expertise, the Bank acted as a partner of choice in providing specialized advisory services on cost saving strategies (framework agreements), in developing procurement performance indices, and in designing a professionalization program. Close attention to meeting the client's needs was critical.

## RESULTS

Mexico has undergone transformational reforms in its federal public procurement system, re-orienting it around principles of delivery for results and focus on outcomes, and away from overarching processes and compliance procedures. Cost saving strategies and e-procurement systems have generated

significant results and savings of US\$1 billion in three years (Dec 2009 - Dec 2012, based on audited expenditures), including:

- Eliminated 586 procurement regulations.
- Rationalized application of excessive and complex laws.
- Fostered competition and promoted governance.
- Applied framework agreements, consolidated purchases and reverse auctions.
  - Introduced global best practices into Mexico's procurement system.
- Implemented a robust transaction based e-procurement platform.
- Boosted processing to more than 70,000 electronic transactions in 2012, from 30,000 in 2010.
- Increased the number of private sector users from 10,000 in December 2009 to more than 85,000 in December 2012.

- Established the procurement intelligence unit, a strong skills development and certification program.
- Strengthened of the capabilities and reputation of the Ministry of Public Administration.
- Standardized of procurement procedures
- Improved clarity to the sanctions regime and dispute resolution frameworks.
- Increased participation of small and medium enterprises (SMEs) in the federal procurement system increased, with a growth of 36 percent in contracts awarded to SMEs between 2010 and 2011 (US\$10 billion in contracts).
- Included social witnessing practiced in all large procurement contracts.
- Increased the number of governmental entities with a certified procurement depart-

ment, organized to support performance budgeting in the future, from none in 2010 to 322 currently.

## BANK GROUP CONTRIBUTION

These just-in-time and strategic advisory services have been provided in Mexico through an innovative non-lending approach, using a combination of knowledge and convening services.

This project included Bank expertise, international consultants and knowledge exchange partnerships among countries. The Bank facilitated an exchange program between Mexico and the government of Western Australia. A similar program between Mexico and Colombia is in progress. The policy work also enhanced the Bank's internal procurement unit's interaction with other sectors (Poverty

Reduction and Economic Management Network and the financial sector), and improved the impact of the Bank's engagement in public procurement reform in Mexico. This project was an important input in the preparation of a Development-Policy Loan on competitiveness and for the implementation of an investment program.

## PARTNERS

The Bank has a long-standing engagement with the government of Mexico in support of public sector reforms, including bringing the federal procurement system into a world-class results-based procurement system. The relationship between Mexico, the Bank, and the Inter-American Development Bank (IADB) has evolved in recent years and has become characterized by more intense dialogue on institutional and capacity strengthening and

by an increased demand on the part of the government for non-lending services.

The Country Procurement Assessment Review of 2007 was an example of such collaboration. This evolution has also led to an interest on the part of the World Bank and IADB to move toward greater reliance on the use of Mexican federal processes (harmonization strategy) and control systems to verify compliance with the Banks' safeguard and fiduciary policies. This is part of a gradual process of devolving fiduciary responsibility to Mexico while supporting the government in its efforts to strengthen capacity and reduce transaction costs.

## MOVING FORWARD

Improving the efficiency of delivery of goods and services requires continuing the procurement system reform that

began in 2009, and the Bank is interested in continuing to support Mexico in this reform. In particular, the Bank would like to support Mexico's objectives to align its public procurement system more closely with expenditure policy to generate value for money, ensure transparency and efficiency, and improve the quality of the works, goods and services procured.

### BENEFICIARIES

The procurement reform has also supported other key government policies. For example, this reform has contributed to the strengthening of small and medium enterprises, which account for over 95 percent of firms, and generate between 60 and 70 percent of employment.



SME-Owner, Auto Repair Shop: "Generating new contracts and new markets, the government has allowed us to grow with a great prospective for our company."



PERU

## PROMOTING PRODUCTIVE USES OF ELECTRICITY IN RURAL AREAS OF PERU: EXPERIENCES AND LESSONS LEARNED

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM/ CAPACITY BUILDING FOR PRODUCTIVE USE OF ENERGY PROJECT

This rural energy project, which included a pilot program to promote productive uses of electricity, supported over 4,970 families and micro-enterprises to adopt electricity to process cereals, coffee, cocoa, baked goods, meat products, milk, wood and metal products and handicrafts, and to pump water for expanded agricultural production and processing.

### CHALLENGE

The rural communities in Peru faced multiple barriers to increasing the use of electricity for production. The constraints on promoting demand for electricity from productive units included (i) limited technical and management skills of rural producers, (ii) inadequate ac-

cess to capital and financing, and (iii) poor quality perception of grid supplied electricity, which reduced interest in electrical equipment.

From the perspective of the supplier, the constraints to meeting the additional demand included (i) a lack of marketing

or tracking of productive-use customers by distribution companies, (ii) limited access to information and insights on rural markets, (iii) rural electrical system designs and network layouts optimized for least-cost household connections, rather than maximum development benefits, and (iv) inconsistent



The main economic activities in the communities targeted by the Peru energy projects were home based or located in or near the fields of the producer. They varied within the range of small scale agriculture, livestock and dairy production, artisanal mining, textiles, off-farm industries and services like transport or product distribution.

service quality in many of the poorer communities, with interruptions and voltage drops.

### **SOLUTION**

The project implemented an approach based on business development services (BDS) techniques. The non-governmental organization (NGO) implementing the productive uses activities used BDS methods to assist small and home-based enterprises in gathering information, finding credit and addressing technology constraints through marketing and assistance campaigns. The BDS approach has been applied in rural programs targeting income generating activities in other sectors by working, often in collaboration with other institutions, to assist enterprises improve and start small businesses by addressing technical skills, markets, finance, technology and other constraints.

For its application to promote productive uses of electricity, the NGOs followed a strategy that included the following elements:

- market assessment;
- preparation of business plans;
- marketing to the community and potential entrepreneurs;
- coordination with complementary institutions; and
- links with the electricity distribution company.

### **RESULTS**

The projects were carried out in areas with different geographical conditions and economic activities. The pilot project areas ranged from the semi-arid coastal communities in Lima provinces, to the Andean highlands in Junín and Cusco, Amazon rain forests in Junín and the steep terrain of the high altitude cloud forests in the Cusco region. The main economic activities in the targeted communities are home based or located in or near the

fields of the producer. They vary within the range of small scale agriculture, livestock and dairy production, artisanal mining, textiles, off-farm industries and services like transport or product distribution. While agricultural production is usually at the individual level, agricultural processing is often done at a cooperative or association level. Women entrepreneurs play a significant role in areas of production such as baked goods, milk production, ceramics and textiles, and are represented in all types of activities. The implementation approach, while not deliberately designed with gender in mind, seems to have been effective in reaching women producers. Overall, one third of the participants were women, and in the Cusco region this number increased to almost two thirds of the participants. Thus far, the pilot project activities has helped over 4,970

families and micro-enterprises to adopt electricity and use equipment to process cereals, coffee, cocoa, baked goods, meat products, milk, wood and metal products and handicrafts, and to pump water for expanded agricultural production and processing. It is expected that by project closing 9,000 families/micro-enterprises are supported in the adoption of productive uses of electricity.

#### **BANK GROUP CONTRIBUTION**

The Energy Sector Management Assistance Program (ESMAP) financed technical assistance (US\$80,000) to support the productive uses of electricity contributed significantly by providing the technical support for the implementation of the productive uses component in the Bank and GEF-supported Rural Electrification Project (US\$144 million total, including

US\$50 million Bank and US\$10 million GEF).

#### **PARTNERS**

The Bank and the Global Environmental Facility (GEF) are supporting the Ministry of Energy and Mines' (MEM) Directorate of Competitive Funds (DFC) of the General Directorate of Rural Electrification (DGER) in the implementation and execution of the project.

#### **MOVING FORWARD**

The theme of productive uses of electricity has been integrated into government objectives—MEM's National Plan for Rural Electrification includes capacity building for productive uses as a key objective. The second rural electrification project will work to make promotion of productive uses an integral part of rural electrification activities of the DGER rather than a separate pilot activity.

#### **BENEFICIARIES**

The electrification of six groundwater pumping stations for prickly pear and cochineal production in Piedra Grande for 46 farmers—organized by the NGO Desco—was the model project to promote the productive use of electricity. Desco produced a study that allowed producers to make the decision on the investment in equipment and organized its execution. Previously, to operate the diesel or gasoline pumps, the farmers descended into the well to turn the pumps on and off up to six times a day, with the risks of working at depth and in a confined space full of carbon monoxide. These tragic losses and, to a lesser degree, the high costs of fuel led to a strong commitment by the community to take advantage of electric pumps with above ground switches.

REGIONAL

## **AN ONLINE PLATFORM TO PROTECT BIODIVERSITY IN THE WESTERN HEMISPHERE**

BUILDING THE INTER-AMERICAN BIODIVERSITY INFORMATION NETWORK

Recognizing the importance of protecting biodiversity, the Summit of the Americas on Sustainable Development, convened by the Organization of American States (OAS) in Santa Cruz de la Sierra, Bolivia, in December 1996 established the Inter-American Biodiversity Information Network (IABIN). The IABIN is an Internet-based forum for technical and scientific cooperation that promotes greater coordination among Western Hemisphere countries in the collection, sharing, and use of biodiversity information relevant to decision-making and education. The IABIN is improving the means of gathering and analyzing data, data transformation into knowledge, and transferring this information to the relevant parties for action and decision making. It is also shortening the lag time from when information is created to when it is available to decision makers.

#### **CHALLENGE**

Since its inception in 1993, the Convention on Biological Diversity (CBD) has recognized the importance of promoting technical and scientific cooper-

ation, which would contribute directly to implementation of the CBD Clearing-House Mechanism (CHM) as well as other areas critical to development and poverty alleviation.

The Convention established the CHM (i) to promote and facilitate technical and scientific cooperation, within and between countries, (ii) to develop a global mechanism for exchange-

ing and integrating information on biodiversity, and (iii) to develop the necessary human and technological network.

### **APPROACH**

With project support, the IABIN developed an Internet-based, decentralized network to provide access to biodiversity information currently scattered in individual institutions and agencies in the Americas and provide the tools necessary to draw knowledge from that wealth of resources, which in turn would support sound decision-making concerning the conservation and sustainable use of biodiversity. This was an ambitious undertaking at a time when there was no successful precedent in establishing a biodiversity informatics network at this scale and scope. The architecture was web-based, and was designed to seek agreement and build on existing standards

and protocols for biodiversity-related information to ensure compatibility of diverse data sources within the region.

While the network was envisioned as a distributed system of data providers in which the data are maintained and controlled by the provider, a single point of access to the integrated resources of the network remains a key component. The structure of the thematic networks was conducive to achieving the desired results and sustainability. The themes address the needs of IABIN stakeholders and were defined as:

- Ecosystems.
- Invasive Species.
- Pollinators.
- Protected Areas.
- Species and Specimens.

### **RESULTS**

The project had an ambitious target of facilitating at least four

new multinational partnerships per year involving access to biodiversity information within the Americas. Through effective networking, the project was able to exceed this target, building as many as 18 new partnerships.

IABIN generated over 5 million biodiversity records from over 100 institutions; trained over 1,000 specialists from museums, botanic gardens, academic institutions, and NGOs in data digitization, integration, and analysis; and raised awareness of status and trends in biodiversity and habitats. In the case of the Species-Specimen Thematic Network (SSTN), 36 institutions digitized approximately 1,300,000 specimen records and 12 institutions digitized 36,840 species records that are available in the SSTN data portal. The SSTN integrates more than five million specimen records from 54 institutions

and over 41,000 species records from 14 data providers.

IABIN also improved the means of gathering and analyzing data, transforming data into knowledge, and transferring this information to the relevant parties for action and decision making. The project developed six value-added information tools to support decision-making using the data provided by the IABIN Data Integration and Analysis Gateway through the integration, overlay and visualization of data shared through IABIN. These tools helped place millions of species, specimen, invasive, and pollinator data on a geospatial platform, as well as ecosystem and protected areas data, coordinating with virtually every engaged government, NGO and academic institution in the hemisphere.

### **BANK GROUP CONTRIBUTION**

The Bank provided US\$829.7 thousand over its 7 year life span. The success of the project design can be measured in the considerable leveraging of funds. The project attracted a significant amount of resources (approximately US\$23 million) in the form of co-financing that far exceeded the GEF allocation of US\$6 million.

### **PARTNERS**

An estimated 145 institutions from 23 countries and regional or international institutions participated in the thematic networks. Organizations responsible for project include the Implementing Agency, an Executing Agency, the IABIN Secretariat, the IABIN Council and the IABIN Executive Committee, the Coordinating Institutions of the Thematic Networks, the IABIN Focal

Points, and the governments and institutions of the Americas who are both data-providers and information users. Staff from the U.S. Geological Survey invested considerable amounts of time and energy towards the implementation of IABIN. NGOs provided close to half of the co-financing, followed by government contributions which corresponded to 40 percent with the U.S. government contributing more than half of total government contributions. Multilateral organizations participated with close to 8 percent followed by academic institutions who contributed 3 percent. The co-financing materialized in the form of time of technical experts, hosting IABIN and meeting site locations, web-site development, launching and hosting amongst others.

In addition, Since IABIN's inception in 1996, all 34

countries have designated official IABIN focal points. Four IABIN Council meetings have been held with the IABIN focal points and a broad representation from international, NGO, and private sector communities.

### **MOVING FORWARD**

The approach used for the establishment of IABIN is definitely one to be scaled up and replicated:

- First, project design is premised on achieving hemispheric information sharing on biodiversity by removing barriers. A review of existing biodiversity information networks avoided duplication of efforts and filled a niche in terms of providing wider access to quality biodiversity information currently scattered around the Americas.
- Second, the project is built on existing political processes and global processes. This

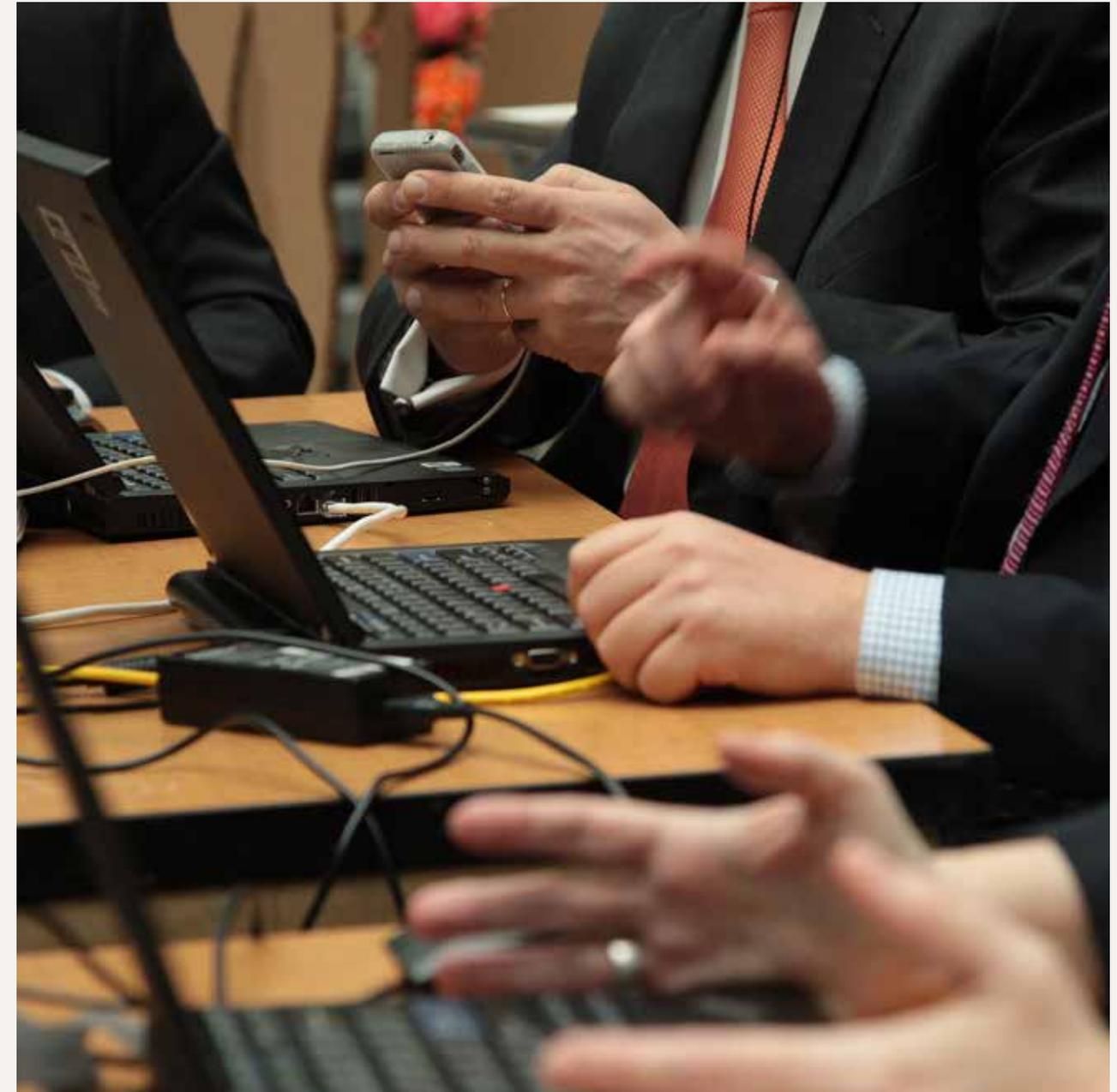
positions IABIN as a region-wide network aligned closely with country priorities and includes enhanced cooperation among the 34 participating countries.

- Third, the quality of cooperation with other development partners has been very strong both from a technical assistance point of view (especially from the U.S. Geological Services) and the significant financial resources leveraged from other donors.

### **BENEFICIARIES**

One of the main achievements of this project was to demonstrate the use of scientifically sound data from IABIN outputs in decision-making related to biodiversity conservation and sustainable use of natural resources. In the Bahamas, for example, the National Invasive Species Strategy was developed based on the tools

and information made available by I3N-Bahamas. In Uruguay, an invasive species database (InBUy) developed with support from I3N has contributed to the creation of an official invasive alien species list for Uruguay and of a National and a Coastal Geographic Information System, and to awareness raising about the threat to biodiversity at both national and regional scale.



## ENHANCING KNOWLEDGE ON PUBLIC WORKS IN EUROPE AND CENTRAL ASIA (ECA)

The global financial crisis that started in 2008 severely contracted the Gross Domestic Product and employment in European and Central Asian (ECA) countries. To support affected households, the governments of the region began scaling up labor market and social assistance programs. The depth and breadth of the crisis, however, brought about unprecedented social consequences. Thus, ECA countries were eager to learn from other middle-income nations around the world that had successfully improved policies to address gaps in anti-crisis employment programs.

**Providing Country(ies):**

Argentina

**Recipient Country(ies):**

Kosovo, Moldova, Serbia,  
Turkey, Ukraine

**Topic(s):** Governance and  
Anti-corruption, Industry and  
Trade

**Funding Source:** South-South  
Facility

**Funding Amount:** US  
\$20,000

**Start Date:** March 23rd, 2011

**End Date:** June 30th, 2012

Through the Global Development Learning Network (GDLN), World Bank staff connected government representatives from Kosovo, Moldova, Serbia, Turkey, and Ukraine with a representative from the government of Argentina and Bank experts. The objective was to help ECA policy makers increase their technical knowledge to strengthen safety nets and implement counter-cyclical employment strategies. The ECA participants, who were grappling with the social consequences of the financial crisis, learned directly from policy makers in Argentina who had faced a labor market crisis a decade earlier. The exchange helped ECA officials understand that they faced common challenges and setbacks in implementing safety nets to mitigate the impact of the crisis. Participants were especially interested in public works programs because of their

potential to provide beneficiaries with needed income while also maintaining links to labor markets when job opportunities were scarce. The exchange therefore enhanced the network of public sector professionals both within ECA and among Argentine experts. The exchange also enhanced participants' knowledge and skills in designing and implementing sustainable public works and health insurance programs.

### STRATEGIC CONTEXT

**Capacity Building Goals:**

- Efficiency of Policy Instruments

The 2008 global financial crisis hit Europe and Central Asia (ECA) severely. During 2009, across the region the average Gross Domestic Product (GDP) contracted more than 5 percent, with 20 out of the 29 economies registering negative growth.

Households felt the crisis through labor market deterioration: firms laid off workers and stopped hiring new employees to reduce their wage bills. Year over year increases in unemployment in ECA countries averaged 30 percent—an absolute increase from 9.4 million to 12.2 million between December 2008 and December 2009. In the face of sharp GDP contractions, many countries implemented or scaled up policies and programs to protect and create jobs, as well as to provide unemployment benefits. Support for affected households included scaling up passive and active labor market programs, strengthening social assistance, and maintaining or increasing minimum pensions. The World Bank has been working closely with the governments in ECA to design tools to mitigate the impact of the crisis on households.<sup>1</sup> Bank staff identified a recurrent demand: to learn



Bank staff organized a knowledge exchange between Kosovo, Moldova, Serbia, Turkey, and Ukraine with experts from Argentina to learn about anti-crisis employment policy responses.

about the policy responses and experience of both other ECA countries and middle-income countries in other regions.

Using funding provided by the World Bank Institute, Bank staff organized a knowledge exchange between Kosovo, Moldova, Serbia, Turkey, and Ukraine and experts from Argentina to learn about anti-crisis employment policy responses. Argentina

was chosen because it is a middle-income country similar to the participant countries and because it had suffered a crisis a decade earlier. In addition, the exchange aimed to address several gaps in technical knowledge, such as how to design effective counter-cyclical employment strategies, how other countries with similar profiles dealt with labor market issues in times of crisis, and how to choose and

design the right tools that lead to meaningful policy reforms.

#### DESCRIPTION

##### Exchange Instruments

- Dialogues

The Global Development Learning Network (GDLN) supported the knowledge exchange through a series of videoconferences and electronic interactions. Claudia Berra, the Senior Advisor to the

Secretary of State for Employment in Argentina's Ministry of Labor, described the 2001 crisis in Argentina and presented the flagship safety net, the Jefes de Hogar (Heads of Household) and Employment Insurance Training Programs currently in use in Argentina. Ms. Berra also talked about designing and implementing employment policies that target the general population and vulnerable segments such as youth and women. Kalandhi Subbarao, a global expert on public works, presented information about public works programs from his work around the world. Ihsan Ajwad, Senior Economist at the World Bank and author of "The Jobs Crisis: Household and Government Responses to the Great Recession in Eastern Europe and Central Asia,"<sup>2</sup> provided ECA-specific information and then facilitated an interactive discussion based on each country's experience.

The learning sessions concentrated on five sets of major technical questions.

- Why are program objectives important? Is the program intended to provide a temporary safety net or is it a long-term employment creation program?
- What key features are likely to influence the program's overall cost and labor absorption potential—the wage rates, number of hours worked, degree of labor intensity? How was the wage rate determined?
- To what extent were the minimum wage and the market wage taken into account?
- What is the program's targeting methodology? Was anything done to include women in the workforce with this specific program?
- What types of assets and infrastructure will be built?

Is there a sustainability plan in place for the maintenance and follow-up of the results both from a cost-benefit perspective and from a community utilization perspective? How will the outcome benefit the community?

- What is the monitoring and evaluating plan for the program? Does the institutional structure allow for a clear division between implementing, supervising, and financing the program?

The knowledge exchange participants requested a number of Bank technical reports, including the policy notes emanating from the just-in-time crisis monitoring effort in ECA, the evaluation of Argentina's public works program, and a number of country-specific reports (e.g., Latvia) as supplements to the learning activities.

## OUTCOMES

### Intermediate Capacity

#### Outcomes

- Enhanced Knowledge and Skills
- Enhanced Networks
- Increased Implementation Know-how
- Raised awareness

The exchange enhanced the knowledge and skills of the participants in designing and implementing sustainable public works programs. It raised awareness of some of the common issues and setbacks when implementing public works programs. The participants also improved their understanding of certain related topics, such as health insurance and wage setting. The knowledge exchange also enhanced the network of officials in the participating ECA countries, so they may continue to share experiences and overcome challenges in

implementing public works. By talking to other policymakers, the participants understood that their problems are not unique and that they can in fact learn from each other's successes and failures.

The videoconferences paved the way for more information sharing between World Bank experts and the participating officials. Upon request, Kalanidhi Subbarao sent out several reports on Public Works and Social Audits in India to the ECA officials. Similarly, Polly Jones, who is a principal Operations Officer at the World Bank, shared information about health and accident coverage in Argentina. The ECA participants understood that they have to be prepared for future crises and thus need to have the capacity to design and implement responsive and scalable employment programs. They also need

sufficient reserves to draw on in case of a crisis.

Overall, the discussions enhanced the debate about public works in the region, which is crucial for ECA because of its weak history of public works. Having a policymaker who had managed the Argentine program as a resource person was thus very beneficial. In addition, having one recipient country answer the questions posed by another recipient country was very effective because it gave the sense that all participants work together to overcome common challenges rather than receiving advice from outsiders.

#### LONG TERM IMPACT

A number of aspects of the event could be sustainable. For example, setting realistic objectives, design and targeting criteria as well as outcomes and monitoring came out very strongly and are

likely to lead policymakers to take particular account of these factors in the future. In addition, participants understood that public works can be used effectively as a counter-cyclical tool, another realization crucial for responding to future crises.

#### LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- Make sure the recipient countries feel that the advice is practical. The participation of an Argentine policymaker in this exchange achieved this result.
- Use extensive group discussions rather than prepared lectures. The format of the GDLN dedicated only 20

minutes to presentations; the remaining time focused on interactive discussions, which worked perfectly.

- Provide additional information after the exchange so learning can continue.
- Plan ahead and if possible schedule the exchanges at the beginning of the fiscal year. A key shortcoming of this exchange was that it took place very late in the fiscal year, which made scheduling additional events difficult.

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<sup>1</sup> Especially through the Technical Assistance on the Human Development Impacts of the Financial Crisis project. The objective of this work is to support ECA clients in responding to the crisis. The project includes monitoring and analyzing impacts on households (social assistance tracking, labor market monitoring), analysis of micro-simulations (in poverty, employment, education, and health consumption), policy responses with social safety nets and employment programs, and social sector public expenditures.

<sup>2</sup> To read the report, please go to: Powered by TCPDF (www.tcpdf.org)

## COMPREHENSIVE CLIMATE CHANGE PLANNING IN TANZANIA

Tanzania is highly vulnerable to climate shocks, and droughts, floods, and tropical storms are likely to become more intense and unpredictable as the earth warms. Current climate variability already inflicts significant economic hardship on Tanzania, which is largely dependent on agriculture. A devastating drought in 2005 and 2006 affected millions of people, particularly those who relied on subsistence crops for food and income, and resulted in high economic costs.

Tanzania is developing a National Climate Change Strategy to identify climate risks and provide a strategic framework for mitigating those risks. Using South-South Facility funding, the World Bank arranged for high-ranking government

officials and civil organization representatives to visit Namibia for a week of workshops and study tours. The Tanzanian delegates met with representatives from Mexico, South Africa, Namibia, and Zambia, who are recognized as global leaders

**Providing Country(ies):**  
Mexico, Namibia, South Africa, Zambia

**Recipient Country(ies):**  
Tanzania

**Topic(s):** Climate Change

**Funding Source:** South-South Facility

**Funding Amount:** US \$112,000

**Start Date:** June 24th, 2011

**End Date:** April 30th, 2012

in developing comprehensive, strategic action plans for addressing climate change.

“The Tanzanian representation here strongly acknowledges the need to revamp the climate change process in Tanzania,” said Dr. Bonaventure Baya, Director of the National Environmental Management Council. “We want to ensure there is new momentum in driving the process in Tanzania.”

The knowledge exchange improved consensus on how climate change challenges can be mainstreamed into national development planning. Some of the lessons were integrated into the finalization of the National Climate Change Strategy, which has involved stakeholders in the government, civil society organizations, and international development partners. Once finalized, the strategy will call

on sectors to develop climate change action plans, promote the development of an institutional framework, and set the stage for Tanzania to leverage climate finance resources to bridge the gap between climate risks to the economy and the cost of adaptation measures.

“We will need to look into the whole climate change management in Tanzania,” Dr. Baya said. “Stakeholder participation will bring in new ideas, and include non-state actors to reshape the whole procedure.”

### STRATEGIC CONTEXT

#### Capacity Building Goals:

- Effectiveness of Organizational Arrangements

Tanzania has become increasingly aware of its high vulnerability to climate change. In 2005, a devastating drought affected millions of people, particularly

those relying on subsistence crops for food and income, and resulted in economic losses of at least 1 percent of GDP. Tanzania’s vulnerability to climate shocks is expected to increase with the warming of the earth and as floods, tropical storms, and droughts become more intense and unpredictable. In a letter to the World Bank in 2011, Tanzania’s Ministry of Environment sought support to develop a comprehensive national climate change strategy, which would outline priority adaptation and mitigation measures as well as clear institutional responsibilities. The strategy should enable Tanzania to invest limited development funds to promote climate resilience. A recent study on the economics of climate change in Tanzania funded by the United Kingdom’s Department for International Development (DFID) reported that future climate change



Tanzania's vulnerability to climate shocks is expected to increase with climate change and as floods, tropical storms, and droughts become more intense and unpredictable.

impacts could result in an annual loss of over 2 percent of GDP by 2030. The same study also projected that Tanzania would need US\$500 million per year to adapt to current extreme weather events now—future adaptation could cost an additional US\$150 million annually.

Tanzania specifically requested the Bank to connect it with Mexico, a recognized global leader in developing comprehensive, strategic action plans for addressing climate change in a holistic manner. Mexico has developed a National Climate Change Strategy and a Special Climate Change Program, which describes emissions targets and priority adaptation actions for each sector. The country has also prepared climate change plans at the state level; these plans include detailed actions together with financing sources. Mexico's cross-cutting program aims to

reduce 50 percent of greenhouse gas emissions by 2050. With funding from the South-South Experience Exchange Facility, the World Bank underwrote Tanzanian government officials and other stakeholders' travel to Windhoek, Namibia for a Learning Week in Global Best Practices in Comprehensive Climate Change Planning. The Learning Week was intended to be a knowledge exchange between the Tanzanian delegation and peers from Mexico, South Africa, Zambia, and Namibia. The aim was for Tanzanian decision-makers and advocates to learn from successful approaches to climate change planning in different economic and regional contexts and apply these lessons to their own context.

#### DESCRIPTION

##### Exchange Instruments

- Communities of Practice
- Conferences
- Study Tour

More than 30 Tanzanian decision-makers, researchers, and civil society advocates traveled to Windhoek, Namibia in October 2011 for an international Learning Week on Global Best Practices in Comprehensive Climate Change Planning. The Learning Week was a precursor to the 17th round of international climate negotiations in Durban, South Africa in November 2011. The representatives from the government of Tanzania included members of the Division of Environment at the Vice President's Office, the Ministry of Natural Resources and Tourism, the Ministry of Agriculture, Food Security and Cooperatives, the Ministry of Livestock and Fisheries, and the National Environmental Management Council. The conference comprised plenary and interactive working group sessions, as well as a day and a half of field visits to observe best

practices in adaptation technologies in Namibia.

The plenary sessions focused on challenges for Tanzania, climate change strategy development, climate finance opportunities, building broad support for planning, and understanding distinct climate change issues in the agriculture, water, and energy sectors. Throughout the week, the Namibian, Mexican, South African, and Zambian representatives shared their countries' experiences with Tanzanian participants and discussed how to apply these lessons to Tanzania.

Participants also visited several projects near Windhoek that demonstrated good practices in climate change planning. The first was the Habitat Research and Development Centre in Windhoek, which works to develop and pilot sustainable

technologies in the housing sector. The delegates also visited two facilities that process wood from invasive bush plants into charcoal and wood fuel briquettes. This strategy creates a sustainable source of biomass energy from a waste product while improving natural habitat. The officials then traveled to the Cheetah Conservation Fund, a research and educational organization that works to conserve the wild cheetah population and promote alternative land-management practices.

Upon returning home, the Tanzanian delegates met to summarize the main takeaways from the exchange. They agreed on an action plan and decided to continue meeting to discuss progress on the national climate change strategy. Three weeks after the conference, the Vice President's Office of Environment circulated a report to

disseminate the lessons learned even more broadly.

## OUTCOMES

### Intermediate Capacity

#### Outcomes

- Enhanced Knowledge and Skills
- Improved Consensus and Teamwork
- Increased Implementation Know-how
- Strengthened Coalitions

The knowledge exchange improved the skills of officials from key agencies in mainstreaming climate change challenges into national development planning. The activities equipped them with the knowledge to develop effective policies and improve Tanzania's climate change resilience. Before the activities the knowledge and understanding of the different officials on the science, potential impacts, and planning processes

varied widely. Thus the exchange helped to raise their knowledge level; the Tanzanian delegates walked away with a common understanding of the challenges faced in their sectors. Many of the participants remarked that they would take the lessons on planning processes at the national and sector-specific level back to their ministries. All participants rated the content, organization, and facilitation of the preliminary sessions as either excellent or good. They also rated highly the selection of sites for the field visits.



The report disseminated by the Division of Environment at the Vice President's Office following the exchange reiterated the importance of climate change in Tanzania's development agenda. It also recommended that Tanzania should operationalize the existing National Climate Change Steering Committee (NCCSC) and National Climate Change Technical Committee (NCCTC), as well as review its 1997 Environment Policy.

The exchange highlighted the need to revisit the draft National

Climate Change Strategy to incorporate lessons learned and recommendations from the Learning Week; the Tanzanian delegates also emphasized this need in the action plan they wrote during the final days in Windhoek. Preparation of the Strategy continued in January 2012 with a meeting of all Learning Week participants at which they shared progress and collected input for improving the final strategy. Further stakeholder consultations occurred throughout 2012. The Strategy should be finalized in late 2012.

Bringing together diverse stakeholders with different viewpoints in a learning environment with experts from other countries have a highly positive impact on the national dialogue.

## LONG TERM IMPACT

Given that a large proportion of Tanzania's GDP is associated with climate sensitive activities, particularly agriculture, the Tanzania Country Assistance Strategy for FY12–FY15 emphasizes Tanzania's vulnerability to climate change and calls for Economic and Sector Work (ESW) on the issue. This ESW is under preparation and will focus on support to the Government of Tanzania to implement the priorities of the National Climate Change Strategy. The Bank is closely coordinating with DFID and the United Nations Development Programme (UNDP) on this support. With the Government of Tanzania committed to comprehensive climate change planning, sustained engagement by the Bank on capacity building and further mainstreaming of climate change in Bank operations in Tanzania should also lead to improved outcomes.

## LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- Stakeholder involvement needs to go beyond passive consultation and should involve stakeholders outside the government. In this case, the exchange benefited from the participation of civil society groups and development partners (including DFID and UNDP).
- Three-tier consultations—sectoral, regional, and national—worked well in this knowledge exchange.
- Bringing together diverse stakeholders with different viewpoints in a learning environment with experts from other countries have a highly positive impact on the national dialogue. Having international peers facilitate allowed for more constructive discussions focused on creative problem solving and brainstorming.

- This South-South exchange was held as Tanzania prepared a National Climate Change Strategy and was considering options for climate finance and institutional strengthening. As such, it was an opportune time for sharing knowledge and ideas across sectors and with civil society. Additionally, the commitment to stakeholder engagement that resulted was a considerable outcome for the planning and implementation of Tanzania's climate change strategy and related policies.

CHILE L PAPUA NEW GUINEA  
SOUTH-SOUTH KNOWLEDGE EXCHANGE

# STRENGTHENING NATURAL RESOURCE REVENUE MANAGEMENT AND LOWERING VOLATILITY IN PAPUA NEW GUINEA

To decrease the negative effects of economic volatility induced by fluctuations in commodity prices and to improve management of natural resource revenues, Papua New Guinea wanted to learn international best practices through exchanges with other developing countries.

The World Bank connected Papua New Guinea with Chile and Mongolia to learn how to implement policies and create governance institutions that would safeguard and manage windfall mineral resource savings, achieve long-term fiscal stability, and address acute social and infrastructural

needs. Using funding provided by the South-South Experience Exchange Facility, high ranking government officials from Papua New Guinea took part in an International Forum on Sovereign Wealth Funds in China, held videoconferences with Mongolia, and went on a study tour to Chile.

**Providing Country(ies):**  
Chile, Mongolia

**Recipient Country(ies):**  
Papua New Guinea

**Topic(s):** Energy and Mining, Finance

**Funding Source:** South-South Facility

**Funding Amount:** US \$80,000

**Start Date:** January 1st, 2011

**End Date:** April 30th, 2012

“A great deal came from the Chile visit, from the perspective of all the agencies involved,” said a Papua New Guinea Department of Treasury official. “Being able to physically meet with counterparts gave far more insights into how to develop the SWF, particularly the frameworks and governance structure, the operational rules, and it also provided a lot of help around the administrative process of the SWF.”

The exchange helped establish a broad coalition to implement the lessons learned into a constitutional amendment in Papua New Guinea to improve the country’s Sovereign Wealth Fund (SWF). The Chilean experience changed Papuan officials’ perspective on how to design the SWF. They gained insight on governance structure and operational rules and saw the advantage of limiting its mandates to

stabilization and development. The officials also learned how to manage mineral resource savings and stabilization funds, establish withdrawal rules consistent with longer-term fiscal sustainability, and ensure optimal returns while minimizing currency risks. Ultimately, this will lead to using natural resource revenues in Papua New Guinea to address social and infrastructure needs.

### STRATEGIC CONTEXT

#### Capacity Building Goals

- Efficiency of Policy Instruments

Papua New Guinea has rich natural resource deposits, including oil, gold, and copper; these are also the country’s main exports. The government’s macroeconomic management improved considerably during the 2004-2008 commodity boom, which helped the economy cope relatively well with

the subsequent global economic crisis. However, like other economies overly reliant on mineral resources, Papua New Guinea suffers from the negative effect of volatile commodity prices. In addition, senior policymakers lacked exposure to global best practices in managing mineral revenues, decreasing commodity-induced economic volatility, and maintaining aggregate fiscal discipline. The country’s windfall savings from mineral resource exports have not been well managed, with over 20 ineffective and insecure trust accounts. Those accounts are denominated in domestic currency—the kina—and have very low interest rates. The fact that commercial banks hold half of the accounts complicates sterilization efforts and leads to net fiscal losses for the government.

Meanwhile, Chile has implemented a controlled diversification of its economy, so

that it no longer relies solely on natural resources. Chile has also managed its mining revenues to decrease volatility, optimize earnings, increase fiscal stability, and distribute benefits to the general population. Using funding provided by the South-South Experience Exchange Facility, the World Bank connected policymakers, economic management agency staff, and think tanks and NGO representatives from Papua New Guinea to Chilean counterparts, and to officials from several other countries with experience managing windfall savings, to learn best practices in macroeconomic and institutional management of natural resource revenues.

### DESCRIPTION

#### Exchange Instruments

- Conferences
- Dialogues
- Study Tour

The knowledge exchange included videoconferences, a conference in China, and a study tour to Chile. In May 2011, senior Papua New Guinea government officials took part in the International Forum on Sovereign Wealth Funds (SWFs)[i] event in Beijing. The first session provided an overview of the recent macroeconomic and capital market developments relevant to investment and global asset allocation. It also presented information on policy implications for SWFs resulting from the challenging, post-financial-crisis environment. The second session discussed in more detail the long-term SWF investments and highlighted the problems of pro-cyclicality in investors’ behavior and extreme sensitivity to short-term volatility. The other sessions covered regulatory reforms and investment regimes from the perspectives of both investors and recipients. The

event allowed Papua New Guinea officials to hold out-of-session meetings with peers from other participating countries to learn about robust frameworks for managing significant natural resource revenues.

The exchange continued with a series of videoconferences with officials from the Department of Finance of Mongolia and Bank staff from the Ulaanbaatar office. Mongolia was in the midst of tackling the challenges that Papua New Guinea wanted to address.

“The discussion with the Mongolia authorities helped with the draft of the organic law, and around the governance structure, and investment strategies, most legal aspects of the Fund, said a Papua New Guinea Department of National Planning official. ”The points discussed in the video conferences were dissem-

inated through the Technical Working Group meetings. They were also useful in developing how draw-down of funds can be linked to development needs.”

In July 2011, 12 high-ranking Papua New Guinea officials traveled to Santiago de Chile for a week-long study tour. The visits featured an intensive program of

meetings with officials involved in the full range of issues around the Chilean SWF, including its development, political communications, and daily operations. The officials also participated in focused sessions to discuss the applicability of what they had learned to Papua New Guinea. An Australian government advisor to Papua New Guinea

devoted to the SWF work also joined the mission, ensuring that his advice and the lessons learned during the knowledge exchange complemented each other, broadening the advisor’s exposure and supporting ongoing internalization within government of Papua New Guinea.



The Chilean experience changed Papuan officials’ perspective on how to design a Sovereign Wealth Fund. They gained insight on governance structure and operational rules and saw the advantage of limiting its mandates to stabilization and governance.

To share lessons learned, the Papuan delegates gave presentations and disseminated briefs to their colleagues back home.

## OUTCOMES

### Intermediate Capacity

#### Outcomes

- Enhanced Knowledge and Skills
- Improved Consensus and Teamwork
- Know-how
- Raised awareness

The knowledge exchange supported government officials from Papua New Guinea in the development of an Organic Law—a constitutional amendment—for the country’s Sovereign Wealth Fund (SWF). Through personal exposure to other emerging economies’ experiences, key members of SWF’s Technical Working Group gained insights into developing such a fund and managing windfall savings. The

Papuan Parliament passed the main law, and has continued to develop the details of supporting legislation, regulations, and management arrangements.

During the visit to Chile, the Papuan delegates learned strategies that they later used to significantly improve the SWF’s robustness. The experience changed the Papuan officials’ perspective on how to design the SWF, limiting its mandates to stabilization and development, and in that way ensuring more focused work and greater transparency with limited politicization. They also learned best practices in establishing governance structure, operational rules, and administrative process.

The exchange ensured the establishment of a broader coalition to implement the lessons learned into the new

SWF framework. It also supported policy changes in institutional structures to safeguard and manage mineral resource savings and stabilization funds. Some of the measures implemented included establishing withdrawal rules consistent with longer-term fiscal sustainability, ensuring optimal returns while minimizing currency risks, and using natural resource revenues to address social and infrastructure needs, while building public support for a long-term sustainable SWF structure.

## LONG TERM IMPACT

The exchange enhanced the support provided by Papua New Guinea’s main development partner, the Government of Australia. The activities coincided with internal reviews of the Australian advisory program, leading Australia to consider a wider range of international experience to solve Papua New

Guinea's policy challenges. Given the significant resources provided by Australia, this change is likely to further improve Papua New Guinea's natural resource revenue management, while also ensuring the country will benefit from other South-South exchanges in different areas.

#### LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- Knowledge exchanges can have a greater impact if they are combined with other instruments. In this case, the exchange, combined with the policy analysis and support from the World Bank, the International Monetary Fund, and the Government of Australia, made a highly significant contribution to the Sovereign Wealth Fund.

- Knowledge exchanges are more successful if they can ensure high level government buy-in, as was the case in this exchange where the lessons learned fed into policy development.
- Knowledge exchanges offer a valuable tool for development partners to support policy-makers. Experts within the country know the formal and informal national institutions much better and are able to implement the lessons learned with a greater success than international experts who have knowledge of the issues, but not of the context.

[i] For more information about the International Forum of Sovereign Wealth Funds and its member countries visit <http://www.ifswf.org/index.htm>

## IMPROVING HEALTHCARE WASTE MANAGEMENT IN INDIA AND VIETNAM

Good healthcare waste management practices are difficult to implement, especially when countries lack the institutional framework and social attitudes to support them.

India has made progress in many areas, such as building institutional arrangements and public-private partnerships to improve healthcare waste management. However, India still needs to improve cost-efficiency and technology. Vietnam is in the early stages of moving away from dated unsanitary and environmentally detrimental practices in its effort to become a modern middle-income country. To expose high-ranking

healthcare officials from the two countries to best practices in operational management and policy implementation, World Bank staff connected India and Vietnam to Brazil. Having made significant progress in healthcare waste management as well as many other development issues, Brazil was eager to share its expertise. The knowledge exchange among the three partners aimed at improving policies and healthcare institutions and

**Providing Country(ies):**  
Brazil

**Recipient Country(ies):**  
India, Vietnam

**Topic(s):** Health and Other Social Services

**Funding Source:** Bank Budget

**Funding Amount:** US \$50,000

**Start Date:** April 1st, 2011

**End Date:** June 30th, 2011

enhancing the knowledge and skills among health officials in Vietnam and India.

“Healthcare waste management system in Brazil is comprehensive and clear on responsibilities,” said Dr. Nguyen Trong Khoa, Deputy Director of Medical Service at the Ministry of Health of Vietnam. “[We learned] very good mechanisms of public and private mix in charge of healthcare waste treatment.”

The exchange helped Indian officials feel confident in continuing with reforms. They also learned how to involve communities and deal with technological and cost-efficiency challenges. The Vietnamese delegates were able to learn from both Brazil and India. They acquired knowledge and skills in financing, building, and maintaining centralized healthcare waste management

facilities. This knowledge will help them to implement the World Bank-financed Vietnam Hospital Waste Management Support Project.

“Vietnam recognized the process was very difficult . . . [as it involved] not only technology, but also institutional arrangements and intersectoral agency cooperation,” said Ruma Tavorath, Senior Environment Specialist with the World Bank. “From Brazil, [India and Vietnam] learned how to create model facilities and how to get the community involved.”

### STRATEGIC CONTEXT

#### Capacity Building Goals

- Effectiveness of Organizational Arrangements

In many developing countries, healthcare waste management is a challenging issue as it crosscuts multiple sectors and stake-

holders. To build the rigorous institutional frameworks for implementation and monitoring, countries require policy reforms, technological innovations, capacity and awareness building, and behavioral changes. As part of becoming responsible middle-income countries, India and Vietnam have been interested in implementing good healthcare waste management practices. India has already made significant progress in the development, capacity building, and monitoring of healthcare waste management, relying on its 1998 policy, which was updated in 2011. However, India continues to face substantial challenges in implementation, communication to communities, and cost-efficiency. Meanwhile, Vietnam is at a very early stage of implementing responsive healthcare management projects. While the country’s 1,100 hospitals generate 350

tons of solid healthcare waste and 150,000 cubic meters of hospital waste water annually, Vietnam still relies on about 500 small-scale on-site incinerators to dispose of healthcare waste—a practice that India has banned since the 1980s.

Brazil has adapted a very efficient Health Care Waste Management System in its hospitals and wanted to share its experiences. Using funding provided by the World Bank Institute through a double South-South Knowledge exchange competition (one for South Asia and one for East Asia and the Pacific regions), the Bank connected Vietnam and India to Brazil. The ensuing knowledge exchange aimed at enhancing knowledge and skills among health and environmental management officials in Vietnam and India; establishing a network among institutions in the East Asia

and Pacific, South Asia, and Latin American and Caribbean regions; and improving policies, institutional arrangements, and technical approaches to hospital waste management in Vietnam and India. These efforts could have a wider impact to other countries in the regions.

### DESCRIPTION

#### Exchange Instruments

- Dialogues
- Study Tour

The main knowledge exchange instrument was a study tour (June 13-19, 2011) for core staff members of the state health departments of Vietnam and India to visit their Brazilian counterparts. The selected participants were part of World Bank-supported health projects in their countries and were all actively involved in implementation and monitoring of healthcare waste management.

A series of videoconferences though the Global Development Learning Network (GDLN) preceded the study tour. During these videoconferences the participants learned about waste management issues in the three countries and produced a plan for the subsequent knowledge exchange activities.

In the first days of the study tours, Brazil’s National Health Surveillance Agency (Agencia Nacional de Vigilancia Sanitaria – ANVISA) and the Brazilian Ministry of Education, which is in charge of university hospitals, provided the knowledge recipients with an overview of federal-level policies, legal frameworks, and institutions. Following the preparatory talks in Brasilia, the team visited the provinces of Parana and Rio Grande do Sul to observe first-hand provincial and facility-level implementation of health envi-



In many developing countries, healthcare waste management is a challenging issue as it crosses multiple sectors and stakeholders.

environment management policies. The knowledge recipients visited two university hospitals, Clinicas of Paraná State in Curitiba and Clinicas de Porto Alegre, and three private waste treatment facilities with different waste management technologies (autoclave, microwave).

The team saw firsthand how hazardous waste was collected and then stored in sealed containers. In Porto Alegre, for example, Aborgama Company is running a hazardous healthcare waste treatment facility with two autoclaves that have a

capacity of about 20 tons a day. In Curitiba, the delegates visited two treatment facilities: one uses a 13-ton-a-day autoclave and 5-ton incinerators, while the other has 6 microwave irradiations with a combined capacity of 6 tons a day. The delegates also met with representatives from environment management authorities, a private not-for-profit recycling facility, and a pre-school program using innovative practices to create environmental awareness.

A toolkit with the lessons learned is in the last stages of produc-

tion. A Bank-wide resource, the toolkit offers recommendations to any government on how to implement healthcare waste management. It will be disseminated to reach a wider range of stakeholders in the providing and recipient countries, as well as to other countries in the East Asia and Pacific, South Asia, and Latin American and Caribbean regions to support the replication of systematic healthcare waste management.

### OUTCOMES

#### Intermediate Capacity

#### Outcomes

- Enhanced Knowledge and Skills
- Enhanced Networks
- Improved Consensus and Teamwork
- Know-how
- Raised awareness

The participants became aware of procedures and processes that support streamlining healthcare waste management implementation and monitoring.

Following the exchange, the Indian officials felt confident that they could continue with their reforms. They also learned how to involve communities in the process by increasing awareness and instructing children on the issue from an early age. The Indian delegation also saw many technological improvements that they could implement and learned how to segregate waste upfront more efficiently to

reduce costs. India also plans to institutionalize public health standards and allocate government funds for healthcare waste management to continue the completed World Bank-financed projects in the country.

The Indian and Vietnamese participants learned how to reduce hazardous waste by training hospital staff in healthcare waste management. They also understood the importance of using effective interactive communication techniques, such as art shows, comedies, and quiz games to make the information about healthcare waste management more accessible. Thanks to such strategies, the Clinicas of Paraná State in Curitiba in Brazil, for example, has reduced waste by 65 percent and lowered costs significantly, while increasing safety for staff and patients. The Indian and Vietnamese delegates also learned the importance of

modernizing equipment, such as replacing thermometers and sphygmomanometers containing mercury with mercury-free devices, for better waste management and safety. They also understood the importance of segregating different healthcare waste correctly and storing hazardous waste in interim storage rooms.

The Vietnamese officials learned how to implement centralized microwave or autoclave waste treatment systems, disinfect waste, and use large-scale incinerators that meet environmental standards. They also understood how to involve the private sector in healthcare waste management, including public-private partnerships and signing contracts with hospitals for collection, transportation, and final disposal of waste. In addition, the Indian and Vietnamese delegations learned

a number of good practices, which they intend to implement, including

- Transportation of healthcare waste in hard plastic reusable containers, which is cost-effective and environmentally sound;
- Increased emphasis on educating children and communities on waste segregation and recycling;
- Institutional coherence between issues related to licensing of project, water use and effluent discharge, land use and environmental policies;
- Emphasis on sound environmental practices, such as sustainable use of water and energy. The delegates found the green exchange program launched by the Municipality of Curitiba, in which recyclable garbage is exchanged for food, particularly impressive.
- The Vietnamese officials

realized they have a long way to go and could use lessons learned from both Brazil and India. “The exchange was extremely beneficial for Vietnam,” said Ruma Tavorath, Senior Environment Specialist with the World Bank. “In Vietnam, commitment of high-ranking officials and establishment of dedicated teams for the management of hospital waste will greatly contribute to assigning a social value on clean environment, which represents a significant change in institutional attitudes.”

#### LONG TERM IMPACT

With regard to the sustainability of the knowledge exchange, Vietnam and India are applying the lessons learned in ongoing Bank programs such as the Rajasthan Health Systems Development Project and the Tamil Nadu

Health Systems Project in India and the newly initiated Vietnam Hospital Waste Management Support Project. These programs could have a cascading effect more broadly in South Asia and East Asia and Pacific regions.

These interventions will ultimately improve the environmental safeguards on infection control and waste management. However, achieving these environmental goals requires a well thought strategy and long time horizon for implementation as it also necessitates a change in social perceptions.

In Vietnam, a key practical lesson from the knowledge exchange that can have long-term impact is the feasibility of using non-burning technologies for waste treatment, especially in cooperation with the private sector. Vietnam will also participate in another knowledge exchange

with India to learn about centralized waste management and public-private partnership arrangements.

#### LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- Logical sequencing was a critical factor in the success of the knowledge exchange program. Participants first exchanged preliminary information and knowledge through the GDLN facility; then the in-country learning experience was further strengthened through the field visits.
- South-South exchanges are a great resource for development. However, exchanges could benefit from sector-wide matchmaking practices to find the right providers.

- South-South exchanges allow for knowledge sharing between countries that face similar social, legislative, and enforcement issues. The exchanges could be improved by being better structured so recipients receive the right kind of knowledge.

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<sup>1</sup> The autoclave process in waste management treatment subjects waste to high-pressurized water steam to sterilize it prior to disposal.

## STRENGTHENING PUBLIC FINANCIAL MANAGEMENT INSTITUTIONS AND BUDGETING IN ECUADOR

The Government of Ecuador was not equipped to manage and invest public funds to maximize the public good, especially during a time when Ecuador benefited from a global surge in resource prices.

To meet constitutional requirements mandating implementation of “performance-based, multi-year budgeting,” the Government of Ecuador reached out to the World Bank for assistance.

Using World Bank Institute (WBI) funding provided through a South-South knowledge exchange competition, 44 officials from the Ecuadorian Ministry of Economy and

Finance (MEF) participated in videoconferences and a workshop with various public finance experts in Uruguay, Brazil, Chile, and Mexico—all countries that had successfully implemented performance-based planning and budgeting.

The Ecuadorian participants saw international best practices in action. They learned about diverse budgeting and planning procedures and strategies

**Providing Country(ies):**  
Brazil, Chile, Mexico, Uruguay

**Recipient Country(ies):**  
Ecuador

**Topic(s):** Finance, Public Administration, Law and Justice

**Funding Source:** Bank Budget

**Funding Amount:** US \$40,000

**Start Date:** February 1st, 2011

**End Date:** June 30th, 2011

applied in different institutional settings and country conditions. The exchange helped Ecuador design a strategy and better align MEF units and other government agencies to begin implementing performance-based, multi-year budgeting.

“From the analysis of big ideas, which were necessary to jump-start the activities, the exchange [narrowed] to a more operational field, which ultimately turned out to be the burning issue,” said Jonas Frank, Senior Public Sector Specialist with the World Bank. “This government-to-government dialogue was more useful than using international consultants.”

### STRATEGIC CONTEXT

#### Capacity Building Goals

- Effectiveness of Organizational

Institutions in charge of public finance management in Ecuador

needed strengthening, which became particularly apparent as public resources increased after a global boom in resource prices. Ecuador’s Code for Planning and Budgeting—announced as part of constitutional reforms from 2008 to 2010—required the Government of Ecuador to implement demanding performance-based management, using multi-year budgeting and planning. Furthermore, this system needed to function at national and decentralized sub-national levels, and it also needed to connect between the levels.

Looking for guidance to implement these ambitious institutional goals, Ecuadorian officials contacted the World Bank. Ecuador’s Ministry of Economy and Finance (MEF) expressed interest in learning from the experiences of other countries that had implemented similar reforms. The World Bank

and Ecuadorian government worked together to identify provider countries Chile, Uruguay, Brazil, and Mexico, each of which had implemented multi-year, performance-based finance management systems using different institutional approaches.

With WBI funding provided through a South-South knowledge exchange competition, Bank staff organized videoconferences and a two-day workshop for 44 mid- and senior-level officials from Ecuador’s MEF to meet with various public finance experts in Uruguay, Brazil, Chile, and Mexico. The exchange aimed to demonstrate international best practices and various institutional arrangements for implementing performance-based budgeting, as well as to stimulate policy dialogue in different sectors of Ecuador’s government on these issues.

## DESCRIPTION

### Exchange Instruments

- Conferences
- Dialogues

In the first stage of the exchange, the World Bank held initial talks with the providing countries to brief them about Ecuador's situation and needs. The knowledge providers then took the time to prepare precise presentations about implementation processes, legal frameworks, and management challenges.

In May 2011, senior and mid-level Ministry of Economy and Finance (MEF) officials then participated in four videoconferences, one with each of the knowledge-providing countries. Officials from the ministries of finance and other institutions of Uruguay, Brazil, and Mexico, and representatives from the Catholic University of Chile, provided knowledge to 44 officials in the

Ecuadorian MEF<sup>1</sup>.

During these sessions, the supplier countries shared their experiences with multi-year, results-based budgeting and discussed how budgeting helped achieve sector, sub-national, and national goals. The discussions covered different tools and strategies, risks and challenges, as well as progress updates and outcomes.

In June 2011, the countries all participated in a two-day, face-to-face workshop in Quito. Ecuadorian policymakers first presented challenges in three areas: macro-fiscal situation, sector planning and budget management, and quality of services. The four knowledge-providing countries then gave presentations about how each had addressed these challenges. The participants discussed best practices, long-

term reforms and risks, dialogue within the government, and different institutional arrangements for implementation and performance management.

During both stages, World Bank staff guided the participants in identifying tools and procedures that Ecuador could apply in the short and long term. The participants were particularly eager to learn the immediate steps needed to facilitate implementation.

## OUTCOMES

### Intermediate Capacity Outcomes

- Increased Implementation
- Raised awareness

The Ecuadorian participants learned about different budgeting and planning procedures and strategies, applied in different institutional settings and country conditions. By demonstrating

how other countries had dealt with similar issues, the exchange helped Ecuador design a strategy and align MEF units, and other government agencies, to begin implementing performance-based, multi-year budgeting.

Realizing the importance of collaboration between MEF units in areas such as staffing and information sharing, the officials wanted to improve coordination

and information sharing among all departments. Following the exchange, MEF began rearranging responsibilities within its units, especially its Budget and Treasury units.

The MEF officials also learned that they needed to coordinate planning, design, and monitoring and evaluation (M&E) with the Ecuadorian office of planning (SENPLADES). Given the increase in public investment in

Ecuador, planning and prioritization within and between MEF and SENPLADES is important for Ecuador's development and growth. Coordination between SENPLADES and MEF will also improve statistical reporting, such as macroeconomic indicators<sup>2</sup>, in Ecuador.



The officials also realized that they needed to strengthen links between sub-national and national government. The MEF is establishing a unit to monitor sub-national finance—a very important step in a country where expenditures are increasingly decentralized.

The knowledge exchange also contributed to MEF officials' increased awareness of the risks of applying results-based budgeting and planning, particularly in a multi-level decentralized government. While realizing the appropriateness of implementing a performance-based financial management system, the Ecuadorians also learned about the complexity of such a system.<sup>3</sup> The Ecuadorian officials became aware of the dangers that could result if reforms were not completed or were implemented inconsistently—such as the development of inefficient bureaucra-

cies and leakage of funds—as well as solutions to these challenges. The Ecuadorians decided to proceed cautiously.

### LONG TERM IMPACT

This knowledge exchange aligned with other World Bank projects in Ecuador and fits into the country's development strategy. Because Ecuador's ambitious legal reforms will take several years to implement, the lessons learned from the exchange will be useful throughout the restructuring process until budgeting, planning, and sub-national governance are well coordinated.

The MEF is considering options for following up on the exchange, including regularly bringing experts from the supplier countries to Ecuador to provide technical assistance. The Ministry of Economy and Finance (MEF), including

Ecuador's Deputy Minister of Economy and Finance, has requested further World Bank support to focus on sub-national government planning and the fiscal framework.

### LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- For successful exchange implementation, invest considerable time and resources in the planning stage and tailor the program to country needs.
- Government-to-government knowledge exchanges—instead of an extensive use of consultants—can greatly enhance learning outcomes and credibility of advice.
- Giving participants a certificate as proof of successful completion of the program provides additional incentive.
- Exchange success often relies on the direct involvement and leadership of authorities

in the recipient entity. In this case, Ecuador's Deputy Minister of Economy and Finance took leadership in inviting the participants, signing the certificates, and providing the political impetus for the exchange.

- It is critical to conduct internal dialogue “horizontally,” which can be challenging in entities with a culture of vertical decision-making.
- Making good use of grant resources is important to help the exchange organizers respond to unforeseen circumstances in designing and implementing the exchange.



## PUBLIC PRIVATE PARTNERSHIPS IN IRRIGATION

The Government of Ghana has made private investment in infrastructure and services through Public Private Partnerships (PPPs) a development priority. This commitment is in response to a major infrastructure deficit, a narrow fiscal space, and a legacy of inefficient public service delivery.

Improved infrastructure services are critical to economic growth. Ghana will draw on the private sector for new sources of capital and more effective service delivery mechanisms. One area needing reform is agricultural services, which includes irrigation. A World Bank technical team supporting the government in agribusiness and PPP development facilitated

a knowledge exchange between Ghana and Brazil. Financed by the South-South Experience Exchange Facility, the exchange centered on extracting lessons from Brazil's recent experience with PPPs, in particular the Pontal Irrigation Scheme. The exchange took place between July and September 2011 and included a week-long study tour to Brazil.

**Providing Country(ies):**

Brazil

**Recipient Country(ies):**

Ghana

**Topic(s):** Water, Sanitation and Flood Protection

**Funding Source:** South-South Facility

**Funding Amount:** US \$101,270

**Start Date:** May 1st, 2011

**End Date:** June 30th, 2012

The knowledge exchange helped the Ghanaian participants expand their knowledge of Public Private Partnerships (PPPs). They learned how to handle risks, negotiate contracts, and build up the pertinent government institutions. They understood that political will is paramount to the success of PPPs, especially in the institutional building stage. The delegates also learned how to enact provisions to make the projects more attractive and marketable. They learned several important lessons from Brazil's Pontal irrigation project that are directly applicable to the Accra Plains Scheme. These include the need for a strong water sector regulator, handling risk allocation in the project design, and connecting irrigation to commercial agriculture and infrastructure development. The lessons learned during the knowledge exchange also in-

formed the design of two World Bank projects financed through the International Development Association (IDA): the Ghana Public Private Partnership Project and the Component 2 of the Commercial Agriculture Development Project, which focuses on establishing PPPs.

### STRATEGIC CONTEXT

#### Capacity Building Goals

- Effectiveness of Organizational Arrangements

Despite rapid economic growth driven by exponentially increasing oil production revenues, Ghana remains fundamentally dependent on agriculture, with about one-third of the economy reliant on the sector. Moreover, agriculture there is largely a small-holder activity and at the mercy of the weather. Large areas are under-utilized but could become very fertile. The government's agenda to modern-

ize agriculture includes attracting commercial investment in production, agribusiness, and ancillary activities. In addition to improving the overall investment climate, the government was looking into more direct mechanisms for supporting sound investors. Ghana has recently formulated a National Policy on Public-Private Partnerships (PPPs) to catalyze private sector investment and spur job creation, improvements in infrastructure, and economic growth. Although the government is especially interested in large-scale irrigation, it is also keen to avoid enclave developments and to support small-holder participation as much as possible. The Ministry of Food and Agriculture (MoFA) and the Ministry of Finance and Economic Planning (MoFEP) had identified the Accra Plains Irrigation Project as the initial PPP transaction in the agribusiness sector, building



on previous investments and feasibility design work. The government also aims to convert its irrigation authority from an implementer to a regulator.

Brazil once faced a similar economic situation to Ghana's, but through innovation and reforms it has achieved significant growth in the agricultural sector. Thus Ghana was interested to learn how the Brazilian Government

incorporated key private and public stakeholders in setting the priorities of the transaction process to develop its agriculture. Using funding provided through the South-South Experience Exchange Facility, World Bank staff connected the two countries so Ghanaian officials could learn how to implement PPPs in large-scale irrigation. The Ghanaians wanted to learn how to identify existing capacity gaps, clarify

roles, and inform the technical design, development timeline, and transaction structuring of the Accra Plains Irrigation Project. In addition, the World Bank is assisting Ghana in developing a PPP Investment Project<sup>ii</sup> and a Commercial Agriculture Project,<sup>iii</sup> in which PPPs in agribusiness are a central component.

## DESCRIPTION

### Exchange Instruments

- Conferences
- Dialogues
- Study Tour

Three components of the Knowledge Exchange contributed to a robust sharing of experiences. The participants started with brainstorming and pre-trip videoconferences. These were held in May 2011 and enabled participants to discuss Brazil's irrigation projects, outline the trip's objectives and agenda, and define key areas of interest to target for the Ghanaian delegation. The officials assembled a trip briefing book, which contained a background summary of Brazil's experience to-date with irrigation PPPs, including Brazil's PPP Law of 2004, the Pontal Irrigation PPP draft concession contract, and a report on irrigated agriculture in the Brazilian semi-arid region.

In June 2011, the Ghanaian officials went on a week-long study tour to Brazil where they gained first-hand knowledge from Brazilian peers on their experience developing PPPs in irrigation. The delegation met with key government officials in Brasilia and then conducted a field visit to the Pontal and Nilo Coehlo irrigation schemes in the State of Pernambuco. A final wrap-up meeting took place at the end of the study tour for participants to reflect on the experience and discuss lessons learned.

Upon returning home, the delegation held several briefings to share its study tour experience. A PPP specialist hired as part of the exchange also ran PPP clinics at these dissemination events. The activities were meant to reach a large group of stakeholders in several ministries, such as the Ministry of Food and Agri-

culture, the Ministry of Trade and Industry, and the Ministry of Finance and Economic Planning, as well as the Ghana Irrigation Development Authority, the Environment Protection Agency, the Lands Commission, and the Savannah Accelerated Development Authority. All events allowed opportunity for feedback, discussion, and clarification of the issues and their relevance to the Ghanaian situation.

## OUTCOMES

### Intermediate Capacity

#### Outcomes

- Enhanced Knowledge and Skills
- Enhanced Networks
- Increased Implementation

The Ghanaian participants enhanced their knowledge of how to develop PPP transactions in irrigation, how to identify and mitigate the safeguards and

commercial risks, and how to shape the role of the government around the core responsibilities necessary to implement successful PPPs. They understood the important role of asset exploration and began to analyze the technical characteristics of the land. The participants also drew guidance from Brazil's experience on designing PPPs in irrigation, which they will use in the Accra Plains project. They learned that they needed to consider parallel infrastructure projects: not just for irrigation, but also for telecommunications, electricity, and roads. One of the most significant realizations concerned the time scale to get a project to market. The Ghanaians applied what they'd learned to finalize the Terms of Reference for the PPP Pre-Feasibility Analysis for the Accra Plains Irrigation Project. The Ghanaian government arrived at a greater understanding of key

policy and more clarity on the roles of different institutions. Discussions during the dissemination workshops also indicated improved understanding of the transaction procedures necessary to make projects more attractive and marketable.

The Knowledge Exchange resulted in several important concrete lessons for the design of the Accra Plains Irrigation Project:

- Develop a strong sector regulator. Brazil regulates water tariffs through its National Water Agency (ANA). ANA is also responsible for much of the monitoring and evaluation of water quality and contract performance over Pontal. Thus the Ghanaian delegates understood they must also establish a water sector regulator responsible for setting tariff levels.
- Allocate risk carefully in con-

tract design. One aspect that had initially deterred many private firms from bidding for the Pontal scheme was the perception of excessive risk burden on the private sector operator. Ghana learned that it needs to be careful not to overburden the private sector with commercial risk. This situation can be mitigated by using availability payments for services provided.

- Consider whether to separate irrigation provision from commercial agriculture development. At the end of the procurement process for Pontal, the government of Brazil received feedback from investors that given the particulars of the scheme they preferred to separate the responsibility for commercial agriculture development from irrigation service. The issue pertains to Ghana, too. The government understood

it needs to consider carefully, based on dialogue with potential investors, whether to seek an irrigation service provider while simultaneously pursuing commercial agriculture developers.

- Provide strong political leadership from the top. Learning from Brazil's experience, Ghana saw first-hand the need to have strong political commitment to PPP development at the highest levels of public office. In addition, central and line ministries must have strong political support in order to effectively move the PPP transaction forward.

### LONG TERM IMPACT

The grant-supported activities fell directly in line with two International Development Association (IDA) projects that were under preparation at the same time. Component 2 of the

Commercial Agriculture Project (P114264) is focused on building PPPs in the agribusiness sector and encompasses investment in the Accra Plains Irrigation Project. The project has identified 15,000 hectares for a substantial irrigation investment to be managed by a PPP to supply water to both large commercial farms and an outgrower scheme. Similarly, the proposed Ghana PPP Project (P125595) will make resources available to support PPPs in all key sectors as well as finance select PPP projects. This work builds on technical assistance work provided to the government over the last two years to assist in their planning and development of the PPP Program.

### LESSONS FOR EFFECTIVE KNOWLEDGE EXCHANGE

- Make sure to prepare relevant materials for participants prior to the study tours.

- Tailor knowledge exchanges to specific concerns of participants.
- If possible, include follow-up events. In this case, the follow-up events ensured that participants fully internalized the experiences while presenting the lessons learned to ministers and officials.
- It is helpful to have an expert consultant as an independent resource person. Participants can get technical support while completing the activities of the knowledge exchange.



Through their understanding of Brazil's experience, Ghanaian participants enhanced their knowledge of how to develop public-private partnerships in irrigation, how to identify and mitigate the safeguards and commercial risks, and how to shape the role of the government around the core responsibilities necessary to implement successful partnerships.

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<sup>i</sup> The government has established a Project Advisory Unit (PAU) within MOFEP to guide PPP transactions from development to commercial closure.

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<sup>ii</sup> The objective of this \$19 million Adaptable Program Lending (APL) project is to improve the legislative, institutional, financial, fiduciary, and technical framework for PPP projects. Leveraging greater volumes of private sector investment in infrastructure provision is a critical Program end-objective. The two-phased APL is designed to promote the creation of a sustainable and cost-effective PPP market in Ghana.

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<sup>iii</sup> The project's development objective is increased access to land, private sector finance, and input- and output-markets by smallholder farms from PPPs in commercial agriculture in the Accra Plains and the Savannah Accelerated Development Authority (SADA) zone.

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