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Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 02-Mar-2017 | Report No: PIDISDSA20634

**BASIC INFORMATION****A. Basic Project Data**

Country Argentina	Project ID P161798	Project Name Salado Integrated River Basin Management Support Project	Parent Project ID (if any)
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date 22-Feb-2017	Estimated Board Date 06-Apr-2017	Practice Area (Lead) Water
Lending Instrument Investment Project Financing	Borrower(s) Province of Buenos Aires	Implementing Agency Ministry of Infrastructure, Province of Buenos Aires	

Proposed Development Objective(s)

To enhance flood protection and strengthen the capacity of the responsible institutions for integrated water resources monitoring and management in the Salado River Basin

Components

Integrated Water Resources Management
River Training Works and Upgrading Associated Infrastructure
Project Implementation, Supervision and Communication

Financing (in USD Million)

Financing Source	Amount
Borrower	75.00
International Bank for Reconstruction and Development	300.00
Total Project Cost	375.00

Environmental Assessment Category

A - Full Assessment

Decision

The review did authorize the preparation to continue

Other Decision (as needed)



B. Introduction and Context

Country Context

1. **After taking office in December 2015, the new Argentine Government moved with speed to implement macroeconomic and structural reforms.** These include inter alia (a) the elimination of export taxes on major crops, beef, and most industrial manufacturing products and the reduction by 5 percent of export taxes on soy; (b) the unification of the exchange rate, effectively ending most foreign exchange restrictions; (c) moving from a system of discretionary- to automatically-provided import licenses in line with World Trade Organization procedures; (d) resolution of the dispute with holdout creditors; and (e) measures to enhance public transparency and accountability. In addition, the National Institute for Statistics launched a new inflation index and improved the overall quality and reliability of statistics. Electricity tariffs and transport fees were increased to improve financial and fiscal, while protecting low-income users with a social tariff. Broader efforts to reduce energy subsidies (which account for a large portion of fiscal deficit) are under way, paired with measures to protect the poor.

2. **Economic activity is estimated to have contracted in 2016, but growth is expected in 2017.** Economic activity is estimated to have contracted by 2.3 percent¹ during 2016, taking a toll on labor markets, where 92,000² formal private sector jobs were lost since October 2015 (1.5 percent of total employment). The economic contraction has been decelerating during the second semester of 2016 and economic growth is expected in 2017 (+2.7 percent¹) on the assumption that the positive impact of recent policy changes kicks in and the global economy recovers. Demand from key trading partners is expected to strengthen. During the last two months of 2016, exports to Brazil and China grew by 30 percent and 18 percent, respectively, compared to the same period in 2015.³ The median estimate for inflation for 2016 is 40 percent,⁴ mostly due to currency depreciation and the reduction of energy and transport subsidies. Inflation has decelerated since August 2016. The central government primary deficit in 2016 was in line with the target established (-4.8 percent). Fiscal consolidation in 2017 will be more gradual than originally planned in part due to increased social spending, including the adjustment of pension transfers, and higher public investment.

3. **Argentina offers many opportunities in a weak global environment, and there is a strong interest from foreign investors and firms.** Going forward, Argentina aims to continue building a growth enabling policy framework to enhance credibility and support broad based growth and quality employment. In particular, the following policies will be important to permanently reduce inflation and put Argentina on a sustainable growth path: (a) increase public spending efficiency as well as its efficacy and reduce the fiscal deficit in line with government targets; (b) continue fostering the credibility of the Central Bank so that monetary policy can further anchor inflation expectations; (c) strengthen competitiveness and productivity through an improved business environment and investments in infrastructure and increasing competition in markets and improving the regulatory framework in sectors; (d) continue strengthening the credibility of official statistics; and (e) continue improving the provision of public goods (including transportation, health, and education) and

¹ World Bank 2017. *Global Economic Prospects, Jan 2017 Weak Investment in Uncertain Times*: WB. doi:10.1596/978-1-4648-1016-9.

² Source: Ministerio de Trabajo, Empleo y Seguridad Social

³ Source: National Institute of Statistics and Census of Argentina (INDEC)

⁴ Banco Central de la República Argentina. 2016. *Resultados del Relevamiento de Expectativas de Mercado (REM)*, December 2016.



reducing regional disparities

4. **Given its geographical characteristics, Argentina is exposed to a variety of natural hazards that adversely impact human wellbeing and economic activity.** The intensity of natural climate variations in many parts of Argentina, with prolonged extreme weather events, has significantly increased during the last decades due to stronger El Niño Southern Oscillation (ENSO) events and climate change.⁵ Loss from natural disasters in Argentina is high and relates predominantly to hydrometeorological hazards, which represent 58 percent of total economic losses over the last 50 years.⁶ According to *Swiss-Re*, Argentina is among the 10 emerging economies with the highest flood hazard exposure, with potential losses in excess of US\$3 billion per year, representing about 0.5 percent of the Gross Domestic Product (GDP).

Sectoral and Institutional Context

5. **The Province of Buenos Aires (PBA) accounts for over 30 percent of Argentina's GDP.** For this reason, the PBA is the most important economic region for Argentina, accounting for 40 percent of the national employment and about 38 percent of goods produced in the country. It concentrates strategic economic engines of Argentina, generating more than one third of national export income across diverse sectors.

6. **With an area of 183,000 km² spanning over 60 percent of the PBA's total territory, the Salado River Basin (SRB) is of strategic importance to both the PBA and Argentina's economic activity and food security.**⁷ This flat, low population density basin houses over 1.4 million inhabitants, 80 percent of which live in urban areas. Land use is characterized by extensive, mostly non-irrigated agriculture and livestock. The highly productive basin generates 25 percent of Argentina's grain and meat production contributing significantly to national export revenue.

7. **Extreme climate events increasingly threaten economic development in the PBA and the SRB.** In 1980 over 30 percent of the total area of the Province was flooded. Between 1985 and 1987, continuous flood events lasting up to 11 consecutive months in some areas devastated the PBA. Floods throughout the 2000-2011 period resulted in nearly US\$4.5 billion in losses and affected 5.5 million people. Disastrous floods have shown worldwide to disproportionately affect vulnerable households with long-term impacts on the poor, particularly on vulnerable groups such as young children and women.⁸ During the 2001 event alone, 2.0 million ha were flooded resulting in losses of US\$700 million in the agriculture and livestock sectors.⁹ In 2015, the highest ever-observed precipitation over the SRB resulted in the flooding of over 800,000 ha and killed 6,000 head of cattle, resulting in upwards of US\$652 million in losses.¹⁰ Several droughts, the most significant of which took place in 1999 and 2007, reduced crop yields by up to two-thirds and prompted farmers to scale back planting (area seeded with wheat fell by 20 percent).⁵

⁵ Capriolo (2012). Extreme Hydrologic Events in North Area of Buenos Aires Province (Argentina)

⁶ Swiss-Re (2016). *Staying Afloat: Flood Risk in Argentina*.

⁷ The SRB runs into small portions of Santa Fe and la Pampa provinces upstream. There are also regulated water transfers between each of these two provinces, plus Córdoba, and the PBA, to manage cases of excess of water to be discharged in the Salado River.

⁸ SDR (2009). Global Assessment Report on Disaster Risk Reduction. Risk and poverty in a changing climate.

⁹ Scarpato (2008): La inundación del año 2001 en la Provincia de Buenos Aires, Argentina

¹⁰ La Nación (2015). Available at: <http://www.lanacion.com.ar/1822371-inundaciones-cuenca-salado>



8. **The combination of increased average rainfall and changes in land use since the 1980s has resulted in rising groundwater, further increasing the frequency and intensity of floods in the SRB.**¹¹ Over the last 20 years, the average level of groundwater in the Argentine Pampa has risen by over two meters.¹² This can be attributed to two overriding factors: (i) annual precipitation increased from 750 mm (1920-1985) to 1100 mm (1986-2001) in large parts of the upper river basin, and by over 10 percent in the lower Salado¹³; and (ii) during the same timeframe, evapotranspiration decreased substantially due to the conversion of pasture land into intensive agriculture (between 1975 and 2005, the area cultivated with soya increased from 1 to 25 percent).¹⁴

9. **In response to the higher flood and drought risks, the PBA, with World Bank support,**¹⁵ **prepared the Integrated Salado River Basin Management Plan (PMI for its acronym in Spanish - *Plan de Manejo Integral de la Cuenca del Río Salado*) in 1999.** The PMI has three main objectives: (i) reduce negative impacts of floods and droughts on the basin's economy and consequently on the provincial and national economy; (ii) improve the economic conditions of the basin through sustainable development, - particularly in the agriculture and livestock sectors; and (iii) develop and preserve the environmental value of the basin and, in particular, the wetlands.

10. **Since 2000, when implementation of the PMI began, priority has been given to the implementation of structural measures.** The PMI envisaged river training works along the 760 km main course of the Salado River. The main course is comprised of five sections totaling 506 km and *Las Horquetas* canal upstream, totaling 254 km. To date, Sections I, II, and III (starting from the river mouth, upstream) have been completed, totaling 477 km and 99.1 million m³ dredged material. Works along the remaining Sections IV and V, totaling 283 km, remain to be completed to ensure full implementation of the PMI's structural component. The overall effectiveness of the river training works that have been completed to date is clearly evidenced by the fact that the flooding generated by the highest precipitation levels observed in 2015 drained in a record time of six weeks, whereas similar events prior to these interventions produced flooding lasting up to six months.

11. **Despite progress in implementing structural measures called for in the PMI, several challenges remain to be addressed.** Following 15 years of implementation of structural measures, the PBA and users in the basin are aware that river works in the main channel only provide a partial solution to the SBR's problems and that several challenges remain unsolved and some are even intensifying with time:

- a. There is still a lack of solid information in terms of both hydrometeorology and the effects of land use on flood generation at the basin level. There are no tools to allow users to take informed decisions and help them increase their resilience to floods and droughts.
- b. Limited knowledge exists in terms of the hydraulic behavior of the network of canals beyond the main river channel, also related to the interconnectivity with the system of wetlands and lagoons. Users act and intervene in these canals in an ad hoc, uncoordinated manner, increasing prospects for conflicts.
- c. The reduced flood risk resulting from so far completed river works, has given way to longer periods of

¹¹ Kuppel (2015). What does it take to flood the Pampas? Lessons from a decade of strong hydrological fluctuations.

¹² Garcia (2016). Land-use as a potential strategy for managing water table depth in flat basins with shallow groundwater.

¹³ Herzer (2013). Flooding in the Pampean Region of Argentina: The Salado Basin in Building Safer Cities: The Future of Disaster Risk

¹⁴ López Laxague et al (2014). Influencia sobre el nivel freático en zonas de llanura debido al efecto del cambio en el uso del suelo y los condicionantes climáticos.

¹⁵ The PMI was developed as part of the World Bank funded Argentina Flood Protection Project (P006052).



land productivity. The intensified agriculture and livestock activities, in turn, increase pressure on overall water quality which negatively impacts productive uses of water and environmental quality.

- d. The environmental assets of the SRB, including the large number of wetlands, have not been sufficiently studied so there are not yet environmental policies and measures in place to protect and conserve this increasingly vulnerable area.

12. **The institutions responsible for water resources management (WRM) and implementation of river works have limited capacity to respond to these challenges.** The Provincial Water Authority (ADA for its acronym in Spanish - *Agencia del Agua*) is the agency responsible for implementing the Provincial Water Law, and the Provincial Department of Hydraulic Works (DPOH for its acronym in Spanish - *Dirección Provincial de Obras Hidráulicas*) is responsible for implementing the structural components of the PMI. Both entities present a series of gaps that impede adequate integrated management of water resources in the basin. Water is managed mainly by users in an ad hoc manner. There is no issuance of water use permits and regulations governing the operation of canals and other hydraulic infrastructure are not effective. The Provincial Water Law recognizes payment instruments by users, but these are not being applied, so there is no cost recovery within the water sector and infrastructure works are financed through general budget allocations. ADA has little presence in the territory of the basin and users turn do not rely on ADA to help mediate problems. In 2002, nine sub-basin committees were established by ADA within the SRB, though at present, they are not operational as they lack participation from key stakeholders including farmer groups, civil society and academia. DPOH still lacks effective tools and instruments to better monitor river works, and plan new interventions, particularly throughout the network of tributary canals. Additionally, the Provincial Agency for Sustainable Development (OPDS for its acronym in Spanish - *Organismo Provincial para el Desarrollo Sostenible*) and ADA have responsibility for preserving the province's natural resources, though their capacity in this field is limited.

13. **The PBA envisions continued implementation of the PMI with a strong focus on non-structural activities as pivotal to address WRM challenges.** Provincial authorities recognize the urgency of strengthening water resources management capacities to complement structural measures in addressing the above-mentioned remaining challenges. The Project will, therefore, support the PBA in building the necessary institutional capacities by financing most of the non-structural measures identified in the PMI, setting the basis for sustainable WRM in the SRB going forward.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

14. To strengthen the capacity of the responsible institutions¹⁶ for integrated water resources monitoring and management and enhance flood protection in the Salado River Basin.

Key Results

15. The key PDO level indicators include:
 - (a) Participative River Basin Committees re-established and operational;
 - (b) Hydromet Information System is used for integrated water resource monitoring;

¹⁶ The responsible institutions are: (i) the Provincial Water Authority (Agencia del Agua, ADA), (ii) the Provincial Department of Hydraulic Works (Dirección Provincial de Obras Hidráulicas, DPOH)



- (c) Area under enhanced flood protection;
- (d) People benefiting from reduced flood risk (of which female).

D. Project Description

16. **The Project will support ADA and DPOH to implement and operationalize structural and non-structural measures envisioned in the PMI.** The Project will finance river training works along 34 km of the middle course of the river and the enhancement of bridges to reduce risks to human life and economic activities. It will also finance non-structural activities aimed to strengthening institutional capacities for improved water resources management, protecting the environment, and supporting the sustainable management of infrastructure investments made under this Project. The Project is structured around three components.

17. **Component 1: Integrated Water Resources Management** (*US\$27.75 million, of which US\$22.2 million IBRD financing*). This component aims to strengthen institutional capacity for water resources management and environmental and hydrological monitoring at different levels, through the implementation of non-structural measures of the PMI, contributing to a holistic and sustainable management approach. The component includes four subcomponents.

18. *Sub-component 1.1. Water Resources Management Plan for the SRB (US\$2.1 million).* This sub-component seeks to operationalize the PMI through the preparation of a complementary, participatory,¹⁷ updated, short-term WRM Plan. The development of this planning tool will tackle the lack of information in the basin.

19. *Sub-component 1.2. Strengthening Environmental Management in the SRB (US\$4.6 million).* This sub-component seeks to strengthen environmental management in the SRB, by supporting the three principal provincial authorities¹⁸ with environmental management responsibilities. Activities include water quality control and environmental services for water resources management; and the development of an Environmental and Wetlands Management Plan for the SRB.

20. *Sub-component 1.3. Improving Water Governance (US\$12.6 million).* This sub-component seeks to strengthen ADA and river basin committees on one side, and DPOH on the other. Activities aim at building institutions that are capable of providing responses to basin challenges, including a review of cost recovery mechanisms for ADA and corresponding promotion of such mechanisms among users; improving regulations governing water basin committees and drainage associations in order to empower them; and strengthening management and technical capacities of DPOH.

21. *Sub-component 1.4. Hydrometeorological Services and Risk Management (US\$8.5 million).* This sub-component aims to generate specific knowledge to understand and manage the risk of floods and droughts. Activities include the development of a hydrometeorological monitoring network for the basin that builds on existing national and regional ones; and the strengthening of institutional capacity to manage it, as well as the development of decision-making tools for risk management, including operational manuals, risk prevention and

¹⁷ Participatory processes are designed and carried out to elicit feedback in a gender sensitive manner.

¹⁸ ADA; DPOH; and OPDS



contingency plans.

22. **Component 2: River Training Works and Upgrading Associated Infrastructure** (US\$337.7 million, of which US\$270.16 million IBRD financing). Following completion of the river training works on the lower Salado River (223 km in Sections I, II and III), and in order to continue to expand the structural measures to reduce the impact of the increased trend in precipitation in the basin, the Province plans to continue implementation of the PMI along the remaining Sections IV and V. This component includes two sub-components.

23. *Sub-component 2.1. River Training Works (US\$290.7 million)*. This subcomponent will finance training works on Section IV-1-B of 34 km. The river cross section is being augmented to hold a flood event of a return period of approximately 10 years,¹⁹ which, in this section of the river, corresponds to about 450m³/s. The works will provide incremental flood protection for higher return period flood events, meaning that these events would have a lesser geographic extent and temporal impacts after the works are completed. These works are also important to enable sequential interventions upstream in tributary areas of the basin that cover an additional area of 43,000 km² that could then drain to the hydraulically enhanced Salado River.

24. River works will imply the movement of approximately 25 million m³ of sediments and soil. The Project will continue to support the cost effective and environmentally friendly approach in which sediments are being handled. Dredged material will be placed in discontinuous parcels, or *recintos*, in adjacent farmlands along the river course, which would be slightly elevated and have higher productivity due to the nutrient rich sediment. The Project will document experience with the *recinto* approach to systematically assess benefits and share lessons learned in the future.

25. *Sub-component 2.1. Upgrading Associated Infrastructure (US\$47.0 million)*. It will finance the adaptation of seven existing bridges to the new river cross-section enhancing their hydraulic capacity and increasing their resilience to extreme floods. Also, as a result of the consultation process of the Project, the subcomponent will finance the setting up of two recreational beach areas (*balnearios*) requested by citizens.

26. On the basis of information available at Appraisal, it is estimated that the climate change co-benefits of the Project to be 96.3 percent of the total Project cost, determined by the costs of Sub-components 1.1, 1.3 and 1.4, and Component 2. Such activities in Component 1 will generate hydrological knowledge incorporating climate variability and change in the models used, and build capacity to use such tools for decision-making in a context of increasing hydrometeorological risk. The Cost of component 2 is fully factored in this percentage, as the river works are designed to reduce the impact of the increasing trend in precipitation observed in the last decades in the basin.

27. **Component 3: Project Implementation, Supervision and Communication** (US\$8.8 million, of which US\$6.89 million IBRD financing). This Component seeks to support the Project Works Coordination and Execution Unit (UCEPO for its acronym in Spanish) in project management, and DPOH in the supervision of the river works. It will finance communication activities, a technical assistance to support a Users' Oversight Committee.²⁰ It will also support to the development of a Grievance Redress Mechanism (GRM).

¹⁹ The design return period was selected in the PMI after considering different recurrences and completed an economic analysis for each of them. The alternative chosen produces the greatest cost benefit ratio within affordable costs.

²⁰ This committee will be established according to the Decree 148, of December 30, 2003. The main function of the committee is the monitoring of the river works. PBA's earlier experience with the committee is positive, showing users'



E. Implementation

Institutional and Implementation Arrangements

28. The Borrower will be the PBA through the Ministry of Economy. The implementing Agency will be the Ministry of Infrastructure and Public Services through UCEPO. The Borrower has previous experience with Bank-financed infrastructure projects. UCEPO will be in charge of securing and coordinating safeguards implementation, monitoring and evaluation (M&E), and coordination with the World Bank. The Ministry of Economy is responsible for financial management arrangements. The Procurement Department of the Ministry of Infrastructure and Public Services (DCYC for its acronym in Spanish - Dirección de Compras y Contrataciones) will be responsible for all procurement under the Project.

29. The UCEPO will manage the contracts with consultancies and construction companies; order payments of eligible expenditures; and coordinate with other entities at the provincial and national levels including ADA, and DPOH. ADA will be in charge of the design and technical supervision of most of the Project activities under Component 1, with DPOH being responsible for the implementation of certain activities under Subcomponent 1.3. DPOH will be also responsible for the execution of the works under Component 2. Implementation of Component 1 will benefit from coordination agreements with participating entities and institutions²¹ for activities such as data sharing, and facilitation of participatory processes. A generic agreement model is included in the Project's Operations Manual (OM), and specific agreements will be developed and included in the OM before the commencing of specific activities that require such collaboration.

30. For the river works and construction of bridges, DPOH supported by a consulting firm will supervise the works. A Users' Oversight Committee will be set up to act as a third party monitoring entity representing the main beneficiaries of the river works. The Department of Environmental Studies of the DPOH has adequate capacity for the environmental supervision, although additional personnel will be contracted, to further strengthen it.

31. The PBA has committed to ensure parallel implementation of structural and non-structural components of the Project. To avoid the risk of delays of key activities under Component 1, an Action Plan with specific milestones for key consultancies on hydrologic planning, institutional strengthening and establishment of the hydromet system, has been agreed upon with the Ministry of Infrastructure. The Action Plan will be included in the OM and covenanted in the Loan Agreement. These milestones are set up aiming at having these activities under implementation within the first year after the loan becomes effective.

active participation in the works' oversight. The Users' Oversight Committee can present to the Ministry of Infrastructure, reports, observations and/or suggestions to be considered in the development of the works. The Borrower is strongly committed to establish the committee before the river works start.

²¹ Including the National Meteorological Service (SMN for its acronym in Spanish - *Servicio Meteorológico Nacional*), the National Institute of Agricultural Technology (INTA for its acronym in Spanish - *Instituto Nacional de Tecnología Agropecuaria*), the National Water Institute (INA for its acronym in Spanish - *Instituto Nacional del Agua*), OPDS and the Ministry of Agriculture, among others.



F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The Salado River Basin (SRB) is predominantly flat, the groundwater table is high and the 760 km long river often overflows, creating large floods that take months to drain. The river is not navigable and there are no fishermen whose livelihood would depend on the river; fishing along the river is recreational/sportive, including a few private installations for this activity, and, to a lesser extent, commercial fishing for hobby trade. Since 2000, 223 km of the main river course have been canalized, and together with other river sections starting upstream from the river mouth, the works have moved a total of 99.1 million m³ of dredged material. Relevant to the World Bank environmental safeguards, the Project area requires attention to natural habitats and physical cultural resources: Despite the fact that the humid pampa in the direct intervention area of the Project's river training works is heavily intervened by anthropogenic activities, the SRB has particular environmental value due to presence of numerous wetlands with important bird populations, including migratory species. Particularly, the SRB includes Samborombon Bay, approximately 300 km away from the leg of the river training works to be financed by the Project, a RAMSAR site recognized as a wetland of international importance. Otherwise, basic identification and mapping of the wetlands in the basin remains a pending task that the Project will address amongst the initial activities to create a basin-level Environmental and Wetlands Management Plan. In terms of physical cultural resources (PCR), the SRB is known particularly for paleontological findings, like a number of prehistoric animal fossils discovered during the exceptional droughts of 2009 in the Municipalities of Roque Perez and Lobos when the Salado River dried up. There are, however, no known PCR within the Project works' direct impact area. In terms of land use, the SRB has low population density and the main land use consists of large-scale agriculture and livestock. The Project aims to improve understanding of the effects of land use changes in the basin hydrology.

G. Environmental and Social Safeguards Specialists on the Team

Tuuli Johanna Bernardini, Pilar Clemente Fernandez, Eleonora Beatriz Camalli

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The Project triggers OP 4.01 and has been categorized as 'A' due to (i) the 34 km of river training works to widen and deepen the Salado river cross section and deposition of nutrient-rich sediment in ring-fenced parcels on farmland under Component 2 ("recintos"); and (ii) the sensitivity of the SRB due to the presence of wetlands and



riparian buffers with environmental value, particularly for avifauna. The track record of the environmental and social management of the 223 km of the downstream works to date has not presented significant negative impacts.

The development of the PMI included the preparation of a strategic Regional Environmental Impact Assessment (REIA) with a basin-wide scope in 1999, and a review and update of the same in 2007. The REIA was financed by the WB and followed the applicable safeguards policies. The sections of the river already dredged followed environmental management guidelines prepared as a result of the REIA process, including an Environmental Management Manual for Hydraulic Works in the SRB, prepared in 2007 and applied thereafter for the detailed design and implementation of the PMI works.

Based on the REIA and an EIA that the DPOH had undertaken and consulted publicly at feasibility stage, the DPOH has conducted an Environmental and Social Impact Assessment (ESIA) and prepared the respective Environmental and Social Management Plan (ESMP) for the Project, with a focus on the river training works, following and complying with the WB requirements for a Category A project. The Bank has approved this ESIA/ESMP that was prepared also to establish key synergies with Subcomponent 1.2 of the Project, which includes the preparation of an Environmental and Wetlands Management Plan for the entire basin.

An Action Plan has been included in the Operations Manual to set up milestones for compliance to ensure that the three main consultancies entailing critical activities under Component 1 are implemented in parallel with the civil works. Under Action 2 of the Action Plan, regarding the consultancy including Hydrological and Environmental Planning and Risk Management activities, a prioritized set of studies and mitigation measures will be prepared and implemented, e.g. hydrological modeling and an environmental and social diagnostic at the basin level, including the



		identification and assessment of wetlands to prepare the Environmental and Wetlands Management Plan. The Action Plan will be covenanted in the legal agreement.
Natural Habitats OP/BP 4.04	Yes	The Project triggers OP 4.04 on Natural Habitats as the entire Salado River is considered an Important Bird Area (IBA) due to the presence of wetlands, and despite the overall heavy impact of anthropogenic activities in the basin. However, the Project works' direct impact area does not include any type of natural habitats as defined by the policy. In every case, qualified assessment of populations of significant bird species will take place before construction works start, and the environmental selection criteria set for the "recintos" requires an environmental assessment of each potential parcel prior to selection, to ensure no remnant areas of value to biodiversity be negatively impacted. The implementation of the SRB Environmental and Wetlands Management Plan is expected to strengthen the key public agencies' capacity for environmental management at the basin level, including the Samborombon Bay Ramsar site and other protected areas outside the direct impact area of the Project that are inadequately managed.
Forests OP/BP 4.36	No	OP 4.36 is not triggered as the native vegetation of the Project area does not include forests. Any potential impact on planted trees will be covered through OP 4.01.
Pest Management OP 4.09	Yes	The Project triggers OP 4.09 to ensure it is prepared to promote integrated pest management to address potential induced impacts: the reduced flooding and creation of the "recintos" is expected to increase agricultural production and potentially the use of agrochemicals. The Project will not imply direct increase in the use of pesticides or herbicides, nor does it require a stand-alone Integrated Pest Management Plan prior to Project appraisal. As described in the ESIA/ESMP, the Project will promote sustainable agricultural and other land use practices under Subcomponent 1.2 to minimize chemical and nutrient flow into the river and the Samborombon Bay.
Physical Cultural Resources OP/BP 4.11	Yes	The Project triggers OP 4.11 for precautionary



		<p>purposes; there are no known physical cultural resources within the Project works' direct impact area. However, the SRB is known for paleontological findings of animal fossils, and the river training works might result in chance finds. The ESIA/ESMP includes specific requirements and guidance to address them.</p>
Indigenous Peoples OP/BP 4.10	Yes	<p>The Project triggers OP 4.10 as there are indigenous peoples present in the SRB; the affected area by Component 1. According to the National Registry of Indigenous Communities, produced by the National Institute of Indigenous Affairs (INAI) to provide information on the localization of indigenous communities, there are no indigenous communities in the area directly impacted by the river works under Component 2. This information was further confirmed through particular consultations conducted by the head of the Department of Environmental Studies (DES) of the DPOH with specialists e.g. from the Faculty of Natural Science and Museum of the National University of La Plata. According to the current map of indigenous peoples developed by the "Encuentro Nacional de Naciones Originarias, ENOPO", four indigenous peoples are represented in different parts of the Province of Buenos Aires: Tonokote, Tehuelche, Querandi, and Mapuche. According to the National Registry of Indigenous Communities, Mapuche and Tehuelche communities are present in the SRB.</p> <p>There are activities under Component 1 that will carry out tasks with, or be directed to different stakeholders with a key role in water management, or affected by water related issues in the basin. Such stakeholders will first need to be identified by studies characterizing the basin, and only when these studies are completed it will be possible to know whether IPs are among such stakeholders. Therefore, an indigenous Peoples Planning Framework (IPPF) was prepared by DPOH and approved by the Bank, and consulted between February 3 and 13, 2017 with INAI and the Provincial Council of Indigenous Affairs (CPAI). The IPPF is similar to those that have been used for technical assistance and focuses on ensuring that any participation process involving indigenous people</p>



		<p>would be carried out in a culturally appropriate manner. Both INAI and CPAI agreed with the proposed strategy and suggested minor changes that were included in the IPPF. The final IPPF was disclosed in-country on February 15 and at the WB external website on February 21, 2017. Consultations on the IPPF were limited to virtual consultations with the INAI and CPIA and broad community support for specific activities would then be obtained during implementation in case the studies confirm that IPs are among the stakeholders that will need to be involved and consulted with in regard to Component 1 activities (with preparation of site specific IPPs, as and if required, following the procedures detailed in the IPPF).</p>
Involuntary Resettlement OP/BP 4.12	No	<p>There will be no involuntary taking of land that result in relocation or loss of shelter, loss of assets or access to assets, or loss of income sources or means of livelihood, and therefore OP 4.12 will not be triggered. The dredged material extracted from the river bed is of rich quality and demanded by many farmers. Its final disposal relies on properly documented voluntary agreements with the implied landowners. These voluntary agreements ensure that there is power of choice and informed consent of owners. The potential dredging impacts to crops on some small strips of land that some farmers may periodically use, even though they know the land is public and subject to frequent floods, will also be avoided. In cases where a farmer were using the public domain land adjacent to his/her property to plant crops, the DPOH will announce the works in a timely manner and provide written notice so that the farmer has the necessary time to harvest the crops prior to impact. Summing up: voluntary agreements will be reached with all farmers who own property adjacent to the area to be dredged; said agreements will include an agreement for the government to enter the relevant farmer's property to access the dredging area, an agreement to dispose the dredged soil (if applicable), and an agreement on the date in which the dredging will commence (so crops, if any, can be harvested before the dredging date). Therefore, no physical works are carried out without the consensus of the landowner. The procedure and details on how to document</p>



		<p>these agreements are explained in the Voluntary Agreements Protocol that has been disclosed as part of the ESIA. It has been confirmed that additional works under Component 2 (the seven bridges and the two public bath areas in Roque Perez and Villanueva) will not require land acquisition. A draft Protocol was disclosed on December 7, 2016 in-country and in the Bank's external website as part of the ESIA/ESMP. The final Protocol was disclosed, respectively, on February 15 and 21, 2017.</p> <p>To gain better knowledge of the actual use of the narrow strip of land that will be excavated with the Project financing, the World Bank conducted an analysis of remote sensing imagery of the implied 34 km of the river shore. In the visual analysis no infrastructure or constructions of any type were identified in the direct Project intervention area and it was concluded that the most prevailing land use type in the referred area is grassland. The analysis also verified that the area of the plots that will be affected by the dredging works represents only a very small percentage of the total area of each plot.</p>
Safety of Dams OP/BP 4.37	No	OP 4.37 is not triggered as the proposed Project will neither support the construction or rehabilitation of dams nor will it support other investments which rely on the performance of existing dams.
Projects on International Waterways OP/BP 7.50	Yes	The Project triggers OP 7.50 as (i) it is located in the RSB that is a tributary of the Rio de la Plata, a water course shared with Uruguay and subject to the Rio de la Plata Treaty and its Common Maritime Front, approved by Law 20645; and (ii) the Project involves infrastructure works to improve the drainage of the river basin. However, the Project has been given an exception from the obligation to inform Uruguay, since Argentina is the final down-stream country and the RSB is entirely within Argentina. The respective Memo was approved by the Regional Vice President for Latin America and the Caribbean on December 12, 2016.
Projects in Disputed Areas OP/BP 7.60	No	OP 7.60 is not triggered as the Project will not finance activities in disputed areas as defined in the policy.



KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Based on the Project's ESIA, the river training works' key potential negative environmental impacts during construction relate to alterations in the pattern of water flow as a result of the excavation in the river bed and surrounding areas. The direct impacts on fauna, particularly birds and fish life, bring about disturbances and loss of habitats in the river and its margins and affects soils of the flood plain. These impacts produce reduction of edaphic quality of the riparian zone and the associated benthonic micro-fauna. These impacts are temporary and can be avoided, minimized or mitigated through proper implementation of the ESMP. The bird and fish species identified in the Project works' direct impact area do not present vulnerable or threatened status. Overall, the environmental assessment conducted on the area presents absence of any type of natural habitat as defined by OP 4.04. It presents mostly rural landscape and significant anthropogenic influence; none wild or pristine zones remain. The loss of habitat due to the Project works is considered localized, temporary and reversible once the works are completed, due to the environmental considerations embedded in the very design of the river works and the overall capacity of the biological/fluvial corridor to restore similar conditions. The Project aims at overall positive environmental impacts in terms of the river training works and preparation of a basin-level Environmental and Wetlands Management Plan. The latter will strengthen environmental management capacity of the Provincial Water Authority (ADA), responsible for water quality.

The social impacts identified by the ESIA are predominantly positive, e.g. generation of employment due to the demand of manpower, generation of induced economic activities, improvements on roads and related infrastructure with the consequent improvement in productivity and regional economy. The negative social impacts, such as modifications on communication pathways due to the works, are limited to the construction phase and thus temporary. They can be avoided, minimized or mitigated by the programs included in the ESMP.

The labor force for the river works is expected to be lower than 100 workers, including local workers, and to be hosted in camps, so the risk of potential impacts to the communities is low. The mandatory training program for the workers, will contain health and safety issues, and incorporate the topic of prevention of communicable diseases.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The main induced and cumulative environmental impacts potentially caused by the global river training works relate to: (i) water quality (sedimentation and turbidity during construction and potential increase of nutrients and fertilizers due to increased drainage from agricultural areas during operation); and (ii) fish populations and recreational fishing activity. To decrease the direct, induced and cumulative impacts, key environmental design aspects have been included and a number of measures and actions systematically applied in the global river training project since the pre-feasibility stage: (i) the maintenance of an ecological flow that corresponds approximately to the medium annual low water condition. This supposes an optimal operation of the system with at least minimum canalized flows with speeds that prevent sedimentation; (ii) no rectification of the main river course nor construction of any type of concrete structures; something that also lessens the implied maintenance needs; and (iii) maintenance/establishment of a biological/fluvial corridor within 200 m from the river edge on both sides as an environmental asset and a



valuable landscape element, exempt also of establishment of the “recintos” to facilitate conservation and strengthening of the area’s key ecological characteristics. Overall, beyond decreasing the flooding risks, the design of the mechanisms that regulate incoming and outgoing water flows facilitates the maintenance of the river’s ecosystem services, including decrease of downstream pollution by nutrients and fertilizers caused by flooding. In practice, the observed river training impacts on the riverine ecosystems have not raised particular concerns.

There is still limited information on both hydrometeorology and effects of land use in the water resources dynamics at the basin level. Component 1 will invest in non-structural measures to promote integrated watershed management at the basin level, e.g. in environmental monitoring and management of the complex wetlands ecosystems. Subcomponent 1.2 aims to strengthen institutional capacities of the key agencies to facilitate informed decision-making related to environmental management with a particular focus on water quality and wetlands management. The basin-level Environmental and Wetlands Management Plan will also promote sustainable agricultural and other land use practices to minimize chemical and nutrient flow into the river.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

The Project contributes to implementation of the PMI that went initially through a careful analysis of available alternatives in terms of the included structural and non-structural measures. The alternatives analyzed to address flooding emergencies in the SRB included the baseline “Without” and 4 different “With Project” options.

The analysis of the alternatives concluded that “Without” was unacceptable, since it would not solve any of the existing environmental, social or economic problems in the SRB. The most likely outcomes of this scenario were: 1) continued flooding in urban and agricultural areas, resulting in economic losses and social impacts; 2) incapacity of the province to increase agricultural production, resulting in loss of share in international markets; 3) continuation of, and perhaps increase in the environmentally negative use of agrochemicals, resulting in reduction of water quality and potential water provision problems; and 4) ad-hoc continuation of the inadequate management/over-exploitation of the natural resources.

The other alternatives included different scales of intervention from small areas of the basin hydraulically enhanced, to an “extensive strategy” of interventions covering the entire basin. The analysis concluded in favor of the “extensive strategy” due also to the resulting increase in economies of scale. Assuming successful operation, it would generate a series of effects that contribute to reduce the environmental and social impacts of both floods and droughts.

Later, technical alternatives were analyzed for the final design of the PMI works: The original proposal on execution of parallel embankments in both margins so that the excessive runoff to flow would be elevated with respect to the natural land was considered disadvantageous in periods of heavy rainfall in the upper basin. The alternative and innovative solution implied disposing the dredged material in selected, discontinuous, low-lying areas along the land bordering the river, denominated “recintos”. Now, the volume of surplus soil, product of the extension and deepening of the river canal, constituted the main factor to consider in terms of impacts. Annex 6 of the Project Appraisal Document provides further details on the alternatives considered.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The environmental and social management of Component 2 will rely on the Department of Environmental Studies (DES) of the DPOH that has prepared the Project’s safeguards instruments. DES has a small inter-disciplinary team of



competent professionals in charge of the EIAs and monitoring of the sustainability of the river training works. The DPOH has a solid capacity and significant experience with the environmental and social management of the structural PMI works since their initial implementation in 2000. OPDS is currently reviewing the EIA required for the Project works by the national and provincial legislation, prepared and consulted prior to the World Bank engagement with the Project. The resulting Declaration of Environmental Impact is expected during the first quarter of 2017. The DES experience covers formal and informal mechanisms of public involvement and communication and negotiation with the affected landowners. The Bank has conducted safeguards related “due diligence” on the already conducted downstream works based on desk review of relevant documents, discussions with the DPOH personnel, and field visits. No issues have been identified that would warrant concern in terms of the DPOH performance on the environmental and social management of the river training works to date. The works along the 26 km leg IV-1-A, financed by the Federal Government and expected to be executed partly parallel to the Project-financed works, are covered with the same environmental and social management procedures as the Project works. Beyond the same overall approach, each river section and stage implies site-specific measures as pertinent to their natural and social features.

Based on the assessment of the institutional capacity needed to implement the Project’s environmental and social risk management under Component 2 and to supervise preparation of the basin-level Environmental and Wetlands Management Plan, DES/DPOH will hire 1) a social specialist with a profile of anthropology to (i) help implement and document the negotiation processes with the affected landowners, (ii) manage grievances following the Grievance Redress Mechanism (GRM) to be developed as one of the ESMP Programs, and (iii) manage the implementation of the IPPF; 2) an environmental specialist with experience in environmental technologies and environmental management in urban areas; and 3) a specialist in GIS to strengthen systematization and access to basin-wide information.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

During the PMI preparation and implementation regarding the river training works along the Salado River, there have been different participation instances that allowed the inclusion of community concerns to the global project. There were also interactions with the academic sector and nongovernmental organizations (NGOs) that fed the design of the works in its different sections and stages. Other actors like municipal authorities and producer associations have also actively participated in difference instances, e.g. in a public hearing summoned by the Provincial Ministry of Infrastructure on Sep 27, 2016 in the City of Roque Perez. In the hearing, the participants were informed about the characteristics and impacts of the river training works at the upper Salado basin where the Project works will take place. Stakeholders like members of the school community and NGOs were present and their concerns, questions and proposals were received, responded, and, when feasible, incorporated in the Project. The latter was the case of proposals for improvement of two public recreational beaches (“balnearios”). Other questions related with chances to find PCR, an aspect covered by the Project ESIA/ESMP. The Project ESIA presents the related public participation in further detail.

The advanced draft of the Project ESIA/ESMP was disclosed in-country and at the World Bank external website on Dec 7, 2016. It was consulted on line from Dec 15 until Jan 12, 2017, including opportunity for face-to-face discussion at the DES office on 10-12 of Jan. This consultation did not yield additional comments or considerations. The final ESIA report was disclosed in-country on Feb 15 and by the Bank on Feb 21, 2017.

The Water Resources Management Plan and Environmental and Wetlands Management Plan for the SRB will be developed through a participative process where local and regional stakeholders will be consulted about their scope



and content. DEA/DPOH prepared, consulted and disclosed an IPPF to promote participation of Indigenous Peoples in activities under Component 1 at the basin level.

Component 2 will have a GRM as one of the ESMP programs. It establishes the mechanisms to submit grievances and receive responses, stating the number of days it can take to receive a response, and identifies two different levels of conflict resolution before complaints reach the judicial court system. A GRM will be implemented also for Component 1 to secure pertinent mechanisms will be in place.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank	Date of submission to InfoShop	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
17-Nov-2016	21-Feb-2017	07-Dec-2016

"In country" Disclosure

Argentina

15-Feb-2017

Comments

The ESIA/ESMP was disclosed by the Provincial Department of Hydraulic Works (DPOH) and Provincial Water Authority (ADA) of the Province of Buenos Aires and the World Bank on December 7, 2016. It was consulted between December 15, 2016 and January 12, 2017. The final ESIA/ESMP was disclosed in-country on February 15 and at the World Bank website on February 21, 2017.

Indigenous Peoples Development Plan/Framework

Date of receipt by the Bank	Date of submission to InfoShop
16-Jan-2017	21-Feb-2017

"In country" Disclosure

Argentina

15-Feb-2017

Comments

The IPPF was consulted virtually between February 3 and 13, 2017.

Pest Management Plan

Was the document disclosed prior to	Date of receipt by the Bank	Date of submission to InfoShop
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appraisal?

NA

"In country" Disclosure

If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.

If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

NA

OP 4.09 - Pest Management

Does the EA adequately address the pest management issues?

Yes

Is a separate PMP required?

No



If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?

NA

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?

Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

Yes

OP/BP 4.10 - Indigenous Peoples

Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Practice Manager?

NA

OP 7.50 - Projects on International Waterways

Have the other riparians been notified of the project?

NA

If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?

Yes

Has the RVP approved such an exception?

Yes

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank's Infoshop?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes



All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

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APPROVAL

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Note to Task Teams: End of system generated content, document is editable from here.