

FOR OFFICIAL USE ONLY

Report No: PAD4645

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$400 MILLION

TO THE

ARGENTINE REPUBLIC

FOR A

CLIMATE INTELLIGENT AND INCLUSIVE AGRI-FOOD SYSTEMS PROJECT

November 15, 2021

Agriculture And Food Global Practice
Latin America And Caribbean Region

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.



CURRENCY EQUIVALENTS

(Exchange Rate Effective October 25, 2021)

Currency Unit = Argentine Peso (AR\$)

AR\$99.4528 = US\$1

US\$0.01 = AR\$1

FISCAL YEAR

January 1 - December 31

Regional Vice President: Carlos Felipe Jaramillo

Country Director: Jordan Z. Schwartz

Regional Director: Anna Wellenstein

Practice Manager: Preeti S. Ahuja

Task Team Leader(s): Tomas Ricardo Rosada Villamar, Joanne Catherine Gaskell

**ABBREVIATIONS AND ACRONYMS**

BNA	Banco de la Nación Argentina
CERC	Contingent Emergency Response Component
CO ₂	Carbon dioxide
COVID-19	Coronavirus Disease
CSA	Climate-Smart Agriculture
DA	Designated Account
DIPROSE	Directorate General of Sectorial and Special Programs and Projects (<i>Dirección General de Programas y Proyectos Sectoriales y Especiales</i>)
DFIL	Disbursement and Financial Information Letter
EIRR	Economic Internal Rate of Return
EPSA	Provincial Strategy for the Agri-Food Sector (<i>Estrategia Provincial para el Sector Agro-alimentario</i>)
FAO	Food and Agriculture Organization of the United Nations
FIRR	Financial Internal Rate of Return
FM	Financial Management
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIRSAR	Integrated Risk Management in the Rural Agro-industrial System Program (<i>Programa de Gestión Integral de los Riesgos en el Sistema Agro-industrial Rural</i>)
GoA	Government of Argentina
GRID	Green, Resilient and Inclusive Development
HPC	High Price of Carbon
IBRD	International Bank for Reconstruction and Development
INTA	National Agricultural Technology Institute (<i>Instituto Nacional de Tecnología Agropecuaria</i>)
IPF	Investment Project Financing
LPC	Low Price of Carbon
MAYDS	Ministry of Environment and Sustainable Development (<i>Ministerio de Ambiente y Desarrollo Sostenible</i>)
MAGyP	Ministry of Agriculture, Livestock, and Fisheries (<i>Ministerio de Agricultura, Ganadería y Pesca</i>)
M&E	Monitoring and Evaluation



MFD	Mobilizing Finance for Development
MSME	Micro, Small, and Medium Enterprise
MTR	Mid-Term Review
O&M	Operation and Maintenance
PCM	Private Capital Mobilization
PDO	Project Development Objective
PISEAR	Socio-Economic Inclusion in Rural Areas Project (<i>Proyecto de Inclusión Socio-Económica en Áreas Rurales</i>)
PIU	Project Implementation Unit
POM	Project Operations Manual
PPSD	Project Procurement Strategy for Development
Pro-WEAI	Project-level Women's Empowerment in Agriculture Index
R&D	Research and Development
SAFCI	Secretariat of Family, Peasant and Indigenous Agriculture (<i>Secretaría de Agricultura Familiar, Campesina e Indígena</i>)
SEP	Stakeholder Engagement Plan
SIR	Rural Investment Subprojects (<i>Subproyectos de Inversión Rural</i>)
SME	Small and Medium Enterprise
SOE	Statement of Expenditures
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
tCO ₂ e	Tons of Carbon Dioxide Equivalent



TABLE OF CONTENTS

DATASHEET.....	i
I. STRATEGIC CONTEXT	1
A. Country Context	1
B. Sectoral and Institutional Context	2
C. Relevance to Higher Level Objectives	6
II. PROJECT DESCRIPTION.....	7
A. Project Development Objective.....	7
B. Project Design Concept.....	7
C. Project Components	8
D. Results Chain	14
E. Rationale for Bank Involvement and Role of Partners.....	15
F. Lessons Learned and Reflected in the Project Design	15
III. IMPLEMENTATION.....	16
A. Institutional and Implementation Arrangements.....	16
B. Results Monitoring and Evaluation Arrangements.....	17
C. Sustainability	17
IV. PROJECT APPRAISAL SUMMARY	18
A. Technical, Economic and Financial Analysis	18
B. Fiduciary.....	19
C. Legal Operational Policies.....	21
D. Environmental and Social	21
V. GRIEVANCE REDRESS SERVICES	22
VI. KEY RISKS	22
VII. RESULTS FRAMEWORK AND MONITORING	24
ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN.....	44
ANNEX 2: DETAILED PROJECT DESCRIPTION	58
ANNEX 3: CONTRIBUTION TO CLIMATE MITIGATION AND ADAPTATION.....	74
ANNEX 4: GENDER GAPS AND ACTION PLAN	80
ANNEX 5: ECONOMIC AND FINANCIAL ANALYSIS.....	85



DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Argentina	Climate Intelligent and Inclusive Agri-food Systems Project	
Project ID	Financing Instrument	Environmental and Social Risk Classification
P176905	Investment Project Financing	Moderate

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
09-Dec-2021	15-Jun-2027

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The objectives of the project are to (i) support economic recovery and promote climate smart practices among Project beneficiaries in Argentina's agri-food system; and (ii) respond effectively in case of an eligible crisis or emergency.

**Components**

Component Name	Cost (US\$, millions)
1. Public Infrastructure for Agro-industrial Development	250.00
2. Agro-industrial Development and Strengthening of Rural Livelihoods	215.00
3. Innovation for a Green and Inclusive Agri-food System Transformation	75.00
4. Project Management and Evaluation	10.00
5. Contingent Emergency Response Component - CERC	0.00

Organizations

Borrower: Argentine Republic

Implementing Agency: Dirección General de Programas y Proyectos Sectoriales y Especiales (DIPROSE)

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	550.00
Total Financing	550.00
of which IBRD/IDA	400.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	400.00
--	--------

Non-World Bank Group Financing

Counterpart Funding	125.00
Borrower/Recipient	100.00
Local Beneficiaries	25.00
Commercial Financing	25.00



Unguaranteed Commercial Financing	25.00
-----------------------------------	-------

Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2022	2023	2024	2025	2026	2027
Annual	15.00	65.00	80.00	85.00	90.00	65.00
Cumulative	15.00	80.00	160.00	245.00	335.00	400.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Environment, Natural Resources & the Blue Economy, Finance, Competitiveness and Innovation, Poverty and Equity, Water

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● High
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Moderate
6. Fiduciary	● Substantial
7. Environment and Social	● Moderate
8. Stakeholders	● Moderate
9. Other	● Moderate
10. Overall	● Moderate



COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

☐ Yes ☒ No

Does the project require any waivers of Bank policies?

☐ Yes ☒ No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

SCHEDULE 2 - Section I. D. Public Infrastructure Subprojects. Clause D. 1 (a). The Borrower shall, through MAGyP's



DIPROSE, prior to the implementation of any activity under Part 1 of the Project for the benefit of a Participating Province, which shall be implemented by the Participating Province through a sub-loan, enter into an agreement with the relevant Participating Province, under terms and conditions acceptable to the Bank and substantially similar to those in the model form of Framework Subsidiary Loan Agreement, setting forth the framework for the implementation of the Public Infrastructure Subprojects under Part 1 of the Project in its jurisdiction.

Sections and Description

SCHEDULE 2 - Section I. E.1. (a) prior to the carrying out of any given activity under Part 2 of the Project, either: (i) on-lend or transfer on a grant basis (as the case may be), part of the proceeds of the Loan to the corresponding Participating Province to partially finance the preparation and carrying out of Rural Livelihood Subprojects under Part 2 of the Project, up to an amount equivalent to \$400,000 for any given Subproject (as said amount may be revised from time to time by mutual agreement between the Borrower, through MAGyP's DIPROSE, and the Bank and reflected in the Project Operations Manual), pursuant to the terms of an agreement (the Participation Agreement) to be entered between the Borrower, through MAGyP's DIPROSE, and the pertinent Participating Province, under terms and conditions acceptable to the Bank,

(b) Upon approval of any given Rural Livelihood Subproject the Borrower, through MAGyP's DIPROSE, shall enter into an agreement with the relevant Eligible Beneficiary (the Rural Livelihood Subproject Agreement), on terms and conditions acceptable to the Bank, which terms shall have been approved by the Bank.

Sections and Description

SCHEDULE 2 - Section I. F. (2). Prior to the initiation of any Agri-food Tech Investments by an Eligible Beneficiary, the Borrower shall, through MAGyP's DIPROSE, cause INTA to enter into an agreement with the Eligible Beneficiary, in terms substantially similar to those in the model form of Agri-food Tech Investment Agreement, and in terms and conditions acceptable to the Bank.

Sections and Description

SCHEDULE 2 - Section I. E. 2. (a) The Borrower, through MGAP, shall make available a portion of the proceeds of the Loan, on a grant basis (the Matching Grant), to an Eligible Beneficiary, to partially finance the preparation and carrying out of an Agro-industrial Entrepreneurship Subproject under Part 2 of the Project, up to an amount equivalent to \$700,000 (as said amount may be revised from time to time) for any given Subproject, in accordance with eligibility criteria and procedures, satisfactory to the Bank, as further specified in the Project Operations Manual.

(b) Upon approval of any given Agro-industrial Entrepreneurship Subproject the Borrower, through MAGyP's DIPROSE, shall enter into an agreement with the relevant Eligible Beneficiary (the Agro-industrial Entrepreneurship Subproject Agreement), on terms and conditions acceptable to the Bank, which terms shall have been approved by the Bank.

Sections and Description

SCHEDULE 2 - Section I. F. (1) The Borrower shall, through MAGyP's DIPROSE, cause INTA to provide Matching Grants to Eligible Beneficiaries up to an amount equivalent to \$350,000 per Eligible Beneficiary for any given Agri-food Tech Investment (as said amount may be revised from time to time), for the implementation of Agri-food Tech Investments under Part 3.2. of the Project in accordance with eligibility criteria and procedures satisfactory to the Bank and specified in the Project Operations Manual.



Sections and Description

SCHEDULE 2 - Section I. D. Public Infrastructure Subprojects. Clause D. 1 (b). The Borrower shall, through MAGyP's DIPROSE, prior to the implementation of any specific activity under Part 1 of the Project for the benefit of a Participating Province, enter into a Subsidiary Loan Agreement or a Subsidiary Grant Agreement (as the case may be) with the Participating Province, under terms and conditions satisfactory to the Bank and substantially similar to those in the model form of Subsidiary Loan Agreement and model form of Subsidiary Grant Agreement,

Conditions

Type Effectiveness	Financing source IBRD/IDA	Description ARTICLE V — Clause 5.01. The Project Operations Manual has been adopted by the Borrower, through MAGyP's DIPROSE, in a manner acceptable to the Bank.
Type Disbursement	Financing source IBRD/IDA	Description Schedule 2 - Section III. B: Withdrawal Conditions. No withdrawal shall be made for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed \$ 80 million may be made for payments made prior to this date but on or after April 30, 2021, for Eligible Expenditures under Category (1).
Type Disbursement	Financing source IBRD/IDA	Description Schedule 2 - Section III. B: Withdrawal Conditions. No withdrawal shall be made for payments under categories (4) and (5) unless the INTA Subsidiary Agreement has been executed in form and substance satisfactory to the Bank.
Type Disbursement	Financing source IBRD/IDA	Description Schedule 2 - Section III. B: Withdrawal Conditions. No withdrawal shall be made for payments for Emergency Expenditures under Category (6), unless and until (i) the Borrower has determined that an Eligible Crisis or Emergency has occurred, and has furnished to the Bank a request to withdraw Loan amounts under Category (6); and the Bank has agreed with such determination, accepted said request and notified the Borrower thereof; and (ii) the Borrower has adopted the CERC Manual and Emergency Action Plan, in form and substance acceptable to the Bank.



The World Bank

Climate Intelligent and Inclusive Agri-food Systems Project (P176905)



I. STRATEGIC CONTEXT

A. Country Context¹

1. **Argentina has a historically large and strong middle class, with social indicators that are in general above the regional average; however, persistent social inequalities, volatility of economic growth and underinvestment have limited the country's development.** Urban poverty in Argentina reached 40.6 percent of the population in the first semester of 2021, and 10.7 percent of Argentines live in extreme poverty. Childhood poverty, for children under 14 years old, is at 54.3 percent. In the metropolitan area of Buenos Aires, the high vulnerability of low-income population can be illustrated by its crowded living conditions and high dependence on informal economic activities. Over the last 50 years, Argentina's average annual economic growth rate of 2.1 percent, lags that of the world (3.6 percent) and the region (3.2 percent). Decades of chronically low underinvestment have led to sizeable gaps in capital stock vis-à-vis other countries, with public capital expenditures as a share of GDP recently declining amid the large increase in public spending.

2. **The COVID-19 outbreak hit Argentina at a time when its economy faced significant macroeconomic imbalances and a highly uncertain outlook.** Following a two-year recession, high inflation, and lack of access to capital markets, the COVID-19 outbreak led to the implementation of a strict lockdown to contain the spread of the pandemic while preparing the health care system. This situation implies one of the biggest global economic crises in recent time and triggered in Argentina a GDP loss of 9.9 percentage points in 2020, the largest retraction since 2002. The implementation of a fiscal stimulus package to support families and firms – equivalent to 6.5 percent of GDP² – coupled with an abrupt decline in revenues resulted in a central government (primary) deficit estimated at 6.5 percent of GDP in 2020.³ In a context of restricted market access, financing the response to the COVID-19 shock required an important monetization of the deficit. This has exacerbated macroeconomic imbalances, notably by exerting pressures on reserves and on the persistent large gap between the official and parallel exchange rates.

3. **The economy has started to recover building on the broad reach of the vaccination campaign and the targeted fiscal support that was maintained during 2021, reaching pre-pandemic levels by August 2021, though in a very heterogeneous manner across economic sectors. According to the national authority projections, Argentina's GDP is expected to grow 8 percent in 2021 and 4 percent in 2022.** Economic recovery has gradually picked up as containment measures have been progressively lifted, building on the economy's ample idle capacity. Uncertainty as well as price and capital controls could put a lid on the strong investment growth that occurred during the first stages of the economic recovery, while the imperative to bring down the fiscal deficit could limit the scope for demand stimulus. A reduction in the primary fiscal deficit is materializing in 2021, due to: the unwinding of emergency programs implemented to fight the pandemic; to extraordinary resources stemming from the increase in commodity prices and an exceptional tax on large fortunes. Nonetheless, the economy continues to display large unresolved macroeconomic imbalances. Annual inflation stood at 52.5 percent in September 2021.

¹ Source for estimates and projections in this section (unless otherwise stated): INDEC National Income Accounts and World Bank staff calculations.

² Fiscal cost of the COVID-19 stimulus package is based on the Budget Progress Report to the Congress (June 2021) of the National Budget Office (*Oficina Nacional de Presupuesto*). The figure of 6.5 percent of GDP refers to the overall budget outlays to finance COVID-19 related expenditures in 2020, including 4.5 percent of GDP in fiscal impact measures and 2.0 percent of GDP in credit.
<https://www.economia.gob.ar/onp/presupuestos/2022>

³ Fiscal accounts for 2020 are based on National Public Sector cash statistics, which is used as a close proxy of accrued fiscal statistics that are usually released with some delay in the future. See <https://www.economia.gob.ar/onp/estadisticas/>



4. **Regarding external debt, the Government of Argentina (GoA) successfully restructured the sovereign debt denominated in foreign currency held by private creditors.** The restructuring was agreed by creditors holding 99 percent of the bonds under external and domestic law. The swap significantly improved Argentina's maturity profile for the next five-to-eight years. As from 2028, debt service obligations are equivalent to those that triggered the debt swap in 2020 and 2021. Authorities are holding conversations with the International Monetary Fund on a new program to refinance debt owed to this institution and will later have to negotiate with Paris Club members outstanding debt.

5. **Despite the early and strict lockdown measures, the health impact of COVID-19 in Argentina has been severe.** The country ranks second in the region and ninth in the world in the number of confirmed total cases. As of November 5th, the country accounts for more than 5.3 million cases and almost 116,000 cumulative deaths. In April 2021, the country experienced the beginning of a second wave with an average of more than 20,000 new cases per day-with a peak of 41,000 daily cases by the end of May 2021, putting the country's health system under major stress with the intensive care unit occupancy rate reaching a peak of 79 percent nationwide on June 9, 2021. After some initial delays in vaccination, the Government has been making continuous progress in strengthening the national strategy for the deployment of COVID-19 vaccines. Currently, more than 34.1 million Argentines (77 percent of the population) have received one dose of COVID-19 vaccine and more than 25.9 million (58 percent of the population) have already received two doses. Argentina is currently at its lowest rate of new COVID cases since the summer of 2020 and the number of infections remains on average at around 1,000 per day nationwide.

B. Sectoral and Institutional Context

6. **The confluence of health, macro-fiscal and environmental challenges require Argentina to adopt policies that promote smart, green, and inclusive private sector-led growth.** Argentina has committed to an ambitious new goal of not exceed 359 million tons of net emissions of carbon dioxide equivalent (tCO_{2e}) by 2030, which means a total decrease of 19 percent in emissions by 2030⁴ compared to the historical peak reached in 2007, and a reduction of 25.7 percent compared to the previous National Determined Contribution (NDC) submitted in 2016. This commitment provides the foundations from a linear to a circular economic system. To meet these commitments, Argentina is having to rethink its industrial and sectoral organization and the innovations that underpin private sector growth. Livestock and agriculture yields will have to increase via more efficient technologies and practices that boost production without significantly expanding the cropland area. Going forward, innovations that increase productivity and efficiency can contribute to long-term, stable growth while providing climate co-benefits, while recovery from COVID-19 must be fully aligned with resilient, inclusive, and green growth.

7. **Argentina's abundant natural capital supports the livelihoods of a large rural population, as well as the development of the agriculture, livestock, forestry, and fisheries sectors.** The country remains one of the largest food producers and net food exporters in the world. With more than 32 million hectares of agricultural land, 53.6 million hectares of native forests, 1.2 million hectares of forest plantations and an extensive and biodiverse marine exclusive economic zone, agriculture, forestry, and fishing together represented 7.2 percent of the GDP in 2019⁵. From 2015-2019, agriculture's contribution to GDP increased from 5.2 to 7.2 percent, while the service sector declined from 58.8 to 53.6 percent and the industrial sector's contribution remained constant at 23 percent. This growth has been facilitated mainly by technological change and, for much of the period, by highly favorable international commodity prices. In 2019, Research and Development (R&D) in agriculture captured 16.9 percent

⁵ World Bank Data Atlas, 2020.



of total investments of public sector funds and 9.5 percent of private sector funds for R&D. The country is a regional leader in agricultural R&D and upstream and downstream technological innovations have had important impacts on productivity, climate resilience, Greenhouse Gas (GHG) and emissions, and jobs.

8. Argentina's forestry sector depends on a mix of cultivated forests (85 percent) and native forests (15 percent). Most forests are in the northern provinces of Corrientes and Misiones, each with approximately 500,000 ha of planted forest, where excellent soils lead to some of the world's highest growth rates, but logistics costs and lack of higher value-added products (paper, furniture) hamper exports. Most uncontrolled and often illegal deforestation occurs in the fragile Chaco Ecoregion where deforestation is contributing to biodiversity loss, soil degradation and carbon emissions. Uncontrolled deforestation often occurs in areas with high levels of poverty, where communities are highly dependent on forest products for their livelihoods and have been disproportionately affected by the deforestation.

9. Looking ahead, agriculture, forestry and fisheries production and exports are expected to remain critical for the Argentine economy, but the environmental footprint needs to be managed carefully. Agriculture, livestock and forestry account for about 37 percent of Argentina's total GHG emissions⁶. The expanding practice of double cropping of maize or wheat and soybean is expected to raise output through more intensive use of already cultivated land. With the intensification of production through feedlots, beef production is expected to grow 13.5 percent between 2020-30. Poultry and pork production is expected to grow 14.0 and 17.5 percent, respectively, this decade⁷. Argentina's agricultural exports are highly concentrated in a few (mostly low value-added) primary products and their derivatives, while processed products are used as inputs in downstream industries abroad⁸. Diversification of Argentina's agricultural export base – including upstream technology exports and downstream value-added products – would reduce the sector's environmental footprint and the country's exposure to commodity price fluctuations.

10. While the export-oriented agriculture sector is growing, family farming performance is weak and large pockets of poverty remain. Distribution of farmland in Argentina is highly unequal across different types of farms. According to the 2018 Agricultural Census⁹, about 80 percent of the farm units (about 182 thousand farmers), have less than 500 ha and occupy 17.9 million ha which is only 11.5 percent of the existing agricultural land. On the other hand, 45,457 farm units are larger than 500 ha per farm, making up about 20 percent of all farming units and accounting for about 88.5 percent of Argentina's agricultural land. Despite the availability of technical resources from the public sector, micro, small and medium enterprises (MSMEs) in the agri-food sector face serious difficulties in accessing financial services that would allow them to invest in innovation and new technologies. In 2020, MSMEs received on average only 18.4 percent of the total amount of the monthly outstanding loans in national and foreign currency.¹⁰

11. Several provinces, and rural and more remote parts in particular, face infrastructure gaps, which undermine productivity, logistical efficiency and overall competitiveness. Investment in infrastructure represents only 2.5 percent of GDP, with underinvestment in upgrading or maintenance. Logistics costs are high in Argentina and the system is inefficient, resulting in challenges that drive up domestic prices and reduce export competitiveness. Poor logistics performance also accentuates regional disparities, since the Northern, Patagonian,

⁶ Ministerio del Ambiente y Desarrollo Sustentable (MAyDS). 2020. "Second National Determined Contribution of the Republic of Argentina".

⁷ OECD-FAO, 2021. Agricultural Outlook 2021 - 2030. Data available at <https://stats.oecd.org/>

⁸ OECD. 2021. "Chapter 3: Argentina" in Agricultural Policy Monitoring and Evaluation 2021: Addressing the Challenges Facing Food Systems.

⁹ *Censo General Agropecuario*; INDEC, 2018.

¹⁰ Banco Central de Argentina http://www.bcra.gob.ar/PublicacionesEstadisticas/Cuadros_estandarizados_series_estadisticas.asp



and Western regions are disconnected from the core economic center, where logistics flows are concentrated and there is congestion on the main corridors and access to ports. Moreover, rural road maintenance to increase connectivity has some of the highest potential to create jobs.¹¹

12. Gender gaps in the agricultural sector also contribute to persistent productivity gaps. Although 45 percent of the registered family farmers in Argentina are women, only 10 percent self-identify themselves as headed by women.¹² Available data suggests that less than 30 percent of women have had access to communal property and only 16 percent have benefited from the allocation of public lands¹³. The lack of employment opportunities for rural women in highly mechanized production systems has concentrated female participation in peasant and indigenous family farming. Women receive only a tiny part of the monetary benefits as they are rarely linked to commercialized products or processes, and there is a perception that their salaries “supplement” men’s. Argentina has recently strengthened its gender actions with the creation of the Ministry of Women, Gender and Diversity on December 10th, 2019 (decree 7/2019); the Directorate of Integral Care under the Ministry of Social Development; and the Directorate of Economy, Equality and Gender of the Ministry of Finance (see Annex 4). Women represent almost 55 percent of publicly funded research as opposed to 31 percent in the private sector.¹⁴ “Micaela’s Law”¹⁵ establishes mandatory training in topics related to gender gaps and violence against women for public servants at all levels and hierarchies in the Executive, Legislative and Judicial branches of the Nation. Additionally, the national budget approved for 2021 includes a 15 percent increase in activities to reduce gender gaps through actions such as the “Accompany Program”, the first national policy to strengthen the economic autonomy of women and sexual minorities.

13. Climate Change and other weather-related events present critical risks for agriculture and the welfare of farmers. Rising temperatures and extreme weather events are expected to lead to more frequent and intense natural disasters, such as heat waves, floods, and droughts, impacting human health, water resources and food security. According to the preliminary findings of the Country Climate and Development Report (CCDR), extreme precipitation events (droughts and floods) dominate the country’s climate risks and will severely impact agricultural production, which represents 60 percent of exports.¹⁶ Productivity losses associated with climate change could reduce agricultural GDP between 3 and 17 percent in some countries in Latin America and Argentina is no exception.¹⁷ Small-scale farmers and rural populations are particularly vulnerable to the effects of climate change due to their dependency on rainfed agriculture for food production, nutrition security and income generation, as well as their limited capacity to cope with disasters or transfer the risks associated with the loss or degradation of productive assets and output. Securing future investments from damaging storms, adapting infrastructure in response to soil erosion and flooding, adopting adaptive climate-smart technologies and practices, and implementing green agricultural practices are key to mitigate climate change and adapt to extreme events.

14. Irrigated agriculture is responsible for around 70 percent of the freshwater consumption in irrigated areas. However, only 5 percent (around 2.1 million hectares) of the cultivated area is irrigated, with an average

¹¹ World Bank. 2021. “Jobs and Distributive Effects of Infrastructure Investment : The Case of Argentina.” The World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/35850> License: CC BY 3.0 IGO.”

¹² Data obtained from the National Registry of Family Farming (RENAF, for its Spanish acronym).

¹³ Ferro, S.L., 2013. “Género y propiedad rural: República Argentina” 2a Ed. - Buenos Aires: Ministerio de Agricultura, Ganadería y Pesca de la Nación. Unidad para el Cambio Rural, UCAR.

¹⁴ Ministry of Science, Technology and Innovation. Human Resources in R&D: <https://www.argentina.gob.ar/ciencia/indicadorescti/rrhh>.

¹⁵ Legislative Branch of the Argentine Nation (2018). Law 27499 Micaela Law on mandatory gender training for all people who make up the three branches of the State. Recovered from: <https://www.argentina.gob.ar/normativa/nacional/ley-27499-318666/texto>.

¹⁶ Rozenberg, J., D. Dborkin, F. Giuliano, C. Jooste, M. Mikou, L. Rodriguez Chamussy, G.Schwerhoff, S. Turner, E. Vezza, B. Walsh. 2021. Poverty and Macroeconomic Impacts of Climate Shocks in Argentina. World Bank, Washington DC

¹⁷ “Estudio de la Potencialidad de Ampliación del Riego en Argentina” (FAO- UTF/ARG/017/ARG; 2015).



efficiency of 34 percent. Despite this relative low efficiency, irrigated agriculture generates around 13 percent of the value of the total agricultural production. Important economic gains could be achieved by investing in improving irrigation efficiency from 34 to 58 percent,¹⁸ and Argentina could triple the irrigated area (by 6.2 million hectares) in areas with favorable agroecological conditions and available water resources.¹⁹ This would require private investments in irrigation and drainage systems, complemented with public support to training and technical assistance (TA), access to information, institutional strengthening, innovative mechanisms to support irrigation modernization and adaptation to climate change.

15. Digital agriculture presents a unique opportunity to promote sustainable economic growth, but challenges persist.²⁰ A recent World Bank study²¹ evaluated the landscape of digital agriculture in Argentina and identified key actors across value chains, the main challenges they face and the potential of innovative digital technologies to overcome these barriers. Currently, 80 percent of farmers use basic technologies and only about 10 percent farmers use advanced digital technologies such as remote sensing and machine learning tools. The study identifies several challenges to expand digital tools in agri-food systems in Argentina, such as: (i) limited access to digital technologies or robust infrastructure; (ii) limited ability to purchase hardware; (iii) lack of interconnection among end users; and (iv) low digital literacy, disparities in digital skills and technology adoption. The public sector can play a key role in promoting digital agriculture solutions through public-private partnerships, by investing in digitalizing agriculture (e.g., meteorological services, soil maps, digital platforms for decision making).

16. The National Institute of Agriculture Technology (INTA) is the leading agricultural technical institution, focusing on research, extension and innovation in food systems technology. INTA is a government organization with operational and financial autonomy under the Ministry of Agriculture, Livestock and Fishery (MAGyP). It focuses on innovation in the agri-food sector, and promotes inter-institutional cooperation, knowledge and technology sharing through its systems of extension, information and communication. Beyond its headquarters, INTA has 15 Regional Centers, six Research Centers, 53 Experimental Stations, employing more than 7,000 people. Its international reach includes 185 collaboration agreements with multilateral and bilateral institutions from 39 countries²². Key elements of INTA's strategy include strengthening institutional capacity for innovation, boosting extension services, reducing food loss and waste, improving food quality and safety, and increasing sustainability and climate change adaptation and mitigation at the regional level.²⁴ INTA's Institutional Strategic Plan for 2015-2030 aims to promote innovation and contribute to the sustainable development of a competitive, inclusive, equitable and environmentally friendly agri-food system.²⁵

17. INTA has played a major role in the development of key innovations in agricultural and biological science, leading to substantial increases in sector productivity. However, it needs to be strengthened further so as to continue to spearhead agricultural innovation to transform agri-food systems and boost competitiveness. INTA's institutional transformation would require boosting new capacities, including: (i) investing in R&D, transfer and extension; (ii) enhancing the role of family farming in innovation processes in agro-industrial systems; (iii) promoting greater productivity and environmental sustainability (both mitigation and adaptation) and more inclusive agro-industrial production systems; (iv) strengthening INTA's planning, management and administration;

¹⁸ World Bank, 2021. Argentina: Valuing Water. 145pp

¹⁹ MAYDS. 2020.

²⁰ World Bank, FAO and CIAT. 2020. "Argentina Digital Agricultural Profile (DAP)."

²¹ Schroeder, K., J. Lampietti and G. Elabed. 2021. "What's Cooking: Digital Transformation of the Agri-Food System." The World Bank

²² For more information see <https://www.argentina.gob.ar/INTA>

²³ INTA's budget per DA 04/2021 was AR\$11,287,257,830 or US\$114.7 million, at an exchange rate of AR\$98.40/US\$1 (BCRA, 2021).

²⁴ FAO Policy Note 2020.

²⁵ <https://www.argentina.gob.ar/sites/default/files/inta-presentacion.pdf>



and (v) developing and mainstreaming collaborative public-private engagement models.

18. The Project concept builds on past and ongoing interventions in agricultural and other operations in Argentina. The Project aims to deepen ongoing support with the Socio-Economic Inclusion in Rural Areas Project (PISEAR, P106685) and the Integrated Risk Management in the Rural Agro-Industrial System Project (GIRSAR, P162316). The Project will scale up and expand the Productive Alliances (PA) model to improve beneficiaries' productive and commercial capacities, and access to domestic and international markets. It will complement efforts to promote innovative and climate-smart technologies as well as strengthen key public services to provide TA and capacity building to producers. The public investments, agricultural innovation, capacity building and institutional strengthening to be supported under the Project will enable the Mobilization of Financing for Development (MFD) in the agri-food system.

C. Relevance to Higher Level Objectives

19. The Project is aligned with the Country Partnership Framework (CPF) FY19-22 for the Argentine Republic.²⁶ The CPF program aims at strengthening Argentina's capacity to cope with climate shocks, maintain its leading position as a world food exporter, and promote the adoption of climate-smart activities in rural areas. The proposed Project will promote the adoption of climate-smart practices and technologies at both the landscape and the farm level, with a focus on vulnerable family farmers and disadvantaged groups (particularly poor indigenous communities in northern regions). The Project will contribute to making the rural economy more climate smart by financing low-carbon and low-environmental impact production and construction technologies to promote the adoption of agroecological practices at the landscape and at the farm-level. Additionally, the Project will also support addressing key institutional constraints for better governance and service delivery and also contribute to the supporting Argentina achieve its NDC, at the same time of increasing the resilience of the country's rural communities and of its biodiversity to climate shocks.

20. The Project is consistent with the integrated Green, Resilient and Inclusive Development (GRID) framework²⁷ **adopted by the World Bank in April 2021.** GRID provides an integrated longer-horizon strategy to repair the structural damage caused by COVID-19, accelerate climate-change mitigation and adaption and underpin a strong and durable economic and social recovery, with the goal of "building back greener". The Project aligns with the GRID strategy by providing support to renewed private sector-led development supported by public investments in key areas; technological development; creation of sustainable new jobs; a renewed emphasis on inclusion that addresses structural inequalities exacerbated by COVID-19 and rebuilding social capital. In particular, the Project aims to accelerate digital transformation by key public and private institutions, agri-businesses and productive units for a long-term resilient recovery. Finally, the Project is also consistent with World Bank Group's climate-change commitments, particularly via support to both adaptation and mitigation measures.

²⁶ Report No. 131971-AR, discussed by the Board on April 25, 2019.

²⁷ World Bank Group. 2021. "From COVID-19 Crisis Response to Resilient Recovery. Saving Lives and Livelihoods while Supporting Green, Resilient, and Inclusive Development (GRID)."



II. PROJECT DESCRIPTION

A. Project Development Objective

21. **PDO Statement.** The development objectives of the proposed Project are to: (i) support economic recovery and promote climate smart practices among Project beneficiaries in Argentina's agri-food system; and (ii) respond effectively in case of an eligible crisis or emergency.

22. **Economic recovery in the context of the above PDO statement for the proposed Project is understood as creating jobs and increasing sales for Project beneficiaries.** Climate-smart practices in the context of this Project are understood as investments undertaken by beneficiaries that achieve any of the following three objectives: (a) increase agri-food productivity and incomes through the adoption of sustainable practices; (b) adapt and build resilience to climate change; and (c) reduce net balance of carbon emissions (with and without Project). Progress in achieving these objectives will be measured by the following PDO Level Indicators.

PDO Level Indicators

<i>PDO Theme</i>	<i>PDO Outcome Indicators</i>
<i>Economic recovery</i>	1. Jobs created or maintained under initiatives supported by the Project (cumulative numbers of people employed (full-time equivalent), disaggregated for type of job, gender and age group). 2. Increase in volume of sales of the agro-industrial MSMEs or producer organizations benefited by subprojects under the Project (percentage). 3. Subprojects by agro-industrial MSME's or producer organizations operational and/or maintained 12 months after the investment completion (percentage).
<i>Climate smart practices</i>	4. Beneficiaries with access to new or improved rural public infrastructure for agricultural risk mitigation and/or natural resources management (cumulative number), disaggregated for gender, age group and Indigenous Peoples (IPs)/Afro-descendants. 5. Subprojects financing the adoption of climate smart agriculture technologies and-or practices to anticipate and prevent negative impacts of climate (cumulative number). 6. New climate smart technologies and practices to avoid negative impacts of climate developed by INTA under the Project (cumulative number).

B. Project Design Concept

23. **This Investment Project Financing (IPF) has a total estimated cost of US\$550 million, comprising of an US\$400 million IBRD loan with US\$100 million in counterpart financing, and leveraging around US\$50 million in contributions from local beneficiaries.** The Project will be implemented over 5.5-years at the national level, focusing on lagging provinces and regions, addressing constraints and bottlenecks that limit the development of agri-food systems, and responding to demands expressed by provincial governments and the private sector. With respect to each participating province, the Project will take the Provincial Strategies for the Agri-Food Sector²⁸ (EPSAs) as the basis for identifying priority investments for project support.

²⁸ The Provincial Strategies for the Agri-food Sector (EPSAs) condense and systematize the main political guidelines for agri-food development through the identification and orientation of investments related to agribusiness with a strong impact on the sector's economy for a period of 10 years. This prioritization of activities, together with the outline of strategic interventions that increase the productive capacity and efficiency of the sector, make EPSAs key instruments to promote the development process with greater commitment from the different intervening actors. Each EPSA presents the key pillars for the development of the provincial agricultural economy, with a view to designing projects for the integration of rural areas and the incorporation of productivity-promoting activities.



24. **The Project comprises of three mutually supporting components designed to generate conditions for the post-pandemic recovery and consolidation of a modern and more inclusive agro-industrial sector.** It combines investment in public goods (Component 1); support for private investments to enhance market access and development and reduce the vulnerability of rural inhabitants (Component 2); and investments to promote agricultural innovation (Component 3). The Project's interrelated and complementary components will promote growth and employment while catalyzing a more sustainable and longer-term development approach, consistent with green, resilient and inclusive development. All components are designed to focus on post-Covid-19 economic recovery and climate resilience and aim to promote sectoral growth and development with greater inclusion and sustainability. The Project will promote the private capital mobilization (PCM) in support of the agri-food system, address gender gaps and generate significant climate co-benefits.

C. Project Components

25. **Component 1: Public Infrastructure for Agro-industrial²⁹ Development (Total Cost US\$250 million; IBRD loan US\$200 million; counterpart funding US\$50 million).** The main objective is to increase the coverage and quality of rural public infrastructure to support green, sustainable and inclusive economic recovery, by reducing climate vulnerabilities, expanding green infrastructure and increasing competitiveness and job creation in the agri-food system. The component will finance a range of activities that support adaptation to and mitigation of climate change (see the details in Annex 3). The main areas of investment under Component 1 include:

- (a) **Climate-resilient infrastructure investments**, constructed with attention to environmental and agro-ecological considerations, for strengthening and expanding **connectivity**, with a focus on “last mile” segments in existing networks (e.g., rural/tertiary roads, coverage of internet and digital services and rural electricity, to close the gap for beneficiaries).
- (b) **Rehabilitation and improvement of existing primary irrigation and drainage works³⁰** to protect against climate-induced water scarcity and **more sustainable management of water resources** for agricultural production and processing (expanding works under public domains), in coordination with private investments in downstream segments (supported either by Component 2 or outside the Project).

26. **The Project will finance public infrastructure prioritized by authorities at the federal or provincial levels.** The component will finance works, goods, non-consultant and consultant services, training, and operating costs under the following activities: (a) **Advisory services** to support provinces in preparing or adjusting Provincial Strategies for the Agri-Food Sector (EPSAs), making these strategic instruments for identifying climate smart public infrastructure subprojects; (b) **Pre-investment activities** to update existing project profiles, including via a sustainability lens, or preparation of feasibility studies to be presented for financing; (c) **Strategic studies** required by the provinces to improve understanding of climate-resilience in agriculture; and (d) **Implementation of approved Investment Subprojects** as approved by the Directorate General of Sectorial and Special Programs and Projects (DIPROSE) for financing to contribute directly to the development objectives of the Project.

27. **All public infrastructure subprojects selected will include adoption of climate-smart practices leading to increased climate resiliency (see Annex 3).** Moreover, the engineering designs for construction will follow environmentally friendly norms and design parameters, increasing resiliency to climate change and extreme weather events, as well as taking into consideration elements that promote participation by women, youth, Indigenous Peoples (IPs), afro-descendants and other vulnerable beneficiary segments. These subprojects will prioritize public investments that contribute to reducing gender gaps in rural areas (e.g., reducing the amount of time spent by women and children to collect water for consumption) and to providing better basic public services

²⁹ When the term “agro-industrial” is used alone, it includes agricultural and agri-food systems, as well as agro-industries.

³⁰ Investment in new irrigation and drainage schemes that rely on waters of international waterways are not expected.



(e.g., proper road connectivity, electricity and internet access) that enhance women's inclusion and facilitate their participation in the labor market beyond childcare and household chores (see Annex 4).

28. **The expected results from these investment subprojects are increased productivity and climate-resilience in the targeted areas.** The subprojects will also improve the quality of agriculture production, reduce commercialization costs, reduce on-farm losses and post-harvest waste, contributing to lower emissions, improve sales and market access, and boost competitiveness in domestic and export markets. Special priority will be given to investment proposals that address vulnerability and enhance resilience to weather events and climate shocks (from floods, droughts, tornados, etc.), with positive impacts on adaptation and mitigation agendas, thus reducing the likelihood of extreme impacts on assets and population. MAGyP has a portfolio of pre-screened public infrastructure subprojects amounting to approximately US\$175 million that will be re-assessed applying the Project's eligibility criteria (see Annex 2, Figure A2.2).

29. **Component 2: Agro-industrial Development and Strengthening of Rural Livelihoods. (Total Cost US\$215 million; IBRD loan US\$140 million; counterpart funding US\$35 million; commercial financing US\$20 million; local beneficiaries US\$20 million).** This component will support private investments in agribusiness initiatives and rural livelihoods made through thematic calls for proposals that will respond to specific territorial conditions and the needs of vulnerable beneficiary groups (see Annex 2).³¹ This component will finance activities that aim to close gender gaps by promoting women's productive associations, business skills, entrepreneurship and empowerment in the rural sector through managerial training tailored for women (see Annex 4). Investments will focus on access to finance and markets, distribution of productive assets, equipment, and technologies, especially for vulnerable populations by promoting the formal inclusion of women, indigenous peoples, afro-descendants and youth in the production and transformation stages of the agri-food system. Women's empowerment will be measured under agro-industrial entrepreneurship subprojects through the Project-level Women's Empowerment in Agriculture Index (Pro-WEAI) and DIPROSE has installed capacity that will be harnessed for measuring this indicator.³² The financing under this component will cover a range of activities that support climate change adaptation and mitigation, including improving net carbon balances (see the detailed description of climate co-benefit-generating activities in Annex 3 and its Appendix 1).

30. **The Component will operate through four investment windows.** Windows 1 and 2 will be dedicated to rural livelihoods investments and windows 3 and 4 will finance agro-industrial entrepreneurship subprojects. This four-window mechanism allows for the possibility of a progressive graduation of beneficiaries from Window 1. Component 2 will operate with detailed eligibility criteria and financing caps for each Window to be detailed in the Project Operations Manual (POM) (see Annex 2 for further details).

31. **Window 1: Livelihoods for economic and productive inclusion.** This window will target producers who are organized into formal producer organizations, practice agriculture as their main livelihood, and aim to "transition" over time from subsistence to commercially oriented production (Windows 3 and 4), giving priority to underprivileged groups such as rural women, indigenous peoples, afro-descendants, and rural youth. It will also

³¹ There would be dedicated calls for proposals for vulnerable groups, such as women, youth, indigenous peoples, etc., which would be held to ensure the participation of said sectors of the population.

³² The Pro-WEAI is a survey-based index to measure women's empowerment, management and inclusion in the agricultural sector. This index was jointly developed by the Institutional Food Policy Research Institute (IFPRI), the Oxford Poverty and Human Development Initiative, and thirteen partner projects in IFPRI's GAAP2 portfolio. Pro-WEAI is composed of twelve indicators of women's empowerment in agriculture: income autonomy, self-efficacy, attitudes toward domestic violence, contributions to productive decisions, ownership of land and other assets, access to and decisions about credit, control over use of income, work balance, visits to important places, membership in groups, membership in important groups, and respect among household members.



finance investments to enable beneficiary households to generate sustainable agricultural/non-agricultural autonomous incomes and the adoption of climate-smart agriculture (CSA) technologies.³³

32. **Window 2: Small scale water investments for domestic and productive purposes.** Based on the ongoing “Plan Agua”³⁴, this window will finance subprojects to vulnerable producer organizations for the management of water resources, i.e., drip and sprinkler irrigation systems, shallow wells and rainwater collection systems.³⁵ These investments will also prioritize technologies to enhance the environmental resilience of the target population.

33. **Window 3: Micro and Small Agro-industrial Enterprises Investments and Window 4: Medium Agro-industrial Enterprises Investments.** These two windows will promote commercial and export-oriented agriculture and agroindustry by attracting and leveraging investments from agro-industrial MSMEs for high value agricultural production and value addition undertaken by supporting the implementation of Productive Alliances. Eligible investments will promote climate smart practices in productive possesses as well as in works. Funding will be channeled through agro-industrial entrepreneurship subprojects that will finance working capital, productive assets and equipment, private infrastructure and specialized technical assistance. Investments in Windows 3 and 4 are expected to mobilize increasing amounts of counterpart funding and financing from the commercial banking sector and non-bank value-chain financiers, in line with the Bank's goals of promoting PCM.

34. **Component 3: Innovation for a Green and Inclusive Agri-food System Transformation (Total Cost US\$75 million; IBRD loan US\$55 million; counterpart funding US\$10 million; commercial financing US\$5 million; local beneficiaries US\$5 million).** This component seeks to strengthen the institutional capacity of INTA to be able to play a key role in the sustainable³⁶ economic recovery and development of the country (see Annex 2). This component will promote Agri-food Tech³⁷ innovation, including digital agriculture and climate-smart practices, particularly among the rural youth with a view to enabling a generational transition. It will finance activities that aim to close gender gaps, especially in the research field, promoting the participation of women researchers, scientists, entrepreneurs, owners of startups or innovative companies, among other agriculture-related disciplines. Besides INTA itself, the component will directly benefit agro-industrial startups and MSMEs that seek support for agro-industrial innovation, as well as public and private organizations part of Argentina’s agri-food innovation ecosystem. The support under this component will cover a range of activities that will also support adaptation to and mitigation of climate change (see Annex 3).

35. **Subcomponent 3.1: Institutional transformation of INTA to support an innovative and climate-smart agro-bio-industrial sector.** This subcomponent aims to promote innovation, and improve the agribusiness enabling environment and contribute to strengthen the climate resilience of the agri-food sector by contributing to the modernization of INTA’s infrastructure and human capital. Investments in equipment and infrastructure will be aimed at ensuring that INTA's physical and intellectual assets can be strengthened further, so that it continues to spearhead agricultural innovation in support of the transformation of agri-food systems. These will include investments in technological infrastructure, investments for INTA’s laboratories and the acquisition of a laboratory management system, investments in new technologies and equipment to promote rural development and the adoption of climate-smart approaches and technologies, and investments in specialized computerized

³³ This includes productive assets and inputs, technical assistance (TA), and small improvement works in rural households. It would include CSA technologies and good agricultural practices to enhance farmer’s productivity and resilience.

³⁴ The “Plan Agua” (National Water Plan) aims at substantially reducing the percentage of the population living in poverty, guaranteeing the right to drinking water and sanitation, sustainable productive development, conserving water in a state compatible with health and the environment, and improving the protection of the population against floods.

³⁵ It would identify and enable the most apt beneficiaries to participate in larger investment options such as those of Windows 3 and 4.

³⁶ “Sustainable” refers to environmentally, climatic, socially and economically sustainable activities.

³⁷ Agri-food Tech refers to a segment of the startup and venture capital universe that’s aiming to improve or disrupt food and agriculture industry. Defines the innovation taking place across the food supply chain, not just at either end per “Ag-tech” and “Food-tech”.



equipment to measure emissions and perform on-site soil analysis and transport vehicles. Investments in human capital will be aimed at enhancing institutional capacities in disciplinary and technological areas prioritized at the institutional level, increasing the number of front-line researchers in key areas, training future institutional leaders to meet the challenges of agriculture sector in the future, and strengthening national and international collaboration networks.

36. Subcomponent 3.2. Agri-food Tech ecosystem investments. Through direct investments in Agri-food Tech MSMEs, this subcomponent will support the development of innovative enterprises in the field of agriculture technology and climate smart practices. Expanding and accelerating the country's scientific and technological know-how for the development of new agriculture technologies requires the participation of strategic investors that can boost and accelerate growth in an increasingly competitive industry. In this sense, the activities executed in this subcomponent will leverage existing Agri-food Tech capacity and scientific knowledge of the country from private sector, universities, nongovernmental organizations, and INTA. This subcomponent will be implemented under INTA's technical leadership, building on its Incubator-Accelerator Platform Initiative.³⁸

37. This subcomponent will provide finance through four windows for the development of new climate-smart technologies and practices through matching grants. Window 1 - Incubation: this window will finance the incubation of innovative agriculture and food-oriented businesses under INTA's Enterprise Incubation Program. Window 2 - Acceleration: this window will finance Agri-food Tech MSMEs with at least two years of experience in developing innovative business lines that require support with acceleration. Window 3 - Venture/risk capital: this window will provide, and seek to attract, venture capital financing for expanding the activities of innovative Agri-food Tech businesses. Window 4 - Innovation Challenge Funds: this window will support open competitions and challenges to finance individual entrepreneurs or innovators who are in the ideation and prototype phases of developing solutions to specific problems related to climate-smart agriculture development. For the first three windows, the Project will award matching grants Agri-food Tech MSMEs with the most innovative and promising proposals, so that they can leverage further private investment (equity or credit). For the fourth window, grants will be awarded primarily through open competitions and challenges where solutions to specific problems will be submitted and an interdisciplinary, inter-stakeholder panel will evaluate and select the most promising proposal.

38. Component 4: Project Management and Evaluation (Total Cost US\$10 million; IBRD loan US\$5 million; counterpart funding US\$5 million). Component 4 will help enhance DIPROSE's capacity to be able to effectively execute the roles of fiduciary management, planning, monitoring & evaluation (M&E), training, legal and environment and social standards. This component will finance goods, consultancies, training and other services, as well as a baseline assessment, mid-term and end evaluations for assessing the Project's final results and effectiveness in achieving the intended outcomes (Borrower's final report). In addition, the component will support strategic evaluation activities in coordination with the Secretariat for Strategic Affairs (SAE), as the agency responsible for technical-methodological advice and oversight.³⁹ The financing provided under this component

³⁸ INTA's Incubator-Accelerator Initiative is an organization-based approach to support startups and MSMEs in the development of innovative and proprietary technology to advance production capabilities in the agri-food sector. Currently, the program consists of two established incubators: INCUVA in Rafaela, Santa Fe, and INCUINTA in Castelar, Buenos Aires Province. With the program's support, INTA expects to develop three new incubator centers distributed along the country's territory, and expanding the programs output to 80 companies assisted in the next 5.5 years. INTA provides selected companies with direct assistance and expert advice from its specialists, who work in innovation projects with selected companies to advance innovations, technologies and inventions that can be scaled up to fill market productivity, efficiency, and sustainability demands.

³⁹ The strategic evaluation activities to be carried out in coordination with the SAE focus on generating evidence on the contribution of the international financing strategy to: (i) the achievement of the Sustainable Development Goals; (ii) the priority guidelines of the public sector's management and (iii) the achievements of institutional strengthening activities of the National State and the Jurisdictions.



will include financing of activities that support adaptation to and mitigation to climate change (see details in Annex 3).

39. **Component 5: Contingent Emergency Response Component - CERC (US\$0 million).** This component is a contingent financing mechanism available to Argentina to have immediate access to Bank financing to respond to an eligible crisis or emergency, 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.” The mechanism for the triggering of the CERC would be established in the CERC Manual, detailing the applicable fiduciary, environmental and social, monitoring, reporting, and any other implementation arrangements necessary for the implementation of the proposed activities to be financed. In case of an event triggering the component, a reallocation of funds would be introduced to loan disbursement categories, to be able to fund the proposed activities under this component in order to be able to respond to the emergency. The implementation agency for this CERC would be determined in accordance with a CERC Manual.

Table 1 - Costs and Financing Sources by Component (in US\$ Million)

Components	IBRD Loan	Counterpart Funding	Private Sector	Total
1. Public Infrastructure for Agro-industrial Development	200	50	-	250
2. Agro-industrial Entrepreneurship and Resilient Rural Livelihoods	140	35	40	215
3. Innovation for a Green and Inclusive Agri-food System Transformation	55	10	10	75
4. Project Coordination and Management	5	5	-	10
5. Contingent Emergency Response Component-CERC	0	0	-	0
Total:	400	100	50	550

Project Beneficiaries

40. **The main direct beneficiaries of the Project consist of: (a) agricultural producers⁴⁰; (b) agro-industrial MSMEs; (c) rural producers’ organizations; (d) Agri-food Tech MSMEs; and (e) INTA.** The total number of direct beneficiaries under the Project is estimated at 93,000, of whom 51,400 will benefit from activities under Component 1; 38,700 from activities under Component 2, and 2,900 from activities under Component 3. It is expected that young people, women, and members self-identifying as Indigenous People (IPs) and afro-descendants will receive a certain percent (at least 25 percent) of the subproject's investments. The Project will also indirectly benefit other agri-businesses, rural enterprises and local populations (rural inhabitants) through the expansion of public infrastructure and connectivity services. A description of the direct beneficiaries of the Project by Component is presented in Table 2.

⁴⁰ In the context of this Project, agriculture producers would be family farmers type A, B and C as per the typology of Scheinkerman de Obschatko, Edith (2009) “Family Farms in the Republic of Argentina: an analysis based on data from the 2002 National Agricultural Census”. Article 5 of the Government of Argentina’s Family Farming Law was used to define the universe of “family farmers.” It defines family farmers as those who carry out productive agricultural, livestock, forestry, fishing and aquaculture activities in rural areas and fulfill a range of requirements, including, *inter alia*, direct management of productive entrepreneurship by the farmer and/or a family member; ownership of all or part of the means of production, and the agricultural activity of the holding being the main source of family income.

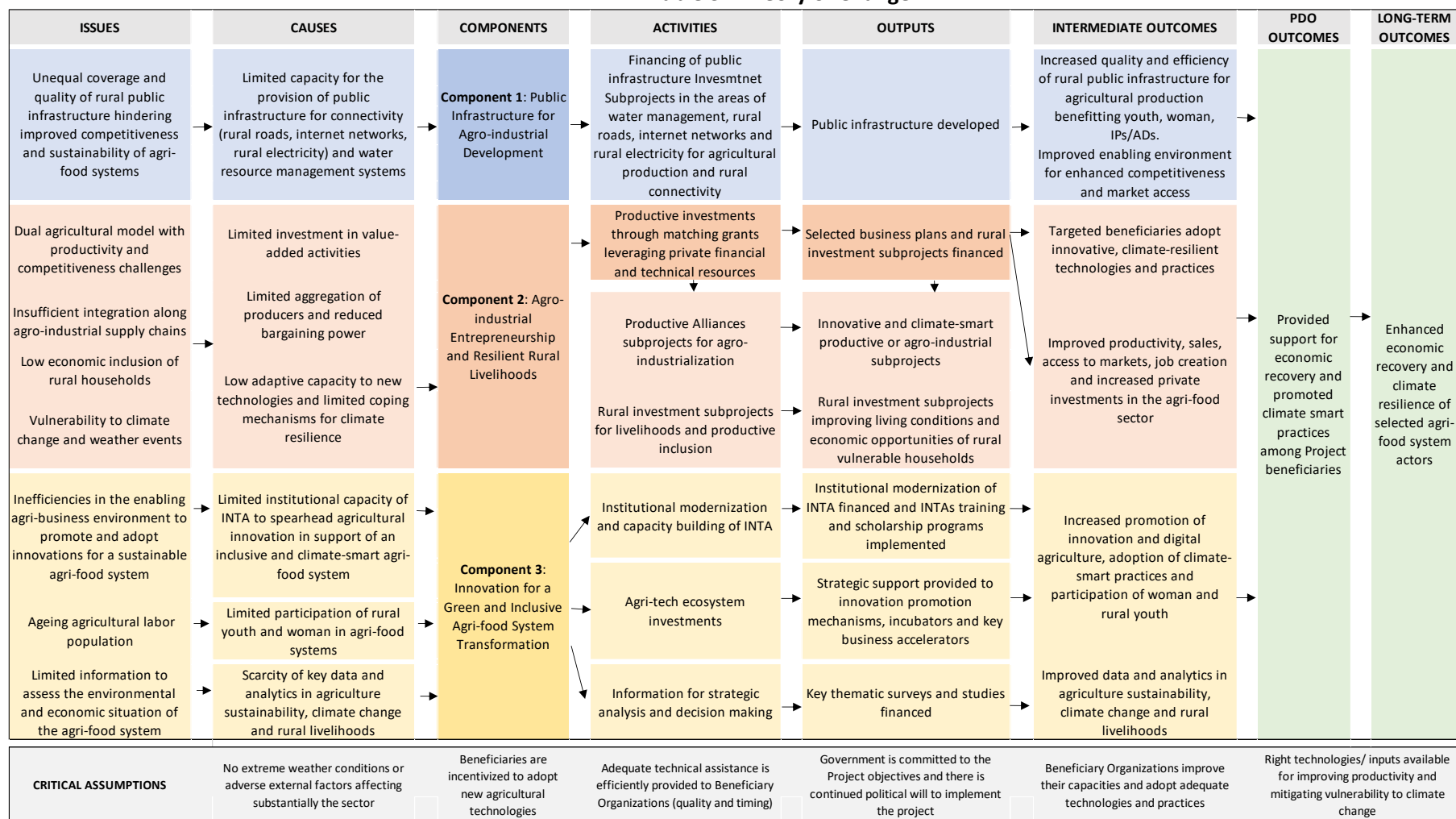
**Table 2 - Direct Project Beneficiaries by Component**

Comp.	Beneficiaries	Definition
1	Agricultural Producers	Individual family farmers or family farmer associations/cooperatives
2	Agro-industrial MSMEs	Micro, Small and Medium legal enterprises that perform on-farm and/or off-farm commercial activities. The definition will be based on the following variables, <i>inter alia</i> : number of employees, turnover volume; etc., to be defined in the Project Operations Manual (POM)
	Producer Organizations	Group of citizens organized for the common interest of providing services or inputs to improve their productivity, processing, commercialization capacity, competitiveness and market linkages
3	Agri-food Tech MSMEs	Startups and Micro, Small and Medium legal enterprises that seek funding for the development and/or scaling-up of climate-smart agro-industrial innovations as defined in the POM
	INTA and their staff	The National Agricultural Technology Institute (INTA) and people employed by INTA that benefit from investments supported by the Project



D. Results Chain

Table 3 - Theory of Change





E. Rationale for Bank Involvement and Role of Partners

41. **The Project will help increase MAGyP's capacity to implement priority policies while strengthening the relationship between the Federal and Provincial levels of government**, focusing on solving some of the most urgent constraints for a more harmonious and inclusive development. The Project will build on the World Bank's long history in Argentina, while providing improved capacities to respond to the rising threat of climate change in the sector. The results and lessons from previous projects and analytics will support the design and implementation of this new operation.

42. **The World Bank brings leadership in the areas of agriculture and agro-industrial development**, comprising a combination of public and private efforts, to create an inclusive and sustainable system, with increased resiliency to climate change and enhanced international competitiveness. As the Bank has extensive and successful experience with institutional strengthening of national agriculture research institutions in Latin America, its support to the strengthening of INTA will have long lasting effects in the sectoral development of the country. The World Bank is supporting governments across the region to come together for GHG mitigation and climate adaptation in agriculture as well as also coordinating academic and bilateral partnerships to elevate the quality of climate policies and programs.

43. **The World Bank Group's crisis response mechanism has helped countries save lives and livelihoods threatened by COVID-19 while starting to build the foundation for a strong and durable recovery in a world transformed by the pandemic.** The World Bank Group is adopting a new, integrated approach to promoting a strong and durable recovery and growth through GRID. This entails building resilience and inclusion across all facets of the economy and society, in a context of growing fragility and a dramatic increase in inequality of outcome and opportunities. Important focus will be on strengthening human capital through higher-quality services and more adaptable delivery mechanisms for social services, while bolstering mechanisms to ensure equal opportunities, equitable access, and voice. The scale and complexity of the challenges are such that an integrated framework that emphasizes interlinkages among the immediate and longer-term challenges is needed to deliver a growth path that is broad-based and sustainable. The World Bank Group is well qualified to provide support in the implementation of a coordinated multi-sectorial effort to contribute to ensuring sustainable and inclusive business growth, job creation, and building long-term resiliency.

F. Lessons Learned and Reflected in the Project Design

44. **Important lessons learned have been considered in the design of the proposed Project**, particularly from the implementation of projects in Argentina, such as the First and Second Provincial Agricultural Development Projects (PROSAP I - P006010 and PROSAP II - P106684) and the ongoing PISEAR (P106685) and GIRSAR (P162316), together with lessons from similar projects in Latin America, summarized in the following paragraphs.

45. **A strong central implementing agency is essential.** Given the dimensions of the country and the diversity of regions, together with the variability in institutional capacities at the provincial level, it is essential to have a strong and experienced central coordinating and management unit to coordinate strategic and operational decisions, manage core fiduciary functions and M&E systems, provide support to provincial entities, ensure consistency of procedures and reduce transaction costs. In addition, a central technical implementation team in charge of subproject formulation within this PIU also ensure consistency across the different project activities and regions.

46. **There should be flexibility in investment instruments.** Given the delicate macroeconomic context of the country, it is important to have implementation arrangements that allow for both central and provincial level investments, both in public infrastructure subprojects as well as in rural investment subprojects and agro-industrial entrepreneurship subprojects targeted to producers, agro-industrial enterprises and producer



organizations.

47. **Strong early implementation performance requires early preparation and agile reviews.** In order to ensure speedy project implementation and disbursements after inception, it is highly recommended to have a pipeline of pre-identified investment subproject profiles, as well as defined an agile scheme for the Bank's non-objection of subprojects, both in terms of technical design and compliance with environmental and social standards. In cases when the approval of interinstitutional cooperation and/or sub-execution agreements is required, it is recommended that they be approved prior or very soon after effectiveness.

48. **Irrigation investments require a balance of "hard" and "soft" support.** Investments in hard infrastructure, together with innovative mechanisms for multiplying the benefits of TA and training programs is required to ensure full realization of results. The investments in irrigation will include rehabilitation, modernization and improvement of the operation and maintenance of the selected schemes, aiming at improving the resilience and efficiency of water conveyance and distribution and enhancing water quality, including the provision of TA to farmers and water user associations.

49. **There needs to be early provision for operation and maintenance.** For projects involving a hierarchy of interdependent physical investments, these aspects should be decided and agreed before implementation. Formal agreements with sub-national entities or governments need to be reached early-on regarding post-completion roles and responsibilities for maintenance and operation. In addition, cost recovery mechanisms must have high visibility and broad support, and such mechanisms must be maintained during project lifetime, as well as ensuring long-term sustainability after implementation.

50. **Several factors are important in subproject performance.** Subproject proposals should be selected based on a series of factors, including: (i) demonstration of tight integration and coordination of all (publicly or privately financed) activities that contribute to the achievement of the stated objective; (ii) promotion of innovation; (iii) ability to integrate production chains and market access; (iv) clear, local insertion of TA activities, especially the development of networks for TA delivery involving local knowledge and institutions (i.e., municipalities, universities, and INTA) that enhance long-term sustainability, and the incorporation of proven TA techniques; (v) strict targeting mechanisms that promote transparency and ensure that project resources reach intended beneficiaries; and (vi) strong beneficiary participation in the identification, design, and implementation of activities throughout the pre-investment and investment cycles, as well as the inclusion of women and youth.

51. **Selection of subprojects must be based on explicit, transparent criteria.** It is critical that investments in public goods and services for agriculture, as well as incentives for farmers to adopt agricultural technologies, are based on explicit, transparent selection criteria to eliminate discretion in the allocation of funding to public infrastructure investments, especially at the sub-national level.

III. IMPLEMENTATION

A. Institutional and Implementation Arrangements

52. **The agency responsible for implementation is DIPROSE of MAGyP.** DIPROSE has overseen a wide range of projects with external multilateral financing as well as bilateral donors over many years. It has been responsible for implementing various Bank-financed operations since the early 1990s. It has received continuous support to expand and enhance its capacity and has a large cadre of staff covering relevant implementation areas such as financial management, procurement, monitoring and evaluation (M&E), and client engagement. During implementation, DIPROSE will enter into cooperation agreements with other agencies of the federal and provincial governments, according to the nature of the activities, to increase efficiency in service delivery and improve results. DIPROSE will implement the Environmental and Social Framework. Similarly, for the



implementation of investment subprojects, DIPROSE will enter into agreements with other national or provincial institutions as required by the nature and coverage of the activities, building on past experiences and lessons learned, and will delegate part of the responsibilities to them for implementation or supervision.

53. In line with Decree No. 945/2017, DIPROSE will lead the execution of the Project's financial management and procurement, in strict collaboration with other related participating agencies, such as INTA. Disbursements, procurements and administrative operations required to achieve the Project objectives will be centralized and coordinated by DIPROSE, which will conduct these activities in coordination with the corresponding agencies, in line with processes described in the POM. INTA, which has recognized expertise and vast experience in the technical aspects under Component 3, will be a key partner and collaborating agency for DIPROSE in operationalizing and supervising the component.

B. Results Monitoring and Evaluation Arrangements

54. An M&E System has been implemented under previous projects under DIPROSE to support project planning, monitoring and management. The M&E system supports project monitoring, evaluation and impact assessments and provides information for decision-making, as well as managerial information to improve project implementation. Progress in fulfilling project objectives will be monitored in accordance with MAGyP and Bank procedures, based on the Results Framework. The M&E unit has ample experience from previous multilateral and bilateral donor projects. It will: (i) monitor the day-to-day activities and outputs of the Project, generating and systematizing information for management; (ii) support the budgeting process; (iii) monitor project outcomes and progress on indicators at the end of each semester; (iv) monitor results at a technical, financial, environmental and social level; (v) provide inputs for communicating project results and lessons learned; (vi) establish a communication mechanism with field staff of the Ministry; (vii) promote accountability for resource use against objectives; (viii) provide and receive feedback from stakeholders; and (ix) undertake special evaluation studies and generate inputs for dissemination of project results and lessons learned and for periodic evaluations. Further description of the M&E system is provided in Annex 1.

C. Sustainability

55. On the institutional side, the Project will help strengthen the strategical and operational capacities of the public sector's agricultural institutions, mainly in terms of rural TA and extension systems, marketing and risk management, and will promote adequate and sustainable mechanisms for operation and maintenance (O&M) of investments. funding for O&M could include provincial budgetary sources, as well as revenues received from beneficiaries and users of the investments (traffic or water fees, internet charges, etc.).

56. The key to sustainability of on-farm and community investments will be enhanced competitiveness, leading to improved market sales and revenues. Funding to beneficiary organizations for productive investments and the adoption of better technologies will substantially increase their profitability. The sustainability of productive investments will be enhanced via rigorous design and independent assessments of their technical, financial, social and environmental viability. Based on lessons from previous projects, productive subprojects will be designed with a greater emphasis on improving on-farm climate resilience, market access and O&M. Subprojects will support incorporation of climate smart agricultural technologies and practices, based on assessments of on-farm agro-climatic vulnerabilities at the pre-investment stage. To improve market access, each subproject proposal will be required to identify existing commercial constraints and potential market outlets. Long-term sustainability will rely on strengthening the human capital (capacity building and TA), O&M procedures (working capital, capital costs, maintenance of infrastructure and equipment, administration, etc.), and better adaptation to climate changes based on the adoption of resilient approaches and technologies.



IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

Economic and Financial Analysis

57. **Benefits under Component 1 will derive from innovative public investments that have demonstrated economic and financial viability⁴¹ and that enhance agricultural competitiveness**, such as: improving rural roads, promoting efficient irrigation systems, expanding rural electricity and connectivity networks, improving agricultural sector information systems, promoting digital agriculture services and enhancing financial literacy enhancement activities. In Component 2, expected incremental benefits will arise from economic and financial profits of sustainable and inclusive productive alliances, agro-processing initiatives and income-generating activities, together with economic benefits derived from evidence-based solutions to improve water access in rural areas. All Component 1 subprojects showed positive returns with financial internal rates of return (FIRR) ranging from 12 to 69 percent for the preliminary Pipeline evaluated. Component 2 financial models evaluated were also found to be financially viable with FIRRs ranging from 17 to 31 percent. Qualitative benefits derive from innovative public instruments to strengthen agricultural sector information systems, research, and extension service delivery in Component 3.

58. **The economic impact analysis of the Project is based on total costs estimated at US\$550 million over a 5.5-year period, indicating that it is economically viable.** The estimated economic Net Present Value (NPV), at a social discount rate of 12 percent, is US\$147.4 million, and the Economic Internal Rate of Return (EIRR) is 20.9 percent under the base case scenario (without including GHG analysis). Two additional scenarios were developed to evaluate economic profitability indicators including GHG emissions, in line with the most recent World Bank guidelines (World Bank; 2017). They involved using a high-value carbon price (US\$82 per ton of CO₂e) assumption and a lower carbon price (US\$41 per ton of CO₂e) assumption to estimate economic benefits from reducing GHG. The EIRR was estimated at a 40.3 percent under the High Price of Carbon (HPC) scenario with a net present value (NPV) of US\$397.0 million. When the Low Price of Carbon (LPC) was considered, the EIRR fell to 29.5 percent, with an NPV estimated at US\$272.5 million.

59. **The expected performance and robustness in terms of profitability were tested by carrying out a sensitivity analysis assuming a set of risk scenarios with impacts on project costs and benefits.** These included (i) an increase in project costs of 10 and 20 percent, yield EIRRs of 20.5 and 20.2 percent, respectively; (ii) a reduction in project benefits of 10 and 20 percent, yield EIRRs of 20.5 and 20.0 percent, respectively; (iii) delays in project benefits by 1 and 2 years, yield EIRRs of 19.9 and 18.9 percent, respectively, and (iv) combined scenarios with reductions in benefits and increased costs, show that profitability indicators remained in a positive range under most of the pessimistic scenarios. Low and high estimated economic values for carbon sequestration were also used to adjust the economic indicators (see Table 4 below).

Table 4 - Summary of Economic Indicators

Indicator	Baseline	LPC	HPC
EIRR (percent)	20.86	29.46	40.29
Economic NPV (US\$ million)	147.39	272.46	396.97
Switching value for costs (percentage)	334	617	898
Switching value for benefits (percentage)	-77	-86	-90

⁴¹ As evidenced in World Bank's PROSAP II ICR (2017) -P106684- and IADB's PROSAP III PCR – AR-L1120 (2018).



B. Fiduciary

60. **Financial Management (FM).** During preparation, the Bank performed an assessment of the FM arrangements for the Project.⁴² The Project will rely on the overall coordination of DIPROSE, and INTA⁴³ for the execution of Component 3 of the Project.

61. **The overall conclusion of the assessment is that:** (i) the FM arrangements for the proposed Project are considered adequate; (ii) the funds flow, disbursements, monitoring, auditing, and supervision arrangements have been designed in a way to respond to the Project's implementation arrangements; and (iii) the residual FM risk associated with the Project is rated as Substantial. The combined fiduciary risk is also rated as Substantial. There are no FM-related conditions for negotiations, board and/or effectiveness. See Annex 1 for more details.

62. **Procurement (See Annex 1 for a detailed description of procurement arrangements).** The procurement of goods, works, non-consulting and consulting services will follow the World Bank's 'Procurement Regulations for IPF Borrowers' of July 2016 and updated in November 2017, July 2018 and November 2020. The World Bank's Standard Procurement Documents will govern the procurement of World Bank-financed Open International Competitive Procurement. For procurement involving National Open Competitive Procurement, the Borrower will use documents agreed with the World Bank. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the estimated costs, prior review requirements, and time frame will be agreed between the Borrower and the Bank in the Procurement Plan, which will be registered in STEP: Systematic Tracking of Exchanges in Procurement. The Procurement Plan will be updated at least annually or as required to reflect the actual Project implementation needs.

63. **DIPROSE will be responsible for all procurement activities at the central level under Components 1, 2 and 4, and Subcomponent 3.1, and for the coordination and supervision of:** (i) procurement activities carried out by the provinces – through provincial project implementation units - in implementing public infrastructure subprojects under Component 1; and (ii) provincial project implementation units with regards to procurement activities under subprojects carried out by producers, producer organizations and MSMEs under Component 2. DIPROSE has extensive experience implementing World Bank-financed Projects. The PIU has procurement staff with adequate capacity and experience in the implementation of procurement activities under the World Bank's Procurement Regulations for IPF Borrowers. Moreover, DIPROSE will formally assess the capacity of decentralized units at the provincial level following a methodology acceptable to and agreed with the World Bank, summarize the findings in a final assessment report, and propose an Action Plan subject to World Bank approval.

64. **INTA will coordinate and supervise the Agri-food Tech ecosystem investments lines to be implemented through matching grants under Subcomponent 3.2.** A procurement capacity assessment of INTA was completed during appraisal (October 25, 2021) and determined that INTA has no experience in implementing projects with external financing following World Bank procedures. The task team will support INTA during project implementation through regularly formal and informal discussion of procurement issues, even though the procurement activities to be supervised and coordinated by INTA regarding Agri-food Tech ecosystem investments lines will be of low value and not complex.

⁴² In general terms, based on the Argentina Public Expenditure and Financial Accountability (PEFA) Performance Assessment Report (Report No. AUS000124, December 2019), the Argentine national-level public FM system is reasonably well aligned with international good practices and standards as they are schematized by the PEFA framework. The Project will make extensive use of country's systems in terms of budgeting, accounting, internal controls, and internal and external audit.

⁴³ The Bank performed a FM Assessment of INTA documented in Annex 1. The conclusion of the assessment is that INTA has acceptable FM arrangements to receive and manage Bank funds.



65. **From a procurement standpoint the Project presents a substantial risk, given the decentralized approach for implementing Component 1, and Subcomponents 2.1, 2.2, and 3.2.** The POM will clearly define the arrangements for the subprojects scheme and the Agri-food Tech ecosystem investments lines. The procurement arrangements (appropriate selection methods, market approach, and type of review by the Bank) are based on the results of a simplified Project Procurement Strategy for Development (PPSD). DIPROSE with support from the Bank, has identified the best fit for purpose alternatives that are adequate to achieve the PDO. The PPSP was developed based on experience and lessons learned from previous World Bank projects.

66. **Greenhouse Gas Accounting. The Project will result in a net reduction in GHG emissions.** In concordance with the World Bank corporate mandate to conduct GHG emissions accounting for investment lending, the preparation process included the quantification of GHG emissions, using the Ex-Ante Carbon-balance Tool (Ex-Act) developed by the Food and Agricultural Organization of the United Nations (FAO). Ex-Act estimations, the carbon stock changes (emissions or sinks), were expressed in equivalent tons of CO₂ per hectare and year. A full description of the GHG analysis carried out is in the Project Files. From the methodological perspective, the GHG Analysis contemplated the establishment of subproject typologies that were also applied in the economic and financial analysis. The construction of a “with” and “without project” scenarios is based on average technical references taken from the subproject typologies and experts’ opinions, especially to verify the adequateness of technical assumptions. The net carbon balance, resulting from GHGs emitted or sequestered or reduced during project implementation and capitalization period (20 years) compared to the without project scenario, leads to estimated annual climate change mitigation benefits of 388,855 tCO₂e when compared to a business-as-usual baseline scenario, equivalent to annually reduced GHG emissions of 1.4 tCO₂e per hectare. After 20 years, GHG mitigation benefits would amount to a reduction of almost 7.8 million tCO₂e.

67. **Gender. A Gender Gap Assessment was carried out on October 5th, 2021 and the main elements of the Gender Strategy and Action Plan were formulated to inform project preparation in addressing gender gaps.** Both documents will be available before effectiveness to guide the subsequent implementation process. The assessment shows gender gaps in terms of: i) women's time availability for productive agricultural activities; ii) limited access to paid employment and recognition of their work in rural areas; iii) limited access to assets and services such as land, financing, technology, and technical assistance for agri-food production, and iv) little space for associative participation and leadership. Capacity building will be included in the professional and technical teams in charge of the Project for the incorporation of the gender perspective in their work, including the use of protocols for prevention of and response to gender-based violence (GBV). The results framework includes several indicators that will measure progress in addressing the gender gap, including gender empowerment, which will be measured through the Pro-WEAI, as well as the goal of reaching at least 35 percent of women as direct beneficiaries of the Project (see Annex 4).

68. **Private capital mobilization (PCM): The Project is consistent with the World Bank Group’s PCM approach, helping to remove binding constraints or create the prerequisites for private sector financing solutions.** Although current levels of investment in the agricultural sector are higher than other countries in the region, they are not sufficient to reduce rural poverty, increase productivity, reach new markets, and manage climate risks. Multiple constraints have impeded more substantive participation by commercial sources of financing, which, if removed, might contribute to increased private investment. The Project directly targets the private sector, supporting public sector infrastructure and capacity building to support the transition of the agriculture sector to greater efficiency and competitiveness. The Project will directly benefit private actors and investors via several actions, such as the promotion of productive alliances and the generation and diffusion of new technologies impacting productivity, resiliency and competitiveness. The private sector will also benefit from opportunities resulting from opening up high-value markets by addressing the perceived challenges the sector faces. Public investments in Component 1 and in productive alliances in Component 2 will require substantial counterpart



funding by private sector investors, probably requiring commercial sources of credit to finance part of their contributions. Total private sector investment in these two key components is estimated at US\$25 million but could be as much as US\$50-60 million.

69. Citizen Engagement: Effective and demonstrable citizen engagement will be central to project implementation. Careful planning will take place to reduce any risk of exclusion of vulnerable groups, as presented in this document, the Stakeholder Engagement Plan (SEP), and other relevant Environmental and Social Standard instruments. An indicator has been included in the Results Framework to measure beneficiary satisfaction with the participatory process of investment subprojects preparation. The indicator measures the level of satisfaction with the process of engaging and collaborating with people living in the targeted project area during preparation and implementation of the investment subprojects. The Project considers citizen engagement to be a cross-cutting issue for all subcomponents and activities. Wherever feasible, these will follow a community-based approach. This is important for underprivileged groups such as rural women, indigenous peoples and rural youth. During implementation, people's feedback will be sought on communication activities regarding the Project's progress and via feedback channels, including the grievance mechanism. The SEP will ensure the participation of all stakeholders to understand the needs of participant communities and populations; ensure transparency and coordination between government entities, DIPROSE, and communities; and ensure feedback and grievances are addressed. The SEP will set out the nature and periodicity of stakeholder consultations and require regular beneficiary feedback surveys, which will be used to measure and improve citizen engagement.

C. Legal Operational Policies

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

D. Environmental and Social

70. The environmental risk classification is Moderate. The Project will yield many positive environmental impacts and generate significant climate co-benefits. Proposed interventions will improve the management of natural resources and provide sustainability to interventions while reducing vulnerability and increasing resilience via activities that strengthen connectivity (roads, electricity, water), innovation in agrotechnology, employment (jobs creation) and livelihoods. From an environmental perspective, project-related risks will stem from road construction and rehabilitation, power supply, water supply, and farmland investments. The anticipated key concerns are: (i) consumption of water and raw materials for civil works; (ii) generation of construction-related wastes; (iii) nuisance related to dust generation, vibration and noise; (iv) overuse of water for irrigation purposes, and (v) occupational health and safety hazards for the workforce. Such impacts are expected to be site-specific (once geographically determined), limited in scope and duration, and readily mitigated with proven technologies and measures.

71. The social risk classification of the Project is Moderate. The Project is expected to generate important benefits for small farmers, considering the social inclusion of young people, women, and Indigenous People, which include: (i) jobs in the agri-food system; (ii) access to rural/tertiary roads, water, internet coverage, digital services and rural electricity; (iii) matching grants for private agricultural and agro-industrial investments that promote sustainability in the agri-food systems and improve competitiveness; (iv) demand-driven investments in subprojects to improve living conditions and address basic unmet needs of targeted poor rural communities,



including women, youth and indigenous people, comprising, *inter alia*, small-scale investments such as the rehabilitation or construction of rural community/agricultural production infrastructures, food-security activities and the construction or improvement of household sanitation systems, and (v) TA and capacity building for beneficiaries. The construction or rehabilitation of roads could pose some risks related to land acquisition and involuntary resettlement. However, these impacts are expected to be moderate. There are also other moderate cross-cutting social risks, including: (i) possible exclusion of vulnerable populations and groups whose interests could be under-represented, such as women, elders, youth, persons with disabilities, sexual and gender minorities, indigenous peoples, if targeted strategies to ensure their engagement are not incorporated into the project design; (ii) labor influx risks, despite efforts to promote local hiring of community workers; (iii) the intersection with the ongoing COVID-19 health emergency, which could pose additional health challenges particularly for project-related workers and communities. Measures to mitigate these risks and impacts on vulnerable people will be included in the Environmental and Social Commitment Plan (ESCP), Environmental and Social Management Framework (ESMF), SEP, Request for Proposals (RFP), Indigenous People Planning Framework (IPPF), and Labor Management Procedures (LMP). Negotiated versions of ESCP and SEP have been publicly disclosed on November 10th, 2021 by the Borrower and the Bank.⁴⁴ As per the requirement of the ESCP, the ESMF, IPPF, RPF, and LMP will be prepared, consulted, disclosed, and adopted no later than thirty (30) after the Project Effective Date.

V. GRIEVANCE REDRESS SERVICES

72. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the World 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 World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of non-compliance with World Bank policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

73. **A robust grievance mechanism will be put in place by DIPROSE to address concerns and complaints promptly and transparently with no cost or discrimination toward potential Project-affected communities.** Implementing staff and local-level coordination structures will receive guidance on their roles and responsibilities in addressing grievances, particularly around exclusion and manipulation of targeting and benefits. Channels will be developed to allow for community M&E of site-specific project activities such as through social audits or citizen feedback platforms. All these measures are expected to help deepen citizen engagement and reinforce community cohesion. The grievance mechanism is also expected to provide early warnings on any emerging environmental, social, and health and safety risks.

VI. KEY RISKS

74. **Overall risk is considered Moderate.** All categories of risk are **Moderate**, except for Macroeconomic and Fiduciary risks. Macroeconomic risk is considered **High** given the country's fiscal situation and the worsening impact of the pandemic, despite a number of mitigation measures that have been taken. The current macroeconomic conditions in Argentina include high foreign exchange volatility, very low Central Bank reserves,

⁴⁴ <https://www.argentina.gob.ar/agricultura/diprose>.



and high inflation, which might affect project execution directly and indirectly. Civil work contracts and matching grants associated to business plans might also be vulnerable to low performance and delays due to price fluctuations and the need to adjust during implementation. To mitigate the counterpart budgetary risk, the project is designed with low counterpart financing, and to mitigate the beneficiary risk, the project will include price adjustment mechanisms in subprojects.

75. The fiduciary risks are considered substantial. The FM Assessment identified the following risk to the achievement of the Project Development Objective: The Project entails complex implementation arrangements and the flow of funds to subnational levels. Also, the generation of reliable financial information which promotes Project accountability will be complex, considering that the Project's components will operate under different arrangements/schemes. Although DIPROSE has significant experience as an implementing agency of World Bank financed and other international financing projects, the project implementation arrangements coupled with low-capacity issues, both at central and provincial level⁴⁵ present some challenges. These issues included slow flow of funds between the project, beneficiaries and participating provincial entities⁴⁶, and the temporary use of Bank funds to finance the local counterpart share of expenditures. The main mitigating measures, to address the above risks include: (a) designating DIPROSE as the central and main unit responsible for FM; (b) preparing a POM which clearly explains the critical operational procedures and inter-institutional arrangements; (c) conducting annual external financial statement audit based on Terms of Reference acceptable to the Bank covering all aspects of Project execution; (d) executing a concurrent subproject audit for Components 1, 2 and 3.2; (e) using UEPEX accounting system for recording the Project's transactions and preparing the Project's financial reports; and (f) providing periodic ad hoc fiduciary trainings to Project staff coupled with technical assistance aimed at improving the FM processes.

76. In terms of procurement, the Project also presents a substantial risk, given the decentralized approach for implementing the main components. The POM will clearly define the arrangements for the subprojects scheme and the Agri-food Tech ecosystem investments lines. DIPROSE will formally assess the decentralized units at the provincial level following a methodology acceptable to and agreed with the Bank, summarize the findings in a final assessment report, and propose an Action Plan subject to Bank approval. In addition, INTA has no experience in implementing projects with external financing and with World Bank procedures. The Bank's procurement team will closely assist INTA during project implementation through regularly formal and informal discussion of procurement issues with procurement teams.

⁴⁵ This included possible irregularities in the management of one contract which were reported to the Institutional Vice-Presidency (INT). There was a completed investigation into AR PROSAP2 - Second Provincial Agricultural Development (P106684). This case was completed with a Final Investigative Report submitted to the Bank President in 2018. In this instance, INT found that between 2013 and 2014, a Joint Venture ("JV") of local contractors misrepresented the progress of their works. Because of these misrepresentations, the JV allegedly received significant inappropriate payments. INT also found that negligence and mismanagement at the national coordination unit (UCAR) and at the provincial execution unit enabled the fraudulent practice to occur. The Bank's Project Team were said to have subsequently incorporated lessons from this situation into the current and following projects involving the national coordination unit.

⁴⁶ Moreover, during Project preparation it was identified that payment processes tend to be lengthy and subject to multiple reviews.



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Argentina

Climate Intelligent and Inclusive Agri-food Systems Project

Project Development Objectives(s)

The objectives of the project are to (i) support economic recovery and promote climate smart practices among Project beneficiaries in Argentina's agri-food system; and (ii) respond effectively in case of an eligible crisis or emergency.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
Economic Recovery			
Jobs created or maintained under initiatives supported by the Project (Number)		0.00	3,800.00
Formal jobs created under initiatives supported by the Project (Number)		0.00	1,200.00
Informal jobs created under initiatives supported by the Project (Number)		0.00	2,600.00
of whom woman (Number)		0.00	1,330.00
of whom youth (Number)		0.00	1,140.00
Increase in volume of sales of the agro-industrial MSMEs or producer organizations benefited by subprojects under the Project (Percentage)		0.00	35.00
Subprojects by agro-industrial MSME's or producer organizations		0.00	75.00



Indicator Name	PBC	Baseline	End Target
operational and/or maintained 12 months after the investment completion (Percentage)			
Climate Smart Practices			
Beneficiaries with access to new or improved rural public infrastructure for agricultural risk mitigation and natural resources management (Number)		0.00	63,000.00
of whom woman (Number)		0.00	31,500.00
of whom youth (Number)		0.00	22,050.00
of whom Indigenous Peoples/ Afro-Descendants (Number)		0.00	15,750.00
Subprojects financing the adoption of climate smart agriculture technologies and-or practices to anticipate and prevent negative impacts of climate (Number)		0.00	750.00
New climate smart technologies and practices to avoid negative impacts of climate developed by INTA under the Project (Number)		0.00	10.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Public Infrastructure for Agro-industrial Development			
Number of EPSAS including criteria for prioritization of climate-smart practices updated (Number)		0.00	10.00
Kilometers of rural roads developed or improved (Kilometers)		0.00	350.00
Kilometers of low and medium voltage lines built or improved		0.00	700.00



Indicator Name	PBC	Baseline	End Target
(Kilometers)			
Beneficiaries with new or improved internet access (Number)		0.00	40,000.00
Area provided with new or improved irrigation and/or drainage services (Hectare(Ha))		0.00	35,000.00
Average percentage increase in water conveyance and or conduction efficiency (Percentage)		0.00	15.00
Increase in collection capacity of fees paid by water user associations (Percentage)		0.00	15.00
Agro-industrial Development and Strengthening of Rural Livelihoods			
Agro-industrial MSMEs and producer organizations supported that have a majority participation of women (Percentage)		0.00	50.00
Agro-industrial entrepreneurship subprojects for productive alliances financed under the Project (Number)		0.00	90.00
Rural Investment Subprojects (SIRs) financed under the project (Number)		0.00	330.00
Water Plan subprojects financed under the Project (Number)		0.00	350.00
Women attending women-tailored training events implemented to provide additional support to their enterprises (Percentage)		0.00	15.00
Percent of women beneficiaries demonstrating an improvement in empowerment (Pro-WEAI) (Percentage)		0.00	15.00
Innovation for a Green and Inclusive Agri-food System Transformation			
Agricultural Experimental Stations and Extension Agencies with new or improved infrastructure or equipment (Number)		0.00	280.00
Agri-food Tech MSMEs assisted technically and/or financially (Number)		0.00	160.00
Agri-food Tech MSMEs assisted technically and/or financially that have a majority participation of women (Number)		0.00	55.00
Number of staff in INTA that complete training courses financed by the project (Number)		0.00	1,900.00



Indicator Name	PBC	Baseline	End Target
of whom woman (Number)		0.00	950.00
Number of staff in INTA that complete doctoral programs (PHDs) financed by the Project (Number)		0.00	30.00
of whom woman (Number)		0.00	15.00
Project Management and Evaluation			
Grievances responded to and/or resolved within the timeframe specified in the Grievance Mechanism (percentage of total received) (Percentage)		0.00	100.00
Beneficiary satisfaction with the participatory process of business plans preparation (Percentage)		0.00	80.00
PIU staff that are part of this Project take at least one gender-specific training per year (Yes/No)		No	Yes
Private capital mobilized through Project investments (PCM) (Amount(USD))		0.00	25,000,000.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Jobs created or maintained under initiatives supported by the Project	Cumulative number of people employed (full-time equivalent), disaggregated by formal and informal labor as well as by gender and youth	Annual	Administrative records of Subproject Profile / Business Plan applications. Affidavits	Reports from Provincial registries, surveys and monitoring visits to sites of initiatives supported by the Project. It is proposed that the Project	DIPROSE



			from companies to obtain ANRs. The Project will validate the end target and parameters through surveys to each type of beneficiary.	validate the target and parameters through random surveys by type of beneficiary. End target estimation: The target estimate is based on a 80% probability of jobs maintained over the projection of jobs created by the activities financed in component 2, plus the jobs created by the companies supported with the activities from component 3. For component 2, the amount was obtained estimating 10 jobs per each of the productive alliances supported (90), plus 10 jobs per each of the SIR supported (330). For component 3, the amount was obtained estimating 5 jobs created per each of the startups and SMEs supported (160) at a 60% survival rate.	
--	--	--	---	---	--



				Rounded to nearest hundred	
Formal jobs created under initiatives supported by the Project	The target value is estimated based on the jobs expected to be created under Component 2, windows 3 and 4, and Component 3				
Informal jobs created under initiatives supported by the Project	The target value is estimated based on the jobs expected to be created under Window 1 of Component 2 (rural investment subprojects)				
of whom woman	The target value is estimated at 35% of total				
of whom youth	Individuals aged 18-30. The target value is estimated at 30% of total.				
Increase in volume of sales of the agro-industrial MSMEs or producer organizations benefited by subprojects under the Project	Percentage increase over the baseline, calculated by comparing the value of gross sales of a sample of beneficiary agro-industrial MSMEs and/or producer associations	Yearly starting in year 2	Annual Project Progress Report	Increase in percentage points over the baseline, calculated by comparing the value of gross sales of a sample of Project beneficiaries with a control group. End target estimation: based on the experience from previous projects and economic projections.	DIPROSE



Subprojects by agro-industrial MSME's or producer organizations operational and/or maintained 12 months after the investment completion	Percentage of agro-industrial MSME's or rural producer associations subprojects operational and/or maintained 12 months after completion of their investment support (during project lifespan) is at least 75%	Semi-annual	Semi-annual Project Progress Report and Project monitoring system	Percentage out of total number of agro-industrial MSME's or producer organizations subprojects operational and/or maintained 12 months after their completion during Project lifespan, End target estimation is based on a survival rate estimation for companies supported under each component for which support ended during the project lifespan, which is estimated at 80% for productive alliances (weighted by 0.56), and 60% for incubated and accelerated agro-industrial startups and SMEs (weighted by 0.18)	DIPROSE
Beneficiaries with access to new or improved rural public infrastructure for agricultural risk mitigation and natural resources management	Cumulative number, disaggregated by gender, indigenous population, and age group.	Semi-annual	Semi-annual Project Progress Report and	Pre-feasibility studies of works. Administrative records. Ex-post surveys.	DIPROSE



			Project monitoring system	End target estimation is based on the projections of beneficiaries for each of the components of the program: 51,400 beneficiaries from component 1, and 11,600 beneficiaries from Component 2, Window 2 - Plan Agua (subsets may overlap)	
of whom woman	Based on demographic distribution and location of the activities, the target value is estimated at 50% of total				
of whom youth	Individuals aged 18-30. Based on demographic distribution and location of the activities, the target value is estimated at 25% of total				
of whom Indigenous Peoples/ Afro-Descendants	Number of individuals who self-define as Indigenous or Afro-Descendants. Based on demographic distribution and location of the activities, the target value is estimated at 25% of total.				



Subprojects financing the adoption of climate smart agriculture technologies and-or practices to anticipate and prevent negative impacts of climate	This indicator measures the cumulative number of subprojects who have adopted at least one improved agricultural practice and/or technology promoted by the project to anticipate and prevent negative impacts of climate	Semi-annual	Semi-annual Project Progress Report and Project monitoring system	This indicator will be measured through a survey, conducted by a third party, applied to a representative sample of beneficiaries who are part of subprojects that incorporate climate-smart practices or technologies. End target estimation is calculated based on the assumption that 100% of the electrification, irrigation, and transportation projects, 55% of the productive alliances supported, 60% of SIRs supported, 100% of Plan Agua and 100% of all agro-industrial startups and SMEs incubated and accelerated, are expected to finance the adoption of climate smart agriculture technologies and-or practices	DIPROSE
New climate smart technologies and practices to avoid negative impacts of	This indicator will measure the cumulative number of	Annual	Annual Project	New climate smart technologies and	DIPROSE



climate developed by INTA under the Project	new climate smart technologies and practices emerging from research projects funded through innovation promotion mechanisms under the Project. Measured by number of patent applications filed to INPI, papers published in peer reviewed publications, and new genetic events applications filed to INASE.		Progress Report and Project monitoring system	practices emerging from research projects funded through innovation promotion mechanisms will be those approved and recognized by INTA . End target estimation is based on the project's ability to legally register new climate smart technologies or practices through established mechanisms, such as utility patents or peer reviewed publications.	
---	---	--	---	---	--

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Number of EPSAS including criteria for prioritization of climate-smart practices updated	This indicator will measure the completion of updated versions of the Provincial Strategies for Agri Food Systems (ESPAS, for it Spanish acronym) to make them climate sensitive and serve as the key instrument	Semi-annual	Semi-annual Project Progress Report and Project monitoring system	Count of approved documents	DIPROSE



	for identification of priority areas for the formulation of additional public infrastructure for agro-industrial development subprojects				
Kilometers of rural roads developed or improved	This indicator will measure the kilometers of rural roads developed or improved through investments supported by the Project	Semi-annual	Project Progress Report and Project monitoring system	Based on reports from Provincial Road Directorates	DIPROSE
Kilometers of low and medium voltage lines built or improved	This indicator will measure the kilometers of low and medium voltage lines built or improved through electrification investments	Semi-annual	Project Progress Report and Project monitoring system	Based on the Registry of users of electricity service providers.	DIPROSE
Beneficiaries with new or improved internet access	This indicator measures the number of beneficiaries accessing new or improved internet services developed through investments funded under the Project	Semi-annual	Project Progress Report and Project monitoring system	Based on provincial statistics on internet and computer use in households in the area of influence of the subprojects and/or administrative records of the service operator	DIPROSE
Area provided with new or improved irrigation and/or drainage services	This indicator measures the total area of land provided with irrigation and drainage	Semi-annual	Project Progress Report and	Based on provincial irrigation registries and/or irrigation fee	DIPROSE



	services under the Project, including in (i) the area provided with new irrigation and drainage services, and (ii) the area provided with improved irrigation and drainage services, expressed in hectares (ha).		Project monitoring system	payment records in consortiums	
Average percentage increase in water conveyance and or conduction efficiency	This refers to the increase in conveyance irrigation efficiency achieved by the reduction of conveyance losses. Values and targets refer to efficiency increase, averaged over project schemes in percentage from baseline.	Before implementation and after completion of works for two years	Project Progress Report and Project monitoring system. Data to be collected/measured in irrigation subprojects.	It is measured against the original target. Water use efficiency will be measured by the relative decrease in water loss due to infrastructure projects executed.	DIPROSE
Increase in collection capacity of fees paid by water user associations	Improved rate of Operations and Maintenance (O&M) fee collection from water user associations within a season after starting the irrigation service and during the project period of execution. (Percentage)	Semi-annual	Project Progress Reports based on provincial irrigation registries and/or irrigation fee payment records in	The percentage increase is calculated on the basis of the increase in the collection of use and maintenance fees two seasons after the start of the service. Measurement prior to the start of works and after their	DIPROSE



			consortiums	completion, up to 2 years.	
Agro-industrial MSMEs and producer organizations supported that have a majority participation of women	This indicator will measure the percentage of agro-industrial MSMEs and producer organizations supported under Component 2 that have a majority participation of women. Majority participation of women will be those agro-industrial MSMEs or producer organizations (i) where at least 51% of the shareholding is held by women; or (ii) where women hold control of the company through their shareholding; or (iii) where the borrower is a women; or (iv) in the case of legal entities, if 51% of the amount of the final borrower's participation corresponds to women	Semi-annual	Project Progress Report and Project monitoring system	Business plans approved by the Project for Windows 1,2, 3 and 4 under Component 2	DIPROSE
Agro-industrial entrepreneurship subprojects for productive alliances financed under the Project	Total number of productive alliances financed by the Project	Semi-annual	Project Progress Report and Project monitoring	Count of business plans approved by the Project End target estimation is based on the 90 productive alliances	DIPROSE



			system	(15,000 direct beneficiaries) which are expected to be financed by activities under Component 2, windows 3 and 4.	
Rural Investment Subprojects (SIRs) financed under the project	Total number of traditional and National Plan Argentina Against Hunger Subprojects financed under the project	Semi-annual	Project Progress Report and Project monitoring system	Count of SIRs approved. End target estimation is based on the 330 SIRs and National Plan Argentina Against Hunger Subprojects that are expected to be financed by activities in component 2.	DIPROSE
Water Plan subprojects financed under the Project	Total number of Water Plan ("Plan Agua") subprojects financed under the Project	Semi-annual	Project Progress Report and Project monitoring system	Count of Water Plan subprojects approved	DIPROSE
Women attending women-tailored training events implemented to provide additional support to their enterprises	Technical assistance will be provided in the context of agro-industrial entrepreneurship subprojects. This indicator will measure the percentage of women attending women-tailored training	Annual	Project Progress Report and Project monitoring system	Number of woman participating in women-tailored training events registered in attendance reports compared to the total number of woman participating in	DIPROSE



	events implemented with respect to the total number of woman participating in productive alliances.			productive alliances financed under the Project	
Percent of women beneficiaries demonstrating an improvement in empowerment (Pro-WEAI)	<p>Ratio of number of women participating in business plans that demonstrate an increase in the Pro-WEAI index over total number of surveyed women participating in business plans.</p> <p>The project-level Women's Empowerment in Agriculture Index (Pro-WEAI) is a survey-based index for measuring empowerment, agency, and inclusion of women in the agriculture sector. It is composed of 12 indicators of women's empowerment in agriculture: autonomy in income, self-efficacy, attitudes about domestic violence, input in productive decisions, ownership of land and other assets, access to and decisions on credit, control over use of income, work balance, visiting</p>	Mid-term evaluation and final evaluation	Project Progress Report and Project monitoring system	Surveys will be used to measure empowerment, self-management, and inclusion of women in the agricultural sector. This indicator will be assessed by a third party.	DIPROSE



	important locations, group membership, membership in influential groups, and respect among household members.				
Agricultural Experimental Stations and Extension Agencies with new or improved infrastructure or equipment	Number of Agricultural Experimental Stations and Extension Agencies with new or improved infrastructure or equipment	Annual	INTA's department of IT	Improved equipment and infrastructure is installed and functioning. End target estimation is based on INTA's current administrative structure and distribution over the territory (52 research stations and 350 extension agencies)	INTA
Agri-food Tech MSMEs assisted technically and/or financially	Number of startups and small and medium agro-industrial enterprises assisted by INTA or any of its affiliated institutions and specialists technically and/or financially	Semi-annual	Project Progress Report and Project monitoring system	Project Progress Report and Project monitoring system. End target estimation is based on INTA's output capacity, estimating a maximum of 80 MSMEs attended by the incubator program, 60 by the accelerator program, 15 by the venture capital program, and 5 supported	INTA



				through Innovation Challenge Competitions	
Agri-food Tech MSMEs assisted technically and/or financially that have a majority participation of women	Majority participation of women will be those (i) where at least 51% of the shareholding is held by women; or (ii) where women hold control of the company through their shareholding; or (iii) where the borrower is a women or (iv) in the case of legal entities, if 51% of the amount of the final borrower's participation corresponds to women.	Semi-annual	Project Progress Report and Project monitoring system	End target estimation: based on demographic distribution and location of the activities, the target value is estimated at 35% of total Agri-food Tech MSMEs assisted technically and/or financially.	INTA
Number of staff in INTA that complete training courses financed by the project (Number)	This indicator will measure the number of staff in INTA that complete one of the five following programs for human capital development financed through the Project: (i) professional immersion program, (ii) research fellowships program, (iii) talent attraction program, (iv) management training program, (v) international experts program	Mid-term evaluation and final evaluation	Project Progress Report and Project monitoring system	Training courses completed by staff. End target estimation is based on INTA's human capital training program projection.	INTA
of whom woman	The target value is				



	estimated at 50% of total				
Number of staff in INTA that complete doctoral programs (PHDs) financed by the Project	This indicator will measure the number of staff in INTA that complete a doctoral program and/ or receive their candidacy through funds provided by the Project	Mid-term evaluation and final evaluation	Project Progress Report and Project monitoring system	End target estimation is based on INTA's human capital education program projection.	INTA
of whom woman	The target value is estimated at 50% of total				
Grievances responded to and/or resolved within the timeframe specified in the Grievance Mechanism (percentage of total received)	Grievances responded to and/or resolved within the timeframe specified in the Grievance Mechanism (percentage of total received)	Annual	Information collected by the DIPROSE through the Grievance Redress System, and from inquiries made through other means.	Reception, analysis, and response to complaints, claims, and inquiries made through the Grievance Redress System and other means.	DIPROSE
Beneficiary satisfaction with the participatory process of business plans preparation	This indicator measures the level of satisfaction of beneficiaries with the participatory process implemented to prepare business plans under the Project	Annual (PIU will start reporting from year 3 of project implementation)	Satisfaction surveys; Project execution progress report	Satisfaction surveys will be carried out annually to receive feedback from beneficiaries and make any needed corrections to the process for involving beneficiaries in the preparation of	DIPROSE

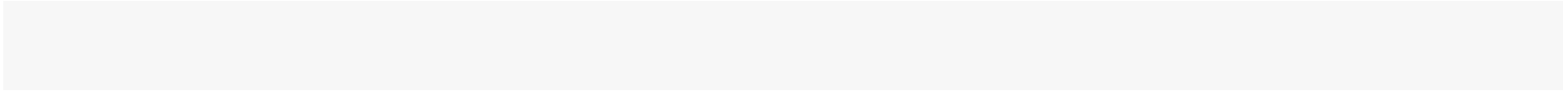


				business plans	
PIU staff that are part of this Project take at least one gender-specific training per year	The PIU will offer gender-specific training courses each year to its staff. Content, duration and modality will be developed each year and included in the Annual Operating Plan.	Annual (PIU will start reporting from year 2 of project implementation)	Project Progress Report and Project monitoring system	Annual reporting in the Project's M&E system	DIPROSE
Private capital mobilized through Project investments (PCM)	Private commercial financing leveraged by investments in Component 2 (windows 3 and 4, MSMEs productive alliances and ANRs) and Component 3 (windows 2 and 3, accelerators and venture capital)	Semi-annual	Project Progress Report and Project monitoring system	The information for this indicator will be collected from data on loans and other types of private capital obtained by participating MSMEs to co-finance investments under the Project. End target estimation based on an expected 1:1 relation per dollar invested by the program with private capital mobilized.	DIPROSE and INTA.



The World Bank

Climate Intelligent and Inclusive Agri-food Systems Project (P176905)





ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

1. **The agency responsible for implementation will be the Ministry of Agriculture, Livestock and Fisheries (MAGyP), through its Directorate General of Sectorial and Special Programs and Projects (DIPROSE).** This Project Implementation Unit (PIU) has overseen a wide portfolio of projects with external multilateral and bilateral donor financing over many years. As part of its portfolio of projects, DIPROSE has been in charge of a wide array of Bank-funded operations since the early 1990s. In this context, DIPROSE has continuously been receiving support to expand and enhance its operations and has been to a large extent successful in dealing with sectoral development efforts and initiatives. For these activities, it has a large cadre of staff covering the main areas of implementation coordination, financial management, procurement, M&E and client engagement. During project implementation, DIPROSE will enter into cooperation agreements with other agencies of the federal and provincial governments, depending on the nature of the activities, so as to increase efficiency in service delivery and in achieving results. Similarly, for the implementation of investment subprojects, DIPROSE will enter into agreements with other national or provincial institutions as required by the nature and coverage of the activities, building on past experiences and lessons learned, and delegating part of the responsibilities to them for implementation or supervision.
2. **DIPROSE will have adequate staffing based on specific Terms of Reference with the requisite qualifications for the roles envisaged for them under the Project,** including on gender issues and the implementation of the Gender Action Plan (mainly to teams in charge of supporting the preparation and implementation of the subprojects). These staff will receive intensive training on project procedures and technical updates related to the Project's particular approach and methodologies.
3. **DIPROSE will be responsible for the administrative management of the Project.** Likewise, it will have specialists to safeguard compliance with the applicable environmental and social standards as set forth in the environmental and social instruments of the Project. In addition, it will conduct external audits (financial statement and subprojects) to validate the use of financial resources and internal disbursement controls.
4. **DIPROSE will implement a Grievance Redress Mechanism (*Sistema de Información y Atención a Quejas*)** to receive, respond to, monitor and report on the grievances of project beneficiaries, communities or of any individual who considers that the implementation of the Project has adversely affected them. DIPROSE will review and respond in a timely manner to all grievances received through the mechanism, including those submitted anonymously. The timely response to complaints is an indicator included in the Results Framework.
5. **The Project will also support preparation of a Strategic Communication Plan (PCE) to keep interested parties informed.** The Plan will have two axes: (i) for internal clients, and (ii) for external clients. In the case of internal clients, information communication mechanisms will be designed regarding operational aspects of the Project, such as: information on window calls; requirements for participating in the Project; eligibility criteria; services or benefits of the Project; communication channels (contacts and office address), etc. To this end, DIPROSE will prepare graphic and audiovisual material for effective dissemination, considering the realities of the regions and populations served (women and men, youth, Indigenous Communities and afro-descendants). It will also prepare local and regional workshops to disseminate information about the Project and its results. In the case of external clients, DIPROSE will design actions to disseminate results to individuals and institutions that are not beneficiaries of the Project and to the general public.

Planning, Monitoring and Evaluation

6. **The Project will monitor and evaluate progress and results at the technical, financial, social and environmental levels.** A Planning, Monitoring, and Evaluation Unit will: (i) monitor the day-to-day activities and



outputs of the Project, generating and systematizing information for management; (ii) support the project budgeting process; (iii) monitor project outcomes and the progress of indicators at the end of each semester; (iv) monitor results at a technical and financial; (v) provide inputs for the communication of project results and lessons learned; (vi) establish a communication mechanism with field staff of the Ministry; (vii) promote accountability for resource use against objectives; (viii) provide and receive feedback from stakeholders; (ix) monitor implementation of and report on project Environmental and Social instruments as well as subproject level ESMPs, as applicable; (x) undertake special evaluation studies and generate inputs for the dissemination of project results and lessons learned and for periodic evaluations; and (xi) carry out strategic evaluation activities in coordination with the Secretariat for Strategic Affairs (SAE), as the agency responsible for technical-methodological advice and oversight⁴⁷.

7. DIPROSE will be responsible for raising and systematizing the baseline information of all subprojects applying to receive project financing, through surveys of communities specifically designed for the Project.

These surveys will reveal socioeconomic, productive, environmental and organizational information, before the funds to implement subprojects or TA are released. The baseline analysis should disaggregate by gender, age and ethnicity, and identify specific gaps for women, youth, indigenous peoples, afro-descendants and others (e.g., persons with disabilities). Progress in the fulfillment of project objectives and outcomes will be monitored in accordance with Bank procedures and will be based on the Results Framework.

8. Joint semi-annual supervision missions will be carried out with Bank staff to assess the status of key project results and compliance with legal agreements. DIPROSE will prepare Semiannual Progress Reports that will be sent to the World Bank for consideration. The Reports will present the physical and financial progress of the Project, based on the planned activities, and the results of the Project based on the Results Framework. They will also present any problems faced during implementation and describe the corrective measures considered. They will report on compliance with E&S standards as set forth in the environmental and social instruments of the Project, including information on Grievance Redress Mechanism (GRM) implementation.

9. The Bank will carry out a Mid-Term Review (MTR) when 40 percent of resources have been committed or halfway through the original implementation period, whichever comes first. DIPROSE will prepare an MTR report with the objective of assessing whether the execution is satisfactory in terms of physical, financial and impact results, in order to progress towards the PDO objectives and results indicators. The MTR will be carried out based on a review of documents and field information, through data collected from a representative sample with a questionnaire prepared specifically for these purposes. The MTR will provide recommendations for adjustments to address shortfalls versus plans or emerging challenges for each component. It will also provide recommendations regarding the design, implementation and management of the Project. The results at MTR will be assessed against indicators in the latest Results Framework.

10. At project closure, DIPROSE will carry out a final evaluation of the Project (Borrower's Completion Report). The final evaluation will be conducted to evaluate the results of the Project and identify lessons learned and challenges to consider in new operations, including the sustainability of project results. This final evaluation will begin once 90 percent of the resources have been disbursed, or six months before the Project closes, whichever comes first. The final evaluation will establish the causal relationships between the interventions of the Project and the outcome variables and identify how the Project had generated changes in the PDO indicators and the Intermediate Indicators in the Results Framework. The analysis will also consider social and environmental

⁴⁷ The strategic evaluation activities to be carried out in coordination with the SAE focus on generating evidence on the contribution of the international financing strategy to: (i) the achievement of the Sustainable Development Goals; (ii) the priority guidelines of the public sector's management and (iii) the achievements achieved in terms of institutional strengthening of the National State and the Jurisdictions.



variables, including a disaggregated analysis for subgroups of interest such as gender and youth, as well as the degree of beneficiary satisfaction with the Project. This component will also carry out strategic evaluation activities in coordination with the Secretariat for Strategic Affairs (SAE), as the agency responsible for technical-methodological advice and oversight.

Procurement

11. **Procurement will be conducted using the Bank's 'Procurement Regulations for IPF Borrowers'**, issued in July 2016, and updated in November 2017, July 2018 and November 2020, for the supply of goods, works, non-consulting and consulting services. The World Bank's Standard Procurement Documents will govern the procurement of World Bank-financed Open International Competitive Procurement. For procurement involving National Open Competitive Procurement, the Borrower may use documents agreed with the World Bank.

12. **The procurement risk assessment at this stage is *substantial*.** DIPROSE, the existing Project Implementation Unit (PIU) at the national level, has extensive experience implementing projects with external financing, its procurement team has experience in Bank's Procurement Regulations and procedures. However, challenges emerged in the implementation of the PISEAR and GIRSAR projects, notably regarding the proper application of procurement policies and rules in the procurement of subproject activities, so that the risk to this Project is still considered substantial at this stage. Functions, responsibilities, and the interaction between each involved party in the implementation of the Project will be detailed in the POM. The procurement capacity assessment for sub-executing agencies at the provincial level to be selected to participate in the implementation of Components 1 and 2 will be updated or carried out by DIPROSE following a methodology previously agreed with the Bank.

13. **The Borrower through DIPROSE has prepared a simplified PPSD.** Based on the nature of the operation, the PPSD was developed identifying the type of activities that are envisaged for the Project under the components. If during project implementation the requirements for the activities change from the ones analyzed in the PPSD, the strategy will be updated accordingly to reflect the best fit for purpose procurement arrangements to achieve the desired Value for Money. Based on the assessment, the following procurement arrangements are envisaged for this Project:

- (a) **Works.** The Project will finance small works for connectivity, electricity, irrigation and rural roads, and small works to be executed under public investment subprojects in each province under Component 1. These activities are expected to be carried out through a Request for Bids with an open and national market approach. To this end, a standard bidding document acceptable to the Bank will be applied to carry out these activities. Under Component 2, the expected works for "Plan de Agua" (Water Plan) and those works to be carried out under rural livelihoods subprojects and agro-industrial entrepreneurship subprojects for water supply and productive use, irrigation, and sanitation systems, are also of low complexity and standard technical specifications. Based on the nature of these works they are expected to be carried out through a Request for Quotations with an open and national market approach.
- (b) **Goods.** The Project, under Component 1, will finance operation and communication equipment to be carried out through a Request for Bids and Request for Quotations, with an open competitive national market approach. Under investment subprojects of Component 2, is expected to finance the procurement of solar panels, equipment and facilities for production intensification and technologies for agricultural risks mitigation. These goods are expected to be carried out through a Request for Bids and Request for Quotations, with an open and/or limited competitive national market approach. Regarding goods under Component 4 they are yet to be defined.
- (c) **Consulting Services.** The Project will finance, under component 1, individual consultants mainly to support provinces in adjusting or preparing EPSAs, update existing projects, formulation of full feasibility studies and strategic studies required by the provinces to improve understanding of climate-resilience in the agriculture



sector; and under component 2, individual consultants individual consultants for subprojects formulation; to be carried out through open and competitive selection of individual consultants. Under component 3, consulting services include the design of an incubator platform and a technological surveillance system, both to be carried out through a Request for Proposals (QCBS with an international market approach). Regarding consulting services under component 4 they are yet to be defined.

- (d) **Non-Consulting Services.** Non-consulting services under public infrastructure subprojects of component 1, and communication campaigns and workshops under component 2 will be carried out through Request for Bids and Request for Quotations, with an open competitive national market approach. Regarding non-consulting services under component 4 they are yet to be defined.

14. Procurement arrangements for these and the rest of the activities expected to be carried out during the first 18 months are detailed in the relevant Procurement Plan. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the implementing agencies has recommended (i) close procurement support and guidance in the first bidding processes, and (ii) annual supervision missions in the field to carry out the post review of procurement actions.

15. Procurement will include: Component 1: (i) works: small works for connectivity, electricity, irrigation and rural roads; (ii) goods: operation and communication equipment; (iii) consulting services to support provinces in adjusting or preparing EPSAs, update existing projects and formulation of full feasibility studies; to be carried out through national open competitive procedures; and (iv) public infrastructure subprojects: covering small works, goods, consulting and non-consulting services; to be carried out through national open competitive procedures. **Component 2:** (i) works: small works for “Plan de Agua” (Water Plan); (ii) individual consultants for subprojects formulation; through national open competitive procedures; (iii) non-consulting services: communication campaigns and workshops, to be carried out through national open competitive procedures; and (iv) rural livelihoods subprojects and agro-industrial entrepreneurship subprojects: covering small works for water supply and productive use, irrigation and sanitation systems, solar panels, equipment and facilities for production intensification, technologies for agricultural risks mitigation; through national open and/or limited competitive procedures. **Component 3:** (i) goods: technological infrastructure (hardware and software) and peripherals; infrastructure for the new data center, computer security, networking equipment, software licensing and computer equipment for INTA’s operational units; investments for laboratories and the acquisition of a laboratory management system; and investments in new technologies and equipment; through national or international open competitive procedures (ii) consulting services: incubator platform design and technological surveillance system, through international open competitive procedures; (iii) Agri-food Tech ecosystem investments lines (matching grants) for agro-industrial startups and MSMEs through national open and/or limited competitive procedures. **Component 4:** (i) goods; (ii) consulting services: audit services, baseline assessment, mid-term evaluation and end-line assessment to examine impacts of the program; (iii) non-consulting services.

Financial Management (FM)

16. Project’s Main implementing entity. As pinpointed earlier, the main Project implementation responsibility from the FM perspective will fall upon DIPROSE. Among other aspects, this unit will be responsible for requesting funds from the Bank, authorizing payments, accounting for transactions, and processing disbursement requests for all the Project’s components. DIPROSE is well staffed and there is an adequate segregation of duties⁴⁸. However, given the possible intervention of other entities in the implementation of the Project, the arrangements

⁴⁸ From a recent supervision of AR Socio-Economic Inclusion In Rural Areas Project (P106685) managed by DIPROSE and that took place in June 8-10, 2021 the conclusion was that FM personnel are qualified and capable of undertaking the FM function of the Project. There was an adequate segregation of duties. The quality and number of FM personnel was adequate to support the Project’s implementation, with minor changes in the composition of the FM personnel noted.



between these entities will need to be governed under inter-institutional agreements and the provisions stipulated in the OM.

17. **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 Ministry of the Treasury and follows a clearly defined calendar that is generally adhered to. The Federal Government's Integrated Financial Management Information System (*Sistema Integrado de Información Financiera*, or e-SIDIF) will be used for fulfilling the Project's budget accounting needs. The Project will rely on the MAGyP's own procedures for budget formulation and execution.

18. **DIPROSE through its Budgetary and Operational Management oversees articulating the planning of DIPROSE, in line with the national budget and with the guidelines of the funding agencies.** It also has among its functions the tasks related to management control, monitoring, and evaluation. A centralized approach and analysis are used to prepare the Project budget, taking into consideration procurement plans and contracts as well. From a recent supervision of AR Socio-Economic Inclusion in Rural Areas Project (P106685) managed by DIPROSE and that took place in June 8-10, 2021 the conclusion was that DIPROSE has satisfactory procedures in place to plan Project activities and prepare related budgets and to collect information from the units in charge of the different components. The Project plans and budgets had been realistic, based on valid assumptions and prepared for all significant activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance (budget vs. actual variance analysis).

19. **Accounting and Financial Reporting.** The UEPEX⁴⁹ computerized system which is the Federal Government system/software for accounting and financial reporting of donor-financed operations will be used to generate the annual financial statements and Interim Financial Reports (IFRs) for reporting purposes. These reports will be generated on the basis of budget execution reporting in the e-SIDIF system and will consolidate results of all the Project's components. DIPROSE through the Financial and Accounting Management area will be responsible for: (a) maintaining the Project's accounts with the Chart of accounts reflecting the Project categories, components, and sources of funding; and (b) producing the requisite annual financial statements following International Accounting Standards. The cash basis accounting will be used to maintain the Project's records. Project financial reports will consist of annual financial statements and semiannual IFRs. These reports will be used by DIPROSE management to monitor the Project, including comparisons of actual vs. budgeted expenditure. The Chart of accounts (that is adequate, and can be adapted to properly account for, and report on, all the Project's activities), format, and content of annual financial statements and IFRs will be incorporated in the POM. There are written policies and procedures covering all routine accounting and related administrative activities and only authorized persons, may change or establish new accounting principles, policies, or procedures. The accounting function is adequately staffed with experienced and qualified persons. DIPROSE will also have access to the Bank's Client Connection system for up-to-date information relating to the disbursement of the proceeds of the Loan. The Project's accounting records in UEPEX, will be reconciled on a regular basis with this information. The UEPEX system is used by the DIPROSE on a central level and by the Provinces as well.

⁴⁹ UEPEX: Argentina budget execution and recording software for multi-lateral financed operations.



Table A1.1 - Reports' Schedule

Report	Due date
Semi-annual unaudited IFRs reflecting the sources and uses of funds for each semester and cumulative uses by category, including beginning and ending cash balances.	Within 45 days after the end of each calendar semester.
Annual audit report on Project financial statements	Within six months after the end of each calendar year (or other period agreed with the Bank).
Special opinions on SOEs and Designated Account	
Management letter identifying any internal control weaknesses and areas for improvement	
Semi-annual concurrent Audit Report	Within 60 days after the end of each calendar semester.

20. Internal Controls and Internal Auditing. The internal control environment to be used for the Project is anchored in Argentina's legal and institutional framework and the MAGyP operational processes and procedures i.e., approval and authorization controls are in place and properly documented. These allow for the establishment of roles and responsibilities for FM, and the proper segregation of duties. The process flows appear to be well understood by DIPROSE personnel. Bank reconciliations are performed regularly. 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. Fixed assets/inventories are also controlled, with regular asset/inventory counts, reconciled with control accounts and procedures in place to control the disposal/sale of assets. The use of the national e-SIDIF system, with its inbuilt controls that ensure proper authorization of transactions, contributes to the observance of these controls. All accounting and support documents are retained on a secure basis, using an electronic system that allows for easy retrieval for the authorized user. The IT department of MAGyP is well staffed with adequate personnel, and detailed procedures are in place to ensure the integrity of data captured by the various IT systems, including daily back-ups of all data, in an alternative secure location. In addition, the MAGyP is under the scope of the General Syndicate of the Nation or SIGEN, which is the Federal Government's internal audit office under the Executive branch. SIGEN supervises and coordinates the actions of the Internal Audit Units⁵⁰ in all government agencies, approves their audit plans, and conducts independent audits. The FMS will contact the DIPROSE Internal Audit Unit during FM implementation missions to inquire as to any observations or recommendations made (if any) regarding the Project or the DIPROSE processes and to have them involved and participate in a dedicated supervision meeting.

21. The Project's internal control system will also be documented in the POM. The POM 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:

⁵⁰ The internal audit function is relatively effective (PEFA Indicator 26-Score C+). When internal control weaknesses are highlighted in the reports along with auditors' recommendations, action plans are requested including measures to be adopted, deadlines and responsible for its implementation. Sometimes there is a delay in implementing corrective actions, which gives rise to recurring recommendations. For this reason, SIGEN has adopted the Corrective Action Monitoring System (*Sistema de Seguimiento de Acciones Correctivas*) which is available to internal audit units for follow-up on audit reports. The units enter their reports and detailed recommendations into the system, indicating in each case the person or area responsible and the estimated date of completion. They also enter information on the situation found at the time of monitoring and generate the respective monitoring reports.



Flow of Funds, Chart of Accounts, Project organizational structure and responsibilities, oversight lines, authority limits, internal and external audit arrangements, accounting practices, disbursement procedures and the financial reporting arrangements). The POM will be prepared by DIPROSE and be approved by the Bank and be maintained/updated throughout the Projects' life.

22. External Auditing Arrangements. There are no overdue audit reports and/or outstanding FM or audit issues affecting DIPROSE at this moment. The Project's annual financial statements will be audited under Terms of Reference prepared in accordance with Bank guidelines and performed by an independent auditor following standards acceptable to the Bank. Terms of Reference were agreed with DIPROSE at appraisal and will be incorporated in the POM. Audited financial statements (and any accompanying Management Letter) will be furnished to the Bank no later than six months after the end of each fiscal year—or another period agreed upon with the Bank (not exceeding 18 months)—when, due to project circumstances, it is more cost effective to join periods to be audited. In accordance with the Bank's Access to Information Policy, upon receipt of the annual audited financial statements of the Project, they will be made available to the public by the Bank (but not the Management Letter). It is expected that the financial statement audit will be conducted by Argentina's Supreme Audit Institution the *Auditoria General de la Nación* (AGN).

23. The number and different types of subprojects to be executed under Components 1, 2 and Subcomponent 3.2 will require extensive monitoring for compliance. Concurrent subproject audits will be carried out throughout the lifetime of the Project to provide DIPROSE with feedback and information needed to identify and mitigate any issues that may arise during implementation. A single private sector firm acceptable to the Bank, will be hired to audit the subprojects. DIPROSE will submit the concurrent subproject audits, to the Bank on a semesterly basis (within 60 days after the end of each semester), flagging any potential issues. The cost of these audits will be financed from the Loan. It is expected that DIPROSE will hire the subproject auditors within 3 months after the approval of the first subproject.

24. Flow of funds and Disbursement: The following disbursement methods may be used under the Loan: (a) Advance, (b) Reimbursement and (c) Direct Payment. The Project's funds will be managed by DIPROSE through a specific segregated designated account (DA) in U.S. dollars for the Project at the *Banco de la Nación Argentina* (BNA). There are no Lapsed Loans. Proceeds from the DA account in U.S. dollars will be transferred to an operative account in local currency, also to be opened and held in BNA. These transfers will take place based on a three-month expenditure forecast. Payments made directly by DIPROSE and the transfers for the subprojects administered by the Provincial Units (UEP's) and to INTA will be made from this local currency operating account. Before funds are advanced to any Province participating in the Project, DIPROSE will conduct a review of the FM arrangements in place in each Province. This FM review will be conducted following Terms of Reference acceptable to the Bank and to be included in the POM. Each provincial FM review will be properly documented/filed and be available for review by the Bank and external auditors, if required. All the Provinces involved in managing Project funds will also use UEPEX for registering the Project's transactions. The UEPs and INTA will open separate bank accounts to receive the proceeds of the Loan. Bank accounts will be reconciled monthly.



Figure A1.1 – General Flow of Funds

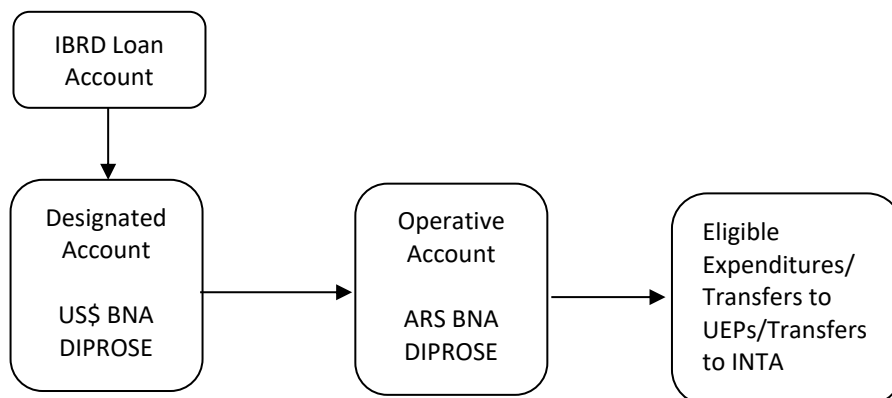


Table A1.2 – Disbursement Arrangements

Retroactive expenditures	<p>Eligible expenditures:</p> <ul style="list-style-type: none"> Are paid up to 12 months prior to the date of loan signing; and Do not exceed 20 percent of the loan amount.
Reimbursement of eligible expenditures pre financed by the Government after the date of loan signing	<ul style="list-style-type: none"> Reimbursement of eligible expenditures. The Minimum Application Size for Reimbursement requests will be defined in the Disbursement and Financial Information Letter (DFIL).
Other Disbursement Methods	<ul style="list-style-type: none"> Advance to a segregated DA in US\$ managed by DIPROSE with a proposed Fixed Ceiling of US\$ 60 million. Direct Payments to suppliers. The Minimum Application Size for Direct Payment requests will be defined in the DFIL.
Frequency of reporting expenditures paid from the DA	<ul style="list-style-type: none"> Once every three months.
Supporting documentation	<ul style="list-style-type: none"> Standard and Customized Statement of Expenditures (SOEs). Records (supplier contracts, invoices, and receipts).

25. The disbursement procedures are described in the Disbursement and Financial Information Letter (DFIL). The DA will have an agreed Fixed Ceiling of US\$60 million. Withdrawal Applications will be submitted by the DIPROSE with two signatures (or more) indicated in their list of authorized signatures. The Minimum Value of Applications is set at US\$25,000 for Category 4 and US\$1 million for the other categories equivalent. Applications for replenishment of the DA will be submitted to the Bank on a quarterly basis and will include a reconciled bank statement as well as other appropriate supporting documents. The Project will have a four (4) month Grace Period.

26. Reporting on the use of loan proceeds. Supporting documentation should be provided with each application for withdrawal in the form of standard or customized Statements of Expenditures (SOE) or Records.

27. Retroactive Financing. Based on the Project's needs, the Bank could finance up to US\$80 million of the loan amount for eligible expenditures incurred by the Borrower on or after April 30th, 2021.

28. Specific types or modalities of financing of expenditures under the Project, will require specific disbursement arrangements as follows:



29. **Component 1** will finance Investments to strengthen and expand connectivity with a focus on “last mile” segments in existing networks (e.g., rural/tertiary roads, primary irrigation and drainage schemes, coverage of internet and digital services, rural electricity, etc.). This component will operate with eligibility criteria for both participating provinces and subprojects, including financing caps (see Annex 2 in PAD for details). For Component 1 MAGyP has a portfolio of pre-screened public infrastructure subprojects amounting to approximately US\$175 million that will be assessed through the Project’s eligibility criteria (see Annex 2 in PAD, Figure A2.2). Based on the analysis of the final Subproject Report, DIPROSE will select the proposals approved for financing. Thereafter, a Subsidiary Loan or Grant Agreement will be signed between DIPROSE and the Counterpart Entity and disbursements will follow the agreed flow channels and disbursement schedule set out in the Agreement. DIPROSE will document expenditures to the Bank based on amounts transferred to the Counterpart Entity (i.e., lumpsum method) using a customized SOE. This is for practical and agile purposes as DIPROSE has adequate controls and measures in place to ensure that the transfers are ultimately used for productive purposes and are documented by the beneficiaries. DIPROSE will need to submit to the Bank semesterly reports, detailing the actual use of amounts transferred to the beneficiaries. For eligibility purposes, all amounts transferred to the beneficiaries will need to be used/documentated to DIPROSE by the Application Deadline Date. All subproject activities will also need to be completed before the Closing Date to be considered eligible. These subprojects do not require either cash or in-kind support from the beneficiaries.

30. **Component 2** will support agribusiness initiatives through Productive Alliances and rural livelihoods investments through Rural Livelihoods Subprojects and Agro-industrial Entrepreneurship Subprojects. Component 2 will operate with detailed eligibility criteria and financing caps for each window (see Annex 2 in PAD for details). Based on the analysis of the final Subproject Report, DIPROSE will select the proposals approved for financing. Thereafter, a Subsidiary Loan or Grant Agreement will be signed with the subproject beneficiary⁵¹ and disbursements will follow the agreed flow channels and disbursement schedule set out in the Agreement. DIPROSE will document expenditures to the Bank based on amounts transferred to the subprojects (or to the provincial entity) (i.e., lumpsum method) using a customized SOE. This is for practical and agile purposes as DIPROSE has adequate controls and measures in place to ensure that the transfers are ultimately used for productive purposes and are documented by the beneficiaries. DIPROSE will need to submit to the Bank semesterly reports, detailing the actual use of amounts transferred to the beneficiaries. For eligibility purposes, all amounts transferred to beneficiaries will need to be used/documentated to DIPROSE by the Application Deadline Date. All subproject activities will also need to be completed before the Closing Date to be considered eligible. These subprojects require either cash or in-kind⁵² support from the beneficiaries.

31. **Component 3** will support the institutional strengthening of the National Institute of Agricultural Technology (INTA). This Component will finance goods, works, consultancies, Agri-food Tech investments, scholarships, training, and operating costs. INTA will be responsible for: i) managing a segregated bank account in local currency for receiving advances made to it by DIPROSE; ii) making the payments for the provision of services and goods under this Component following the Bank’s Procurement Regulations; iii) maintaining internal control procedures and periodic reconciliations; iv) preparing and submitting information to DIPROSE regarding Component 3, to enable DIPROSE to prepare the IFRs and the documentation of expenditures to the Bank; and v)

⁵¹ Windows 1 and 2: DIPROSE or the provincial government will enter into the subproject agreement. Windows 3 and 4: Only DIPROSE will enter into the subproject agreement.

⁵² All in-kind contributions must be eligible, actual, evidenced and essential to the delivery of the subproject. A transaction of equal value (that can be independently assessed and documented and thereby audited) will be recognized in order to reflect the provision of either the goods in-kind or services in-kind, valued at a fair market value. The basis of measurement for different types of in-kind contributions, combined with other relevant provisions will be specified in the OM (for example that workforce from the beneficiaries will be valued at daily market rates in the country or area, calculated per day, for example, number of days x market value per day).



preparing and providing all financial documentation and Project reports/information requested by DIPROSE for monitoring purposes, external auditors and Bank staff, related to Component 3. INTA will define the terms and conditions of the scholarship agreements between the institution and the beneficiaries of any scholarships, and disbursements will follow the agreed flow channels and disbursement schedule set out in the scholarship agreement. Component 3.2 will also support the Agri-food Tech ecosystem incubators and accelerators co-financing venture capital initiatives with co-sharing participation in benefits, via matching grants. The matching grant agreement will be signed between INTA and the grant beneficiaries and disbursements will follow the agreed flow channels and disbursement schedule set out in the grant agreement. INTA (and then DIPROSE) will document expenditures to the Bank based on amounts transferred to the beneficiaries (i.e., lumpsum method) using a customized SOE. INTA will need to submit to DIPROSE (and DIPROSE to the Bank) semesterly reports, detailing the actual use of amounts transferred to the beneficiaries. For eligibility purposes, all amounts transferred to beneficiaries will need to be used/documentated to INTA and DIPROSE by the Application Deadline Date. All grant activities will also need to be completed before the Closing Date to be considered eligible. These subprojects require either cash or in-kind support from the beneficiaries. Except for the matching grants mentioned previously, INTA will have to submit to DIPROSE (and thereafter DIPROSE to the Bank) supporting documentation evidencing actual expenditures (including for the scholarships) for all amounts spent under Component 3 and refund any unused funds for all activities under Component 3.

32. Component 5 is to provide immediate response to an Eligible Crisis or Emergency, as may be presented in the future. The CERC is one of the Bank's contingent financing mechanisms available to Borrowers to gain rapid access to Bank financing to respond to a crisis or emergency. As a Project component, it is designed to provide swift response in the event of an eligible crisis or emergency, 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." The mechanism for the triggering of the CER will be included in the Loan Agreement, which requires, inter alia, the preparation of a CERC Manual detailing the applicable fiduciary, environmental and social, monitoring, reporting, and any other implementation arrangements necessary for the implementation of the proposed activities to be financed. In case of an event triggering the component, a reallocation of funds will be introduced to loan disbursement categories, to be able to fund the proposed activities under this component to respond to the emergency. The implementation agency for this CERC will be determined in accordance with a CERC Manual to be developed in case of an emergency. If an entity other than DIPROSE leads the emergency response, we will need to conduct a FM assessment of said entity, prior to funds under this component being disbursed.

33. In summary, components 1, 2 and 3 will be paid centrally and by participating subnational level jurisdictions and INTA for component 3, while components 4 and 5 will only be paid centrally by DIPROSE.

Table A1.3 – Category of expenditures and financing percentages

Category	Loan Amount (in US\$ million)	Percentage of Expenditures to be financed*
(1) Goods, works, consulting services (including audits), non-consulting services, Training, and Operating Costs for Parts 1, 2 and 4 of the Project (other than categories 2, 3, 4, 5 and 6).	17.0	100%
(2) Public Infrastructure Subprojects under Part 1 of the Project.	196.0	100 % of the amount set forth in a Subsidiary Loan Agreement or a Subsidiary Grant Agreement for a Public Infrastructure Subprojects.



(3) Matching Grants for Rural Livelihoods Subprojects and Agro-industrial Entrepreneurship Subprojects, under Part 2 of the Project.	131.0	100% of the amount set forth in an Agro-industrial Entrepreneurship or Rural Livelihoods Subproject Agreement
(4) Goods, works, consulting services, non-consulting services, Training, Scholarships and Operating Costs under Part 3 of the Project (other than Category (5)).	35.0	100%
(5) Matching Grants for Agri-Food-Tech investments under Part 3.2 of the Project.	20.0	100% of the amount set forth in an Agri-food Tech investments Subproject Agreement
(6) Emergency Expenditures under Part 5 of the Project.	0	100%
(7) Front-end-Fee.	1.0	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(8) Interest Rate Cap or Interest Rate Collar premium.	0	Amount due pursuant to Section 4.05 (c) of the General Conditions
Total Amount:	400.0	

* inclusive of Taxes, except for taxes and fees levied by financial transactions

FM Assessment of INTA for Component 3

34. **The Project will advance funds to INTA.** INTA is a leader institution in the agricultural, food and agro-industrial technology sectors. It works in a decentralized manner, with operational and financial independence but is functionally mapped to the MAGYP. INTA's permanent staff amounts to more than 7,000 employees, which means an increase of more than 130 percent since 2003 (on top of almost 3,000 workers who have different types of relationships labor, such as hired, trainees, etc.). A central administrative personnel structure of around 80 professional staff supports the administrative and accounting processes and tasks at INTA. The organization chart is publicly available in the official INTA website⁵³. INTA's highest decision-making level is the Board of Directors, governed by a president and a vice-president appointed by the National Executive Power. The Board of Directors is made up of a collegiate body with five representatives from the public sector and five from the private sector. In this way, an active participation of the productive sector is guaranteed in setting policies and global strategies for institutional decision-making, as well as social control of their actions. The guidelines established by the Board of Directors are operationalized by the National Directorate that coordinates, plans and manages the activities of the Institute. The National Directorate is assisted by Assistant National Directorates (DNA), General Directorates (DG) and National Coordination (CN).

35. **Planning.** INTA prepares Annual Budget Plans. Activities to be implemented under the Component 3 will be included in the MAGYP's budget. INTA will not record the funds received in its own budget. INTA will nevertheless provide DIPROSE with all relevant information, so that DIPROSE can prepare (and subsequently monitor) the Project's detailed budget.

36. **Internal controls.** There are written policies and procedures covering all routine accounting and related administrative activities. Component 3's transaction processing will use INTA's internal approval processes and systems, that provide for reasonable segregation of duties, supervision, quality control reviews and reconciliation.

⁵³ <https://www.argentina.gob.ar/inta>



The institutional site for INTA contains detailed information that gets continuously updated on authorities, salary scales, personnel affidavits, procurement and contracts, subsidies and other transfers, administration, audits, etc.

37. **INTA is also subject to internal audits performed by General Syndicate of the Nation (SIGEN, by its Spanish acronym).** Internal audit reports performed by Internal Audit Unit (UAI) can be found at: <https://www.argentina.gob.ar/agricultura/transparencia/auditorias>. In addition, INTA has a well-developed citizen participation grievance mechanism in place to receive and treat citizen complaints accessible at <https://www.argentina.gob.ar/agricultura/transparencia/participacion>

38. **External controls.** Regarding external audits, INTA has not had external financial statement audits performed since almost 10 years ago. Nevertheless, the Project's financial statement audit will cover the funds transferred to and the activities undertaken by INTA.

39. **Accounting.** INTA has an in house developed accounting and information system named E SIGA for budget, administration, and accounting to administer funds from all sources. However, INTA will use the UEPEX System for Project purposes and to communicate financially with DIPROSE. Funds will be transferred from DIPROSE to INTA to a dedicated local currency bank account.

40. **The conclusion of the assessment is that INTA has acceptable FM arrangements in place to receive and manage Bank funds as the executor of Component 3 of the Project.**

IMPLEMENTATION SUPPORT PLAN

41. **Implementation support will be provided through short follow-up technical meetings and semiannual supervision missions.** These will focus on the following areas:

- (a) **Strategic support.** Bank supervision missions will meet with DIPROSE representatives to: (i) review progress on the Project's activities; (ii) discuss strategic alignment of the Project's different activities, especially at the planning level between the relevant stakeholders; and (iii) evaluate progress on cross-cutting issues such as M&E, training, communication, knowledge exchange, innovation, dissemination of results and experiences, and coordination between relevant stakeholders.
- (b) **Technical support.** Supervision will concentrate on ensuring the technical quality of investment for all activities, including the quality of bidding documents, Terms of Reference, evaluation reports, construction plans, and products delivered by consultants. During the execution of investments, technical supervision will be provided to ensure that technical contractual obligations are met. Regular site visits will be carried out during project implementation and will involve technical specialists as needed.
- (c) **Fiduciary support.** Formal fiduciary supervision missions will be conducted at least twice per year throughout the Project's lifespan to: (i) perform desk reviews of IFRs and audit reports, following up on any issues raised by auditors, as appropriate; (ii) assess the performance of control systems and arrangements; (iii) update the procurement and FM ratings in the Implementation Support and Status Reports as needed; (iv) provide training and guidance on carrying out procurement processes in compliance with the Procurement and Anti-Corruption Guidelines and the POM; (v) review procurement documents and provide timely feedback to DIPROSE; (vi) carry out the post review of the corresponding procurement activities; and (vii) help monitor progress against the Procurement Plan. In addition, the core team will have regular contact with project counterparts through calls/video conferences. Finally, an independent auditor, with experience and qualifications acceptable to the Bank, will be hired for purposes of carrying out a semi-annual audit on subprojects executed under Component 2. The scope of this concurrent audit will comprise eligibility, financial and procurement aspects of the investment subprojects.
- (d) **Procurement support.** During procurement post reviews and/or project supervision, procurement will review the implementation of agreed arrangements and performance metrics, identify corrective actions if



necessary, and monitor the procurement risk and procurement performance ratings. The Project will be closely monitored and supported with the aim of ensuring that the procurement arrangements are working as intended and the procurement regulations are adhered to. Procurement post reviews are expected to take place on an annual basis.

- (e) **Environmental and social support.** During project implementation support and supervision missions, the Bank will review the implementation of the agreed actions and measures set out in the social and environmental documents, including the management of project-related grievances, implementation of stakeholder engagement activities, implementation of the ESMF and SEP, and the Borrower's compliance with applicable relevant labor laws to manage labor-related risks for the Project, in line with ESS1 and the ESCP. The Project will be closely monitored by the Bank via virtual and field missions (once COVID-19 conditions allow), which will take place at least twice a year.

Table A1.4 - Implementation Support Resource Estimates

Time	Activity	Skills Needed	Resource Estimates
Year 1	<ul style="list-style-type: none"> - Baseline studies - Refine and finalize strategic studies and detailed plan for project activities -Recruit/reallocate additional staff to initiate project activities - Initiate promotion and dissemination campaigns - Refine market and other strategic studies to identify targeted beneficiaries under the components and the scope of the calls for proposals -- Prepare Terms of Reference for TA and bidding documents for major processes (computerized systems, works, equipment of key agencies, etc.) - Negotiate and sign agreements with related agencies and independent institutions in the agricultural sector, and with Provincial Governments - Identify additional gaps in TA and needs for additional institutional strengthening efforts -Carry out calls for proposals after effectiveness 	<ul style="list-style-type: none"> -Project management -Agricultural, climate change, value chains -Safeguards management -Fiduciary management -Monitoring and evaluation 	<ul style="list-style-type: none"> - at least 2 yearly support missions, one with full Task Team - support from country office for technical, safeguards and fiduciary aspects
Years 2-4	<ul style="list-style-type: none"> - Full project implementation -Call for proposals, reception and assessment of proposals - Approval and financing of selected subproject proposals - Implementation of subprojects -Social and environmental monitoring and management -Fiduciary (FM review and supervision of procurement bidding documents /processes and consultant contracts) - Full implementation of Monitoring and evaluation system 	<ul style="list-style-type: none"> -Project management -Agricultural, climate change, water and sanitation expertise -Agricultural/ Agri-food Tech innovation specialist -Safeguards management -Fiduciary management - M&E 	<ul style="list-style-type: none"> -2 yearly support missions, one with full Task Team -support from country office for technical, safeguards and fiduciary aspects



Year 5	-Completion of all subprojects -Monitoring and evaluation (M&E) -Final Evaluation and Reporting	-Project management -Technical quality -M&E	-2 support missions, one with full Task Team
--------	---	---	--

Table A1.5 - Skill Mix Requirements

Skill Needs for Supervision	Origin	Estimated Staff Weeks
Task team leaders	Headquarters and country based	10 per year
Agricultural smart technologies and practices-Generation of technologies-Private sector participation	Headquarters and country based	5 per year
Agricultural or Agri-food Tech innovation specialist (to develop new mechanisms to work efficiently with private sector)	Headquarters or country based	4 per year
Public Investments design and implementation	Headquarters and country based	4 per year
Coordination with commercial sources of financing	Headquarters and country based	4 per year
Agricultural economists	Headquarters and country based	5 per year
FM specialist	CMU based	4 per year
Procurement specialist	CMU based	4 per year
Social specialist	CMU based	4 per year
Environmental specialist	Country Based	4 per year
M&E specialists	Headquarters/country based	6 per year
Operations analyst	Country based	6 per year
Lawyers	CMU based	4 for project lifecycle
Disbursement officers	Headquarters/country based	2 per year



ANNEX 2: DETAILED PROJECT DESCRIPTION

1. **The Project concept builds on past and ongoing interventions implemented under recent agricultural and other relevant development operations in Argentina**, such as the PISEAR (P106685) and GIRSAR (P162316) Projects. For instance, the Project will scale-up and expand the Productive Alliance (PA)⁵⁴ model to improve beneficiaries' productive and commercial capacities, and access to domestic and international markets. It will promote innovative CSA technologies, strengthen key public services and provide TA and capacity building to producers. The Project will be structured in three main interrelated and complementary components dedicated to public investments, private investments and agricultural innovation. The public investments, support to agricultural innovation, capacity and institutional strengthening activities supported via the Project will enable the Mobilization of Financing for Development (MFD) in the agri-food system. The Project will also address gender gaps and generate significant climate co-benefits.

Description of Project Components

2. **Component 1: Public Infrastructure for Agro-industrial⁵⁵ Development (Total Cost US\$250 million; IBRD loan US\$200 million; counterpart funding US\$50 million).** The component's main objective is to increase the coverage and quality of rural public infrastructure in order to support green, sustainable and inclusive economic recovery, by addressing climate vulnerabilities and increasing competitiveness and job creation in the agri-food system. The US\$200 million in IBRD financing to be provided under this component will finance a range of activities that support adaptation to and mitigation of climate change (see the detailed in **Annex 3**). The main areas of investment include:

- a. Climate-resilient infrastructure investments to strengthen and expand **connectivity** with a focus on "last mile" segments in existing networks (e.g., rural/tertiary roads, coverage of internet and digital services, and rural electricity).
 - b. Rehabilitation and improvement of existing primary irrigation and drainage works⁵⁶ to protect against climate-induced water scarcity and **better management of water resources** for agricultural production and processing (expanding works under public domains), in coordination with private investments in downstream segments (supported either by Component 2 or outside the Project).
3. **The Project will finance public infrastructure prioritized by authorities at the federal, provincial or regional levels.** The component will finance works, goods, non-consultant and consultant services, training, and operating costs under the following activities:
- a. **Advisory Services** to support provinces in adjusting or preparing Provincial Strategies for Agri-Food Systems (EPSAs), making them key climate sensitive instruments for identifying priority areas for the formulation of additional public infrastructure for agro-industrial development subprojects;
 - b. **Pre-Investment activities** (mainly consulting services) to update existing project profiles that are ratified as priorities for the proponent provincial authorities and are consistent with their EPSAs, or for the formulation of full feasibility studies to be presented to DIPROSE⁵⁷;

⁵⁴ A "Productive Alliance" is a business relationship (alliance) between producer organizations and/or MSMEs, an identified market or buyer, a TA provider, and a commercial financial institution. These parties enter into an agreement based on a joint business plan to meet a market demand while improving productivity, value addition, market position and sales on a benefit-sharing basis. Buyers' participation is critical to the productive alliance model, as buyers provide market linkages that can persist after a project has closed.

⁵⁵ When the term "agro-industrial" is used alone, it includes agricultural and agri-food systems, as well as agro-industries.

⁵⁶ Investment in new irrigation and drainage schemes that rely on waters of international waterways are not expected.

⁵⁷ Formerly called *Unidad de Coordinación de Proyectos* (UCAR), created under the Bank-funded *Programa de Servicios Agropecuarios Provinciales* (PROSAP, P006010).



- c. **Strategic studies** (consulting services) required by the provinces to improve understanding of climate-resilience in the agriculture sector and promote adoption of climate-smart technologies and practices;
 - d. **Implementation of approved Public Infrastructure Subprojects** (covering works, goods, consulting and non-consulting services, and incremental operational costs) presented by provincial governments and approved by DIPROSE for financing aimed at improving connectivity, climate-resiliency, and energy-efficient agro-industrial infrastructure development, that are expected to contribute directly to the development objectives of the Project.
4. **All public infrastructure subprojects selected will include adoption of climate-smart practices leading to increased climate resiliency (see Annex 3).** Moreover, the engineering designs for construction will follow environmentally friendly norms and design parameters, increasing resiliency to climate change and extreme weather events. The designs take into consideration elements that promote participation by women, youth, Indigenous Peoples, afro-descendants and other vulnerable beneficiary segments. A key aspect to be analyzed for the selection of the subprojects to be financed is the commitment and budgetary capacity of the province to assure adequate coverage of operation and maintenance (O&M) responsibilities after the implementation phase is finished.

Public Infrastructure Subprojects Selection Process

5. **The Project will finance public infrastructure subprojects proposed by national, regional or provincial levels institutions.** These preliminary proposals will be presented as responses received to “Calls for Proposals” carried out by DIPROSE, (which could be general calls or could target specific types of subprojects or specific geographical regions), as well as responses to direct dissemination campaigns with the provinces. Once the expressions of interest are received, together with a “Subproject Profile”, a prioritization process will be carried out by DIPROSE (reinforced by technical specialists from MAGyP and external specialists) as the first step in the selection of subprojects to be financed, based on a set of eligibility criteria.
6. **Eligibility Criteria: Component 1 will operate with eligibility criteria for both participating provinces and subprojects.** Criteria for submitting subproject profiles will aim to ensure balanced access to project resources by all provinces, transparent procedures and open competition.
7. **The following criteria will apply for the selection of provinces:** (i) submitting an EPSA that is in force (with a 10-year horizon); (ii) designating or identifying a pre-existing Provincial Liaison Entity (EE) or Agricultural Development Programming Entity (EPDA) with the capacity to fulfill the role of interlocutor between the province and DIPROSE; (iii) designating or identifying the government unit or person in charge of Financial Administration (or a pre-existing Provincial Financial Administration Entity, EPAF) with adequate capacity to perform the administrative, accounting and financial coordination functions of the Project in the province, and (iv) in cases in which provinces cover investments under this Component 1 through provincial borrowing, a current indebtedness law and borrowing capacity will be required.
8. **The following criteria will apply for the selection of subprojects:** (i) relevance and consistency with the strategic objectives of the Project and the respective EPSA; (ii) a Subproject Profile in accordance with formats established by the POM; (iii) compliance with national, provincial and municipal regulations, as well as environmental and social standards applicable to the Project; (iv) a Subproject document that includes, *inter alia*, a feasibility analysis of the technical proposal; an institutional feasibility analysis; an economic-financial analysis; an environmental and social analysis (i.e. an evaluation of environmental and social impacts and of expected results in terms of climate change resiliency and of net GHG emissions) and environmental and social management plans; a results matrix; an annual operating plan, and a study defining the mechanism for total or partial recovery of the costs of administration and of O&M for the works (including a mechanism for total or partial recovery of



investment costs, where feasible from a legal point of view and based on the economic condition of the beneficiaries). All public infrastructure subprojects to be financed under Component 1 will comply with the limits set out in Table A2.1 below.

Table A2.1 - Financing caps for Public Infrastructure Subprojects (in US\$)

Subproject type	Maximum amount per beneficiary	Maximum amount per subproject	Provincial counterpart funding (% of total subproject cost)
Rural roads	\$ 15,000.00	\$ 20,000,000.00	20%
Water and irrigation	\$ 60,000.00		
Rural electrification	\$ 30,000.00		
Connectivity (internet)	\$ 8,000.00	\$ 15,000,000.00	20%
Minor works	\$ 10,000.00	\$ 1,000,000.00	20%

9. The proposed profiles must be consistent with the *Estrategias Provinciales para el Sector Agro-Alimentario (EPSAs)*, which cover a 10-year period. EPSAs of participating provinces will be revised incorporate a clear climate resilience dimension in their rationale. The first 2 EPSAs will be submitted to the Bank for no objection. DIPROSE will fund human resources to contribute to provincial effort to adjust/restructure the EPSA. Once the Subproject Profile is analyzed by DIPROSE and accepted for further processing, the proposing entity (Counterpart Entity, or CE) could request TA for the preparation of the subproject document, by presenting DIPROSE a Formulation Request for TA. The CE may be a national agency, a provincial government, a decentralized provincial or national body whose objectives are consistent with those of MAGyP, and that has counterpart resources to meet a proportion of the Project's planned costs, and that will be responsible for the execution of the subproject. Completed subproject proposals will then be evaluated according to the following technical factors: (i) implementation capacity; (ii) scale and coverage; (iii) beneficiary participation by gender; (iv) technical feasibility; (v) environmental impact; (vi) social impact; (vii) financial viability; (viii) economic return; (ix) risk analysis; (x) M&E plan; and (xi) cost recovery mechanism (including full O&M costs). In addition, each province must demonstrate that it has sufficient budgetary resources to meet the counterpart contributions for the Project. Finally, the Report will include all required documents for the contracting of implementation civil works and procurement of goods and services. The final engineering designs will be part of the contracting of services to be done by the construction entity and its costs covered under the subproject financing arrangements.

10. Based on the analysis of the final Subproject Report, DIPROSE will select the proposals approved for financing and issue recommendation for approval, as appropriate, through a technical report based on the aforementioned evaluation to the Investment Programing Committee. The Bank will issue a technical, environmental and social no objection to the first subproject of each category. Thereafter, a Subsidiary Agreement will be signed between DIPROSE and the Counterpart Entity and disbursements will follow the agreed flow channels and disbursement schedule. A results assessment report will be carried out at the end of the implementation.

11. Special priority will be assigned to investment proposals that address vulnerability and enhance resilience to weather events and climate shocks (from floods, droughts, tornados, etc.), with positive impacts on adaptation and mitigation agendas, thereby reducing the likelihood of extreme impacts on assets and population. Supervision of subprojects in Component 1 will be made through a cloud platform for project delivery.

12. DIPROSE already has a portfolio of pre-identified provincial investments subprojects that could be considered for further analysis under the Project (see Table A2.2). Among these, there are nine subprojects at



advanced preparation/feasibility stages (five for water resources/irrigation, three for energy distribution/electricity, and one for connectivity infrastructure) totaling about US\$97.1 million. These will be ready for consideration by project Effectiveness, if ratified by the respective provinces.

Table A2.2 - Pre-identified Pipeline of Public Infrastructure Subprojects

Province	Subproject	Beneficiaries	Cost (US\$ million)	Type of Subprojects	Status
Buenos Aires	Rural Connectivity I (Patagones & Villarino), II (Puán, Saavedra & Tornquist, and III (C. Tejedor, F. Ameghino, Gral. Pintos, Gral Villegas & Rivadavia)	3,749	6.5	Connectivity	Pre-feasibility
Catamarca	Development of Irrigated Areas: Londres– Department of Belén	637	6.2	Water Resources	Feasibility
Chaco	Rural Roads – Depto. Güemes – 2nd Phase	1,213	21.0	Roads	Pre-feasibility
Corrientes	Rural Roads RN 6 & RP 100 – 1st Phase	1,137	17.0	Roads	Pre-feasibility
Entre Ríos	Roads Area VIII - Zenón Roca - Villaguay	359	19.0	Roads	Profile
	Connectivity Rural I (Bovril – La Paz) and II (RP 51)	5,450	2.5	Connectivity	Pre-feasibility
Formosa	Rural Electricity II – 2nd. Phase	664	11.0	Electricity	Feasibility
	Rural Connectivity	1,000	2.0	Connectivity	Profile
La Rioja	Modernization of Water Resources: Chilecito	708	10.5	Water Resources	Pref-feasibility
Jujuy	Rural Connectivity (Area North) and II (Ramal and Puna)	1,100	2.0	Connectivity	Feasibility
Mendoza	Water Resource System: Santa Rosa - La Paz	1,289	22.0	Water Resources	Feasibility
Neuquén	Rural Electricity Junín de los Andes – San Martín de los Andes	1,600	6.5	Electricity	Feasibility
	Water Resource System: Lower Valley Río Limay – Arroyito - Senillosa	536	11.7	Water Resources	Feasibility
Salta	Water Resource Improvement in Colonia Santa Rosa -- Río Colorado – 2nd. Phase	278	14.0	Water Resources	Feasibility
	Rural Electricity in Productive Areas – Southern Zone	243	5.2	Electricity	Feasibility
Tucumán	Water Resources System Improvement: Río Choromoro	100	18.5	Water Resources	Feasibility
TOTAL		20,063	175.6		

13. Component 2: Agro-industrial Development and Strengthening of Rural Livelihoods (Total Cost US\$215 million; IBRD loan US\$140 million; counterpart funding US\$35 million, unguaranteed commercial financing US\$20 million; local beneficiaries US\$20 million). The Component will operate through four investment windows: Windows 1 and 2 will be dedicated to rural livelihoods investments and windows 3 and 4 will be for agro-industrial businesses. This four-window mechanism will allow for the possibility of an internal graduation of beneficiaries. Investments will be identified via thematic calls for proposals and subprojects will be assessed according to eligibility criteria that ensure their contribution to the Project Development Objectives. Given Argentina's geographical extension and diversity of climate zones biomes and economic conditions of territories, the calls for proposals will be tailored to respond to specific territorial conditions, with due attention to responsible natural resources management and climate considerations and the needs of vulnerable beneficiary groups. This component will finance activities that aim to close gender gaps and other vulnerable populations' gaps, especially in aspects such as access to finance and markets, distribution of productive assets, equipment, and technologies



to promote the formal inclusion of women, indigenous peoples, and youth in the production and transformation stage of the agri-food system. It will also promote women's productive association, business skills, entrepreneurship and empowerment in the rural sector through women-tailored managerial training (see Annex 4).

14. **Investments will also contribute to improve net carbon balances**, through: (i) investments in sequestration from afforestation and/or restoration of degraded areas and the transition from bi-annual or annual to more climate friendly perennial cropping systems (agro-forestry, orchards, gardens, tree crops, etc.); (ii) through emission reductions from improved management of agro-forestry, livestock, improved cropping systems; and (iii) better management of agriculture and food losses and waste. The US\$140 million in IBRD financing to be provided under this component will finance a range of activities that support adaptation to and mitigation of climate change (see the detailed description of climate co-benefit-generating activities under Component 2 in **Annex 3**).

15. **Window 1: Livelihoods for economic and productive inclusion.** Window 1 will channel project funding through SIRs and will target producers who are organized into formal producer organizations, practice agriculture as their main livelihood, and aim to “transition” from subsistence to commercially oriented production (transitioning agriculture). It will finance investments to enable beneficiary households to generate sustainable agricultural/non-agricultural autonomous incomes. Priority will be given to underprivileged groups such as rural women, Indigenous and Afro Descendant populations, and rural youth. This window will finance productive assets and inputs, technical assistance (TA), and small improvement works in rural households. It will promote climate-smart technologies and good agricultural practices to enhance productivity and resilience.

16. **This window will finance investments aimed at improving basic living conditions, productivity, market access, and resilience of small rural producers and vulnerable groups in Argentina’s lagging regions** through productivity increases and access to enhanced productive techniques, innovations and technologies. It will build on the Partnership for Economic Inclusion Initiative (<https://www.peiglobal.org/>) as well as on evidence from the Bank-financed PISEAR Project (P106685). Priority will be given to climate-smart technologies that strengthen the economic and environmental resilience of the target population. The subcomponent will enable the most apt beneficiaries to connect with larger investment options financed under Windows 3 and 4.

17. **Window 1 will finance physical assets, productive inputs, technical assistance (TA), and small improvement works in rural households.** Investments will include water catchment works for domestic and productive consumption; rural community infrastructures, such as small cattle pens, storage facilities, greenhouses; seeds and seedlings; animal husbandry; construction and/or improvement of household water and sanitation systems, and semi-permanent points of sales for commercialization of agriculture produce, all with the objective of improving agricultural productivity and marketing by smallholders.

18. **Window 2: Small scale water investments for domestic and productive purposes.** Window 2 will also channel project funding through SIRs. Based on the ongoing “*Plan Agua*”⁵⁸ (Water Plan) experience, this window will finance rural livelihoods subprojects to vulnerable producer organizations for the management of water resources, i.e., drip and sprinkler irrigation systems, shallow wells and rainwater collection systems, *inter alia*. These investments will prioritize climate-smart technologies to enhance the environmental resilience of the target population. This window will also identify and enable the most apt beneficiaries to participate in larger investment options such as those financed under Windows 3 and 4 below.

⁵⁸ The *Plan Agua* (National Water Plan) aims at substantially reducing the percentage of the population living in poverty, guaranteeing the right to drinking water and sanitation, sustainable productive development, conserving water in a state compatible with health and the environment, and improving the protection of the population against floods.



19. **Investments will aim at ensuring food safety and food security activities, as well as natural resources management by ensuring beneficiaries' access to water both for consumption and production purposes.** The component will provide matching grants to finance implementation of subprojects, including fixed capital, working capital, TA expenditures, and other investments to support the enhancement of productivity, marketing and sales. Participating communities will co-finance a percentage of the total cost of the subprojects in cash, kind, or labor, as will be specified in the POM.

20. **MAGyP has pre-identified a portfolio of potential subprojects that may be eligible for financing under Windows 1 and 2 of the Component, which exceeds US\$40 million.** This portfolio may constitute a starting point for this Project. However, these initiatives will need to be reassessed and validated under the criteria and procedures put in place for the Project to reconfirm their eligibility and priority.

Table A2.3 - Pre-identified Pipeline of Rural Livelihoods Subprojects (Windows 1 and 2)

Type of Subproject	Quantity of Subprojects	Provinces	Households of Beneficiaries	Amount (US\$)
Window 1 - Livelihoods for economic and productive inclusion subprojects	21	6	746	2,754,349
Window 1 – Livelihoods for economic and productive inclusion subprojects associated with the “Argentina Against Hunger” national plan	41	14	1,126	4,731,110
Window 2 – Small scale water investments for domestic and productive purposes (“Plan Agua” construction of wells and installation of irrigation systems)	337	13	5,297	23,154,930
Window 2 – Small scale water investments for domestic and productive purposes (“Plan Agua”, construction of rainwater harvesting cisterns)	141	3	3,035	10,622,500
TOTAL	540		10,204	41,262,889

21. **Window 3: Micro and Small Agro-industrial Enterprises Investments and Window 4: Medium Agro-industrial Enterprises Investments.** These two windows will promote commercial and export-oriented agriculture and agroindustry by attracting and leveraging investments from agro-industrial MSMEs for high value agricultural production and value addition. Eligible investments will include those undertaken via Productive Alliances, as well as investments promoting climate smart practices even outside these alliances. Funding will be channeled through agro-industrial entrepreneurship subprojects that will finance working capital, productive assets and equipment, private infrastructure and specialized technical assistance. Investments in windows 3 and 4 are expected to mobilize increasing amounts of counterpart funding and financing from the commercial banking sector and non-bank value-chain financiers (estimated to be around US\$38 million), in line with the Bank's goals of promoting PCM.

22. **For both Windows 3 and 4, the Project will finance the preparation and implementation of agro-industrial entrepreneurship subprojects.** Subproject preparation will include information campaigns, public advertisements and information workshops at national and provincial levels for matching grants program prospective applicants, as well as annual conferences to review the performance of the matching grants program. It will also finance TA to assist approved matching grant applicants in the preparation of quality investment proposals, and operating costs associated with the review and approval of grant applications by technical and financial experts.



23. **Matching grants will be provided by the Project to co-finance implementation of eligible subprojects.** To guarantee additionality, the size of the matching grant and the level of the counterpart financing required will vary according to the type of beneficiary, (micro, small or medium agro-industrial enterprise). Upstream and downstream investments in the value chains could include, *inter alia*, machinery, technologies, production practices, post-harvest activities (washing, drying, cooling, processing, aggregation, storage), and value-added certifications (Hazard Analysis Critical Control Point (HACCP), International Organization for Standards (ISO), organics, etc.).

24. **Agro-industrial entrepreneurship subproject proposals will be identified and selected through a transparent, demand-driven mechanism.** In order to promote the participation of private financial institutions and non-bank value-chain financiers in co-financing agro-industrial entrepreneurship subprojects, Windows 3 and 4 will operate under schemes of matching grants provided to Productive Alliances (PAs). The Project will foster coordination with commercial banks to facilitate access to credit opportunities and build confidence and business relationships between the producer organizations/MSMEs and commercial banks and non-bank value-chain financiers.

25. **To avoid a dispersion of ideas, expedite assessment process and maximize the possibility of finding the best proposals, Windows 3 and 4 will make use of thematic calls for proposals.** Moreover, in order to avoid market distortions by providing grants to only a reduced number of initiatives, Windows 3 and 4 will use a competitive process for awarding grants. To guarantee additionality and ownership, the size of the matching grant and the level of the counterpart contribution will vary according to the type and size of beneficiary.

26. **The expected outcomes of this subcomponent include an increase in profitable business agreements between producer organizations and agribusiness MSMEs investing in higher value agriculture production and value chains.** They will also include an increased number of producers benefitting from partnerships via increases in productivity, incomes and employment, as well as increased commercial production in value chains. Investments in agro-industrialization will help to reduce food losses, promote the adoption of climate resilient technologies; and upgrade productive processes for processing, storage, aggregation, logistics or other food safety and climate solutions (e.g., renewable energies, energy-efficient technologies and low carbon processes that are resilient to climate changes), as well as certifications that contribute to value added. Gender-sensitive and culturally sensitive interventions will be promoted that close gaps in vulnerability and are adapted to the specific needs of women and Indigenous Peoples. Agro-industrial entrepreneurship subprojects will also contribute to improving net carbon balances and increased resiliency to climate change, through strategic investments in carbon sequestration and adoption of technologies and climate smart practices, together with reduction of losses and better management of waste (see Appendix 1).

27. **It is expected that the Productive Alliances model to be used in Windows 3 and 4 will facilitate access to finance for agro-industrial enterprises and producers organizations,** since banks perceive a decrease in credit risk due a number of factors such as the commercial agreement with the buyer, TA provided for implementation (a service that commercial banks rarely offer) and additional contributions in cash as co-financing from beneficiaries, thus signaling greater ownership and commitment to the Productive Alliance.

Component 2 Eligibility criteria and Financing Limits

28. **The component will operate with separate eligibility criteria for resilient rural livelihoods (Windows 1 and 2) and agro-industrial entrepreneurship (windows 3 and 4) subprojects.** Eligibility criteria for Windows 1 and 2 will include, as applicable, the following: (i) beneficiaries must belong to the target population; (ii) proposals must be economically, technically and environmentally sustainable according to the criteria established in the POM; (iii) they must propose eligible investments established in the POM; (iv) applications must comply with the



following documentation: registration in the National Registry of Family Farmers (RENAF by its Spanish acronym) of the beneficiaries or equivalent accreditation; proof of registration with the Federal Administration of Public Revenue (AFIP by its Spanish acronym); the current statute of the applicant organization; and demonstrated tenure of the land where the investment will be developed.

29. The following investment limits have been established for financing under windows 1 and 2 of the Project:

Table A2.4 - Financing Caps for Rural Livelihoods Subprojects (Windows 1 and 2) (in US\$)

Window / subproject type	Maximum amount per household beneficiary	Maximum amount per subproject	Beneficiaries counterpart (minimum % of total subproject cost)
Window 1 - Livelihoods for economic and productive inclusion subprojects	\$ 10,000.00	\$ 250,000.00	10%
Window 1 - Livelihoods for economic and productive inclusion subprojects associated with the "Argentina Against Hunger" national plan	\$ 15,000.00	\$ 400,000.00	10%
Window 2 - Small scale water investments for domestic and productive purposes	\$ 10,000.00	\$ 250,000.00	10%

30. **Eligibility criteria for Windows 3 and 4 will include, as applicable, the following:** (i) beneficiaries must belong to the target population; (ii) proposals must be economically, technically and environmentally sustainable according to the criteria established in the POM; (iii) they must propose eligible investments established in the POM; (iv) proponents must be registered in the National Sanitary Registry of Agricultural Producers (RENSPA) or authorized by the National Service of Agri-Food Health and Quality (*Servicio Nacional de Sanidad y Calidad Agroalimentaria*, SENASA); (v) proponents must have a SME certificate issued by the competent authority; (vi) they must be registered with the Federal Administration of Public Revenue (AFIP by its Spanish acronym); (viii) they must include certificates of the last two years of tax settlement provided by the competent authority; (viii) they must provide audited financial statements (last 2 years); (ix) they must provide the current statute of the applicant organization, and (x) they must demonstrate tenure of the land where the investment will be developed (in cases requiring fixed assets). In addition, investment limits for windows 3 and 4 have been established, as shown in Table A2.5 below.:

Table A2.5 - Financing Caps for Agro-Industrial Entrepreneurship Subprojects (in US\$)(Windows 3 and 4)⁵⁹

Type (*)	Max grant (\$)	Max PA grant (% of total BP)	Counterpart (cash or credit)	Counterpart (in kind)
Window 3	Micro	\$ 250,000.00	70%	50%
	Small	\$ 400,000.00	50%	60%
Window 4	M1	\$ 550,000.00	40%	75%
	M2	\$ 700,000.00	30%	90%

(*) <https://www.argentina.gob.ar/produccion/registrar-una-pyme/que-es-una-pyme#1>

31.A **roster of private technical service providers will be established by province to facilitate the implementation of subprojects.** The technical service providers could include a wide range of specialists including private sector business consultants, consultancy firms, traders, associations, nongovernmental organizations,

⁵⁹ Typology based on a national definition (<https://www.argentina.gob.ar/produccion/registrar-una-pyme/que-es-una-pyme>)



state universities/colleges, and business management schools. They will provide TA to principal grant applicants who do not have sufficient technical and managerial capacity to prepare full investment proposals, and to support the beneficiaries in implementing the approved subproject. The technical service providers will assist with the preparation of full proposals for agro-industrial entrepreneurship subprojects. TA could be partially covered by the Project under specific criteria set out in the POM. The technical service providers will receive specific training to standardize the contents and form and to make sure they follow procedures established under the Project, including specific mechanisms for an adequate implementation of the Gender Action Plan.

32. Under this Component, some of the capacity-building activities will be carried out during the preparation phase of the subproject proposals, and others during the implementation of the approved subprojects, as follows: (i) the provision of TA to communities and organizations of small producers and rural workers, especially indigenous peoples, women and youth, aimed at providing technical support for the elaboration of subprojects, including Environmental and Social Plans; (ii) the provision of TA for improving their organizational, planning, and management capacity, especially among women, IP, and youth; and (iii) the provision of gender-based training to producer's groups and rural women. The Project will facilitate periodic dissemination activities to inform potential beneficiaries about opportunities under the Project.

33. To ensure selection transparency, all calls for proposals will be made public and will have adequate lead times. Additionally, proposals will be selected in accordance with eligibility criteria and rating sheets, with defined scores previously established in the POM and approved by the Project Evaluation Committee. The decisions of the Committee will be ratified by the Project Steering Committee, comprised of representatives of: (i) DIPROSE; (ii) MAGyP; (iii) producer organizations/MSMEs; (iv) experts or specialists in the different types of the eligible subproject (e.g., agronomy, water resources and irrigation systems, and/or agribusiness); and (v) other private and public sector institutions. All final selection decisions will be made public. Non-approved subproject proposals will receive feedback on the areas to be strengthened in their proposals and will receive visits by project technicians who will encourage and support them to participate in future calls for applications.

34. All subprojects to be supported by the four windows will be selected through detailed selection criteria that will prioritize the adoption of climate smart technologies and practices to increase resiliency, both in the production and processing activities, as well in the engineering designs for eventual works to be carried out under the subprojects. Some of the main technologies to be disseminated and promoted are presented in Box A2.1 below (see further details in Annex 3).

Box A2.1 - Component 2: Climate Adaptation and Mitigation Initiatives

Agro-industrial entrepreneurship subprojects, regardless of their type, would boost the adoption of climate-smart technologies, natural resource management and good agriculture practices. The main objective will be to reduce GHG emissions in the agriculture sector and promote climate resilience by reducing risks associated with adverse weather or natural events such as droughts, pests, hail, etc. The extent of the inclusion of CSA will be assessed at the time of evaluation of the proposal and will receive extra points contributing to their selection for financing. Examples of CSA technologies and practices are:

- Silvo-pastoralism, sustainable pasture management, climate-resilient fodder production strategies, and improved livestock management (health, genetics, feeding).
- Soil and watershed management practices that reduce erosion and limit evapotranspiration.
- Enhanced water-use techniques, including the creation or improvement of farmer-led, small-scale irrigation systems to increase the efficiency of rainfed agriculture.
- Construction or rehabilitation of water harvesting and water storage, including the individual or collective management of small-scale irrigation and drainage systems.
- On-farm irrigation technologies—primarily drip/sprinkler irrigation—that increase water productivity and savings
- Use of improved seed that are better adapted to climate change and climate variability.
- Land management practices to rehabilitate degraded areas for crop production.



- Low-cost, energy-efficient (solar) pumping systems.
- Biodigesters (with livestock manure) and facilities for composting crop residues.
- Energy-efficient cold storage, handling and processing facilities.
- Reduced fossil fuel use in power generation.
- Climate-resilient, energy-efficient infrastructure: warehouses, post-harvest storage and cold chains.
- Energy-efficient transport and machinery.
- Sale of seed varieties more resistant to climate change and variability.

35. Component 3: Innovation for a Green and Inclusive Agri-food System Transformation (Total Cost US\$75 million; IBRD loan US\$55 million; counterpart funding US\$10 million, unguaranteed commercial financing US\$5 million, local beneficiaries US\$5 million). This component seeks to strengthen the institutional capacity of the National Institute of Agricultural Technology (INTA) for it to play a key role in a sustainable⁶⁰ economic recovery and development of the country. The US\$55 million in IBRD financing to be provided under this component will finance a range of activities that support adaptation to and mitigation of climate change (see the detailed description of climate co-benefit-generating activities in Appendix 1 of this Annex).

36. Subcomponent 3.1: Institutional transformation of INTA to support an innovative and climate-smart agro-bio-industrial sector (Total Cost US\$31 million; IBRD loan US\$27 million; counterpart funding US\$4 million). This subcomponent aims to contribute to increasing INTA's stock of infrastructure and human capital. Investments will be identified, budgeted and distributed throughout the life of the Project, through an investment and institutional strengthening plan to be prepared by INTA, submitted to DIPROSE and submitted to the Bank for no objection. The plan will be updated periodically according to INTA's needs and those of the Project.

37. Infrastructure investments will be in fixed assets, durable goods, and necessary equipment to increase INTA's operational capacity and scale with the objective of strengthening their Technical Assistance (TA) services to agriculture producers and other private sector entities. INTA will provide a list of planned interventions that will increase and improve their research aptitudes following their strategic vision for 2030. This list will comprise investments in laboratories, instruments and equipment, and material structured under the three following subjects: (i) investments in technological infrastructure (hardware and software) and peripherals to increase security and capacity for data processing and storage, including infrastructure for the new data center, computer security, networking equipment, software licensing and computer equipment for INTA's operational units; (ii) investments for INTA's laboratories and the acquisition of a laboratory management system, and (iii) investments in new technologies and equipment to promote rural development and the adoption of climate-smart approaches and technologies (genomics, sensors, biotechnology, synthetic biology, nanotechnology, development of functional foods, etc.) as well as investments in specialized computerized equipment to measure emissions and perform on-site soil analysis and transport vehicles. It will also consider investments in infrastructure and equipment for the technological and energetic reconversion of some of the Germplasm Banks maintained by the institution to increase the energy efficiency involved in the preservation of genetic resources.

38. Investments in human capital will be aimed at enhancing institutional capacities in disciplinary and/or technological areas prioritized at the institutional level, increasing the number of front-line researchers in key areas, training future institutional leaders to meet the challenges posed by the future of agriculture and strengthening national and international collaboration networks. These investments are classified into six major programs: (i) doctoral scholarships; (ii) professional immersion; (iii) research fellowships; (iv) talent attraction; (v) management training, and (vi) international experts.

⁶⁰ "Sustainable" refers to environmentally, socially and economically sustainable activities.



39. **Under the Doctoral Scholarships program, scholarships will be provided to finance training of PhDs in leading universities.** Through a competitive selection process, 35 doctoral scholarships will be granted to INTA researchers in strategic areas of knowledge that contribute to the development of climate-smart agriculture technologies and practices and other key topics prioritized by the Project, within the framework of INTA's Postgraduate Program. Scholarships will be assigned following pre-established eligibility criteria that will include: (i) a definition of future project drivers; (ii) proposals for development during the training process; (iii) proposals for ex-post capacity building; and (iv) criteria of gender and balanced territorial development. At least 50 percent of the scholarships will be awarded to women. Further guidelines, criteria and mechanisms for scholarship granting will be included in the POM.

40. **The Professional Immersion program will involve immersion in specialized universities and training centers to ensure INTA's professionals acquire innovation management skills.** Around 80 INTA professionals will be immersed in leading international institutions (e.g., Stanford, MIT, Santa Fe Institute, Wageningen, Sussex, Manchester, VTV, etc.) to acquire skills related to knowledge management and innovation and/or in the development of new technologies. This initiative will allow INTA to form and train interdisciplinary managerial teams that, in turn, will promote and lead innovation projects and take on promising initiatives that appear in the future with the required agility, flexibility, and expertise. It is expected that the trained professionals will become aware of the dynamic of the agriculture technology markets and will be prepared to develop rapid responses to new opportunities that arise at the institutional level.

41. **Under the Research Fellowships program, 25 scholarships will be awarded via a competitive selection process to INTA PhDs or doctoral students to carry out research stays in leading universities and/or technology centers.** The duration of these fellowship programs is expected to be of a maximum of 1 year. Allocations will be based on eligibility criteria that will include the presentation of technological adoption projects in prioritized areas, gender equity and balanced territorial development. These research fellowships will allow INTA to establish institutional connections with leading international research centers, facilitating information exchange opportunities and sustained cooperation in innovation projects. They will also encourage foreign researchers to develop their research in Argentina as part of exchange programs that will strengthen INTA's network while broadening the scope of its internationalization strategy.

42. **Under the Talent Attraction program, scholarships will be provided to attract talent to cover critical gaps in current institutional capacity and skillsets.** Through a competitive selection process, 25 scholarships will be awarded to university students or recently graduated professionals from national universities for the development of institutional projects in critical areas where INTA is currently facing knowledge gaps (for example, programmers for genomic sequencing, statisticians specialized in Big Data, recent graduates with a degree in data science, specialists in soil management, etc.). INTA has a strong proportion of its specialized workforce near retirement age thresholds and is facing a shortage of experts in critical areas in the short term. Replacement of these specialists is essential to guarantee the continuity of certain teams and the provision of key services in areas for which sudden personnel rotation will be a critical liability. This scholarships program will help INTA renovate its workforce, facilitate generational replacement and retain necessary knowledge, skills and know-how.

43. **The Management Training program will involve in-company training sessions for which internationally renowned academics and executives will be invited.** This initiative will target INTA's middle management, amounting to approximately 800 employees. The training will be aimed at strengthening: (a) management of innovative organizational models in science and technology; (b) teamwork via networks and open platforms; (c) knowledge management in disruptive areas, and (d) valuation and capitalization of institutional innovations. INTA will develop a comprehensive middle management training program based on this activity, producing all the necessary content to escalate it, using educational technology platforms that expand the beneficiary base through



different cohorts and provide synchronous and asynchronous access to all the material for the personnel located across the country.

44. **The International Experts program will involve hiring R&D leaders from outside of the institution to lead and manage specific emerging projects.** This initiative will be expected to directly benefit 1,000 direct employees of INTA. The institution will acquire the services of world-class specialists in areas of strategic importance to lead and manage areas of investment for which INTA lacks proper management resources.

45. **INTA will define the terms and conditions of the agreements between the institution and the beneficiaries of any of the initiatives financed under Subcomponent 3.1.** In the case of PhD training programs, beneficiaries will have to agree to return to the country to work for the institution after the completion of their study programs for at least the same duration of their scholarship, in which they will contribute to technical development of the institution based on their area of expertise. For the rest, the considerations for each beneficiary will correspond to the nature of the support involved and will reflect INTA's strategic goals and objectives, as well as the beneficiaries' future role in the institution. The selection process will be defined by a comprehensive policy that will cover each of the investments groups detailed above, attending to their specific goals and objectives. In this sense, INTA will define the eligibility criteria and selection process beforehand for each type of investment, as well as the scope and expected results of each of them.

46. **Subcomponent 3.1 will also assign specific resources to finance researchers' incentives to file for new patents and publications in peer reviewed journals and editorials.** To increase research efforts, INTA will reward its researchers per citation outside the institution in peer reviewed publications. A monetary bonus will be established to implement this incentive system. This activity will help to strengthen INTA's patent portfolio, review its licensing and royalty agreements, and revamp the revenue generating units of the institution. The funds will also allow INTA to hire the services of intellectual property (IP) specialized attorneys, consultants, economists and engineers to redesign INTA's strategy on intellectual property of technology and know-how.

47. **Subcomponent 3.2: Agri-food Tech ecosystem investments.** Through direct investments in Agri-food Tech⁶¹ startups and MSMEs, this subcomponent will support the development of innovative enterprises in the field of agriculture technology with a focus on climate smart agriculture. Expanding and accelerating the country's scientific and technological know-how for the development of new agriculture technologies requires the participation of strategic investors that can boost and accelerate growth in an increasingly competitive industry. In this sense, the activities executed in this subcomponent will leverage existing Agri-food Tech capacity and scientific knowledge of the country from private sector, universities, nongovernmental organizations, and INTA.

48. **Subcomponent 3.2 will build on INTA's Incubator-Accelerator Platform initiative⁶².** This will enable INTA to have a more systematic approach to supporting joint private-public Agri-food Tech innovation initiatives, building their capacity to accompany entrepreneurs, private researchers, and companies primarily from the early stages of product/service development to the investment stage. Currently INTA's capacity is limited in this space of entrepreneurship and Agri-food Tech private investors, so a capacity building program for INTA will be included in this subcomponent, to ensure that the new mandate can be fulfilled. This capacity building program will be based on inputs obtained from cooperation agreements with investment funds and accelerators, which will provide INTA access to resources and networks in the innovation investment ecosystem.

49. **This subcomponent will finance strategic Agri-food Tech investments through four windows:** (a) Window 1 - Incubation: this window will finance the incubation of innovative agriculture and food-oriented businesses

⁶¹ Agri-food Tech refers to a segment of the startup and venture capital universe that's aiming to improve or disrupt food and agriculture industry. Defines the innovation taking place across the food supply chain, not just at either end per "Agtech" and "Foodtech".



under INTA's Enterprise Incubation Program; (b) Window 2 - Acceleration: this window will finance Agri-food Tech MSMEs with at least two years of experience in developing innovative business lines that require support with acceleration; (c) Window 3 - Venture/risk capital: this window will provide, and seek to attract, venture capital financing for expanding the activities of innovative Agri-food Tech businesses; and (d) Window 4 - Innovation Challenge Funds: this window will support open competitions and challenges to finance individual entrepreneurs/innovators who are in the ideation/prototype phases of developing solutions to specific problems related to climate-smart agriculture development.

50. For the first three windows, the Project will award matching grants to the beneficiaries (Agri-food Tech MSMEs) with the most innovative and impactful proposals, so that they can leverage further private investment (equity or credit). For the fourth window, grants will be awarded primarily through open competitions and challenges where solutions to specific problems related to climate-smart agriculture development will be submitted and an interdisciplinary, inter-stakeholder panel will evaluate and select the most promising proposal. The investment policy statement will define the rules for the fund managers, general goal and objectives, investment eligibility criteria, risk tolerance and liquidity. The selection criteria will need to include the four main areas of focus of this subcomponent: climate change, competitiveness, digital tech, and MFD, while ensuring the inclusion and outreach for participation from family farmers, women, youth and indigenous peoples. Investments in Subcomponent 3.2 will include studies, matching grants and a matching fund.

51. The first three Windows involve scaling up INTA's incubator-accelerator initiative while the fourth window will support an Innovation Challenge Fund. The incubator-accelerator initiative involves a public-private partnership that leverages private capital to increase the pool of investment capital available to small Agri-food Tech MSMEs. INTA will take advantage of its access to the talent of professional investment fund managers to identify and finance promising Agri-food Tech. INTA will then leverage capital raised from private investors, such as banks, pension funds or high net-worth individuals. Every US\$1 raised by INTA from investors will be matched with a US\$1 grant from the Project. The Agriculture Fund manager will be able to assemble a portfolio of long-term investments in Argentinean Agri-food Tech. When the investments are realized, INTA will implement an exit strategy for each SME so they can graduate towards 100 percent private financing.

52. To undertake this work, an incubator/accelerator/fund will be contracted (or a partnership will be signed) to help develop the Agri-food Tech MSMEs that are part of INTA's incubator program. The support to the Agri-food Tech MSMEs will be provided via matching grants, based on a subproject proposal that they will present under the respective window. These subproject proposals will be evaluated by the incubator/accelerator/fund and reviewed by a committee of experts from INTA and other public or private sector institutions. The selection of Agri-food Tech Investments will follow the same approach of the productive alliance projects, but the universe of participants will be reduced to those already within INTA's program. INTA currently manages two incubators in two different locations: INCUVA in Rafaela, Santa Fe and INCUITA in Castelar, Buenos Aires. The objective at the end of the proposed Project is for INTA to have a total of five running business incubators/accelerators throughout Argentina. Each incubator/accelerator should support at least four new initiatives per year. The role of an incubator is to facilitate the birth of a company and its commercial expansion. Accelerators focus on speeding up the growth of existing companies that already have a minimum viable product.

53. Investing alongside Agri-food Tech SME risk capital funds will enable reaching out to the broader Agri-food Tech ecosystem of Argentina and the region. For this first three windows, INTA will procure services from a private sector incubator/accelerator that will act as a general strategic partner. INTA's goal is to learn from international best practices in the entrepreneurial and private sector. The Accelerator should have previous experience in the design of food and agriculture innovation ecosystems. In addition, the Accelerator should also have active and successful experience as a Risk Capital Fund.



54. **The fourth window will be a fund for Agri-food Tech Innovation Challenges and Competitions (AICC).** This will be done through a team of individual consultants/experts to be hired by the MAGYP (and/or INTA) to identify the various problems and opportunities of the agriculture sector that could be addressed through new technologies, and then translate those into actionable call for proposals. The calls can be challenges or competition to crowdsource the most innovative initiatives available. This window will include the financing of awards to motivate participation from individuals, especially those who are not close to any urban center.

55. **Technical Investment Committee (TIC).** INTA will establish a Technical Investment Committee to review and approve matching grants under Subcomponent 3.2. The Technical Committee will be composed of value chains/agribusiness specialists, environmental and social specialists, technology and financial sector representatives, as well as one to three external experts selected on an *ad hoc* basis, depending on the type of proposal-investments to be considered. The Technical Committee will review and approve proposals based on the eligibility criteria for this Subcomponent.

56. **Eligibility criteria: Detailed eligibility criteria will be developed in the Project Operations Manual (POM), ensuring the prioritization of climate smart innovations as well as the participation of women, youth, and indigenous peoples.** For all eligibility criteria to be defined under this subcomponent, the minimum standards will be set following Argentine Law 24.647 and Resolution 19/2021 of the Ministry of Production, regarding the particular conditions that will apply. The maximum amount of public financing for innovation grants is set at US\$350,000.

57. **All prospective companies will have to comply with the following requisites, *inter alia*:** (i) be willing to work with the INTA team, advisors, and mentors on development of the company; (ii) be located in Argentina; (iii) have 50 percent or more of their employees in Argentina; (iv) have a business plan, or and executive summary (or be willing to work to complete one); (v) have a management team in place or under development; (vi) be a growth-oriented, for-profit company with potential for job creation; (vii) show sufficient income or capital commitment to complete the incubation process; (viii) be willing to hire from low-to-moderate income wage earner pool whenever possible; (ix) not be a defendant in litigation; (x) have no past-due debts to a federal or state agency, and (xi) have no outstanding federal or state tax liens.

58. **For the AICC, a model of open calls for innovation along the lines of the United States Small Business Innovation Research (SBIR) will be designed.** It is expected that at least two yearly AICCs will be implemented. The detailed AICC general cycle will be described in the POM.



Figure A2.1 - Agri-food Tech Innovation Challenges and Competitions (AICC) general cycle



59. **Component 4: Project Management and Evaluation (Total Cost US\$10 million IBRD loan US\$5 million; counterpart funding US\$5 million).** This component will support DIPROSE that is currently responsible for implementing and managing all programs and projects with external financing under the responsibility of the MAGyP, thus avoiding the multiplicity of similar structures for each project, and allowing the efficient, effective and pertinent integration of the different sources of financing and public investments with policy actions. DIPROSE has been in charge of implementation of all Bank-supported projects in its current portfolio and is managing a large portfolio of projects for several other key development institutions and funds. Component 4 will partially finance enhancing DIPROSE's capacity to effectively execute the roles of fiduciary management, planning, M&E, training, legal services and implementation of environment and social standards. This component will finance goods, consultancies, training and other services and it will also finance a baseline assessment, mid-term and end evaluations for assessing the Project's final results and effectiveness in achieving the intended outcomes (Borrower's final report). In addition, the component will support carrying out strategic evaluation activities in coordination with the Secretariat for Strategic Affairs (SAE), as the agency responsible for technical-methodological advice and oversight⁶³. The US\$5 million in IBRD financing to be provided under this component will include financing for activities that support adaptation to and mitigation of climate change (see the detailed description of climate co-benefit-generating activities in Appendix 1 of Annex 3).

60. **Component 5: Contingent Emergency Response Component - CERC (US\$0 million).** The objective of this component is to provide immediate response to an Eligible Crisis or Emergency, should one arise during the life of the Project. The CERC is one of the Bank's contingent financing mechanisms available to Borrowers to gain rapid access to Bank financing to respond to a crisis or emergency. As a project component, it is designed to provide

⁶³ The strategic evaluation activities to be carried out in coordination with the SAE focus on generating evidence on the contribution of the international financing strategy to: (i) the achievement of the Sustainable Development Goals; (ii) the priority guidelines of the public sector's management and (iii) the achievements achieved in terms of institutional strengthening of the National State and the Jurisdictions.



swift response in the event of an eligible crisis or emergency, 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.” The mechanism for the triggering of the CERC will be included in the CERC Manual, detailing the applicable fiduciary, environmental and social, monitoring, reporting, and any other implementation arrangements necessary for the implementation of the proposed activities to be financed. In case of an event triggering the component, a reallocation of funds will be introduced to loan disbursement categories, to be able to fund the proposed activities under this component in order to be able to respond to the emergency. The implementation agency for this CERC will be determined in accordance with a CERC Manual.

Table A2.6 - Costs and Financing Sources Estimates by Component (in US\$ million)

Components	IBRD Loan	Counterpart	Private Beneficiaries	Total Costs
1. Public Infrastructure for Agro-industrial Development	200	50		250
• Public infrastructure investment subprojects	196	50		246
• Pre-investment, studies and technical assistance	4			4
2. Agro-industrial Development and Strengthening of Rural Livelihoods	140	35	40	215
• Window 1: Livelihoods for Economic and Productive Inclusion	41	15	6	62
• Window 2 : Small scale water investments for domestic and productive purposes	40	10	6	56
• Windows 3 and 4 : Micro, Small and Medium Enterprise Investments (Productive Alliances)	45.5	6	28	79.5
• Windows 3 and 4 : Micro, Small and Medium Enterprise Investments (Non-Reimbursable Support, ANR)	4.5	1		5.5
• Technical assistance	9	3		12
3. Innovation for a Green and Inclusive Agri-food System Transformation	55	10	10	75
3.1 Institutional transformation of INTA to support an innovative and climate-smart Agro-bio-industrial sector	35	7		31
• Infrastructure and Equipment Investment	23	5		17
• Institutional of Human Capital	12	2		14
3.2 Agri-food Tech ecosystem investments	20	3	10	33
• INCUVA-INCUINTA Program	8	3		11
• Co-investments for Agricultural Innovation	12		10	22
4. Project Management and Evaluation	5	5		10
• Project Management	2	5		7
• M&E, Strategic Studies and Knowledge Management	2.35			2.35
• Strategic evaluation and Borrower's Final Report	0.65			0.65
5. Contingent Emergency Response Component-CERC	0	0		0
TOTAL	400	100	50	550



ANNEX 3: CONTRIBUTION TO CLIMATE MITIGATION AND ADAPTATION

Component 1: Public Infrastructure for Agro-industrial Development (IBRD US\$200 million)

1. **Subprojects for irrigation/water management (estimated at around US\$80 million from loan proceeds)** will be promoted to protect agricultural activities against climate-induced water scarcity, as well as improving drainage and reducing flood risks in vulnerable areas. This includes investments such as water efficient irrigation systems that substantially reduce energy use; rehabilitating irrigation infrastructure (such as canals to reduce leakages and improve water availability and conveyance efficiency), and integrated watershed management practices to increase water use efficiency and improve the resilience of rural communities, livelihoods and the agriculture sector. The improved operation and maintenance activities included in the subprojects will improve energy efficiency, water savings, complement wastewater treatment programs, and/or be a part of an overall program to improve operation and maintenance across the region.
2. **Subprojects for roads rehabilitation (estimated at around US\$44 million from loan proceeds)** will improve farmers' resilience to climate change via improved road serviceability under extreme events, reduced transportation costs, reduced product post-harvest losses, and enhanced food waste utilization (circular economy systems), as well as avoided food losses along the value chain (e.g., via better managed cold-chain infrastructure to reduce crop or food spoilage).
3. **Subprojects for expansion and improvement of electricity distribution (estimated at around US\$34 million from the loan)**, which will mostly involve reservoir hydropower, geothermal energy, bioenergy or solar/wind energy, will reduce the use of fossil fuels for energy generation, pumping systems, etc., and will promote the reduction of food loss and waste once refrigerated conservation mechanisms are established.
4. **Subprojects for internet connectivity and services (around US\$38 million of loan funds)** will enable farmers to access climatic information systems to support decision-making and implement preventive measures in the face of hazardous extreme climate/phytosanitary events. Digitization of service delivery will lead to a substantial reduction in travel or material use and enable a substantial reduction in net GHG emissions over the long term. Potentially eligible activities include the application of e-government, tele-medicine, mobile banking and tele-working.
5. **Cross-sectoral technical support activities and actions (at least at US\$4 million of loan funds) will be provided.** All support for the formulation and implementation of subprojects will include technical assistance to promote CSA and agricultural productivity enhancements like crop diversification and agricultural technologies, or practices that reduce non-CO₂ GHG emissions (e.g. reduction in fertilizer use, etc.), capacity building (training for farmers and water user organizations, and capacity building at the institutional level), as well as water management practices to improve the water use efficiency. All these activities will contribute to the sustainable adoption of climate smart technologies and practices in the long run.



Table A3.1 - Summary of Climate Adaptation and Mitigation Approaches to be Implemented under Subprojects in Component 1

Action/Practice/Technology	Type of Subproject	Contribution to Climate Change
Rehabilitation of irrigation systems to improve energy efficiency, increase water conveyance efficiency and improve water availability	Irrigation	Adaptation and mitigation
Water management practices to increase the resilience of the agriculture sector to climate change impacts		Adaptation
Promotion of agricultural technologies or practices to improve water productivity and reduce non-CO ₂ GHG emissions (reduction in fertilizer use, implementation of CSA, etc.)		Adaptation and mitigation
Improvement and rehabilitation of roads that would serve under any climatic condition, avoiding post-harvest losses	Connectivity: Rural Roads	Adaptation and mitigation
Improvement and rehabilitation of roads that would reduce fuel consumption and its cost		Mitigation
Use of other energy sources (hydropower, geothermal energy, bioenergy or solar/wind) that would contribute towards reducing the use of fossil fuels for energy generation	Connectivity: Electrification	Mitigation
Enabling refrigerated conservation of products, thereby reducing food loss and waste		Adaptation and mitigation
Development of internet connectivity and ICT services that would allow the widespread use of digital technologies, improving access to climate information and broaden e-services	Connectivity- Internet access	Adaptation and mitigation

Component 2: Agro-industrial Entrepreneurship and Resilient Rural Livelihoods (IBRD loan US\$140 million)

Window 1: Livelihoods for economic and productive inclusion (US\$41 million from loan proceeds)

6. **This window will increase the Project's overall climate resilience by implementing subprojects that will promote⁶⁴ climate smart agriculture and energy efficient practices and technologies.** These will, in turn, increase agricultural productivity and sources of income. Specifically, the subprojects will allow farmers to access drought-tolerant crop seeds, soil and water management practices in the context of droughts and high temperatures, crop diversification options and technical assistance and training for the implementation of climate-smart options like climate smart agronomic practices, nutrient management, reduced tillage, crop residues retention, use of organic materials, as well as the proper use of productive inputs with a view to reducing the misuse of pesticides and fertilizers.

7. **Through this window, the Project will also promote activities and practices that improve carbon pools (such as beekeeping, agroforestry, etc.)** and that promote the rehabilitation of degraded lands, water retention and avoid fire in forest and natural grasslands and promote integrated landscape and natural-resource management, including natural forest management. Investments in pasture management and animal health will increase resilience to climate change risks as they will seek to avoid major long-term loss of productivity and vegetation cover, severe mechanical damages of natural vegetation and soil erosion. All these investments will contribute to improving net carbon balances.

Window 2: Small scale water investments for domestic and productive uses (US\$40 million from loan proceeds)

8. **This window will finance subprojects that will translate into integrated sustainable management of water, soil, and associated plant and animal nutrition issues, leading to increased agricultural productivity, climate**

⁶⁴ Promotion of CSA under Windows 1, 3 and 4 would be made with selection criteria under each call for proposal by prioritizing subprojects that implement CSA approaches. Further details on selection criteria and methods would be included in the Project Operations Manual.



resilience and reduced GHG emissions. Subprojects will provide water-use efficiency improvements via the implementation of modern irrigation systems and methods and protect farmers and households against climate-induced water scarcity in farms and households and higher evapotranspiration rates. Investments in rainwater harvesting practices/techniques, capacity building, and training for water conservation will also be provided.

Windows 3 and 4: Micro, Small and Medium Enterprise Investments (US\$50 million from loan proceeds)

9. **These two windows seek to promote commercial and export-oriented agriculture and agroindustry by attracting and leveraging investments by agro-industrial MSMEs in high-value agriculture production and value addition.** Funding will be channeled through climate-informed investment subprojects for commercially oriented Productive Alliances, financing working capital, productive assets and equipment, private infrastructure and specialized technical assistance.

10. **Climate change, including variability and extreme events, is a pervasive source of risk to agro-industrial business development.** Subprojects will promote partnerships between groups of producers and commercial partners, and climate smart agri-food initiatives, while collective action will help producers to address the climate change challenges and promote sustainable business development. Agricultural sector MSMEs will be expected to shift from business as usual to investing in better adaptation to climate variability and shocks by implementing climate-risk mitigation measures and being more proactive in seeking climate mitigation benefits.

11. **Investment Subproject will include energy efficient infrastructure and renewable energy technology** (such as solar energy, biogas productions, etc.). These will provide sustainable development and mitigation benefits, and enhance the resilience of MSMEs by generating savings in energy costs; storage facilities to reduce exposure and susceptibility of commodities to extreme weather conditions; cold facilities for food security to withstand increasing temperatures; climate resilient infrastructure in value chains (warehouses, access to markets, effluent treatment, biogas production, etc.); and capacity building for farmer organizations and institutions on climate-smart value chain development.

Mechanisms for ensuring climate smart technology adoption in Windows 3 and 4 (estimated at around US\$ 9 million of loan funds)

12. **Capacity building will be provided for Micro, Small and Medium enterprises (MSMEs).** Additionally, technical assistance funds will be integrated to ensure that subproject formulation and implementation integrate climate change adaptation and mitigation strategies. This will result in the enhanced resilience of vulnerable MSMEs, through awareness raising and the integration of climate risks in investment subprojects.

13. **Many MSMEs suffer significant financial losses due to climate-related hazards and impacts but are not quantifying losses versus the costs of adaptation and thus are not aware of the business case for adopting climate resilient measures.** Thus, their investment subprojects do not reflect the impacts of climate change accurately. The Project will identify the most vulnerable MSMEs via screening processes and support them in quantifying historical losses and projected risks so as to understand the economic impacts of climate change on their businesses. In response, the Project will provide several options for technical assistance:

- a. Training on analytical tools and methods for analyzing risk and incorporating mitigation strategies into investment subprojects;
- b. Demonstrating the business case for risk management for vulnerable MSMEs;
- c. Supporting the implementation of risk management tools for vulnerable MSMEs;
- d. Applying Climate Resilient Value-chain Analysis tools to business planning;
- e. Conducting training workshops on climate risk and vulnerability assessment and integrating measures to reduce climate risks in their investment subprojects.



Table A3.2 - Summary of Climate Adaptation and Mitigation Approaches to be Implemented under Subprojects Included in Component 2

Practice/technology	Window	Contribution to Climate Change
Soil and watershed management practices that reduce erosion and evapo-transpiration	1,2	Adaptation
Enhanced water-use techniques, including the creation or improvement of farmer-led, small-scale irrigation systems to increase the efficiency of rainfed agriculture	1, 2	Adaptation
Construction or rehabilitation of water harvesting and water storage, including the individual or collective management of small-scale irrigation and drainage systems	2	Adaptation
On-farm irrigation technologies—primarily drip/sprinkler irrigation—that increase water productivity and savings	1,2	Adaptation
Use of improved seed or crops that better adapt to climate change and climate variability	1,2	Adaptation
Land management practices to rehabilitate degraded areas for crop production	1,3,4	Adaptation and mitigation
Low-cost, energy-efficient (solar) pumping systems	1,2,3,4	Mitigation
Elaboration and implementation of organic fertilizers and avoid misuse of pesticides and synthetic fertilizes	1,2	Adaptation and mitigation
Energy-efficient cold storage, handling, and processing facilities	3,4	Adaptation and mitigation
Climate-resilient and energy-efficient infrastructure: warehouses, post-harvest storage, cold chain	3,4	Adaptation and mitigation
Silvo-pastoralism, sustainable pasture management, climate-resilient fodder production strategies, and improved livestock management (health, genetics, feeding)	1,2	Adaptation and mitigation
Implementation of integrated landscape and natural-resource management, including approaches that avoid fire in forest and natural grassland	1,2	Adaptation and mitigation
Application of agro-ecological principles, nutrient management, reduced tillage, crop rotations, and permanent soil cover.	1,2	Adaptation and mitigation
Use of biodigesters (for livestock manure) and facilities for composting crop residues	1,3,4	Mitigation
Formulation of climate-informed Productive Alliances	3,4	Adaptation and mitigation

14. The proposed Project will develop advocacy materials on mainstreaming climate change. Developing the tools and methods for risk assessment and risk management is already relatively advanced but rarely practiced. It needs to be recognized and promoted by investors and become standard and expected in business planning. The Project will emphasize the development of knowledge solutions and capacity development support, as well as



targeted climate vulnerability assessment methods; sector-specific climate proofing methods; decision frameworks for private sector adaptation planning, practical business models and tools to help MSMEs to become more climate-resilient by anticipating and preparing for climate-related threats to their assets and value chains.

15. Tools will be developed to help MSMEs, including to: (i) anticipate damage and build resilience to extreme weather events (including severe wind, flooding, and drought); (ii) assess and modify production practices in response to changing climates (e.g., shifting crops, irrigation methods, or planting schedules in the case of the agro-industry); (iii) build climate resilience into value chains; (iv) manage basic service interruptions (such as electricity and water), and (v) manage water at production sites, among a host of other interventions. Expected activities under this strategy could include:

- a. Collection of key data for climate change research and decision-making, and the development of databases, data homogenization and data sharing. The Project will support efforts related to information generation, collection and management for analyzing climate change impacts as well as final energy use.
- b. Studies on climate change. The Project will provide support for specific studies on climate change mitigation and adaptation that could benefit Argentinian MSMEs, including sectoral analyses and analyses of the economic impacts of climate change.

Component 3: Innovation for a Green and Inclusive Agri-food System Transformation (US\$55 million from loan proceeds).

16. Component 3 will finance INTA's capacity building to increase climate resilience in the agriculture sector. Subcomponent 3.1 (**with estimated investments of US\$27 million**) will include climate-resilient infrastructure in line with best international practices for energy efficiency or that are supplied largely by on-site renewable energy generation. Subcomponent 3.2 (**with estimated investments of US\$20 million**) will promote Agri-food Tech ecosystem public/private investments and disseminate climate-smart approaches and solutions.

Table A3.3 - Summary of potential climate adaptation and mitigation approaches to be implemented under subprojects included in Component 3

Action/Practice/technology	Subcomponent	Contribution to Climate Change
Investments in energy efficient infrastructure (rehabilitation and new constructions of INTA, germplasm banks, etc.)	3.1	Mitigation
Technical activities to provide training to farmers and disseminate climate-smart agriculture techniques	3.2	Adaptation and mitigation
Build capacity at the institutional level (INTA) on climate-smart practices that lead to GHG emission reduction	3.2	Mitigation
Development of new policy actions and technologies to scale-up CSA adoption	3.2	Adaptation and mitigation

17. Investments in equipment and technology at INTA regional centers will seek to provide the research facilities with state-of-the-art technological infrastructure. This implies the use of the most efficient and sustainable hardware available to renew the IT networks, as well as key equipment to perform innovative research methods in food and agriculture science. Equipment in IT technology and infrastructure will help INTA reduce the cost of maintaining decentralized servers and networks with the benefit that this will bring in terms of electric consumption and electronic waste. On the other hand, investment in state-of-the-art laboratory equipment will help gain efficiency in time and resources spent for research, including electric consumption, water management,



and disposable inputs. In this sense, climate Co-Benefits will not only be derived from the operational enhancement of the research facilities, but also from the new and innovative research on food and agriculture science productivity that those centers generate and that will be shared with the private sector through different knowledge transfer programs.



ANNEX 4: GENDER GAPS AND ACTION PLAN

A. Institutional gender framework

1. **This annex is prepared based on a study of gender gaps in the Argentine rural and agri-food sector, as well as on a Gender Action Plan for this Project.** These are presented in a synthetic way, considering information that contributes to the adoption of measures for the empowerment of women through the components of this Project. Both documents will be available for the final design of the PAD and for the implementation of the Project.
2. **The Ministry of Women, Gender and Diversity (MMGyD, for its Spanish acronym), created in 2019, is responsible for the design, execution and evaluation of national public policies related to gender, equality and diversity policies, to prevent, eradicate, and repair GBV and to fully assist victims.** It coordinates actions with other ministries and with provincial and municipal governments to ensure the mainstreaming of these policies in all actions and levels of execution in the different sectors and territories. The National Plan for Equality in Diversity (2021-2023), the main planning instrument of this Ministry, includes actions aimed at the rural population. In August 2021, the National Program for Strengthening the Gender Perspectives in Rural Development “*Sembrando Igualdad*”, was launched to reduce inequality in access to and control of economic, social and cultural resources for the full development of women and LGBTI+ in rural areas.
3. **In November 2020, the MAGyP created the Unit for Mainstreaming the Gender Perspective to promote gender equality in all areas of interest of the national portfolio.** It is currently leading the Comprehensive Plan for Women in Peasant and Indigenous Agriculture, “*En nuestras manos*”, which is being overseen by the Secretariat of Family, Peasant and Indigenous Agriculture (SAFCI) and DIPROSE through the PROCANOR Project financed by the International Fund for Agricultural Development (IFAD). Additionally, in its Strategic Plan 2015/2030, INTA proposes the promotion of gender equality and better living conditions for children and adolescents. The Gender and Childhood and Adolescence Platform was created, consisting of a space for the articulation of capacities and coordination of actions between the different actors that make up the Argentine Agro-industrial System, as well as institutions and government agencies at the national and international level.

B. Gender gaps in rural areas

4. **According to data from the National Registry of Family Agriculture (RENAF) as of August 2020, 45 percent of the people registered as family farming units are women, and only 10 percent of these identify themselves as female heads, generally due to the absence of a male in their unit.**⁶⁵ On farms, women represent 21 percent of those responsible (producers and partners) for farming, while 38 percent of the total population residing on farms are women and 62 percent are men.⁶⁶ Women have a direct relationship with the maintenance and development of agricultural activities since they are responsible for farms' production for own consumption. On the other hand, men are employed seasonally on large farms or in other economic activities, which forces them to emigrate temporarily. Women are also employed on plantations and in value-adding activities such as packaging and processing of products, although to a lesser extent. The Argentine agricultural model reveals an asymmetry between men and women in accessing technology, credit, machinery, income, capital and, fundamentally, rural property.⁶⁷

⁶⁵ Secretary of Rural and Indigenous Family Agriculture (2020). *Plan Integral para las Mujeres de la Agricultura Familiar, campesina e Indígena “Plan En Nuestras Manos”*.

⁶⁶ INDEC (2021). National Agricultural Census 2018. Final Results. April 2021.

⁶⁷ Secretary of Rural and Indigenous Family Agriculture (2020). *Plan Integral para las Mujeres de la Agricultura Familiar, campesina e Indígena “Plan En Nuestras Manos”*.



Time use

5. **In Argentina, women work 7 hours more per week than men when considering both paid and unpaid hours of care tasks.**⁶⁸ In rural areas, women spend up to 14 more hours in caregiving tasks than men, revealing the gap between rural and urban conditions. This gap intensified during the pandemic, since women's unpaid care tasks increases by around 4 hours at the same time that agriculture production increased, placing double pressure on rural women.⁶⁹ The presence of children at home widens the gap in the distribution of unpaid work: women without children under 6 years of age perform 5 percent fewer care tasks than women who have two or more children in their care.⁷⁰

Labor market and economic autonomy

6. **The participation of women in the labor market is lower than that of men by 21 percentage points (49.2 percent vs. 71.2 percent, respectively)⁷¹ and the employment rate of women is 39.4 percent compared to 57.7 percent of men.**⁷² Young women from the age of 14 participate less in the labor market than men of the same age. Intensive cash crops, especially in value chains such as fruits, vegetables and flowers, are a source of paid employment for some rural women. Salaried women in the rural sector represent 17.7 percent of the total permanent agricultural wage earners,⁷³ while the majority participate in peasant and indigenous family farming. In this, their contributions are not usually considered agricultural work, as they are associated with domestic and care tasks. The absence of remuneration generates income inequality and conditions of economic dependency for rural women. Additionally, while 16.8 percent of women do not have their own income, only 10.6 percent of men are in the same situation.

Financial services

7. **In Argentina, there is a gap of 8 percentage points in access to bank credit: 44 percent for women and 52 percent for men, even though the female segment has a level of repayment compliance that is around 3 or 4 points higher.**⁷⁴ This situation is aggravated further for rural women because they lack security of land tenure (and property title), which makes it difficult for them to offer the guarantees required by the traditional financial sector. This is even more limiting if they belong to indigenous communities, where the majority live on collective community lands.

Digital Information and Communication Technology (ICTs)

8. **In 2019 there were 120,586 people dedicated to R&D activities, of whom 75 percent were researchers, of whom in turn 53 percent were women.** Only 9.6 percent of researchers come from agriculture-related disciplines, being the least represented discipline among researchers. Women run 55 percent of current projects in agriculture

⁶⁸ National Directorate of Economy, Equality and Gender (2020): “*Las brechas de género en la Argentina. Estado de situación y desafíos*”. Recovered from: https://argentina.gob.ar/sites/default/files/las_brechas_de_genero_en_la_argentina_0.pdf

⁶⁹ Secretaria de Agricultura Familiar Campesina e Indígena (2020). *Plan Integral para las Mujeres de la Agricultura Familiar, Campesina e Indígena “Plan En Nuestras Manos”*.

⁷⁰ National Directorate of Economy, Equality and Gender, Secretary of Economic Policy and Ministry of Economy. 2020. *Los cuidados: un sector económico estratégico. Medición del aporte del Trabajo doméstico de cuidados no remunerado al Producto Interno Bruto*.

⁷¹ National Directorate of Economy, Equality and Gender (2020): “*Las brechas de género en la Argentina. Estado de situación y desafíos*”, Dirección Nacional de Economía, Igualdad y Género. Recovered from: https://argentina.gob.ar/sites/default/files/las_brechas_de_genero_en_la_argentina_0.pdf

⁷² National Institute of Statistics and Censuses (2021) Statistical Dossier in commemoration of the 110th International Women's Day.

⁷³ Ministerio de las Mujeres, Género y Diversidad. 2021. *Plan Nacional de Igualdad en la Diversidad 2021-2023*.

⁷⁴ Martínez, P. (24 de julio del 2020). *Mujeres con menos protagonismo en la inclusión financiera – Argentina*. Educación Financiera. <http://www.educacion-financiera.org/actualidad/mujeres-con-menos-protagonismo-en-la-inclusion-financiera-argentina/>



science funded by the public sector, and 53 percent of the overall projects financed by the public sector.⁷⁵ Women researchers outnumber male researchers in the public sector (54.4 percent) but lag behind them in private companies (31 percent). Rural women producers face important barriers to accessing technology: (i) lack of connectivity, since only 57 percent have internet at home; (ii) reduced availability of equipment for digital communication; (iii) limited skills for the use of digital technologies/Agtech; and (iv) lack of a gender perspective in projects and technological innovations and in the technical assistance services of the institutions in charge.^{76,77}

Association and leadership

9. **A study of the status of young rural women in Argentina (2015) confirmed their active participation in organizations, in which they are often the majority.** In part, they step in for men who emigrate or are overworked in off-farm jobs. On the other hand, in recent years, significant empowerment processes have taken place, generating greater awareness of the importance of women's active participation.⁷⁸ This increase in women's participation was evidenced in the PISEAR Project, where 35 percent of the organizations were constituted by women. Additionally, the management bodies of the representative entities of the agricultural productive sector at the national level reflect a great disparity in favor of men. Of the 12 entities studied, only 7.3 percent of the total existing management positions are held by women and only half have women in their management bodies.⁷⁹

Gender Action Plan

10. **This Plan aims to ensure that the Project contributes to closing gender gaps in rural areas and the agri-food sector.** It focuses on creating opportunities for women as part of the vulnerable population that requires the support of the Project to advance in their development, but also considers their role as agents with the potential to transform their own reality and whose contribution is key for the social and productive growth of rural territories, particularly in playing a managerial role in agroindustry and in the technological development of the sector.

11. **The overall success of the proposed activities will be measured through the project-level Women's Empowerment in Agriculture Index (Pro-WEAI), a survey-based index for measuring empowerment, agency, and inclusion of women in the agricultural sector.** Pro-WEAI consists of 12 indicators of women's empowerment in agriculture: autonomy in income, self-efficacy, attitudes about domestic violence, input in productive decisions, ownership of land and other assets, access to and decisions on credit, control over use of income, work balance, visiting important locations, group membership, membership in influential groups, and respect among household members. Several actions will be implemented under the Project to close the identified gender gaps and achieve the goals laid out in the Gender Action Plan, as indicated below.

12. **Component 1: Public Infrastructure for Agro-industrial Development.** This component could complement household investments under Component 2 to provide rural families with access to basic services such as water for consumption or production, internet connectivity, better access to main roads, among others. These investments will have a direct positive effect in reducing the household burden of rural women, including saving time in collecting water; access to the internet for the education of children, and reducing time and facilitating access to neighboring cities. The Results Framework will include the following gender related PDO indicator

⁷⁵ Sistema de Información de Ciencia y Tecnología Argentino, 2021.

⁷⁶ Stegagnini, M. (2021) Brechas de género en instituciones de ciencia y tecnología agropecuaria en América Latina y El Caribe.

⁷⁷ Alegre, S. Lizárraga, P. and Braweman, J. (2015). The new generations of rural women as promoters of change. A quantitative-qualitative study of the situation of young rural women, their needs and opportunities in Argentina. Unit for Rural Change (UCAR) - Ministry of Agriculture, Livestock and Fisheries of the Argentine Nation.

⁷⁸ *ibid.*

⁷⁹ CEDEF Foundation (2020). Very low representation of women in the management of entities. Recovered from: <https://cedef.org.ar/2020/01/28/muy-baja-representacion-de-mujeres-en-las-conduccion-de-entidades/>



related to Component 1: (i) Beneficiaries with access to new or improved rural public infrastructure for agricultural risk mitigation and natural resources management, of whom woman (number).

13. **Component 2: Agro-industrial Entrepreneurship and Resilient Rural Livelihoods.** Given that the submission of agro-industrial entrepreneurship subprojects is a demand-driven process, communication is vital to secure vulnerable groups' participation, including women. Each business plan submitted for approval will be complemented by an Environmental and Social Plan that provides an opportunity to demonstrate how the subproject will contribute to reducing gender gaps with a specific group. The Project will encourage vulnerable groups to submit investment subprojects by creating thematic call for proposals, to make sure women, indigenous people and youth have an opportunity to participate in the Project. Therefore, a sound communication strategy will be developed to inform women in different project territories and to encourage their participation. The Results Framework will include the following gender-related indicators: (i) Agro-industrial MSMEs and producer organizations supported that have a majority participation of women; (ii) Percent of women beneficiaries demonstrating an improvement in empowerment (Pro-WEAI)⁸⁰, (iii) Women attending women-tailored training events implemented to provide additional support to their enterprises.

14. **Component 3: Innovation for a Green and Inclusive Agri-food System Transformation.** This component will promote the participation of women in the design of productive and innovative technologies in the agricultural sector, as well as the incorporation as professionals and techniques in the development of technological innovation activities in agriculture (Agri-Food Tech). Institutional strengthening under this component will include gender-specific training for selected INTA staff (both at headquarters and at a territorial level), service providers, and producer organizations to ensure coordination and close collaboration in closing gender gaps in Argentina's rural areas and promoting inclusion of women within the technology and innovation sector. Therefore, under this component, consideration will be given to young women entrepreneur to reduce the entrepreneurship gap. The Results Framework will include the following gender-related indicators: (i) Agro-industrial Startups and MSMEs assisted technically and/or financially that have a majority participation of women (number); (ii) Number of staff in INTA that complete training courses financed by the Project, of whom women (percent); (iii) Number of staff in INTA that complete graduate studies financed by the Project, of whom women (percent).

15. **Component 4: Project Coordination and Management.** The Project will provide training to women both at the institutional and community level, as follows: (i) Gender training will be organized at the institutional level to sensitize all project team members within SAFCI and DIPROSE staff (at the headquarters and territorial level), to ensure coordination and close collaboration in closing gender gaps in Argentina and promoting inclusion of women across project activities; and (ii) Gender training at the community level will include activities such as organizing events inviting women, couples, and male and female leaders from local communities in the Project to participate in gender-sensitivity training. This training will contribute to lessening gender stereotypes and social norms, indirectly reducing GBV. The Results Framework will include the following gender-related indicators: (i) PIU staff that are part of the Project take at least one gender-specific training per year (yes/no).

⁸⁰ Ratio of number of women participating in agro-industrial entrepreneurship subprojects that demonstrate an increase in the Pro-WEAI index over total number of surveyed women participating in agro-industrial entrepreneurship subprojects.



Table A4.1 - Summary of Gender Gaps, Actions and Indicators

Component/Gap	Action	Indicator	Strategic Pillar
<u>Component 1</u> -Access to basic public services -Time use	Invest in public infrastructure to provide water for consumption and production, roads, electricity, and internet connection to rural farmers.	At least 50 percent (31,500 people) of the total beneficiaries with access to new or improved rural public infrastructure for agricultural risk mitigation and natural resources management are woman	-Close gender gaps in human endowments -Ownership and control of assets
<u>Component 2</u> -Lack of access to agribusiness opportunities and private financing. -Low leadership, association, and decision-making capacity	Support agro-industrial entrepreneurship subprojects and promote private financing participation. Generate entrepreneurial, associative and leadership capacity among women participants. Invest in small-scale productive infrastructure to enhance women's livelihood.	(i) Percent of agro-industrial MSMEs and producer organizations supported that have a majority participation of women ; (ii) Percent of women beneficiaries demonstrating an improvement in empowerment (Pro-WEAI), (iv) Women attending women-tailored training events implemented to provide additional support to their enterprises	-More and better jobs -Ownership and control of assets -Close gender gaps in human endowments
<u>Component 3</u> -Digital gender gap -Low participation in Agri-food Tech innovation and start-ups development	Ensure participation of women in Incubator-Accelerator platforms as well as in the R&D sector.	(i) percentage of agro-industrial Startups and MSMEs assisted technically and/or financially that have a majority participation of women; (ii) Number of staff in INTA that complete training courses financed by the Project that are women; (iii) Number of staff in INTA that complete doctoral programs (PhDs) financed by the Project	-More and better jobs -Ownership and control of assets -Women's voice and agency
<u>Component 4</u> -Lack of knowledge / capacity -Asymmetries between men and women	Sensitize all project team members within SAFCI and DIPROSE, especially at the territorial level. Gender training for communities to lessen gender stereotypes and adverse social norms, indirectly reducing GBV	DIPROSE staff that are part of the formulation and implementation of subproject under Component 2, and on the ground, take at least one gender-specific training provided by the Project	-Ownership and control of assets -Women's voice and agency



ANNEX 5: ECONOMIC AND FINANCIAL ANALYSIS

Introduction

1. The Project will support a more environmentally sustainable, job-rich and inclusive development pathway for project beneficiaries. It will leverage relevant technologies including climate-intelligent technologies and practices, improve investments in agro-logistics and strengthen capacities and institutions. The Project will also promote an agro-industrial and climate-smart transformation, as well as a sectorial modernization to help recover from the COVID-19 crisis. Project activities will promote public and private investments, leveraging synergies and economies of scale offered through the portfolio of other relevant development projects and will be based on existing comparative advantages of the Argentinian agri-food system.

2. The benefits in Component 1 will derive from innovative public investments that have demonstrated economic and financial viability⁸¹ and which enhance agricultural competitiveness. These include improving rural roads, promoting efficient irrigation systems, expanding rural electricity and connectivity networks, improving agricultural sector information systems, promoting digital agriculture services and enhancing financial literacy activities. In Component 2, expected incremental benefits will arise from economic and financial profits of sustainable and inclusive productive alliances; agro-processing initiatives and income-generating activities, as well as evidence-based solutions to improve water access in rural areas. Qualitative benefits will derive from innovative public instruments to strengthen agricultural sector information systems, research and extension service delivery under Component 3, ensuring that a new portfolio of technologies and practices (including climate mitigation and adaptation measures) are generated and disseminated with sustainable impacts. It will also promote venture capital co-financing of initiatives that will be developed and scaled-up. The Project will also yield positive environmental externalities such as a net reduction in GHG emissions, which will be valued at a low and a high shadow price of carbon in the economic assessment.

3. The Project is justified in that it will promote public sector interventions that will increase efficiency, productivity and climate resilience in agri-food value chains. Project support will address market failures that hamper inclusive development pathways, private investment and job creation, and environmental sustainability in rural areas. The Project's investments in Component 1 will reduce transaction costs, increase agricultural productivity and competitiveness and will provide access to key public services. Component 2 will reduce risk aversion for private investments in agri-food value chains and address the lack of access to finance and basic services and infrastructure for improving rural livelihoods. Component 3 will address the sector's institutional aspects and create conditions for public innovation. Each subproject under Component 1 will be formulated considering the economic and financial viability and efficiency criteria. Sustainability will be also promoted as operation and maintenance, cost-recovery and payback mechanisms will be promoted and further explored by the implementing agency. For Component 2, each instrument will propose a co-financing scheme depending on the target group and the level of consolidation of beneficiaries. The subproject formulation process will define the level of subsidy that will be needed on a case-by-case basis (with pre-established ceilings and criteria).

Economic and Financial Analysis (EFA)

4. The EFA consists of an ex-ante evaluation of the Project's expected profitability. It is undertaken by calculating the incremental cash flows generated by project interventions identified according to the logic of the Theory of Change, integrating benefits and costs of project-related investments. The economic analysis aims to measure the economic worth of investments from the perspective of the country and society as a whole, including positive environmental externalities such as the economic value of GHG emissions avoided. The financial analysis

⁸¹ As evidenced in World Bank's PROSAP II ICR (2017) -P106684- and IADB's PROSAP III PCR – AR-L1120 (2018).



assesses the financial profitability and viability from the point of view of project beneficiaries, making sure that they will have a financial incentive to engage with the Project's activities.

5. **The following streams of economic benefits and investment models were applied in the EFA.** For Component 1, investments in public infrastructure are expected to increase agricultural productivity and farmer's incomes, and reduce commercialization and transportation costs, as well as on-farm losses and post-harvest waste. They are also expected to generate time-savings for farmers and improve sales due to better access to markets. Component 2 investments will focus on co-financing agribusiness initiatives, income-generating activities and infrastructure and equipment to improve rural livelihoods and improve access to better water-use technologies. For Component 3, agri-food entrepreneurship venture investment subprojects were considered to obtain the costs and benefits of initiatives that will be co-financed. The following table summarizes sources of benefits of each investment.

Table A5.1 - Assumptions on Public Infrastructure Investments in Component 1

Instrument	Type of Project	Source of Benefit
Component 1: Public Infrastructure Works	Irrigation	Increased agricultural productivity Increased sales and incremental margins
	Electricity	Avoided expenditures (energy) Increased agricultural and livestock productivity Increased sales and prices
	Rural Roads	Cost reduction (transportation) Increased production Avoided expenditures
	Rural Connectivity	Time-savings Avoided expenditures (travel) Increased incremental margins
Component 2: Window 1. Livelihoods for economic and productive inclusion.	Productive and income-generating activities (livestock, horticulture, poultry, agro-forestry, etc.)	Incremental productive income Increased agricultural productivity
Component 2: Window 2. Small scale water investments for domestic and productive purposes.	Rainwater harvesting cisterns	Water saved Time-savings
	Irrigation systems (drip irrigation/small wells/ponds)	Increased Agricultural productivity Incremental incomes
	Non standardized technologies	Increased sales and incremental margins
Component 2: Windows 3 and 4. Productive Alliances.	Honey processing	Increased sales and incremental margins
	Tea processing	
Component 3: Subcomponent 3.2 Co-financing productive initiatives in the Agri-food Tech ecosystem	Agri-food innovative ventures	Incremental venture margins Increased sales



Table A5.2 - Economic Profitability Results - Component 1 – Subprojects

Province	Subproject	Type	EIRR	NPVe (US\$)
Chaco	Rural Roads Productive Areas - Depto. Güemes - 2nd Stage	Roads	21 percent	4.464.107
Corrientes	Rural Roads RN 6 and RP 100 - 1st Stage	Roads	14 percent	883.932
Entre Rios	Road Zone VIII - Zenón Roca - Villaguay	Roads	12 percent	29.128
Formosa	Rural Electrification II - 2nd Stage	Electricity	21 percent	8.343.158
Neuquen	Rural Electrification Junín de los Andes - San Martín de los Andes	Electricity	13 percent	370.118
Salta	Rural Electrification in Southern Productive Areas	Electricity	16 percent	1.076.668
Buenos Aires	Rural Connectivity I (Patagones y Villarino), II (Puán, Saavedra y Tornquist) and III (C. Tejedor, F. Ameghino, Gral. Pintos, Gral. Villegas y Rivadavia)	Connectivity	17 percent	1.564.384
Jujuy	Rural Connectivity I (North Zone) and II (Ramal and Puna)	Connectivity	19 percent	469.924
Entre Rios	Rural Connectivity I (Bovril - La Paz) and II (RP 51)	Connectivity	69 percent	15.718.582
Formosa	Rural Connectivity	Connectivity	24 percent	1.279.692
Neuquen	Lower Limay River Valley Irrigation System - Arroyito - Senillosa	Irrigation	18 percent	7.411.253
La Rioja	Modernization of Chilecito Irrigation System	Irrigation	13 percent	43.133.063
Salta	Improvement of the Colorado River Irrigation System - 2nd Stage	Irrigation	27 percent	26.059.969
Catamarca	Development of the Irrigated Area of Londres - Department of Belén	Irrigation	20 percent	5.838.282
Mendoza	Santa Rosa - La Paz Irrigation System	Irrigation	29 percent	19.601.717
Tucuman	Development of the Choromoro River Irrigation System.	Irrigation	62 percent	3.397.775

Table A5.3 - Assumptions for Public Infrastructure Investments in Component 1

Type	Amount (US\$ million)	Percent	Number	Beneficiaries
Irrigation	97	40	7	4,130
Electricity	45	19	6	5,014
Connectivity	46	19	14	39,547
Rural Roads	57	23	3	2,709

6. The stream of economic benefits of Component 1 was assessed by considering the preliminary pipeline of works presented by DIPROSE and detailed data on costs and benefits from economic and financial evaluation of subprojects. Four types of public works were identified: Rural Roads, Connectivity, Electrification and Irrigation, and economic incremental benefits in US dollars were valued for each type of public works. Investment subprojects in the pipeline were at different levels of elaboration; a detailed economic and financial analysis with



sensitivity tests was done for those at a Pre-feasibility Study or Feasibility Study stage, verifying their economic and financial profitability and the robustness of results. Subprojects were formulated using FARMOD software for financial analysis and farm models and COSTAB software for costing. The following tables present the economic profitability indicator of projects in the pipeline and assumptions concerning the expected investment amounts per type of subproject, number of subprojects and targeted beneficiaries. The total number of beneficiaries is estimated at around 51,400 (of whom 20,560 would be women).

7. **For Component 2, a set of 8 financial models was developed to illustrate the expected impacts of activities under the four investment windows.** Economic benefits were also considered for beneficiaries who will be provided with access to water via rainwater harvesting cisterns. Table A5.4 presents the assumptions on subprojects to be implemented by category. The final definition of investment subproject categories and eligibility criteria per instrument will be included in the POM.

8. **Concerning Windows 3 and 4, the Productive Alliances model will be improved considering lessons learned from the Productive Alliances that were recently implemented under the PISEAR Project.** Windows 3 and 4 are expected to implement 90 Productive Alliances reaching 15,000 beneficiaries with an average matching grant estimated at US\$600,000 per subproject and between 30-50 percent co-financing, depending on the size of MSMEs and Cooperatives. Calls for proposals will be oriented around thematic issues such as enhancing natural resource use efficiency, reducing GHG emissions, and promoting climate adaptation, *inter alia*.

Table A5.4 - Assumptions for Rural Investment Subprojects and Productive Alliances in Component 2.

Window Typologies	Subprojects	Average beneficiaries per Subproject	Beneficiaries families	Average Subproject Cost (US\$)	Average Grant per subproject	
					(US\$)	Percent of cost
1. SIRs (traditional and National Plan Argentina Against Hunger Subprojects)	340	40	13,600	185,000	165,000	89
2. Water Access Plan Subprojects	346	34	11,800	165,000	150,000	91
3. Productive Alliances- Small MSMEs	60	100	6,000	500,000	350,000	70
4. Productive Alliances- Medium MSMEs	30	300	9,000	1,200,000	600,000	50
TOTAL:	776		40,400			

9. **Two types of financial models were prepared to assess the financial and economic profitability of the investments:** supporting beekeepers cooperatives to improve agro-processing, certification and exportation of honey in partnership with national buyers, and elaboration and certification to increase exports of high-quality tea in partnership with international buyers. The following table summarizes the financial profitability results of models. The exercise shows that both models are financially viable and profitable. The financial discount rate was estimated at 12 percent and cash flows were calculated for a 10 year-period.



Table A5.5 - Assumptions on Public Infrastructure Investments in Component 1

Type	FIRR	NPV (US\$)	Benefit/ Cost Ratio	NPV per beneficiary (US\$)
1. Productive Alliance in Honey Certification and Agro-processing	18	196,661	2.9	656
2. Productive Alliance in Tea Certification and Elaboration	19	112,443	1.62	1,124

10. **For Windows 1 and 2, the Project will build on the experience of the PISEAR Project (P106685) and the Partnership for Economic Inclusion Initiative.**⁸² It will support community-driven investments required to improve basic living conditions in poor and vulnerable rural households inhabited by family farmers. It will also finance key technologies to improve access to water and productive investments that will enable beneficiary households to generate a minimum agricultural and/or non-agricultural autonomous income. MAGyP has identified a portfolio of projects considered eligible for financing under this component that exceeds US\$40 million. For modeling purposes, subprojects were separated in two groups: a. Subprojects aligned with the National Plan “*Plan Agua*”, providing access to water to vulnerable households in rural areas via proven social technologies; and b. Community-driven subprojects to improve livelihoods and promote income-generating activities in vulnerable rural households. The “*Plan Agua*” investments will address deficient access to water for multiple purposes. They will ensure that families of producer organizations, groups or communities can access different technologies to provide safe water for domestic or productive consumption.

Table A5.6 - Assumptions on Investments subprojects in Component 2

Type	FIRR (%)	NPV (US\$)	Benefit/ Cost Ratio	NPV per beneficiary (US\$)
1. Agri-food initiative Agricultural service provision, poultry and horticulture	17	103,956	2.3	2,599
2. Agri-food initiative Horticultural Cooperative	31	202,161	1.5	5,054
3. Traditional SIRs Nut production and processing	23	86,928	3.1	2,173
4. Traditional SIRs Community-based infrastructure for Livestock production	30	63,031	2.0	1,576
5. Water access Plan Subprojects Type A (Standardized)	18	13,097	1.3	327
6. Water access Plan Subprojects Type B (Non standardized)	13	3,618	1.5	181

11. **Four types of community-driven investment subprojects were identified for modeling.** Two productive Rural Investment Subprojects (SIRs) in livestock and agricultural activities and two initiatives aligned with the National Plan Against Hunger “*Plan Argentina Contra el Hambre*”, promoting diversified horticulture production and commercialization, agricultural service provision and poultry. Table A5.6, lines 1-4, summarize the results of the financial profitability assessment of these subprojects. All models evaluated were financially viable with FIRRs

⁸² See: <https://www.peiglobal.org/>



ranging from 17 percent to 31 percent and NPV ranging from US\$63,031 for community-based livestock investments to US\$202,161 for agri-food initiatives promoting horticulture.

12. **For Component 3, various studies in the region illustrate the results of R&D investments in agriculture.** These include Nin-Pratt & Falconi; (2018) and Alston, et Al; (2012). Available studies in the country confirm that public investments in agricultural research and development (R&D) have had positive and significant investment returns rates ranging from 6 percent to 12 percent (Lema & Hermo, 2019). Additionally, the elasticity of Total Factor Productivity to the public research capital stock ranges from 0.20 to 0.34 (Lema & Hermo, 2019). A more rigorous and detailed economic analysis of the impact of Public Agricultural Research and Development Investments in Argentina is warranted using reliable systematic data and sources of information, some of which will be supported during the Project. Component 3 will also support the Agri-food Tech ecosystem incubators and accelerators co-financing venture capital initiatives with co-sharing participation in benefits. Financial profitability and viability of MSMEs models were assessed to show the expected results for these type of investments with realistic success rates (from 50 to 70 percent).

13. **Economic Analysis aggregates the economic benefits of the three Components and considers all the costs associated with project implementation. The economic analysis is based on total project costs estimated at US\$550 million.** Aggregated benefits were adjusted by using adoption and success rates per model in order to provide a more realistic estimate, considering that not all project beneficiaries will yield benefits as expected (rates range from 60 percent to 80 percent depending on each model).

Table A5.7 - Economic Profitability indicators for Component 1

Indicators	Component 1
EIRR	29.41%
NPV (US\$)	175,398,818

Table A5.8 - Economic Profitability indicators for Component 2, Windows 1 and 2

Indicators	Windows 1 & 2
EIRR	19%
NPV (US\$)	106,289,065

Table A5.9 - Economic Profitability indicators for Component 2, Windows 3 and 4

Indicators	Windows 3 & 4
EIRR	13.68%
NPV (US\$)	2,337,849
Benefit/Cost Ratio	1.19

Table A5.10 - Economic Profitability indicators for Component 3

Indicators	Subcomponent 3.2
EIRR	12%
NPV (US\$)	50,753

14. **Climate change mitigation co-benefits have also been integrated into the EFA.** In accordance with the World Bank's Environmental Strategy and its Climate Action Plan, Project activities imply net GHG emissions reduction, taking into consideration the baseline scenario, the trend scenario 'without project' and the 'with project' scenario. Additionally, the upgrading and expansion of irrigation infrastructure (in Component 1)



substantially reduces climate shock harm to agricultural production. Following the scenarios presented in the Third National Communication on climate change (2039 and 2099) for moderate and extreme emissions and climate change projected impacts, it was estimated that the irrigation investments proposals included in the initial project portfolio would contribute to avoid US\$2,748,883 of production losses in the near future scenario (2039) and between US\$13,985,886 (moderate emissions) and US\$18,133,284 (extreme emissions) in the far future scenario (2099). See full description of the GHG Analysis in the Project Files.

15. **The economic analysis results show that the Project is economically viable.** The Project's Economic Net Present Value (applying a social discount rate of 12 percent) is US\$147,39 million, and the EIRR is 20.86 percent under the base case scenario (without the GHG analysis). Two scenarios were developed to evaluate economic profitability indicators including GHG emissions following the most recent World Bank guidelines (World Bank; 2017), using a high carbon price (US\$82 per tCO₂e) and a low carbon price (starting from US\$41 per tCO₂e) to estimate economic benefits from reducing GHG.

16. **The Economic Internal Rate of Return (EIRR) was estimated at 40.29 percent under the High Price of Carbon (HPC) scenario, with a net present value (NPV) estimated at US\$396.97 million.** When the Low Price of Carbon (LPC) is considered, the EIRR is 29.46 percent and the NPV is estimated at US\$272.46 million.

17. **The Project's expected performance and robustness in terms of profitability were tested by carrying out a sensitivity analysis assuming a set of risk scenarios with impacts on project costs and benefits.** It included an increase in project costs by 10 percent and 20 percent, with EIRRs at 20.52 percent and 20.19 percent, respectively; a reduction in project benefits by 10 percent and 20 percent, with EIRRs at 20.49 percent and 20.02 percent, respectively; delays in project benefits of 1 and 2 years, yielding EIRRs at 19.92 percent and 18.85 percent, respectively, and combined scenarios (with reductions in benefits and increases in costs) where the Project's profitability indicators remained in a positive range under most of the pessimistic scenarios.

Table A5.11 - Sensitivity Analysis of Economic Indicators

Sensitivity Analysis	Δ percent	Risk				EIRR (%)	NPV (US\$)
Base scenario						20,86	147,390,802
Benefits	-10%	Combined risks on sale prices, productivity, adoption rates				20,49	128,232,657
	-20%					20,02	109,074,513
Costs	+10%	Increase in expenses, input prices and unit costs				20,52	142,971,737
	+20%					20,19	138,552,673
Delay 1 year in Benefits		Adoption rate / delays				19,92	119,624,679
Delay 2 years in Benefits						18,85	94,286,541
External Shock every 2 years	-50% benefits	External shock (prices, quantities, climate)				17,51	72,821,831
External Shock every 3 years	-50% benefits					18,57	100,060,096
Mixed Scenarios		Costs	+10%	Benefits	-10%	20,12	123,813,593
			+10%		-20%	19,62	104,655,448
			+20%		-20%	19,22	100,236,384
			+20%		-30%	17,15	47,181,014
			+20%		-10%	19,75	119,394,528

18. Finally, switching values for cost increments are 898 percent, 617 percent and 334 percent under the HPC and LPC, and baseline scenarios, respectively, and 90 percent, 86 percent and 77 percent for reductions to economic benefits under the different scenarios. This shows that the Project represents a valuable investment for



Argentina from an economic perspective. The Table below summarizes the economic indicators for the three scenarios discussed in this analysis.

Table A5.12 - Summary of Economic Indicators

Indicator	Baseline	LPC	HPC
EIRR (percent)	20.86	29.46	40.29
Economic NPV (US\$ million)	147.39	272.46	396.97
Switching value for costs (percentage)	334	617	898
Switching value for benefits (percentage)	-77	-86	-90