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# SCALING UP CLIMATE AMBITION ON LAND USE AND AGRICULTURE THROUGH NDCS AND NAPS (SCALA)

Inception Report | Argentina

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## ABBREVIATIONS AND ACRONYMS

AMBA	Buenos Aires Metropolitan Area
BIOFIN	Biodiversity Finance Initiative
BMUV	German Federal Ministry for Environment, Nature Conservation and Nuclear Safety
CAR	Climate Action Review matrix
COFEMA	Federal Council for the Environment
COP	Conference of Parties
DNCC	National Directorate of Climate Change
DPS	Directorate of Sustainable Productions of the Ministry of Agriculture, Livestock and Fisheries
ELP	Long-Term Low-Emission Resilient Development Strategy
FAO	Food and Agriculture Organization of the United Nations
FP	Financing Proposal
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	greenhouse gas
GNCC	National Climate Change Cabinet
IKI	International Climate Initiative
INTA	Agricultural Vulnerability Index
INDEC	National Institute of Statistics and Census of Argentina
LTS	Long-Term Decarbonization Strategy
MACS	Argentine Sustainable Meat Board
MAGyP	Ministry of Agriculture, Livestock and Fisheries
MAIZAR	Argentine Maize and Sorghum Association
MAyDS	Ministry of Environment and Sustainable Development
MBGI	GEF's 'Sustainable Livestock in the forest region of the Argentine Parque Chaqueño through Forest Management with Integrated Livestock' project
NAP	National Adaptation Plan



NDC	Nationally Determined Contribution
NEA	Argentinian north-east
NGOs	Non-Government Organizations
PANAyCC	National Agriculture and Climate Change Action Plan
PNAyMCC	National Climate Change Adaptation and Mitigation Plan
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SAGyP	Secretariat of Agriculture, Livestock and Fisheries
SCALA	Scaling Up Climate Ambition on Land Use and Agriculture through Nationally Determined Contributions and National Adaptation Plans
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

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# 1. INTRODUCTION

## 1.1 Objectives of the report

The general objective of the SCALA programme's inception report in Argentina is organized around three main stages: (i) background research, (ii) technical planning meeting, and (iii) inception workshop. The aim is to systematize the results of the baseline survey, the Climate Action Review (CAR) Tool, the theory of change, and the inception workshop with the different identified stakeholders. The objective of this report is to present the programme that will be developed in Argentina, its foundations, objectives, and the country's work plan, as well as to coordinate with partners and stakeholders interested in engaging with the project to promote climate acceleration in the agricultural sector.

## 1.2 Global Programme Overview

The Support Programme for Scaling up Climate Ambition in Agriculture and Land Use through NDCs and NAPs (SCALA) is a multi-year initiative funded by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMUV) through its International Climate Initiative (IKI). The programme is designed to support transformative climate action in the agricultural and land use sectors to reduce greenhouse gas emissions (GHG) and/or enhance absorptions, as well as to strengthen resilience and adaptation capacity to climate change in participating countries. Its specific objective is for countries to **translate their NDCs and/or NAPs into actionable and transformative climate solutions in land use and agriculture with the involvement of multiple stakeholders**. It emphasizes collaboration between the public and private sectors to drive implementation, which will be achieved through three outcomes:

**Outcome 1:** Use of information and assessments by national actors to identify and explore transformative climate actions to promote NDC and NAP priorities in agriculture and land use.

**Outcome 2:** Integration of priorities for the agricultural and land use sectors, determined by climate risk, into national and sectoral planning, budgeting, and monitoring.

**Outcome 3:** Increased private sector involvement in climate action related to agriculture and land use.

The SCALA Programme provides support to **12 countries in Africa, Asia, and Latin America** (Argentina, Cambodia, Colombia, Costa Rica, Cote d'Ivoire, Egypt, Ethiopia, Mongolia, Nepal, Senegal, Thailand, and Uganda). Additionally, it works directly with key government actors (i.e., Ministries of Agriculture, Environment, Finance, and Planning, and Climate Change Coordination bodies) as well as with representatives from civil society, the private sector, researchers, and academics. To reach more countries, it also promotes knowledge dissemination and lessons learned through a technical service established under the programme, focusing on private sector engagement and public-private collaboration.

Funded by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMUV), the SCALA programme is implemented through a joint effort of the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Development Programme (UNDP), building on lessons learned from the Integrating Agriculture in National Adaptation Plans Programme (NAP-Ag), funded by IKI. The SCALA programme leverages the technical expertise and experience of both agencies, working through their respective Regional Offices, Regional Service Centers, and Country Offices in support of country programming frameworks. Both agencies have significant global, regional, and national initiatives that are utilized for knowledge exchange and complementary activities.



### 1.3 Initial phase

During the initial phase of the programme, an exhaustive documentary examination was carried out, including a baseline survey. Virtual team meetings were held between the consultant in charge of this analysis and the national and global team members of the SCALA team belonging to UNDP and FAO, in order to advance expeditiously in the initial phase. These meetings were held during the month of November 2023.

For UNDP Argentina, the following participated: Matías Mottet, Environment and Development Coordinator; Nahuel Pugliese Environment and Development Officer; Nicolas Xanthopoulos, National BIOFIN Coordinator.

For UNDP ROW: Valeria Correa, Technical Specialist for Pipeline Development Nature, Climate and Energy Bureau of Policy and Program Support; Farrah Adam, Private Sector Engagement Officer - Scaling up Climate Ambition on Land Use and Agriculture (SCALA Programme); Samuel Tumwesigye, Agriculture and Climate Change Adaptation Technical Specialist (SCALA Programme).

For FAO: Sebastián Burgos, Climate Change Specialist, Office of Climate Change, Biodiversity and Environment, OCB; Krystal Crumpler, Natural Resources & Climate Change Specialist.





## 2. CONTEXT

### 2.1 Country profile

The Argentine Republic adopts a republican, representative, and federal form of government with a decentralized political organization. It is composed of 23 provinces and the Autonomous City of Buenos Aires. Geographically, it is located in the southern part of the American continent and includes part of Antarctica. The total area is 3.8 million km<sup>2</sup>, of which 74 percent corresponds to the continental portion and 26 percent to the Antarctic continent and southern islands. Argentina has highly varied climatic characteristics due to the vast expanse of its territory. It is characterized by arid and cold regions in the west and south, while temperate and warm regions are found in the center and north. The arid diagonal crosses Argentine territory from the north-west to the south-east, with the wettest regions located in the north-east.

The main dominant factors of the climate system are the Andes Mountain range, latitude, and the influence of oceans. The estimated population of Argentina is 46.04 million inhabitants (INDEC, 2022). The average population density at the national level is 11 inhabitants/km<sup>2</sup>, with 91 percent of the population residing in urban areas, with 32 percent of the total population concentrated in the Buenos Aires Metropolitan Area (AMBA), which includes the Autonomous City of Buenos Aires and its surrounding areas. The gender ratio is distributed with 51 percent female and 49 percent male. More than 4 percent of the total population is foreign-born (Source: 3rd biennial communication).

The population identifying as indigenous or of indigenous descent represents just over 2 percent of the total population. 29.6 percent of households are below the poverty line, while 40.1 percent of the population lives below the poverty line (INDEC, 2023). 40 percent of minors suffer from malnutrition, and 54 percent live in overcrowded conditions. According to the latest SOFI report from FAO, which analyses data from 2019 to 2021, Argentina had the highest increase in food insecurity population in the region. It affects 37 percent of the total population, compared to 19.2 percent from 2014 to 2016, marking an increase of 17.8 percentage points.

The main internal economic sectors include industry, especially food processing, followed by services, transportation, communications, real estate activities, and agriculture. On the other hand, foreign trade is heavily dominated by the export of primary products and agricultural manufacturing. According to 2019 figures, the main export complexes were oilseeds (29 percent share of the total), grains (15.5 percent), automotive (10.9 percent), oil and petrochemical (7.8 percent), and metal mining (7.8 percent).

#### **Agriculture, livestock, and forests**

Agricultural and agro-industrial production represent one of the most significant contributions to the national GDP, as a source of employment, and as a generator of foreign exchanges, with sectors engaged in regional and global value chains. In 2019, the total planted area was 40,507,400 hectares, with soybeans accounting for 41.7 percent, corn for 23.4 percent, and wheat for 17.1 percent. This activity is complemented by the livestock sector.

In this regard, livestock farming is mainly carried out on the extensive grasslands of the Pampas, Espinal, and humid Chaco regions, where cattle stocks totaled about 52.9 million heads in 2020, while 13.9 million heads were slaughtered in 2019. Although most beef production is for domestic consumption, 28.4 percent of production was destined for export in 2018. The combined cattle, poultry, and pork chains generate nearly 30 percent of the Gross Value of Production of agri-food chains in Argentina, contributing 23 percent of their Added Value. They are present in all 23 provinces and employ more than 400,000 people.

On the other hand, the Argentine Republic has extensive areas of native forests, totaling 53,654,545 hectares. Due to different geographical, geological, topographical, and climatic conditions, various types of native forests are found, mainly located in seven forest regions: Paranaense Forest, Yungas, Chaco Park, Espinal, Andean Patagonian Forest, Monte, and Delta and Islands of the Paraná River, each subject to different natural and human pressures.





The annual percentage of native forest loss has decreased since the enactment of National Law No. 26.331 of Minimum Budgets for the Environmental Protection of Native Forests in December 2007, dropping from an average of 368 thousand ha/year during the period 2002-2013 to less than 179 thousand ha/year during the period 2014-2018. As for planted forests, the country currently has an approximate area of 1.4 million hectares. In 2018, the provinces of Misiones, Corrientes, and Entre Ríos accounted for about 78 percent of the country's total forested area. The cultivated species are mainly fast-growing exotics.

In Argentina, livestock accounts for 20,8 percent of all GHG emissions, while agriculture and land use change account for 4,7 and 19,5 of emissions respectively.<sup>1</sup> Together these account for nearly 45 percent of all GHG emissions.

## 2.2 Impacts, risks, and vulnerabilities of climate change

The risk of potential consequences of climate change is defined as the combination of hazard, vulnerability and exposure. In this regard, Argentina faces a series of risks and impacts related to climate change that vary in different regions of the country, namely water stress due to temperature increases in the north and west of the country, potential water crisis in Cuyo, glacier retreat in the Patagonian Andean region, reduction of mean river flows in the Plata Basin, sea level rise (affecting coastal areas and the Río de la Plata coast), and high frequency of extreme precipitation and floods in the NEA and western humid region.

In terms of projections related to precipitation, past observations cited within Argentina's National Adaptation Plan point to an increased mean of extreme precipitation dating back from 1960 in the south-eastern sector of South America (corresponding to the eastern part of Argentina).<sup>2</sup> It is expected that this trend will continue to increase in the 21st century along with associated flooding. In contrast, a decrease in precipitation is expected in the south-western part of South America (SWS, corresponding to the western strip of Argentina), which will be affected by more frequent and severe droughts, increased aridity, and climatic conditions favorable for wildfire spread.

The agro-productive sector is particularly vulnerable to climate stress, severe droughts, and floods that have resulted in productive losses affecting the economy and threatening farmers' livelihoods. Drought currently represents the climate impact with the highest number of associated agricultural emergency declarations during the periods of 2004-2017. Virtually the entire country has experienced an emergency declaration due to drought at some point. Shifting climates in agro-productive regions have resulted in a higher propensity of pests affecting agricultural production.

In economic terms, in 2023, with the presence of the La Niña phenomenon for the third consecutive year, both the fine (wheat) and coarse (soybean and corn) crops felt the full impact of the lack of precipitation and drought. According to a study by the Córdoba Stock Exchange (BCR), the drought caused losses for the soybean, wheat, and corn-producing sectors of over USD14 billion for the current year. Additionally, if the impact on reduced demand for freight, labor, financial services, and others is added, the damage amounts to USD 21 billion. This figure is equivalent to 4 percent of GDP.

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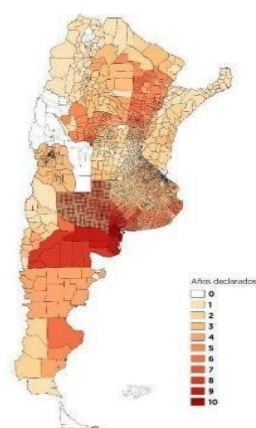
<sup>1</sup> MAyDS, 2023. Inventario Nacional de Gases Efecto Invernadero. Argentina 2023. Ministerio de Ambiente y Desarrollo Sostenible, República Argentina.

<sup>2</sup> Ministry for the Environment and Sustainable Development of the Argentine Republic. (2022). National Adaptation Plan. <https://unfccc.int/documents/633532>



Figure 1 - Recurrence of declarations of agricultural emergency due to drought

Figura 15: Recurrencia de declaraciones de emergencia agropecuaria por sequia (periodo 2004-2017)



**Source:** Dirección Nacional de Emergencias y Desastres Agropecuarios (DNEyDA). 2017. Recurrencia de resoluciones de Emergencias por sequias, 2004-2017. Inventario Nacional de emergencias y desastres agropecuarios. [https://www.argentina.gob.ar/sites/default/files/agro\\_29\\_11\\_2019\\_revision.pdf](https://www.argentina.gob.ar/sites/default/files/agro_29_11_2019_revision.pdf)

\*The boundaries and names shown, and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

Flooding is also an important risk particularly in the core Pampas region (north-west of Buenos Aires, Cordoba, and Santa Fe) where the highest recurrence of emergency declarations has been due to flooding occurrences. Climate trends for the Pampas region denote an increasing occurrence of heat waves and dry periods followed by high rainfall events. Observation of high precipitation events taken from the provinces of Buenos Aires, Santa Fe, Entre Ríos, and Corrientes have demonstrated that the number of extreme precipitation events in these areas doubled from 1960-2010. Climate projections point to annual precipitation rates increasing by 8 percent in some climate scenarios with the frequency and intensity of extreme precipitation events projected to increase.

In its recent NDCs,<sup>3</sup> Argentina has unconditionally committed itself to increasing the adaptive capacity of its various social and economic sectors, highlighting the link between the agriculture and livestock sectors to national income and food security. The country's recently presented National Adaptation Plan has also prioritized the need to strengthen the agricultural and livestock sector's capacity to adopt adaptive management practices.

Other impacts related to Climate Change that affect the sector in the country are hail, intense winds, fires, frost, thermal stress, biological threats, and impacts on the sea.

## 2.3 Climate change planning and implementation

### 2.3.1 Institutional arrangements

It is important to note that Argentina has undergone a recent political transition in December 2023. The new political administration has made significant changes within the National Public Administration System. Institutional arrangements reflected below demonstrate discussions and analyses made prior to the elections as well as to the new national context, particularly as it pertains to environmental and agricultural policies.

<sup>3</sup> <https://www.argentina.gob.ar/ambiente/cambio-climatico/contribucion-nacional>



In 2015, the former Secretariat of Environment was elevated into a Ministry. Until December 2023, the Argentine government's action on climate change was primarily coordinated through the Under-Secretariat of Climate Change and Sustainable Development under the Ministry of Environment and Sustainable Development (MAyDS). Within this framework, the National Directorate of Climate Change (DNCC) was created in 2016, which oversaw the Directorate of Climate Change Mitigation and the Directorate of Climate Change Adaptation.

Figure 2 - Governance Scheme of the National Climate Change Cabinet in Argentina until 2023



**Source:** Argentina government official website. 2024. Governance framework. <https://www.argentina.gob.ar/ambiente/cambio-climatico/esquema-de-gobernanza>

As mentioned above, at the end of 2023, the national Government underwent a restructuring process. Changes relevant to the project include the delegation of all environmental issues (including climate change policies) to the Under-Secretary of Environment placed within the Ministry of the Interior. This new Under-Secretary maintains the missions and functions of the previous Ministry of Environment and Sustainable Development and will maintain the international commitments assumed by Argentina.

With regard to agricultural and livestock policies, the **Secretariat of Agriculture, Livestock, and Fisheries** (SAGyP), under the Ministry of Economy of the Nation, and the DNCC were the national agencies responsible for the planning and implementation of climate change adaptation and mitigation in the agricultural and land use sectors at the national, regional, and local levels. Additionally, the Climate Change Commission for Agriculture, Livestock, Fisheries, Food, and Forestry was created to serve as a coordination space.

Through Resolution 576/2014 and Resolution 192/18 of the SAGyP, the **Climate Change Commission for Agriculture, Livestock, Fisheries, Food, and Forestry** was established as a coordination space where all areas of the SAGyP must appoint representatives, including decentralized agencies.

As part of the government restructuring, in 2024, the Secretariat of Agriculture, Livestock, and Fisheries was replaced by the newly formed Secretariat of Bioeconomy. This new Secretariat has been assigned to the Ministry of Economy.



Figure 3 - Map of decentralized organizations of the SAGyP



Source: Argentina government official website. 2024. <https://www.argentina.gob.ar/bioeconomia>

At the subnational government level, various environmental and/or climate change departments are involved in the management of the agricultural and land use sector at the regional and local levels. The Technical Commission on Climate Change of the Federal Environment Council (COFEMA) participates in the Provincial Articulation Table of the National Climate Change Cabinet (GNCC). This commission includes representation from each jurisdiction through a titular focal point and an alternate focal point, both of whom participate in general, regional, or bilateral meetings, identifying common needs and exchanging experiences in the joint and associative search for solutions that go beyond territorial boundaries. Through this coordination space, activities are carried out to support the development of subnational Climate Change Response Plans, such as meetings and training workshops.

The **Directorate of Sustainable Productions** is a cross-cutting area within the Secretariat of Agriculture, Livestock and Fisheries (SAGyP), which is articulated inter- and intra-secretariat, establishing links with various areas and decentralized agencies. It has technical representation within the National Cabinet of Climate Change and Development. It carries out actions and activities aimed at contributing to fulfilling the country's commitments under the UNFCCC regarding agriculture. Additionally, it provides technical participation in various regional and international forums such as the Climate Action Platform in Agriculture for Latin America and the Caribbean (PLACA) and the Global Research Alliance, among others. It is responsible for the executive secretariat, whose functions include assisting the Secretary on Climate Change issues, coordinating actions and instruments to fulfill commitments made in this area, developing proposals for dissemination and training, and proposing and supporting studies and projects.

There is also the **Federal Agricultural Council (CFA)**, an institutional meeting space among ministers, created by law, where the highest national and provincial authorities in the agribusiness sector address, in joint work, all the issues related to the agribusiness sector that, due to their impact on regional or provincial economies, require a broad federal, transversal, and collaborative approach.

### 2.3.2 Main frameworks and policies

Argentina, as a member of the United Nations (UN), adopted the 2030 Agenda for Sustainable Development in 2015 and ratified various agreements and conventions. These include the United Nations Framework Convention on Climate Change (UNFCCC), including the Kyoto Protocol, the Convention on Biological Diversity, the United Nations Convention to Combat Desertification, and the Sendai Framework for Disaster Risk Reduction.



In line with these commitments, Argentina is part of the Paris Agreement reached during the United Nations Climate Change Conference (COP21), fulfilling obligations such as regular submissions of inventories and Nationally Determined Contributions (NDCs), among other reports.

The Law 27.520 of 2019 on Minimum Budgets for Adaptation and Mitigation to Global Climate Change (Climate Change Law) and its Regulatory Decree No. 1030/201039 reaffirm and regulate the international commitments assumed, strengthening the national climate policy. Additionally, it institutionalizes the GNCC as the national governance body for the coordinated and consensus-based design of climate change adaptation and mitigation policies.

The GNCC includes ministerial meetings comprising all ministerial portfolios of the National Executive Power (including the agricultural sector), as well as the focal points table, which brings together political and technical representatives from all areas of the National Public Administration to build a common national vision on climate action. The law establishes the creation of the External Advisory Council to the GNCC, as a permanent consultative body, to assist and provide technical advice in the development of climate change public policies. Within the Ministry of Agriculture, Livestock, and Fisheries operates the Climate Change Commission for Agriculture, Livestock, Fisheries, Food, and Forestry (Resolution MAGyP 576/14 and 191/2018).

Moreover, Argentina participates in various international platforms and forums, positioning itself in international climate change negotiations such as the Group of Twenty (G20), the Adaptation Committee, and the Adaptation Fund.

In this context, the Ministry of Environment and Sustainable Development (MAyDS) developed the **National Climate Change Adaptation and Mitigation Plan** (PNAyMCC), aiming to identify priority adaptation measures for the most vulnerable sectors, systems, and regions of the country. This plan is linked to the Long-Term Low-Emission Resilient Development Strategy (ELP) projected to 2050, which seeks to implement commitments acquired in the Second NDC.

The means and actions to achieve the adaptation and mitigation goals outlined in its Second NDC and its update are:

**Mitigation goal:** not to exceed a net emission of 349 MtCO<sub>2</sub>e by 2030, applicable to all sectors of the economy.

In this regard, Argentina successfully completed the revision of its NDC, and on December 30, 2020, presented a more ambitious new target for emission reduction by 2030 of 359 MtCO<sub>2</sub>eq, with an indicative interim target for 2025 of 372 MtCO<sub>2</sub>e. Additionally, as an additional goal for 2030, the agricultural sector aims to avoid the emission of 25.74 MtCO<sub>2</sub>eq.

MAyDS, in collaboration with FAO as an accredited entity to the GCF, requested Payment for REDD+ Results through a Financing Proposal (FP) under the REDD+ Results-Based Payments Pilot Programme. As a result of these efforts and the development of the FP, the GCF approved a disbursement of USD 82 million. The REDD+ Project achieved total emission reductions in the country of 165,172,705 tCO<sub>2</sub>e for AT REDD+ 1 and 109,458,580 tCO<sub>2</sub>e for AT REDD+ 2. Consequently, Argentina has achieved a reduction in emissions from deforestation of 274,631,285 MtCO<sub>2</sub>e during the period 2014-2018, compared to the Forest Emissions Reference Level, and has received payments for 18,731,707 MtCO<sub>2</sub>e.

**Adaptation goal:** to build capacities, strengthen resilience, and reduce vulnerability to climate change across various local governments and sectors, through measures that prioritize vulnerable communities and social groups, incorporating a gender and intergenerational equity approach.

Moreover, this document incorporated the Adaptation Communication and formalized the intention to develop a Long Term-Emission Resilient Development Strategy aiming for carbon neutrality by 2050. Recently, the National Adaptation Plan (NAP) was published, which, while maintaining the same lines of action as the NAP and PNAyMCC regarding the agricultural, livestock, and forestry sectors, incorporates within its goals the objective of the Agriculture, Livestock, and Fisheries sector, which is to "Improve the resilience and adaptation capacity of productive systems of family, peasant, and indigenous agriculture for self-consumption and sale in





the face of floods, droughts, changes in river flows, rising temperatures, among other threats, throughout the country."

It also specifies the estimated costs for measures in this strategic line, which are approximately USD 6,160.38 million, where the action line for the management of climate risks in agroforestry and fisheries will require the most resources. Particularly noteworthy is the measure aimed at improving agricultural emergency response to climate events, with an estimated cost of nearly USD 3,520 million, accounting for more than half of the total cost calculated for the entire strategic line. Following in cost magnitude is the measure to promote risk management instruments, with an estimated budget of USD 626 million, and then, to a lesser extent, the measure to improve intra-predial infrastructure, and finally, the measure to prevent wildfires in native forests.

On the other hand, following the review of the NDCs, sectoral plans emerged, within which the **National Agriculture and Climate Change Action Plan (PANAyCC)** was created. This plan was coordinated by the Directorate of Sustainable Productions (DPS) of the Ministry of Agriculture, Livestock, and Fisheries (MAGyP) along with the National Directorate of Climate Change (DNCC) of the Ministry of Environment and Sustainable Development (MAyDS). The plan encompasses a set of initiatives aimed at equipping agro-industrial development policies with adaptive capacity and empowering the sector as a provider of solutions to climate change challenges with competitiveness and sustainable productivity. It was also discussed with other ministries and agencies comprising the GNCC, the Agro-Industry table of the GNCC, and with representative actors from academic sectors, non-governmental organizations (NGOs), chambers, companies, the labor sector, and participants from the extended GNCC tables.

At the **national level**, 10 measures were determined, identifying 46 instruments which are currently under review, namely:

1. Sustainable management of agroecosystems to promote the resilience of productive systems.
2. Promotion of Climate Change resilient infrastructure to reduce the vulnerability of agricultural systems.
3. Recovery of degraded systems to reduce vulnerability and promote the resilience of agricultural systems.
4. Development, improvement, and adoption of varieties and breeds adapted to climate conditions.
5. Improvement of socio-economic conditions for agricultural producers to reduce their vulnerability.
6. Facilitation of financing for climate change adaptation in agricultural production systems.
7. Promotion of agricultural climate risk management instruments.
8. Improvement in the Agricultural Emergency System.
9. Promotion of research, development, and capacity building for climate change adaptation in the agricultural sector.
10. Strengthening of agroclimatic information systems.

Among the series of measures and actions identified with advanced execution are the increase in forested area, the expansion of area cultivated with cereals (wheat and corn), and the reduction in area occupied by oilseeds (soybeans and sunflowers), compared to the proportion of crops in the 2011 campaign, starting in 2020. Also noteworthy is the thermal generation through biomass use/electricity generation not connected to a grid through biomass use (Project for the Promotion of Biomass-Derived Energy, PROBIOMASA).

Furthermore, at the **provincial level**, consultations were conducted through online surveys and in-person workshops, resulting in a list of actions and policies related to the theme for 11 provinces. These were broken down based on climate risk following the 4 axes differentiated by province, which are:

1. Prevention and reduction of risk,
2. Risk transfer,
3. Emergency response, generation, and
4. Information and knowledge management.

Five out of the eleven jurisdictions reported having legislation on sectoral climate change adaptation planning, eleven reported the existence of public, public-private, or private entities regulated by law that implement or coordinate actions and/or policies related to climate issues in rural areas, and twelve listed ongoing or developing actions related to risk management.



It is worth mentioning the program of the Ministry of Economy of the nation (BIRF 8867) called the **Comprehensive Risk Management Programme in the Rural Agro-Industrial System** (GIRSAR), which aims to comprehensively manage the risks of the Argentine agro-industry by adopting mitigation and risk transfer actions and addressing agricultural emergencies. This risk management strategy focuses on climate and market risks and includes mitigation, transfer, and emergency response actions. The actions of the Programme at the provincial level are framed within 17 Provincial Integrated Risk Management Plans for Agriculture and Livestock (PPGIRA), which establish a comprehensive and exhaustive baseline regarding climate risk assessment, socio-economic analysis with a gender perspective, consultation processes with different stakeholders (in-person workshops, surveys, among others), and identify specific intervention actions, the majority of which have been or are being implemented, with significant potential for scaling.

Regarding the legal framework for agricultural risk management, Argentina has the **National Agricultural Emergency and Disaster Law**, which regulates state intervention when natural phenomena strongly impact agricultural activity. This law establishes the "**National System for the Prevention and Mitigation of Agricultural Emergencies and Disasters**," and determines that a climatic event will be considered a catastrophe, or an emergency based on the percentage of loss generated in the productive field. Additionally, there is a **National Fund for the Mitigation of Agricultural Emergencies and Disasters** (FONEDA) and a series of multi-risk insurance policies, which are effective tools for mitigating the effects of droughts or floods. However, their implementation requires state intervention to make insurance accessible to small and medium-sized producers.

### 2.3.3 Capacities needed for climate action in agriculture and land use

**At the government level:** Upon the update of the NDCs, a guideline emerged to integrate the National Agriculture and Climate Change Action Plan (2019) with the National Forest and Climate Change Action Plan (2019), thus forming a future National Action Plan for Agriculture, Livestock, Fisheries, Forests, and Climate Change.

**Adaptation:** To decrease the sensitivity and exposure of rural producers and increase their adaptive capacity in order to establish sustainable and resilient productive systems in the face of climate change.

**Mitigation:** To manage GHG emissions and increase carbon sequestration in such a way that synergies are generated with productive efficiency, competitiveness, and food security. Measures oriented towards reducing emission intensity are prioritized, increasing productivity, and consequently decreasing the impact of the agriculture and livestock sectors in GHG emissions.

In summary, the sector contributes through its driven measures to the sustainable and resilient management of agroecosystems; the development and promotion of climate risk prevention and transfer instruments; and emergency response in agricultural production, promotion of research, development, and capacity building for climate change adaptation in the agricultural sector.

As needs for greater ambition in climate action planning, the following can be identified:

- Incorporation of climate change in the design stage of projects, programmes, policies, and so on, is still not widespread.
- Lack of indicators to monitor the effective implementation of climate measures.
- Heterogeneous technical capacities in climate change matters.

**At the private level:** In mid-2019, the DPS of the MAGyP conducted a survey of producers. The survey found that almost all producers consider themselves quite or very exposed to various risks derived from climate change. Among the identified risks are increases in production costs, impacts on production or yields due to gradual changes or extreme events, and regulatory exposure to future climate regulations.

Two-thirds of the responding producers stated that they have incorporated practices or technologies into their activities to address climate variability and change, such as the use of varieties or breeds adapted to different stresses, risk coverage through insurance, productive diversification, integrated nutrient management, conservation and/or restoration of ecosystems, pasture management, changes in planting dates, use of irrigation or switching to more efficient irrigation systems, afforestation and reforestation, integrated nutrient





management, and the implementation of agro-pastoral/silvopastoral systems. Most producers perceive themselves as quite or very organized to cope with the impacts of climate change. More than half participate in organizations or programmes that address issues related to climate change and variability, such as watershed committees, forest consortia, climate consulting groups (professionals), associations like the Argentine Association of No-Till Farmers (AAPRESID), the CREA Movement, the Argentine Business Council for Sustainable Development (CEADS), universities, and rural road consortia. In contrast, almost no one reported being a beneficiary of any programme or action initiated by a national, provincial, or municipal state agency related to climate change, and the few that do are within the framework of the Native Forest Law 26.331, as beneficiaries of the conservation fund.

## 2.4 Relevant projects and programs

Here is a list of ongoing and/or planned projects and programs identified, relevant to the planning and/or implementation of adaptation and mitigation of climate change in the agricultural and land use sectors, complementary to the SCALA programme:

1. Office of Agricultural Risk (ORA): (<http://www.ora.gob.ar/>)
2. Adaptation and Resilience Project of Family Agriculture in the NEA Region to the Impact of Climate Change and its Variability
3. Projects of the National Observatory of Land Degradation and Desertification
4. INTA projects linked to climate change and the IJSIJB project
5. MBGI Project
6. Argentina Without Hunger PRODAF
7. PRODESPA
8. Rural Roads Programme (PCR) of the National Directorate of Emergencies and Agricultural Disasters (DNEyDA).
9. Inclusive Rural Development Programme (PRODERI). Access to water; Infrastructure for productive development and adaptation to climate change (DIPROSE).
10. Hail Prevention Program (PPG) and Drought Prevention Program (PPS) (DNEyDA)
11. National Plan for Forest Management with Integrated Livestock.
12. National Plan for Agricultural Soils
13. Integrated Risk Management Project in the Rural Agro-industrial System (GIRSAR).
14. PRODERI - Programme for Inclusive Rural Development.
15. National Commission on Agricultural Emergencies and Disasters (CNEyDA).
16. BIOFIN UNDP Argentina



## 3. ANALYSIS OF CLIMATE ACTION

### 3.1 Methodology

The global team of UNDP and FAO developed, within the framework of Activity 1.2.1, the Climate Action Analysis Matrix as a review tool to assess climate actions in agriculture and land use based on their transformative potential in the context of NDC and/or NAP implementation. The matrix allows for a comparative analysis of climate actions across seven transformation dimensions to inform the prioritization of transformative climate action for implementation under the SCALA programme.

A "transformative climate action" in SCALA is one that: 1) is climate-based, 2) promotes gender equality and social inclusion, 3) applies systemic thinking, 4) incentivizes private sector participation, 5) applies innovative technologies, 6) contributes to sustainable development, and 7) fosters a whole-of-government approach to achieve national adaptation and/or mitigation goals for climate change in agriculture and land use. In this report, the simplified version recently designed by the team was used.

At the time of writing this report, the country was under special circumstances due to a long process of national elections, which made it impossible for the consultant and the UNDP/FAO team to engage with the government counterpart. Therefore, the analysis of climate action was primarily conducted through desk work, a limited number of interviews with the private sector, and informal discussions with representatives of the national government.

The climate analysis and theory of change as well as the country's workplan under SCALA have been reviewed and approved by the new Government through its recently created Secretariat of Bioeconomy.

### 3.2. Analysis of climate action with transformative potential

From the documentary analysis conducted before the use of the simplified Climate Action Matrix tool, the following findings stand out:

The National Adaptation Plan in its strategic line "Sustainable management of food systems and forests, soil conservation, sustainable use of native forests, diversification and productive efficiency, and management of agroforestry and fisheries climate risks," outlines 7 general lines of action, which encompass specific measures to be implemented by 2030:

1. Soil conservation
2. Production efficiency and diversification
3. Management of agroforestry and fisheries climate risks
4. Integrated management of agroecosystems
5. Tracing mechanisms for productions
6. Reduction of deforestation
7. Relocation and population settlement

Among the 21 identified measures of the sector in the National Adaptation Plan, the management of climate risks in agroforestry and fisheries stands out, through the promotion of risk management instruments. The National Agriculture and Climate Change Action Plan also includes 10 adaptation measures classified into 4 intervention axes aimed at risk management at the national level, which are:

1. Prevention and reduction of risk in agricultural production areas
2. Risk transfer
3. Emergency response
4. Generation and management of information and knowledge.

Various framework instruments were identified for the implementation of these measures, highlighting their current status and proposing specific adjustments for their effective development.



The following table summarizes those instruments currently identified and the proposed adjustments included in the analysis of the National Agriculture and Climate Change Action Plan, which justify and emphasize the relevance of the proposed lines of work in this report to scale up climate ambition in Argentina.

**Table 1 – Key national measures and instruments supporting the implementation of the National Agriculture and Climate Change Action Plan, with proposed adjustments**

MEASURES	INSTRUMENTS	ADJUSTMENTS PROPOSED IN PANAyCC
1. Development of infrastructure resilient to climate change and variability to reduce the vulnerability of agricultural systems.	Rural Roads Programme (PCR) of the National Directorate of Agricultural Emergencies and Disasters (DNEyDA).	Improve monitoring and control of works to integrate indicators of progress in adaptation
	Programme for Inclusive Rural Development (PRODERI). Access to water; Infrastructure for productive development and adaptation to climate change (DIPROSE).	Development of adaptation indicators.
	Hail Prevention Programme (PPG) and Drought Prevention Programme (PPS) (DNEyDA).	Improve the monitoring and control of works in order to integrate progress indicators in adaptation.
2. Sustainable management of agroecosystems to promote the resilience of productive systems.	National Forest Management Plan with Integrated Livestock.	Develop adaptation indicators, divided into abiotic environmental, biotic environmental, socioeconomic and productive.
3. Recovery of degraded systems to reduce vulnerability and promote the resilience of agricultural systems.	National Agricultural Land Plan	Development of adaptation indicators to climate change (synergy with mitigation).
4. Development, improvement and adoption of varieties and breeds adapted to climatic conditions.	National Agricultural Land Plan	Development of adaptation indicators to climate change (synergy with mitigation).
5. Improvement of the socioeconomic conditions of agricultural producers, to reduce their vulnerability.	National Programme Titling and Rural Rooting.	Systematization of the information for the construction of indicators socioeconomic



		adaptation. Provide information in the Risk Map System of Climate Change.
6. Facilitation of financing for adaptation to climate change in productive systems.	Goat Chain Development Programme (PRODECCA). Component 1: Market development and support for the sector; Component 2: Productive, organizational and commercial development.	Prepare adaptation indicators for corresponding monitoring.
	PRODERI-Program for Inclusive Rural Development.	Prepare adaptation indicators for corresponding monitoring.
7. Promotion of agricultural climate risk management instruments.	Comprehensive Risk Management Project in the Rural Agroindustrial System (GIRSAR). Component 3: Emergency response and agroclimatic risk transfer instruments; subcomponent II: development of instruments of risk financing agricultural.	Consider zoning agroclimatic/Maps of suitable areas.  Programme Development of Agrarian Insurance (D).
8. Improvement in the Agricultural Emergency System.	Emergency Law 26,509 Agriculture National Commission for Agricultural Emergencies and Disasters (CNEyDA).	Accelerate declaratory processes. Strengthen recommendations techniques of activities, areas and declaration deadlines. Programme Development of Agrarian Insurance (D).
9. Promotion of research, development and capacity building for adaptation to climate change in the agricultural sector.	PRODERI, PRODECCA and PROCANOR.	Systematization of information for the construction of indicators to monitor adaptation.
10. Strengthening agroclimatic information systems.	Comprehensive Risk Management Project in the Rural Agroindustrial System (GIRSAR).	Systematization of information
	Agricultural Emergencies Monitoring Office (OMEGA), National Directorate of Agricultural Emergencies.	Systematization of information
	Interinstitutional Protocol for Information Management in the Face of the Threat of Meteorological and Agricultural Droughts in the Argentine Territory (DNEyDA).	Development of an information platform and articulation with regional scales.



**Source:** Elaborated by the authors based on Gobierno de la República Argentina. 2019. Plan de Acción Nacional de Agro y Cambio Climático. [https://www.argentina.gob.ar/sites/default/files/agro\\_29\\_11\\_2019\\_revision.pdf](https://www.argentina.gob.ar/sites/default/files/agro_29_11_2019_revision.pdf)

Likewise, the CAR tool simplified version was used to obtain a final list of pre-selected adaptation priorities, which are proposed in this document for their potential for transformative climate action. 3 adaptation priorities were identified, based on the analysis of the 3 documents surveyed (NDC, PNAyCC, PANAyCC), which are:

1. Improvement and management of sustainable livestock production
2. Improvement and management in sustainable agricultural production
3. Promote Risk Prevention instruments in Agricultural Production

### 3.3. Results of the review of climate actions

Below are the results of the simplified version of the Climate Action Review matrix (see Table 1) for each of the lines of action prioritized by the SCALA programme in Argentina.

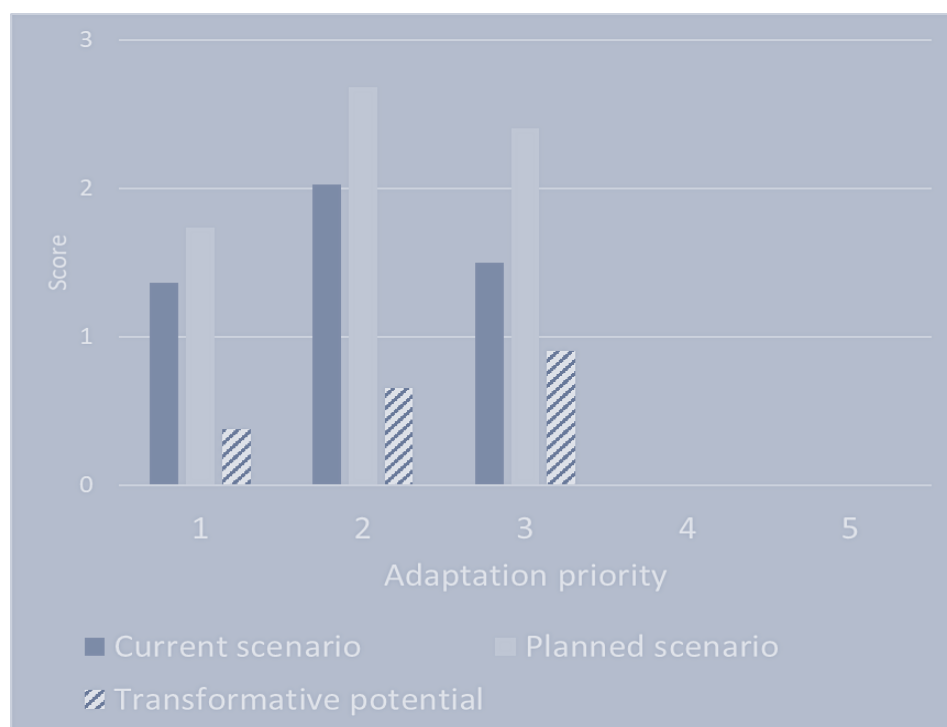
#### **General Results**

1 corresponds to the Improvement and management of sustainable livestock production

2 corresponds to Improvement and management in sustainable agricultural production

3 corresponds to Promote Risk Prevention instruments in Agricultural Production

Figure 4 - Results of the CAR matrix



**Source:** Authors' elaboration.



## 4. IMPLEMENTATION OF TRANSFORMATIVE CLIMATE ACTION IN AGRICULTURE AND LAND USE

### 4.1 Theory of transformative change

SCALA will support a transitional shift of the agricultural sector in Argentina, by improving its production models in the agricultural (maize) and livestock beef sectors, promoting environmentally sustainable innovative low carbon models and climate adaptive productive practices, thereby increasing the sectors' resilience, efficiency, and access to sustainable markets. The project will focus its work in the Pampas region. The Pampas region is among the most important productive regions of the country; hence, this experience will provide the evidence base for the implementation of an innovative climate-sensitive model for a non-expansive agro-productive sector that could be replicated and scaled up in other regions of the country.

SCALA's work in Argentina is aligned with the country's Nationally Determined Contributions (NDCs), which recognize the role that agro-industrial production has and will continue to have in the country due to its significant contribution to national GDP, as well as being an important source of employment and a generator of foreign exchange. With this in mind, SCALA's contribution focuses on strengthening public-private joint work to optimize grain (maize) and beef productive sectors in a manner that ensures sustainability, improves resilience, and reduces the impacts of the sectors in GHG emissions. Actions are also aligned with Argentina's National Adaptation Plan (NAP)<sup>4</sup> in that, it seeks to promote the line of action toward sustainable management of food systems and forests through soil conservation, climate risk management, and adaptive ecosystem management. Further, it is aligned with Argentina's commitment to the 2030 Agenda to enhance efficiency in increasing total beef and grain production without increasing the total effective agricultural area.

SCALA's project recognizes the fundamental priority of safeguarding food security and the vulnerability of food production systems to the adverse impacts of climate change. SCALA's contribution will therefore focus on the development of a resilient rural sector to reduce climate vulnerability while sustaining local livelihoods by working with communities and local productive associations (enterprises) to strengthen their participation and competitiveness in national and international markets and enhance their capacity to implement adaptive practices and promote their participation in climate security programmes. In this context, mitigation and adaptation measures aim to manage GHG emissions and increase carbon sequestration, while supporting ecosystem-compatible practices that build resilience so that synergies are generated with productive efficiency, competitiveness, and food security. The project will work with small agricultural and livestock enterprises<sup>5</sup> that are highly reliant on agricultural incomes and often have the least capacity to implement adaptive practices and shift their initial means of agricultural/livestock production. Knowledge products however will be relevant to all rural producers within the region, hence supporting the translation of national climate plans into local context.

Work developed through the SCALA programme, will include working to shift agricultural and livestock production to sustainable sectors in comparison to expansive and resource-intensive business-as-usual scenarios, this will result in a certification roadmap for both sectors. Opportunities will be identified to reduce the impacts of both these sectors in the GHG emissions while ensuring that investments and productive strategies that sequester carbon in soils for agricultural and livestock use are employed through ecosystem-compatible approaches resulting in increased climate resiliency and long-term sustainability while favoring access to sustainable markets. The project will support Argentina in the delivery of a line of action prioritized within the country's National Adaptation Plan by strengthening the sector's capacity to adopt adaptive management practices oriented towards forage evaluation and livestock management, as well as strengthening sustainable land management practices through the promotion of good agricultural practices such as conservation and agriculture amongst others.

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<sup>4</sup> <https://unfccc.int/documents/633532>

<sup>5</sup> Agricultural/livestock enterprises are the equivalent of agricultural/livestock associations that group a series of small farmers (often household level, meaning that they do not employ anyone outside of their immediate household in agricultural activities) to enhance their capacity to access resources.





Moreover, the project will contribute to validate important national data systems such as the Agricultural Vulnerability Index (INTA) at a regional level and translate national adaptation measures into local actions, strengthening local capacity of producers to assess climate risks and vulnerabilities and implementing provincial climate change plans in the sector of agriculture. A gender analysis will also be carried out for both the beef livestock and grain sector to evaluate gender balance and identify mechanisms for a better integration of women into the decision-making platforms for these sectors, including local productive enterprises and associations.

The project as a whole will address a significant gap in translating national plans into local action by supporting the implementation of the National Plan for Adaptation and Mitigation to Climate Change as applied at the regional level for the agricultural sector. In doing so, it will contribute to the fulfillment of the goals established in its Nationally Determined Contributions (NDCs) by identifying mechanisms that allow for local alignment and implementation.

**Rationale for change:** In Argentina, livestock accounts for 20,8 percent of all GHG emissions, while agriculture and land use account for 4,7 and 19,5 percent of emissions respectively.<sup>6</sup> Per its recently submitted NDCs, Argentina unconditionally committed to not exceed 359 million tons of carbon dioxide in its net emissions (MtCO<sub>2</sub>e) in 2030. In 2021, Argentina also signed the Global Methane Pledge at COP26, committing to undertake voluntary action to contribute to a reduction of global methane emissions by at least 30 percent by 2030 compared to 2020 levels. Agricultural production continues to be one of the main means of national income, as well as one of the principal sources of people's livelihoods. This agro-productive sector is particularly vulnerable to climate stress, severe droughts, and floods, which have resulted in productive losses affecting the economy and threatening the livelihood of farmers. Shifting climates have resulted in the higher propensity for pests affecting agricultural production. The Pampas region in the last century has faced both persistent flood and drought episodes. Climate trends denote an increasing occurrence of heat waves and dry periods followed by high rainfall events. Climate projections point to an 8 percent increase in annual precipitation rates under some climate scenarios. For its part, drought has been the main cause of declared agricultural emergencies between the period of 2004-2017. In its recent NDCs, Argentina has unconditionally committed to increasing the adaptive capacity of its various social and economic sectors, highlighting the link between the agriculture and livestock sectors to national income and food security.

The Pampas region – which is one of the most important productive regions in Argentina – has in recent decades experienced a process of agricultural expansion and intensification. The region is comprised of 500,000 square kilometers of grassland plains and some dry forest areas that contrast with other forests. Nearly 80 percent of all soy and corn production and 70 percent of beef livestock are concentrated in this region. As mentioned above, the beef and grain (maize) productive sectors are exposed to increasing climate stressors, but the capacity of the sectors to enhance their resilience while harnessing their potential to shift productive practices to more sustainable production has yet to be promoted, as is required both to meet national climate commitments and to ensure long-term sustainability (in its three components, social, economic and environmental) of both the agricultural and livestock sectors.

**Change sought:** SCALA will promote the development of climate-resilient production models and GHG reduction practices that aim to sustain agroecological practices by creating value in carbon mitigation strategies, strengthening local capacities of producers and rural populations to assess climate risks and vulnerability, implementing provincial climate change plans in the agriculture sector, and by developing innovative climate insurance initiatives to tackle residual risks. The approach will be applied to the Pampas region (subnational), considering the high rate of conversion of grazing lands to croplands and the increased vulnerability to the effects of climate change. As a very productive temperate region, the agroecosystem allows for favorable approaches that seek to enhance carbon sequestration capacity (SOC) and overall ecosystem health. It will also seek to demonstrate the potential for incentives linked to sustainable agro-productive practices (through access to high-value markets through certified production) to enable sectoral transformation without supporting an increase in the total effective agro-productive area. As part of the business development of agricultural producers and rural communities in the region, SCALA will promote the inclusion and

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<sup>6</sup> MAyDS, 2023. Inventario Nacional de Gases Efecto Invernadero. Argentina 2023. Ministerio de Ambiente y Desarrollo Sostenible, República Argentina.





participation of women in decision-making, as well as their role in managing climate risks and the vulnerability of natural resources.

### **Main lines of work:**

All work in the project will be carried out with a landscape approach, looking at the Pampas region as a whole and the dynamics and interconnections in this agro-productive sector. The beneficiaries of these different lines of work will overlap, working with target groups that will be able to assess climate risks and vulnerability, improve their adaptive capacity, and enhance their current production conditions to more efficient and resilient methods based on an improved understanding of climate change impacts.

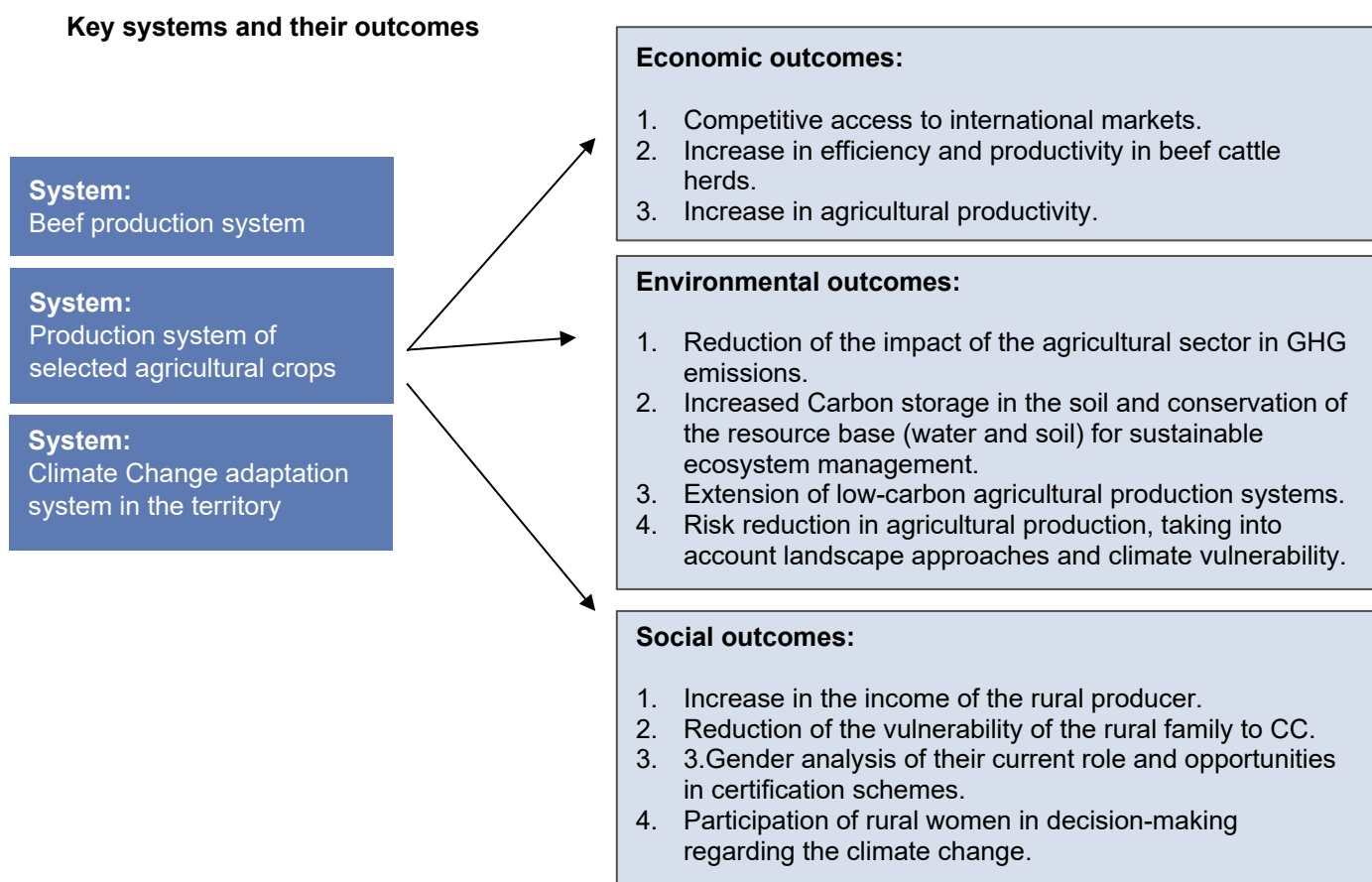
1. **Production, traceability, and certification strategies for a low-carbon beef livestock sector in the Pampas region.** The project will seek to incentivize the transition of beef livestock production into a low-carbon, environmentally sustainable, high-productivity, and climate-resilient sector. To this end, the project will begin by developing key assessments to identify the needs and feasibility of creating a low-carbon production model for beef systems, taking into consideration the interrelationship of indicators for sectoral adaptation as expressed in the Agricultural Vulnerability Index (INTA), as well as market demands and certification standards for low-carbon beef. An assessment of risks, vulnerabilities, and adaptation measures, including gender analysis, will be undertaken in the maize and beef agricultural systems in the Pampas Region. Based on this information, the project will work hand in hand with the private sector and local producers to strengthen their capacities on low carbon, climate adaptive, and sustainable beef production practices, as well as tools to enhance the traceability of the product.

The work on traceability will also allow to increase the robustness of the sector's GHG inventory and reporting, including methane emissions. Building on this experience, the project will work with existing public-private partnerships (such as MACS) to design a roadmap leading to the full implementation of a certification and traceability strategy for low-carbon sustainable beef in the Pampas region.

2. **Production and certification strategies for a low-carbon value chain of extensive agricultural crops (maize) in the Pampas region.** The scope of the project in the agricultural sector (maize) is based on optimizing the current conditions of low-carbon production currently promoted through diverse subnational and private Good Agricultural Practices Programmes. Therefore, it will create an opportunity to validate their impact, upscale results and ensure their alignment with agrobiodiverse and climate-positive practices for both adaptation and mitigation, particularly as they are applied in the Pampas region. The information generated and consolidated will allow the design and validation of certified production models, associated with standards and requirements of sustainable international markets. Special attention will be given to soil organic carbon models as an area of opportunity to enhance sustainable agricultural models. The work with the private sector is aimed at strengthening capacities, including the capacities of women in decision-making processes, and scaling up certified production technologies, involving existing public-private partnerships (such as MAIZAR, SRTS) to design the roadmap for the implementation of a certification strategy in the Pampas region, including indicators for monitoring the progress of mitigation/adaptation measures.
3. **Instruments for adoption, monitoring, and evaluation of adaptation measures at the regional level, including agricultural insurance programmes and ecosystem-based adaptation approaches.** The project will seek to increase the perception and awareness of the agro-productive community of the need to identify and improve adaptation measures in the Pampas region, strengthen the local capacity of producers to assess climate risks and vulnerability, and implement provincial climate change plans in the agriculture sector. The project will contribute to validating important national data systems such as the Agricultural Vulnerability Index (INTA) at the regional level and to the translation of national adaptation measures into local actions, strengthening the national adaptation strategy. The results of the analysis for the beef and maize sector will be taken into consideration in the design of the local actions. Priority will be given to strengthening the agricultural insurance system, as a mechanism to reduce economic risks, together with knowledge on technologies and costs of implementing adaptation measures to improve the adaptive capacity of local producers in the Pampas region.



Figure 5 - Illustrative flow of the Theory of Change



Source: Authors' elaboration.

### Climate risk context

**Risks and impacts related to climate change in Argentina:** water stress due to temperature increases in the north and west of the country, potential water crisis in Cuyo, glacier retreat in the Patagonian Andean region, reduction of mean river flows in the Plata Basin, sea level rise affecting coastal areas, and high frequency of extreme precipitation and flooding in the NEA and western humid region.

**Climate impacts in the agriculture sector:** the main climate risks are drought and floods, representing the issue with the highest number of agricultural emergency declarations recorded in the period 2004-2017. Other impacts related to climate change that affect the sector in the country are hail, intense winds, fires, frost, thermal stress, biological threats, and impacts on the sea.



## Driver analysis

### Economic

- The Argentine agricultural model is based on the extensive use and management of environmental goods and services (natural resources), covering more than 60 percent of the territorial surface (280 million hectares), with both extensive and intensive production in agriculture and livestock.
- Beef farming is the main activity of almost 130,000 producers who manage a stock of around 50 million heads of cattle, with great variability in farm size and technology. Extensive agriculture (cereals and oilseeds) annually occupies an area of more than 36 million hectares, with soybeans (15 million hectares) and corn (8 million hectares) being the main crops.
- The agricultural and agro-industrial sector represents 70 percent of the value of national exports but shows a strong dependence on primary products of grains and meats (commodities), whose growth is based on the expansion of the area occupied by both activities.

### Environmental

- The capacity and quality of the soil, especially in the Pampas region, allows productive levels to be sustained while with adequate management it could increase carbon stocks, contributing to resource conservation, food security and resilience to climate change.
- Within the framework of national greenhouse gas emissions, the agriculture, livestock, forestry and land-use change sector accounts for 45 percent of total emissions, of which agriculture and livestock represent 60 percent.
- The sector has demonstrated great fragility and vulnerability of its productive systems and the rural environment to the impacts of climate change, not only in terms of floods and severe droughts, but also in terms of reduced yields, soil loss due to erosion, new pests, and, above all, the socio-economic impacts on the vulnerable rural populations.

### Social and Cultural

- The productive structure classified as “family farmers”, represented by small and medium-capitalized producers (enterprises), plays a fundamental role in the environmental and productive sustainability of the sector, ensuring the development of the territory and the rural cultural heritage, but requires significant support to achieve innovative models.
- At the rural level, women play a fundamental role in production, although there are limitations in decision-making. Only 20 percent of legally constituted firms are managed by women.

### Political

- The agricultural sector is one of the pillars of the policy of stabilization and economic growth, based on increased quality production and exports, which requires greater capacity for innovation to respond to increasingly competitive, qualified, and environmentally demanding international markets.
- The lack of sustainable financing models is a barrier to upscaling low-carbon and climate-resilient agricultural practices to promote the level of transformation that is required. Incentives from carbon markets and access to high-value commodity markets through verified certification schemes would provide the space for financial innovation to fund the additional investment required to shift from a business-as-usual scenario.



Figure 6 - Seven dimensions of transformative change

System thinking	SCALA involves relevant actors in the livestock and agricultural production chains with the aim of reducing GHG emissions, increasing productivity and accessing quality international markets.
Climate rationale	Livestock producers and farmers are trained and strengthened to incorporate low carbon technologies. Small enterprises are trained to adopt resilient practices adapted to climate change and in keeping with ecosystem sustainability.
Innovation	The agricultural sector is one of the most dynamic sectors to contribute to limiting GHG emissions. The low C models developed, traceable and certifiable are an innovative, accessible, and scalable tool in agricultural activity.
Social inclusion and gender equality	Transfer of climate technology to family farming to reduce its vulnerability to impact, enhance its productive capacity and improve quality of life. Support the development and participation of rural women in decision-making in the family business.
Whole-of-Government	The program's activities strengthen and make visible the framework for action and implementation of the national and provincial climate strategies, the National Contributions-NDC and the National Plan for Adaptation and Mitigation of Climate Change.
Sustainable development	The implementation of low C climate practices in the sector contributes to sustainable soil and water management, food security and resilience to climate change. Access to international quality markets and their prices increases the income of producers, ensuring the economic sustainability of the model.
Private sector engagement	Technological and commercial developments for producers, cooperatives and rural service companies promote an increase of productivity, access to new markets and improved sectoral income levels. Promotion of investment opportunities and public and private financing for sustainable and innovative practices in the sector.

Source: Authors' elaboration.



## 4.2 Workplan

The workplan in Argentina is structured to achieve a transition in the agricultural sector in the Argentinean Pampas with three outputs that are interconnected and respond to SCALA's outcomes. Below is a brief overview of the workplan.

### Objective

Transition of the agricultural sector in Argentina by improving its production models in the agricultural (maize) and livestock beef sectors, promoting efficiency and innovation in low-carbon models, increasing its resilience and its access to sustainable markets.

### Outcomes

Public and private spheres articulated for the assessment, implementation and monitoring of measures in the agricultural sector to reduce its impact in GHG emissions, increase efficiency and access to sustainable markets.

### Output 1: The evidence base for the implementation of transformative climate action in land use or agriculture strengthened

1.1.1 Conduct participatory technical reviews of NDCs and/or NAPs to identify priority land-use and agriculture actions with transformative and systems-change potential

- 1.1.1.1 Conduct participatory technical reviews of NDCs and/or NAPs to identify priority land-use and agriculture actions with transformative and systems-change potential.
- 1.1.1.2 Promotion of exchange and socialization of project results and products achieved (Mid Term Review).

1.1.2. Conduct participatory systems-level assessments to define evidence-based transformative and inclusive implementation options

- 1.1.2.1 Design and update of low-carbon beef production models developed and validated in Pampas Region.
- 1.1.2.2 Design of low-carbon non-extensive crop production models (maize) developed and validated in the Pampas region.
- 1.1.2.3 Identification of risks, vulnerability, and adaptation measures in extensive agricultural productive systems (maize and beef) in the Pampas Region.

### Output 2: NDC and NAP priorities for land use and agriculture enhanced and integrated into sectoral planning and budgeting

2.1.1 Strengthen multi-stakeholder coordination and institutional capacities for the integration of NDC and/or NAPs' priorities on land use and agriculture in policies, plans and budgets.

- 2.1.1.1 Assessment of strategies for low-carbon beef traceability systems in pastoral systems in the Pampas region.
- 2.1.1.2 Assessment of strategies for certification of low carbon agricultural production models in Pampas region (maize).
- 2.1.1.3 Strengthening of capacities in private sector agricultural businesses for implementation and monitoring provincial adaptation plans in the Pampas Region.



2.1.2 Improve/develop MRV and M&E systems at the national and/or sectoral level for monitoring and reporting regarding mitigation and/or adaptation in land use and agriculture, including collection of gender-disaggregated data.

- 2.1.2.1 Identification of requirements and methodologies for the operationalization of an M&E in mitigation and adaptation to climate change in the Pampas region in the agricultural sector.

**Output 3: Enabling environment and incentives enhanced for private sector engagement in NDCs and NAPs implementation:**

3.1.1 Identify policy and financial de-risking measures and business opportunities.

- 3.1.1.1 Coordination of dialogues to position and develop certification in low-carbon beef and agriculture (maize) for international markets.

3.1.2 Develop project concept notes to leverage investment for transformative and inclusive action in partnership with the private sector.

- 3.1.2.1 Strengthening of capacities for the development and scaling-up of agricultural insurance programmes and initiatives.
- 3.1.2.2 Increase private commitment through knowledge analysis to adopt double benefit mitigation/adaptation measures (win-win).

### 4.3 Stakeholder Mapping

SCALA’s Programme in Argentina is coordinated with relevant projects led by UNDP and FAO in the country as well as with relevant national initiatives. Moreover, the project has identified key stakeholders that contribute to the implementation of the SCALA programme in Argentina from the public and private sectors. The following table summarizes this mapping.

Table 2- SCALA programme key stakeholders

Sector	Stakeholder
Public Sector	Secretariat of Bioeconomy
	Climate Change Commission for Agriculture, Livestock, Fisheries, Food, and Forestry
	Directorate of Sustainable Productions
	National Directorate of Climate Change (DNCC) - Under Secretary of Environment
	Federal Agricultural Council (CFA)
	National Institute of Agricultural Technology (INTA)
	SMN - National Meteorological Service
	National Insurance Institute
	Provincial Governments (Buenos Aires Province, Cordoba, Santa Fe, La Pampa, Entre Ríos)





<b>Private Sector</b>	Association of No-Till Farmers (AAPRESID)
	CREA Movement
	Argentine Business Council for Sustainable Development (CEADS)
	Argentine Association of Regional Consortiums of Agricultural Experimentation (AACREA)
	MACS - Argentina Sustainable Beef Roundtable
<b>Academia, NGOs and International Organizations</b>	University of Buenos Aires – School of Agronomics
	MAIZAR - Argentine Corn Association (NGO)
	Provincial Universities Research Centres
	UNDP and FAO

**Source:** Author's elaboration.





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### Information

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