ARG/MIE/Rural/2011/1

Ex Post Evaluation Summary

Increasing Climate Resilience and Enhancing Sustainable Land Management in the Southwest of the Buenos Aires Province, Argentina

February 2024

The Adaptation Fund (the Fund) was established through decisions by the Parties to the United Nations Framework Convention for Climate Change and its Kyoto Protocol to finance concrete adaptation projects and programmes in developing countries that are particularly vulnerable to the adverse effects of climate change. At the Katowice Climate Conference in December 2018, the Parties to the Paris Agreement decided that the Fund shall also serve the Paris Agreement. The Fund supports country-driven projects and programmes, innovation, and global learning for effective adaptation. All of the Fund's activities are designed to build national and local adaptive capacities while reaching and engaging the most vulnerable groups, and to integrate gender consideration to provide equal opportunity to access and benefit from the Fund's resources. They are also aimed at enhancing synergies with other sources of climate finance, while creating models that can be replicated or scaled up. www.adaptation-fund.org

The Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) is an independent evaluation advisory group accountable to the Fund Board. It was established in 2018 to ensure the independent implementation of the Fund's evaluation framework, which will be succeeded by the new evaluation policy from October 2023 onwards. The AF-TERG, which is headed by a chair, provides an evaluative advisory role through performing evaluative, advisory, and oversight functions. The group is comprised of independent experts in evaluation, called the AF-TERG members. A full-time secretariat provides support for implementation of evaluative and advisory activities as part of the work programme.

While independent of the operations of the Fund, the AF-TERG aims to add value to the Fund's work through independent monitoring, evaluation, and learning. www.adaptation-fund.org/about/evaluation/

This ex post evaluation is a product of the Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG). The evaluation was conducted by GeoAdaptive and benefitted from the invaluable inputs and leadership by Jindra Cekan/ova (Valuing Voices), Margaret Spearman (independent consultant), Dennis Bours (AF-TERG Secretariat Coordinator in the period July 2019 – April 2023), and Mariana Vidal Merino (AF-TERG Data Analyst). The focal point for this work was AF-TERG member Susan Legro. Special thanks are also extended to all the members of the AF-TERG, Adaptation Fund Board Secretariat, and other stakeholders who provided support in the delivery and finalization of this evaluation.

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AF-TERG, Washington, DC.

This report was finalized in February 2024.

Cover page images: A working weather station in Teniente Origone. Source: GeoAdaptive, 2023.

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General information

AF Project ID	ARG/MIE/Rural/2011/1	
Country	Argentina, Province of Buenos Aires	
Project Title	Increasing Climate Resilience and Enhancing Sustainable Land Management in the Southwest of the Buenos Aires Province, Argentina	
Intervention Area	1 province: Provincia de Buenos Aires; 4 municipalities: Bahía Blanca, Villarino, Puan, and Patagones. (app. 6,500,000 ha)	
Implementing Entity	The World Bank - International Bank of Reconstruction and Development	
Executing Entity	Ministry of Environment and Sustainable Development	
Budget (USD)	Grant Amount: US $4,296,817	
Start date	11/06/2015	
Completion Date	30/09/2019	
Years	4 years	
Sector	Agriculture	
Overall Goal	Contribute to reducing climate and human induced vulnerability of the agroecosystems in the Southwest of the Buenos Aires Province by increasing adaptive capacity of key local institutions and actors, and piloting climate resilient and sustainable land management practices. Participatory planning processes will be used to identify and pilot concrete adaptation measures focusing on water, crops and livestock management to promote climate resilience.	
Project Components and Outcomes	**Component 1:** Reducing institutional and community-level vulnerability **(selected as the focus of the ex post evaluation)**	**Outcome 1:** Contribute to reducing climate vulnerability of the agroecosystems in the Southwest of the Recipient's Buenos Aires Province
	Component 2: Implementing adaptation measures in productive agroecosystems	**Outcome 2:** Contribute to reducing human-caused vulnerability of the agroecosystems in the Southwest of the Recipient's Buenos Aires Province
	Component 3: Applying participatory approach to knowledge management and local capacity – development for adaptation to climate change	**Outcome 3:** Enhanced local knowledge and capacity for adaptation and response, developed in a participatory manner
	Component 4: Developing a sustainability strategy	**Outcome 4:** Improved local, provincial and national level technical and institutional capacity to sustain, scale up and replicate the Project outcomes
Project Ratings at Terminal Evaluation	Project's sustainability	Moderately satisfactory
	Effectiveness	Satisfactory
	Efficiency	Satisfactory
	Financial and economic sustainability	Moderately satisfactory
	Socio-political sustainability	Moderately satisfactory
	Institutional and governance	Moderately satisfactory
	Environmental sustainability	Moderately satisfactory
	Uncertainty regarding the impacts of climate change	Moderately satisfactory

Evaluation background

This ex post evaluation is the third in a series of pilot ex post evaluations of strategically selected projects that have been closed between three and five years at the request of the Adaptation Fund Board to develop post-implementation learning and impact evaluation for projects and programmes.

The ex post evaluation of this project was commissioned by the Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) and aimed to analyse a project outcome in order to answer two questions:

1. Has the project outcome selected as subject of the ex post evaluation been sustained since project completion?
2. How do the sustained outcome characteristics contribute to the system's resilience?

These evaluations aim to gauge AF's overriding desired impact, which is: "Adaptive capacity enhanced, resilience strengthened and the vulnerability of people, livelihoods and ecosystems to climate change reduced."

Evaluation process

The ex post evaluation was conducted by the contractor GeoAdaptive with a national evaluator in the field. The evaluation started in April 2023 and included fieldwork in August 2023. It was carried out in the following stages: review of project documentation, selection of the outcomes to evaluate ex post, stakeholder consultations and co-creation of the evaluation focus, field visits and data collection, data analysis, and report write-up.

Prior to the start of the evaluation, the contractor and national evaluator underwent training on ex post evaluation methods and piloting processes. This training facilitated discussions with stakeholders that led to the selection of an outcome to evaluate using the ex post evaluation methodology.

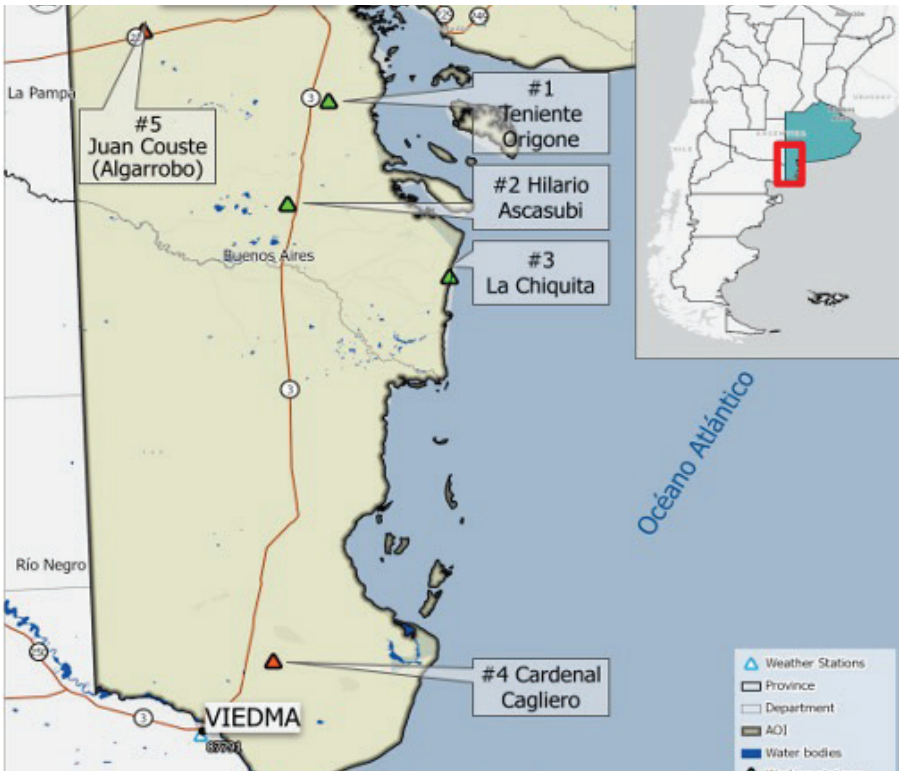
Evaluation scope

The scope of the evaluation (Component 1) was determined in consultation with the implementing entity and other stakeholders. Component 1 was evaluated for ex post: Reducing institutional and community level vulnerability, specifically Outcome 1: Contribute to reducing climate vulnerability of the agroecosystems in the Southwest of the Recipient's Buenos Aires Province. Sub-component: Data Collection Information and Early-Warning System (IEWS). The project output studied was the construction of 11 hydrometeorological stations: five were reported during stakeholder consultations as currently working, while six were reported as not in operation. At project closure, the total number of beneficiaries reported was 5,057 potential beneficiaries, and 10 local employees were reported as receiving training.

The evaluation area included four counties: Bahía Blanca, Villarino, Puan, and Patagones. The fieldwork focused on visiting five hydrometeorological stations built on Argentina's Route 3, going from Bahía Blanca to Viedma. This maximized the number of stations visited and the number of beneficiaries and producers interviewed.

- Station 1: Teniente Origone – working
- Station 2: Hilario Ascasubi – working
- Station 3: La Chiquita – working
- Station 4: Cardenal Cagliero – non-working
- Station 5: Juan Couste – non-working

FIGURE 1: Areas Visited During Fieldwork (Source: GeoAdaptive, 2023)



Evaluation methods and limitations

The evaluation team used qualitative tools, including one-on-one key informant interviews (semi-structured interviews) with producers and technicians, transect walks, field observation, and photographic documentation A total of 18 interviews were carried out: nine with technicians and nine with producers.

One limitation was the limited sample frame due to the target population. Data collection was limited to IEWS beneficiaries, including individual agriculture producers, members of agricultural producers organizations, and technical experts from the National Institute of Agricultural Technology (INTA) and the National Meteorological Service (NMS), for a total of 18 cases. Nine cases were producers in the area of interest (individuals or producers organizations) and nine cases were technical staff (INTA, NMS, Municipality). Only one of the interviewees was a woman, an INTA technician. No women producers could be identified for the interviews with the beneficiaries, which is likely to be a reflection of the great degree of masculinization in the agro-livestock industry in Argentina.

Some selection bias is acknowledged in the selection of interviewees, as the implementer, INTA, selected the respondents. However, the evaluation attempted to mitigate this bias by selecting non-working stations. A deeper ex post evaluation was limited due to a restricted budget and a short time frame for fieldwork.

Finally, the study has limitations in relation to time and resources allocated and time elapsed since project closure. It was not possible to collect quantitative results to establish that the information delivered from the IEWS had resulted in changes and improvements in agricultural production.

Findings: sustainability, resilience, and impact

The sustained outcome indicators correspond to the indicators that were used during the development of the project (Project Proposal, Midterm Evaluation, and Project Completion Report) to measure the selected outcome: "Relevant threat and hazard information generated and disseminated to farmers and other stakeholders on a timely basis." There are two types of indicators for this outcome: those related to assets (hydrometeorological stations) and those related to capacities. The evaluation team formulated questions for the beneficiaries based on these assets and capacities.

Indicators and findings related to assets	
Outcome indicators	Findings related to assets
1. Relevant threat and hazard information generated and disseminated to farmers and other stakeholders on a timely basis	• 100% of producers interviewed indicated they have access to climate information from the IEWS. • 44% of the producers indicated the information provided by the IEWS improves their response to climatic shocks. The other 56% indicated IEWS has a partial impact. • Producers indicated several ways the information has improved their response to climate shocks. For example, IEWS data improves drought preparedness, aids in selecting the best planting dates, provides insights into forest fire-related data, and enhances understanding of variations in precipitation. • Data used by producers to guide decisions on productive activities was mainly from climate maps, maps on rain data, temperature and rain forecasts, and alerts for droughts or information regarding lack of pasture. • Climate data has enabled 33% of producers interviewed to farm differently than before the project. • IEWS information allows producers to farm differently in many ways. For example, it aids in deciding planting dates dependent on the presence of pests and helps them make decisions to combat disease. • Data from the IEWS has helped producers to address challenges regarding droughts and windstorms.
2. Share of beneficiaries satisfied with climate-related information and recommendations generated by the IEWS	• One-third of the producers fully agreed that the information on threats and dangers they received from IEWS improved their land management since the project ended, while two-thirds indicated that it has improved partially.

(continued)

Indicators and findings related to capacities	
1. Percentage/ number of targeted local public employees trained (disaggregated by gender)	• Technicians were trained on how to incorporate meteorological data when providing recommendations and guidance to producers. Those capacities are still in use, as evidenced by the compilation and dissemination of the reports beyond project closure. • Technicians informed producers on how to use IEWS information. All recommendations referred to the IEWS reports. Additionally, technicians visited producers' fields to review the state of crops and inform problems such as a lack of fodder, implantation failures, tracking timing, and when to buy seeds, among others. They trained producers regarding the use of reservoirs, afforestation, pasture management and sustainable use of soils. • Technicians continue to provide similar support to producers through regular meetings, and producers continue to apply the recommendations received. • 9 of the 10 initial employees trained are still part of the project. Three additional technicians were trained to replace staff in case of staff turnover.
2. Percentage of technical experts satisfied with the hazard information provided by the IEWS	• 8 of the 9 technical experts interviewed agreed with the statement that the hazard information provided by the IEWS has been used adequately by farmers and collaborating institutions.

Additional observations from fieldwork included the following:

- Producers have sustained access to climate information through INTA's quarterly IEWS reports. These reports influence producers to different extents when making decisions about their agricultural practices.
- Eight of the 10 producers interviewed reported that the climate information from IEWS has helped them to adapt more effectively to climate disturbances, with an additional producer reporting that the reports had partially helped (however, no objective data is available to confirm this impact).
- INTA continues to maintain the hydrometeorological stations under their jurisdiction that were constructed under the project; they have also continued to visit producers and to provide them with hydromet data reports.
- At present, producers have increased access to hydromet data compared to project closure due to IEWS quarterly reports, which are now delivered through various communication channels such as WhatsApp, Google Sheets, and WordPress.
- Producers and technicians reported that producers are adopting anticipatory measures to confront climate variations (see box below) as well as integrating less-invasive land management practices. The IEWS has contributed, in combination with other initiatives, to the progressive transition from intensive traditional practices to farming techniques that promote the protection and recovery of soils.

Improved producer resiliency:

Interviewees highlighted various ways in which the IEWS system and quarterly reports have increased producer resiliency.

Overall, 78% of producers stated that the IEWS climate information had helped them adapt. When asked to describe how the information had helped, their responses mentioned improving drought preparedness, helping them choose the best planting dates, allowing them to see data related to forest fires, and improving their understanding of variations in precipitation.

Furthermore, technicians remarked that producers have made various changes in their agricultural practices in response to the recommendations made by reports. Some specific examples of improvements in agricultural practices include reducing the animal load in the fields, adjusting the type of tillage based on the time of year, and perennializing their land.

Natural field with a predominance of perennial species. Source: Fieldwork interviews, 2023, and IEWS September Report, 2023.

Negative outcomes:

- In the absence of dedicated budgetary resources and clear responsibilities for the maintenance of hydrometeorological stations, stations under the jurisdiction of the National Meteorological Service (NMS) are in a state of abandonment.
- The data accuracy of the overall IEWS network is constrained by the fact that 6 of the 11 stations from the total network sample – those administered by the NMS – are not currently providing data to farmers.

Non-working stations:
Obsolete technology and lack of maintenance

Out of the 5 stations visited during the fieldwork, 2 of the stations were non-working. Both site 4, Cardenal Cagliero, and site 5, Juan Couste, were not transmitting data due to the obsolescence of 2G communication networks.

During the site visit to Cardenal Cagliero, it was observed that cattle had caused damage to the fencing. Parts of the fence were reinforced with additional wire from the Ministry of Agrarian Development of the Province of Buenos Aires (MAD); however, the site is not regularly maintained.

Site 4: Cardenal Cagliero (Carmen de Patagones), non-working station. Source: Fieldwork, 2023

The Juan Couste station was in a similar state of abandonment, with overgrown vegetation observed throughout the site. Municipal personnel indicated that the station was never maintained and that the municipality was never permitted to help in those duties. The NMS was identified as the main responsible entity for both non-working sites.

Emerging/unexpected outcomes

- Technicians interviewed stated that some producers continue to use traditional farming practices that are harmful to soil quality, ecosystems, and human health. Although the IEWS has discouraged the use of some destructive practices, such as plowing, the IEWS cannot by itself systemically change culturally embedded practices.

Evidence of resilience

- The IEWS system is redundant in a positive sense: i.e., it is able to continue its operation and deliver data to all farmers in the network despite the obsolescence of some of the stations. There are additional contingency features of the system, such as the option to collect data manually in case of connectivity failure.
- Both producers and technicians in the field report that the program has had an impact on land management. Producers have reported the adoption of new land-management practices in the target area studied.
- Continuous feedback loops have been maintained by INTA through the continuation of field visits, where technicians provide simplified explanations and technical advice to producers. All the producers interviewed indicated that they still receive support through INTA.
- Since project closure, INTA reports have evolved based on producers' continuous feedback. During the project, reports included technical language that was difficult for producers to understand. For this reason, INTA has made continuous iterations to adjust the language and format of the reports to improve readability and accessibility.
- The IEWS contributes to an ecosystem of tools that enhances agricultural production in the intervention area. The IEWS is an additional tool used to guide producers' agricultural decisions, although it is not always the main one. Decision-making is also guided by agricultural experience, observation, and cultural traditions.

It should be noted that productive flexibility depends to a large extent on the resources and land of the producers. While small producers are recognized as more vulnerable to climate shocks because they have fewer resources to diversify their production, this evaluation did not attempt to measure the distribution of benefits across different groups due to time and resource constraints.

Adaptation Fund impact

The IEWS system, in addition to other actions included in the project, has enhanced the ability of producers to take anticipatory actions, contributing to fulfilling the intended impacts of "adaptive capacity enhanced, resilience strengthened and the vulnerability of people, livelihoods and ecosystems to climate change reduced."

It is important to note that while the missing data inputs from the six stations led to a less dense network of input data, the level of detail from the stations was still seen as sufficient to inform adaptive measures in the form of decisions about planting, etc.

- Sustainability of project assets was limited, because six of the hydrometeorological stations from the total network of 11 stations were not transmitting data and were not properly maintained. That said, the five stations that functioned provided valuable hydromet and technical information to farmers in need of production data and advice across the region studied.
- Despite the non-working stations, the producers interviewed reported that their vulnerability decreased thanks to the increased predictability of climatic events and to the producers' application of INTA quarterly report recommendations regarding best agricultural practices.
- It was not possible to determine how well the hydromet stations functioned in reducing vulnerability across producers, as interviewees reported their perceptions to the evaluator, but agricultural production was not measured.

Lessons learned and recommendations

Ownership and project exit: INTA, which had a local presence, was involved and engaged with all stations from the project continuing to operate, while NMS, which was based in Buenos Aires, did not. The disengagement of the latter resulted in stations that were not operational. INTA plays a key role in sustaining the provision of information for decision-making, which both technicians and providers reported was utilized.

Recommendations: Define institutional mechanisms with agencies responsible for maintaining assets over time, assign clear responsibilities for maintenance of the assets, and confirm that the owner/operator is committed to allocating funds for operations and maintenance. Ensure institutional alignment with local-level institutions as a part the project's exit strategy prior to closure.

Gender: In spite of the project proposal's description of gender-sensitive participatory approaches, few women were engaged in project-related productive activities in the field, and no women producers could be identified for the interviews with the beneficiaries. As when women are not mainstreamed in project activities, it was difficult to conduct an ex post evaluation with significant representation from women beneficiaries.

Recommendations: Ensure that projects adhere to the Adaptation Fund gender policy at the design and implementation stage.

Project Data: The selection of the project outcome for the ex post evaluation involved a review of data quality and availability from project formulation to completion. The review of the project indicators revealed that some of them were eliminated or modified over the project life cycle. This lack of consistency resulted in difficulty in measuring some project outcomes during the ex post evaluation. Furthermore, the lack of instruments in the project results framework for assessing resilience made it difficult to track this over time. Finally, data availability, particularly related to capacities, was a problem.

Recommendations: Improve M&E consistency from baseline to endline, using consistent indicators throughout the funding proposal, mid-term reports, and final evaluation. Ensure that the guidance to projects supports their evaluability ex post. Consider requesting IEs to archive data at closure in a way that ensures accessibility at ex post.