I. STRATEGIC CONTEXT

A. Country Context

1. **With a gross domestic product (GDP) of US$614 billion, Argentina was the third-largest economy in Latin America in 2022.** The country has 2.8 million square kilometers, and its population of about 45 million inhabitants is highly urbanized, with 92 percent living in cities. The Buenos Aires Metropolitan Area alone constitutes 33 percent of the national population and generates more than 40 percent of Argentina's GDP. Argentina is a federal state. Hence, its 23 provinces and the Autonomous City of Buenos Aires preserve their autonomy under the national government.

2. **The middle class has historically been large and strong, with social indicators generally above the regional average; however, persistent social inequalities, economic volatility, and underinvestment have limited the country's development.** The rate of urban poverty reached 39.2 percent in the second semester of 2022, and 8.1 percent of Argentines live in extreme poverty. Childhood poverty, for those under 15 years old, is at 50.9 percent. The high frequency of economic crises in recent decades—the economy has been in recession during 21 of the past 50 years—has resulted in an average annual growth rate of 1.8 percent, well below the world average of 3.6 percent and the region average of 3.2 percent. Decades of underinvestment have led to sizeable gaps in capital stock relative to comparable countries, although capital spending as a percentage of GDP has improved in recent years. Such volatile macroeconomic environment has hindered the country's ability to reduce poverty rates and infrastructure deficit and increase incomes.

3. **The economy recovered from the Coronavirus Disease (COVID) crisis at a fast pace, reaching pre-pandemic activity levels by mid-2021.** Argentina's economy grew by 10.4 percent in 2021 and 5.2 percent in 2022, the largest increase in GDP since the 2010-2011 biennium, after the global financial crisis. Higher commodity prices and trading partners' growth, notably Brazil's, combined with public investment led to a robust growth recovery in 2021 and the beginning of 2022. However, since 2022 increasing macro imbalances and a more turbulent global context, started to slow down the pace of GDP growth. The Government of Argentina has concluded the process of restructuring its debt in foreign currency (both local and external) with private creditors, significantly improving the maturity profile for the next five to eight years.

4. **Climate change poses additional threats to Argentina's recovery and exacerbates existing climate vulnerabilities.** Average annual temperatures are expected to increase – 1.5°C by mid-century – together with country-wide annual average precipitation and high variability. As the climate changes, weather-related disasters, such as floods, droughts, and heat waves, are likely to increase in frequency and intensity,[1] posing additional threats to vulnerable populations, reducing their ability to address them, and impacting the government's capacity to deliver public services. Climate change will particularly affect the Argentinian energy sector and its climate resilience, as higher temperatures and extreme weather events will impact power generation, especially clean energy sources such as hydro, solar and wind.[2] Higher demand resulting from economic growth, industrial expansion, urbanization, and population growth will also challenge existing power supply systems. Extreme temperatures and weather events will add further complexities due to an overload of demand and could lead to service disruptions and failures to satisfy the energy demand of the most vulnerable populations. Key investments in both energy efficiency and supply for lower income households and communities will need to be scaled up to reduce and satisfy the growing demand and Argentina's development needs.

[1] The World Bank Group, Climate Risk Profile: Argentina, 2021.
[2] The World Bank Group; OLADE, *Evaluación del Impacto del Cambio Climático en la Generación Eléctrica en los Países del Cono Sur*, 2022.

5. **In March 2022, Argentine authorities reached an agreement with the IMF, on an Extended Fund Facility (EFF) program for a period of 30 months and an amount of US$45 billion, to address the economy's macroeconomic imbalances and set the basis for sustainable growth.** This amount covers the remaining obligations under the 2018 SBA (US$40.5 billion) and provided a small net financing support for reserves accumulation (US$4.5 billion). The program sets a gradual fiscal consolidation path toward a zero primary deficit in 2025 (from 3 percent in 2021 to 2.5 percent of GDP in 2022, 1.9 percent in 2023, and 0.9 percent in 2024), a reduction of monetary financing of the deficit (eliminated by 2024), and the framework for monetary policy involving positive real interest rates, as part of a strategy to fight inflation. A staff-level agreement on the fourth review under Argentina's 30-month EFF arrangement was approved by the IMF Executive Board in March 2023, granting Argentina access to about US$5.3 billion (SDR 4.0 billion).

6. **Despite meeting all the performance criteria under the IMF EFF by end-2022, Argentina's macro-fiscal situation remains challenging.** According to the IMF statement, prudent macroeconomic management in the second half of 2022 supported stability and helped secure program targets through end-2022 with some margin. Nevertheless, capital controls and deficit monetization continue to cause a large gap between the official and parallel exchange rates and limit foreign reserve accumulation. Inflation accelerated to historically high levels (102 percent year-over-year, as of February 2023), denting purchasing power. While fiscal targets have been met so far, a still sizable fiscal deficit continues to pressure monetary policy, given limited access to capital markets. A severe drought is expected to strongly affect agricultural production in 2023, reducing exports and fiscal revenues while limiting the capacity of the Central Bank to accumulate international reserves.

7. **In this context, the government is increasing efforts towards a gradual macroeconomic stabilization program that contains a broad set of economic policies.** To reduce the monetary financing of the fiscal deficit and the associated persistent and high inflation, the government has adopted measures to reduce the cost of subsidies and improve their targeting, especially in the costly energy sector. In addition, it is taking steps to improve the ability of the customs administration to supervise and control the over invoicing of trade and other related distortions. In addition to addressing the urgent need for reserve accumulation, these measures should help pave the way for the eventual easing of foreign exchange controls.

B. Sectoral and Institutional Context

8. **Argentina faces critical water security challenges. Water demand is increasing while availability is affected by climate change and increased climate variability.** This affects safe water provision, and reliable flows needed for agriculture, industry, and hydropower. The World Bank conducted an extensive water security diagnostic (*Argentina Water Security: Valuing Water - Brief for Policy Makers*, 2021) presenting the main water security gaps in the country and estimating that current economic costs derived from key water security gaps are around 2.2 percent of the country's GDP (US$11.8 billion a year).[3] Additionally, Argentina's Country Climate and Development Report published

[3] World Bank (2021). *Argentina: Valuing Water.* World Bank, Washington, DC.

by the Bank indicates how the country's macroeconomic volatility has created challenges for investments in climate change adaptation and mitigation (Box 1.)

Box 1. Argentina's Country Climate and Development Report

The CCDR published by the Bank describes how Argentina's macroeconomic volatility has hampered long-term economic growth and created challenges for investments in climate change adaptation and mitigation. Rising poverty levels have increased the population's vulnerability to climate shocks, as they tend to have limited capacity to cope with losses. Building resilience to climate shocks not only would lead to more inclusive and sustainable growth, but it would also accelerate the country's transition to a low-carbon economy.

According to the CCDR, climate change impacts will change the country's hydrology; working toward water security and resilience is identified as a priority. Investing in flood risk reduction will have macroeconomic impacts and urban flood mitigation infrastructure will reduce asset and welfare losses. The benefit-cost ratios of the interventions (in the range from 1.4 for flood mitigation, to 4.0 for hydrometeorological infrastructure) could be increased by lowering costs through the implementation of nature-based solutions. Green infrastructure, which also helps reduce GHG emissions. Similarly, more effective use of planning and land-use management tools can also help reduce exposure to floods. By developing land-use plans that incorporate climate change considerations, especially related to flood risk and strengthening local government's capacity to adapt their legal frameworks to facilitate land management enforcement, Argentina could promote sustainable and climate-proof spatial development.

9. **The increased cases and risks of flash or surface flooding, heatwave events, and intense climate extremes bear evidence of the rising impacts of climate change.** Furthermore, climate change tends to strengthen the anomalies caused by El Niño and La Niña.[4] Future climate projections presented in the latest United Nations Intergovernmental Panel on Climate Change report suggest that these stronger anomalies will result in an even higher risk of climate change-exacerbated events.

10. **As one of the early signatories of the Paris Climate Agreement, Argentina has adopted Nationally Determined Contributions (NDCs).** The latest NDCs for Argentina were submitted in December 2020 and updated in October 2021. The updated NDCs frame Argentina's key priorities on adaptation measures to contribute to sustainable development and remain fully committed to achieve the goals set out during the Paris Agreement (2016). The key priorities on adaptation focus on (i) measures prioritizing vulnerable communities and social groups, and (ii) measures incorporating a gender and intergenerational equity-based approach.[3] The NDCs highlight how economic recovery needs to consider policies contributing to decoupling emissions from economic growth and building economies and societies that are more resilient and less vulnerable to the observed and anticipated impacts of climate change. This is, considering how climate change effects may push many into poverty over the next 15 years (especially the most vulnerable).

11. **Flooding is a major natural hazard in Argentina and risks are increasing as a result of climate change. Floods pose a significant developmental challenge with large environmental and socio-economic impacts. Reduced exposure and vulnerability of urban areas to floods can greatly benefit assets and well-being, bringing macroeconomic stability, which is pivotal for economic growth**. In Argentina, 60 percent of disasters resulting from natural hazards are floods, and floods resulted in 95 percent of economic losses caused by extreme natural events. This reached up to US$22.5 billion of economic losses since 1980 for the populations living in the areas affected. According to the Water Security Diagnostic for Argentina, about 28 percent of Argentina's population is exposed to

[4] According to the World Meteorological Organization the la Niña phase initiated in September 2020, resulting in reduced precipitation and hydric stress in large parts of the country.

flooding, with a probability of recurring once every 100 years. One of the most affected areas is the basin of the La Plata River where about 70 percent of the Argentine population lives.[5] This region has the highest rainfall in the country, and combined with the high ground-water tables, the riverine areas are recurrently exposed to flooding. Climate change adds further stress to the existing infrastructure, and without proper planning and investments in risk management, floods will have a larger impact on residents and the economy.

12. **Prevailing gender inequalities and norms in Latin America influence how women and men are affected by, prepare for, respond to, and recover from water-related disasters.** For example, during droughts, women and girls pay more for water and spend more time collecting water. In times of water scarcity, it is more difficult for families to maintain proper hygiene, including menstrual hygiene – hence, women are affected more adversely, both individually and as caretakers. During floods, women have less access to emergency shelters than men; enjoy less mobility as they often tend to children and the elderly when disaster hits; and are more vulnerable to gender-based violence which often increases in disaster situations. It is not unusual for women to be less equipped than men to respond to disasters; they often have less access to disaster preparedness information and early warnings; less savings and assets to cope with disaster-related economic losses; and are less likely to have disaster insurance to pay for damages.[6]A study conducted in the City Buenos Aires observed that floods affected women's and men's daily routines differently. A higher percentage of women, compared to men, were unable to carry out activities outside the household, such as studying (70 percent of women in comparison to 51 percent of men) and working (94 percent of women compared to 92 percent of men). Similarly, the percentage of women who did not suspend their household care activities, was higher than the percentage of men, indicating that women continued to be responsible for household-related activities and livelihood during and after floods. Given the low levels of educational attainment by women, the interruption of their studies due to floods is an additional deterrent to the development of their capacities and employment potential.[7]

13. **Poor and vulnerable populations are disproportionally affected by the impacts of floods as disaster-related damage in urban areas is caused by a combination of exposure and vulnerability**. The World Bank estimates that 1.5 percent of Argentina's population could fall into poverty after a major flooding event.[8] Even after social transfers, poor people often find it hard to fully recover before the next disaster, with women and children among the highest-risk groups.[9] Even though poor people may suffer fewer asset losses than the rich (in absolute terms), they experience greater well-being losses. If well-being losses are accounted for, the annual costs of floods would increase by 60 percent.[10] These indications call for measures to not only reduce exposure but also to reduce vulnerability and increase resilience in extreme events.

14. **Recent studies show that flooding impacts men and women differently, contributing to unequal levels of access to opportunities and personal development according to gender.**[11] Consequently, flood mitigation

[5] The La Plata River Watershed is the alluvial plateau of the Paraná, Paraguay and Uruguay rivers and their tributaries (including most of the northern provinces, Santa Fe, the metropolitan area of Buenos Aires, and a portion of the Buenos Aires province).
[6] World Bank (2022) *A Water Secure World for All: The Gender Dimension. A Good Practice Note for a Task Team.*
[7] Kristof, Mariano Jordan; Ramirez, Maria Catalina; Pereira, Leda; Couvin, Sabrina. 2020. A Data-Driven Framework to Address Gender Issues in Managing Flood Risks: Flood Risk Management Support Project for the City of Buenos Aires, Argentina. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/34375 License: CC BY 3.0 IGO.
[8] World Bank (2021). *Argentina: Valuing Water*. World Bank, Washington, DC.
[9] World Bank. 2021.*Argentina: Valuing Water*. World Bank, Washington, DC.
[10] World Bank (2021). *Argentina. Valuing Water*. World Bank, Washington DC.
[11] National Water Institute (2021) *Women's Participation in Science, Technology and Management of Water Resources*.
The project analysed gender mainstreaming within the international, regional and national regulatory frameworks. On the other hand, the study analysed the gender gaps between women and men participating in (i) university careers related to water resources (students and graduates) (ii) university authorities/governments and science-related sectors, and (iii) water resources management sectors, including government agencies and water and sanitation providers. The project started in March 2020 and had a total duration of 18 months

infrastructure will result in social, gender and geographic distributional impacts.[12] A study performed by Argentina's National Water Institute (Instituto Nacional del Agua) in 2021 highlights persistent gender gaps in government organizations and other public institutions related to water resources management. Science, Technology, Engineering and Mathematics (STEM) candidates for careers related to water resources are on average 65 - 78 percent men, this is particularly relevant as these educational backgrounds nourish the pool of candidates for water management positions in the future. The study revealed that the highest executive positions in universities are predominately occupied by men, and the gender gap increases as the positions become more hierarchical. Even though there are more women in junior positions, only 24 percent of women achieve leadership positions in the National Scientific and Technical Research Council (Consejo Nacional de Investigaciones Científicas y Técnicas). In the National Water Institute, no woman has ever reached the highest positions (both board and executive level). Another study by the Autonomous City of Buenos Aires and the World Bank highlighted how flooding events constrain development opportunities especially for women; from human endowment (education, health, and nutrition) and economic aspects to voice and agency domains.[13] The statistics obtained for the City of Buenos Aires are relevant in the rest of the country, where education levels achieved by women and stable employment tend to be lower than in the country's capital. Moreover, in the northern provinces, on which the first phase of the Multiphase Programmatic Approach (MPA) will focus, illiteracy rates are on average three percentage points higher than in the City of Buenos Aires, with values as high as five percentage points higher in the province of Chaco. School and work absenteeism due to floods are also expected to worsen the gender gap.[14]

15. **Water-related disasters disproportionately disadvantage women. Nevertheless, there is a clear underrepresentation of women in planning and implementation of interventions focusing on disaster risk management.** Policies and programs rarely consider women's and men's different concerns and needs. A more sustainable and equitable recovery from disaster could be achieved if women were included in planning and decision-making bodies. This lack of representation has implications for decision-making and the types of investments prioritized; although not definitive, several research case studies have shown that women may often prioritize communal assets, collaboration and in some cases may place a higher priority on sustainable solutions.[15] Women also tend to be under-represented in new Green Economy jobs. As flood mitigation interventions tend to include more Nature Based Solutions it is important to strive for better balance in gender representation.[16]

16. **Current flood management practices in Argentina are often insufficient, especially in relation to a holistic river basin approach which is required to optimize efficiency of interventions.** There is a lack of systematic data collection and exchange of data to prioritize appropriate flood management practices and "build back better" after a flood event. Thorough planning and design of infrastructure require an integrated river basin management approach. Innovative interventions, such as nature-based solutions to reduce flow peaks and store flood waters also need to be introduced to increase efficiency. Rivers do not have the room required to handle peak flows and do not provide an acceptable

[12] World Bank (2021). *Argentina: Valuing Water.* World Bank, Washington, DC. and Hallegatte, Stephane, Adrien Vogt-Schilb, Mook Bangalore, and Julie Rozenberg (2017). *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*. Climate Change and Development Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1003-9. License: Creative Commons Attribution CC BY 3.0 IGO

[13] Kristof, Mariano Jordan; Ramirez, Maria Catalina; Pereira, Leda; Couvin, Sabrina (2020). *A Data-Driven Framework to Address Gender Issues in Managing Flood Risks: Flood Risk Management Support Project for the City of Buenos Aires, Argentina.* World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/34375 License: CC BY 3.0 IGO

[14] INDEC (2010). Census.

[15] In a study in Indonesia, Peru, and Tanzania forest user groups with at least 50 percent female members conserved more trees, and distributed benefits more equally under payments for environmental services.

[16] Climate Change and Gender, Thematic Policy Note for Update to the World Bank Group Gender Strategy, World Bank 2022: (GGWG&DCED,2012). A recent study found that only 62 women for every 100 men are considered to have 'green talent', a figure that has remained stagnant since 2015 (LinkedIn,2021).

flood risk level. System's designs insufficiently consider the effects of climate change, and while authorities often have the regulations, they lack the capacity to control settlements in flood-prone areas and natural streams.

17. **The country has a clear governance structure and institutional arrangements for water resources management. However, there are important capacity constraints, resources gaps and coordination challenges between the different levels of government.** Natural resources management (including water management) falls under provincial jurisdiction. For some river basins provinces and the national government coordinate management through basin management authorities. Municipalities and local governments are responsible for urban planning and land use management. Coordination becomes even more complex as investments in the water sector often require financial support from the national government. The Ministry of Public Works (MOP) implements most of these interventions after which they are handed over to the provincial or municipal authorities for operation and maintenance (O&M). This complex and dispersed institutional framework, the diversity of actors, and the political-institutional dynamics, often lead to inadequate management of water resources, particularly in inter-jurisdictional situations.[17] There is a need to develop updated protocols to enable adequate planning, implementation, O&M, and monitoring and evaluation (M&E) of infrastructure.

18. **As a result of the flaws in the institutional and legal framework as well as limited technical capacity, implementation of interventions is often ad-hoc in response to recent events.** Interventions are often developed to minimize flood risks at a specific location disregarding upstream opportunities for more efficient water management strategies or downstream effects. This is the result of (i) a siloed approach between governmental departments and jurisdictional levels that are partly the consequence of the federal nature of the country, and (ii) a restriction in mandates, which leads to the overlook of cost-sharing opportunities for multipurpose interventions coordinated between sectoral departments.

19. **Urbanization processes have taken place with limited long-term planning, and hydrological/hydraulic considerations are often forgotten**. Land occupation has led to increased soil impermeability and direct run-off. Additionally, natural and built drainage systems are often blocked due to inadequate solid waste management practices. Furthermore, drainage systems' modifications have limited their flexibility, as no room is left for the increasing intensity of storms, resulting in an increased risk of flooding. Finally, river and stream bank occupancy (often by informal settlements) has also reduced the room for water and has limited the natural drainage capacity of riparian areas. Those informal settlements usually host poor and vulnerable communities with limited or no alternatives. As urban areas face a wider range of shocks and stresses, it is important to promote urban development and sustainability, as well as foster climate resilience in metropolitan areas.

20. **Although urban flood hazard is considered high in Argentina,[18] few cities have truly integrated water management plans to properly prioritize investments.** Some provinces have prioritized investments, and other provinces are carrying out studies, often financed by the national government, to identify the required investments to reduce flood risks in an integrated manner. For the provinces of Buenos Aires and Santa Fe, two of the most affected provinces, the investment needs to reduce flood risks amount to more than US$3.4 billion alone. Other sources estimate that required investments are about ten times higher than the official estimates.[19]

21. **Many of the interventions to reduce flood risks are based on traditional or "grey" infrastructure, predominantly stormwater drainage networks and flood defenses along rivers and streams.** However, many cities

[17] Inter-jurisdictional implies equal levels of authorities, i.e., shared resources between two provinces.
[18] Using the toolkit Think Hazard. *www.thinkhazard.org*
[19] World Bank (2021). *Argentina: Valuing Water.* World Bank, Washington, DC.

in Argentina started to explore the potential of green-blue infrastructure,[20] which uses ecosystems, soil permeability, and the natural retention of runoff to enhance infiltration or evapotranspiration processes, thus reducing surface flows.[21] Those well-designed, implemented and maintained, green-blue infrastructure provides multiple benefits across environmental, social, economic, and public health sectors including improvement of habitat connectivity, enhancement of air quality, support of carbon sequestration, promotion of community identity and a sense of well-being, and reduction of energy consumption. Cities still have "their backs turned to water" but are looking for opportunities to achieve a paradigm shift from water as a risk and nuisance to living with water and optimizing the added value (economic, social, and environmental) in urban development.

C. Relevance to Higher Level Objectives

22. **The Multiphase Programmatic Approach (MPA) aligns with the 2022 National Plan of Public Works (PNOP), which aims to transform Argentina's productive and development matrix by creating jobs and promoting sustainable use of resources, enhancing local capabilities, and reducing regional inequalities.** The PNOP's 10-year time frame is well aligned with the MPA and is organized around four axes: (i) Connectivity and Road Infrastructure, (ii) Water Resources Management, (iii) Urban and Rural Infrastructure, and (iv) Care Infrastructure.

23. **PNOP's axis on Water Resources Management, builds upon previous sector and international frameworks and plans.** These include the Disaster Risk Prevention and Reduction Program,[22] the Federal Hydrology Council's (COHIFE) National Water Policy Guiding Principles,[23] the National Water Plan (2016), and the National Plan for the Reduction of Natural Disasters 2018-2023.[24] The water resource management plan strategy presented in the PNOP addresses social vulnerabilities linked to the population's health and quality of life, sustainable economic-productive development, energy generation, and the prevention, protection, and risk management against climate-related threats. Likewise, the PNOP reinforces the international commitments assumed by Argentina in terms of environmental preservation, social integration, and sustainability, such as the Paris Agreement, the United Nations 2030 Sustainable Development Goals (SDGs), the Sendai Framework for Natural Risk Management, the latest updated NDCs (2021), the New Urban Agenda, the UN Framework Convention on Biological Diversity and the Convention Fight Against Desertification. The National Water Plan (2016) already aligned the country's water policy with the SDGs. It was developed as an action plan and a development agenda with the objective to establish a pact between the national government, the provinces, the private sector, and the society to adapt to climate change increasing levels of protection from floods, droughts, and other natural hazards, especially for the most vulnerable (women, children, the elderly, indigenous communities, and vulnerable settlements). The PNOP reinforces that mitigation and adaptation of hazards' impacts are to be achieved proactively through infrastructure development (flood protection infrastructure, dams and retention areas, channels, and dikes, among others), early warning systems enhanced by radar networks, emergency and contingency plans, and river basin management plans. The MPA would support the

[20] Green infrastructure (also called natural infrastructure, or engineering with nature) intentionally and strategically preserves, enhances, or restores elements of a natural system, such as streams, wetlands and can also include linear parks with flood plains, bioswales and wadis, or green roofs. Blue infrastructure refers to open water bodies of all sizes to retain water and reduce peak flows towards and in natural and constructed drainage systems.

[21] World Bank (2021). *Argentina: Valuing Water.* World Bank, Washington, DC.

[22] The Disaster Risk Prevention and Reduction Program, an entity that aims to promote the inclusion of disaster risk reduction in development policies and land use planning at all levels of the State, through awareness raising and training of key actors.

[23] The National Water Policy Guiding Principles are federally agreed statements that allow for integration of technical, social, economic, legal, institutional, and environmental aspects of water in a modern, and efficient management.

[24] National Plan for the Reduction of Natural Disasters defines the policy guidelines for risk management to guarantee improved security conditions for the population, the economy, the environmental and cultural heritage.

objectives related to improved capacity, reduced flood risks, adopting green interventions and strengthening the river basin approach for better prioritization of interventions.

24. **The proposed MPA is aligned with the World Bank Group's FY19–FY22 Country Partnership Framework (CPF)[25] for Argentina and its Performance and Learning Review (PLR).[26]** The PLR adjusted the CPF considering Argentina's current economic and social context while extending the CPF period for two years to align it with the county's electoral cycle. The MPA supports three focus areas. Focus area (i) "*supporting inclusive recovery*", which includes improving living conditions reminiscent of the type of interventions to be funded under the MPA, mitigating the impacts of flooding, and improving urban areas with green/blue interventions providing better urban spaces in selected cities and reducing the vulnerability of population with improved strategies, plans, and norms. Focus area (ii) "*strengthening service delivery to protect the poor and the vulnerable",* as the MPA focuses initially on the ten northern provinces with the lowest poverty-related socio-economic indicators. Finally, focus area (iii) "*supporting climate measures and long-term sustainable growth*" as the MPA will directly increase cities' resilience to extreme weather events induced by climate change and climate variability by building flood mitigation infrastructure and reducing vulnerability.

25. **This MPA also aligns with the World Bank's Global Crisis Response Framework (GCRF) to address the multiple, compounding crises faced on a global scale.** As a climate resilient operation, Phase I of this MPA supports Pillars 3 and 4 of the GCRF. Under Pillar 3, Strengthening Resilience, the World Bank addresses crisis preparedness, and disaster risk management by advocating programs that respond rapidly to future shocks. Under Pillar 4 Strengthening Policies, Institutions and Investments for Rebuilding Better, the World Bank focuses on promoting the Green, Resilient, and Inclusive Development (GRID) agenda.

26. **The project will contribute to the World Bank Group's GRID approach.** In line with GRID, this project will systemically and simultaneously address the interlinkages between 'Planet, People and Economy', challenges of urban poverty, and climate change through targeted investments in flood risk management in combination with urban upgrading. The project will help integrate innovative interventions and concepts to adapt to climate change. With a focus on improving Argentina's institutional capacities on river basin management and inclusive planning the MPA is looking to enhance urban resilience to flood risk, through the implementation of structural and non-structural climate resilient interventions in the medium to long term.

D. Multiphase Programmatic Approach

Rationale for using the MPA

27. **The Program Development Objective for the MPA is to increase the number of people with reduced flood risk and benefiting from improved integrated flood risk management in Argentina.** To achieve this objective the MPA supports the government to implement medium- and long-term plans for the water sector through a 10-year strategy. The proposed MPA for a total of US$900 million includes a three-phase overlapping approach, with each phase using the Investment Project Financing (IPF) instrument, in agreement with the government. The objective of the MPA is aligned with PNOP's policy programs and interventions, considering the effects of climate change and opportunities for climate change mitigation. Common threads in the implementation of the MPA are adaptation to climate change, inclusiveness and optimizing interventions to close the gender gaps**.**

[25] Report No. 131971–AR.
[26] Argentina - Performance and Learning Review of the Country Partnership Framework for the Period FY19-FY22, Report Number170668, Report Date 2022/05/31.

28. **An MPA allows to address complex flood risk management issues with long-term engagement, flexibility, and gradually strengthening flood risk management countrywide**. This instrument allows for the implementation of no-regret measures ready to be executed in the most critical regions,[27] while developing a deeply needed depository of robust and well-prepared interventions to be considered for implementation during the consecutive phases of the MPA. Additionally, the phased approach will allow for national and subnational authorities to progressively build institutional capacity, helping to manage implementation risks. Flood risk challenges are complex to address. To sustain these interventions they require multijurisdictional, multi-agency and multisectoral approaches. According to lessons learned in World Bank projects this requires long term engagement of the World Bank supporting the borrower over a period that surpasses the timeframe of a regular Investment Project Financing (IPF). The IPF is the optimal instrument to address the need to invest in flood risk reduction infrastructure and support the government to reduce the population's vulnerability to climate hazards.

29. **The MPA's phased approach permits innovative urban flood risk management solutions to be conceptualized, prepared, piloted, and scaled up.** During the first phase innovative and gender sensitive green-blue interventions for mitigating flood impacts and reducing citizens vulnerability, based on nature-based solutions, non-structural measures, and active engagement with communities will be developed and monitored. Because the MPA provides a scalable and modular framework, and a learning agenda is an instrumental part of the MPA, the borrower can learn from implementing interventions and optimizing efficiency of investments during subsequent phases.

30. **Institutional capacity-building activities also require longer timeframes that facilitate adequate transition from knowledge to practice**. Besides the MPA's intrinsic learning agenda, Phase I foresees the deployment of capacity building activities for policymakers and civil society. In fact, the programmatic approach supports the government to acknowledge the participation of various stakeholders that will help plan for the longer term and ensure lessons learned are transferred as the MPA advances.

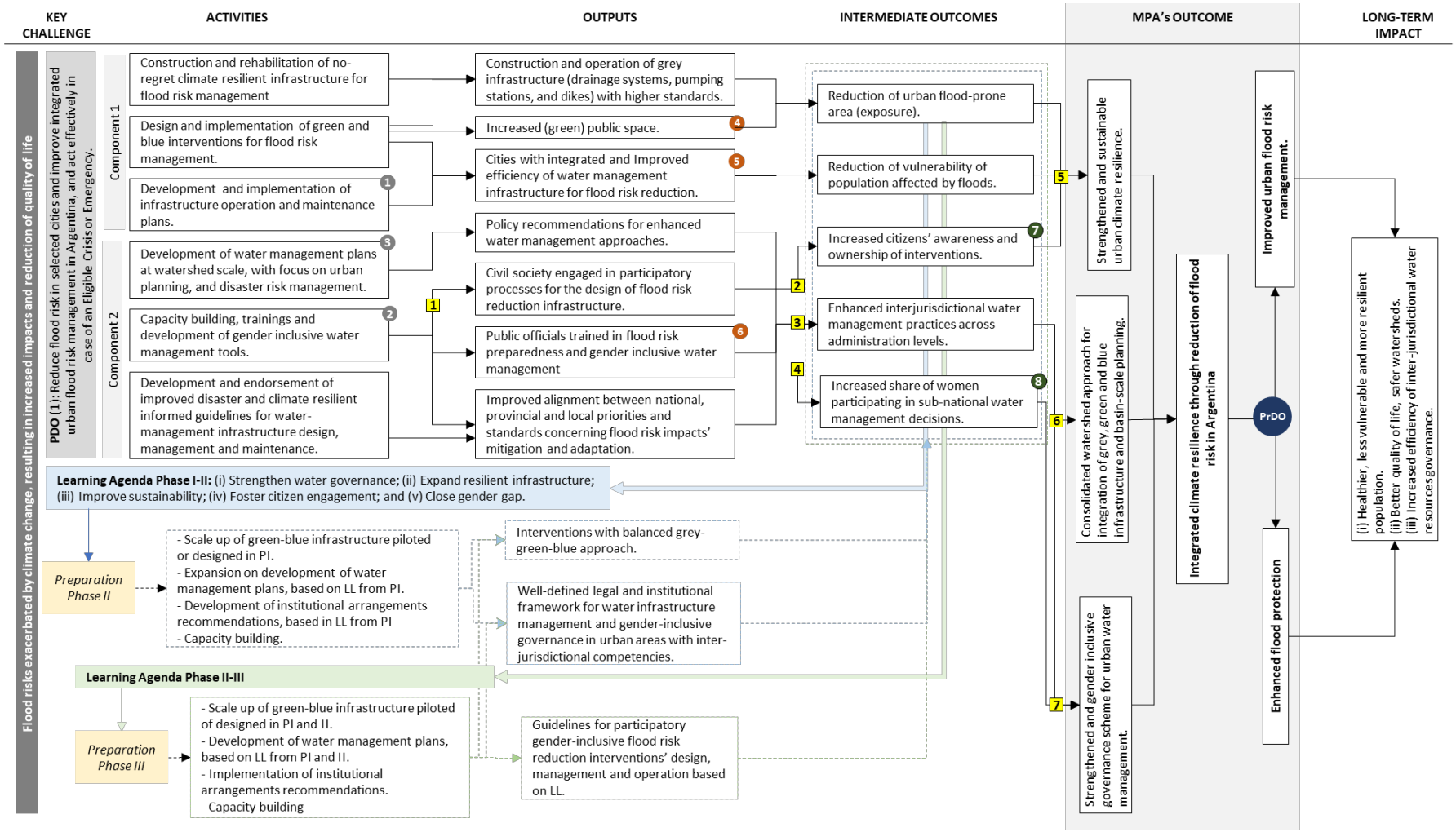
31. **Finally, the MPA approach fosters the transfer of lessons learned from one phase to the next one.** All proposed interventions under this program (structural and non-structural) are better suited to be implemented over a longer period through a series of overlapping phases promoting quick learning, knowledge transfer and prompt adaptation. These characteristics will result in better and proactive risk management throughout the MPA.

MPA Program Results Chain

32. **The Program Development Objective (PrDO) will be achieved by (i) efficiently blending and developing green-blue, and grey infrastructure, as well as non-structural interventions, (ii) improving flood risk multi-level governance,[28] and (iii) increasing the capacity to manage flood risk through an integrated river basin planning approach.** These activities are expected to lead to short-term results such as the implementation and operation of grey infrastructure with higher standards, and the improvement of flood mitigation schemes by complementary green and/or blue interventions. By putting into effect both structural and non-structural interventions, the MPA aims to increase climate resilience and build the capacity for improved flood risk management using river basin planning as a starting point for prioritization of interventions. Beyond the MPA's 10-year implementation period, long-term effects include a less vulnerable and more resilient population in safer river basins, with improved quality of life. Figure 1 presents the MPA's Result Chain.

[27] No-regret interventions are interventions that will be part of any given combination of interventions in a city. Without these interventions it will not be possible to reduce flood risks to an acceptable level.
[28] Multi-level governance refers to different levels of authority: national, provincial, municipal, and inter-jurisdictional.

Figure 1. MPA's Results Chain and Phase I TOC.



REFERENCES:

Activity indicators

1. Operation and management plans prepared for project interventions.
2. Events organized to engage civil society in flood-risk resilience, awareness, preparedness and management.
3. Development and endorsement of urban water management strategies and plans at a watershed scale.

Output indicators

4. Creation of new public space as a result of green/blue interventions.
5. Number of cities with integrated green and/or blue interventions as a result od project's activities.
6. Officials and practitioners trained on increased resilience for flood-risk preparedness.

Intermediate Outcome indicators

7. Citizen engagement's impact in interventions designs.
8. Change in percentage (Increase) of the share of women in subnational organizations participating in water management decisions.

Phase I Outcome (PDO) indicators

- Number of people with reduced flood exposure as a result of Project interventions.
- Number of people with reduced flood impacts as a result of Project interventions.
- Number of cities that adopted improved integrated urban flood risk management practices as a result of the Project.

MPA's Outcome (PrDO) indicators

- Number of people with enhanced flood protection through Program interventions
- Number of cities that adopted improved integrated urban flood risk management practices as a result of the Program.

Underlying Assumptions

1. Civil society / beneficiaries are actively interested in participating in proposed activities.
2. Beneficiaries' inputs are considered for interventions design.
3. Lessons-learned from trainings are translated into improved policies.
4. Commitment from subnational units to improve gender diversity in the decision-making positions.
5. Infrastructure integration and adequate O&M.
6. Governments' ability to prioritize investments and policies with a watershed approach.
7. Policy recommendations are translated into multi-level and interjurisdictional actions towards long-term coordinated objectives and standards.

Phase I Identified interventions

C1. Climate resilient infrastructure for flood risk mitigation and adaptation in selected cities

Construction and rehabilitation of no-regret climate resilient infrastructure for flood risk management:

- Urban drainage and flood defense system (Pirané, Formosa).
- Improvement of *Canal Alvarado* hydraulic conditions (San Salvador de Jujuy, Jujuy).
- Rehabilitation of *Canal Alvear* (Salta, Salta).
- Improvement of *Caseros-Alvear* drainage network (Salta, Salta).
- Improvement of *Arribalzaga* watershed drainage system (Resistencia, Chaco)
- Rehabilitation of *Canal Soberanía Nacional* (Resistencia, Chaco).
- Drainage network for *Itamabae-Guazú* urbanization (Resistencia, Chaco)

Design and implementation of green and blue interventions for flood risk management.

- Consultations for co-design of interventions
- Water Park (Pirané, Formosa)
- Improvement of *Alegre* stream (Aristóbulo del Valle, Misiones).
- Improvement, channeling and landscaping of public areas– Stage 1 (*Posadas, Misiones*)

Development and implementation of infrastructure operation and maintenance plans

C2. Capacity building and vulnerability reduction

Capacity building, trainings and development of water management tools:

- Consultations for co-design of interventions.
- Trainings for national level officials for building resilience towards climate risk preparedness.
- Trainings for local authorities (municipal and provincial) for building resilience towards climate risk preparedness.
- Workshops for civil society on awareness and flood risk preparedness.

Development of water management plans at watershed scale.

- Formosa's sustainable water management plan.
- Clorinda's sustainable water management plan.

Development and endorsement of improved disaster and climate resilient informed guidelines for water-management infrastructure design/management/maintenance.

C3. Project Management

C4. CERC

33. **This MPA considers the needs and circumstances particular to each region when building resilient infrastructure, improving operational efficiency, and strengthening water governance.** Climate change effects and the need for adaptation are noticeable across Argentina albeit in varying degrees of intensity and form. Considering the wide range of socio-economic, political, and natural environments, the level of flood risk and the readiness of interventions to reduce flood risks, this MPA pursues a gradual approach divided into three stages. At the request of the government, the first phase will focus initially on the most vulnerable provinces,[29] implementing the interventions presented and increasing the readiness of other projects. This will lead to a strong portfolio for the second and third phases while including other provinces and moving toward a country wide approach optimizing the efficiency of the projects using lessons learned and increased capacity at national, provincial, and local levels.

34. **MPA's Development Objective (PrDO) indicators**

a. Number of people with enhanced flood protection through Program interventions

b. Number of cities that adopted improved integrated urban flood risk management practices as a result of the Program.

MPA Program Framework

35. **The MPA is proposed to be implemented in three overlapping phases, in order to profit from lessons-learned in the preparation of subsequent stages**. The MPA's phases will share common objectives while expanding the MPA's geographical scope, as phases progress. Priority in intervention selection will be given to no-regret actions, based on readiness, potential beneficiaries, innovation (sustainable approaches for flood risk reduction and water resources management – hybrid green-grey solutions, nature-based solutions, strategic planning tools, governance frameworks, among others), and incorporation of lessons-learned from previous phases. Each phase is envisaged as a five-year commitment, with preparation of interventions that could be included during the following phase.

36. **Phase I of the MPA (US$200 million) will be financed through an IPF and focuses initially, but not limited, on interventions identified by the government in the Norte Grande Region (Chaco, Formosa, Salta, Jujuy, Tucumán, Misiones), Buenos Aires, and Santa Fe provinces, where most of the country's vulnerable urban settlements are located (see Annex V).** The Norte Grande Region concentrates about 23 percent of the country's population. It presents acute territorial inequalities, reflected in the lack of basic service coverage (lowest in the country) and the high Social Vulnerability Index,[30] see Table 1. Phase I will serve as a baseline and provide lessons for the preparation of the subsequent phases of the program. This phase will also include the design of investments to increase readiness for the next phase, especially for green and blue interventions. Additionally, capacity building and strengthening local and multi-level governance frameworks will focus on aligning the national, provincial, and local authorities' responsibilities and priorities. This will include establishing a much-needed benchmark on women's representation in water resources management agencies and units and the initial efforts to close this gap. Phase I will focus on implementing no-regret grey infrastructure, preparation, piloting and implementation of green and blue in interventions, capacity building for local and national decision-makers, to (i) improve the enabling governance environment, (ii) strengthen climate resilience and reducing flood risk, and (iii) set a learning agenda to enhance the design and implementation of comparable interventions in subsequent phases. Interventions will support the development of guidelines on planning, design, implementation, O&M and M&E of structural and nonstructural measures.

[29] The Norte Grande region (including Salta, Chaco, Jujuy, Formosa, Tucuman, Santiago del Estero, Catamarca, Corrientes, La Rioja, and Misiones) as well as Santa Fe and the Province of Buenos Aires.

[30] Plan Nacional de Obras Públicas (2022).

Table 1. Sociodemographic indicators (expressed in percentage) for the provinces with identified interventions. Source INDEC (2010; 2022).

Province	Unsatisfied Basic Needs[31]	Poverty[32]	Extreme poverty[33]
Buenos Aires	11.2	42.0	11.9
Chaco	23.1	49.9	15.0
Formosa	25.2	24.4	8.6
Jujuy	18.1	33.8	6.4
Misiones	19.1	28.7	5.1
Salta	23.7	34.5	5.4
Santa Fe	9.5	39.1	7.8
Tucumán	16.4	35.1	5.8
National	**12.5**	**36.7**	**9.1**

37. **Phase II of the MPA will allow for new investments and implementation of interventions prepared during the first phase.** Innovative approaches of green- blue infrastructure prepared and/or applied in Phase I, could be scaled up and implemented during Phase II, where appropriate. Phase II will also seek to build on lessons learned in relation to institutional and governance arrangements and strengthen local capacities. Interventions in Phase II will efficiently balance grey-green-blue infrastructure as well as non-structural interventions, adopting the lessons learned during the previous phase.

38. **Phase III of the MPA will further implement interventions and strengthen the integrated management of flood risk reduction using a basin approach to prioritize and optimize interventions.** Like previous phases, this last phase will regard the scaling-up of interventions in provinces where flood risk reduction is a priority. Additionally, during this phase a guideline will be completed including the lessons learned during previous phases. With the completion of the MPA, flood risks will be reduced, and the governance structure will have adopted necessary instruments to improve prioritization, planning, design, implementation, O&M and M&E of efficient packages of grey, green, blue interventions and non-structural measures that increase the climate resilience of populations affected by floods.

Table 2. MPA Framework

PrDO:			To increase the number of people with reduced flood risk and benefiting from improved integrated flood risk management in Argentina					
Phase	Project ID	Sequential or Simultaneous	Phase's Proposed PDO	IPF or PforR	Estimated Amount ($ million)	IBRD, IDA, Other	Estimated Approval Date	Estimated E&S Risk Rating
I	P178534	--	(i) To reduce flood risk in selected cities and improve integrated urban flood risk management in Argentina, and act effectively in case of an Eligible Crisis or	IPF	200.00	IBRD	April 2023	Moderate

[31] INDEC (2010). National Census: Percentage of households and population with Unsatisfied Basic Needs (UBN) by province.
[32] INDEC (2022). Incidence of poverty and indigence in 31 urban agglomerations. Permanent Household Survey (Technical Report Vol. 6-N° 164.
[33] INDEC (2022). Incidence of poverty and indigence in 31 urban agglomerations. Permanent Household Survey (Technical Report Vol. 6-N° 164.

			Emergency					
II	n/a	Partially Simultaneous	TBD	TBD	350.00	IBRD	TBD	Moderate
III	n/a	Partially Simultaneous	TBD	TBD	350.00	IBRD	TBD	Moderate
Total					900.00	IBRD		

Learning Agenda

39. **The MPA will have an overlapping approach where learning from each phase will be integrated into the succeeding one.** The nature of the MPA presents similar infrastructure activities (i.e., the use of grey and green/blue infrastructure and non-structural interventions for flood adaptation and mitigation) in the three phases, which makes the MPA an excellent modality for learning lessons and implementing them in the subsequent phases.

40. **The MPA will adopt a variety of lessons learned and embedded feedback that will help the program evolve.** Those will include technical aspects of infrastructure, construction techniques, procurement process, strengthen capacity of local contractors, efficient balances between grey-green-blue-infrastructure, active social participation in decision making processes to increase awareness of benefits and avoid the "not in my back yard" phenomena,[34] non-structural measures to reduce vulnerability, conflicting competences of national, provincial, and municipal levels, O&M arrangements, etc. The learning agenda will be designed and adapted during the preparation of the following phases to align interventions and achieve the PrDO. Based on the Water Security Diagnostic for Argentina and lessons learned the learning agenda will initially focus on aspects related to (i) improving the institutional framework and strengthen water governance, (ii) how infrastructure to reduce flood risk can be made more resilient, (iii) strengthening the basic needs for improved sustainability and (iv) how to increase citizens engagement and close the gender gaps that are related to flood risk management and the added value of water in urban development.

a. **Strengthen water governance.** The MPA will evaluate and help design guidelines that capture the essential roles and responsibilities of agents and key stakeholders involved in the program. Previously identified gaps in the Water Security Diagnostic for Argentina suggest the need to (i) develop and update existing flood risk management strategies and/or drainage master plans, (ii) review the challenges of governance arrangements, particularly conflicting or overlapping competencies between local, provincial, and national authorities for effective water management, and (iii) improve benchmarking data on gender aspects. Tackling both challenges will help to close the planning gap and build capacity for flood risk management. The guidelines developed during Phase I will become a framework for subsequent phases, helping to understand what actions should be conducted to improve the involved authorities' performance and how the existing strategies to manage flood risk can be improved. This could be through measures that enhance the authorities' organizational and performance capacities or promote interactive collaboration between all governmental authorities across all levels. The guidelines will be further improved using lessons learned during phases II and III.
b. **Expand resilient infrastructure**. The program intends to develop an optimum balance between grey-green-blue infrastructure. Expansion and development of the solutions will be achieved through the inclusion of training /capacity building activities for water resource/network management, plans for flood management, and enhancing response capacity as this will accrue climate adaptation benefits. Results during and after the

[34] The "Not In My Back Yard" or NIMBY phenomena refers to individuals and groups of people who oppose to various types of development in their communities because they believe those developments to be hazardous or undesirable.

infrastructure implementation will allow to "test" the performance (benefits and challenges) of interventions before rolling them out or scaling them in subsequent phases. Phase I will also provide important input on how integrating water in urban development can increase the added value of water (economic, social, and environmental) in urban upgrading processes.

c. **Improve sustainability.** Good O&M is required to improve sustainability of the interventions included in this program. Therefore, it is critical for the MPA to accompany these interventions with the necessary capacity and training efforts. The implementation of interventions will be accompanied by the preparation of O&M plans with the responsible authorities. The percentage of developed O&M plans has been included as an indicator in the Phase I results framework. As the MPA phases evolve, training and capacity building activities will be improved, building on the experience and feedback received. For consecutive phases it is foreseen that an indicator will be added related to the inclusion of a budget line in financial plans prepared by responsible authorities. Sharing these lessons learned with other cities will also help them in making better decisions toward improving sustainability.

d. **Foster citizen engagement and close gender gap**. Throughout the MPA it is expected to monitor and leverage all the opportunities to increase citizen engagement (from the planning and design of the interventions to their O&M and M&E). Additionally, related activities and approaches will be identified and applied to narrow the identified gap on gender diversity in leadership and staffing performance, subject to local needs by province or municipality. It is expected to work closely with vulnerable communities in the development of workshops and guidelines and ensure and advocate for the participation of women in disaster risk management decision-making positions and the development of community-based disaster risk management plans that are more gender inclusive. Lessons learned will further improve interventions included in phases II and III of the MPA.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

41. The PDO is to reduce flood risk in selected cities and improve integrated urban flood risk management in Argentina, and act effectively in case of an Eligible Crisis or Emergency.

PDO Level Indicators

42. The Project Development Objective (PDO) will be measured against the following indicators:

a. Number of people with reduced flood exposure as a result of Project interventions.

b. Number of people with reduced flood impacts as a result of Project interventions.

c. Number of cities that adopted improved integrated urban flood risk management practices as a result of the Project.

B. Project Components

43. **The project, as the first phase of the MPA, focusses initially on no-regret actions ready to be implemented in cities located in the most flood affected regions of Argentina. Synchronously, the pipeline for phase II will be built including the use of innovative concepts to increase efficiency.** Government identified interventions in four cities (San Salvador de Jujuy, Salta, Resistencia and Pirané) in a demand-driven manner for the first set of no-regret

interventions based on readiness, frequency of flood affection, and highest impact on poor and vulnerable communities. All subprojects to be selected subsequently should be aligned with the MPA objectives, have technical designs that consider climate change scenarios, be economically viable and financially sustainable, with clear responsibilities for implementation, O&M and M&E, and ensure satisfactory environmental and social management following the Environmental and Social Management Framework (ESMF). All subprojects should comply with a moderate risk rating. Therefore, interventions involving large-scale resettlement (i.e., more than 50 households) will not be eligible under the Project.

44. **Component 1. Climate resilient infrastructure for flood risk mitigation and adaptation in critical cities (US$179.5 million).** This component will support technical design and implementation of structural interventions to improve people's resilience to flood risks, arising from the effects of climate change. Structural interventions under this Project focus on (i) rehabilitating/constructing defense works in urban areas with high vulnerability to flooding damage; and (ii) pluvial drainage works to reduce the areas and communities affected by storms. These civil works will reduce exposure to floods and the impacts such as asset and welfare losses, reduced disruption of connectivity, temporary disruption of economic activities, etc. Interventions will be integrated in spatial planning, increasing the added value of water in urban areas Intervention details and technical assessments can be found in Annex I.

45. **Subcomponent 1.1. Evidence-based flood risk mitigation measures (US$138.75 million).** This subcomponent will carry out demand-driven no-regret interventions consisting of rehabilitation, upgrading, reconstruction, or construction of new grey hydraulic infrastructure for urban drainage and flood risk mitigation (e.g., primary drainage channels, secondary and tertiary drainage networks, flow control infrastructure, storage areas, defenses, embankments, and pumping stations among others).

46. **Subcomponent 1.2. Innovative, integral, and multipurpose flood risk mitigation interventions (US$40,75 million).** Activities under this subcomponent will focus on optimizing existing grey interventions (including those under Subcomponent 1.1). Within the comprehensive matrix of green-blue infrastructure options, this Subcomponent will include the development of retention areas, linear parks, green roofs, and permeable pavements among others. Such green-blue interventions allow for robust climate adaptation and resilience. Additional benefits are the regulation of extreme temperatures (e.g., moderating heat island effects in urban areas), storage of water, reducing GHG emissions (reduction by limiting cement production), and capturing CO2. Furthermore, these solutions could support the creation of recreational areas and urban green corridors adding to the integration, maintenance, and recovery of urban biodiversity.

47. **Component 2. Capacity building and vulnerability reduction (US$15 million).** This component will support capacity building of local, provincial, and national institutions to improve climate-resilient flood risk management. Increasing resiliency requires structural mitigation measures and non-structural interventions to reduce vulnerability by enhancing risk preparedness and recovery capacity. This component will also focus on non-structural measures including the development of urban flood risk management plans and strategies, environmental assessments, urban development and solid waste management plans, the revision of legal frameworks, development of early warning systems, and any other tool necessary to strengthen the capacity to operate and maintain the infrastructure for improved urban flood risk management. Component 2 will include activities serving as a steppingstone toward gender inclusive water governance, especially in relation to urban flood risk management, such as the introduction of a system for providing and disclosing benchmarked data on gender diversity in water institutions. Having benchmarked data readily available is critical for stimulating change and empowering sub-national entities (such as provincial and municipal water resources/flood management agencies/ministries/secretariats/departments)[35] outside of the

[35] Examples of such positions are: Director of Water Infrastructure, Director of Public Works, Director of Water Policy, Responsible for Water Resources Monitoring, Responsible for Watershed Management, Responsible for Water Projects, etc.

national government to assess their progress, and advocate for greater gender diversity in technical and decision-making positions, as directors, head of department/unit, or managers.[36] Another action will focus on training community leaders (including and targeting women) on flood preparedness and support them in organizing wider informational events/community meetings for women and girls. This component will also support the development of gender-sensitive flood emergency plans.

48. **Component 2 will also focus on strengthening policymakers' capacity for integrated urban flood risk management using a river basin approach to increase efficiency and allow for better prioritization.** This also includes provision of training and development of tools to guide involved stakeholders. These will help authorities in the development and update of existing flood risk management strategies, drainage master plans, and project development using a more holistic basin approach. Preidentified sustainable flood risk management plans correspond to the cities of Formosa and Clorinda, in Formosa province. Others would be identified during the Project implementation. Overall, activities executed under this component aim to support authorities by strengthening their institutional capacity, identifying roles and responsibilities, that ultimately facilitate the development and execution of investments in later phases of the MPA.

49. **Component 3. Project Management (US$5 million).** This component will provide support to the Project Executing Agency (PEA) for the administration, monitoring, coordination, and supervision of project activities, including environmental and social management aspects, independent audits, and other related activities. It will also support the collaboration between MOP, provinces and cities, and finances participatory and interactive design processes with key stakeholders, all in response to the increased risk of urban flooding due to climate change). Carrying out of Project strategic evaluation activities in coordination with the Ministry of Economy, through the Undersecretariat of International Financial Relations for Development, as responsible for technical-methodological advice.

50. **Component 4. Contingent Emergency Response Component - CERC (US$0 million).** A CERC is included in the Project to allow for rapid reallocation of uncommitted loan funds in the event of an eligible emergency.[37] An Annex to the Project Operational Manual ('CERC Annex') will be prepared early on to be able to guide a timely activation and implementation of the CERC when an emergency occurs. The Annex will include a CERC ESMF with the CERC E&S assessment and initial requirements. For the CERC to be activated, and financing to be provided, the Government will need (i) to submit a request letter for CERC activation, and the evidence required to determine eligibility of the emergency, as defined in the CERC Annex; and (ii) an Emergency Action Plan, including the emergency expenditures to be financed; and (iii) to meet the environmental and social requirements as agreed in the Emergency Action Plan and ESCP. The mechanism to trigger the CERC will be established in the CERC Manual, which will detail the applicable fiduciary, environmental and social, monitoring, reporting, and any other implementation arrangements necessary for the execution of the proposed activities. In case of an event triggering the component, a reallocation of funds will be introduced to loan disbursement categories, to fund the activities and respond to the emergency. The implementation agency for the CERC will be determined in the CERC Manual.

[36] Improving gender equality in decision making would apply to municipal, provincial, and representatives of interjurisdictional watershed committees. Altogether, hundreds of water professionals would be benchmarked and subject to targets for increased gender representation in the first phase. As this benchmarking system can be applied nationally, the likely medium-term scale is substantially higher.

[37] An eligible emergency is defined as an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters. Such events include a disease outbreak.

C. Project Beneficiaries

51. **Activities under Component 1 of the Phase I of the MPA will benefit at least 123,000 people with reduced flood exposure,[38] and at least 818,000 from reduced flood impacts,[39] considering currently identified interventions.** Under Component 1, the flood risk in selected areas will be reduced through structural measures, directly benefiting the population in these areas, both those who live in the areas (reducing exposure of floods and damage of personal property) and those, working, commuting, studying around these areas with reduced flood related impacts on social and economic activities. With interventions improving the management of urban flood risks, for example, through better planning, prioritization, and more efficient interventions, the people living in the selected cities will benefit from the Project. These numbers are expected to increase significantly with the identification of additional interventions to be financed under this project. The interventions under Component 2 will increase the capacity of cities and authorities to reduce flood risks and to adopt improved integrated urban flood risk management practices.

Table 3. Project Beneficiaries

STATUS	PROVINCE	CITY	ACTIVITIES	BENEFICIARIES from Reduced Flood Exposure	BENEFICIARIES from Reduced Flood Impacts
Component 1					
Identified	Formosa	Pirané	Urban drainage and flood defense	20,000	65,000
			Pirane's Water Park.		
	Jujuy	San Salvador de Jujuy	Rehabilitation of Canal Alvarado, secondary and tertiary drainage, and green interventions	23,000	234,000
	Salta	Salta	Rehabilitation of *Alvear* Channel.	65,000	228,000
			Caseros-Alvear drainage network.		
			Canal Oeste Linear Park.	TBC	
	Chaco	Resistencia	*Arribalzaga* drainage system.	15,000	291,000
			Rehabilitation *Soberania Nacional* Channel.	TBC	
Shortlisted	Misiones	Aristobulo del Valle	Improvement of the Alegre stream.	21,000	TBC
		Posadas	Improvement, channeling, and landscaping of public areas (Stage 1).	276,000	TBC
			Drainage network for Itamaebe Guazu urbanization.	TBC	TBC
Component 2					
Identified	Formosa	Formosa	Sustainable drainage and water management Master		222,000

[38] Beneficiaries from reduced flood exposure are those inhabitants that will benefit from a reduction in flood risk exposure due to their proximity to the areas where the selected interventions will take place.
[39] Flood impacts include damage to property and assets, disruption of mobility, and disruption of social and economic activities.

		Plan	
	Clorinda	Sustainable drainage and water management Master Plan	54,000

D. Rationale for Bank Involvement and Role of Partners

52. **The World Bank is a key and long-term partner of Argentina in the water sector.** With a long track record of supporting the sector with bold interventions, including over 20 years of engagement in mitigating flood risks, support in addressing the poor environmental conditions of the Matanza-Riachuelo river basin, and expanding water supply and sanitation services in low-income northern provinces (Norte Grande Region), the Bank is a trusted partner in the sector, helping the government overcome technical, institutional, financial, and legal challenges, among others. The Bank supports infrastructure investments and provides global technical expertise to encompass institutional development, environmental management, and citizen engagement, assisting the government toward the 2030 agenda and pursuing the SDGs.

53. **The Bank has demonstrated that it can play a key role in assisting Argentina in the preparation and implementation of a strategic program that contributes to enhancing living conditions.** Over the past decades, the Bank has been actively involved in flood risk management in Argentina financing projects that initially focused on recovery and rehabilitation and is now shifting to flood mitigation and flood risk management. The government has stated to seek the Bank's knowledge and expertise on best practices in flood risk management. The Bank is well placed to provide this support given the many flood risk management projects that have been and are being supported by the Bank in this region and in other regions of the world. The Bank has also worked together with other development partners through additional funding. This long-term engagement will provide additional opportunities to look for partnerships and further strengthen the learning agenda.

54. **The World Bank can share global knowledge and provide technical assistance for efficient flood risk management.** Bank assistance to support and develop the Project would facilitate the sharing of lessons learned from previous Bank financed projects in Argentina and successful flood risk management projects globally. The Bank is bringing leading international experts and innovative concepts from within and outside the institution to inform the design and support the proposed Project's implementation.

E. Lessons Learned and Progress on Learning Agenda

55. **An integrated approach is needed to reduce flood risks including but not limited to institutional and technical assessments, citizen engagement and consideration of the effect of flood risks on deepening the gender gap.** Among the many projects that have provided important lessons learned for using an integrated approach, are the Sponge City projects in China, the Colombo Wetland Program in Sri Lanka, and the Urban Flood Risk Management projects in Wroclaw (Poland), Beira (Mozambique) and Kigali (Rwanda). Many of these projects are carried out in a cross-sectoral manner. From the Latin America and the Caribbean region, the Bank can bring experiences from Colombia, Brazil and Argentina itself sharing knowledge from projects in the city of Buenos Aires and Norte Grande region.

56. **Thorough institutional and technical assessments are needed to support the prioritization of efficient structural and non-structural interventions.** Often interventions to reduce flood risks are implemented as a reaction to an extreme event. These often fail to look at the bigger picture and therefore can have unwanted effects downstream or turn out to be less efficient if a more holistic approach had been chosen. Projects managed by the

Bank, in and outside the region, have shown that using a more holistic approach that considers the river basin as a starting point and integrates interventions in urban development plans will result in more efficient strategies and interventions. This also includes the integration of green and blue infrastructure to reduce peak flows and regulate the discharges to the storm water drainage systems. Furthermore, nonstructural interventions to increase capacity have been included in many of the Bank projects to further reduce vulnerability of communities and increase sustainability for example through better O&M. The holistic approach is needed to ensure the development of an efficient combination of interventions to swiftly answer to urgent challenges while securing the necessary basis for long term sustainability.

57. **Citizen engagement is at the heart of planning and implementing interventions in urbanized areas.** Selected cities already have strong programs on participatory planning and inclusion of communities to improve awareness and create a sense of ownership. This is done through community mobilization, participatory planning, and extensive communication throughout implementation; all factors critical for implementing grey and especially the green infrastructure interventions, considering their impact on public spaces. Engagement is also crucial for increasing resilience of the neighborhoods affected by floods. Participatory planning is required to design public spaces that also retain water. This will ensure that the community understands the need for interventions and to increase awareness regarding the maintenance of these areas to ensure proper functioning during extreme storms. Non-structural interventions to increase resilience such as early warning systems and evacuation plans, design with a gender lens, need to be internalized to optimize their effect in case of an extreme event. The mechanisms of citizen engagement including a stakeholder analysis will be developed further in the Stakeholder Engagement Plan.

58. **Given the existing gender gaps in education and employment, the interruptions caused by flood impacts are an additional deterrent to the development of their capacities and employment potential worsening pre-existing conditions and gaps.** Interventions are also planned in locations where deterioration of the actual infrastructure increase the sense of insecurity which often has a stronger impact on the mobility of women. The interventions on flood risk reduction and rehabilitation of existing drainage infrastructure will have a positive effect on women and specific attention to women will be given to participation in the design of the interventions. These actions will include but are not limited to the involvement of women in the development of gender-sensitive flood emergency plans, the coordination of community workshops to sensitize stakeholders and locals about the pivotal role of women in disaster risk management decision-making, the provision of trainings/capacity building and activities advocating for the involvement of women in decision-making bodies at national and subnational levels.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

59. **The project will be implemented by the PEA composed of a technical team under the Infrastructure and Water Policy Secretariat (SIPH) and a fiduciary team under the General Programs and Sectorial and Special Projects Directorate (DiGePPSE), both within the MOP.** Both the technical team and the fiduciary team have experience with the implementation of Bank-financed projects. While requests for interventions will come from provincial and municipal governments, the PEA will be responsible for the design and implementation of interventions. They will be assisted by the municipalities and provincial authorities providing the required information to prepare and assess projects throughout this process. Municipalities and provinces will review every consultancy product and participate in the supervision of works. The team under the SIPH will be responsible for technical tasks such as developing technical specifications, reviewing technical proposals, contracting works, and supervising contracts.

60. **The financial management, procurement, environmental and social responsibilities will be carried out by DiGePPSE that has shown good capacity to work with Bank systems. While the team has limited experience with the Bank's Environmental and Social Framework (ESF), they have used the Bank's safeguards and already manage a project with the IDB's new Environmental and Social Policy Framework that has strong similarities with the ESF and officials have participated in ESF trainings of the Bank.** Specifically, for environmental, social, health and safety management (ESHS) the DiGePPSE has a dedicated team composed of five environmental specialists (three senior and two junior), two social specialists, two health and safety specialists and one general ESHS coordinator. In addition, there will be coordination/liaison teams at provincial and city levels, mainly with the Provincial Ministries of Public Works (or equivalent) and, if required, municipalities. General environmental and social management responsibilities (including supervision) will remain in DiGePPSE, which will coordinate activities with local entities as necessary. On an exceptional basis, the use of loan proceeds to finance necessary resettlement costs is allowed[40] to mitigate the risk that implementation of key activities under the Project are delayed as a result of lack of funds for compensation. Given that this will be the first operation with the MOP under the Bank's ESF, an assessment was carried out prior to appraisal. In general terms, it was found that the current ESHS team of DiGePPSE, with the support of an additional specialist on communication / public relations that belongs to the same Directorate, has the required capacity for the management of the Project. The E&S risk is rated as Moderate.

61. **The tendering of ESIA and implementation will be coordinated by the PEA. For supervision of the implementation the PEA might delegate responsibilities to provinces or municipalities. This depends on the type of project.** An evaluation of stakeholders and institutional arrangements will be necessary for each intervention and responsibilities will be summarized in a responsibility matrix to be included in the agreements that will be signed between stakeholders before projects are implemented. These matrices will describe responsibilities during implementation, O&M and M&E. Details of the institutional arrangements are included in Annex II.

62. **Throughout the planning, preparation and implementation of interventions close collaboration and coordination will take place between the PEA and the cities where interventions will be carried out to ensure that structural and non-structural interventions answer to the specific needs of the cities.** Special attention will be given to capacity building between the PEA and the provinces through workshops and activities allowing the transfer of skills. This will enable the responsible provincial and municipal authorities to carry out O&M to increase the sustainability of projects and ensure that the strategies, plans and tools to be developed will be used in an optimum manner. Collaboration will be promoted starting with the design stages of the interventions, with a required percentage of female representation. This collaboration and coordination between the different levels of government will be laid out in an annex of the agreement signed between the national government and the authority that will receive the works. The content of these agreements will be further detailed in the Project Operational Manual (POM).

B. Results Monitoring and Evaluation Arrangements

63. **The PEA is responsible for producing semi-annual reports to monitor progress under the Project.** The PEA will be responsible for organizing and merging the data coming from different levels of government (provincial and municipal) to track the advancement of the program against the indictors detailed in the results framework. PEA will appoint a reference person for each team involved in the Project to ensure smooth coordination. Regarding infrastructure works, the contractor will be responsible for originating the data on various works-specific intermediate

[40] Memo approved by RVP on January 31, 2023

indicators and the supervision firm will be responsible for the analysis of the data provided. The PEA will utilize this data to calculate the main PDO indicators.

C. Sustainability

64. **To ensure sustainability the national government will work with the responsible provincial and municipal authorities to improve capacity and develop the protocols needed to allocate resources for O&M and M&E.** The MOP and responsible provincial and / or municipal authorities will sign agreements that lay out the tasks that need to be carried out during preparation, implementation, O&M and M&E. These agreements will be in force during the implementation to allow the provincial and municipal authorities to partake in the planning, design, and implementation ensuring that the subnational authorities will take full ownership of the interventions they receive. The agreements also will describe the responsibilities after implementation including the obligation to allocate sufficient funds for O&M. The content of these covenants will be further detailed in the POM.

65. **Sustainability will be improved through increased awareness and sense of ownership.** Increased awareness and sense of ownership will be achieved through citizen engagement and participation, not only to include citizen's interests in the decision making on designs but also to increase their collaboration in O&M and M&E. With the help of citizens adequate long-term operation of structural measures can be improved as they are often the ones that first observe malfunctioning of the infrastructure. Increased understanding of how interventions function in reducing flood risks will also reduce the risk of counterproductive behavior of citizens, for example through vandalism or improper disposal of solid waste.

66. **Increasing the social, ecological, and economic value of water will also improve sustainability of the projects.** Making solid assessments of what this added value is for the community and finding the proper ways to communicate this will also increase awareness and support. This added value can be further increased by optimizing the different benefits that green/blue interventions can have for the communities. Therefore, increased collaboration with urban development will be sought to ensure that water and especially flood risk management will be properly integrated in neighborhood upgrading. Interaction and participation of the local communities will strengthen this and will also further increase social cohesion. Proper communication strategies will also further strengthen environmental sustainability.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

67. **The interventions included in the first phase of the MPA have been prepared by the cities and provinces, prioritized by the MOP, and further developed by SIPH and DiGePPSE**. These interventions are assessed as no-regret measures meaning that, given their urgency, expected impact, and efficiency, they will be implemented in any given alternative package of interventions to reduce flood risks. During preparation of the Project an assessment has been carried out to ensure that these interventions are coherent under a river basin approach. The Project will fund additional flood risk management interventions to be defined during implementation. Four cities have presented and prepared interventions under Component 1 that the PEA and the Bank are analyzing in detail to prepare for implementation. Under Component 2 the government will prepare urban flood risk management plans using their existing drainage plans as a starting point. It is expected that additional interventions (in other cities) will become eligible for financing using criteria such as cost effectiveness, impact on poor and vulnerability factors of communities.

Technical analysis

68. **A technical assessment of the pre-identified interventions under Component 1 has been performed.** The proposed interventions were found technically adequate, with designs that address the need to upgrade the systems to adapt to climate change effects and address the challenges derived from flood risks in each urban setting. The following paragraphs summarize the identified interventions. Additional interventions to be identified will also include green and grey infrastructure to improve drainage and adapt to climate change effects and non-structural interventions to improve sustainability. Further information is presented in Annex I.

a. **Improvement of urban drainage and flood defense systems including pumping stations of the city of Pirané, Formosa (US$22 million).** The activity focuses on the implementation of Pirane's Urban Drainage Plan. It comprises several structural interventions to reduce flood risks. Additionally, non-structural interventions will be carried out to improve capacity for O&M, development of an early warning system and adequate solid waste management as this will allow the use of the full retention and discharge capacity of the system needed in the face of climate change. The intervention will also include the construction of a water park for public use, increasing awareness on issues like climate change and flood risks. Expected beneficiaries from reduced flood exposure are more than 20,000 people, and beneficiaries from reduced flood impacts are close to 65,000 people.

b. **Improvement of the existing hydraulic conditions of the Canal Alvarado and the integration of the works in urban development in San Salvador de Jujuy, Jujuy (US$8.8 million).** This intervention will recondition and improve the existing stormwater drainage system in the San Pedrito neighborhood. This activity will address issues resulting from uncontrolled urban sprawl, which has led to the expansion of vulnerable settlements along the canal. Non-structural interventions will include regulating land use in the riparian area allowing for more room for water (retention) to adapt to changing precipitation patterns; (ii) development of an early warning system; and (iii) improved solid waste management. Expected beneficiaries from reduced flood exposure are more than 23,000 people, and beneficiaries from reduced flood impacts amount to just over 234,000 people living in the Canal Alvarado basin.

c. **Rehabilitation of Canal Alvear and secondary drainage network in the city of Salta, Salta (US$23.4 million).** The main part of the intervention[41] seeks to rehabilitate and upgrade the existing tunneled section of the Canal Alvear and its secondary network draining to the Canal-Alvear basin to increase the capacity in the face of climate change. This will be combined with the development of green retention areas to reduce the peak flow toward the canal and reduce the impact of increased precipitation. These green interventions also are expected to have a positive effect on the heat island effect in the city. The intervention includes citizens engagement programs to raise awareness on climate change, flood risk management, resilience, and waste management. Expected beneficiaries from reduced flood exposure are close to 65,000 people, and beneficiaries from reduced flood impacts are around 228,000 people living in the macrocenter area.

d. **Improvement of the Arribalzaga street drainage network, and rehabilitation of Canal Soberania, Resistencia, Chaco (US$18.3 million).** According to the municipality, Resistencia experiences increased flood events as a result of climate change. Interventions considered to reduce impact are (i) rehabilitation of the existing Canal Soberania (10Km) including the construction of a linear park to retain water, and (ii) improvement of the drainage system located in the Avenida Arribalzaga including tunneled drainage and green interventions like rain gardens to reduce the peak flows toward the drainage system.[42] Expected

[41] The tunneled section and secondary drainage network are estimated at 80 percent of the costs and 20 percent of the costs will be related to green interventions.

[42] The estimated breakdown of the costs between green and grey interventions are 40 percent for the linear park, 40 percent for the tunneled drainage and 20 percent for green interventions like rain gardens.

beneficiaries from reduced flood exposure are 15,000 people, and beneficiaries from reduced flood impacts amount to 291,000 people.

Table 4.2 Readiness summary of the preidentified interventions

Identified interventions	Technical designs	Economic analysis	TdR for ESIA	Financial assessment	Estimated Budget (US$million)
Urban drainage and flood defense (Pirané)	✓	✓	✓	✓	22
Canal Alvarado (San Salvador de Jujuy)	✓	✓	✓	✓	8.8
Canal Alvear and secondary drainage network (Salta)	✓		✓	✓	23.4
Drainage Arribalzaga, and Canal Soberanía (Resistencia)				✓	18.3
Total					73.5

Economic Analysis

69. **According to the Argentina´s Water Security Diagnostic carried out by the Bank (2021) urban flood induced losses are equivalent to 0.19 percent of the national GDP mainly as a result of asset damage. When considering impacts on the population's well-being, losses are even higher**. Asset losses from the richest 80 percent of the population represent 2.6 times those of the poorest 20 percent, but the latter have welfare losses equivalent to more than 8 times the losses of richer inhabitants. It is estimated that 34 percent of those affected by floods belong to the lowest income quintile.

70. **Previous Bank-financed operations have shown that flood risk management interventions such as the ones to be financed under this project are economically feasible, showing positive Economic Internal Rates of Return (EIRR) and benefit-cost ratios (B/C) larger than 1.** As a result of limited data, it is often the case, that only a partial economic assessment of structural flood mitigation measures can be carried out, leaving out the valuation of additional benefits and underestimating the positive impacts of these types of investments.

71. **For this project a cost-benefit analysis was selected as the appropriate methodology for interventions' economic assessments.** Benefits accounted for in the evaluation include the reduction of asset loss, the reduction of interruptions in economic and social activities, and the reduction in travel times, among others. Other benefits, associated with the regularization of informal urban settlements, and those linked with green and blue infrastructure, like improved air quality, GHGs emissions reduction, increase of recreational areas, reduction of the heat islands effect, creation of new local socioeconomic opportunities, and tourism, have also been partially considered. To quantify these benefits, the methods of (i) avoided damage; and (ii) hedonic prices have been used.

72. **The provinces of Formosa and Jujuy carried out a cost-benefit analysis for the interventions in Pirané and San Salvador de Jujuy, respectively.** Economic analysis shows that the project is economically feasible presenting B/C ratios larger than 1 and positive EIRR. After performing a sensitivity analysis, considering alternative cost scenarios and discount rates (between four and twelve percent) the interventions continue to be economically feasible, depicting their robustness. In the case of Pirané, benefits were estimated using avoided damage method, and the

results show an EIRR of 17.4 percent with a four percent discount rate for the base scenario. In the case of San Salvador de Jujuy, benefits were estimated using a combination of avoided damage and hedonic prices methods. In this case the EIRR was 12.1 percent.

B. Fiduciary

(i) Financial Management

73. **For the preparation of this project a Financial Management (FM) Assessment was carried out to assess the adequacy of the FM arrangements in place for project implementation at the DiGePPSE within the MOP.**[43] Given that DiGePPSE is currently managing the Bank's Belgrano project (P125151) with overall satisfactory fiduciary arrangements, it was determined that the existing FM arrangements are acceptable to the Bank provided that the DiGePPSE is capable to: (i) correctly and completely record project transactions; (ii) produce the required financial reports and statements in a timely manner; (iii) safeguard the project's assets; and (iv) fulfill annual financial audits acceptable to the Bank. No other than standard conditions for FM will be applicable to the project.

74. **The Argentinian legal framework for FM is well-developed at all levels of government, which is supported by the 1992 Financial Administration Law, revised in 2006, that regulates budgeting, public credit, treasury, government accounting, and internal controls.** The Supplementary and Permanent Budget Act No. 11.672, dated 1932, outlines the budgeting process. The existing National FM System and framework has satisfactory internal rules and controls, with a clear definition of responsibilities and institutional arrangements. Additionally, the 2019 Public Expenditure Financial Accountability (PEFA) assessment findings show that the performance of the FM systems at national level are reasonably aligned with international standards and good practices. In particular, "transparency of public finances performance" is advanced, and "policy-based fiscal strategy and budgeting" pillar shows solid performance, with "budget reliability" and "accounting and reporting" pillars reflecting slightly above basic level of performance. However, the "external scrutiny and audit" pillar had indicators that clearly underperformed in relation to international good practices. Although the systems and tools in place are deemed adequate to support fiscal and budgetary outcomes, there remain opportunities for improving the efficiency and effectiveness of public resources.

75. **Overall, FM arrangements in Argentina function well and this project is expected to make extensive use of country systems in terms of budgeting, flow of funds, internal controls, and internal and external audits.** The project's arrangements are expected to rely on those in place at the Plan Belgrano Water Supply and Sanitation Services Development Project (P125151) currently under implementation with satisfactory performance in terms of FM. The Implementing Agency will be composed by a technical team under the SIPH and a fiduciary team under the DiGePPSE, both within the Ministry of Public Works. The team at SIPH will oversee the coordination and technical implementation of the program, coordinating with the provincial and municipal governments, while the DiGePPSE will oversee the administration as well as the budgetary, environmental, and social, financial, and legal issues. At present these implementation arrangements are used in several programs financed by multilateral development banks.

76. **Unlike in FM matters, the Ministry has shown weak procurement performance in the mentioned Bank project, due to an excessive turnover of officials, limited availability of technical staff and deficient coordination between the technical team and DiGePPSE.** These obstacles caused poor quality of technical specifications, unnecessary repetitions in prior review of procurement documents, prolonged evaluations of bids and proposals and some difficulties in contract management. Throughout the planning, preparation and implementation of interventions

[43] The Financial Management Assessment is conducted in accordance with FM directives and in line with the Bank Guidelines Manual for World Bank-Financed Investment Operations.

intensive collaboration and coordination will take place between the SIPH and DiGePPSE and Component 3 will cover training and workshops to ensure sufficient capacity and improve collaboration also with the provinces and cities where interventions will be carried out.

77. **Financial Reports.** The borrower, through the DiGePPSE, shall prepare and furnish to the Bank interim unaudited financial reports ("IFR") on a semi-annual basis, no later than forty-five (45) days after the end of each calendar semester, in form and substance satisfactory to the Bank.

78. **Audits**. The project will be subject to annual audits of its Financial Statements, commencing with the fiscal year in which the first withdrawal was made. The audited Financial Statements for each period shall be furnished to the Bank by the borrower through DiGePPSE, no later than six months after the end of such period.

(ii) Procurement

79. **Procurement under the Project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services, Fourth Edition November 2020, hereafter "Procurement Regulations."** All contracts will also be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, revised in January 2011, and as of July 1, 2016. Local procedures will be applicable under the conditions allowed by the Procurement Regulations and to the extent that they are consistent with the Bank's procurement principles. The project will use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record, and carry out procurement transactions. A procurement assessment was carried out January 2023 and some risks and mitigation measures have been identified on procurement and implementation matters (see Annexes II and IV).

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

80. **The project will be located in urban and peri-urban areas in the Norte Grande Region, the provinces of Santa Fe and Buenos Aires. Some of the proposed interventions (canal and drainage system rehabilitation/construction and flood control interventions) may impact the waters of the La Plata River system and its tributaries, including the Paraguay, Paraná, Pilcomayo, and Uruguay Rivers, hence, the Legal Policy OP 7.50 on International Waterways applies to the Project.** Riparian notifications were sent by the Bank (on behalf of the government) to other riparian countries including Bolivia, Brazil, Paraguay, and Uruguay on December 20, 2022. Responding to requests by some of the notified countries additional information and additional time for review of project information were provided. As of February 24, 2023, which was the extended deadline, no further responses have been received. Based on the outcome of the notification process and the assessment that the Project will not cause appreciable harm, the Regional Vice President gave his approval to finalize Project preparation on March 9, 2023.

D. Environmental and Social

81. **Based on available information, the nature of project interventions is relatively simple, and the adverse environmental risks and impacts on human populations or the environment they could cause are, in principle, not considered to be significant.** The environmental and social risk is rated as Moderate. The scale of the project's physical interventions is medium to low, with moderate environmental and social sensitivity of implementation sites as they would be in urban and peri-urban areas of selected cities, some of them densely populated (for example, pre-selected cities of Salta and San Salvador de Jujuy and metropolitan area of Resistencia), i.e., in already transformed land.

82. **The magnitude of the expected adverse environmental impacts preliminarily identified is low or moderate and their spatial extent is localized.** No long term, permanent, irreversible, unprecedented, or complex adverse impacts are expected; expected risks and potential adverse impacts preliminarily identified so far will be site-specific, temporary, predictable and/or reversible, and can be mitigated through readily available measures, considering the mitigation hierarchy. These include i.e., alteration of everyday urban traffic, pollution by particulate matter, gaseous emissions, noise, and vibration related to the movement and operation of vehicles and machinery, soil excavation, waste generation of different types, issues with project workers and/or public health and safety, accidental damage to objects and interference to other public services. Given the type of interventions included in the project, no valuable ecosystems, or habitats (legally protected and internationally recognized areas of high biodiversity value) are also expected to be affected.

83. **In principle, there is low probability of serious adverse effects to human health**, being the current COVID pandemic (and uncertainties on its evolution) and the recurrent dengue epidemic the main related risks to be managed, in addition to standard working health and safety risks, that usually are present in this kind of urban infrastructure projects.

84. **The preliminary identified social risks and impacts are few and expected to be low to moderate and easily managed through either subproject design and construction planning (avoidance) or through appropriate mitigation measures included in the environmental and social risk management instruments.** Subprojects may include minor land acquisition, and permanent physical or economic displacement. Also, temporary economic displacement is expected due to restriction of access to businesses during construction and households will experience as well minor negative impacts associated with restriction of access during construction. However, these affected parties will later experience positive impacts when works are finished, and flood risks reduced. In terms of vulnerable groups, such as local communities with high poverty rates, the risk of exclusion is low, given that works are proposed in areas where all can benefit from the project's results. Local communities that live near the site locations will benefit from the project's investments, so they can fully access project benefits. A gender-perspective design is being considered and opportunities to directly hire more women for project implementation will be explored. Vulnerable groups will be considered in the Project's design.

85. **For the management of these risks and potential impacts, the MOP has developed a set of Environmental and Social instruments**. For interventions pre-identified during preparation and for which preliminary designs have been developed (in the cities of Jujuy and Salta) the MOP prepared the Terms Of Reference (TOR) for the Environmental and Social Impact Assessments, which were disclosed in-country and in the World Bank external website on November 18th, 2022. The TOR of the Jujuy subproject were consulted at the local level and the corresponding report was disclosed in country on February 6th, 2023 and in the World Bank external Website on February 25th, 2023; the consultation process of the Salta subproject is currently planned to be carried out during the first semester of 2023. The MOP also developed a Stakeholder Engagement Plan (SEP), to ensure active participation of key stakeholders during project preparation and implementation, and a Resettlement Policy Framework (RPF) to cover any potential impact under ESS5. Draft versions of the SEP and the RPR were disclosed in-country[44] and in the World Bank external website, respectively, on January

[44] https://www.argentina.gob.ar/obras-publicas/birf-p178534

20th, 2023, and on February 24th, 2023, prior to appraisal. For interventions to be identified during project implementation, the MOP will develop an ESMF establishing the E&S management requirements to be applied to the subproject selection, design, and implementation; it will be finalized before initiating the preparation of any subproject selected during implementation. The MOP will also develop Labor-Management Procedures (LMP) to be finalized before hiring any project worker. Environmental and social commitments have been reflected in an Environmental and Social Commitment Plan (ESCP); the ESCP was disclosed in-country and on the World Bank's external website[45] on April 13h, 2023. The Appraisal Environmental and Social Review Summary (A-ESRS) was disclosed in the World Bank´s external website on January 20th, 2023.

V. GRIEVANCE REDRESS SERVICES

86. **Grievance Redress.** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit http://www.worldbank.org/grs. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit *https://accountability.worldbank.org/*.

VI. KEY RISKS

86. **Political and governance risk is assessed as Moderate.** In October 2023 there will be presidential elections which could undermine the commitment to decisions related to the Project, such as selected provinces, municipalities, and neighborhoods for interventions. However, given the priority given to flood risk reduction, the high need to address these aspects in pre-selected cities and locations and the flexibility to include additional projects in this or consecutive phases of the MPA, the risk is rated as moderate. Considered mitigation measures include (i) active consultation with the borrower to understand political and governance risks, (ii) constant monitoring of the dynamics of the political situation in the country, and (iii) conduct regular risk analyses with the Country Management Unit (CMU) and coordinate an appropriate risk response.

87. **The macroeconomic risks are High.** The risks include high foreign exchange volatility and high inflation, which may lead to price volatility and adjustments particularly for contracts and civil works. The project will be fully financed by the Bank to mitigate the risk of constrained counterpart financing during this fiscal situation. The contracts will have specific price adjustment clauses to further mitigate the risks.

88. **The Institutional Capacity for Implementation and Sustainability risk is rated Substantial.** The risk assessment is based upon the capacity of the government's PEA to implement the activities supported by the Project and achieve

[45] https://www.argentina.gob.ar/obras-publicas/birf-p178534

the set objectives. In previous Bank projects executed by the borrower, challenges surfaced in relation to the coordination between the two teams of the PEA as well as with the beneficiary's technical institutions at provincial and municipal level. Additionally, the lack of specialized staff has led to weaknesses in the design and implementation of subprojects. These risks will be minimized through ensuring the participation of the benefiting province/municipality in the design, development of Terms of References, tendering and implementation, and the provisioning of capacity building for the involved institutions at local, provincial, and national levels to increase technical capacity.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Argentina

Climate Resilient Infrastructure for Urban Flood Risk Management Project

Project Development Objective(s)

The PDO is to reduce flood risk in selected cities and improve integrated urban flood risk management in Argentina, and act effectively in case of an Eligible Crisis or Emergency.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
To reduce flood risk in selected cities and improve integrated urban flood risk management in Argent			
Number of people with reduced flood exposure as a result of Project interventions (Number)		0.00	123,000.00
Number of cities that adopted improved integrated urban flood risk management practices as a result of the Project (Number)		0.00	10.00
Number of people with reduced flood impacts as a result of Project interventions (Number)		0.00	818,000.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
C1 - Climate reslient infrastructure for flood risk mitigation and adaptation in selected cities			
Operation and management plans prepared for project interventions (Percentage)		0.00	100.00
Number of cities with integration of green and/or blue interventions as a result of project's activities (Number)		0.00	5.00
Creation of new public space as a result of green/blue interventions (Hectare(Ha))		0.00	30.00
Subprojects that have incorporated feedback received on the beneficiaries participation process (Percentage)		0.00	30.00
C2 - Capacity building and vulnerability reduction			
Events organized to engage civil society in flood-risk resilience, awareness, preparedness and management (Number)		0.00	10.00
Development and endorsement of urban water management strategies and plans at watershed scale (Number)		0.00	3.00
Officials and practitioners trained on increased resilience for flood-risk preparedness (Number)		0.00	150.00
C3 - Project Management			
Grievances responded and/or resolved within the stipulated service standards for response times (Percentage)		0.00	100.00
Change in percentage (increase) of the share of women in subnational organizations participating in water management decisions (Percentage)		0.00	5.00

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of people with reduced flood exposure as a result of Project interventions	This comprises the total number of beneficiaries from reduced flood exposure from interventions of Component 1.	Biannual	Supervision reports	The indicator will be calculated by adding the number of beneficiaries of reduced exposure to floods as a result of interventions under Component 1.	Execution Entity
Number of cities that adopted improved integrated urban flood risk management practices as a result of the Project	Number of cities that adopted improved integrated urban flood risk management practices as a result of the Project (Components 1 and 2)	Biannual	Supervision reports	Addition of cities where improved and integrated urban flood risk management practices are incorporated as a result of the Project's activities.	Executing Entity
Number of people with reduced flood impacts as a result of Project interventions	This comprises the total number of beneficiaries (those with lower flood exposure and receiving indirect flood-related impacts) from the interventions conducted under Component 1 and 2.	Biannual	Supervision Reports	The indicator will be calculated by adding the total number of beneficiaries (those with lower flood exposure and receiving indirect flood-related impacts) from the interventions conducted under components 1 and 2.	Executing Entity

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Operation and management plans prepared for project interventions	Each project-funded intervention is expected to be accompanied by an operation and maintenance plan. This indicator will measure the compliance of such measure. O&M plans include a chapter on gender and inclusion.	Biannual	Supervision reports	O&M manuals are developed and presented to the Bank after works are completed.	Executing Entity
Number of cities with integration of green and/or blue interventions as a result of project's activities	Cities already include: (i) Pirané parque de agua, (ii) Canal Soberania (Resistencia), (iii) Salta Linear Park Canal Oeste and cities where integrated flood risk management plans will be developed.	Biannual	Supervision reports	Hydraulic model calculation of volumen retained, according to permeability parameters, runoff, and slopes for a before and after interventions scenario	Executing Entity
Creation of new public space as a result of green/blue interventions	New public space created from linear parks, retention areas, an other green interventions.	Biannual	Supervision reports	Spatial comparison of flood modelling outputs for a before and after interventions' scenarios.	Executing Entity
Subprojects that have incorporated feedback received on the beneficiaries participation process	Percentage of subprojects that have been updated considering feedback received from beneficiaries in the public consultation	Biannual	Public consultation report and subproject participatory	Subprojects updated based on the participation process feedback are counted.	Executing Entity

	process, including the public audit.		design workshops.		
Events organized to engage civil society in flood-risk resilience, awareness, preparedness and management	Two broad events organized in cities covered by this Project to increase awareness of stakeholders on objectives including preparedness and management of flood risks and engage civil society (Pirane, Salta, Jujuy, Formosa, Resistencia).	Biannual	Supervision reports	Addition of the number of events organized in cities covered by this Project which have as an objective to increase awareness of stakeholders on objectives including preparedness and management of flood risks and engage civil society.	Executing Entity
Development and endorsement of urban water management strategies and plans at watershed scale	Pre-identified actions include plans for sustainable drainage and water management for the cities of Clorinda and Formosa. Endorsed plans entails that they are ratified/passed as local law or decree by corresponding authorities.	Biannual	Supervision reports	Addition of the number of plans for sustainable drainage and water management completed and endorsed (ratified/passed as local law or decree) by corresponding authorities.	Executing Entity
Officials and practitioners trained on increased resilience for flood-risk preparedness	Number of technical officials and decisionmakers working in the water management sector who have undergone a training/capacity	Biannual	Supervision reports	The number of national-level officials that participate in each training will be recorded and number of trained personnel will be updated biannually	Executing Entity

	building/seminar successfully provided in the project's context (minumum of 10 officials per city included in this Project).				
Grievances responded and/or resolved within the stipulated service standards for response times		Semi-annual	Supervision reports	GRM systems	Executing Entity
Change in percentage (increase) of the share of women in subnational organizations participating in water management decisions	The indicator will be measured against the baseline, defined in year 1. At least 50 per cent of the provinces where interventions are carried out are expected to increase – on average - 5 per cent their share of women in technical (technical staff belonging to the water management-related departments), managerial (head of units, head of departments, managers) and/or decision-making positions (directors, secretariats) by the end of Project, in the aim working towards gender equality.	Semi-annual	Supervision reports	The provinces where the indicator will be measured and monitored will be defined, together with the baseline during year 1 of the Project. These must represent at least in at least 50 per cent of the subnational areas where interventions are taking place. These jurisdictions will remain constant throughout the Project´'s implementation. For the baselines' calculations, the total number of women working in technical, medior and senior management positions will be accounted for, and compared to the total	Executing Entity

				number of people in those positions. Biannual progress towards the objective will be evaluated in the same manner. Average percentual values will be compared, and an increment of 5 per cent is expected to be achieved by the end of the Project (year 7). For instance, if the baseline is 30 %, the expected average increase for the end target will be 31.5 per cent (30% + (30%*5%)=31.5%)	

ANNEX I: Technical Assessment

1. Structural interventions have been identified in four cities: Salta (Salta), San Salvador de Jujuy (Jujuy), Pirané (Formosa) and Resistencia (Chaco) while the elaboration of flood risk management plans is programmed for Clorinda and the city of Formosa. Each project will be supported by complete technical designs considering climate change effects, proof of its economic feasibility, financial sustainability, as well as adequate environmental and social management.

Table A1.13. Phase I beneficiaries per Project's component.

STATUS	PROVINCE	CITY	ACTIVITIES	BENEFICIARIES from Reduced Flood Exposure	BENEFICIARIES from Reduced Flood Impacts
Component 1					
Identified	Formosa	Pirané	Urban drainage and flood defense systems	20,000	65,000
			Pirane's Water Park.		
	Jujuy	San Salvador de Jujuy	Rehabilitation of Canal Alvarado, secondary and tertiary drainage, and green interventions	23,000	234,000
	Salta	Salta	Rehabilitation of *Alvear* Channel.	65,000	228,000
			Caseros-Alvear drainage network.		
			Canal Oeste Linear Park.	TBC	
	Chaco	Resistencia	*Arribalzaga* drainage system.	15,000	291,000
			Rehabilitation *Soberania Nacional* Channel.	TBC	
Shortlisted	Misiones	Aristobulo del Valle	Improvement of the Alegre stream.	21,000	TBC
		Posadas	Improvement, channeling, and landscaping of public areas (Stage 1).	276,000	TBC
			Drainage network for Itamaebe Guazu urbanization.	TBC	TBC
	Tucuman	TBC	TBC	TBC	TBC
Component 2					
Identified	Formosa	Formosa	Sustainable drainage and water management Master Plan	N/A	222,000
		Clorinda	Sustainable drainage and water management Master Plan	N/A	54,000

Salta: Rehabilitation of Canal Alvear and drainage network in the city (Caseros-Alvear river basin)

2. **Geographic Focus Area.** The Province of Salta is located northwest of Argentina. It has a population of 1,214,441, according to the 2010 census prepared by the National Institute of Statistics and Census (Instituto Nacional de Estadística y Censos – INDEC), and a total area of 155,488 km2 (making it the sixth-largest province in the country). Its capital is the city of Salta, and it has an average rainfall of 757mm. Salta is situated in the Lerma Valley, a ravine of pluvial origin located in the Oriental Mountain range near La Puna. In recent decades, the urban area has expanded to reach neighboring towns, such as Villa San Lorenzo and Vaqueros to the North, and Villa Los Alamos to the South, forming the conglomerate known as Greater Salta or Metropolitan Area. Urban expansion has generated structural pressure, determined partly by natural geographical conditions and common limitations of land use planning processes that do not satisfy current spatial and housing demands. Additionally, urban growth was not accompanied by the necessary urban drainage infrastructure works, causing the existing systems to become less efficient and resulting in exacerbated flooding episodes after rainfall events.

3. **Current situation.**

a. Over the last 30 years, Salta has undergone a process of urbanization development with inadequate planning and a disregard for hydrological and hydraulic aspects. This has resulted in a lack of green and open areas, increasing soil impermeabilization and direct run-off. Additionally, climate change and reduced room for storage and limited natural drainage capacity as a result of occupation of flood-prone areas (river and stream banks), often by informal settlements, has exacerbated vulnerability and reduced resilience.

b. Peripherical urban settlements lack access to clean water, sewerage, and drainage systems and are exposed to health risks and waterlogging.

c. The current drainage system lacks development and maintenance, especially the secondary drainage network that no longer has the capacity to drain sufficient storm water.

4. **Proposed interventions.** The selected intervention will improve the hydraulic conditions of the existing Canal Alvear in the Caseros-Alvear basin. It is a sector located in the Center of Salta, which houses the Calixto Gauna, Campo Caseros, San Martin, El Carmen, and San Cayetano neighborhoods with a high demographic and commercial density. In the area a significant number of schools are located. The need for flood reduction infrastructure in this area is evident. The current drainage configuration cannot support the increasing frequency and severity of precipitation that is leading to floods, with water depths reaching up to 80 cm and velocities over 2 m/sec. These are dangerous hazards for population and assets. Flooding in the area disrupts day-to-day activities, accessibility of primary and secondary schools and traffic. Works will involve the opening of the drainage tunnel or emissary to be rebuilt with reinforced concrete, improvement of the secondary drainage system and construction of rain gardens to reduce the peak discharge. The designs for the new infrastructure will take into consideration the effects of climate change.

5. **Beneficiaries**. Expected beneficiaries from reduced flood exposure are about 65,000 beneficiaries from reduced flood exposure, corresponding to population living in Caseros-Alvear basin, and 228,000 beneficiaries from reduced flood impacts living in the macro-center area.

6. **Cost**. The estimated budget is about US$23.4 million. Bidding documents and updated budget are under development.

San Salvador de Jujuy: Development of Canal Alvarado

7. **Geographic Focus Area.** The Province of Jujuy has a total area of 53,219 km^2 and 673,387 inhabitants, of which 87 percent are urban dwellers. San Salvador de Jujuy is the capital of the province and has a population of 265,249 inhabitants (INDEC Census 2010). The historic center is located between the Grande and Xibi-Xibi rivers, but the population increase has caused urbanization to exceed the limits. The area where the interventions will take place is a basin of approx. 7.94 Km^2, covering the neighborhoods of San Pedrito, Coronel Arias, Bajo & Alto Gorriti, and Mariano Moreno, which represent 25 percent of the city of San Salvador de Jujuy (257,970 residents).

8. **Current situation**.

a. Fast urban development with limited consideration of criteria related to storm water drainage resulted in insufficient drainage capacity and flooding exacerbated by improper solid waste management. These floods cause damage to assets and property while disrupting mobility and connectivity.

b. Canal Alvarado is an urban barrier within the neighborhood. The open-air storm drainage canal adjacent to Sergio Alvarado St., hinders the urban connectivity. There is a lack of pedestrian walkways and there are insufficient bridges limiting the social connection between the areas on both sides of the canal.

c. Lack of green areas. There's a deficit of space for recreation and leisure (only 0.5 percent), hence inhabitants have very limited access to these types of community facilities.

d. Lack of infrastructure maintenance and upgrading to adapt to climate change. Concrete structures have collapsed, and borders of the canal are eroded. This in combination with the lack of solid waste management and a lack of environmental awareness has turned parts of the canal into micro-waste dumps. The accumulation of solid waste and the stagnation of water also contributes to the spread of diseases such as Dengue.

9. **Proposed interventions**. Proposed works in San Salvador de Jujuy to adapt to climate change and reduce flood risks include (i) the construction of a new Canal (2.5Km), (ii) the consolidation of the surface runoff stormwater drainage network (4867m of gutter systems and 468m^2 of channels), and (iii) the planting of Squares, Parks, and Green Corridors along the Canal as a complement to grey infrastructure and to increase water retention in the focus areas. Additionally, interventions are planned to beautify the border of the Canal and to construct bike paths along the Canal. Also, a series of non-structural interventions are expected to be developed including an early warning system, and the planning of an adequate urban solid waste management system.

10. **Beneficiaries**. Expected beneficiaries from reduced flood exposure are estimated at 23,000, and beneficiaries from reduced flood impacts are estimated at 234,000 people.

11. **Cost**. Approximately US$8.8 million.

Pirané, Formosa: Improvement of urban drainage and flood defense systems in the city

12. **Geographic Focus Area.** The department of Pirané has a surface area of 8,425 km^2 and the municipal area approximately 8,000 ha, of which 7.8 percent is urbanized (624 ha). Pirane's population is approximately 20,335 inhabitants (2010). The dominant hydrological feature of the Pirané site area is a typical flatland relief with large tracts of land occupied by wetlands and lagoons, such as the Pirané and Gallego estuaries and the Pirané lagoon. Floods in Pirané are caused by local rains and those occurring in the northwestern area. Additionally, surface runoff is slow and complex because the estuaries have very little slope, are covered with dense vegetation, and there is a lack of hierarchical course that would allow for the rapid evacuation of water. These hydrological

challenges are aggravated given the existing urban morphology and rail infrastructure that cut across the river basin.

13. **Current situation**.

a. Urban drainage system. Pirane's stormwater drainage network consists of ditches located in the green space of sidewalks and open collector channels. There are no buried storm drains or conduits. The drainage networks drain into the town's surrounding wetlands, which act as reservoirs, and discharge capacity depends on their volume. Furthermore, most canals and culverts present excessive sedimentation and vegetation, and deficiencies in the general slopes of the system. According to the municipality there is an increase of flooding as a result of more extreme storm events.

b. North-West defense and three pumping stations. Made of cohesive material, the dike was reconditioned by the province in 2010. It has a total length of 8660 meters, a crown width of 6 meters with lateral slopes (1V:2H), an average elevation of 82.5 meters above sea level (a.s.l.), with maximum heights compared to the surrounding terrain of 2.5m in sectors of Obrero neighborhood and less than 1m in the southwest end of the dike. The dike is also used as a road, which due to the absence of paving has accelerated erosion processes. Additionally, there are areas where soil has been removed from the dike's slopes reducing their stability. Finally, part of the dike's trace lays on private property, hindering maintenance works.

14. **Proposed works.** Proposed works under this subproject to improve drainage capacity and adapt to climate change include interventions such as (i) reconditioning of existing defenses (crown height at 82.5 meters a.s.l.) with cohesive material; (ii) building the East Defense for flood risk mitigation (5,600 meters long); (iii) Constructing the East/Matadero pumping station (evacuation capacity of 3 m^3/s) and a 12 Ha reservoir (storage capacity of 100,000 m^3); (iv) reconditioning existing reservoirs at the Obrero, Evita, and 20 de Junio neighborhoods; (v) reconditioning of existing pumping stations at Obrero and Evita neighborhoods (0.5 m^3/s evacuation capacity); (vi) implementing 13 km of concrete - lining in existing canals and 4.5 km of reinforced concrete conducts; and (vii) reconditioning of existing 4 km of urban canals, 3 km of rural canals and gutters.

15. **Beneficiaries**. Expected beneficiaries are around 20,000 beneficiaries reduced flood exposure corresponding to population living in the urban center of Pirané, while the whole population of Pirané, 65,000 beneficiaries from reduced flood impacts, are expected to benefit from reduction in disturbances of circulation and economic activities as well as from the use of the Water Park.

16. **Cost**. Approximately US$22 million.

Resistencia, Chaco: Arribalzaga drainage system and Rehabilitation of Soberania Nacional Channel

17. **Geographic Focus Area.** The city of Resistencia is the capital of the Chaco Province. It is located in the southwest of the province and in the northeast of the San Fernando department. Combined with three neighboring towns, the area is called Greater Resistencia (562 km^2) and is characterized as a main cultural and economic center. The urban basin of Avenida Lynch Arribalzaga, in the city of Resistencia, is located in the South Zone of the embanked area in the Greater Resistencia Metropolitan Area including neighborhoods 200, 277, 204, 208, 284 and 295, with a total area of the order of 3,07 km2. It is an area exposed to ongoing informal urbanization with an extremely high percentage of its houses lacking basic urban infrastructure.

18. **Current situation.** Because of the limited slope, this area gets easily flooded, even during medium intensity storms. Rainwater runoff occurs basically through different ditches adjacent to the streets, all of them draining to the same canal (Soberania). These ditches often do not have the capacity to drain the storm water to

the main drainage system of the basin and eventually overflow. Thus, given that the actual drainage capacity is insufficient, the population is permanently exposed to flooding events, expected to be exacerbated by climate change.

19. **Proposed works**. The Project will finance the construction of a tunnel in combination with rain gardens for retention to better regulate discharge and reduce flooding in the area. The pre-identified interventions adapt to climate change and reduce flood risks. Those are the execution of the storm water tunnel under Avenida Lynch Arribalzaga, its paving, and the Linear Park of Avenida Soberania Nacional.

20. Interventions considered are (i) rehabilitation of Canal Soberania (10Km), (ii) Av. Arribalzaga improvement. No technical specifications have been received yet. However, all works will complement existing schemes, including pumping stations with evacuation capacities of less than $10m^3/s$ and less than 5 Km long drainage pluvial systems.

21. **Beneficiaries**. Expected beneficiaries from reduced flood exposure are estimated at 15,000, corresponding to the population living in La Rubita neighborhood, while beneficiaries from reduced flood impacts ascend to 291,000.

22. **Cost**. Approximately US$18.3 million

Innovative interventions (green and blue interventions)

23. In urban areas, the traditional, or “grey,” drainage infrastructure predominates over retention options and nature-based, or “green/blue” infrastructure. So far, most pre-identified interventions under the Project are based on conventional “grey” infrastructure, predominantly stormwater drainage networks, and concrete defenses along rivers and streams. However, to better adapt to climate change, Argentina is exploring opportunities to increase efficiency of interventions by better balancing grey and green-blue infrastructure. Sub-component 1.2 in innovative interventions aims to support the development and inclusion of green-blue infrastructure in urban and peri-urban settings. These solutions use ecosystems, soil permeability, and the natural retention of runoff to enhance infiltration or evapotranspiration processes, thus reducing surface flows. Green-blue infrastructure improves habitat connectivity, enhances air quality, supports carbon sequestration, promotes community identity and well-being, and reduces energy consumption. Therefore, accounting for multiple benefits across environmental, social, economic, and public health sectors. Within the comprehensive matrix of green-blue infrastructure options, the Project will include retention areas, rain gardens, and permeable pavements, amongst others.

24. Potential innovative interventions have already been identified in Salta, Pirané, and Resistencia.

a. In Salta, the identified intervention focuses on developing a linear park along the Canal Oeste to increase retention capacity and stormwater infiltration (cost yet to be determined).

b. In Resistencia, the identified intervention focuses on developing a linear park along Canal Soberania Nacional (cost yet to be determined).

c. In Pirané, the Water Park will function as a retention area and will include a walkway with placards that will inform the visitors on climate change and the effect of climate change on flood risks. The objective is to increase awareness and showcase the work done by the municipality to reduce risks using grey, green, and blue interventions and how citizens can support proper functioning of the drainage system (cost yet to be determined).

ANNEX II: Implementation Arrangements and Support Plan

A. Project Institutional and Implementation Arrangements

1. **The Borrower is the Argentine Republic, and the Implementing Agency will be composed by a technical team under the SIPH and a fiduciary team under DiGePPSE, both within the MOP**. The team at SIPH will oversee the coordination and technical implementation of the program, coordinating with the provincial and municipal governments, while the DiGePPSE will oversee the administration as well as the budgetary, environmental, and social, financial, and legal issues. At present these implementation arrangements are used in several programs financed by multilateral development banks. While the requests for interventions will come from provincial and municipal governments, the PEA will be responsible for (outsourcing) the design and implementation of the interventions. Municipalities and provincial authorities will be involved throughout the design, bidding and implementation providing the required information to prepare and assess projects, review every work consultancy contract, and participate in the supervision of works. Technical tasks such as developing technical specifications, reviewing technical proposals, contract products, and supervising contracts will be carried out by the team under the SIPH.

2. **Throughout the planning, preparation and implementation of interventions intensive collaboration and coordination will take place between the PEA and the cities where interventions will be carried out to ensure that structural and non-structural interventions answer to the specific needs of the cities.** Special attention will be given to capacity building between the PEA and the provinces through workshops and activities allowing the transfer of skills. This will enable the responsible provincial and municipal authorities to carry out O&M to increase the sustainability of the projects and ensure that the strategies, plans and tools to be developed will be used in an optimum manner. Collaboration will be promoted since the design stages of the interventions, with a required percentage of female representation. This collaboration and coordination between the different levels of governments will be laid out in an annex of the covenant signed between the national government and the authority that will receive the works. The content of these covenants will be further detailed in the POM.

3. **The financial management, procurement, environmental and social responsibilities will be carried out by DiGePPSE that has shown good capacity to work with Bank's systems.** General environmental and social management responsibilities (including supervision) will remain in DiGePPSE, which will coordinate activities with local entities as necessary. Given that this will be the first operation with the MOP under the Bank's ESF, an assessment was carried out prior to appraisal. In general terms, it was found that the current ESHS team of DiGePPSE, with the support of an additional specialist on communication / public relations that belongs to the same Directorate, has the required capacity for the management of the Project, for which the risk is rated as Moderate.

B. Financial Management

4. A Financial Management Assessment (FMA) was carried out to assess the adequacy of the Financial Management (FM) arrangements in place at the DiGePPSE within the MOP for project implementation.[46] Given that DiGePPSE is currently managing the Bank's Belgrano project with overall satisfactory fiduciary arrangements, it was determined that the FM arrangements in place are acceptable to the Bank provided that: i) the DiGePPSE

[46] The Financial Management Assessment (FMA) is conducted in accordance with FM directives and in line with specific Bank Guidelines Manual for World Bank-Financed Investment Operations.

is capable to correctly and completely record project transactions; ii) produce the required financial reports and statements on a timely manner; iii) safeguard the project's assets; and iv) fulfill annual financial audits acceptable to the Bank.

5. **Risk Assessment and Mitigation**. The overall FM risk after mitigating measures is assessed Moderate, based on the Project FM design and the DiGePPSE's wide experience with World Bank-financed projects. The following mitigating measures are designed to cope with the identified Project's FM residual risks: (i) preparation of a POM including a section with FM arrangements acceptable to the Bank; (ii) designation of specific FM staff within the PIUs (together with the hiring of additional staff/consultants as required to provide additional fiduciary support) and (iii) annual audit of Project's financial statements following auditing standards and terms of reference acceptable to the Bank. The Project risk rating will be reviewed regularly during Project supervision. Additionally, the procurement capacity assessment determined that the PEA has experience in implementing Bank's operations and other multilateral development organizations financed Projects (IDB, CAF, FONPLATA, etc.) and is staffed to handle the challenges of the new Project implementation. However, some weaknesses should be addressed so as not to repeat the procurement issues detected in previous Bank's operations, as described in Annex III. The fiduciary risk rating would be reviewed and updated during project preparation, based on new developments and the impact of any mitigation measures that may be taken (e.g., capacity building of fiduciary teams; preparation of the POM which will describe main fiduciary procedures and controls, etc.).

6. The following FM Action Plan was agreed:

Action/Condition	Responsible	By When
1. Prepare the POM and request the Bank's No Objection to the POM, including TOR for the external auditors	DiGePPSE	By Effectiveness
2. Hire/Designate the following fiduciary staff: (i) DiGePPSE overall FM Coordinator.	DiGePPSE	Throughout the Project's life.
3. Participate in the fiduciary training for Bank projects, if required.	DiGePPSE	After Signing

7. Description and Assessment of Project FM arrangements. Specifically, the DiGePPSE will be responsible for: (i) coordinating and supervising the Project's FM overall; (ii) budgeting formulation and execution, iii) managing the Designated Account (DA) and submitting disbursement requests and documentation of expenditures to the World Bank for the project's activities; iv) maintaining the Project's accounting records and preparing the requisite Project financial reports; (v) preparing and submitting IFRs to the World Bank; (vi) preparing and providing all financial documentation and Project reports/information requested by external auditors and World Bank staff (including those related to ADIFSE); and (vii) preparing and updating the Operational Manual.

8. Organization and Staffing. The DiGePPSE line departments have qualified FM staff who can undertake the Project's FM function. These FM professionals have relevant experience in WB-financed project implementation.[47] Staff mapped to the DiGePPSE will always need to include an overall FM coordinator, responsible for ensuring that the Project's fiduciary obligations are met, that the Project's transactions are valid, accurate and completely

[47] Bank-financed projects: Argentina: Plan Belgrano Water Supply and Sanitation Services Development Project (P125151, approved in 2011, and active with closing date in June 2023); Norte Grande Water Infrastructure Project (*P120211*, approved in 2010 and closed in 2019) and AR APL2 Urban Flood Prevention and Drainage Project (*P093491*, approved in 2006 and closed in 2014).

captured, and acting as the main counterpart to the Bank regarding FM and disbursement issues. In summary, DiGePPSE has a suitable organizational structure to ensure responsible Project management.

9. Budgeting. National budget formulation and implementation are guided by rules established by the National Constitution and the Financial Administration Law. The preparation of the annual budget, which integrates current and capital expenditures, is coordinated by the DiGePPSE, within the Ministry of Public Works, and follows a clearly defined calendar that is generally adhered to. The Federal Government's integrated budget and accounting IT system e-SIDIF, Sistema Integrado de Información Financiera will be used for fulfilling the project's budgeting and accounting needs. The Project will execute budget allocation from the Ministry of Public Work's general budget. The Project will rely on the Argentinian procedures for budget formulation and execution.

10. Accounting. The accounting module of the Project Executing Units with External Financing, Unidades Ejecutoras de Proyectos con Financiamiento Externo (UEPEX) system will be used for recording the project's transactions. Furthermore, the accounting module will be used to also record Project transactions. UEPEX[48] is the Federal Government's IT module for accounting and financial reporting of donor-financed operations. The UEPEX system allows the DiGePPSE to record Project transactions in US dollars and local currency. The UEPEX system provides a good ex-ante internal control framework and it is considered adequate for accounting purposes.

11. The DiGePPSE will be primarily responsible for: (i) maintaining the Project's accounts with the chart of accounts reflecting the Project categories, components and source of funding; and (ii) producing the requisite annual financial statements following the International Accounting Standards (IAS). The cash basis accounting is expected to be used to maintain the project's records.

12. Internal Control and Internal Auditing. The internal control environment to be used for the Project is anchored in Argentina's legal and institutional framework and Ministry of Public Works' internal approval processes and systems, that provide for reasonable segregation of duties, supervision, quality control reviews and reconciliation. The internal controls relevant to the Project include arrangements to provide assurance that: (a) operations are conducted effectively, efficiently, and in accordance with relevant financing agreements; (b) financial and operational reporting is reliable; (c) applicable laws and regulations are complied with; and (d) assets and records are safeguarded. The use of the national e-SIDIF and the UEPEX systems, with its inbuilt controls that ensure proper authorization of transactions, contributes to the observance of these controls.

13. DiGePPSE is subject to internal audit by the General Syndicate of the Nation (Sindicatura General de la Nación, SIGEN), which is the Federal Government's Internal Audit Agency, under the jurisdiction of the Executive branch. SIGEN is an integral part of the Federal Government's internal control system providing the following core services: (i) assessing the adequacy and effectiveness of the internal control system (internal audit of the Executive branch); (ii) supervising and coordinating the actions of the various Ministries/Agencies' Internal Audit Units (IAUs) and approving their audit plans; and (iii) compliance auditing of procurement processes and contracts. The IAU carries out the internal audits under the supervision of SIGEN. The IAU audits are scheduled/planned based on specific works projects in progress, not on an annual basis.

14. The Project's internal control system will be documented in the Operational Manual. The Operational Manual will comprise descriptions, flow charts, policies, templates and forms, user-friendly tools, tips and techniques to ensure that the approval and authorization controls continue to be adequate and are properly documented and followed with adequate safeguarding of the Project's assets (including the following topics in the FM and Disbursements section: Flow of Funds, Chart of Accounts, Project organizational structure and responsibilities, oversight lines, authority limits, internal and external audit arrangements, accounting practices,

[48] UEPEX: Argentina budget execution and recording software for multi-lateral financed operations.

disbursement procedures and the financial reporting arrangements). The Manual will be prepared by the DiGePPSE and be approved by the Bank and be maintained/updated throughout the Project's life. A draft of the Manual was presented to the Bank and concluded it was adequate and that covers the main aspects of the Project's FM functions, roles and responsibilities.

15. DiGePPSE transaction processing will use the requirements established in the Operational Manual and that provide for reasonable segregation of duties, supervision, quality control reviews and reconciliation. The process flows appear to be well understood by DiGePPSE personnel. Bank reconciliations are performed regularly and there is adequate segregation of duties/functions. The bank accounts reconciliation will be prepared by someone from DiGePPSE who does not process or approve payments, and all unusual items on the bank reconciliation will be reviewed and approved by the FM coordinator.

16. All Project transactions will be processed within the e-SIDIF and UEPEX systems, which enforces strict segregation of duties, controls the preparation and approval of transactions to ensure that these transactions are properly executed and recorded (i.e. different units or persons authorize the transaction and record the transaction), and guarantees the confidentiality, integrity and availability data. All accounting and support documents are retained on a secure basis, using a physical system and an electronic system that allows for easy retrieval for the authorized user.

17. It is concluded that internal controls framework in place for the DiGePPSE is adequate and capable to carry out the Project's activities.

C. Disbursement

18. The primary disbursement method will be the Advance method. There are no Lapsed Loans. DiGePPSE will be also able to process Reimbursements and Direct Payments, if required.

19. Flow of funds: Bank funds will be transferred to specific segregated account, to be opened specifically for the Project, Designated Account (DA) in US dollars at the Banco de la Nacion Argentina (BNA) under control of the DiGEPSE.

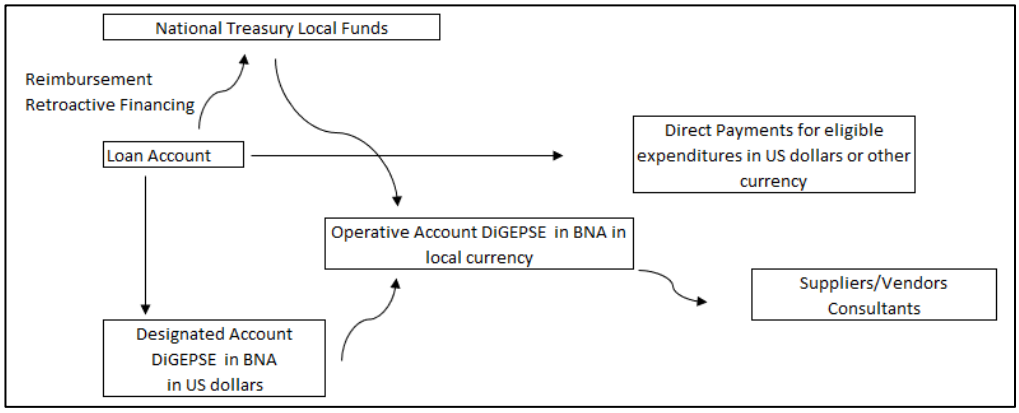
20. Another segregated bank account will be opened (DiGePPSE local currency operating account) in the BNA, in local currency, for the purpose of: i) receiving funds from the DA to pay for eligible expenditures to be paid to suppliers/vendors by DiGePPSE; and ii) receiving local funds from the National Budget. Payment processes will be registered by DiGePPSE in the UEPEX and e-SIDIF systems.

21. The IFRs (for financial reporting purposes and not disbursement purposes) and SOEs will be prepared by DiGEPSE, with information available in UEPEX. [49]

22. DiGePPSE staff would request access to the Bank's Client Connection webpage to perform the periodic reconciliation between its own registries and the Bank's disbursement records.

[49] The General Conditions require the Borrower to retain all records (contracts, orders, invoices, bills, receipts, and other documents) evidencing eligible expenditures and to enable the Bank's representatives to examine such records. They also require the records to be retained for at least one year following receipt by the Bank of the final audited financial statements required in accordance of the Legal Agreement or two years after the Closing Date, whichever is later. Borrowers are responsible for ensuring that document retention beyond the period required by the Legal Agreement complies with their government's regulations.

Figure 1. Flow of Funds



23. The disbursement of Project funds to DiGePPSE will be processed in accordance with Bank procedures as stipulated in the Legal Agreement and in the Disbursement and Financial Information Letter (DFIL). Funds will be disbursed in respect of eligible expenditures incurred or to be incurred under the Project and will be disbursed in accordance of agreed financing percentages.

24. The Project Application Deadline Date (final date on which the Bank will accept WAs from the DiGePPSE or documentation on the use of loan proceeds already advanced by the Bank) will be four months after the Loan Closing Date. This "Grace Period" is granted to permit orderly Project completion and closure of the Loan Account via the submission of WAs and support documentation for expenditures incurred before the Closing Date.

D. Procurement

25. **Procurement under the Project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services, Fourth Edition November 2020.** The Project will be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, revised in January 2011, and July 1, 2016. The Project will use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record, and track procurement transactions.

26. **The main procurement risks identified are:** Considering the performance in previous Bank operations executed by the Borrower and the matrix organizational structure under the PEA, the main risks initially detected are as follows: (i) an excessive turnover of officials due to a wage and compensation scheme depreciated compared to the labor market (ii) lack of specialized staff to develop properly technical specifications for works and goods; iii) a poor coordination between technical and fiduciary officials; (iv) a Borrower's moderate weaknesses in procurement processes implementation, including contract management; and (v) regarding the participating provinces, lack of (a) capability to develop works designs, and (b) ownership on the subprojects.

27. **The early key measures identified to mitigate some risks include**: (i) an POM with provisions that: a) reinforce the role of the DiGePPSE in ensuring compliance with the procurement procedures agreed in the Loan Agreement; b) require maintaining during the life of the Project within the DiGePPSE at least one procurement specialist experienced in World Bank procurement rules and focal points of the Project in the different areas of DiGePPSE and SIPH; c) identify an office/officer who has a comprehensive view on the Project and acts as liaison between the Bank and the multiple implementing actors under the PEA ; d) define appropriate functions, accountabilities and internal agile procedures; and e) set up the provisions of the agreements to be signed with local governments defining a clear responsibility matrix that enables the subprojects execution and maintenance. (ii) Regarding the quality of the designs of the works to be financed by the Project, it would be recommended; a)

to contract consulting firms as needed, whose terms of references include mechanisms for the participation of the beneficiary jurisdictions to promote ownership; b) hire under SIPH qualified specialists to overview works designs developed by provinces or other beneficiary jurisdictions. Furthermore, capacity building on the World Bank's Procurement Regulations will be necessary for all staff involved in procurement activities.

28. **The Borrower's team have developed with close support from the Bank a Project Procurement Strategy for Development (PPSD) identifying the procurement arrangements that will ensure the delivery of value for money while efficiently achieving the PDO**. The preparation of the PPSD did not represent any challenge because the identified subprojects are not complex and the construction market for this type of works is solid in Argentina. The PPSD is focused on the most relevant contracts included under all components and analyzes the target market, the main risks that could jeopardize the procurement objectives and the subsequent mitigation measures. Based on the results of the PPSD, the procurement arrangements for the activities to be executed during the first 18 months have been detailed in the Procurement Plan.

29. **Some procurement processes will be implemented under a national market approach.** For the preparation of the Project the national procurement system has been assessed by the Bank and found it acceptable. Local procedures will be applicable under the conditions allowed by the Procurement Regulations and to the extent that they are consistent with the Bank's procurement principles. The standard procurement documents to be used under the local approach will be previously reviewed and approved by the Bank to ensure that they are admissible from the Bank's perspective.

ANNEX III: Economic Assessment

1. **Economic assessments for the proposed interventions in Pirané (Formosa) and San Salvador de Jujuy (Jujuy) were carried out by the respective provinces.** These were reviewed and considered satisfactory by the Bank's team. All identified interventions, not assessed at this stage, will be evaluated for their economic feasibility to ensure that these are eligible for Project funding.

2. **The evaluations were performed using the cost-benefit methodology.** The cost-benefit analysis takes into consideration the stream of expected benefits over a 30-year horizon, together with the interventions' total capital and annual O&M costs. The costs and benefits are discounted at a rate of 4 percent in the base scenario, and the feasibility is assessed with Net Present Value (NVP), Economic Internal Rate of Return (EIRR), and benefit-cost ratio. A sensitivity analysis was carried out with alternative rates of 6 and 12, and the benefit-cost ratio is presented in the table below.

Table A3.1. 4 Economic assessment B/C ratios.

B/C ratio	Discount rate		
	12%	6%	4%
Pirané	1.3	2.1	2.5
Alvarado	1.0	1.9	2.0

3. **The horizon of analysis and the discount rates are aligned with World Bank Guidance[50].** Based on the Ramsey formula, which depends on three elements: (i) estimated economic growth, (ii) elasticity of marginal utility of consumption (θ) assumed to be 2.0 following World Bank guidance, and (iii) inter-temporal elasticity of substitution (ρ) of 0 also following World Bank guidance. The World Bank forecasts a 2.1 percent real GDP growth rate for Argentina in 2023.

Economic Analysis for Pirané (Formosa)

4. **The intervention in Pirané (Formosa) correspond to the implementation of structural measures resulting from the Urban Drainage Master Plan and the construction of a water park in a camping site (Parque de Agua).** Both will reduce flood risks. Given the impact, beneficiary population and data availability, the economic assessment was carried out solely for the Urban Drainage Master Plan interventions and considered only beneficiaries from reduced flood exposure (those living in the areas where flood was mitigated). Indirect benefits, such as those resulting from reduction in transit disruptions, school, or work absenteeism, or reduced economic activity, were only partially considered due to the limited data available to quantify their impact. Hence, if such positive externalities were to be accounted for, results are expected to show greater economic benefits.

5. **To quantify the direct benefits of flood risk reduction the Avoided Damage Method was used.** Avoided damages are calculated for a 10-year return period flood, which causes an accumulated water level of 5 to 10 centimeters above the sidewalk level, depending on topography singularities. Direct benefits included (i) avoided damage on non-paves roads; (ii) avoided damage on paved streets; (iii) avoided damage on front / exposed walls of private buildings; (iv) avoided damage on sidewalks. Indirect benefits accounted for were: (i) avoided schools'

[50] World Bank (2016). Discounting Costs and Benefits in Economic Analysis of World Bank Projects.

absenteeism; and (ii) avoided work absenteeism. As for costs, both capital and O&M costs were considered for the 30-year time frame on the basis of market prices. [51]

6. **A sensitivity analysis has been carried out for the interventions in Pirané and Jujuy (Alvarado) using different Discount Rates (4%, 6%, 12%) and alternative exchange rates**: a) Prices, wages, and exchange rate (US$1 = ARS 224) as of 4/10/23. In all scenarios projects are eligible with EIRR above 10% (Table A.3.2).

Table A3.2. 5 Project sensitivity economic analysis scenarios (US$ 000)

Scenarios	Costs	Benefits	NPV	B/C ratio
Pirané				
a) Exchange Rate on April 10 (224)	**EIRR**		**17.4%**	
Discount Rate 12%	$ 24,950	$ 33,360	$ 8,410	1.3
Discount Rate 6%	$ 27,495	$ 56,829	$ 29,335	2.1
Discount Rate 4%	$ 28,229	$ 70,368	$ 42,139	2.5
Alvarado				
a) Exchange Rate on April 10 (224)	**EIRR**		**12.1%**	
Discount Rate 12%	$ 9,260	$ 9,354	$ 94	1.0
Discount Rate 6%	$ 9,886	$ 16,110	$ 6,224	1.6
Discount Rate 4%	$ 9,950	$ 20,066	$ 10,116	2.0

7. The summary of the main variables of the economic analysis is presented in Table A3.2.

Table A3.2. 6 Economic assessment result summary (Pirané, Formosa).

Discount rate scenario	EIRR	NVP (US$million)	Benefit (US$million)	Cost (US$million)	Benefit/Cost Ratio
4 percent (base scenario)		42,12	70,37	28,23	2.5
6 percent	17,4 %	29,33	56,83	27,5	2.1
12 percent		8,41	33,36	24,95	1.3

Economic Analysis for Canal Alvarado, San Salvador de Jujuy (Jujuy)

8. Given the diversity of interventions, and their multiple objectives, multiple methodologies were implemented for the calculation of benefits. Canal Alvarado presents four objectives: (i) flood risk mitigation; (ii) Increase in sustainable mobility share; (iii) urban improvement; (i) increase access to public spaces. Table A3.3 presents details of benefits corresponding to each objective category and the calculation method used.

Table A3.3.7 Benefits calculation methodology.

Intervention 's objective	Benefits	Calculation method
(i) Flood risk mitigation (for a 10- year return period event)	• Avoided damage to assets. • Avoided absenteeism from work and school • Avoided limitation of circulation.	Avoided damage *

[51] The same values were adopted for the economic and financial analysis, though financial costs are presented without VAT.

(ii) Promotion of sustainable mobility	• Reduced travel time • Increased road safety	Hedonic prices
(iii) Urban improvement	• Dominial regularization • Access to basic services	Hedonic prices
(iv) Access to public spaces	• Recreation and safety improvement	Hedonic prices

** Only beneficiaries from reduced flood exposure were considered*

9. Regarding the costs, O&M costs were estimated at 2 percent of the investment costs annually. The main economic variables are shown in the table below.

Table A3.4.8 Economic assessment result summary (San Salvador de Jujuy, Jujuy).

Discount rate scenario	EIRR	NVP (US$million)	Benefit (US$million)	Cost (US$million)	Benefit/Cost Ratio
4 percent (base scenario)	12.1 %	10,12	20.07	9.95	2
6 percent		6,22	16.11	9.89	1.6
12 percent		0.05	9.35	9.26	1

ANNEX IV: Implementation and Support Plan

1. The approach for the implementation support plan was built on the experience gained from previous and ongoing water and urban projects in Argentina. It has also been developed based on the nature of the Project and its risk profile.

Implementation Support Plan

2. Most of the team members are based out of the Argentina country office, which ensures timely and effective implementation support to the Borrower.

3. **Technical.** Specialized engineering, flood risk management, communications, and education inputs are required to revise bid documents to ensure fair competition through proper technical specifications and a fair assessment of the technical aspects of the bids. During preparation and construction, technical supervision will be needed to ensure that contractual obligations and quality requirements are met, as well as to review any requested change in the selected technical method or design. The team's technical specialists in engineering, risk management, drainage, and communications will conduct site visits on a semiannual basis throughout project implementation. Additionally, experts will conduct field visits to the Project works during the implementation of the Project.

4. **Fiduciary**. The DiGePPSE legally has administrative and fiduciary functions within the institutional structure of Executing Entity. According to the institutional capacity assessment, the DiGePPSE has a director, a coordinator and 9 procurement assistants. Currently, this personnel is dedicated to several programs financed by multilateral development banks, including a World Bank Project. All the staff have experience in procurement. Initially, considering this well-established structure, one senior procurement specialist was considered enough to reinforce the DiGePPSE capacity to implement the new Project, assuming that the eventual partial overlap of the different phases of the Multi-phase Programmatic Approach will not necessarily translate into an accumulation of procurement tasks. However, the Bank will require strengthening the DiGePPSE procurement team if this measure is not adequate to achieve an acceptable procurement performance during the implementation stage. Training will be provided by the Bank's FM and procurement specialists during project implementation. The team will also help the implementation team identify capacity-building needs to strengthen the FM capacity and improve procurement-management efficiency. Both FM and procurement specialists will be based out of the country office to provide timely and continuous support. Formal FM supervision will be carried out semiannually and procurement supervision will be carried out on an as-needed basis as required by the Borrower.

5. **Social and Environmental.** The Bank team will supervise implementation of the social and environmental management instruments and provide guidance to the implementation team to address any issues. The Bank's supervision team includes a senior environmental specialist, a social development specialist, and environmental and social consultants. All of them will be locally based. Formal supervision will be provided through missions, including visits to works sites, and through the revision of the semiannual reports to the Bank, which will include a dedicated chapter on environmental and social risks management aspects for the period covered, as will be established in the POM. It is envisioned that environmental and social specialists will be available to support the PEA and the coordination/liaison teams at subnational levels to minimize potential social and environmental risks.

6. **Thematic support.** The scope, nature, and objectives of the Project indicate that there will be a continuous need for dialogue, particularly in the areas of planning, institutional arrangements, meteorological and hydrological services, and financial protection against disasters. The Bank team expects that most of the dialogue will be led by Bank sectoral specialists.

7. Table A4.1 summarizes the focus of implementation and Table A4.2 the required skills.

Table A4.1.9 Focus of implementation.

Time	Focus	Skills Needed	Resource Estimate
Year 1	• Technical and procurement review of bidding documents • Procurement training • Environmental and social standards training • Development of the financial protection strategy • Inter-institutional council	• Technical • Bank procurement • Bank safeguards • Financial protection against disasters	Supervision budget
Year 2–4	• Supervision and management of construction contracts • Environmental, social and health and safety monitoring • Financial and procurement management	• Technical/construction experts • Bank procurement • Financial Management • Monitoring & Evaluation • Social • Environmental Management • Health and Safety	Supervision budget
Closing	• Drawing lessons learned and mainstreaming good practices	• M&E • Technical	Supervision budget

Table A4.2.10 Skills mix required.

Skills Needed	Staff Weeks	Trips	Comments
Task team leader	12	2	Based in CO
Sector specialist	10	2	
Lead environmental specialist	1	1	Based in HQ
Sr environmental specialist	5	2	Based in CO
Lead social specialist	1	1	Based in HQ
Social specialist	5	2	Based in CO
Procurement specialist	8	0	Based in CO
FM specialist	4	0	Based in CO
Urban Specialist	4	2	Based in HQ
Technical expert	8	4	4 different technical specialists
Financial specialist in disaster protection	3	2	Based in HQ

Note: CO = Country Office; HQ = Headquarters.

ANNEX V: Initial Focus Project Intervention Map (Phase I)