



ADAPTATION FUND



Ministerio de Agricultura,
Ganadería y Pesca
Presidencia de la Nación

PROJECT “FAMILY AGRICULTURE ADAPTATION AND RESILIENCE IN
NORTHEAST ARGENTINA TO CLIMATE CHANGE AND VARIABILITY
IMPACTS”

FINAL EVALUATION

OC 120001/2018000174

COUNTRY: **ARGENTINA**

TYPE OF EXECUTING ENTITY: **NATIONAL IMPLEMENTATION ENTITY**

IMPLEMENTING ENTITY: **SECTORAL AND SPECIAL PROGRAMS AND PROJECTS MANAGEMENT
AND MONITORING DIRECTORATE (DIPROSE)**

EXECUTING ENTITIES: **NATIONAL SECRETARIAT OF AGROINDUSTRY (ORA), NATIONAL INSTITUTE
FOR AGRICULTURAL TECHNOLOGY (INTA) AND SECRETARIAT OF ENVIRONMENT AND
SUSTAINABLE DEVELOPMENT**

SUM: **USD 5.640.000**

EXECUTION PERIOD: **OCTOBER 2013-DECEMBER 2018**

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MAY 17, 2019

Acronyms

ACG	Control and Management Area (UCAR)
AF	Adaptation Fund
BPA	Best Agricultural Practices
CA	Memorandum of Understanding
CCC	Communication on Climate Change
CCT	Technical Cooperation Agreement
CDM	Clean Development Mechanism
CE	Specific Agreements
CER	Certified Emission Reduction
CIRN	Natural Resources Research Center (INTA)
CNHPV	National Census of Population, Households and Housing
CNTE	National Coordination Office for Transfer and Extension (INTA)
DNCC	National Climate Change Directorate (SAyDS)
DIPROSE	Sectoral and Special Programs and Projects Management and Monitoring Dir.
EFNA	Unaudited financial statements
EMT	Midterm review
ENI	National Implementation Entity
FA	ArgenInta Foundation
GCF	Green Climate Fund
GHG	Greenhouse Gases
IHE	Station Standardization Reports
INDEC	National Institute of Statistics and Censuses
INTA	National Institute for Agricultural Technology
INTI	National Institute for Industrial Technology
ITP	Project Completion Report
LRT	List of Technical Requirements
MINAGRO	Ministry of Agroindustry
MML	Logical Framework Matrix
MPT	Ministries of Production and Labor
M&E	Monitoring and Evaluation
NDC	Revision of the Nationally Determined Contribution to GHG
NEA	Northeast Argentina
OECD	Organization for Economic Co-operation and Development
ORA	Office of Agricultural Risk
PO	Purchase order
POA	Annual Operating Plan
PPR	Project Performance Report (Annual Report)
PRET	Territorial-based Regional Projects
SAI	Secretariat of Agroindustry
SAyDS	Secretariat of Environment and Sustainable Development
SIGA	Agrometeorological Information and Management System
UAS	Environmental and Social Unit (UCAR)
UCAR	Unit for Rural Change
UNFCCC	United Nations Framework Convention on Climate Change

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EXECUTIVE SUMMARY

Project “Family Agriculture Adaptation and Resilience in Northeast Argentina to Climate Change and Variability impact” is an intervention that may be considered a role model of integrated, sustainable and adaptive management. The project’s life cycle features a pertinent, quality design and effective, efficient, sustainability-oriented implementation from the beginning with significant impacts in terms of adaptation to climate change, both at farm level, and at the provincial and national levels.

Its **objective** is “to enhance the adaptive capacity and develop resilience of small-scale family farming producers to impacts deriving from climate change and climate variability, particularly those impacts that may arise as a result of an increase in the intensity of hydro-meteorological events, including floods and droughts”. The Project has an area of intervention encompassed by the provinces of Chaco, northern Santa Fe, northeastern Santiago del Estero and western Corrientes. These areas have been strongly affected by intense and growing climate variability, ranging from long and intense droughts to severe flooding in very small periods of time.

Short and mid-term project achievements are highly satisfactory. The Project’s **pertinence is highly satisfactory** from different perspectives: selection of the area and of intervention typologies, development of actions that account for state-of-the-art in science, and alignment with AF objectives. Indeed, the project’s lines of actions and approaches adequately address the conflicts identified during design, related to vulnerability in view of climate risks sustained by small-scale producers of the region. The climate risk types addressed are particularly pertinent: droughts, high temperatures and hail. The water excess is addressed, to a lesser extent, mainly in terms of prevention. The theoretical frameworks taken into account are also pertinent. The selection of the geographical area of intervention is appropriate compared with other potential regions of the country, both on account of the country’s highest volatility values in short and long term parameters of rain and temperature (external variable) and the highest relative vulnerability (inter-regional) of NEA producers to the effects of climate change, given their critical social indicators compared with national mean.

Project’s **effectiveness is highly satisfactory** since, as regards its objective, the Project attained 90% of the proposed goal, and as regards its subcomponents/outcomes, most of the originally anticipated goals were achieved and surpassed, despite the fact that some activities were suspended or their relative importance shifted to other activities as a result of flexible management, by just making negligible adaptations to the needs arising in the territory.

Project’s **efficiency is satisfactory** given that budget execution exceeded 90% in general and in all subcomponents /outcomes. However, there is a delay upon commencement, delays in establishing complex administrative procedures and a very difficult last year of execution due to institutional adjustments at the ENI and at the national execution entities. All this generated an increase in administration costs due to time extensions that had to be requested from the AF, although this increase is partially offset by the low administration cost requested by UCAR / DIPROSE in comparison with international standards.

Long-term project achievements are highly satisfactory. The **socio-political sustainability** of the Project is **highly satisfactory**, in general, for having implemented the project building on a broad and consolidated network of public and private actors (ministries, provinces, municipalities, organizations, universities, trade associations and business organizations), for the high degree of ownership of the project shown by the public agencies involved, and for the replication capacity presented by its broad territorial presence. Although some components are more sustainable than

others, the self-construction methodologies; the national origin of the technologies used, replicated and developed; the incorporation of local knowledge for the execution of the works; the integration of the results in the usual dynamics of the institutions involved; and the vast display of capacity building show, in all, a very positive outlook in terms of sustainability delivered by the project. There are, however, external factors, such as an unfavorable socio-economic climate that will undoubtedly put at risk the adaptive capacity of the most vulnerable producers and the ability of State actors to continue their usual tasks as a result of budgetary adjustments, both present and to come.

The **governance and regulatory frameworks sustainability** of the Project is **highly satisfactory**, in general, for having successfully helped to position the matter of climate change on the political and institutional agenda together with the boost given by the government. The Project has set an important precedent in positioning adaptation to climate change at the national and provincial levels, and has built up background for the government's policy for developing diagnosis and planning on climate change at a large scale. The issue of water access and generation and implementation of adaptation technologies for small-scale producers was specifically incorporated by INTA, which made it a priority for its extension programs. Also UCAR / DIPROSE consolidated its capacity to implement adaptation projects with international funds, despite the fact that its recent restructuring deprived it from part of the human resource generated and its re-accreditation with the Adaptation Fund is yet to be obtained.

The **financial and economic sustainability** of the Project is **highly satisfactory** due to the incorporation of its activities in State agencies, but also because a series of initiatives were launched in the last year that pick up and multiply the actions of adaptation to climate change commenced. Specifically, three projects were approved with international funds (one from the AF, one from the GCF, and one from the WB) that sustain and broaden the Project's lines of action, generating necessary diagnostic and planning activities at national level (across all sectors and throughout the territory), investments in coastal cities and ecosystems of the NEA, and a scaling-up of the same line of work that had been in progress in the farming sector, at the level of all the Argentinian provinces (GIRSAR Project). However, financial sustainability would be even more enhanced if there was a national entity accredited with the AF and with the Green Climate Fund.

The **environmental sustainability** of the Project is **satisfactory** because although a scientifically-based vulnerability assessment was not conducted at the beginning of the project, this gap could be bridged by the technical capacity of the executing parties. On the other hand, the new projects in progress in Argentina will be in charge of conducting quantitatively robust vulnerability assessments that will serve as diagnosis for future interventions. The 4th CCC, which is being drafted, will also be an important source of information. Meanwhile, interviews and partial studies allow to anticipate an intensification of the climatic risks in the immediate future in the area of intervention of the project. This Project was very effective for the prevention and adaptation to risks of water stress, but not in terms of water excess, unusual in the area and that could only be faced in the short term with large-sized infrastructure works. In the meantime, only a reconsideration of the agricultural use of lands will allow to reduce climate risks. It will be necessary to continue, therefore, along the path already undertaken.

To **calculate the connection between outcomes and impact**, two types of factors must be considered: internal and external. In the management of the internal and controllable factors, the strategy and the outcomes of the Project in terms of sustainability were very positive since the executing parties really made the Project their own; knowledge and capacities were passed on; institutional networks were created, strengthened, and consolidated; and legal breakthroughs were made that will consolidate the results obtained in the long term. But there are external factors,

political and economic ones, which are not under the control of the project and that affect its sustainability. Specifically, the prospects of an unfavorable economic context, which is likely to last for many months, will generate more poverty and will worsen the living conditions of the most vulnerable social groups and reduce budgets of public agencies. Likewise, if the priorities in public farming policies are not reversed, the loss of protagonism of small-scale producers will remain an unfavorable factor in terms of the effective adaptation of the most vulnerable sectors.

As regards the **processes that led to these results, project preparation and start-up** occurred when UCAR obtained before the AF the status of ENI, which was an important milestone for the country's possibilities of accessing funds and building capacities regarding adaptation project management with international funds. Until then, no Argentinian agency had obtained such accreditation. The initiative had taken place at the request and with the support of SAYDS, which also played a fundamental role in leading the formulation process. Project formulation was participatory, in the form of workshops with INTA field technicians from the intervention area. These workshops allowed to identify the actions that best adapted to the needs of each of the groups of identified beneficiaries, to generate channels of communication with those communities, and to define modalities for their active participation in project development. There was no possibility, however, of carrying out broader consultation upon design that included a representative sample of said small-scale family producers, which subsequently proved to be a real deficit. It took a while for the project to pick up an acceptable pace of implementation on account of administrative delays in signing agreements and in transferring funds already accredited, but during the main years of implementation, it was expeditious and efficient. Only again, during closing year, administrative obstacles were observed stemming from UCAR transformation into DIPROSE and the internal restructuring, in the sphere of the national cabinet of the Secretariat of Agroindustry.

Country ownership was high. At the time of formulation and during the first years of execution there were no national, sectoral or provincial plans of adaptation, and the issue was barely on the agenda of the leading agencies in farming matters such as the Ministry / Secretariat of Agroindustry or INTA. Only as of 2016 the government undertakes a process of national planning and, in the farming sector, on adaptation to climate change, which is a novelty in the country. In this context, the Project set a very significant precedent when positioning climate change adaptation at the national and provincial levels. The most desirable result would be the presentation and enactment by the national Congress of a law on climate change. The relevant bill is undergoing drafting.

Stakeholders' participation was paramount. The project involved a large number of stakeholders through information sharing, built into design, implementation and monitoring. The use of the skills, experience and knowledge of the executing entities, non-governmental organizations and producers, insurance companies, universities, and municipalities was key in achieving a successful design and implementation. The project mainstreamed gender as early as upon formulation, achieving substantial impact in the life of women of producers' families, who were traditionally responsible for carrying water back and forth, and who have gotten four hours a day back on average for other uses by having immediate access to water in their farms, according to the EMT.

ENI supervision and support activities were of high quality, at very low cost. Its role was essential in assuring the successful coordination of a complex network of public and private agencies. The ENI really owned the project and capitalized the accumulated technical capacities of the then UCAR, a unique agency in the country specialized in managing international financing programs for the agricultural and farming sector. The considerable contribution of UCAR/DIPROSE areas devoted to

monitoring and evaluation is worth mentioning. These deployed a wide array of follow-up instruments that allowed for an adequate and thorough adaptive management, with lessons learned and readjustments throughout the project, which were essential to obtain the results shown.

In light of all these achievements, it is worth mentioning that this Project is **highly akin to the new strategic framework of the Adaptation Fund**, stated in its 2018-2022 planning document. It is rated as **consistent-highly consistent with the objective, goals, and most of the strategic priorities** stated in such planning document.

1 PROJECT OVERVIEW

The Adaptation Fund (AF)¹ was established by the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) at its seventh Conference (Marrakesh, Morocco, 2001) to finance projects and programs of climate change adaptation in countries that are parties to the Kyoto Protocol, which are particularly vulnerable to climate change adverse effects. The AF is created in response to the demand of emerging countries in respect of their historical reduced responsibility for climate change generation and their high vulnerability to it. Also, after the Paris Climate Conference of the Parties (COP21), held in December 2015, which positions adaptation on an equal footing with mitigation in terms of the fight against climate change, the AF is empowered as it starts serving such agreement. The AF funding was originated with the selling of Certified Emission Reduction (CER), within the Clean Development Mechanism (CDM), although afterwards government, private and individual contributions gained in importance.

The AF is one of the few international funds which allows for direct financing for member countries, as they can have entities of the national public administration accredited as National Implementation Entities (ENI)², which become responsible for supervising and managing funds awarded to each country. This characteristic clearly accounts for the “aid effectiveness and efficiency” principles approved by the Paris Declaration (2005), and in this case it has been a widely used circumstance to ensure sustainability of the intervention and ownership by the national stakeholders. The Unit for Rural Change (UCAR) was the first entity of the Argentinian public administration to be accredited with the AF as ENI, status which got in March 2012 after a long process. Such accreditation ended in 2017, and is currently undergoing renewal for the DIPROSE (name currently adopted by the same entity)³.

The Project was one of the first two signed by the Argentinian government with the AF as strategic and financing partner⁴. The Executing Entities of the Project included the Institute for Agricultural Technology (INTA), through its National Coordination Office for Transfer and Extension (CNTE) and the Natural Resource Research Center (CIRN); the Office of Agricultural Risk (ORA) of the Secretariat of Agroindustry; and the National Directorate on Climate Change (DNCC) of the Secretariat of Environment and Sustainable Development⁵. For execution, work teams were formed within the

¹ www.adaptation-fund.org

² Regional and multi-lateral organizations can also obtain accreditation with the AF (<https://www.adaptation-fund.org/apply-funding/implementing-entities/national-implementing-entity/>)

³ With the change of the national government in 2015, the former Ministry of Agriculture, Farming and Fishery became the Ministry of Agroindustry. Subsequently, in March 2018, UCAR became the General Directorate of Sectoral and Special Programs and Projects (DIPROSE) going from being in the sphere of the ministry to the sphere of the Secretariat of Administrative Coordination. In September 2018, the Ministry of Agroindustry became the Secretariat of Agroindustry, in the care of the Ministry of Production and Labor, and the DIPROSE entered the sphere of the Under-secretariat of Administrative Coordination. All such changes delayed the re-accreditation process with the AF to such lengths that the process began over a year and a half ago, and still there is no end in sight. In case re-accreditation with the Adaptation Fund is completed, it would be possible to fast-track re-accreditation with the Green Climate Fund, which is also pending (source: interview and ITP).

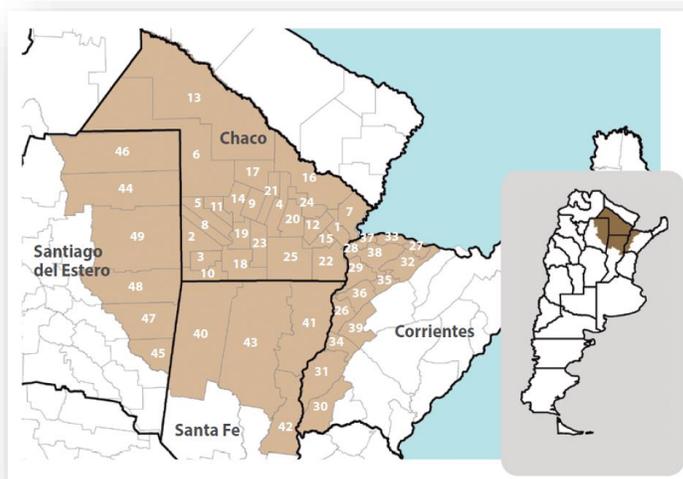
⁴ The other project, “Enhancing Climate Resilience and Improving Sustainable Management of the Land in the Southwest of the Province of Buenos Aires”, is being executed by the Secretariat of Environment and Sustainable Development and is being implemented and supervised by the World Bank.

⁵ For further details on the roles and responsibilities of each one of the Executing Entities, see Moreiras y Deambrogio (2019).

INTA and the ORA with their own technical staff, thus avoiding the formation of “ad hoc” executing units.

The Project is intended for the provinces of Chaco, northern Santa Fe, northeastern Santiago del Estero and western Corrientes as area of intervention.

Figure.1 Geographical intervention area of the Project: Argentinian provinces of Chaco, northern Santa Fe, northeastern Santiago del Estero and western Corrientes.



The Project officially started execution in October 2013. Completion was originally anticipated for October 2016, but after two time extensions were approved, completion date was postponed to December 2018.

Table 1: Summary of basic data and key milestones of the Project

Country	REPUBLIC OF ARGENTINA
Project ID	ARG/NIE/Agri/2011/1
Project Name	Family Agriculture Adaptation and Resilience Project in Northeast Argentina (NEA) to climate change and variability impacts.
Sum	USD 5,640,000
Matching budget	The Project Document fails to stipulate this, but there has been an actual matching contribution by ORA, INTA, INTI, the Ministry of Production of the Province of Corrientes and DIPROSE, which provided technical assistance and support, and by the producers and rural organizations involved in the construction of on-farm works.
Direct beneficiaries	The project is targeted at 4,000 small-scale producers, both men and women, living in rural areas within the geographical area of intervention. They either have, or live in, a production unit with total maximum surface area of 25 hectares, and most of the family income comes from such unit. In addition, the project is intended for 200 technicians and officials of the national and provincial governments, to strengthen their capacities on climate change adaptation and use of agroclimatic information.
Beneficiary Production:	Farming

Organization for execution	The institution implementing the project was a National Entity, UCAR (currently DIPROSE), belonging to the Secretariat of Agroindustry, where the team of Project Coordination was established, under the sphere of the Environmental and Social Unit.
AF Board Approval date	Thursday, April 4, 2013
Agreement execution date	Tuesday, April 16, 2013
Effectiveness date	Thursday, October 24, 2013
First revision	Application for extension sent January 13, 2016, and approved by the Adaptation Fund.
Second revision	Application to reassign budget and plan over activities, approved by AFB/B.28--29/1, on February 3, 2017
Third revision	Application for extension, approved by the Adaptation Fund on November 16, 2017 through Decision B.30--31/4
Midterm Review Date	October 2016- January 2017
Original completion date	October 2016
Revised completion date	December 2018
Main changes of design and implementation agreements:	<ul style="list-style-type: none"> I) Reassignment of funds among components ii) New activities proposed, others removed iii) Time extension for project execution

Source: ITP, PPRs and Vaca Avila (2017).

The main components and outcomes of the Project are described below.

Table 2: Summary of the Project's logical framework

Project components	Anticipated outcomes
COMP 1 Increase in the adaptation capacity of small-scale family producers of Northeast Argentina to climate variability and change	Outcome 1.1 Improved use and yield of water for family farming producers.
	Outcome 1.2 Reduced fluctuation of income for family farming producers, encouraging to continue farming and to continue living in rural environments.
	Outcome 1.3 Increased farming production of small-scale family farming producers, and reduced economic and social vulnerability in view of climate change and variability.
COMP 2 Strengthening of information, monitoring and management systems of climate information.	Outcome 2.1 More and better monitoring and evaluation capacity of climate change and variability.
	Outcome 2.2 Systematized basic information, freely available, for effective decision-making as regards adaptation of producers to adverse conditions and aimed at local and regional planning.
COMP 3 Local and regional capacity-building on climate change and variability impacts and on implementation of adaptation measures.	Outcome 3.1 Units of municipal and provincial governments, educational spheres, and producers with capacity to generate appropriate adaptive interventions.

Source: Moreiras y Deambroggio (2019)

The budgetary weight of the Project components and outcomes is described below.

Table 3: Original budget and budgetary reassignment per component (USD)

	Original budget (USD)	Revised budget (USD)
Component 1: Increase in the adaptation capacity of NEA small-scale family producers to climate variability and change	3,499,380	3,572,410
Component 2: Strengthening of information, monitoring and management systems of climate information.	1,404,370	1,386,765
Component 3: Building of local and regional capacity on climate change and variability impacts, and on implementation of adaptive measures	456,250	400,825
Project implementation (ENI)	280,000	280,000
Total approved	5,640,000	5,640,000
Actually used	5,315,799	5,315,799

Source: Moreiras y Deambroggio (2019) and PPR 2018.

2 REVIEW GENERAL PURPOSE AND INFORMATION

At the request of the AF, at the end of the project’s execution period, an Independent External Review must be conducted. Such review is intended to assess the progress made by the project towards “achieving more resilience and less vulnerability, added to the actions conducted to reach sustainability and replication” (List of Technical Requirements of the evaluation service agreement)

According to the above mentioned LRT, the **objectives** of this review include:

1. Determining whether the Project has reached the objectives sought after and identify unplanned achievements. The review is expected to validate the outcomes and arrive at a general determination on the extent to which planned outcomes were attained, and to which extent unplanned outcomes resulted.
2. Sorting out and summarizing experiences and lessons that may help improve the selection, design, implementation and evaluation of future projects of the AF.
3. Understanding how the achievements of the Project contribute to the AF mission.
4. Providing feedback for the decision-making process to improve future policies, projects and programs.
5. Reviewing relevance, effectiveness and efficiency of the Project design, objectives, and execution.
6. Identifying obstacles and factors contributing to the fulfillment of the Project objectives.

This review is conducted with DIPROSE’s objective to improve effectiveness, efficiency and pertinence of climate change projects, particularly, to systematize lessons learned during implementation of any project with AF funding. The conclusions and recommendations stemming from this review will allow to have relevant evidence of institutional lessons learned contributing to improving the performance quality of the Argentinian public administration agencies as implementing and executing entities. It will also serve as a relevant input for the AF in its capacity

as financing agency. This review is conducted pursuant to international standards provided by the OECD Development Assistance Committee and accepted by the AF itself⁶.

The review covers the period going from October 2013 (date on which activities are deemed to have commenced, as it is the date of execution of agreements with the main executing entities) until December 2018, execution completion date. This review is performed according to the AF Directives for Program and Project Final Evaluations⁷ and following guidelines proposed in the evaluation agreement.

Table 4: Review general information

Final evaluation implementation period	January - May 2019
Places visited	City of Buenos Aires and provinces of Chaco and Corrientes
Individuals involved in the review	See list of interviews attached.
Review methodology and key questions	See review methodology and matrix attached.

The review of the extent of the project's achievements relies to a large degree on existing secondary information, specifically on documents issued by the Project itself, which at this time is abundant and thorough (annual Project reports, Project financial reports, survey results, systematizations, midterm review, review conducted by the AF, DIPROSE internal evaluation, report on training, reports on station standardization, several publications made by the project, etc.)⁸ Primary sources included semi-structured interviews with key stakeholders, such as managers of the implementation and execution units, national and provincial officials (see list attached), which were intended to identify drives and priorities in stakeholders, convey strategic projections of the involved entities, review lessons learned, identify gaps and deficits, and allow for triangulation of documents analysis. A short online survey was also conducted, as well as field work in the provinces of Chaco and Corrientes, and a workshop for project closing was held. Inter-connection, systematization and combined analysis of all that material is, hence, the basic objective of this review.

The evaluation is mainly descriptive in nature, rather than causative, and it is not based on an experimental or quasi-experimental method. Thus, many attribution problems cannot be settled in a definitive manner. This arises from the way the beneficiaries of the intervention were selected. This was not a random selection, but a selection based on prior connections the execution agencies had in the territory or as a result of informative campaigns. This proposal does not intend to respond either to principles of equivalence or independence in the analysis⁹. Therefore, selection, history, maturation, test administration and other biases that threat internal validity cannot be controlled¹⁰. External validity of the research is also limited by these circumstances. However, in the final chapter of the report conclusions and lessons learned will be drawn inductively from the findings, which could be extrapolated to other contexts with a plausible capacity of replication in

⁶ Adaptation Fund Board. 2015. Evaluation Framework.

⁷ Adaptation Fund. 2011. Guidelines for Adaptation Fund Project/Programme Final Evaluations

⁸ The numerous publications made under the project, the Midterm review and the project management report can be found at the links appearing in Bibliography.

⁹ See Campbell, Donald T. y Stanley, Julian (1995). *Diseños experimentales y cuasi experimentales en la investigación social*. Buenos Aires: Amorrortu editores.

¹⁰ See Lieberson, Stanley (1985), *Making it Count. The Improvement of Social Research and Theory*. Berkeley and Los Angeles: University of California Press.

similar situations. According to these guidelines and notes, an annex with an evaluation matrix is introduced, detailing the methodological structure of the intervention.

3 EVALUATION RESULTS | PROJECT ACHIEVEMENTS

3.1 SHORT AND MID-TERM PROJECT ACHIEVEMENTS | OUTPUTS AND OUTCOMES

General rating of project achievements in the short term	<p>The project’s relevance is highly satisfactory since the Project properly addresses the problems it intends to solve having conducted an appropriate selection of lines of action, geographical scope and beneficiary population, bearing in mind the existence of other alternatives. The theory of change that lies behind it takes into account the state-of-the-art of scientific research in fight against climate change and fully matches AF priorities.</p> <p>Its effectiveness is also highly satisfactory, since it obtains a very good performance globally and per subcomponent in terms of objective and goal fulfillment according to the design parameters.</p> <p>Its efficiency is satisfactory. Budgetary execution was high (92%). However, the commencement was delayed, and during the last year, ENI’s restructuring prevented executing some of the funds anticipated for closure. The option granted by the AF of conducting adaptive management fostered efficient management because of the chances of adapting planning to changing conditions of the context and to any contingencies that could arise during execution.</p>
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3.1.1 Relevance

Relevance or pertinence of a project is typically twofold. On the one hand, a project is pertinent if it adequately addresses the problem that gave rise to the intervention. From this perspective, the alignment is analyzed of the project with its context, with the local community priorities, and with the society at hand (Feinstein, 2007). From this same perspective, whether changes occurred that may have altered its rationale during execution needs to be verified. On the other hand, a project is relevant if its objectives match the strategy of the institution promoting or financing it. (Nierenberg, 2010) Next, we will analyze the pertinence of this intervention from the above two perspectives.

Rating on relevance	<p>The Project’s relevance is highly satisfactory from the different perspectives to analyze this criterion, including, appropriate selection of the geographical scope (given the higher intensity of climate change compared with other areas), and appropriate selection of beneficiaries (given their high social vulnerability), relevant identification of intervention typologies, development of actions that account for state-of-the-art in science, and alignment with AF’s objectives.</p>
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3.1.1.1 Project objectives anchored in the problems to be addressed

This Project’s objective is “to enhance the adaptive capacity and develop resilience of small-scale family farming producers to impacts deriving from climate change and climate variability, particularly those impacts that may arise of an increase in the intensity of hydro-meteorological events, including floods and droughts”, in the geographical area of intervention. Such objective is

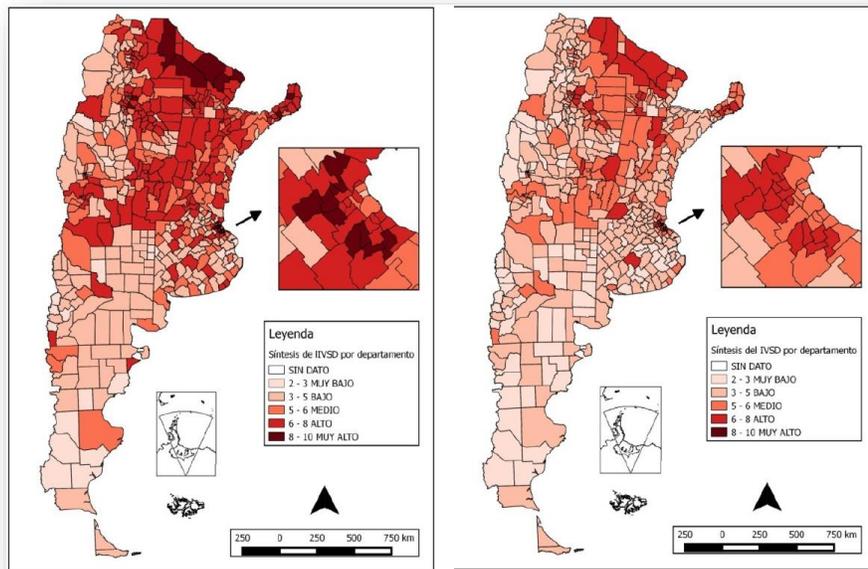
thus connected with the idea of vulnerability. Vulnerability to climate change not only depends on the intensity thereof but also on the different adaptation capacity of the populations sustaining such change. Impacts observed in the territory are subject, therefore, to an external variable (climate change) and to an internal one (the adaptation capacity of the population and of their production structures.) Resilience refers to the capacity to reduce such vulnerability, and for the purposes of this project, resilience is understood as: “The capacity of a social or ecological system to absorb alterations without losing their basic structure or basic modes of operation, their capacity of self-organization, or their capacity to adapt to stress and change”. (IPCC, 2007:87).

The difficulties of family farming producers of NEA to adapt to climate change is the main problem this project intends to address. The project covers different kinds of risks through its different components: the increase in the duration of droughts and heat waves, with activities relating to water harvesting and storage; and hail storms and strong winds, with insurance against hail. The production of climate information is an intervention that cross cuts all different kinds of risks, and therefore, is useful to allow adaptation to an increased frequency of water excess. In this regard, the series of objectives proposed is fully pertinent in that it limits the climate change problem **to the specific kind of risk** sustained and perceived by family producers of the identified area on a daily basis, which is the variability of hydro-meteorological events (it has been verified as such in surveys taken before and after intervention)

The **area of intervention selected** is also highly pertinent compared with other potential geographical areas where the project might have been executed. On the one hand, the NEA region shows, according to the last CCC (SAyDS, 2015), greater variability in terms of precipitation and increase in extreme situations (flooding and droughts) than other regions of Argentina. Growing variability of extreme climate events has been pointed out at meetings with the project’s technical actors and in field interviews¹¹.

Figure.2 Social vulnerability index before risks of disasters with 2001 census data (left) and 2010 census data (right)

¹¹ Technical agencies stressed that the NEA may not be the only region of Argentina to sustain this problem, but it shows the country’s highest volatility values in short and long term parameters of rain and temperature.



Source: 3rdCCC (Secretaría de Ambiente y Recursos Naturales, 2015)

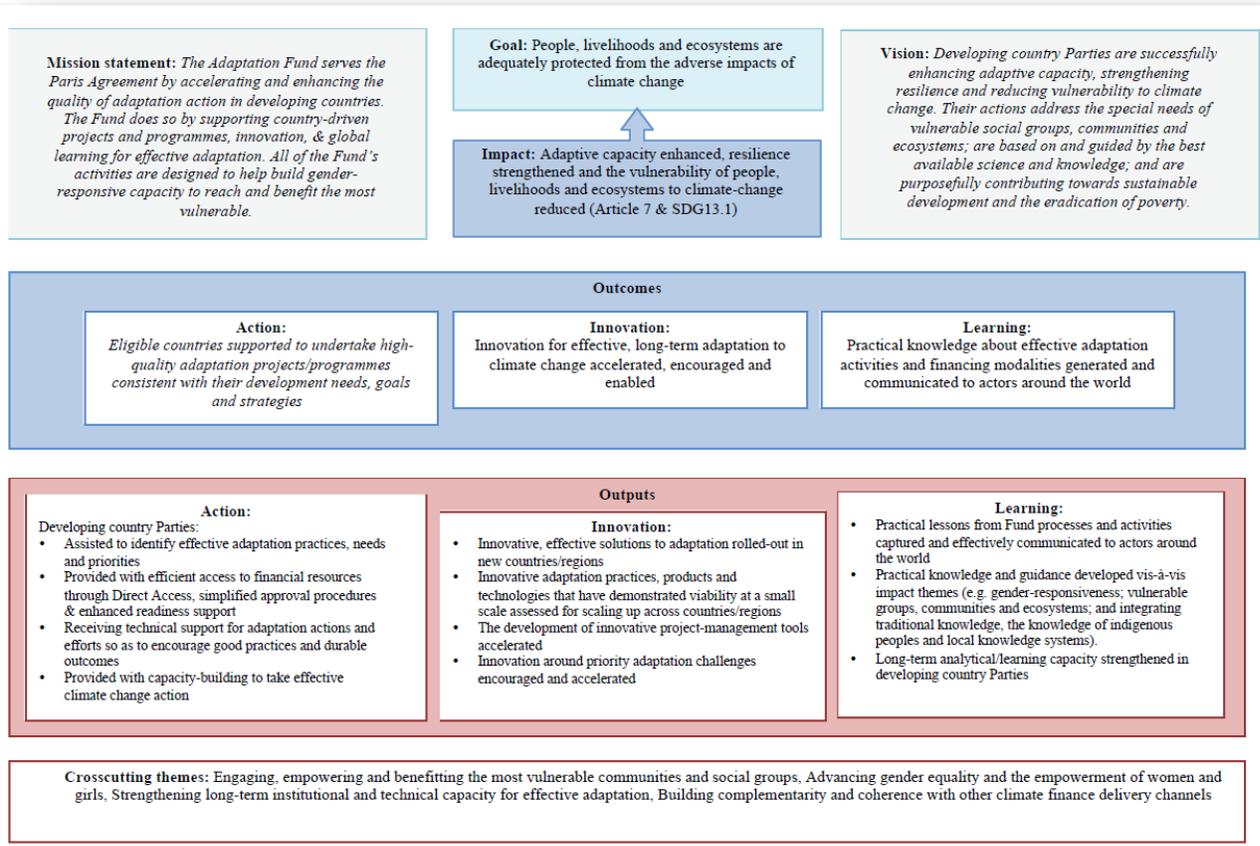
On the other hand, NEA is a region where small-scale farming producers find greatest difficulty regarding adaptation compared with producers from other regions of the country. The level of social vulnerability of family producers from this region, that is, the availability of material and non-material resources with which to face new challenges, is summarized in the third CCC (SAyDS, 2015, 38). From year 2001 to 2010 (prior to project design), the different aspects of the IVSD¹² had favorably evolved for the entire country. But in both years the vulnerability of the area of intervention is observed to be higher (see prior figure). Similarly, according to alternative metrics (the Unsatisfied Basic Needs index, based on census data from 2001), households located in the rural departments of the geographical area of the project have a UBN of 26.4% to 47.56%, whereas the national average was 17.7% (UCAR/INTA/ORASADyS, 2013: 10). Hence, the region was seen as a pertinent scenario to develop the intervention when it began. The pertinence of the selection of the area of intervention at the time of project design is accounted for by both, the importance of the external variable (extreme events) and the incidence of the internal factor (producers' adaptation capacity). The relevance of this selection was subsequently verified by the contents of the Third National Communication on CC and remained invariable during project implementation period.

3.1.1.2 Alignment of Project outcomes with AF objectives, goals and strategic priorities

The Adaptation Fund has just updated its intervention strategy in a new plan for the 2018-2022 period.

¹²The social vulnerability index in the face of disasters (IVSD in Spanish) is based on three dimensions of vulnerability: social conditions in strict sense, housing conditions and economic conditions (SAyDS, 2015: 37).

Figure.3 Summary of the mid-term strategy of the Adaptation Fund, 2018-2022



Source: Adaptation Fund (2018)

The new strategic framework is **highly consistent** with the Project outcomes, as detailed in 4.4.

3.1.2 Effectiveness¹³

The effectiveness criterion focuses on the analysis of the intervention's positive effects anticipated at the design stage and stipulated as objectives thereof (Feinstein, 2016). A specific initiative is more or less effective depending on the extent to which such objectives are fulfilled, bearing in mind quality and timing, and without taking costs into account.

¹³ The largest part of the quantitative information of this section comes from the draft of the Project Completion Report (ITP) prepared by Moreiras y Deambroggio (2019) Such has been triangulated with other documents deriving from the project itself, such as systematization (4), works audit reports, stations standardization reports, and interviews with key stakeholders in Buenos Aires, Chaco and Corrientes.

Rating on effectiveness	Project's effectiveness is highly satisfactory since as regards its objective, the Project attained 90% of the proposed goal, and as regards its subcomponents/outcomes, most of the originally anticipated goals were achieved and surpassed, despite the fact that some activities were suspended or their relative importance, shifted as regards other activities, as a result of flexible management with the chance of making negligible adaptation efforts to the needs arising in the territory.
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3.1.2.1 Effectiveness of project objectives

The effectiveness analysis as regards **project objective**¹⁴ is high in that 90% of the goal established was attained. The project's objective is "to enhance the adaptation capacity and resilience of small-scale agricultural producers in view of the impacts that derive from climate change and variability, particularly those related to an increased intensity of hydro-meteorological events, such as floods and droughts." This objective **must be deemed fulfilled to a large extent, since a total 3,591 families of family agriculture producers in the area of intervention was attained, out of the 4,000 originally anticipated** as goal in the logical framework.

Furthermore, it must be considered that the project included new beneficiaries through the execution of works in public institutions such as rural schools and child care providers, not provided for in the original design. Through these actions, 2,488 additional beneficiaries were attained in 19 rural farming schools, one child care provider, and one community center¹⁵.

Table 5: Progress of indicators of Project's objectives under the Project Logical Framework

Indicator	Baseline	Measurement Unit	Progress as of 9/30/2017	Goal at the end of the project	% Progress
Number of families vulnerable in view of adverse effects of climate variability and change	No measures of adaptation to climate change have been implemented to the date	Total number of beneficiary families, of which	3,591	4,000	90%
		<i>Represented by women</i>	618	800	77%
		<i>Represented by young population</i>	398	600	66%
		<i>Families of indigenous population</i>	627	320	196%
		Total students, children and teachers beneficiaries of adaptation works at public schools and child care providers	2,488	-	-

Source: Moreiras y Deambroggio (2019)

To attain such a high degree of effectiveness it was essential to undertake and put to the test a flexible and adaptive notion of a project's life cycle management. Even though the design of this

¹⁴Unlike other projects design, where a general objective is provided (regarding the impact, the repercussions in the extended context or in the long run) and a specific objective (representing what the project intends to achieve specifically), the intervention at hand has only one objective and it addresses the effectiveness criterion, that is, the effects specifically sought for.

¹⁵ The information on these works is not added to producers' families, as these are intended for a different beneficiary, but it impacts the Project's global scope, allowing for a greater scope.

intervention, as was mentioned in the previous section, was highly pertinent, the development of such a project is a complex process that requires minor adjustments during implementation. In this case, as the preferences and needs of the producers in the territory became understood in greater detail, the coordination team at UCAR / DIPROSE together with the heads of the executing agencies (INTA and ORA) decided to give greater relative importance to some types of intervention over others also anticipated, and proposed some budgetary adjustments to the AF, which were conducted after approval. This adaptive management is responsible, to a large extent, for a better use of resources, for the reasons that will be explained later. Let us first explain, in more detail, what kind of arrangements were made.

The original design of the project included four different types of technology for subcomponent 1.1 for water access: a) boreholes/wells to obtain groundwater, b) retrofitting of roofs and construction of associated cisterns or water wells as reservoirs for harvesting rain water, c) dams for large and small livestock, and d) a multi-purpose dam water system combining harvested rainwater with groundwater. Through the actions of this subcomponent, a total of 1,283 producers' families were expected to be attained to improve their access to water through one of these methods.

Several adjustments were necessary from this original proposal. First, because it was evident that the demands of the population regarding water access greatly exceeded the initial diagnosis. The main explanation for this original underestimation has to do with the technical approach prevalent in INTA that had never considered water access as a need related to their chores. This appears in several interviews:

"Our view as farming extension technicians always focused on Best Agricultural Practices and on the provision of supplies. But for a long time in the region we observed that our best practices were failing, slipped through our fingers: there were people who had to walk 1, 2 or 3 kilometers just to have water to eat and bathe while we were asking of them to water their orchards. Obviously, that wasn't their priority. We were stuck, demoralized and we were not solving the underlying problem, access to water, which had to be solved first. This project allowed us to realize that. Today that issue is already taken care of (or at least we have the instruments to finish solving it) and now we can really move forward with best practices, in a more propitious context "(interview with José Rafart, Director of Las Breñas Farming Experimental Station, Chaco).

This finding was of paramount importance and allowed the decision to increase the specific weight of component 1.1. in terms of relative costs. With the reallocation of budget required by UCAR/DIPROSE, approved in February 2017 by the AF, the financing intended to this subcomponent went from 30% to 41% of the total¹⁶.

Likewise, a second readjustment was made regarding the technologies originally provided in said subcomponent. In the field, there were significant difficulties in making boreholes for groundwater drawing in many areas due to the lack of up-to-date and reliable groundwater maps that could guide

¹⁶ Although originally the request submitted to the AF included a revision of the goals of the logical framework in line with the budgetary readjustment, as indicated by the AF itself, the modification was only financial, with the relative weight of the subcomponents' goals being not totally in line with the revised budget weight. For the budgetary readjustment, the savings obtained by lower final acquisition prices than anticipated and by activities that could not be developed (such as the feasibility study and implementation of a multi-risk insurance for small-scale producers of cereals, cotton and oilseeds of subcomponent 1.2 and the specific assistance to indigenous families of component 1.3.) were re-allocated.

them (since in many areas groundwater is depleted or there is a widespread presence of arsenic). The difficulty of access to groundwater made roof retrofitting technology for the harvesting of rainwater and construction of cement tile-roof cisterns and masonry water wells for storage the best technical solution. In this way, the Project increased by near six times the number of families planned for this technology and trebled the amount of construction works (Moreiras y Deambroggio, 2019). This allowed, also, to opt for a modality of self-construction by the producers themselves, which was defining, afterwards, in terms of project sustainability and replication chances.

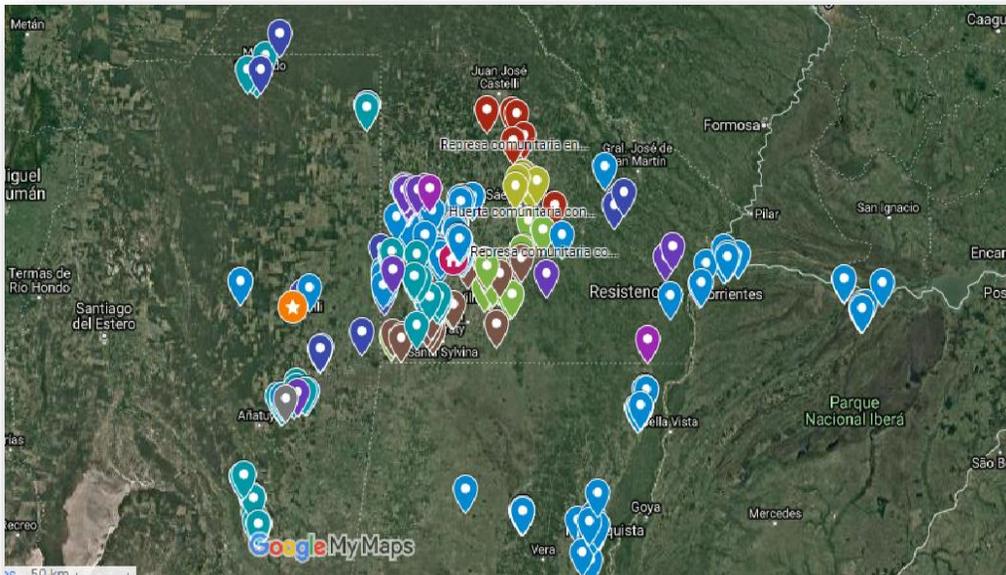
3.1.2.2 Effectiveness per component and subcomponent

The **analysis of effectiveness at the level of the subcomponents / outcomes** is also highly positive since in all cases the expected goals were exceeded, on average. Under **subcomponent / outcome 1.1.**, 900 on-farm water harvesting, storage and management works were carried out, benefiting **2,052 families** of family agriculture producers and 1,978 students, teachers and children, 14 schools, one community center, and one child care provider. This way, the amount of families attained through this component **surpasses by 56% the 1,283 originally provided** as goal.

For **subcomponent/outcome 1.2.** progress was made with the feasibility study of the sheltered horticultural insurance¹⁷ in the province of Corrientes, and the authorization of the insurance policy was processed with the National Superintendence of Insurance (SSN), with the first policy for small-scale horticultural producers in the country having been recorded with such agency, valid for the entire national territory. In addition, the systematization of the lessons learned from the experience was carried out, surveying the opinion of producers, the provincial government of Corrientes, the national government, the technicians who participated in the experience, and the insurance companies. **On a total of 787 families planned, the pilot insurance plan covered 1,247, surpassing the goal by 58%**, despite having removed the feasibility study activity and implementation of multi-risk insurance policy for cereals, cotton and oilseeds in the province of Chaco, as no agreement could be reached with the provincial government.

Photo1 Geo-referencing of outcomes from subcomponents 1.1 and 1.3

¹⁷ This review allowed us to study the different methods of damage assessment: field supervision, valuation through satellite images and verification of damage through drones and photographic images, with support from the government of the province of Corrientes.



Source: INTA-CNTE (2019).

For **subcomponent/outcome 1.3**, equipment, improvement of facilities and technical assistance in on-farm BPA were provided to a **total of 292 producers families** and to 510 students and teachers in 5 rural schools. Output indicators show low execution compared against planning: the activities of crop protection structures reached 148 out of the 272 planned (54%) and technical assistance in BAP and improvement of facilities, 59 out of the 109 families planned (23%). The activity of assistance to indigenous population in orchards was finally dismissed as an activity in its own, since technical assistance and work with the indigenous population was mainstreamed in the different activities of the project. In general, the lesser extent of execution was due to having prioritized water access as a prior and necessary condition for the implementation of equipment and best agricultural practices, as previously explained. In many cases, these practices were then implemented anyway with the technical support of INTA.

As regards the integration and expansion of agro-meteorological networks (**subcomponent/outcome 2.1**), all the planned outputs were achieved: **18 new full automatic meteorological stations** were built and installed on site, and **10 simple meteorological stations were turned into full stations**¹⁸. Whenever possible, their location in areas with thin coverage was prioritized to expand the coverage of data measurement in areas with a greater relative presence of small-scale producers (rather than in areas of extensive or large-scale agriculture) and in key scenarios of climate change in the region. The Project also advanced **the integration of INTA's meteorological stations data network** with those of the provinces of Corrientes and Chaco,

¹⁸ The full meteorological stations measure a total of 10 variables: ambient temperature and humidity, precipitation, soil temperature, solar radiation, atmospheric pressure, wind direction and speed, and leaf wetness. This allows to have more information not only on climate, but also on the effects on crops in a specific area / region.

previously disconnected, and it was done through the signing of collaboration agreements with the private sector and provincial governments (reaching 90% of the established goal). The provinces of Santa Fe and Santiago del Estero did not have a network of stations at the time of Project execution and, therefore, did not participate in the integration at the provincial level, although the information from the INTA network stations was added. In addition, work was conducted on interoperability and the quality of information, improving access and servers to guarantee shared standards among institutions and greater availability of online information¹⁹. In all, three portable stations were designed and assembled at the Climate and Water Institute of INTA. Two out of those are located in the province of Corrientes in two different types of livestock environments, one next to the other. All indicators of subcomponent 2.1 were met 100 % or more in terms of their original goal, except for one trial, which could not be performed (three trials had been planned out).

Based on the information generated by the increase in the number of stations and the improvements incorporated in the analysis and monitoring of agro-climatic information, the subcomponent proposed an **Early Warning System (subcomponent /outcome 2.2)**. The Project **developed a web platform**, which compiles all the new agro-climatic outputs, and free, open-access agro-meteorological information of various NEA institutions, and contains information on the works carried out with the Project and different agro-climatic outputs²⁰. All indicators of subcomponent 2.1. **were fulfilled by 67% to 100%** compared with the original goal²¹.

Training is another of the Project's great contributions: **the planned goals for capacity-building and the promotion and systematization of the lessons learned were exceeded**. Despite using a smaller amount of financial resources than expected (due to a decrease in the unit cost of capacity-building), under **component 3, 3,882 producers were trained** (3,600 were planned), of which 55% were women, 52% young population, and 9% indigenous population. Capacity-building trained nearly **4 times the initially stipulated number of technicians (600 vs. 160)**, and the objective of strengthening the capacities of the 5 institutions directly involved in the Project was met. The objectives of publications were exceeded²².

¹⁹ It was possible to integrate the georeferenced and integrated meteorological data bases of the Project provinces, plus soil cartographies at a national and regional scale for 3 provinces, soil profiles for the 4 provinces and contour line maps for the 4 provinces.

²⁰ 5-day weather forecast and meteogram, monitoring of water reserves in the ground for different production chains and for each of the provinces; map with the location and access to information of the networks of INTA meteorological stations and of the Ministry of Production of Corrientes and Chaco; levels of water deficit and excess risk for the next 7 days (future scenarios); access to information layers for different crops; access to predictive models, such as: precipitation, temperature, evapotranspiration, pressure and wind, fog, UV index, fires and frost and by different agencies; access to the 7-day extended weather forecast; access to the evolution of the climatic variables for the date for the selected point; access to 3-day modeling of evolution of different soil parameters for each of the locations of the INTA's EEAs (Experimental Stations); weekly, monthly and annual reports, links of interest and contact of climatic outputs offered by different national and local agencies and institutions.

²¹ More specifically, 90% of the compilation and evaluation of databases and georeferenced maps for the intervention area was achieved; 2 of 3 trials; 93% of the surface of the project area covered with risk maps; 88% implementation of the soil moisture monitoring system; 100% climate change scenarios developed at regional level or knowledge about impacts on crops; 67% integrated online hydrological studies (SAT); 100% meteorological studies integrated to the web platform (SAT) and 98% of web platform development.

²² Publication of the ORA and INTA on risk maps, maps of water deficit, suitable agricultural areas, systematizations carried out, dissemination booklets of promoted adaptation practices, newsletter on climate change and the analysis of risk and vulnerability at community level, and a publication in the OECD, where the experience of the Project was chosen as one

Table 6: Progress of indicators of Project's subcomponents/outcomes according to Logical Framework

Outcome (subcomponent)	Indicator	Baseline	Project outcome	Goal	% progress to goal
Outcome 1.1					
Improved use and yield of water for family farming producers.	% of producers improving their response capacity and action in view of climate variability	No capacity or infrastructure built in.	A total of 2,052 families implemented water access works. Out of this total, 97% stated being somewhat or a lot better prepared to respond to climate change and variability impacts.	At least 20% of the families in the project area (4,000 targeted) with improved capacities to respond to climate change and variability effects.	250%
	% of beneficiaries claiming improvements in agricultural productivity, related to water supply	To be determined during project implementation	59% of producers state perceiving a more improved agricultural productivity after project implementation. 33% state perceiving a little improvement.	50% of beneficiaries claim improvements in agricultural productivity, related to water supply	118%
	% of beneficiaries claim better access to water supply for drinking and irrigation.	To be determined during project implementation	90.4% of producers claim better access to water for drinking after project	80% of beneficiaries claim better access to water supply for drinking and irrigation.	113%
			74.6% of producers claim better access to water for production after project		93%
Outcome 1.2					
Reduced fluctuation of income for family farming producers, encouraging to continue farming and to continue living in rural environments.	% of beneficiary population attained by appropriate risk transfer mechanisms (broken down per gender)	0% of the families of the project area with access to insurance	Out of the total population identified in the project design document (5,165 NAF), 24% was attained with the component.	15%	161%
	% of the beneficiaries of risk transfer instruments perceive lesser risk in view of extreme events	There is no insurance offer for these types of producers, and no demand either because they have not heard of the product or there is no offer.	42% of producers claim feeling safer and more assured to conduct farming in view of extreme events.	50%	84%
Outcome 1.3					
Increased farming production of small-scale family agricultural producers, and reduced economic and social vulnerability in view of climate	Number of small-scale family producers with safer access (greater access) to livelihoods.	0.8% of the families in the project area received assistance in various farming practices.	29% of producers increase food consumption coming from their own production, going from producing less than 40% of their consumption to producing 40% to 80% of their consumption.	10% of families in the project area see their access to livelihoods improved.	290%
	% of beneficiaries claim improvements in food security due to project activities	To be determined during project implementation	50% of beneficiaries state having access, availability, quality and quantity of food improved.	50% of beneficiaries claim improvements in food security due to project activities	100%

of the experiences of best practices for local development in Latin America (Compendio de Buenas Prácticas para el Desarrollo Local en América Latina © OCDE 2016).

change and variability.	% of beneficiaries claim income increase due to project activities	To be determined during project implementation	31% of beneficiaries state having their income from production increased	At least 30% of beneficiaries state having their income increased due to project activities	103%
	% of beneficiaries with better access to markets.	To be determined during project implementation	41% of beneficiaries state trading increased a lot	At least 30% of beneficiaries have better access to markets.	137%
Outcome 2.1					
More and better monitoring and evaluation capacity of climate change and variability.	Increased density of hydro-meteorological stations and rain meters	Very low density of coverage by monitoring stations. Average density 1 station/rain meter every 29,244 km2	1 station/rain meter every 5.420 km2 19% increase	20% increased density of hydro-meteorological stations and rain meters	95%
Outcome 2.2					
Systematized basic information, freely available, for effective decision-making as regards adaptation of producers to adverse conditions and aimed at local and regional planning.	Number of professionals at government levels / decision makers and producers using early warning systems and climate information platforms for decision-making.	The Early Warning System covers only partially the Province of Chaco and Santa Fe.	Before: 15.3% of the population After the project: 19.7% 30% increase of users of agro-climate information	At least 25% increase in users of early warning systems and climate information platforms.	120%
Outcome 3					
Units of municipal and provincial governments, educational spheres, and producers with capacity to generate appropriate adaptive interventions.	% of staff and producers trained to implement measures to respond to climate event impacts and mitigate them (broken down per gender)	To date, no training or capacity building conducted for the 4000 families involved in the project activities, and the 200 technicians and governmental officials.	3,882 producers (of which 34% are women) trained in implementing adaptation measures of water access, crop protection, technological improvements, seed exchange, agro-ecological orchards and greenhouses, irrigation, fodder resources management, soil and forest management. 86% of all producers targeted	60% of producers trained in implementing measures in their relevant production units.	143%
			392 technicians trained in implementing adaptation measures (of which 30% are women), 196% of the total technicians targeted	70% of technicians and governmental officials	280%

Source: Moreiras y Deambroggio (2019)

3.1.3 Efficiency²³

The efficiency criterion typically associates a relationship between means and ends: it is the extent to which inputs (human resources, materials, equipment and services, money and time) turn into outcomes (OECD, 2010). A project is efficient if it meets its objectives at the lowest possible cost. For this, on the one hand, it will be studied at what cost, in what quantity, with what quality and

²³ The largest part of the quantitative information of this section comes from the draft of the Project Completion Report (ITP) prepared by Moreiras y Deambroggio (2019)

timing the actions have been developed, as well as the necessity and reasonableness of the costs. On the other hand, it implies carrying out an analysis after the intervention of the quality of the project execution phase, where particular emphasis will be placed on the dynamics among stakeholders.

Rating on efficiency	Project's efficiency is satisfactory given that budget execution exceeded 90% in general and in all subcomponents /outcomes. However, there is a delay upon commencement, delays in establishing complex administrative procedures and a very difficult last year of execution due to institutional adjustments at the ENI and at the national execution entities. All this generated an increase in administration costs due to time extensions that had to be requested of the AF, although this increase is partially offset by the low administration cost requested by UCAR / DIPROSE in comparison with international standards.
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The **total cost of the Project** was estimated at **USD 5,640,000**, financed entirely by the AF donation, the distribution of which is detailed, per component, in the table below (before and after the budget modification). The **overall level of financial execution of the Project is high, 91.2%** as of December 31, 2018 (date of completion of activities). As shown in the following table, the execution percentages per subcomponent/outcome are also high and homogeneous (with a low standard deviation of 0.20), which implies that the budget readjustment was necessary and useful to make the most of the available resources. The AF was right in enabling this flexibility in the management of the projects, and the project coordination timely capitalized it.

Table 7: Original and revised budget per component

Components	Subcomponents/Outputs	Original budget (USD)	Revised budget (USD)	% of the budget (Before /after revision)		Financial execution (*) (USD)	% of execution per output
1	1.1. Implementation of improvements in the efficient use, harvesting and storage of water in the areas of intervention.	1,538,171	2,200,103	29	41	2,197,941	99.9%
	1.2. Implementation of a system of risk management and transfer aimed at small and medium scale agricultural producers Development of two pilot tests in the selected region.	1,260,142	719,583	24	13	608,043	84.5%
	1.3. Management optimization practices regarding agricultural, livestock, and forestry production in each of the areas of intervention.	701,068	652,724	13	12	657,009	100.7%
2	2.1 Integration and expansion of agro-meteorological networks.	653,500	891,240	12	17	803,997	90.2%
	2.2 Development of an integrated system of early warning and decision making to evaluate and manage climate risks, including extreme events	750,870	495,525	14	9	358,390	72.3%
3	3.1 Development of modules of capacity-building and communication on CC, risk management and transfer for governmental technical experts and small-scale agricultural producers.	271,500	271,500	5	5	255,320	94.0%
	3.2 Capacity-building and training aimed at municipal and provincial governmental units for hydro-meteorological management and monitoring, climate information analysis.	184,750.00	129,325.00	3	2	44,723	34.6%

4	Project implementation (ENI)	280,000.00	280,000.00	5	5	219,546	78.4%
Total		5,640,000	5,640,000				91.2%

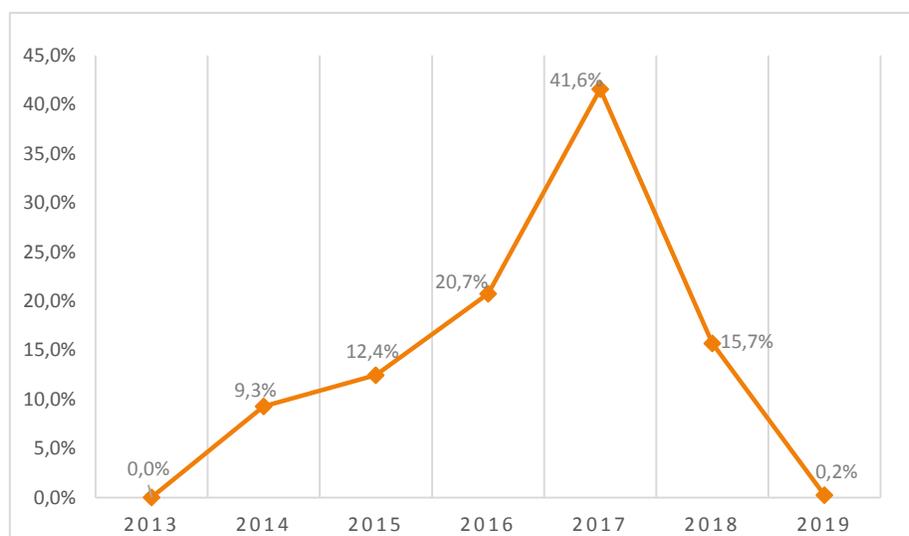
(*) According to payment report of UEPEX, 2/21/2019.

Source: Prepared by the authors based on Moreiras y Deambroggio (2019)

It is observed that the highest levels of execution occur for **component 1**, which, combining the three outcomes, represents a total of **67% of all financial execution**. This evidences how the project substantially prioritized the activities that were implemented in the territory consisting of concrete adaptation measures for small-scale producers (Moreiras and Deambroggio, 2019). This shows that the project intended to obtain concrete and tangible results with immediate impact on the life quality and livelihoods of the beneficiaries rather than longer-term measures.

As regards the **time variable**, the timeline of project execution shows a very delayed commencement. There were two circumstances that generated delays upon commencement: the signing of agreements between UCAR and the executing agencies (mainly, the one necessary to formalize the participation of the ORA, which took almost a year) and a clerical error in the allocation of the 2015 budget in the application form to the National Budget Office (this implied a very low intensity disbursement in a key year for the advancement of execution).

Figure 4 Execution time line Percentage of execution of funds per year



Source: Moreiras y Deambroggio (2019)

The years 2016 and 2017 concentrate 60% of the budget execution, which shows that it took considerable time (2014 and 2015) to smooth out the complex administrative circuits organized for the implementation that involved the UCAR / DIPROSE, the two executing agencies (INTA and ORA) and an organization that assisted in purchases and payments, the Argeninta Foundation. After

establishing these processes, implementation flowed smoothly, in particular after the organization of three important bidding processes for materials regarding the performance of on-farm construction works regarding water access, which took place during those years. Those were particularly large procedures, with widely atomized suppliers throughout the territory, since those suppliers who were in areas close to the works were prioritized due to lower transportation costs and to boost local economy. That complicated procedures but increased the impact on the consideration of the project at the local level. It is also observed, with this rationale, that the application for, and approval of, two time extensions that allowed a thorough and slower intervention was convenient. Finally, by the last project year (2018) everything was planned for all the remaining funds to be executed. However, there was a slowdown in the pace of execution due to the institutional changes produced by the transformation of the Ministry of Agroindustry into the Secretariat of Agroindustry, as a result of a reorganization of the national cabinet, which generated a reduction in personnel and reorganization of UCAR, which became DIPROSE and now had a longer chain of command within State bureaucracy. This impacted both the financial dynamics and the execution of activities. The changes implied alterations of the operation mode and approval and signature circuits at both the ENI and the ORA. Therefore, several activities were delayed and others, which required a prudent time for their execution -as is the case of revolving funds to replace insurance- were not implemented.

On the other hand, it is worth mentioning that the network of actors in charge of implementation and execution, both at the headquarters of the capital city (5 decision points) and in the field (15 PRETs of INTA distributed in 4 provinces), was very complex. As it is well known:

“Implementation lies on a theory of change according to which a deliberate cause will bring about controlled effects in the future. However, it is rarely the case that theory fits reality. Typically, the more stakeholders involved in a public policy, the greater the risk of obtaining effects far from the expected objectives. Conflicts among stakeholders, misinformation, administrative inertia, and the timing of each group make it difficult to meet the initial organization” (Pressman y Wildavsky in Harguindéguy, 2013).

However, in this case, the intricacy of the inter-institutional network responsible for implementation did not adversely impact the project's achievements. On the contrary, after the time it took to achieve fluidity in the exchanges, a technical and administrative team was formed both in Buenos Aires and in the field, very consolidated, motivated and productive, which has survived until the end of the project.

Finally, it is worth stressing that the fact that the ENI was a national entity had pros and cons in terms of efficiency. Pros in that costs charged by the UCAR / DIPROSE to carry out its role (5%) are considerably lower than the overhead expenses charged by international organizations to fulfill the same role. This saving resulted in more funds for concrete activities. Cons in that, when the Project funds go through the distribution mechanisms of the National Treasury, the ENI is subject to the delays and reductions that are inherent when transferring to public entities, particularly in years of fiscal adjustment such as the last years the country has gone through. International agencies do not usually go through this situation given their greater autonomy.

Therefore, to conclude, it is observed that delays upon commencement and delays in establishing complex administrative procedures generated inefficiencies in terms of an increase in

administration costs due to time extensions. However, as the Project progressed, efficiency gains are observed given that a high percentage of financial execution (92%) could be achieved upon completion thereof. The savings that the existence of a national ENI entailed also resulted in lower administrative costs.

3.2 LONG-TERM PROJECT ACHIEVEMENTS | SUSTAINABILITY AND IMPACT

<p>General rating of project achievements in the long term</p>	<p>Project sustainability is rated satisfactory to highly satisfactory. The socio-political sustainability of the Project is highly satisfactory for having implemented the project building on a broad and consolidated network of public and private stakeholders and for the high degree of ownership of the problem that all those stakeholders show. Although some of the components are more sustainable than others, the implementation methodologies used prioritized and strengthened local knowledge. There are, however, external factors such as an unfavorable socio-economic climate that will put at risk the adaption capacity of the most vulnerable producers and the capacity of State actors to continue their usual tasks. The sustainability of governance and of regulatory frameworks of the Project is highly satisfactory, in general, for having successfully helped to position the issue of climate change on the political and institutional agenda together with the boost given by the government. The financial and economic sustainability of the Project is very satisfactory due to the incorporation of its activities in State agencies, but also because in the last year a series of initiatives were launched that pick up and multiply the climate change adaptation actions undertaken. However, sustainability is threatened by the absence of a national entity accredited with the AF and with the Green Climate Fund. The environmental sustainability of the Project is satisfactory because although a scientifically-based vulnerability assessment was not conducted at the beginning of the project, this gap could be bridged by generating the necessary information to correctly anticipate the environmental risks to be considered. In any case, it will be necessary to continue down the road already undertaken since an intensification of the climatic risks is anticipated in the area of intervention of the project. Its magnitude should be corroborated by means of diagnoses and research already in progress, but it can be anticipated that only the execution of infrastructure works of a certain size and the reconsideration of the agricultural use of the land will allow to reduce them significantly.</p>
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An initiative is sustainable if its effects continue over time. By using the sustainability criterion, the probability is analyzed that the benefits produced by the intervention will continue after activities and flow of funds come to an end. For the World Bank (1990) "the term sustainability describes the ability of a project to maintain an acceptable level of benefit flowing throughout its entire economic life". The criterion, in turn, is multidimensional because it refers to a series of diverse aspects based on different theoretical premises. On the one hand, it has been used by the environmental theory to question various initiatives associated with economic growth and its harmony with the physical and biological environment (environmental sustainability). It also refers to the need to count on the continued support of certain stakeholders whose power, participation and contributions are indispensable for an initiative to keep delivering over time (institutional sustainability). Finally, the fiscal crises of many developing countries introduced another element of concern: the capacity of

an intervention to maintain an adequate flow of financial resources to guarantee the continuity of its effects (financial sustainability). Analyzing sustainability can also be understood as the same as proposing a hypothesis regarding the risk factors of the intervention. This view focuses on factors beyond the control of managers that may threaten the ability to continue delivering benefits (risks). Next, we will analyze this intervention from all those points of view.

3.2.1 Project socio-political sustainability

Rating on socio-political sustainability	<p>The socio-political sustainability of the Project is highly satisfactory, in general, for having implemented the project building on a broad and consolidated network of public and private actors (ministries, provinces, municipalities, organizations, universities, trade associations and business organizations), for the high degree of ownership of the project shown by the public agencies involved, and for the replication capacity presented by its broad territorial presence. Although some components are more sustainable than others, the self-construction methodologies; the national origin of the technologies used, replicated and developed; the incorporation of local knowledge for the execution of the works; the integration of the results in the usual dynamics of the institutions involved; and the vast display of capacity building generally show a very positive outlook in terms of sustainability delivered by the project. There are, however, external factors such as an unfavorable socio-economic climate that will undoubtedly put at risk the adaptation capacity of the most vulnerable producers and the ability of State actors to continue their usual tasks as a result of budgetary adjustments, both present and to come.</p>
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3.2.1.1 *Level of ownership, interest and understanding of the stakeholders involved*

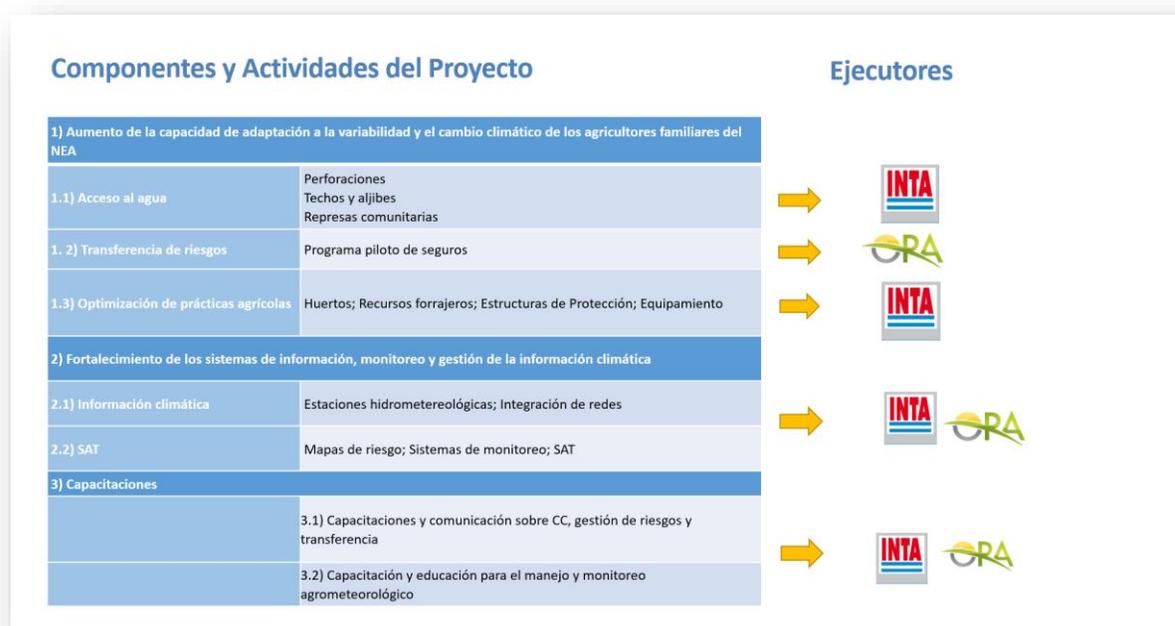
The various strategies of project execution were designed and implemented from the beginning with a view to ensuring its sustainability. The project focused specially on passing on capacity and knowledge, both to producers, and to technicians and officials of the executing organizations, the provincial cabinets and the municipalities. Likewise, much progress was made in networking, in promoting negotiation, round-table discussions, etc. One of the strong points of the project is the high potential for replication, scaling-up and sustainability of its actions. The following considerations justify this assessment.

The project was managed through inter-institutional coordination of a large number of public and private agencies that shaped intervention networks for each of the lines of action, both at the central level and in the territory, coordinated by UCAR / DIPROSE. In all cases, formal agreements were signed to institutionalize joint work. The agencies involved are:

1. The National Institute of Agricultural Technology -INTA- at two decision and intervention levels: the National Coordination Office for Transfer and Extension -CNTE- leading subcomponents 1.1 (water) and 1.3. (agricultural optimization), and the Natural Resources Research Center -CIRN- leading component 2 (climate information).
2. The Office of Agricultural Risk -ORA- of the Secretariat of Agroindustry, which assumed the leadership of subcomponent 1.2 (risk transfer) and worked together with the CIRN in component 2 (climatic information).

3. The National Directorate on Climate Change -DNCC- of the Secretariat of Environment and Sustainable Development, which played a relevant role at the time of Project formulation, contributed to set it in the framework of national guidelines, and to define training and significant contents to disseminate.
4. The National Institute of Industrial Technology (INTI), which despite not being formally an executing agency, was essential in the design and training of producers in the water access technologies used in subcomponent 1.1. (Water wells and construction of roofs and cisterns).
5. The Ministries of Production of the provinces of Chaco and Corrientes in the discussion, design and implementation of the fruit and orchard production insurance of subcomponent 1.2. (Corrientes only) and in the generation and integration of networks for obtaining and processing climatic data of component 2, together with ORA and CIRN.
6. Provincial entities in charge of water management.
7. The Municipalities where the water access works were carried out, which provided logistics, coordination and resources.
8. A broad set of producers, family agricultural organizations, technicians, government officials, communications expert, other local and provincial organizations, insurance companies and universities.

Figure.5 Responsibilities distribution among executing entities per subcomponent



Source: DIPROSE

The **sustainability** of the interventions classified under **subcomponents 1.1. and 1.3.** is high, for various reasons that are detailed below. On the one hand, the technologies used in the Project are national developments of INTA and INTI adapted to the territory and its specificities²⁴. On the other hand, the Project decided to go with self-construction methodology as regards adaptation technologies. This generated a slower pace of execution due to the complexity of organizing and developing this strategy, but it was very important in terms of sustainability. The trainers' training was carried out through capacity-building sessions by INTI / INTA technicians in the different technologies (roof retrofitting and construction of cement tile-roof or masonry water wells; wells for groundwater catchment; dug wells with lining, dug manually or with excavators; installation of crop protection structures such as drip irrigation systems, greenhouses, macro-tunnels; incorporation of pastures or silvo-pastoral systems, etc.). This decision allowed many producers to learn a trade (which many continue to practice to date, multiplying the works in their communities). In many cases they obtained an official diploma through the articulation of capacity-building with the Ministry of Labor Programs "Manos a la Obra" [Hands On] and "Entrenamientos Laborales" [Work Training], delivering the chance of additional income²⁵. It also entailed the increase in associativity within the communities and the empowerment of the women who participated in the works or in their direction. All this has enabled the replication of wells, cisterns and roofs in other towns where funds are obtained for the acquisition of materials, and exchanges have been generated among producers to train others, in an expansive dynamic.

Photo2 Implementation of water access technologies under supervision of INTA/INTI

²⁴ The project capitalized technical knowledge present at INTA regarding the optimization of farming practices. The development of the meteorological stations was made with national materials and based on the prototype called Nimbus, previously developed by INTA-CIRN-Institute of Climate and Water, and the National Technological University (UTN). Due to the financing of the project, the second and third version of the prototype, Nimbus II and III (portable), were developed, assembled and installed in the territory, with state-of-the-art technology. For water access works, collaborative work was conducted with INTI, which had previously developed a methodology for dug wells with lining following a model previously used in Brazil (Program "1 million rural cisterns" www.itd.upm.es / program-cisternas-de-brasil) and with the experience of INTA technicians in the construction of cement tile-roof cisterns and retrofitting of roofs to collect rainwater. The work in the territory was organized through specialists convened for each subject, who trained, and provided technical support to, INTA extension technicians and the producers who volunteered in each community. The technologies were fitted to each territory and reality. Both INTI and INTA had specific publications, instructions and guides for the development of these technologies that were adapted to the purposes of the Project and were even updated for their application to small-scale producers of family agriculture (Vaca Ávila, 2017 and Moreiras y Deambroggio, 2019).

²⁵ INTA has signed an agreement with the Ministry of Labor financing for eight months a grant to people who go through training for a trade. Up to 2018, seven trainings had been carried out, with 140 people, and this strategy continues to be used to continue building local capacities (Moreiras y Deambroggio, 2019).



Source: INTA-CNTE

In addition, local knowledge was taken into account, as is the case of the earth fill dams implemented in the province of Chaco for the construction of two community water reservoirs with their "Chaco type" tank (picture immediately above). Due to the specific characteristics of these soils, very clayey, in some regions it was possible to build earth fill dams by mere compaction, without the need for waterproofing. In other areas - typically brick kilns - the design of the wells and cisterns was adapted to be able to use bricks, material which was available and with which the producers were well acquainted.

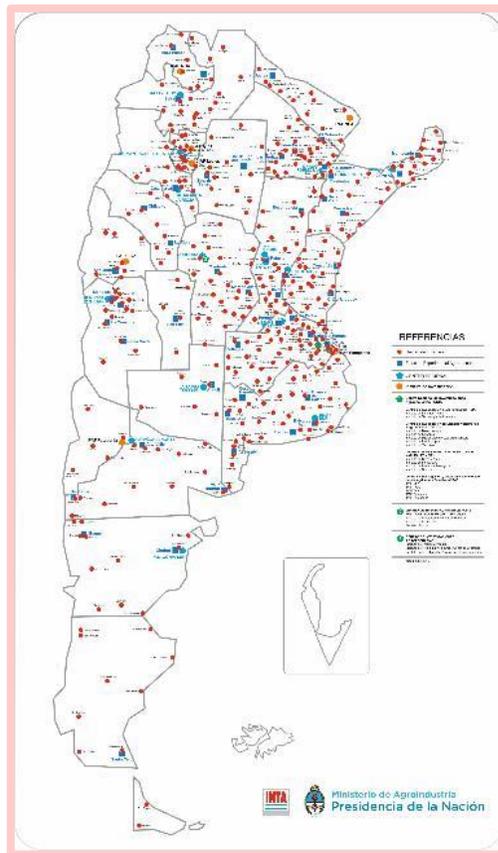
Photo3 Implementation of water access technologies under supervision of INTA/INTI



Source: INTA-CNTE

Figure.6 INTA's territorial presence

Besides, INTA has a permanent presence throughout the national territory, which guarantees the continuity and sustainability of the aforementioned activities, as detailed below.



Source: INTA-CNTE

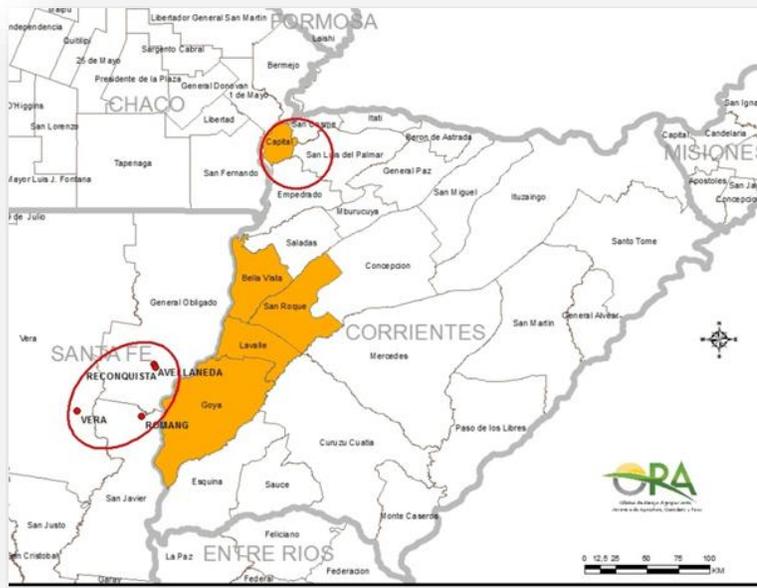
According to INTA technicians, the project triggered a new dynamics of intervention where access to water was identified for the first time as a fundamental condition for small-scale production and passed on capacities so that the producers themselves could build accessible technologies of adaptation:

“If we want to continue, we can do it. Everything is set and new. If you inject, today, a minimum sum of money to purchase materials, which is not that costly anyway, what was done in five years, can be done in two and a half years. The capacity is there. Plenty of people have been trained for that. There are even other institutions that have joined us to continue the work: University of Quilmes with its extension projects, the Ministry of Social Development, INTA itself with its special projects (...) This keeps giving! And now that we have water, it is time to resume working with efficient production systems. Now that they have water, people will want to have 6 pigs instead of just 4, will want to plant other varieties, to expand their orchard...” (interview with José Rafart, director of the Experimental Station of Las Breñas, Chaco).

Unlike the previous one, **sustainability of the intervention for the transfer of risks (1.2.)** is more uncertain since it is an innovative proposal, the replication and use of which in the mid-term depends on a series of factors. Prior to the Project, some pilot trials had already been carried out in the country to insure agricultural production of the smaller-scale and more vulnerable segments

under the PRODERNEA program (a program also under the responsibility of UCAR / DIPROSE). These previous trials involved a smaller number of producers than in this case (around 100), so the progress made in this project is another step in a negotiation process that the trade associations and the insurance companies have been carrying out with the ORA, the Provincial Ministries and provincial producers associations in public / private round-table discussions for years.

Figure.7 Location of the two horticultural insurance campaigns (in red the territories added in the second campaign)



Source: ORA

The main challenges faced by this subcomponent consisted in highly vulnerable horticultural production to hail storms, strong winds, frosts and water excess, where producers were used to claim the repair of damage of the provincial farming emergency programs after the fact, and had no experience in the insurance technique. Also, the insurance companies did not have this type of policy and did not know the specificities of these production systems.

The policy that was negotiated and approved after a long process is an important milestone because it is the first one that got approved by the National Insurance Superintendence. Its replication is enabled by the fact that it has a very broad coverage, since it authorizes its use throughout the national territory (not only in the province of Corrientes, which was where the feasibility study was carried out), for all types of sheltered growing and with no time limit. Besides, the final results of the two campaigns carried out (2017 and 2018) are also encouraging: the average claim rate with the insurers of the agricultural industry is 70% at national level (according to the ORA), while the average obtained in these two campaigns was lower (63%). This entails that the insurance implemented has a claim rate acceptable to the insurance market and could continue to be implemented because it shows interesting and profitable results for insurance companies. With the level of deductible used and with the risk analysis level obtained, a sustainable result was achieved.

Table 8: Results of the two sheltered insurance campaigns in the province of Corrientes.

Concepto	Campaña 2016/17	Campaña 2017/18
Productores asegurados	581	666
Hectáreas aseguradas	215	274
Cultivos asegurados	Tomate y pimiento bajo cubierta	Tomate, pimiento y otros cultivos hortícolas bajo cubierta
Suma asegurada/HA	\$30.600 (plásticos) + \$104.000 (tomate) \$30.600 (plásticos) + \$85.000 (pimiento)	\$42.000 (plásticos) + \$120.000 (tomate y pimiento) ó \$ 24.000 (otras hortalizas)
Suma asegurada total	\$20.354.991	\$42.600.000
Prima	9,07% sobre el monto asegurado	10,7% sobre el monto asegurado
Prima total subsidiada por el Proyecto	\$1.845.839	\$3.527.814
Siniestralidad	43%	83%

Source: ORA

However, according to the national (ORA) and provincial (Ministries of Production of Chaco and Corrientes) technicians, until it becomes a consolidated product in the market, both for producers and companies, it cannot be implemented without the State subsidizing the policy (or a part of it). This was precisely the contribution of the project, which subsidized the premium of the two campaigns. The ORA had reached an agreement with MINAGRO to finance a third campaign, which would have been a great achievement in institutionalizing this cost, which in many countries is assumed by the State, at least in part (among other things, because paying for insurance is cheaper than the need to deploy Agricultural Emergency programs afterwards). However, the incoming administration in care of the Ministry of Agroindustry in 2018 did not agree on keeping this commitment. Currently, it is the provincial governments that seem to be in a better position to assume this role to guarantee the sustainability of the risk transfer instrument. Particularly, the government of Corrientes is carrying out studies to design a bill that allows the government to assume part of the policy for this type of insurance. If this is verified, the future is promising because, as mentioned, it is a profitable product for companies provided a minimum of State intervention is ensured.

In fact, for small-scale producers who have a very diversified production, the logical thing would be to generate a multi-risk insurance or an income insurance, rather than a specific insurance for each product. But that was never achieved in Argentina. The very idea of insurance is also difficult for this type of producer, who has never used them. Proposing that the producer must also be responsible for managing their risks is paradigm-shifting. Also, the private sector, historically, has been very reluctant to venture into this type of insurance, and progress is very slow. The types of projects like the one at hand allow to accelerate, sustain and encourage these processes of learning, coming together and reaching consensus among stakeholders, necessary to advance along this path.

The **sustainability of component 2** on climate information and generation of a regional SAT is high for the actions of subcomponent 2.1. and could have been improved with greater developments in

access and presentation in subcomponent 2.2. The achievement of a better capacity for monitoring and evaluating climate change and variability through the installation of new stations, the improvement of preexisting ones, the integration with provincial networks, and the training carried out (subcomponent 2.1) translates into high sustainability. Undoubtedly, the density of existing hydro-meteorological stations and rain meters has been increased. Their integration into the existing network of INTA ensures continuity beyond the end of the project. The weakest point seems to be the assurance of station maintenance crew and the generation of a stock of spare parts. Regarding the creation of the SAT (subcomponent 2.2.) after a long negotiation process, agreements have also been signed to blend different data networks (INTA stations, stations of the provinces of Corrientes and Chaco, and stations of the trade associations), which had remained isolated, and to make their data interoperable. In this process, a network has been created and capacities have been built that will be passed on at an institutional level. The possibility of accessing a whole spectrum of data and forecasts available online is a sufficient result considering what was originally planned, although it would have been convenient to generate a presentation particularly friendly for small-scale producers, such as a cell phone app.

Lastly, the intervention on **capacity-building (component 3)** also shows high sustainability. The training capacities, if conducted effectively, will always pass on capacity to those receiving training and, as a result, are sustainable in itself²⁶. In this specific case, besides, training was also conceived and executed to a large extent to underpin the activities of the rest of the components, since training was delivered in connection with construction of water access technologies, with proposed measures of agricultural optimization, with the installation of data collection systems, and with insurance execution, in line with a rationale of implementation deeply anchored in a very active participation of the beneficiaries. Hence, sustainability of this component is tied to that of the rest of the components. Furthermore, training was delivered based on a catalog of available topics (including water, climate change, agroecology, agroforestry, and gender) but ultimately decisions were made subject to the demand coming from each group of producers and technicians, which ensured the interest of the territory and their engagement. It turned out to be very important that this intervention was decided in connection with the different groups of stakeholders (producers, technicians, and local officials) since this allowed to create a shared language and similar contents that position the matter on the agenda of everyone involved. Thus, overall, the benefits delivered by training not only allow for replication of adaptation technologies by the producers but also significant articulations and learning through the exchange of experiences, enhancing the potential for synergies and enabling the replication of innovations based on work with various institutions, technicians and producers who develop similar work with the same objectives and in the same territory.

3.2.1.2 Political or social risks which can endanger sustainability

Although, to a large extent, the project execution strategies have provided a good sustainability logic for most of its lines of intervention, there are external factors that can put at risk (partially) the viability of the Project. The recent degradation of the country's economic context results in an increasing vulnerability of small-scale producers in the intervention area. After social indexes improved between 2004 and 2008 and then reached a plateau for a period (2008 to 2016), the years

²⁶Project trainings were effective since, according to the Training Systematization Report, learning generated among technicians and agricultural producers is patent and highly valued by the stakeholders.

2017 and 2018 showed a resurgence of poverty in the country (EPH-INDEC)²⁷. This worsening of the socioeconomic context affects with greater intensity the lower income deciles where the small-scale rural producers are located. Added to this, in line with the public policy priorities of the current government administration (2015-2019), there is a retreat or disappearance of State services that provide concrete support to the small-scale farming producers subsector: a significant reduction of the territorial presence of the Secretariat of Family Agriculture of the former MINAGRO, a budget reduction of INTA that affects the quantity and quality of its support to the producers in the field²⁸, the disappearance of the Farming Simplified Tax System that ensured health coverage and retirement plan for small-scale producers, among others.

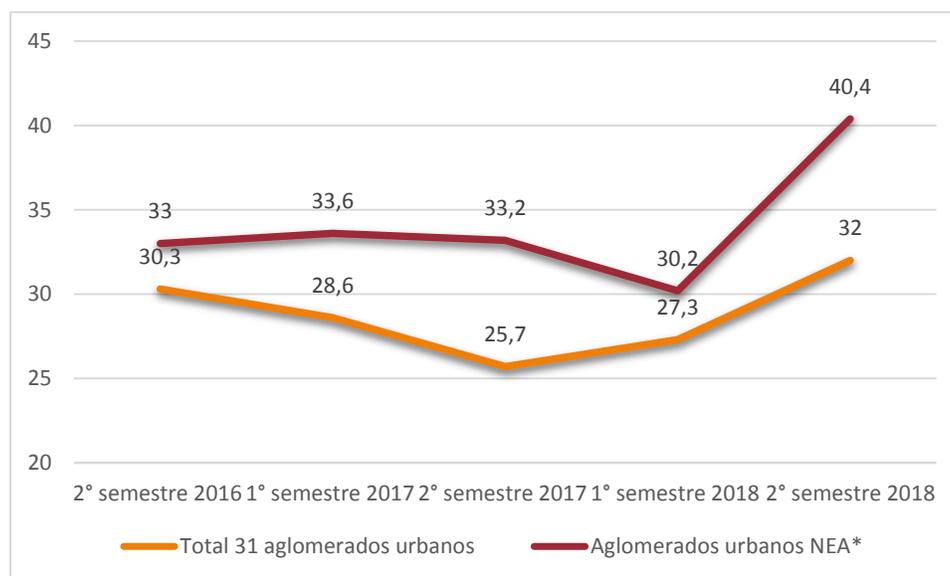
The crisis also has territorial specificities and, in comparative terms, the NEA is the region with higher poverty rate (40.4%) than the national average (32.2%) and other regions of the country²⁹. This shows a more difficult relative sectoral and socio-economic situation of the lowest income deciles in the intervention area of the project and, therefore, of its beneficiaries. A better socioeconomic situation of the producers increases their capacity of response and adaptation to the risks and, therefore, of reducing the unfavorable impacts of extreme climatic events, as established in the specialized literature (IPCC, 2014). The increasing worsening of the living conditions of Argentinian small-scale agricultural producers (especially those of the NEA) is then presented as a risk for their adaptation capacity.

²⁷Given the lack of updated census data on rural poverty (the last CNHPV was carried out in 2010 and the next one should be conducted in the year 2020), an increase in rural poverty cannot be verified specifically for the area of intervention. However, the INDEC data at national and regional levels and the interviews carried out suggest a degradation of the socioeconomic conditions of small-scale rural producers in general, in the last year and a half. Currency depreciations of 2016, 2017 and 2018 and the abrupt drop in the real wage, with cumulative inflation that closed the 2016-2018 three-year period at levels of 160%, generated a strong decline of income. As regards data from the EPH-INDEC, based on the 1st half of 2017, there is 28.6% of the population below the poverty line. From there, the rest of 2017 and 2018, the poverty figures in the country bounce back to 32.2% in December 2018. The same trend is estimated by alternative studies: the analyses by Zack, Schteingart and Favata suggest a poverty index of 27.7% at the end of 2015 against 32.2% at the end of 2018 according to Rozada (UTDT).

²⁸ The Board of INTA approved in early 2019 a restructuring that will involve an operational reduction of more than 20% of its structure, causing the disappearance of agencies of rural extension, national and regional directorates, experimental stations, and research centers and institutes distributed throughout the country. This measure is added to the elimination of more than 700 jobs during the years 2017 and 2018, which, while not involving mass layoffs, reduced about 10% of the jobs of the agency's staff. The most important thing is the budgetary shrinkage that implies the reduction of the Family Agriculture Institutes (IPAF) from five to two and the closing of extension agencies that are located within the Experimental Stations (EEA). Currently, INTA has 53 stations of this type distributed throughout the country, of which 440 extension agencies depend, each employing between five and 15 workers, depending on the population density they serve (source: TSS / UNSAM).

²⁹ People living in poverty reach 31.3% in Greater Buenos Aires, 31.5% in Cuyo, 32.1% in the Pampean Region, 34.5% in the NOA; and 24.9% in Patagonia (EPH-INDEC, 2nd semester 2018).

Chart 1 Evolution of poverty in Argentina (households) 2016-2018. Urban centers



*Corrientes, Formosa, Greater Resistencia and Posadas.

Source: Prepared by the authors based on data of EPH-INDEC (2018)

3.2.2 Project governance and regulatory framework sustainability

Rating on governance and regulatory framework sustainability	<p>The sustainability of governance and of regulatory frameworks of the Project is highly satisfactory, in general, for having successfully helped to position the issue of climate change on the political and institutional agenda together with the boost given by the government. The Project has set an important precedent in positioning adaptation to climate change in the national and provincial levels and has built up background for the government's policy for developing diagnosis and planning on climate change on a large scale. Specifically, the issue of water access and generation and implementation of adaptation technologies for small-scale producers was incorporated in INTA, which made it a priority for its extension programs. Also UCAR / DIPROSE consolidated its capacity to implement adaptation projects with international funds, despite the fact that its recent restructuring deprived it of part of the human resources generated and its re-accreditation with the Adaptation Fund is yet to be obtained.</p>
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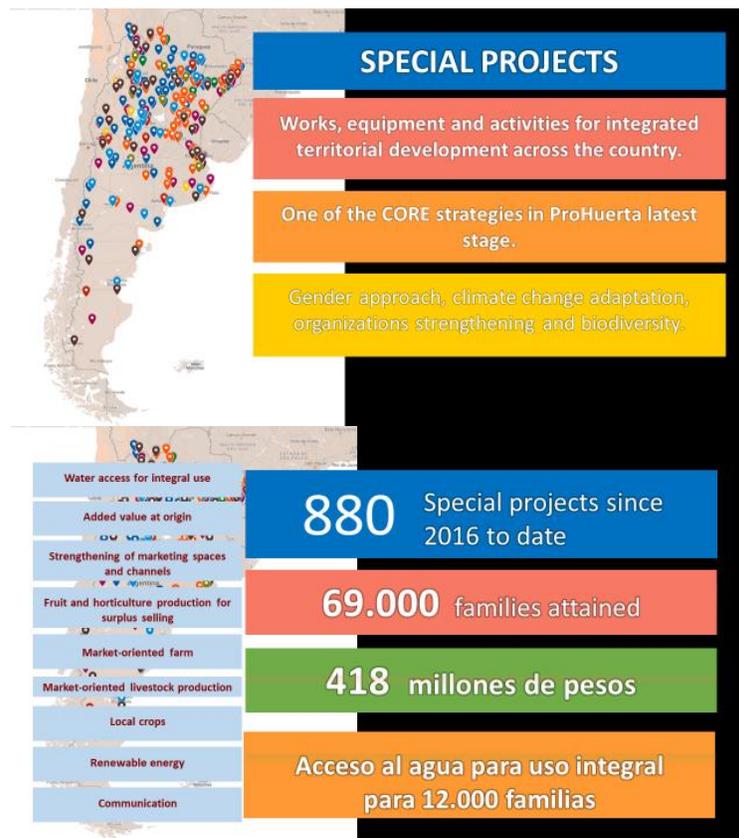
This project was designed and implemented at a time when awareness of climate change and its associated risks were still incipient in the country at the level of producers, technical institutions and the government. In 2013, there were no national or provincial plans for climate change and the issue was not on the agenda of the leading agencies on farming matters, such as the Ministry / Secretariat of Agroindustry or INTA. It was on the agenda of the ORA and of the Secretariat of Environment, as it is their main objective, but these agencies were not able to mainstream the issue or to place it on other political or institutional agendas.

However, after the change of administration in 2015, greater attention began to be paid to these matters. In 2016, a National Cabinet on Climate Change was created for the first time, with all the ministries responsible for the matter having a seat at the table, and generating a Work Plan for the years 2016-2019. Their activities advanced first on mitigation issues, but adaptation was also present. A "National Climate Change Response Plan" is being completed this year, and a bill for a national law is being drafted to provide a more solid institutional framework on the matter (both still being drafted).

In turn, the Secretariat of Agroindustry (formerly MINAGRO) also advanced in the creation of a Sustainable Production Directorate with a broad agenda that includes several issues related to mitigation (updating the inventory of agro-industrial GHGs, development of NDC, and updating technical aspects for the calculation of emissions, assessment of the state-of-the-art generated in the country on climate change and a commitment to participation in international forums). Regarding adaptation, the most important initiative is the development of the "National Action Plan on Agro and Climate Change" which aims to "develop the adaptive capacity of productive systems and enhance their contribution to the mitigation of greenhouse gases in a way that improves productive efficiency, competitiveness and sustainability " (still in process of drafting). This, in general, prioritizes adaptation, but also productivity and competitiveness, it proposes that agriculture should not be only a sector where problems arise, but can also be a source of solutions and commitment to technology for the achievement of its objectives. A baseline is also being conducted regarding the possible adaptation measures that each actor of the farming sector can contribute with its current resources and skills. This baseline includes conversations with the provinces and with the private sector on autonomous adaptation (also in progress). That is to say, the entity of ministerial rank encompassing a large part of the public entities related to this project (UCAR / DIPROSE, INTA and ORA) - the Secretariat of Agroindustry - has focused its efforts during the years coinciding with the implementation mainly on a diagnosis of situation leading to size up the institutional, political and scientific resources of the farming sector in terms of climate change.

If the Secretariat of Agroindustry first included the matter on the agenda with a rationale of planning and diagnosis mainly, INTA also went through a similar process but this time directly involving the implementation of concrete actions in the field, that is, with an objective of making an immediate difference. Indeed, at Project beginning, climate change may have been a residual problem for INTA, but, at project completion, climate change has become one of the agency's most important lines of action, especially in actions of extension. The implementation dynamics of the Project harmonized perfectly, from the beginning, with the priorities and action approaches of both the CIRN and the CNTE, the latter based on a territorial development approach that was enhanced by the boost provided by the Adaptation Fund. The issue of water access, together with the actions carried out in the field with funds from the Project, and its immediate effectiveness, became a key issue to be solved, which the entity had historically overlooked and which now claims as its own.

Figure.8 Priorities of INTA Prohuerta Program



Source: CNTE-INTA

So much so that of the three historical extension programs of INTA, Cambio Rural, Profeder and Prohuerta, the latter determined climate change as one of its priorities and financed an increasing number of "Special Prohuerta Projects" with that objective. "The Prohuerta Special Projects are today the main instrument of INTA to respond to the structural problems of Family Agriculture and in recent years we have seen how the issue of climate change became a growing priority for producers with an increased demand for financial support to underpin it "(Diego Ramilo, National Coordinator of Transfer and Extension INTA). In fact, from 2016 to 2018, with technologies similar to those of the AF Project, the Special Projects ensured access to water for 12,000 families throughout the country. Thus, INTA really made the Project its own and is today a fundamental vehicle for its sustainability and scalability throughout the country.

The matter was similarly felt at UCAR / DIPROSE, an agency of the Ministry / Secretariat of Agroindustry, which over the years had worked as a Minister-related agency, with extensive autonomy, and had accumulated enormous technical expertise in the field of implementation of international projects in farming matters. The matter of climate change was not on their agenda either, and this project placed it on the agenda, expanding the technical capacity of its human resources in climate issues. However, the restructuring and reduction of staff sustained by the agency in recent years has caused a migration of part of those technicians to other public entities,

the private sector, or other countries, generating a loss of part of the accumulated human resource³⁰. In addition, this restructuring prevented their re-accreditation before the AF, which has been ongoing for more than a year. The loss of the accreditation before the AF also caused the impossibility of a fast-track re-accreditation with the Green Climate Fund, for which reason, today there is no agency of the Argentinian State accredited with any of the world's two major funds on the fight against climate change. This is, undoubtedly, bad news for the country that had a very well positioned agency with broad international technical strength in the design and management of climate projects. Given this situation, today this role can only be fulfilled by international organizations such as the World Bank, the UNDP, the CAF or others, which fails to deliver the same advantages in terms of ownership of capacities and results as when it is a State agency that is responsible for these tasks.

In conclusion, when the project began to be implemented, there was a regulatory and institutional framework from which the matter of adaptation to climate change was largely absent. Project implementation generated a strong sense of ownership of the issue by all the public agencies involved (ENI and Executing Entities). This circumstance coincided with a change of governmental priorities, promoting the agenda in the institutions to such an extent that at the end of the project, adaptation to climate change occupies a much more important place. This achievement is, however, partially overshadowed by the loss of accreditation with the AF (and the Green Climate Fund) that deprives the country from technical agencies specialized in climate change for the execution of projects with international funds.

3.2.3 Project financial and economic sustainability

Rating on financial and economic sustainability	The financial and economic sustainability of the Project is very satisfactory due to the incorporation of its activities in State agencies, but also because in the last year a series of initiatives were launched that pick up and multiply the climate change adaptation actions undertaken. Specifically, three projects were approved with international funds (one from the AF, one from the GCF, and one from the WB) that sustain and broaden the Project's lines of action, generating necessary diagnostic and planning activities at the national level (in all sectors and throughout the territory), investments in coastal cities and ecosystems of the NEA, and a scaling-up of the same line of work that had been in progress in the farming sector, at the level of all the Argentinian provinces (GIRSAR Project). However, sustainability is threatened by the absence of a national entity accredited with the AF and with the Green Climate Fund.
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The planning of the National Cabinet on Climate Change mentioned in the previous section has already been materialized based on a series of international financing, chief among which there is

³⁰ "In November 2017, Executive Order No. 945/2017 (...) provided the technical coordination and execution functions of the programs and projects with external funding - whether multilateral, bilateral, or regional - and of public-private partnership projects, presently developed by the technical execution units or by the technical areas of programs' execution units, shall be embodied in the Secretariats or Under-Secretariats or equivalent areas of substantial nature of the Jurisdictions. Then, on March 2, 2018, Executive Order No. 174 approves the organizational chart of the Ministry of Agroindustry, creating the Secretariat of Administrative Coordination, within the scope of which the functions of the UCAR are absorbed. (...) In this way, execution, operational, administrative, budgetary and financial-accounting management were centralized in structures within the ministries' organizational charts, while, previously they lie with mainly external executing units." (Moreiras y Deambroggio, 2019).

one new project of the Argentinian State with the AF, one with the GCF, and another with the World Bank.

- In 2018 the Green Climate Fund approved a project to generate a **National Adaptation Plan** (www.argentina.gob.ar/adaptacion-al-cambio-climatico/plan-nacional-de-adaptacion), intended to mainstream climate change adaptation in the country's development strategies. This plan intends to carry out adaptation planning at the national State level in all relevant scales and engage all the relevant stakeholders to achieve a cross-cutting strategy with a mid and long-term perspective. To this end, a first diagnosis of adaptation needs and capacities will be carried out country-wide, broken down per sector and per provincial plan, and concrete instruments for training and dissemination of the adaptation matter will be created, as well as impact, vulnerability and adaptation studies to define future actions and concrete policies. It proposes the UNDP as implementation entity and, as executing entity, the Secretariat of Environment and Sustainable Development.
- In 2018, the Adaptation Fund approved a **Bi-national Project of Argentina and Uruguay**, focusing on climate change adaptation works and actions in the lower basin of the Uruguay river. The main lines of action are: 1) Reduce the conditions of vulnerability and contribute to developing resilience to climate change and variability in vulnerable coastal communities and ecosystems of the Uruguay River; 2) Promote institutional strengthening considering climate change scenarios in the mid and long term, in territorial management policies, plans and programs for identified vulnerable cities and ecosystems; 3) Promote integrated climate risk management in the cities and ecosystems identified for each country, encouraging the implementation of early warning systems (SAT). It proposes as executing entities the Secretariat of Environment and Sustainable Development (ARG) and the Ministry of Housing, Land Management and Environment (URG), for a total for both countries of USD 13 million, and on the Argentinian side the works and actions will be executed in the province of Entre Ríos. The Development Bank of Latin America (CAF) will be the implementation entity.

The first discussions about these projects presented the UCAR / DIPROSE as implementation entity, but when it lost accreditation before the AF, it was necessary to seek the support of an international organization to be able to carry them out, which meant two lost big chances.

- Likewise, in 2018 the Argentinian government also signed a loan with the World Bank for the approval of the **Comprehensive Risk Management Project in the Rural Agroindustrial System, GIRSAR** (<http://www.ucar.gob.ar/index.php/institucional/manuales-reglamentos-y-salvaguadas/2610-proyecto-de-gestion-integral-de-los-riesgos-en-el-sistema-agroindustrial-rural-girsar>), which represents a scaling up of the Project carried out with the AF. The theory of change behind it is the same and is based on the same pillars: prevention, information generation, the transfer of risks, and investments/works in the territory. Thus, its Component 1 consists in the strengthening of information systems on the Argentinian agroindustrial system and includes the development and strengthening of Systems and Instruments and Institutional Capacities. Component 2 anticipates investments for risk mitigation and includes institutional strengthening for the integrated management of farming risk, infrastructure and natural resource management, and support to vulnerable producers for technology adoption. Component 3 consists in instruments of emergency response and transfers of agroclimatic risks that includes the strengthening of the farming emergency management system, the development of farming risk financing instruments and the payment of premiums and costs related to the acquisition of financial instruments

to be deployed in the context of Farming Emergency. At first sight, the Project does not focus on small-scale agricultural producers, so we will have to wait to know to what extent this sector will be taken into account in the implementation. The agreement was signed on February 12, 2018 with a duration of 6 years (until 2025) for USD 150 million.

That is to say, from the Project that has just ended and with the support of the government, a series of important initiatives were launched that will enhance the importance of adaptation to climate change not only on the agenda but also in Argentina’s activity and public policies in coming years. The lines of action range from diagnosis and planning activities at the national level (in all sectors and throughout the territory), to work in coastal cities and ecosystems, to a scaling-up of the same line of work that had been in progress in the farming sector.

3.2.4 Project environmental risks

Rating on environmental sustainability	The environmental sustainability of the Project is satisfactory because although a scientifically-based vulnerability assessment was not conducted at the beginning of the project, this gap could be bridged by the technical capacity of the executing units. The assessment conducted has not been deemed to be insufficient. On the other hand, the new projects in progress in Argentina will conduct quantitatively robust vulnerability assessments that will serve as diagnosis for future interventions. The 4th CCC, which is being drafted, will also be an important source of information. Meanwhile, interviews and partial studies allow to anticipate an intensification of the climatic risks in the immediate future in the area of intervention of the project. This Project was very effective for the prevention and adaptation to risks of water stress, but not in terms of water excess, unusual in the area and that could only be faced in the short term with large-sized infrastructure works. In the meantime, only a reconsideration of the agricultural use of lands will allow to reduce climate risks. It will be necessary to continue, therefore, along the path already undertaken.
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As already mentioned, a vulnerability assessment (scientifically based) was not properly carried out for the Project and therefore it was not possible to have a unified baseline for all the components. This gap entailed seeking out other solutions in two aspects: technical analysis of climate change risk and identification of beneficiaries. The first aspect was easily solved given that the people involved in the drafting of the Project were also involved in the drafting of the second and third CCC (SAyDS, 2007 y 2015), for which reason the technical quality of the design was flawless. Regarding the data on small-scale farming producers, the appropriate source in Argentina is the National Farming Census (CNA-INDEC) but its last update dated back to 2003 upon project design (even as of the date of writing this document, the final results of the new CNA conducted in 2018 have not been published). Fortunately, the executing agencies had their own databases of producers and knowledge of the territory, so this did not imply an obstacle to start execution (only the ORA had to perform an “ad hoc” measurement for the risk transfer component). All this allowed to begin work on an acceptable basis despite the lack of a vulnerability assessment. On the other hand, the new projects in progress in Argentina will be the initiatives in charge of conducting quantitatively robust vulnerability assessments that will serve as diagnosis for future interventions.

Likewise, with the fourth CCC pending (in the process of being drafted) interviews and partial studies make it possible to anticipate an intensification of climate risks in the immediate future in the area

of project intervention. There is scientific evidence, much of it produced by INTA itself³¹, which proves that soil from the NEA region (like that of other areas of the country) suffers a progressive imperviousness due to the change of agricultural uses occurring mainly since 1998, when an increase in deforestation to free up production area for extensive agriculture with agrochemicals became exponential. Specifically, the south of the province of Chaco in recent months has suffered torrential rains in excess of the highest annual historical mean (according to officials of the Ministry of Production of the province) leading to levels never before reached of excess water. This has generated significant floods in almost a third of the provincial territory repeatedly so far this year. The provincial technicians report that it rained in four months what it usually rains in a year and a half. The field technicians of INTA-Chaco are concerned because: "For twenty years we've got used to managing water deficit, and now we have to deal with surpluses". The existing works in the territory are not enough to drain the vast flooded areas. The main cause of flooding, in addition to rain, is soil imperviousness, which relocates the surplus discharge from neighboring provinces by gradient (mainly from the east of Santiago del Estero).

This Project was very effective for the prevention and adaptation to risks of water stress, but not in terms of excess risks, unusual in the area and that could only be faced in the short term with large-sized infrastructure works. It will be necessary to continue, therefore, along the path already undertaken and to hope that the new interventions under way will also reduce floods as well. Meanwhile, without a doubt, only a reconsideration of the size and impact of the agricultural use of lands (reduction of agrochemicals, rotations, etc.) will make it possible to avoid these situations in the future.

3.2.5 Outcomes-impacts linkage and unplanned outcomes

To determine the linkage between outcomes and impact, two types of factors must be considered: internal and external. In the management of the internal and controllable factors, the strategy and the outcomes of the Project in terms of sustainability were very positive since the executing parties really made the Project their own; knowledge and capacities were passed on; institutional networks were created, strengthened, and consolidated; and legal breakthroughs were made that will consolidate the results obtained in the long term. But there are external factors, political and economic ones, which are not under the control of the project and that affect its sustainability. Specifically, the prospects of an unfavorable economic context, which is likely to last for many months, will generate more poverty and will worsen the living conditions of the most vulnerable social groups and reduce budgets of public agencies. Likewise, if the priorities in public farming policies are not reversed, the loss of protagonism of small-scale producers will remain an unfavorable factor in terms of the effective adaptation of the most vulnerable sectors.

3.3 PROCESSES THAT INFLUENCED ACHIEVEMENTS

3.3.1 Project preparation and start-up, including analysis of delays upon commencement

The process of Project formulation, carried out in the years 2012/2013, occurred when UCAR obtained the status of National Implementation Entity with the AF. Obtaining the role of ENI was a very important milestone for the country's possibilities of accessing funds and generating capacities

³¹ Roberto Casas, Director of the Soils Institute of INTA Castelar, stated that the economic growth of agriculture occurs at the expense of the impoverishment of the soil resource, which is evidenced above all by larger phosphorus depletion (redaf.org.ar/el-avance-de-la-frontera-agropecuaria-y-sus-consecuencias). INTA has published several studies on this subject (for example: ria.inta.gob.ar/contenido/el-resguardo-del-suelo-se-transformo-en-el-reto-del-siglo).

related to the management of adaptation projects with international funds. Until then, no Argentinian agency had obtained such accreditation. The initiative had taken place at the request and with the support of SAyDS, which also played a fundamental role in leading the formulation process.

That process had an institutional bias: the SAyDS and DIPROSE convened the institutions of the Argentinian public administration which, in their opinion, could better respond to the priorities of the AF to be part of a project that could carry out interventions at the level of the farm unit, and at provincial and national levels. After the lack of interest by some of the agencies called, a formulation team was consolidated that articulated the current executing entities (INTA and ORA, with the support of SAyDS and DIPROSE). According to the interviews conducted, what motivated these stakeholders to commit was that the project's subject-matter was a priority on their institutional agenda. There was also a personal interest of the professionals who directed the corresponding areas of work. In any case, the selection of these agencies has been relevant since a solid, integrated and proactive work team was formed, as it derives from all the interviews carried out.

According to the third CNCC (SAyDS, 2015: 149) the technical actors of the Project are among the most recognized in each of the fields of intervention. On the other hand, the Territorial Development approach, which for a decade has underpinned the field work of the National Coordination Office for Transfer and Extension of INTA (CNTE / INTA), was particularly adapted to the need to reach isolated producers with few resources in a vast territory and greatly enabled the identification of the types of interventions and the technology best suitable for the context. The institutional bias for project formulation entailed that the concrete interventions proposed were those that the different institutions and their specific areas were prepared to carry out. This implies limiting the alternatives of action to those which were materially possible to implement. All this is reflected in a project design of high technical quality, highly adapted to the context and easy to implement.

Reviewing the quality of the design does not prevent, however, from pointing out that some intervention modalities originally planned (especially in outcome 1.3.) were considered in the course of implementation of less priority than others (mainly those of outcome 1.1.). This meant an over-execution by the end of the project of a typology (that of outcome 1.1.) and an under-execution of others (those of outcome 1.3.). In other words, the criterion of institutional feasibility that prevailed at the time of Project design and the alignment from the beginning of the AF agenda to the institutional agendas of the executing agencies were key factors in obtaining the good outcomes of the project, although in the course of implementation it was considered appropriate to readjust some of the typologies of the activities originally planned.

The team was properly organized from the beginning: association agreements were signed (UCAR with INTA, ORA, SAyDS and Fundación Argeninta), and roles and responsibilities were negotiated among all the executing units, which were fulfilled and updated as necessary throughout implementation. One of the keys to the good functioning of the team was the quality of the coordination deployed by UCAR / DIPROSE, which guaranteed great fluidity in the implementation of a complex intervention.

Project formulation was participatory, in the form of workshops with INTA field technicians from the intervention area. These workshops allowed to identify the actions that best adapted to the needs of each of the groups of identified beneficiaries, to generate channels of communication with

those communities, and to define modalities for their active participation in project development. There was no possibility, however, due to time constraints, of carrying out broader consultation at the time of design that included a representative sample of said small-scale family producers, which surely would have shown the urgency and priority of providing attention to water access activities to the detriment of other actions.

3.3.2 Country ownership

As anticipated in the previous section, the project contributes to achieving the country's objectives in terms of adaptation. However, at the time of its design and during the first years of execution there were no national, sectoral or provincial plans for climate change adaptation, and the issue was certainly not at the top of the agenda of the leading agencies in farming matters such as the Ministry / Secretariat of Agroindustry or INTA. Only as of 2016 the government undertakes a process of national planning and, in the farming sector, on adaptation to climate change, which is a novelty in the country. In this context, the Project set a very significant precedent when positioning climate change adaptation at the national and provincial levels. Although the international agenda (mainly due to the approval of the Paris Declaration) has also pushed in the same direction, having two Adaptation Fund projects under implementation was, "without a doubt, the initial kick-off to raise the bar of the discussion on adaptation in the country" (in the words of Minister Marcia Levaggi, former director of the Adaptation Fund and official of the Argentinian Foreign Ministry). Likewise, as it arises also from the numerous interviews, this project is very important to replicate many of the lessons stemming from its implementation in other interventions of greater scale.

3.3.3 Stakeholders' participation

As explained in the previous sections, the project involved a large number of stakeholders through information sharing, built into the design, implementation and monitoring. The use of the skills, experience and knowledge of the executing entities, non-governmental organizations and producers, insurance companies, universities, and municipalities was key to achieving a successful design and implementation. These stakeholders were also incorporated into the project's midterm review and final evaluation. In addition, the insights of small-scale producers from the intervention area were taken into account more and more, particularly the opinion of the most vulnerable.

From formulation, gender approach was mainstreamed into Project objectives. The diagnosis included in the Project document provides information on the diversity of tasks and roles according to sex, in the intervention area, and the express inclusion of gender goals to guarantee equitable participation in the expected benefits of the Project. During execution, a gender focal point was incorporated into the ENI that worked with the technicians, through capacity-building, to identify the gaps and inequalities and to establish concrete strategies for the incorporation of women in the different activities. There was an important participation of women in the process of building their own cisterns, a factor of empowerment within communities and organizations, and in capacity-building of small-scale producers of family agriculture. The total percentage of women's participation in capacity-building carried out under the Project is 55%.

Since women are mostly the ones responsible for carrying water back and forth, adaptation measures to improve efficiency of water collection, storage and management made a substantial difference in women's life quality. It is estimated that, based on water access works, women saved an average of 4 to 6 hours a day previously spent in carrying water, allowing them to devote that time to other production and / or personal tasks. In this way, the Project put the spotlight on women

and their needs, and allowed to appreciate more and more their participation, management and leadership skills.

3.3.4 Financial Management

Given that this review was conducted before the final audit report was available, it is too early to issue an evaluation in this regard.

3.3.5 Supervision and support by the implementing entity

The project, initially, did not generate an “ad hoc” management unit for project execution but a small coordination unit (two people) that served as liaison with other areas of UCAR / DIPROSE and with the executing agencies. The main coordinating body between the technical executing actors and the ENI was the Executive Coordination Committee, with a function of sharing and ensuring progress in execution. That committee was very important for progress, but given the absence of poorly centralized management, a gray area was created with powers that were assigned to a set of actors whose articulation was difficult or slow. Over time, this situation became less than adequate to ensure the execution of such a complex project. For this reason, UCAR/DIPROSE had to add, to the role that it had originally assumed (focused on supervision), tasks more inherent to execution. The ambiguity of the role assigned to the ENI in the agreements and its long experience in the management of international projects allowed the ENI to assume this function both from a legal and from a practical point of view.

Besides, the pace of administrative management was slow during the first years because it was in the hands of the different areas of UCAR and the ArgenINTA Foundation. But it assured high-quality management since UCAR/DIPROSE has its procedures verified by the main international organizations.

The work team exclusively responsible for the project was small: maximum it had two full-time technicians, and one coordinator plus one administrative assistant, the latter two with other tasks in charge. Added to this was the intervention and the proactive and very efficient support of the Management Control Area of UCAR from the beginning.

This change of role has undoubtedly been positive in view of the achievements obtained. Thus, project management has been a progressive curve of learning on the fly during which the UAS could, and learned to, improve its task, but at the cost of a trial and error logic that has taken time and that has generated moments of some difficulty. In any case, it is worth stressing the achievements have been obtained due to a firm and clear commitment of all the stakeholders involved under the efficient coordination of the ENI, leading a good team, highly motivated to achieve the objectives and to move forward the project over the years, solving every difficulty as they came up.

3.4 CONTRIBUTION OF PROJECT ACHIEVEMENTS TO THE AF GOAL, IMPACT AND OBJECTIVE

This project is highly akin to the new strategic framework of the Adaptation Fund, as stated in its plan for the 2018-2022 period, which is described in the table below.

Table 9: Consistency of Project outcomes with AF strategic framework (2018-2022)

2018-2022 Adaptation Fund Objective*	Project outcomes consistency*
People, livelihoods and ecosystems are properly guarded against the adverse impacts of climate change.	Highly consistent , mainly as regards the greater protection of the most vulnerable people (small-scale farming producers) and their livelihoods against climate change.
2018-2022 Adaptation Fund goal	Project outcomes consistency*
The Adaptation Fund serves the Paris Declaration by accelerating and improving the quality of adaptation action in developing countries. The Fund does this by supporting projects promoted by the country, generating innovation and multilevel learning for effective adaptation. All Fund activities are designed to engage, empower and benefit the most vulnerable communities and social groups; promote gender equality and the empowerment of women and girls; strengthen long-term institutional and technical capacity for effective adaptation; and build complementarity and coherence among the channels of delivery of climate finance.	Highly consistent , in each and every one of the dimensions considered without exception: innovation, multilevel learning, empowerment of the most vulnerable, promotion of gender equality, institutional and technical strengthening, financing complementarity.
2018-2022 Adaptation Fund strategic priorities	Project outcomes consistency*
Strategic priority 1: Action	
Results as Planned (RP)	
RP1 Reduced vulnerability, reinforced resilience and improved adaptation capacity The vulnerability of project beneficiaries to climate variability and change was reduced, their recovery capacity got strengthened, and their adaptation capacity, improved.	Highly consistent , despite negative external factors (worsening of extreme climate events in the area of Intervention and increase in poverty) contrasting against the project's positive result.
RP2. Strengthening of the institutional capacity Long-term capacity of national and regional institutions in implementing and executing high-quality adaptation projects is strengthened through the Fund processes, including accreditation and adaptive management.	Consistent , as regards executing entities (INTA, ORA and SADyS), the net effect is positive. As regards implementing entity (UCAR/DIPROSE), the positive effect of the project is partially diluted by the re-accreditation obstacles arising from their recent restructuring.
RP3. Effective action expanded Countries got ready to expand effective projects with the support of other climate funds and financing channels (private sector included)	Highly consistent , specifically as regards obtaining new international financing to fight climate change (one new AF project, another of GCF, and the GIRSAR funded by the World Bank).
Strategic priority 2: Innovation	
RP1 Development of successful innovations Innovative adaptation practices, instruments and technologies, proven successful in a country have expanded to new countries/regions.	Consistent Most innovations developed and adapted by the project have reached other regions of the country as they are in the hands of national public agencies (tile-roof cisterns, new meteorological stations, and new insurance policy). There is no evidence they have reached other countries yet.
RP2. Viable innovations expanded Innovative adaptation practices, instruments and technologies, which have proven viable at a small scale, and have been executed at large scale.	Highly consistent , in all components innovating instruments and technologies (meteorological station and insurance policy) were developed, or the use of models and practices existing at small scale were adapted and could be scaled up successfully (meteorological station and tile-roof cisterns.)
RP3. Innovations encouraged and accelerated Development of innovating adaptation practices, instruments and technologies, encouraged and accelerated.	Highly consistent , in all components innovating instruments and technologies (meteorological station and insurance policy) were developed, or the use of models and practices existing at

	small scale were adapted and could be scaled up successfully (meteorological station and tile-roof cisterns.)
RP4. Evidence basis generated Evidence of effective and efficient adaptation practices, products and technologies generated as basis for implementing entities and other funds to evaluate expansion.	Highly consistent , in all cases, innovations developed were properly systematized to enable expansion.
Strategic priority 3: Learn and share	
RP1 Lessons learned and shared Practical lessons of the Fund projects were systematized and effectively informed to the adaptation stakeholders all over the world.	Highly consistent Practical lessons and results were profusely and properly systematized, effectively informed to other stakeholders, and made available online.
RP2. Knowledge and guidance developed Practical knowledge was acquired, and guidance was provided in relation with the selected topics (improvement of the durability of adaptation actions; integration of traditional, indigenous and local knowledge systems in adaptation actions; significance of adaptive management in project implementation).	Highly consistent , especially in outcome 1.1 and component 3, where the Project was highly successful in the integration and dissemination of traditional, indigenous and local knowledge in the interventions deployed. The project is an excellent example of successful adaptive management.
RP3. Strengthening of analytical capacity Strengthening of analytical capacity in the long run in developing countries.	Moderately consistent , as the project was mainly oriented to generating adaptation in vulnerable populations, rather than generating scientific progress or developing diagnosis.

*Ranks: Highly consistent / Consistent / Moderately consistent / Moderately inconsistent / Inconsistent / Highly inconsistent

Source: Prepared by the authors based on Adaptation Fund (2018)

3.5 REVIEW OF MONITORING AND EVALUATION SYSTEMS

3.5.1 Planning, design and implementation of the M&E system (including indicators)

The planning of the monitoring and evaluation system (M&E) of the Project as well as its implementation were in charge of the Control and Management Area of UCAR / DIPROSE. For the design of the system, such area built on the Logical Framework Matrix in order to obtain the information that was required to complete the annual report to the Adaptation Fund. To such end, the following information collection instruments were established.

- **Monitoring:** For each one of the outcomes or subcomponents of the Project, different monitoring instruments have been designed and implemented. (1) Subcomponents 1.1 and 1.3. Adaptation works progress for water access were reflected in “works spreadsheets” stating progress of on-farm construction and reforms, training conducted in order to conduct such works, and matching funds of the different agencies involved. These included a qualitative report of progress detailing the obstacles encountered, the results as they emerged, and the crosscutting training conducted. (2) Remaining subcomponents. A database management system was created where managers of each component were asked on a quarterly basis to provide information on the progress of the indicators as well as a qualitative report, describing the progress and justifying the delays in the different outputs under their care, and a management report of the risks identified in the planning.
- **Systematizations:** Throughout the project, different important experiences were identified that were relevant to analyze and document. In all, five systematizations of project experiences were carried out: water access, horticultural insurance, agro-climatic information system, training, and lessons learned in comparison with the AF project in the Province of Buenos Aires.

- **Monitoring visits:** different monitoring visits were made throughout the project: (1) Joint visits. Visits conducted by the management teams together with the ENI to verify progress and identify chances for improvement. (2) Subcomponents 1.1 and 1.3. A consultant was hired to conduct regular visits to the different works being executed through INTA with the purpose of checking progress, completion quality, and identifying best practices and needs for reinforcement of technical support. (3) Evaluation and planning visits These visits were conducted halfway through the project at the different PRETs to check what had been done so far, and to re-plan activities for the second half of the project in order to ensure the planned outcomes.
- **Midterm review:** Between September 2016 and January 2017, a broad-scope EMT or Midterm Review was conducted, timely submitted to the AF, with recommendations taken into account to adjust some of the lags identified at the time.
- **Adaptation Fund /World Bank Evaluation Mission:** The project was selected as a case study in the Adaptation Fund Evaluation (commissioned by the World Bank about the AF). Consultant "Tango International" was commissioned to carry it out in 2015. The results of the evaluation visit have been published.

In addition to the implementation of these data collection instruments, once a month operational meetings were held with the different executing units and the ENI, and twice a year strategic meetings were held with the institutes' directors. For these meetings, the M&E area of the project would prepare every six months, and shared with the executing units, a progress report showing the degree of indicator fulfillment.

This set of measures allowed identifying weaknesses and potential problems that could have affected the achievement of outcomes, enabling decision making to improve performance and adapt to changing needs (adaptive management). For example:

- Identify slow progress in the training of producers that led to decide as a strategy to hire an additional team of training in the field (two people), which in 2017 managed to train more than 1000 producers and compensate for the delay.
- Define in which territories the works' monitoring visits were to be carried out, which technicians had to be mobilized, and in which towns it was necessary to boost execution because there were delays.
- Identify problems in the quality of works completed, the use of glyphosate drums for water transport, etc. enabling the chance to provide answers.
- Understand that it was necessary to request a reallocation of the budget because the demand in the territory is more about water access works than any of the other types of planned works (farming optimization). This allowed to justify the reassignment requested to the adaptation fund, which was accepted.

The project developed training for the project management team and monitoring and evaluation actors in Buenos Aires. INTA technicians could not be trained in the territory, which meant that they did not always send the necessary information for monitoring in due time and manner.

The M&E plan was correctly budgeted at the planning stage and had financial coverage throughout the project, except for the baseline situation, which could be corrected with the perception survey carried out at the end of implementation.

Regarding the fulfillment of the objectives measured according to the different **indicators** included in the logical framework, those were relevant and convenient to measure the scope of the original goals planned, as detailed in the effectiveness analysis presented herein.

Rating on the monitoring and evaluation system	<p>The monitoring and evaluation system deployed was highly satisfactory since it enabled the timely monitoring of progress towards the achievement of the Project's objectives. This is so because information related to the progress of the activities was systematically and continuously collected throughout implementation. A broad array of follow-up measures (including a Midterm Review) allowed to identify weaknesses and potential problems that could have affected the achievement of outcomes, enabling decision making to improve performance and adapt to changing needs (adaptive management). The information necessary to complete the annual Project Reports (PPR) was available, allowing an accurate report with well-justified ratings. The M&E plan was correctly budgeted at the planning stage and had adequate financial coverage throughout the project, except for the baseline situation, which could be corrected with the perception survey conducted at the end of implementation.</p>
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3.5.2 Project baseline

No survey or other participatory process to define a baseline of the project in the territory could be implemented. The survey was designed but there was no specific funding planned to carrying it out. On the other hand, the collaboration of the INTA technicians was required to survey the information, and this agency was developing the National Registry of Family Agriculture (RENAF) at the time, which information was proposed to be shared with the project. Despite several attempts, this information could never be obtained. To compensate for this deficit, at the end of the project a field survey was designed and implemented with questions of perception of their situation before and after the project.

Regarding climate models and the vulnerability assessment upon project design, it is worth stating that no “ad hoc” diagnosis was made with scientific parameters, but SAYDS’ institutional representatives that participated in project formulation had also been part of the technical teams for the drafting of the 2nd National Communication on Climate Change (SMA, 2007). The data contained therein were the basis of the design of this intervention. The accumulated institutional information of the Agricultural Risk Office (ORA / MINAGRO) and of the Natural Resources Research Center (CIRN / INTA) was also taken into account for the early warning systems, climate and soil monitoring, and development of outputs for transfer of climatic risks. The field experience of the National Coordination Office for Transfer and Extension (CNTE / INTA) regarding water harvesting was also taken into account. In the time elapsed since the approval of the project in April 2013 and its completion in December 2018, the 3rd CNCC (SAyDS, 2015) was published, which, in general terms, endorses the main lines of action identified and the geographical location chosen.

3.5.3 Alignment of project M&E frameworks to national M&E frameworks

There are no national frameworks so far with indicators on climate change adaptation. Hence, project indicators were defined subject to the most relevant information in this regard, mainly the National Communications on Climate Change and the technical knowledge of implementing and executing agencies.

4 CONCLUSIONS, LESSONS LEARNED AND RECOMMENDATIONS

4.1 CONCLUSIONS

As a result of the all the previous considerations, it can be inferred that **short and mid-term project achievements are highly satisfactory**. The Project's pertinence is highly satisfactory from different perspectives: selection of the area and of intervention typologies, development of actions that account for scientific state-of-the-art, and alignment to AF objectives. Project's effectiveness is highly satisfactory since as regards its objective, the Project attained 90% of the proposed goal, and as regards its subcomponents/outcomes, most of the originally anticipated goals were achieved and surpassed, despite the fact that some activities were suspended or their relative importance shifted with other activities. Project's efficiency is satisfactory given that budget execution exceeded 90% in general and in all subcomponents /outcomes. However, there is a delay upon commencement, delays in establishing complex administrative procedures and a very difficult last year of execution due to institutional adjustments at the ENI and at the national execution entities.

Long-term project achievements are highly satisfactory. The socio-political sustainability of the Project is highly satisfactory, in general, for having implemented the project building on a broad and consolidated network of public and private stakeholders (ministries, provinces, municipalities, organizations, universities, trade associations and business organizations), for the high degree of ownership of the project shown by the public agencies involved, and for the replication capacity presented by its broad territorial presence. The governance and regulatory frameworks sustainability of the Project is highly satisfactory, in general, for having successfully helped to position the matter of climate change on the political and institutional agenda together with the boost given by the government. The Project has set an important precedent in positioning adaptation to climate change at the national and provincial levels, and has built up background for the government's policy when developing diagnosis and planning on climate change on a large scale. The financial and economic sustainability of the Project is highly satisfactory due to the incorporation of its activities in State agencies, but also because in the last year a series of initiatives were launched that pick up and multiply the actions of adaptation to climate change commenced. However, this sustainability would be even more enhanced if there could be in the country a national entity accredited with the AF and with the Green Climate Fund. The environmental sustainability of the Project is satisfactory because although a scientifically-based vulnerability assessment was not conducted at the beginning of the project, this gap could be bridged by the technical capacity of the executing parties and by ex-post evaluation instruments. An intensification of climate risks is expected in the near future for the area of intervention. It is, thus, necessary to continue down the path undertaken.

To **determine the linkage between outcomes and impact**, two types of factors must be considered: internal and external. In the management of the internal and controllable factors, the strategy and the outcomes of the Project in terms of sustainability were very positive since the executing units really made the Project their own; knowledge and capacities were passed on; institutional networks were created, strengthened, and consolidated; and legal breakthroughs were made that will consolidate the results obtained in the long term. But there are external factors, political and economic ones, which are not under the control of the project, which may adversely affect its sustainability.

As regards the **processes that led to these results, project preparation and start-up** occurred when UCAR obtained before the AF the status of ENI, which was an important milestone for the country's possibilities of accessing funds and building capacities regarding adaptation project management with international funds. Until then, no Argentinian agency had obtained such accreditation. The initiative had taken place at the request and with the support of SAYDS, which also played a fundamental role in leading the formulation process. Formulation had a participatory modality, conducted by INTA in the intervention area, but it failed to include a representative sample of small-scale family producers, which subsequently proved to be a real deficit. It took a while for the project to pick up an acceptable pace, but during the main years of implementation, it was expeditious and efficient. Only during the closing year were administrative obstacles found again.

Country ownership was high. At the time of formulation and during the first years of execution there were no national, sectoral or provincial plans of adaptation, and the issue was barely on the agenda of the leading technical agencies. From 2016 the government undertakes a process of national planning and, in the farming sector, on adaptation to climate change. In this context, the Project set a very significant precedent in positioning climate change adaptation at the national and provincial levels. The most desirable result would be the presentation and enactment by the national Congress of a law on climate change. The relevant bill is undergoing drafting.

Stakeholders' participation was paramount. The project involved a large number of stakeholders through information sharing, built into the design, implementation and monitoring. The use of the skills, experience and knowledge of the executing entities, non-governmental and producers' organizations, insurance companies, municipalities and universities was key in achieving a successful design and implementation. The project mainstreamed gender from formulation itself, and has made a substantial difference in the lives of women from producers' families.

ENI supervision and support activities were of high quality, at very low cost. Its articulation role was essential in assuring the successful coordination of a complex network of public and private agencies. ENI really made the project its own, and capitalized its built-up technical capacities. The significant contribution of UCAR/DIPROSE areas devoted to monitoring and evaluation is worth mentioning.

In light of all these achievements, it is worth mentioning that this Project is **highly akin to the new strategic framework of the Adaptation Fund**, stated in its 2018-2022 planning document. It is **consistent-highly consistent with the objective, goals, and most of the strategic priorities** stated in such planning document.

4.2 LESSONS LEARNED AND RECOMMENDATIONS

LESSONS LEARNED	RECOMMENDATIONS
The point of view of the beneficiaries must be taken into account from the initial moment, both upon project design and upon commencement of execution to prevent subsequent readjustments. The prior agreement with the beneficiaries regarding the implementation modalities ensures a greater success of the activities.	Incorporate the point of view of the beneficiaries at the time of project formulation and to do so, provide for economic resources and sufficient time. Also, as an initial start-up activity, budget a baseline for a rigorous identification of the beneficiaries and their priorities.
The leadership and engagement of national public agencies in both the role of ENI and of execution is essential to achieve high relevance and sustainability of	Given the differential pros and cons of national and international organizations acting as ENIs, it is paramount that the country can decide whether it is more convenient

<p>the projects. Likewise, administrative costs are greatly reduced, since the requested overhead expenses are lower than those of international organizations. This situation can generate, however, delays and obstacles in the execution linked to the comings and goings of the public administration in peripheral countries (bureaucratic delays, deferred payments, budget and personnel cuts, reduction of budgets for the public entities involved, etc.), which affects efficiency and sustainability. International organizations provide this function at a higher cost and are disconnected, to a large extent, from national and territorial realities, but they have greater financial autonomy.</p>	<p>to have an ENI connected with the national State or with an international organization to lead the implementation of each project, based on the needs of the case. Argentinian agencies responsible for preparing the re-accreditation process of DIPROSE with the AF and the GCF are strongly advised to be aware of this need, and to find fast ways to solve the issues pending in order to attain such objective as soon as possible.</p>
<p>In this case, the combination of relevant formulation, efficient implementation, and the possibility of having instruments in place to adapt management to a changing context or to emerging priorities was fundamental to achieve great effectiveness.</p>	<p>The Adaptation Fund must maintain its flexible view on project implementation and prioritize adaptive management as it has been up to now.</p>
<p>An intervention with a relatively small budget managed to position the issue of adaptation to climate change on the political and institutional agenda in a few years' time, in a country that had been reluctant to give it the necessary importance until then. This was due to the enhancement of analytical, technological and technical capacities that had previously been accumulated at the ENI and at the public executing agencies, which capitalized external support to put to practice preexisting approaches. The change of governmental priorities in favor of this matter was also a very positive factor that allowed this matter, and the lessons learned, to climb up the ladder.</p>	<p>It is not necessary to develop large-sized projects to change the institutional and political agendas. Sometimes, a small pilot project, well designed, managed, negotiated, and advertised, can really make a difference by demonstrating better ways of dealing with complex problems, such as those related to climate change.</p>
<p>The project is an example of the success and expansive capacity that can be achieved with limited resources when collective action problems are solved by playing the right incentives. This project managed to do it at territorial level (construction associative works), in the transfer of risks (tripartite negotiations for insurance) and the consolidation of climate information networks.</p>	<p>In order to solve complex problems such as adaptation to climate change, the activities leading to agreements between relevant stakeholders are very successful when the technical and negotiation capacities are in place and with a minimum of financial incentives to get the stakeholders to break their inertia and reconsider their position.</p>
<p>The receiving State of the funds is the one ultimately guaranteeing the sustainability of the actions undertaken by the projects with international financing. It is the obligation of the projects, during their design, implementation and evaluation, to make all the necessary arrangements to ensure intervention sustainability from within. However, if upon completion of implementation, there are external factors (which the project cannot change) regarding the macro-economic context or reducing the State capacity to conduct its roles, the chances of assuring impacts will be limited.</p>	<p>The Adaptation Fund must consider the negative effects of the fiscal adjustment processes of the peripheral countries on their capacity to ensure sustainability and impact of the financed projects.</p>

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6 LIST OF INTERVIEWS AND MEETINGS

- Laura Abram Alberdi, UCAR/DIPROSE project coordination.
- Soledad Moreiras, project M&E, UCAR/DIPROSE.
- Jorge Arias Almonacid, UCAR/DIPROSE project coordination.
- Gabriela Amadeo, UCAR/DIPROSE project coordination
- Diego Ramilo, National Coordination Office for Transfer and Extension, National Institute for Agricultural Technology.
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- Pablo Mercuri, Natural Resources Research Center, National Institute for Agricultural Technology.
- Sandra Occhiuzzi, Office of Agricultural Risk, National Secretariat of Agroindustry.
- Lucas Di Pietro, Secretariat of Environment and Sustainable Development
- Nicolás J. Lucas, Head of Sustainable Production, National Secretariat of Agroindustry.
- Ms. Marcia Levaggi, Minister, Former Director of the Adaptation Fund and career official of the Ministry of Foreign Affairs and Religion.
- Luis Almirón, Ministry of Production, Province of Corrientes.
- Héctor Daniel Benítez, Head of Documentation and Information Center, Ministry of Production, Province of Chaco.
- Claudio Belber, Head of automatic agro-meteorological stations, Ministry of Production, Province of Chaco.
- Fernando Rodriguez, Head of Geographical Information Systems, Ministry of Production, Province of Chaco.

7 ANNEX I. EVALUATION MATRIX

Sub-questions	Performance indicators	Information sources	Data compilation method	Data analysis method
SCOPE OF PROJECT ACHIEVEMENTS				
General Evaluation question 1: To what extent did the project manage to increase adaptive capacity and develop resilience in view of climate change and variability impacts of small-scale farming family producers in the coverage area?				
General Evaluation question 2: To what extent did the project do the above in view of those impacts arising from an increase in intensity of hydro-meteorological events, such as floods and droughts?				
1. PROJECT'S SHORT AND MID TERM ACHIEVEMENTS (OUTPUTS AND OUTCOMES)				
Criterion 1.1.: Relevance				
Definition "Relation of the intervention's objectives with the institution's strategy promoting or financing such intervention" (Feinstein, 2007) ³² .				
Were the Project's outcomes consistent with AF's objectives, goals, strategic priorities and regional priorities?	Degree of achievement of AF objectives and goals (see point 4)	3rd Argentina CCC 2015 Project Proposal Overall Evaluation AF 2018 Project Final Report Original MML and add PPRs Risk maps	Review of technical literature, document review and interviews with representatives of the Secretariat of Environment and DIPROSE	Comparative analysis of documentary sources and interviews
Criterion 1.2.: Effectiveness				
Definition: "Degree to which the objectives pursued by any intervention are fulfilled" (Feinstein, 2007)				
Are the Project's outcomes commensurate with the project's original or revised objectives?	Degree of achievement of Project's objectives and goals as established in the original and revised logical framework.	Project Proposal EMT Final Report AI Opinion Works and Spreadsheets IHE Original MML and add PPRs Systematizations (x3)	Document review	Descriptive analysis
Criterion 1.3: Efficiency				
Definition: "Relation between the fulfillment of the objectives sought for by any intervention and the resources used to such end" (Feinstein, 2007).				
Were alternatives considered? How was the preparation process compared with other projects? How was the implementation process compared with other projects with similar objectives in terms of cost and time?	Degree of fulfillment of the objectives sought for (per MML) per time unit and financial unit.	Project Proposal EMT Financial reports Original MML and add PPRs Unaudited financial statements Final Report Comparative systematization	Document review and interviews with representatives of the Secretariat of Environment, DIPROSE and PBA project.	Comparative analysis of various documentary sources and interviews Longitudinal analysis of the flow of resources

³² Feinstein, O. (2007) "La evaluación pragmática de políticas públicas" en CAF (2016) "La evaluación de políticas. Fundamentos conceptuales y analíticos", pages 27-48.

2. PROJECT LONG-TERM ACHIEVEMENTS (IMPACTS)

Criterion 2.1.: Sustainability

Definition: “Likelihood that the outcomes achieved will continue after AF financing comes to an end” (LRT) These will be rated based on a general evaluation of probability and magnitude of the potential effect of the risks considered within this aspect.

Question 2.1.: What are the financial and economic risks of the project?

<p>Are there any financial or economic risks that may jeopardize sustainability of Project outcomes? What is the likelihood of financial or economic resources being available once the AF financing comes to an end?</p>	<p>Ratio of assigned funds for climate adaptation or mitigation interventions of executing entities before and after the project.</p>	<p>Financial reports PPRs Unaudited financial statements Annual budgets of executing entities</p>	<p>Document review and interviews with representatives of the Secretariat of Environment, ORA, INTA and DIPROSE.</p>	<p>Comparative analysis of documentary sources and interviews Prospective analysis</p>
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Question 2.2.: What are the socio-political risks of the project?

<p>Are there any political or social risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by beneficiaries, government, technicians) will be insufficient to allow for the project outcomes/benefits to be sustained? Is there interest of the different stakeholders involved (beneficiaries, government, technicians) in support of the project long-term benefits? Is there sufficient stakeholder awareness in support of the project long-term objectives?</p>	<p>Degree of incorporation of climate adaptation or mitigation objectives by executing entities in their strategies before and after the project.</p>	<p>Training reports Field visit report EMT PPRs Maps suitable areas ORA Survey results</p>	<p>Document review and interviews with representatives of the Secretariat of Environment, INTA and DIPROSE.</p>	<p>Comparative analysis of documentary sources and interviews Prospective analysis</p>
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Question 2.3.: What are the risks of governance and related to regulatory framework of the project?

<p>Do the legal or political frameworks, the governmental structures or processes related to the project pose any risk that could jeopardize the sustainability of the project benefits? Are the necessary accountability and transparency systems, and required technical knowledge in place?</p>	<p>Number of legal and/or provincial regulations approved or revised to the effect of the project’s objectives</p>	<p>Training reports Field visit report EMT PPRs Regulatory analysis</p>	<p>Document review and interviews with representatives of the Secretariat of Environment, INTA, and provincial governments.</p>	<p>Comparative analysis of documentary sources and interviews</p>
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Question 2.4.: What are the environmental risks of the project? Vulnerability assessments require value judgement, and any attempt to define and measure vulnerability must be the result of a consultative, stakeholder-driven process, rather than the result of sole technical analysis (LRT)

<p>What is the risk that vulnerability assessments, existing adaptive capacity assessments, scenario development, and other assessments would be insufficient to allow interventions to be sustained or linkages to impacts analyzed? Was the vulnerability assessment conducted at the beginning of the project, scientifically based?</p>	<p>National/provincial statistics on climate variables before and after the project</p>	<p>Training reports IHE PPRs Field visit report Maps suitable areas ORA Risk maps Systematizations (x3) 3rd Argentina CCC 2015</p>	<p>Document review and interviews with representatives of the Secretariat of Environment, INTA, and provincial governments.</p>	<p>Comparative analysis of documentary sources and interviews</p>
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Criterion 2.2: Linkage towards impact achievement				
Definition: "Probability of clear linkages between the achieved outcome and the expected impact" by identifying the "risks that could weaken or strengthen the probabilities of clear linkages between the short and mid-term outcomes and the impacts" (LRT) Given the long-term nature of impacts, in most projects financed by the Adaptation Fund, the consultants will not be able to identify impacts at the time of assessment.				
How do findings on the four aspects of the sustainability risk affect the linkages between outcomes and impact? Are there any unplanned impacts in the broader context or in the long run?	Perception of key informants	Analysis of criterion 2.1	Review of results of criterion 2.1 and interviews with representatives of the Secretariat of Environment, DIPROSE and former ACG UCAR.	Comparative analysis between results of criterion 2.1 and interviews Prospective analysis

3. PROCESSES INFLUENCING PROJECT ACHIEVEMENTS (PROCESS)				
Criterion 3.1.: Preparation				
Question 3.1.: How was the project design process conducted? And how can its quality be evaluated?				
Were the project's objectives and components clear, practical, and feasible within its time frame? Were the capacities of the executing entities and its counterparts properly consulted when the project was designed? Were lessons from other relevant projects properly incorporated into the project design? Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? Were climate models considered and vulnerability assessments conducted? What was the quality of the models used?	Degree of participation of the executing entities in project design and in implementation agreements. Degree of participation of the territorial stakeholders in project design and in implementation agreements. Degree of participation of technical authorities and experts in project design and in implementation agreements.	3rd Argentina CCC 2015 Project Proposal Project Final Report Original MML and add PPRs Risk maps SIGA systematization	Review of technical literature, document review and interviews with representatives of the Secretariat of Environment and DIPROSE	Comparative analysis of documentary sources and interviews
Criterion 3.2.: Country ownership				
Question 3.2.: To what extent does the project contribute to achieving the country's objectives in this regard? And what is the degree of affinity of the project with the governmental agenda?				
Was the project concept in line with the national sectoral and development priorities and plans of the country? Are project outcomes contributing to national development priorities and plans? Were the relevant country representatives from government and civil society involved in the project? Has the government approved policies or regulatory frameworks in line with the project's objectives? What was the role of local communities?	Existence of countries' objectives and degree of alignment thereof with project's objectives. Degree of participation of governmental officials and social leaders in project design and implementation.	EMT 3rd Argentina CCC 2015 Overall Evaluation AF 2018 IHE PPRs Maps suitable areas ORA Risk maps Field visit report	Review of technical literature, document review and interviews with representatives of INTA, ORA, Secretariat of Environment and DIPROSE	Comparative analysis of documentary sources and interviews
Criterion 3.3.: Stakeholders involvement				

Question 3.4.: What was the degree of involvement of the stakeholders throughout the project life cycle?				
<p>Did the project involve the relevant stakeholders through information sharing and consultation and by seeking their participation in project design, implementation, and M&E?</p> <p>Did the project consult with, and make use of, the skills, experience, and knowledge of the appropriate government entities, nongovernmental organizations, community groups, private sector entities, local governments, and academic institutions in the design, implementation, and evaluation of project activities?</p> <p>Were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account while taking decisions?</p> <p>Were the relevant vulnerable groups (including women, children, elderly, disabled, poor) and powerful supporters and opponents of the processes properly involved?</p> <p>Was the project assessed from a gender perspective?</p>	<p>Quantity of activities designed and implemented based on a participatory paradigm</p> <p>Degree of use of technologies and resources locally sourced in project implementation.</p> <p>Curve of disbursements of project expenses (time line)</p> <p>Revision of task assignment inside families and/or communities among men and women.</p>	<p>CA UCAR-FA (Add 1 and 2)</p> <p>CE1 UCAR-INTA (Add 1 and 2)</p> <p>CCT INTA-INTI</p> <p>CE10 ORA-UCAR (Add 1 and 2)</p> <p>AI Opinion Works and spreadsheets</p> <p>Training reports</p> <p>Training systematization</p> <p>PPRs</p> <p>INTI Technical guide</p> <p>INTA Cistern guide</p> <p>Maps suitable areas ORA</p> <p>Risk maps</p>	<p>Document review and interviews with representatives of INTA, ORA, Secretariat of Environment and DIPROSE</p>	<p>Descriptive analysis</p>
Criterion 3.4.: Financial Management				
Question 3.4.: Were funds appropriately managed?				
<p>Did the project have the appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds?</p> <p>Was there due diligence in the management of funds and financial audits?</p>	<p>Quality of financial reports</p> <p>Timely presentation of financial reports and audit performance.</p>	<p>Project Proposal</p> <p>EMT</p> <p>Financial reports</p> <p>Original MML and add</p> <p>PPRs</p> <p>Unaudited financial statements</p> <p>Final Report</p> <p>Comparative systematization</p>	<p>Document review and interviews with representatives of DIPROSE.</p>	<p>Descriptive analysis</p>
Criterion 3.5.: ENI: supervision and support				
Question 3.4.: How would you rate ENI's performance throughout the project's life cycle?				
<p>Did Implementing Entity staff identify challenges in a timely fashion and accurately estimate their significance?</p> <p>Did Implementing Entity staff provide quality support and advice to the project, approve modifications in time, and restructure the project when needed?</p> <p>Did the Implementing Entity provide the right staffing levels, continuity, skill mix, and frequency of field visits for the project?</p>	<p>ENI's performance quality, according to executing entities and territorial actors.</p>	<p>EMT</p> <p>Overall Evaluation AF 2018</p> <p>Final Report</p>	<p>Document review and interviews with representatives of DIPROSE, executing entities and territorial actors.</p>	<p>Discourse and stakeholders' perception analysis</p>
Criterion 3.4.: Delays in project start-up and implementation				

Question 3.4.: Which were the causes and effects of project's delays?				
If there were delays in project implementation, what were the reasons? Did the delays affect project outcomes and/or sustainability, and if so, in what way?	Estimated commencement date vs. actual commencement date Existence of delays in execution Curve of disbursements of project expenses (time line)	CA UCAR-FA (Add 1 and 2) CE1 UCAR-INTA (Add 1 and 2) CCT INTA-INTI CE10 ORA-UCAR (Add 1 and 2) EMT PPRs	Document review and interviews with representatives of DIPROSE, executing entities and territorial actors.	Descriptive analysis

4. CONTRIBUTION OF PROJECT ACHIEVEMENTS TO AF OBJECTIVES, IMPACT AND GOALS

Criterion 4.1.: Contribution to AF goal

AF goal "Assist developing-country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects, in order to implement climate-resilient measures."

Was the project designed and implemented in and by a developing-country Party to the Kyoto Protocol that is particularly vulnerable to adverse effects of climate change? Through this project, would the country be able to achieve concrete adaptation measures and increase its adaptive capacity and resiliency? If so, how? What have been the main challenges or risks to attain increased resilience?	See effectiveness and environmental sustainability analysis	Project Proposal 2Nd and 3rdCCC Overall Evaluation AF 2018 PPRs Risk maps Final Report	Document review and interviews with representatives of executing entities.	Descriptive analysis
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Criterion 4.2.: Contribution to AF impact

AF impact: "Increased resiliency at the community, national, and regional levels to climate variability and change."

Did the project's results increase resilience at the community, national, and/or regional levels to climate variability and change? If so, how? What have been the main challenges or risks to attain increased resilience?	See effectiveness and environmental sustainability analysis	Documents stemming from the project.	Document review and interviews with representatives of executing entities.	Comparative analysis of documentary sources and interviews
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Criterion 4.3.: Contribution to AF objective

AF objective: "Reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels."

Has the project increased adaptive capacity to respond to the impacts of climate change, including variability at local and national levels? How did the project increase the adaptive capacity to respond to climate change impacts and variability? What have been the main challenges or risks to attain reduced vulnerability and increased adaptive capacity?	See effectiveness and environmental sustainability analysis	Documents stemming from the project.	Document review and interviews with representatives of executing entities.	Comparative analysis of documentary sources and interviews
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5. M&E SYSTEM EVALUATION

Criterion 5.1.: M&E Plan

Design:				
What is the assessment of the M&E plan to monitor results and track progress toward achieving project objectives? Was the plan based on the project RBM framework? Did the plan provide a timetable for various M&E activities, such as concrete evaluations, reviews, and supervisions, as well as an appropriate budget?	Percentage of project's budget assigned to M&E activities (broken down per type of M&E activity)	Project Proposal PPRs Comparative systematization M&E activity timetable	Document review and interviews with representatives of former ACG UCAR and DIPROSE	Comparative analysis of documentary sources and interviews
Implementation:				
Was an M&E system in place and facilitated timely tracking of progress toward project objectives by collecting information on chosen indicators continually throughout the project implementation period? Were annual project reports (PPR) complete and accurate, with well-justified ratings? Was the information provided by the M&E system used during the project implementation to improve performance and to adapt to changing needs (adaptive management)? Did the project have an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be compiled and used after project closure?	PPRs quality	Training reports AI Opinion Works and Spreadsheets PPRs Comparative systematization	Document review and interviews with representatives of former ACG UCAR and DIPROSE	Comparative analysis of documentary sources and interviews
Budget and financing for M&E activities:				
Was the M&E plan budgeted appropriately at planning/design stage of the project? Was it adequately and timely financed during implementation?	Percentage of project's budget assigned to M&E activities (broken down per type of M&E activity) Percentage of project's budget assigned to M&E activities actually spent (broken down per type of M&E activity)	Financial reports	Document review and interviews with representatives of former ACG UCAR and DIPROSE	Comparative analysis of documentary sources and interviews
Indicators:				
The evaluator shall analyze progress towards the achievement of the different indicators included in the Project's logical framework.	See effectiveness analysis	See effectiveness analysis	See effectiveness analysis	See effectiveness analysis
Baseline:				
Was the baseline designed through a participatory approach using accessible information? Were reference and adaptation scenarios considered? Were baselines described and analyzed regarding vulnerability, climate risk and adaptation capacity? During project implementation, was the baseline reviewed? And information included therein on vulnerability, climate risk and reference and adaptation scenarios?	Existence of a baseline / existence of similar analyses (even partial ones). Quality of existing analyses	Original MML and add EMT PPRs Risk maps Interviews ACG UCAR Interviews DIPROSE Systematizations (x3)	Document review and interviews with representatives of former ACG UCAR, executing entities and DIPROSE	Comparative analysis of documentary sources and interviews
Alignment of project M&E frameworks to national M&E frameworks:				
Were there M&E systems in place regarding the information the project was seeking to inform?	Project's contribution to the development of national climate information systems.	EMT Original MML and add PPRs	Document review and interviews with representatives of former	Comparative analysis of documentary

<p>Did this project monitoring and evaluation system make the best use of existing (local, sectoral, national) monitoring and evaluation systems, including existing indicators? Could these systems be used as they are, do they need to be revised, or are new and additional systems required? Did this project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component? What were the accomplishments and challenges in establishment of this system? Is the information generated by this system being used as originally intended? Is the system mainstreamed in a proper institutional structure and does it have financing?</p>		<p>Risk maps Systematizations (x3)</p>	<p>ACG UCAR, executing entities and DIPROSE</p>	<p>sources and interviews</p>
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8 ANNEX II. OFFICIAL RESPONSE FROM ENI AND EXECUTION TEAM REGARDING THE EVALUATION FINDINGS AND CONCLUSIONS

Below, we provide the answer by the National Implementation Entity (DIPROSE) and the executing entities (INTA CNTyE, INTA CIRN and ORA) to the conclusions and lessons learned appearing in the final review of the “Adaptation and Resilience project of NEA Family Agriculture to the Impacts of Climate Change and Variability”.

INTA (National Coordination of Transfer and Extension)

The independent external review report accounts for the project pertinence and its achievements in terms of effectiveness, efficiency and socioeconomic sustainability attained. We agree with the above and deem the consultant’s recommendations adequate and pertinent. Those will be taken into account upon the design and formulation of new institutional projects.

INTA (Natural Resource Research Center)

Based on a final review of the “Adaptation and resilience project of Argentina’s Northeast Family Agriculture to impacts of climate change and variability”, we make the following comments:

- The project, the purpose of which was to improve the adaptation and resilience to climate change, was designed to perform specific activities in the territory selected, with high involvement of local stakeholders. This was novelty compared with other institutional projects of adaptation and resilience.
- Each one of the project components was designed with verifiable and very specific objectives and indicators in mind, which allowed the monitoring and follow-up of progress throughout the project, as well as the assessment of the achievements reached, in both qualitative and quantitative terms.
- The design of component II always proposed objectives considering sustainable outputs and actions by making them part of the institutional structure and dynamics of INTA in order to have any attained benefits extend after project life cycle ended.
- The interaction among involved institutions and the NIE (DIPROSE, former UCAR) has been very beneficial, largely enabling organizational and administrative aspects of project execution.
- Stakeholders behind Component II acknowledge the importance of the part the support of professionals of the NIE played during development of the activities, especially in light of the challenges faced.
- The project’s considerable territorial support also allowed the Component’s executing parties to better understand and learn the dynamics, challenges and problems of the territory at hand.
- The design chosen by the Project is perfectly replicable in other territories, with the relevant adjustments after the lessons learned.
- The project has set the foundations for the development of new **adaptation and resilience actions by the local stakeholders in the territory.**

Office of Agricultural Risk

Among the lessons learned, especially as regards Project formulation, the need to have adequate time span for Project formulation must be mentioned, to take into account larger local participation, of both potential beneficiaries and institutions. Although there was a consultation process, more time would have been needed to size up the problems and requirements of adaptive measures, which would have prevented the need for re-adjustments during execution.

The network of institutions responsible for Project implementation features a positive externality: the strengthening of technical teams, specialized in adaptive measures, belonging to national and provincial agencies, and to NGOs, which continue connected with the rural development and risk management projects. This strengthening allows the institutional sustainability required to continue and deepen actions implemented in the mid-term, regardless of the current financial constraints. This way, the actions undertaken in component 2, such as integration and consolidation of meteorological networks and development of early warning systems, will be carried on and enhanced through GIRSAR project execution, for other regions not included in this Project.

As regards the vulnerability assessment, which will be helpful in future interventions, we wish to point out the technical study which included risk maps of water stress and surplus for crops, under climate change scenarios, conducted under component 2. That assessment contributes an instrument for decision-making and development of public policies. The differentiated analysis of changes of risk levels and the determination of causes (changes of precipitation pattern or water requirements) allow to establish land planning policies leading to benefit from new areas with lesser risk for diversification or expansion of crops, and to establish priority areas for implementation of adaptation measures in future conditions in those places where the risk is expected to grow, such as changes of sowing dates, use of new varieties, planning supplemental irrigation in times of high atmospheric demand, and works to manage water surplus.

Even though the Project was monitored and evaluated through the control of different indicators, the need to have information to establish Project baselines is worth mentioning. In this regard, it is essential to have updated census data to describe the productive systems and social vulnerability of the rural sector.

The personal commitment, technical skill level, and consolidation of the inter-institutional work team are worth mentioning. Despite the changes sustained by the Agro-industry structure, UCAR/DIPROSE and INTA, the budgetary and financial constraints, and the bureaucracy intricacies, we have managed to attain highly satisfactory results as regards Project formulation.

DIPROSE

As regards the conclusions and lessons learned appearing in the final review of the “Adaptation and resilience project of NEA Family Agriculture to the impacts of Climate Change and variability”, we agree on all of them. In this regard, we stress the need to include the viewpoint of the beneficiaries at the time of formulation, for future experiences, and to try and ensure DIPROSE’s re-accreditation with the Adaptation Fund.

Lastly, we want to point out the commitment by the work teams of the different executing agencies which were part to this program. We are grateful for that. Without it, none of the results achieved would have been possible.