



@#&OPS~Doctype~OPS^blank@migpidaprcoverpage#doctemplate

# Project Information Document (PID)

---

Appraisal Stage | Date Prepared/Updated: 19-Oct-2023 | Report No: PIDIA00331

## BASIC INFORMATION

**A. Basic Project Data**

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Argentina	LATIN AMERICA AND CARIBBEAN	P180028	Argentina Environmental Management Project
Financing Instrument	Estimated Appraisal Date	Estimated Approval Date	Practice Area (Lead)
Investment Project Financing (IPF)	18-Oct-2023	22-Feb-2024	Environment, Natural Resources & the Blue Economy
Borrower(s)	Implementing Agency		
The Argentine Republic	Ministry of Environment and Sustainable Development		

## Proposed Development Objective(s)

To improve Argentina's management capacity of selected environmental priorities across jurisdictions.

**Components**

Policy Development and Capacity Building  
 Environmental Information Management  
 Closure of Legacy Dump Sites  
 Project Management

**PROJECT FINANCING DATA (US\$, Millions)****Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)?

Is this project Private Capital Enabling (PCE)?

**SUMMARY**

Total Operation Cost	100.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	0.00

**DETAILS****World Bank Group Financing**



International Bank for Reconstruction and Development (IBRD)	100.00
Environmental And Social Risk Classification	
Substantial	
Decision	
The review did authorize the team to appraise and negotiate	

## B. Introduction and Context

### Country Context

1. **With a gross domestic product (GDP) of US\$614 billion, Argentina was the third-largest economy in Latin America in 2022.** The country has 2.8 million square kilometers, and its population of about 46 million inhabitants is highly urbanized, with 92 percent living in cities. Argentina is a federal state; its 23 provinces and the Autonomous City of Buenos Aires preserve their autonomy under the National Government.
2. **The middle class has historically been large and strong, with social indicators generally above the regional average; however, persistent social inequalities, economic volatility, and underinvestment have limited the country's development.** The rate of urban poverty reached 39.2 percent in the second semester of 2022, and 8.1 percent of Argentines live in extreme poverty. Childhood poverty, for those under 15 years old, is at 54.2 percent. The high frequency of economic crises in recent decades—the economy has been in recession during 21 of the past 50 years—has resulted in an average annual growth rate of 1.8 percent, well below the world average of 3.6 percent and the region average of 3.2 percent.
3. **The economy recovered from the Coronavirus Disease (COVID-19) crisis at a fast pace, reaching pre-pandemic activity levels by mid-2021.** Argentina's economy grew by 10.4 percent in 2021 and 5.2 percent in 2022, the largest increase in GDP since the 2010–2011 biennium, after the global financial crisis. Higher commodity prices and trading partners' growth, notably Brazil's, combined with public investment led to a robust growth recovery in 2021 and the beginning of 2022. However, since 2022 increasing macro imbalances and a more turbulent global context, started to slow down the pace of GDP growth. The Government of Argentina has concluded the process of restructuring its debt in foreign currency (both local and external) with private creditors, significantly improving the maturity profile for the next five to eight years.
4. **In March 2022, Argentine authorities reached an agreement with the International Monetary Fund (IMF), on an Extended Fund Facility program for 30 months and an amount of US\$45 billion, to address the economy's macroeconomic imbalances and set the basis for sustainable growth.** This amount covers the remaining obligations under the 2018 Standby Agreement (US\$40.5 billion) and provided a small net financing support for reserves accumulation (US\$4.5 billion). The program sets a gradual fiscal consolidation path toward a zero primary deficit in 2025 (from 3 percent in 2021 to 2.5 percent of GDP in 2022, 1.9 percent in 2023, and 0.9 percent in 2024), a reduction of monetary financing of the deficit (eliminated by 2024), and the framework for monetary policy involving positive real interest rates, as part of a strategy to fight inflation. On April 1, 2023,



the Executive Board of the IMF completed the fourth review of Argentina's Extended Fund Facility, allowing for an immediate disbursement of about US\$5.4 billion in early April 2023.

**5. Despite meeting all the performance criteria under the IMF Extended Fund Facility by end-2022, Argentina's macro-fiscal situation remains challenging.** According to the IMF statement, prudent macroeconomic management in the second half of 2022 supported stability and helped secure program targets through end-2022 with some margin. Nevertheless, capital controls and deficit monetization continue to cause a large gap between the official and parallel exchange rates and limit foreign reserve accumulation. Inflation accelerated to historically high levels (104 percent year-over-year, as of March 2023), denting purchasing power. A severe drought is strongly affecting agricultural production in 2023, reducing exports and fiscal revenues while limiting the capacity of the Central Bank to accumulate international reserves. While the fiscal target for end-2022 has been met, the impact of the drought on fiscal revenue, among other factors, has caused the Government to miss the original target by the end of March 2023.

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

**7. Argentina is also at high risk of climate-related hazards.** In the Argentina Climate and Development Report (2022), the World Bank Group estimates that from 1900 to 2021, 92 percent of the 115 recorded natural disasters were climate-related, mostly floods (58 percent) and storms (20 percent). The same report estimates that Argentina suffers an average of US\$1.4 billion each year in direct asset losses and US\$4 billion in welfare losses due to floods. In addition to flood, the country is also vulnerable to wildfires, storms, landslides, droughts, and extreme temperatures. Droughts have affected agricultural production in the country, affecting crops such as wheat, and heat waves have become more frequent, affecting mainly urban populations due to the heat island effect. Additionally, increased aridity and drought and associated wildfire events have adversely affected the country. The central region, which includes the core crop and livestock areas, is particularly vulnerable to drought impacts. From 2006 to 2011, major drought events caused approximately US\$4 billion in losses and affected 1 million Argentines. Overall, Argentina ranks among the 10 emerging economies most vulnerable to climate change.

#### Sectoral and Institutional Context

**8. Argentina relies heavily on the country's valuable natural resources but faces challenges in managing the environmental externalities of its economic development, urbanization, and population growth.<sup>1</sup>** For example, deforestation in the northern provinces (due to land-use change) and, to a certain extent, water pollution (related to the use of agrochemicals) and air pollution (linked to the use of fire for land clearing and

<sup>1</sup> In 2018, natural capital contributed 10.6 percent of Argentina's national wealth (data of the Changing Wealth of Nations at <https://www.worldbank.org/en/publication/changing-wealth-of-nations/data>, accessed April 23, 2023) but more than 75 percent of the country's exports. Over the past two decades, natural resources have typically accounted for nearly 30 percent of total gross production value and are key for foreign reserve accumulation and fiscal revenues for Argentina.



burning of agricultural wastes) has been linked to the expansion of agricultural production and property development. Another example is that unmanaged urbanization has caused environmental problems of air, water, noise, and waste pollution in low-income settlements of the Buenos Aires metropolitan area.

**9. Environmental degradation imposes high costs to Argentina's economy and population.** The Country Environmental Analysis 2016 of the World Bank Group (WBG) estimates that "the cost of air pollution impacts on society" is about 1.8 percent of the country's GDP due to premature mortality and reduced productivity.<sup>2</sup> Like in other countries, pollution has a disproportional impact on residents of low-income communities and vulnerable population (seniors, children, women, and persons with preexisting health conditions) in Argentina. Data show that "the percentage of households located near open dumps is 8.8 percent on average for the 31 main urban agglomerates but when taking into consideration only households located in slums the percentage increases to 39.5 percent."<sup>3</sup> The famous Mendoza case showcased how poor communities had to fight at the Supreme Court to trigger the government's actions to control air and water pollution in the Matanza-Riachuelo river basin, the country's most populated and economically active area.

**10. Climate change has brought additional environmental challenges to large areas of the country.** Over the past two decades, Argentina has experienced extreme events and widespread droughts across multiple regions, which are expected to increase in frequency and intensity due to climate change.<sup>4</sup> The most visible example is that increased heat and drought events have caused serious fire events across the country in recent years. In the first half of 2020, fire events extended over 1.15 million ha and destroyed forests, rangelands, and infrastructure that local communities depend upon.<sup>5</sup> Such events, which continued during 2021 and 2023 due to a recent La Niña event, not only are costly to control but also cause severe air pollution events across multiple provinces, exacerbating respiratory problems and posing risks to public health of millions of citizens. As a result, in January 2022, the Federal Government declared a one-year fire emergency at the national level and later extended this declaration to January 2024.<sup>6</sup>

**11. The Argentine Government has strived to protect the country's environment but faces multiple challenges.** Constitutionally, provinces and municipalities are the owners of natural resources with the responsibility of regulating and enforcing local environmental matters. The constitutional reform in 1994 authorized the Federal Government to develop national laws to establish minimum environmental standards (see Annex 2 for details). But with few national laws on minimum environmental standards, the current institutional setup has led to inconsistencies in environmental regulations and enforcement across the different levels of the Government and coordination challenges in critical environmental issues such as air pollution control, wastewater treatment, solid waste management and wildfire management.<sup>7</sup> For example,

<sup>2</sup> Another pollution issue with high economic costs is lead contamination. For details, see (a) World Bank (2022). Recycling of Used Lead-Acid Batteries: Guidelines for Appraisal of Environmental Health Impacts and (b) World Bank (forthcoming). The Global Health Cost of Lead Pollution: A Case for Action Beyond 2023.

<sup>3</sup> Based on data from the 2014 *Encuesta Permanente de Hogares* of the National Institute of Statistics and Censuses Argentina (WBG 2016).

<sup>4</sup> Climate Risk Profile: Argentina (2021): The World Bank Group.

<sup>5</sup> Ministry of Environment and Sustainable Development. 2020. *Fire Management Report of October 13, 2020*.

<sup>6</sup> <https://www.boletinoficial.gob.ar/detalleAviso/primera/279086/20230105>.

<sup>7</sup> For example, there are no federal requirements on fine particulate matter of 2.5 microns or less in diameter (PM<sub>2.5</sub>) that are associated with serious health concerns. At the local level, it is reported that only the city of Buenos Aires has an AAQS of PM<sub>2.5</sub> (the annual mean value) in the country while the limit is two times higher than the guideline value of the World Health Organization (WHO. 2022. Health and Environment Scorecard: Argentina). See also UNEP (United Nations Environment Programme). 2021.

*Regulating Air Quality: The First Global Assessment of Air Pollution Legislation.* For discussions on the impact of the federal system on



under the Mendoza case Argentina's Supreme Court had to issue a court order with continued close supervision to prompt the national and concerned local governments to develop and jointly implement a comprehensive environmental cleanup plan for the Matanza-Riachuelo Basin. Before that, the involved jurisdictions had never had the level of coordination required to address a two-century-old environmental legacy and allowed this area within the country's most developed metropolis to become one of the top 10 most polluted river basins worldwide.

**12. As in many other countries, special interest groups invested in local economic development have pushed back on the adoption of more stringent environmental regulations and standards.** The Federal Government has had limited success in promoting environmental laws with minimum and common standards. The wetlands bill is the most paradigmatic example. It is well known that the lack of control of human activities is the main cause of frequent fires in wetland areas such as the Parana River delta. However, the National Congress has dismissed multiple proposals of the wetlands bill in recent years due to strong resistance from northern provinces and interest groups of agribusiness, mining, and real estate sectors.<sup>8</sup> Another example is that efforts to introduce a national law with minimum and common air quality standards have not progressed in the National Congress. As a result, Argentina still does not have appropriate ambient air quality standards (AAQS) for the critical air pollutant PM<sub>2.5</sub>, despite the fact that PM<sub>2.5</sub> has caused about 11 percent of the country's annual deaths.<sup>9</sup>

**13. Inadequate coordination across all three levels of jurisdictions, inconsistent and limited regulatory requirements, and revenue-oriented local development agendas have limited investments in environmental management capacity development at the local level.** As a result, provincial and municipal authorities have not invested technical capacity and financial resources to set adequate environmental standards or monitor and enforce existing environmental standards.<sup>10</sup> For example, municipal governments are responsible for waste management and air quality management (AQM). However, many cities, particularly small ones, have low rates of waste collection and treatment. While the Buenos Aires Metropolitan Area (*Área Metropolitana de Buenos Aires, AMBA*) has the highest landfill coverage rate of 79.4 percent of its inhabitants, the rate is as low as 15.2 percent for other regions and only 9.4 percent for municipalities with less than 15,000 inhabitants.<sup>11</sup> As a result, Argentina has over 5,000 open dump sites.<sup>12</sup> For AQM, so far, there are 15 air quality monitoring stations (AQMS) in its seven cities, operated independently by public and private entities with frequent operation and maintenance (O&M) challenges. The most advanced city, the Autonomous Buenos Aires City (*Ciudad Autónoma de Buenos Aires, CABA*), does have a PM<sub>2.5</sub> standard but is only monitoring PM<sub>10</sub> information with its three AQMSs.<sup>13</sup> The limited air quality monitoring efforts have constrained public understanding and

---

environmental management in Argentina, see Milmenda and Garay. 2020. "The Multilevel Politics of Enforcement: Environmental Institutions in Argentina." *Politics & Society* 48 (1): 3–26. <https://doi.org/10.1177/0032329219894074>.

<sup>8</sup> Tognola, Virginia, 2020. "Activists Call for Legislation to Protect Argentina's Wetlands." <https://nacla.org/argentina-wetlands-protection>, accessed March 17, 2023.

<sup>9</sup> WHO. 2022. Health and Environment Scorecard: Argentina.

<sup>10</sup> WBG 2016.

<sup>11</sup> Ibid.

<sup>12</sup> As in other countries, such sites in Argentina are open fields used for waste disposal. Used formally by municipalities or informally by residents, pollution control measures commonly adopted at sanitary landfills (such as non-permissible liners, gas and leachate collection and treatment) are non-existent at such sites.

<sup>13</sup> UNEP (United Nations Environment Programme) (2021) and the official website of the Environmental Protection Agency of CABA ([https://buenosaires.gob.ar/areas/med\\_ambiente/apra/calidad\\_amb/red\\_monitoreo/mapa.php?menu\\_id=34233](https://buenosaires.gob.ar/areas/med_ambiente/apra/calidad_amb/red_monitoreo/mapa.php?menu_id=34233), last accessed February 15, 2023). The city's PM<sub>2.5</sub> standard is much relaxed than the internationally recommended ones.



the ability of the Government to make sound public policies to investigate and address air pollution issues at specific airsheds and during specific events such as the recent wildfires.<sup>14</sup>

**14. Limited efforts at collecting and disclosing accurate and reliable environmental monitoring information have hindered environmental enforcement.** Recognizing the importance of environmental information in public policy debates of the country, in 2020, the Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible*, MAyDS) created an Environmental Information Center (EIC), which serves as an integrated platform for the disclosure of environmental information. However, the lack of timely and credible environmental monitoring information has limited the center's ability to improve the public's awareness of the seriousness and economic and health impacts of environmental degradation in the country and their subsequent demands for pro-environment policies. This has also allowed local governments to be reactive rather than proactive on matters such as environmental pollution and wildfire events. In the abovementioned Mendoza case, concerned and affected citizens had to go through lengthy legal processes to force local governments and the Federal Government to take concrete actions to monitor the air and water quality of the basin and invest in a mega-sanitation infrastructure—*Sistema Riachuelo*—to control water pollution and protect public health.

**15. Recognizing these challenges, MAyDS has requested the World Bank's support to develop effective mechanisms and investments to better coordinate across jurisdictions the Government's environmental management efforts and incentivize local governments to improve their environmental management practices within the country's federal system.** Given the magnitude and complexity of the challenges mentioned above, MAyDS proposed that the project focuses on three selected environmental priorities: AQM, wildfire management, and municipal solid waste management. Considerations for this selection include (a) existence of strong and negative public perceptions of these issues, (b) high economic costs and disproportional impacts on vulnerable and economically disadvantaged population, (c) diverse levels of technical and institutional (that is, different administrative levels involved) complexities, and (d) complementarity with existing investment programs in the country.<sup>15</sup> It is expected that MAyDS will scale up and expand approaches successfully implemented under the project to further promote environmental management within the country's federal system.

**16. On fire management, Argentina has a national law (Ley 26.815/2012).** Following the law, it has established (a) a nationwide fire management system led by the National Fire Management Service (currently under MAyDS) with a clear action framework for federal and provincial jurisdictions and (b) a national fire management fund, which after being modified by Law #27.591/21 has secured a stable source of income of 0.3 percent of all insurance premiums except those of life insurances. With an estimated annual income of around US\$70 million, this fund has enabled MAyDS to increase its support to local governments' fire management actions, including the piloting of new technologies for early fire detection and warning. The project will build on these efforts and (a) promote integrated fire management approaches at the national and local levels to ensure that the five R principles (review and analysis, risk reduction, readiness, response to fire,

---

<sup>14</sup> Note that an airshed may be affected by transboundary sources outside a specific jurisdiction and even the country.

<sup>15</sup> WBG (2016). With the support of donors including the WBG, Argentina has strong investment programs in water pollution, land use, and water resources management. Examples of World Bank operations include the Matanza-Riachuelo Basin Sustainable Development Project (P105680), the Sustainable Recovery of Landscapes and Livelihoods in Argentina Project (P175669), the Climate Intelligent and Inclusive Agri-food Systems Project (P176905), and the Salado Integrated River Basin Management Support Project (P161798).



and recovery) are fully integrated into the Government's fire management programs and (b) scale up the early wildfire warning systems to use real-time data to incentivize timely local fire response actions.

**17. With regard to waste, Argentina has a national law (Ley 25.916/2004) on integrated solid waste management (ISWM) and a national ISWM strategy (2005) and corresponding ISWM laws and strategies at the provincial level.** In 2021, the Federal Government launched a national recycling program (Resolution 642/2021) and promoted social and labor inclusion of urban waste pickers. In terms of investments, MAdyS has mobilized multiple waste management financing from the World Bank (P089926), the Inter-American Development Bank (IDB), and other development partners to support local waste management investments.<sup>16</sup> With ongoing IDB financing, MAdyS has been supporting selected municipalities to develop their ISWM systems and is developing a national dump site inventory. Complementary to these efforts, this project will focus on policy development for integrated and inclusive solid waste management (*Gestión Integral e Inclusiva de Residuos Sólidos Urbanos, GIIRSU*) to promote circular economy development in the waste management sector, pilot the closure and transformation of small-scale legacy dump sites to new public areas, and disclose dump site information at the national level to create an incentive for local governments to take actions to invest in dump site closure and improve their waste management practices.

**18. Despite imposing high costs on society, air pollution is the least known and regulated among the three priorities in Argentina.**<sup>17</sup> The 1973 Federal Air Pollution Law (Ley 20.284/1973) includes air quality standards (albeit without PM<sub>2.5</sub> standards) at the national level but has been used by local governments only as guidance. Committed under the Regional Action Plan on Air Pollution, Argentina developed its National Action Plan on Air Pollution in 2014 but has so far not implemented its proposed key action of establishing a national air quality monitoring network. In 2021 and 2022, the EIC implemented a pilot program to use low-cost sensors to monitor air quality in selected cities. Results of the pilot suggest that air quality in these cities is poor in areas with high vehicular traffic (for example, along traffic corridors), socioeconomically disadvantaged areas, and areas surrounding open dump sites. Recognizing these realities, this project will focus on the development of a national air quality monitoring network to generate real-time air quality data in major metropolitan areas to incentivize local actions on air pollution control, along with selected policy instruments to promote AQM actions at the national and targeted local levels.

### C. Relevance to Higher Level Objectives

**19. The proposed Project objectives are consistent with the WBG's Country Partnership Framework (CPF) for the Argentine Republic (FY19–FY22)** discussed by the Board of Executive Directors on April 25, 2019 (Report No. 131971-AR) and revised by the Performance and Learning Review on May 31, 2022. By supporting MAdyS and participating local governments, this project will contribute directly to (a) Objective 5 of the mentioned CPF (improving service delivery through enhanced inter-jurisdictional coordination) through improved air quality, waste, and wildfire management practices and (b) Objective 10 (building resilient and low-carbon cities) through reduced pollution releases including greenhouse gases (GHGs) from wildfires and waste management.<sup>18</sup> Successful implementation of this project will contribute to Argentina's efforts to achieve

<sup>16</sup> For example, the United Nations Development Programme (UNDP) has been supporting MAdyS on biogas recovery from waste management operations. See UNDP. 2022. "Modelos De Negocios Para La Producción De Biogás." (<https://open.undp.org/projects/00096640>, accessed April 12, 2023).

<sup>17</sup> WBG (2016).

<sup>18</sup> WBG. 2019. *CPF for the Argentine Republic for the Period FY19–FY22* (Report No. 131971-AR).



Sustainable Development Goal (SDG) 3 for Good Health and Well-Being and SDG 11 for Sustainable Cities and Communities by better measuring and controlling environmental pollution discharges in the country.<sup>19</sup>

**20. The project is consistent with the country's climate commitments set in the Second Nationally Determined Contributions (NDCs) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2020 and updated in October 2021, its Long-Term Strategies (LTS) submitted to UNFCCC in November 2022, and its National 2030 Climate Change Mitigation and Adaptation Plan (NCCMAP).**<sup>20</sup> In Argentina, the three priorities are interlinked and have direct contributions to climate actions defined in the country's climate strategies and plans. Specifically, dump sites generate and release methane and open fires at wastes/dumpsites are part of wildfire issues faced by Argentina. Fire events not only reduce carbon stock and release carbon dioxide but also generate and release more potent short-lived climate pollutants—black carbon, methane, and nitrous oxide.<sup>21</sup> More importantly wildfires have undermined climate resilience of Argentina's agricultural, livestock, and forest sectors. The country commits to forest fires prevention, through planned actions aimed to avoid or mitigate forest fires spread, promote effective control measures, and achieve a sustainable development through proper waste management. By design, the project will respond to the requested technical assistance and support the implementation of Argentina's climate actions through the strengthening of public policies under Component 1; the consolidation of a national early fire warning system and capacity building to provide an early response through Component 2; and promotion of replicable good practices for open-dumpsites closure to improve solid waste management in the country, including land use change with potential CO<sub>2</sub> sequestration related to shrubs and grass planting and reducing methane emissions through flare options under Component 3. With these proposed interventions, the project is Paris Aligned for both mitigation and adaptation (see Section IV below for additional information).

### C. Proposed Development Objective(s)

#### Development Objective(s) (From PAD)

**21. The proposed Project Development Objective (PDO) is to improve Argentina's capacity to manage selected environmental priorities across jurisdictions.** Specifically, with a focus on the three priorities - AQM, wildfire management and waste management. By supporting policy development and capacity building, deployment of information infrastructure, and physical investments for dumpsite closure and redevelopment, the project will help national and participating local jurisdictions improve their capacity, coordination and cooperation to manage the three priorities with (a) agreed action plans, (b) consistent policy instruments at the operational level, (c) improved technical capacity of their staff, (d) access to real-time air quality data and wildfire early warning data for informed decision-making, and (e) practical knowledge on the closure and redevelopment of legacy dump sites for new public uses. Acknowledging the constraints of the federal system, MAyDS will enter into formal agreements with participating governments to ensure full commitments of both parties to carry out project activities and maintain and operate project investments during and after project

<sup>19</sup> Under SDG 11, Argentina is committed to monitoring air quality in cities with more than 300,000 inhabitants.

<sup>20</sup> For NDCs, see <https://unfccc.int/NDCREG>. For LTS, see <https://unfccc.int/process/the-paris-agreement/long-term-strategies>.

For NCCMAP, see [https://www.argentina.gob.ar/sites/default/files/pnaymcc\\_2022 - vf\\_resol.pdf](https://www.argentina.gob.ar/sites/default/files/pnaymcc_2022 - vf_resol.pdf). Note that as of May 21, 2023,

Argentina still is in the process of preparing its National Adaptation Plan to be submitted to the United Nations Framework Convention on Climate Change.

<sup>21</sup> Short-lived climate pollutant (SLCP) reductions can result in observable climate benefits in much shorter time frames than long-lived GHGs and are the important lever available to slow the rate of global warming and the mounting toll of extreme weather events in the first half of this century. Black carbon from fire and other sources is a component of PM2.5, the critical air pollutant.



implementation in a sustainable manner. Among others, the national and local governments will commit under such participation agreement to improve their cooperation in managing the three environmental priorities based on (a) consistent policy instruments and institutional mechanisms developed under the project (b) accurate and transparent environmental information generated from project investments. It is expected that improved management practices across jurisdictions on the three priorities will generate direct environmental benefits of reducing pollution discharges and GHG emission.

#### Key Results

**22. Progress toward the achievement of the project objective will be measured using the following PDO-level results indicators:**

- Participation agreements signed between MAdyS and participating provincial and municipal governments (number).
- Consistent national and provincial policy instruments adopted for the three environmental priorities (number).
- Urban centers with real-time disclosure of air quality information (number).
- Reduced response time to wildfire events in monitored areas (percentage).
- Areas of legacy dump sites closed and transformed to new public areas (hectares).
- Net GHG emissions reductions (metric tons of CO<sub>2</sub>eq per year).

#### D. Project Description

**23. The proposed project will have four components:** (1) Policy Development and Capacity Building, (2) Environmental Information Management, (3) Closure of Legacy Dump Sites, and (4) Project Management. Climate resilience will be considered fully in all physical investments of the project. Successful implementation of these interventions will help Argentina improve its enabling environment for effective management of the concerned environmental priorities across jurisdictions. Analytical and consultation activities will be supported to review the gender aspects of each environmental priority, with the expectation that targeted gender actions will be incorporated into new policy instruments to be developed under the project. In parallel, measurable outcomes in terms of reduction of gender gaps will be seek in broader and better documented crosscutting areas (see Section IV-E).

**24. Component 1: Policy Development and Capacity Building.** This component will support MAdyS and participating local governments to improve their technical capacity and cooperation for the management of the three environmental priorities through (a) policy development and (b) building technical capacities of public servants and relevant stakeholders to manage the three environmental priorities. Component 1 will build on results and lessons learned from Components 2 and 3, and its outputs are expected to help scale up successful project interventions at the national level.

**25. Subcomponent 1.1: Policy Development** will support MAdyS to carry out policy studies to review the existing policy framework for the three environmental priorities and identify areas where potential improvements can be proposed, with a particular focus on management across multiple (at least, two) jurisdictions. Based on the studies and information generated from project interventions on air quality, fire alerts, and dump sites, it will support MAdyS, provincial and municipal authorities in developing and adopting the following policy instruments at the operational level:



- National plans for AQM, integrated fire management and GIIRSU;
- AQM plans for three metropolitan areas that will receive project support on air quality monitoring and will involve multiple subnational jurisdictions;
- Six provincial plans for integrated fire management and three provincial GIIRSU plans;
- National air quality standard on PM<sub>2.5</sub> involving the national government and multiple subnational jurisdictions;
- National technical guidelines on the air quality monitoring network, the wildfire early detection system, and the closure and redevelopment of legacy dump sites.

26. **To aid the preparation of national and provincial AQM plans, this subcomponent will also support a pilot pollution release registration system with its associated source apportionment study, chemical speciation and air quality modeling to enable better monitoring and forecasting of air quality.** In addition, to support the development of national and provincial GIIRSU plans, this subcomponent will support a study to explore financing options to mobilize private sector investments in dump site closure and redevelopment. To align with the strategic directions provided by the country's NDCs/LTS/NCCMAP, the GIIRSU plans will promote the adoption of circular economy approaches and interventions to minimize waste generation and disposal. Better implementation of GIIRSU plans is expected to help reduce flood risks caused by waste leakages into surface water bodies of the country.

27. **During project implementation, it is expected that all these policy documents will be adopted, except for the AQM plans which are only expected to be presented to relevant authorities for consideration.** This reflects the complexity and multisectoral nature of air quality issues and the fact that there are still limited air quality monitoring data to support informed decision-making in the country.

28. **Subcomponent 1.2: Capacity Development** will help develop and strengthen the technical capacity of MAdS and participating subnational governments (provincial and municipal) in managing the three concerned environmental priorities, including (a) methodologies and good practices for environmental information collection (on fires, air quality, and GIIRSU/dump sites), processing, analysis, sharing, and disclosure and (b) technical studies and training on topics such as (i) pollution release (including GHGs) and transfer registry, source apportionment studies, chemical analysis, and air quality modeling,<sup>22</sup> (ii) integrated fire management approaches and practices; (iii) dump site assessment, redevelopment, post-closure management, and monitoring (including methane); (iv) social inclusion and gender issues in GIIRSU, focusing on addressing the vulnerability of female waste pickers, gender-based violence (GBV) risks, and the needs of female-headed households located nearby the dumpsites to be redeveloped; and (v) mechanisms to further improve environmental co-management in the country. For dump sites, the focus will be on participating municipal governments as they manage the closed dump sites and newly developed public areas.

29. **Component 2: Environmental Information Management.** This component will support MAdS and provincial authorities in improving their physical infrastructure for collection, management, and public disclosure of critical environmental information through (a) the development of a national air quality monitoring system with an initial focus on a few major urban centers, (b) the development of a national wildfire early warning system with a focus on fire-prone areas, and (c) improvements in environmental information management infrastructure and operations at both the national and provincial levels. Due to close linkages

<sup>22</sup> The apportionment studies will examine chemical compositions (including heavy metals such as lead) and source characteristics of PM<sub>2.5</sub> to better inform potential AQM control measures of different sources.



between wildfire and severe air pollution events in the country, MAyDS confirmed that the National Fire Management Fund will develop a specific budget line to finance O&M of the national air quality monitoring network and wildfire early warning systems. Detailed arrangements will be formalized during project implementation as a pre-requisite to investment in physical infrastructure. All physical investments will include climate-proof design (such as sufficient structural stability under extreme weather events, proper drainage, firebreaks, and humidity control for precise monitoring equipment) to ensure adequate operation of such investments under a changing climate. For AQMS and wildfire early detection units, the selection of their exact locations will exclude sites that may require involuntary land acquisition, restrictions on land use, physical displacement or potential economic displacement.

**30. Subcomponent 2.1: National Air Quality Monitoring System** will support the development of a national air quality monitoring network with a mix of fixed stations and mobile monitoring units in major urban centers and selected air pollution hotspots. It is expected that 16 fixed AQMS will be distributed among AMBA (4), the Rosario metropolitan area (4), the Cordoba metropolitan area (4), and the Paraná/Delta basin (4). The mobile stations will be used to carry out year-round air quality monitoring campaigns to supplement data from the fixed stations in extended areas, monitor air quality affected by fire events, and verify air quality changes before and after the closure of legacy dump sites to be financed by Component 3. Monitoring parameters of fixed stations will include carbon monoxide, carbon dioxide, ozone, nitrogen dioxide, sulfur dioxide, nitrogen oxide, hydrogen sulfide, ammonia, ethylene oxide, methane, total volatile organic compounds, formaldehyde, methyl mercaptan, chlorine, hydrogen chloride, PM<sub>1.0</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, ambient noise, and ultraviolet radiation. Specific monitoring parameters of mobile stations will be decided during project implementation based on site-specific monitoring needs. MAyDS will recruit contractors to provide mobile air quality monitoring services and will procure and use contractors to manage O&M of project-financed fixed stations during the first two years of operation, while in parallel, the contractors will provide technical training to MAyDS staff on such matters. Project-financed fixed stations will remain the property of MAyDS, and all monitoring data will be transmitted to the national EIC for real-time processing and disclosure.

**31. Subcomponent 2.2: National Wildfire Early Warning System** will support the development of a network of wildfire early detection units in wildfire-prone localities. Based on the piloted early wildfire detection technology, MAyDS will contract the construction and O&M of 45 early wildfire detection units covering approximately 89,000 km<sup>2</sup>, mostly in the provinces of northwest and northeast regions (Jujuy, Salta, Tucumán, Catamarca, La Rioja, Santiago del Estero, Chaco, Formosa, Corrientes, and Misiones).<sup>23</sup> Each unit will be equipped with multi-spectrum cameras installed on 30–40 meter towers. With AI-enabled software, it will identify geographic coordinates of potential fire spots and issue fire alerts in real time to provincial authorities and national EIC for processing and responding to such alerts. To further strengthen its early warning systems, MAyDS will contract drone services in the protected areas of Chubut, Río Negro, Neuquén, La Pampa, San Luis, Córdoba, Santa Fé, Entre Ríos, Corrientes, Misiones, Chaco, Formosa, Jujuy, and Tucumán. MAyDS has also planned to finance additional systems of early wildfire detection units and drones with its own budget and financing from other donors to improve the coverage of its wildfire early warning system. These investments are expected to help provincial and national governments significantly shorten the time required to detect and respond to wildfire events and thus reduce the negative impacts of wildfire events. Both national and provincial

<sup>23</sup> The early wildfire detection units use multispectral sensors installed on tall structures similar to radio towers and artificial intelligence-enabled real-time data transmission and processing for early detection of smokes and fires within an area of up to 2,800 km<sup>2</sup>. MAyDS has installed five such units, which have reported positive initial results. An example is that the system was able to detect a fire and generate pictures of an individual who might have been involved in igniting the fire. This has enabled MAyDS to explore legal avenues to control such illegal actions.



competent agencies will receive the alerts and exchange information on the triggered responses, and as needed speed up the eventual escalation of the interventions when higher level support is required.<sup>24</sup>

**32. Subcomponent 2.3: Improvements in Environmental Information Management** will finance the procurement of new information technology (IT) equipment, software and consulting services for the deployment of new information management systems (servers, or cloud services) to improve the capacity of the national EIC and selected provincial fire management information centers for receiving, storing, processing, and sharing environmental data collected through investments of this project (that is, air quality monitoring data, wildfire early detection data, and dump site data) and the Government's own programs. It will also support the EIC to improve its IT platforms to process received data, issue wildfire alerts to provincial governments, disclose to the general public critical environmental information such as real-time air quality information and regular reports of wildfire alerts and provincial responses. Such information disclosure will be carried out under the existing regulations of the country and is expected to enable and incentivize local governments to improve their management systems and practices for the three environmental priorities.<sup>25</sup>

**33. Component 3: Closure of Legacy Dump Sites.** This component will finance the closure and transformation of about 20 sites from legacy dump sites to new public areas. The targeted sites will have an area between 0.5 to 4 ha, as such sites account for the majority of identified dump sites in Argentina. Site-level interventions will include (a) environmentally sound closure of dump sites to prevent the transport of pollutants from the dump sites to surface and ground water bodies, (b) collection of landfill gas (methane), (c) post-closure management and monitoring of the dump sites, and (d) climate resilient vegetation, landscaping and facilities for public uses.<sup>26</sup> Based on lessons learned from these 20 sites, this component will support the development of engineering designs and investment plans for 50 additional dump sites. With an expectation that such investments will generate new land areas for appropriate municipal uses (such as parks and sports facilities), these investment plans will be presented to interested public and private investors for consideration.

**34. MAdYS plans to work directly with selected municipal governments to implement such investments.** Criteria for the selection of such sites include the following, among others:

- (a) Ensuring the distribution of dumpsite closure and redevelopment investments in all regions to promote future replications of such investments across the country;
- (b) Adopting a risk-based approach to select sites with high risks to local communities, in particular those sites vulnerable to climate events such as heavy rainfall or flood;
- (c) Confirming the non-operational status of candidate sites;
- (d) Verifying the proper operation of existing waste management systems in the concerned municipalities;
- (e) Securing municipal commitments to (i) not create new open dump sites and (ii) properly maintain the post-closure dump site areas;
- (f) Assessing the potential for redeveloping the closed dump sites for new public uses.

<sup>24</sup> As stipulated in the forest fires law, local governments are in charge of fire responses and the national government provides support to local fire suppression efforts at the request of the local governments.

<sup>25</sup> Project procurement of IT equipment/services will ensure the adoption of best available technologies in the country.

<sup>26</sup> The utilization of collected gases will be considered during project implementation if such investments are technically and financially feasible. Drought-resistant grasses and trees and deep-rooted plants will be selected for the redeveloped sites. As needed, windbreaks will be incorporated into landscape design to reduce fire risk.



35. **During project implementation, detailed assessments will be performed for each selected site**, to ensure that site-specific environmental (such as lead) and social (such as gender) issues are well identified. Such environmental and social (E&S) issues will then be incorporated into risk-based site closure investment and post-closure management plans. As part of such assessments, appropriate stakeholder consultation will be performed to solicit their inputs on land-use plans of new public areas developed at the closed dump sites.

36. **Component 4: Project Management.** This component will support the incremental cost of MAyDS and participating provincial and municipal authorities for carrying out project-supported activities. Project management will support the implementation of existing national gender regulations by (a) training project staff and consultants on gender and diversity matters to promote a gender-sensitive environment in the MAyDS, (b) disseminating nationally adopted gender principles and practices to participating local governments as appropriate, (c) promoting women' participation in decision-making processes of all project activities, (d) encouraging women participation in project trainings; and (e) promoting the hiring of women and sexual minorities for technical and managerial positions of all project financed activities, when the skills and experience from alternative candidates prove to be equivalent.

37. **The project's direct beneficiaries are as follows:**

- **Municipalities, residents, and businesses of fire-prone areas that will be under the monitoring of project-financed wildfire early warning system.** Early detection of wildfire events could reduce their exposure to wildfire damages such as air pollution, losses of assets, lost revenues from productive activities, and lost infrastructure and utility services.
- **Residents living close to dump sites to be closed by the project.** These residents will benefit from improved environmental quality because of closed dump sites and newly developed public areas.
- **MAyDS and provincial and municipal authorities that are in charge of AQM, fire management, and waste management.** These agencies will benefit from the project's support to improve its policy instruments, information management infrastructure, and real-time air quality and wildfire information for proper management of the three priority issues. The staff members of these agencies are expected to improve their technical capacity through their participation in project-supported capacity-building activities and implementation of other project activities.

38. **The project's indirect beneficiaries are as follows:**

- **Residents of major urban centers with air quality monitoring supported by the project.** With real-time air quality information, they may minimize their exposure to poor air quality, and provide informed support for AQM interventions.
- **Residents of cities with dump sites to be closed under the project.** With project support, these residents may benefit from the use of the new public areas transformed from closed dump sites.
- **Argentine population.** The new and improved policy instruments (standards, plans, and guidelines) at the national level will help improve the Government's cross-jurisdictional management of the three environmental priorities, and thus the population will benefit from reduced environmental risks/exposures.



Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No
Summary of Screening of Environmental and Social Risks and Impacts	

39. **The integrated Environmental and Social Risk is rated as Substantial.** During the construction phase, project investments are expected to have limited risks and adverse environmental and social impacts related to (a) small-scale investments for the proposed air monitoring stations and fire early warning system, (b) the preventative nature of fire management practices, and (c) construction within the boundaries of existing dump sites. The operation phase of project investments is expected to generate positive environmental and social impacts through (a) generation and dissemination of accurate and timely environmental information, (b) reduced fire risks and damages, and (c) reduced pollution from fire events and open dump sites.

40. **From an environmental perspective, project related impacts would involve environmental pollution events associated with civil works in case of inadequate waste management; hazardous materials handling, increased risk of occupational incidents and accidents; nuisance on the neighboring and minor community health and safety issues during works in public space.** In this context, environmental risks and potential impacts are predictable in general terms and expected to be temporary and/or reversible, site-specific, not significant nor complex/large, not expected to cause serious adverse effects to human health and the environment and easily mitigated in a predictable manner by applying routine and accessible measures and safety precautions including, as applicable, the adoption of Good International Industry Practices as defined in the World Bank Group General Environment, Health and Safety Guidelines.

41. **From a social perspective, risks are related to the potential exclusion of vulnerable groups – including IPs that may be living in affected urban, peri-urban and rural areas – from the benefits of the Project if they are not properly included in the stakeholder engagement programs as interested parties to be consulted and their feedback taken into consideration.** There is also a low risk of potential impacts on cultural heritage of IPs related to works and infrastructure financed under the project, related to the installation of fire prevention units. With respect to Environmental and Social Standard #5, risks and impacts are limited to potential economic displacement of informal activities in the dump sites (component 3) – such as, informal waste pickers and others that may informally be using the site –. Sexual exploitation and abuse and sexual harassment risk is Low.

## E. Implementation

### Institutional and Implementation Arrangements

42. **MAyDS will manage all project implementation issues.** Within the ministry, the Secretariat of Environmental Monitoring and Control (*Secretaría de Control y Monitoreo Ambiental*, SCyMA) will be in charge of technical aspects of project implementation, including the management of E&S risks and impacts according to the World Bank's Environmental and Social Framework. The General Division of Projects with External Financing and International Cooperation (*Dirección General de Proyectos con Financiamiento Externo y Cooperación Internacional*, DGPFEyCI) of the Secretariat of Administrative Management (*Subsecretaría de*



*Gestión Administrativa, SSGA) will be in charge of administrative and fiduciary aspects of project implementation, including the management of participation agreements to be signed with provincial and municipal authorities for the implementation of specific project activities.* MAyDS has used and is using this implementation arrangement to manage investment operations of the IDB, the World Bank, and other donors.

**43. During project implementation, MAyDS will establish a project team to manage the day-to-day implementation of project activities.** Among others, this team will include a full-time project coordinator, one full-time environmental risk management specialist, one full-time social risk management specialist, one occupational health and safety specialist, one communications specialist, one gender specialist, and one monitoring and evaluation (M&E) specialist. Sufficient budget allocations have been incorporated in project financing to ensure that MAyDS can mobilize and sustain qualified experts for these positions.

**44. MAyDS will enter formal agreements with participating provinces and the national parks authority on investments for the wildfire early warning system and with participating municipalities for AQMS and dump site closure investments.** Among others, such participation agreements will clearly define the roles and responsibilities of MAyDS and participating authorities in related project activities, including the O&M of equipment financed by the project, when relevant (project-financed equipment for AQM and wildfire early warning will remain the property of MAyDS, which will retain the responsibility for O&M). These agreements will specify how air quality and wildfire alert and response information will be collected, processed, analyzed, shared across jurisdictions, and disclosed to the public. Focal points of local governments and their supporting staff will be defined in such agreements.

**45. Before project implementation in a given year, the Secretary will hold an annual review meeting with participating local governments to review the implementation results of the previous year and approve the implementation plan for the coming year.** The Project Operational Manual (POM) will specify how the project team will work with responsible technical divisions of SCyMA and the concerned provincial and municipal governments to review and validate terms of reference and technical specifications of bidding documents, as well as outputs from contracted services and works.

## CONTACT POINT

### World Bank

Jiang Ru  
Senior Environmental Specialist

Pablo Francisco Herrera  
Senior Environmental Specialist

### Borrower/Client/Recipient

The Argentine Republic

**Implementing Agencies****Ministry of Environment and Sustainable Development**

Martin Illescas, Director General de Proyectos con Financiamiento Externo y C, millescas@ambiente.gob.ar

**FOR MORE INFORMATION CONTACT**

The World Bank  
1818 H Street, NW  
Washington, D.C. 20433  
Telephone: (202) 473-1000  
Web: <http://www.worldbank.org/projects>

**APPROVAL**

Task Team Leader(s):	Jiang Ru, Pablo Francisco Herrera
----------------------	-----------------------------------

**Approved By**

Practice Manager/Manager:		
Country Director:	Paul Procee	18-Sep-2023