

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC2203

Project Name	AR Vega Flood Prevention and Drainage Project (P145686)
Region	LATIN AMERICA AND CARIBBEAN
Country	Argentina
Sector(s)	Flood protection (100%)
Theme(s)	Water resource management (100%)
Lending Instrument	Investment Project Financing
Project ID	P145686
Borrower(s)	City of Buenos Aires
Implementing Agency	Ministry of Finance, City of Buenos Aires
Environmental Category	A-Full Assessment
Date PID Prepared/ Updated	11-Nov-2013
Date PID Approved/ Disclosed	29-Jan-2014
Estimated Date of Appraisal Completion	13-Mar-2014
Estimated Date of Board Approval	30-Oct-2014
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

Flooding is a major natural hazard in Argentina that poses a developmental challenge with large socio-economic impacts. According to Swiss-Re, a leading wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer, Argentina is amongst the top 10 emerging economies with the highest flood hazard exposure, with potential losses in excess of US\$3 billion a year. The Autonomous City of Buenos Aires (CABA for its initials in Spanish) is one of the busiest cities in Latin America and the political, financial, commercial, and cultural center of Argentina. Considering that CABA represents approximately 24 percent of Argentina's economy and is home to 8 percent of the national population, the recurrent flooding in the City has a negative impact on the livelihood of its 3 million inhabitants and the overall national economy. The services sector accounts for over 75 percent of the City's economy. Manufacturing (meat, dairy, grains, tobacco, wool, and leather products) is also prominent with most activities taking place in the greater Buenos Aires Metropolitan Area. To the west of the City is the Pampa Húmeda, one of Argentina's most productive agricultural regions for crops such as wheat, soybeans, corn and also

livestock. The La Plata River connects Buenos Aires to north-eastern Argentina, Brazil, Uruguay and Paraguay, and its port (located in the center of the City) serves as the distribution hub for a large portion of the south-eastern region of the continent. Therefore a reliable connection between the greater metropolitan area and the City's center is essential to maintain and increase productivity and competitiveness.

Intense rainfall, exceptionally high tides from the south east in the La Plata River (Sudestada), and shallow water tables are the main causes of flooding in Buenos Aires. Numerous creeks and small ponds used to flow into the La Plata River from the flatlands of the delta of the Paraná-La Plata river system. Nowadays the majority of watercourses flow under the City's streets and buildings and the natural drainage network has been completely modified as a result of expanding urbanization. Consequently the soil's absorption capacity has diminished (only one tenth of the City is open, green space) and storm water run-off has dramatically increased. The existing urban drainage system is under-designed and needs to be upgraded to increase its capacity to evacuate large amounts of rainfall from the City's streets.

Severe rainfall events, driven by increased climate variability and possibly climate change, have become more frequent and destructive in recent years. As recently as April 2013, CABA experienced one of the heaviest storms recorded in nearly 50 years in which 350,000 people were directly affected and damages and losses amounted to US\$300 million (fiscal expenditure in government subsidies for flood relief to date is US\$40 million); key transportation routes were submerged and mass-transit systems like the Buenos Aires metro and railway systems were disabled. Power outages lasted for as long as 15 hours in at least 11 neighborhoods, and up to several days in a few others. Despite having the same level of probability for intense rainfalls as in other regions, CABA is more vulnerable to flood hazard than the rest of the country since the value of its at-risk social and economic assets is considerable.

Although floods are a common occurrence, private flood insurance and other risk financial protection instruments are not available in Argentina. Direct public expenditures and subsidies in flood relief represent a significant and potentially ever increasing fiscal burden for the City. A new fiscal strategy is necessary to offset the rising private and public costs of floods which are covered mostly by the fiscal budget. Otherwise this scenario might become unsustainable in the near future.

Sectoral and Institutional Context

The CABA Government, with the support of the World Bank, prepared a Strategic Master Plan (SMP) in 2004 to improve the level of protection and reduce economic and social losses caused by flooding (i.e. Plan Director de Ordenamiento Hidráulico). The SMP defines the guidelines for the City to manage flood hazards. This plan will require additional time and significant efforts to be fully operational and yield results. The SMP outlines a comprehensive flood risk management plan and identifies a set of priority structural and non-structural measures that will provide sustainable flood management up to a certain safety level. The SMP encompasses a thorough analysis of the institutional framework, actions on communication and education, and a schedule to implement control and mitigation measures and to further develop a sectorial management system. The strategy aims at shifting from a purely reactive disaster response scheme to an integrated risk management approach.

The City started the implementation of the SMP under the Bank's Urban Flood Prevention and Drainage Project APL1 (AR-7289) which financed a new drainage system. The new system resulted

in a three-fold increase in drainage capacity within the Maldonado Stream Basin and directly benefited around 1 million people by reducing exposure to flood hazard. The Project also enhanced the City's capacity to analyze flood hazard, to plan and design future drainage systems, and to better respond to emergencies.

Relationship to CAS

There is currently a pressing need for the Government to respond to flood hazard, particularly after the April 2013 floods; the frequency of flood damage has increased over the past few years, and it is likely to keep increasing as a result of further exposure and vulnerability. The proposed Project has been prioritized by the National Government and is included in the list of projects that can access external financing from the Bank in the forthcoming Country Partnership Strategy (CPS). The City Government is strongly committed and has expressed its desire to initiate Project implementation in the shortest possible time. As a sub-national entity, it will borrow directly from the Bank with a sovereign guarantee from the Federal Government. This Project builds on lessons learned from a long standing partnership between Argentina and the Bank in cross-cutting policy for flood risk management since 1992. Over the past 21 years, the Bank has been involved in the financing of 6 projects exceeding US\$1 billion in 11 of the 23 provinces and the City of Buenos Aires and benefited about 6 million people.

Implementation of the Project satisfies two of the nine strategic result areas identified in the draft CPS FY 2013-2016, currently under preparation: (i) Enhanced Urban and Rural Development: The project will support flood hazard reduction measures in the City of Buenos Aires by increasing the safety of people living in flood-prone areas and reducing associated economic losses especially for the vulnerable population who are often at a higher risk due to precarious living conditions; and (ii) Climate Change Adaptation and Improved Climate Resilience: The development of an integrated flood risk management strategy will improve the city of Buenos Aires's response to the effects of hydro-meteorological and climate hazards.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

Proposed Development Objective: The PDO is to increase the resilience of the City of Buenos Aires to flooding, particularly in the Maldonado Vega and Cildáñez watersheds.

Key Results (From PCN)

Possible PDO/outcome indicators could be the following: (i) A cross-sector Steering Committee in charge of implementing the Strategic Master Plan for flood risk management has been formally set up and is operational (i.e. has a strategy, organization, protocols, agenda, budget, authority/responsibilities); (ii) the rate of accurate and successful rainstorm and flood warnings produced, received, adequately understood by the population and followed by response teams has increased, compared to 2012 (as assessed by technical audits); and (iii) the area protected from flood risk in the Maldonado, Vega and Cildáñez watersheds has increased for rainstorm events of up to an intensity of approximately 100 to 140 mm/h (i.e. equivalent to $Tr \approx 10$ years).

Intermediate outcome indicators could include: (i) A probabilistic risk model for flood hazard has been developed; (ii) Risk financial protection instruments (i.e. residential and commerce insurance and, other transfer instruments) have been developed and made available to owners through insurance and re-insurance companies; (iii) number of people participating in flood risk social communication and education programs; (iv) evidence of BOD (Biological Oxygen Demand)

reduction after the restoration of the Soldati Lake in Cildañez and its surroundings (v) number of kilometers of tunnel and secondary networks constructed; and (vi) drainage capacity has increased. The complete Project Results Framework will be finalized by Appraisal.

III. Preliminary Description

Concept Description

The proposed Project has a total cost of US\$260 million (US\$138 million IBRD plus co-financing for USD\$122 million from the City of Buenos Aires). The Project would support the City of Buenos Aires's plans to reduce flood hazard and will build upon the activities conducted under the Urban Flood Prevention and Drainage Project APL1, lessons learned, best practices, and experiences obtained from its implementation, as well as from activities in other countries. The proposed project will have three components:

Component 1: Institutional Development for Flood Risk Management (approximately US\$25 million): This component will support the creation of a modern and sustainable framework for flood risk management within the City of Buenos Aires based on a permanent inter-institutional organization that goes beyond the life of the Project. Component 1 will finance systems, equipment, the development of risk models, policies and strategies, and capacity building amongst other goods and services.

Component 2: Flood Mitigation Infrastructure (approximately US\$225 million): This component will finance works for up to approximately US\$220 million and includes the specialized independent supervision of works. The design storm for all works will be the 10 year flood recurrence. Component 2 will finance the following in three of the City's drainage basins:

- Maldonado Stream Basin: Around forty kilometers of secondary and tertiary drainage conduits which will feed water into the large drainage tunnels built under the previous Bank loan;
- Vega Stream Basin: The current drainage system in the Vega basin dates back to the 1930s and 1940s and is comprised of one main underground collector (emissary) and a network of secondary drainage collectors. Component 2 will finance the construction of one large drainage tunnel with an estimated length of 8.4 kilometers, which will act as a second emissary for the Vega stream, doubling the capacity of the existing one. Component 2 will also finance 10.5 kilometers of secondary and tertiary networks;
- Cildañez Stream Basin: The intervention in this basin will include (i) improvements to the existing conduits to increase the drainage capacity in the lower lands of Cildañez to reduce the likelihood of flooding; (ii) the environmental recovery of Lake Soldati by collecting and diverting both sewage and storm run-off currently discharging into the lake, and (iii) the use of this lake as a flood retention pond to delay flows towards the Riachuelo River.

Component 3: Project Management (approximately US\$10 million): Component 3 finances Project audits, monitoring, evaluation, and an impact evaluation based on baseline and post-project surveys, capacity building and training, and other operating costs.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04		x	

Forests OP/BP 4.36		x	
Pest Management OP 4.09		x	
Physical Cultural Resources OP/BP 4.11	x		
Indigenous Peoples OP/BP 4.10		x	
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50	x		
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	260.00	Total Bank Financing:	138.00
Financing Gap:	0.00		
Financing Source			Amount
Borrower			122.00
International Bank for Reconstruction and Development			138.00
Total			260.00

VI. Contact point

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