



**EASTERN REPUBLIC OF URUGUAY**  
**Second Nationally Determined Contribution to the**  
**Paris Agreement**

**December 2022**

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## **1. Guiding principles for climate action.**

The National Policy on Climate Change (PNCC), as the country's climate policy framework since 2017, has as its general objective "to contribute to sustainable development, with a global perspective, intra and intergenerational equity and human rights, seeking a more resilient society, less vulnerable, with greater capacity to adapt to climate change and variability, and more aware and responsible to this challenge, promoting a low-carbon economy, based on environmentally, socially and economically sustainable production processes and services, which incorporate knowledge and innovation".

The Nationally Determined Contributions (NDCs), submitted by Uruguay in compliance with the provisions of the Paris Agreement, are framed within this general objective and approach of the NCCP and serve as an instrument for its implementation and the establishment of its targets every five years, considering as a reference the trajectories presented in the Long-term Climate Strategy for Low Emission and Climate Resilient Development (LCSD).

This is why the implementation of the NCCP and the Second Nationally Determined Contribution (NDC2), in particular, are guided by the respect and safeguarding of human rights and the preservation of ecosystems, with a perspective of inclusion, intra- and intergenerational equity, and gender from an intersectional and just transition approach.

These guiding principles for climate action will guide the implementation of all actions and measures included in this document.

## **2. National circumstances and main actions.**

Uruguay is a relatively small country compared to other countries in the region, located in South America, with a population that resides mostly in the coastal zone and an economy based on agro-industrial production and services, such as tourism, which makes it particularly vulnerable to the effects of climate change and therefore adaptation is a national priority. Early actions aimed at increasing the adaptive capacity and resilience of society, productive systems and ecosystems have been prioritised and this becomes even more relevant in the face of adverse climatic events that will become increasingly frequent and bring with them significant losses and damages.

The phenomena of greatest recurrence and impact are floods caused by the overflowing of rivers and streams after persistent rainfall events (drainage floods) or by meteorological tides (south-storms). Urban floods cause the evacuation of population groups, affecting their health (physical and emotional), income and housing. Meteorological tidal surges (south storms) affect the coastal ecosystem and cause material damage to infrastructures. Droughts, in turn, have a direct negative impact on agricultural activity, affecting agricultural yields, livestock production, calving and animal mortality rates, as well as on hydroelectric generation and the provision of drinking water.

Uruguay has focused its national adaptation planning strategy on priority areas for climate vulnerability. In 2019, the National Plan for Adaptation to Climate Variability and Change for the Agricultural Sector (PNA-Agro) was presented, which aims to contribute to improving the livelihoods of rural populations through sustainable animal and plant production systems that are less vulnerable to the impacts of climate change and variability, considering the gender perspective in a cross-cutting manner.

In 2021, the National Adaptation Plan for the Coastal Zone to Climate Variability and Change (PNA-Coasts), focused on strengthening capacities to identify the impacts and vulnerabilities of the coastal sector and define concrete adaptation actions in the coastal zone, and the National Plan for Adaptation to Climate Variability and Change in Cities and Infrastructure (PNA-Cities), which aims to reduce vulnerability to the effects of climate change by building capacities for adaptation and resilience in cities, infrastructure and urban environments, were presented. Both national plans mainstream gender and generations following the Gender and Climate Change Strategy of the National System of Response to Climate Change and Variability (SNRCC), as well as the ecosystem-based adaptation (EbA) approach.

The country is also working on the formulation of the National Adaptation Plan for the Energy Sector (NAP-E) and the National Adaptation Plan for the Health Sector (NAP-Health).

Along with the implementation of these actions, and despite the fact that the country has only a 0.03% share<sup>1</sup> in total global Greenhouse Gas (GHG) emissions, important mitigation measures have been developed in various sectors.

In the energy sector, the consolidation of the decarbonisation of the electricity matrix, achieved through the incorporation of around a third of the total installed capacity in wind energy, stands out. In addition to this source, the installed capacity in biomass and solar photovoltaic power, which together with historical hydroelectric power, reached 94% of electricity generation in 2020. Thus, at the same time as reducing GHG emissions in the electricity generation sector, Uruguay adapted the sector to climate change, which is highly dependent on rainfall, by opting for non-traditional renewable sources in a synergy that is notably beneficial for the country and the global environment. The primary energy matrix will be 58% renewable by 2020. These actions, together with energy efficiency measures, contribute to mitigating and adapting to climate change in the energy sector, within the framework of the National Energy Policy, in force since 2008 and with a 2030 horizon.

For its part, the agricultural sector has undergone significant transformations that have increased productivity in the sector, accompanied by better practices from an environmental point of view, reducing the intensity of GHG emissions per unit of product.

Since 2019, the project "Climate-smart livestock production and soil restoration in Uruguayan pastures" has been implemented with the aim of increasing the production of livestock systems on natural pastures and, at the same time, reducing GHG emissions per kilogram of meat, favouring carbon sequestration in pasture soils and restoring ecosystem services. On the other hand, the country has implemented actions in the forestry sector towards the maintenance of native forest area, on the one hand, and the promotion of forest plantations, on the other. In 2022, the project "Agro-ecological and Resilient Systems in Uruguay (SARU)" began to be implemented, with the objective of strengthening public agricultural systems and rural producers to increase actions to mitigate and adapt to climate change and promote agro-ecological production. It will implement actions in line with national climate action policies including climate change adaptation priorities outlined in the NAP-Agro that contribute, at the same time, to farm sustainability processes through the promotion of biodiversity in the farm system, maintenance or restoration of natural areas and the protection and efficient use of natural resources,

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<sup>1</sup> According to INGEI 2019, Uruguay's share of GHG emissions in the world is 0.03% (based on global emissions reported for 2019 in the [Emissions Gap Report 2020, UN Environment](#)).

conserving or enhancing ecosystem services. Synergies with GHG emission reductions and/or improving carbon balances towards carbon neutral or carbon sequestering balances are envisaged.

In relation to the waste sector, strategies are being developed for better management and recovery. In 2019, the Law on Integrated Waste Management was approved, a regulatory instrument that frames and regulates waste management at national and departmental level with a focus on environmental, economic and social sustainability, promoting the circular economy. In accordance with the provisions of article 14 of this law, in 2021 the National Waste Management Plan (PNGR) was drawn up, a strategic planning instrument at national level for the implementation and development of the national waste management policy.

Considering the latest available National Greenhouse Gas Inventory (INGEI) and analysing by gas, it can be seen that in 2019, 4,850 Gg of carbon dioxide ( $\text{CO}_2$ ) were sequestered in net terms. Emissions of this gas come mostly from activities in the Energy sector from the burning of fossil fuels, particularly in transport. In 2019, this sector contributed 6,170 Gg, 60% of which came from Category "1.A.3 Transport". The Industrial Processes and Product Use (IPPU) sector contributed 445 Gg, while the Waste sector generated 1.2 Gg of  $\text{CO}_2$  emissions. On the other hand, the Agriculture, Forestry and Other Land Use (AFOLU) sector net sequestered 11,466 Gg  $\text{CO}_2$  (29,581 Gg gross emissions and 41,047 Gg gross  $\text{CO}_2$  removals).

In turn, methane ( $\text{CH}_4$ ) emissions totalled 760 Gg in 2019 and were mainly generated in the AFOLU sector, which accounted for 92% of the total, followed by the Waste sector, which contributed 7%, and finally the Energy sector with only 1% of total  $\text{CH}_4$  emissions. Nitrous oxide ( $\text{N}_2\text{O}$ ) emissions were 26 Gg. 96% came from the AFOLU sector, 3% from the Energy sector, 1% from the Waste sector and less than 1% from the IPPU sector.

Regarding the consumption of halocarbons and sulphur hexafluoride ( $\text{SF}_6$ ), it is worth mentioning that in Uruguay there is no production of hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), so demand has been met only through imports. Emissions of these gases were produced by their use in refrigeration, air conditioning, fire extinguishers, insulation foams and electrical transformation, among others. It was estimated that 254 and 1 Gg  $\text{CO}_2\text{-eq}$  (GWP<sub>100</sub> AR2) of HFCs and  $\text{SF}_6$  were emitted in 2019, respectively.

Considering the relative contribution to global warming of these gases, net emissions for 2019 were 19,463 Gg  $\text{CO}_2\text{-eq}$  (GWP<sub>100</sub> AR2), and if the contribution of category "3.B Land" is not considered, emissions were 31,020 Gg  $\text{CO}_2\text{-eq}$  (GWP<sub>100</sub> AR2). When analysed by gas,  $\text{CH}_4$  emissions account for 51% of total national emissions and  $\text{N}_2\text{O}$  emissions for 26%, largely from food production.  $\text{CO}_2$  emissions accounted for 22 % and HFC and  $\text{SF}_6$  emissions, despite their high global warming potential, represent 1 % of total national emissions.

Uruguay implements a comprehensive and coherent strategy to respond to the problem of climate change, focusing on the development of adaptation and mitigation actions but also involving the cross-cutting dimensions of the issue, such as governance and capacity building. In this regard, the creation of the SNRCC in 2009 stands out as an area for the coordination of climate change policies and actions in the country. In 2016, the PNCC was drawn up in a participatory and multisectoral manner. During 2017, as an instrument for the implementation of this policy, the CDN1 was drafted and submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

The creation of the Ministry of the Environment (MA) and the National Directorate for Climate Change (DINACC) in 2020 is also noteworthy in the process of institutional strengthening and prioritisation of the issue.

During 2021, the ECLP<sup>2</sup> for Low Emission and Climate Resilient Development was developed with the objective of agreeing and making explicit a country vision on GHG emissions and removals and adaptation, resilience and risk reduction to 2050.

In the same year, the National Gender and Climate Change Plan was approved within the framework of the SNRCC with a 2024 horizon, consistent with the principle of social equity integrated into the PNCC. This Plan was preceded by the National Gender and Climate Change Strategy elaborated in 2019, which defines the form of integration of this perspective in the PNCC and CDN based on the categorisation, generation of recommendations and commitments for gender equality in the measures included in the CDN.

Also, during 2021, the process of elaboration of the National Action Strategy for Climate Empowerment (ENACE Uruguay) was developed, in line with the PNCC, the CDN1, the ECLP and the provisions of the UNFCCC and the Paris Agreement.

As was the case in most countries, Uruguay was strongly affected by the health crisis caused by the spread of COVID-19 during 2020 and 2021. As a consequence of the health crisis, economic activity in Uruguay contracted by 6.1% in 2020 compared to the previous year, after 17 consecutive years of economic growth. In 2021 there were signs of recovery, with economic growth of 4.4%.

The significant fall in output in 2020 resulted in an increase in poverty in the country. Inequality also increased, although the Gini index (0.387)<sup>3</sup> continues to show Uruguay as the most equitable country in Latin America. In this context, economic measures were taken to mitigate the impact of the crisis, particularly on the most disadvantaged socio-economic sectors.

Between 1990 and 2019, net GHG emissions increased by 8.6% (expressed in CO<sub>2</sub>-eq using the <sub>GWP100</sub> AR2 metric), while the size of the economy more than doubled over the same period. This implies that Uruguay managed to halve its level of emissions per unit of GDP, thus advancing the decarbonisation strategy of its economy without affecting food production.

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<sup>2</sup> [Uruguay's Long Term Climate Strategy](#).

<sup>3</sup> [Technical bulletin. Estimation of poverty by the 2020 income method. INE](#).



### **3. Second Nationally Determined Contribution process**

As in the case of the CDN1 and the ECLP, the Uruguayan NDC2 was developed within the framework of the SNRCC. In particular, to address the elaboration of this new contribution, several working groups were active simultaneously during 2022. Among them, one focused on adaptation aspects (in which the Second Adaptation Communication was developed) and another on the definition and analysis of mitigation measures and corresponding targets.

These working groups maintained a permanent articulation among themselves and with other groups such as Gender, Education, Communication and Awareness, Programming, Monitoring, Reporting and Verification (pMRV) and INGEI, in order to reach an integrated final document.

#### **Technical work**

Within the framework of the working groups, the technical processes necessary for the formulation of the different components of the CRC2 were developed.

For the definition of mitigation measures and targets, firstly, the most up-to-date available information on emissions and removals for the different INGEI sectors and categories was analysed. In addition, the GHG emissions and removals trajectories projected under the LCA developed during the year 2021 were reviewed and adjusted to the medium term. This information, together with the analysis of the objectives and measures of the CDN1 and their degree of progress, formed the basis for the work going forward.

In each INGEI sector, work was carried out to define the measures that will contribute to the achievement of the NDC2 targets which, in accordance with the rules of the Paris Agreement, must be progressively ambitious in successive NDCs. Based on these measures foreseen for the period 2025-2030, new projections of the expected development of the different sectors were made to estimate the impact on GHG mitigation and the setting of the corresponding targets.

With regard to the adaptation component of CRC2, the Second Adaptation Communication (ComAd2), the starting point was the analysis of the progress made with regard to Uruguay's First Adaptation Communication, included in the CDN1, which included various measures and actions that the country proposed and is carrying out to move towards the objectives of increasing resilience and improving adaptive capacity in a wide range of areas. In addition, work was done on the country's contribution to the Global Goal on Adaptation (GGA).

As part of the process of defining the measures included in the CRC2, workshops were held with the participation of relevant actors related to the different areas and sectors. Inputs were obtained that contributed to the technical analysis and evaluation of possible measures to be included in the CRC2.

Other central elements of the CRC2 on which work was carried out in an articulated manner are the cross-cutting aspects; the incorporation of the social and economic dimensions, and within these in particular the aspects of gender, generations, capacity building, private sector involvement, investment and financing needs, among others, are fundamental to consider when it comes to making the actions that will be implemented to achieve the objectives of the new CRC viable.

With regard to the private sector, lines of work were strengthened to ensure that the various actors, both business and financial, incorporate the climate change dimension into their business lines and to promote the mobilisation of private financing for climate action.

Likewise, the gender perspective was further explored from an intersectional approach, analysing the potential impact to respond to inequalities in each of the mitigation and/or adaptation measures that the country commits to.

Among the aspects of capacity building and knowledge generation, the strategic guidelines and actions set out in the NBSAP, elaborated in 2021, were considered. It is therefore expected that the present CRC will promote the implementation of this Strategy and in turn that the latter will guide the country's future contributions in relation to action for climate empowerment.

A macroeconomic assessment of the mitigation measures proposed for CRC2 was carried out using a dynamic general equilibrium macroeconomic model that provided information on the impact of these measures on key macroeconomic variables. In addition to contributing to the integration of economic and environmental dimensions, this tool allows for the evaluation of alternative mitigation strategies.

The incorporation of these cross-cutting dimensions sought to enhance UNCRC2 and facilitate its implementation, reflecting an increase in ambition in relation to UNCRCN1.

### **Participatory processes**

From the beginning of the process, a digital participation platform was created, open to the public,<sup>4</sup>, in which the population could express their points of view, contributions, suggestions and comments on actions they are carrying out or know about with regard to climate action. Through this space, we also sought to increase knowledge about ongoing initiatives, public concerns about climate change issues, and different adaptation and mitigation actions that are taking place at different scales. This is part of the country's work with the International Open Government Partnership and in particular with the objective of designing and implementing a participatory process to contribute to the elaboration of the UNCCD2.

In this space, the timeline of the elaboration process and different milestones in the development of the CRC2 were also presented, so that the population could have access to the most relevant information. In this regard, information was provided on the consultations that were held to gather inputs that were of interest for the definition of measures and objectives at sectoral and area level, as well as the announcement and implementation of the public consultation stage of the draft document. The inputs received were analysed at the time of drafting the final document, which was again published on the platform for public knowledge and dissemination.

In addition, a capacity building and feedback process was developed with a group of 40 young people between 14 and 22 years of age from different parts of the country and different contexts. The objective of the process was for the young people to learn about the various aspects of climate change, its causes, impacts, actions that can be taken individually to combat this phenomenon, policies and actions that are being carried out at the national level, context and international commitments, among other issues, in order to then present their vision and contributions to the process of drafting the CRC2 in Uruguay. At the end of the process, they presented a series of measures and lines of work that, in their view, should be implemented and/or deepened to strengthen climate action in the country. On the other hand, they also presented actions and measures they want to commit to in order to contribute to a better and more efficient implementation of local and global initiatives.

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<sup>4</sup> [Digital Citizen Participation Platform](#)

## 4. Contribution to adaptation

### 4.1. Adaptation objectives

Article 7 of the Paris Agreement sets out the global goal on adaptation, which is to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change with a view to contributing to sustainable development and achieving an adequate adaptation response in the context of the temperature goal mentioned in Article 2<sup>5</sup> [1] In order to link national adaptation efforts with the elements set out in the GGA, ComAd2 has defined general objectives and specific objectives for each adaptation area, ComAd2 has defined general objectives and specific objectives for each adaptation area, and efforts have been made to establish the qualitative contribution of each of the proposed adaptation actions in order to establish a strategic framework for the implementation of ComAd2.

The general objectives are:

#### **In relation to increasing adaptive capacity:**

- a) Strengthen information systems for decision-making, generating, incorporating and improving information, with technical and scientific validation, linked to the consequences of climate change and the implementation of adaptation actions.

#### **With regard to vulnerability reduction:**

- b) Reduce the impacts of climate change on socio-ecological systems; reducing losses and damages in the various productive areas and sectors, through the implementation of climate change adaptation actions.

#### **In relation to strengthening resilience:**

- c) Strengthen partnerships for climate governance, policy, planning and technical instruments, with a cross-cutting approach to climate change, especially adaptation.

### 4.2. National adaptation measures

The following are the specific climate change adaptation objectives and the respective measures, including the definition of their scope in terms of management and/or results, that Uruguay plans to achieve in order to contribute to the global goal on adaptation. The measures identify the main priorities, by area and/or sector, information needs, implementation and support, adaptation plans and actions in order to mitigate adverse effects of climate change.

To implement the proposed measures, Uruguay may use means of implementation to be provided under the Convention, both in terms of financing, technology transfer and capacity building.

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<sup>5</sup> Article 2(a) To keep the global average temperature increase well below 2°C above pre-industrial levels, and to pursue efforts to limit this temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change.

## Cross-cutting adaptation measures

### Climate Information and Services

(relating to Paragraph 7 of the PNCC)

**Strengthen information systems for decision making, improving the available information and knowledge on the risks derived and enhanced by climate change, accounting for frequency, severity and impacts on people, significant assets and the environment.**

- 1) By 2030, there is a geographic information system that includes the components of the main socio-natural risks susceptible to being enhanced by climate change.
- 2) By 2030, an updated system of information and reporting on emergencies and impacts of socio-natural phenomena will be available, considering greater efficiency in the information and its sources, homogenisation of variables, analysis of magnitude, intensity, frequency, impact, causality and its relationship with climate change.
- 3) By 2030 a Climate Services Information System has been developed and made available in open data format.
- 4) By 2030, official climate change projections to 2050 and 2100, based on the best available scientific information and climate change scenarios, have been agreed, updated and made available within the framework of the SNRCC.
- 5) By 2030, a *mesoscale* atmospheric model and a *nowcasting* system for the development of very short-term forecasts are in place, as well as human resources trained in their generation and updating.
- 6) By 2030, an inter-institutional group for the governance of climate services has been formed and is operational, within the framework of the National Meteorological Council and the SNRCC.

### Disaster Risk Reduction

(relating to Paragraph 10 of the PNCC)

**Strengthen integrated emergency and disaster risk management with the incorporation of a climate change perspective.**

- 7) By 2030, an information system has been designed, updated and set up, based on the comprehensive risk and impact monitor (MIRA), for multi-risk analysis, estimating the probability of occurrence, impact, response and recovery capacity, in the face of socio-natural phenomena that could potentially occur due to the effects of climate change.
- 8) By 2030, the periodic updating and development of tools for prospective, corrective and/or compensatory management of emergency and disaster risk at the departmental level has been promoted.
- 9) By 2030, at least three guides for private sector companies to assess climate risks and identify adaptation measures will have been developed and made available.

**Strengthen governance related to the generation of knowledge and interoperability of information regarding the risks configured in Uruguay and the associated emergency and disaster events. It implies coordinating, planning and promoting the production of relevant knowledge and information.**

- 10) By 2030, new areas of work have been generated and existing working groups between the SNRCC and the SINAIE have been strengthened, promoting integrated risk management with a climate change perspective.
- 11) By 2030, seven flood-prone cities have incorporated a flood early warning system, integrated into the action and communication protocol, which improves inter-institutional interaction and the dissemination and communication of warnings and alerts to the population and the actors involved in emergency response and care.

## **Loss and Damage**

*(relating to Paragraph 10 of the PNCC)*

**Strengthen processes for recording, measuring and assessing the impacts of adverse weather-related events and their chains, in order to estimate losses and damages at national, local and sectoral levels.**

- 12) By 2030, a work plan for Loss and Damage assessment has been implemented, including mechanisms and procedures to improve the recording, storage, estimation and visualisation of losses and damages at national, local and sectoral levels, caused by socio-natural events and their respective impact chains.
- 13) By 2030, an information system associated with the impacts on energy infrastructures has been developed and implemented to quantify losses and damage to the system due to climatic causes.
- 14) By 2030, processes for recording and assessing impacts of climate-related adverse events will have been improved to quantify and estimate losses and damages in the tourism sector by improving databases and information sources.

## **Migration and Displacement**

*(relating to Paragraph 8 of the PNCC)*

**To understand Uruguay's situation in relation to migratory movements and human displacement due to conditions linked to climate change and its derived chains of impacts.**

- 15) A database has been developed for 2030 that reports on the situation in Uruguay regarding the influence and impact of climate change on migration and human displacement to, from and within Uruguay, considering an intersectional approach.

## **Measures for the main areas of adaptation**

## **Health**

*(relating to Paragraph 9 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for the area of Health.**

- 16) By 2030, the 2026-2030 Action Plan of the National Health Adaptation Plan has been implemented. (NAP Health)
- 17) By 2030, the consequences of climate change on occupational health have been assessed for the definition of policies for the prevention and promotion of occupational health.
- 18) By 2030, epidemiological and entomological surveillance has been strengthened, as well as the development and implementation of early warning and response systems for vector and disease outbreaks resulting from or enhanced by the effects of climate change.

**Strengthen governance in the area of health to address issues related to climate change and its effects, within the Ministry of Public Health and related institutions, in the framework of the SNRCC.**

- 19) By 2030, a technical working group on climate change has been created, institutionalised and put into operation within the Ministry of Public Health, which develops the cross-cutting programme line of climate variability and change in health policies, plans and programmes.

## **Cities, Infrastructures and Spatial Planning**

*(relating to Paragraph 11 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for cities and spatial planning.**

20) The 2026-2030 Action Plan of the National Adaptation Plan for Cities and Infrastructure (NAP Cities) has been implemented by 2030.

**Deepen the adequate incorporation of adaptation to climate change and variability in land-use planning instruments, urban planning and management, urban landscape, building regulations under a climate risk framework and incorporating the ecosystem-based adaptation approach.**

- 21) By 2030 all departments have incorporated climate change adaptation measures and climate risk reduction strategies in new and revised Land Use Planning Instruments.
- 22) By 2030, 100% of cities with very high, high or medium flood risk levels have flood risk maps for riverbank flooding, drainage, and/or sea level rise and storm surges.
- 23) By 2030 support materials have been updated and disseminated to incorporate climate change and variability in the planning of Uruguayan cities.
- 24) By 2030 the implementation of the National Urban Stormwater Drainage Plan has started.
- 25) By 2030, all departments have incorporated ecosystem-based adaptation in at least one urban locality as a strategy to improve habitat conditions in urban environments and optimise their climate performance.
- 26) By 2030, parameters with the dimension of adaptation to climate change and variability have been incorporated into departmental regulatory bodies, in reference to the design, construction and maintenance of housing, infrastructure and equipment, taking into account territorial particularities.

**Promote the generation of financing instruments for the implementation of adaptation actions that improve the resilience of cities to climate change and its effects.**

- 27) By 2030, a public-private financing instrument to improve climate resilience in new and/or existing buildings and urban infrastructure, including an ecosystem-based adaptation approach, will be implemented.

**Promote the development of sustainable and resilient infrastructures in the face of climate variability and change that contribute to reducing greenhouse gas emissions.**

- 28) By 2030, all operational household and similar waste disposal sites operated by municipalities have conditions that reduce the risk and likelihood of impacts from adverse climate change events.

## **Biodiversity and Ecosystems**

*(relating to Paragraph 12 of the NCCP)*

**Promote the integration of climate change, its effects and adaptation strategies into planning and policy instruments focused on the conservation, protection and restoration of natural ecosystems, to ensure the provision of ecosystem goods, services and functions.**

- 29) By 2030 the National Biodiversity Strategy, the National Protected Areas System Strategic Plan, Marine Spatial Planning and the Land Degradation Neutrality Strategy incorporate climate change and variability.

- 30) A legal instrument for the protection and restoration of wetlands, based on their ecosystem services and their contribution to climate change adaptation, is being implemented by 2030.
- 31) By 2030, risk analysis and specific targets and actions on adaptation to climate change and variability are incorporated in 100% of the Protected Areas with approved and updated Management Plans as of 2025.

**Incorporate and deepen risk assessment with a climate change perspective and its effects on biodiversity and ecosystems, and increase the valuation of the role of ecosystems in adaptation, for the design of instruments and measures for risk reduction and ecosystem-based Adaptation.**

- 32) By 2030, a risk analysis of key biodiversity and ecosystems considering the effects of climate change has been developed and data will be made available through an information system.
- 33) By 2030, guidelines on managing risks to biodiversity and ecosystems linked to climate change and variability have been developed and key actors have been trained to implement them.
- 34) By 2030, knowledge and valuation of ecosystem functions and services associated with reducing climate change vulnerabilities of key ecosystems and their mitigation co-benefits will have increased.

### **Coastal Zone**

*(relating to Paragraph 13 of the PNCC)*

**Strengthen policy and adaptation planning instruments for the coastal zone in the face of climate change and variability.**

- 35) By 2030, Law 19.772 on the National Guideline for Territorial Planning and Sustainable Development of the Coastal Space of the Atlantic Ocean and the Río de la Plata will have been regulated.
- 36) By 2030, the 2026-2030 Action Plan of the National Plan for Adaptation in Coastal Zones (PNA Costas) will have been implemented.
- 37) By 2030, a guidebook for incorporating climate change vulnerability assessment into EIA and SEA processes in the coastal zone will have been developed using the best available scientific information, and key stakeholders will have been trained to implement it.

**Promote the conservation and reduction of vulnerability of the coastal zone threatened by climate change and variability through ecosystem-based adaptation measures.**

- 38) By 2030, 100% of vulnerable components of the coastal zone will be included in plans or programmes for adaptation to climate variability and change by defining their level of protection and/or implementing ecosystem-based adaptation measures for both conservation and restoration.

**Encourage the generation of financing instruments for the implementation of adaptation actions in the coastal zone.**

- 39) By 2030, a public-private financing instrument for the implementation of adaptation measures in the coastal zone will be designed and implemented.

**Implement a system for monitoring the coastal dynamics of the Río de la Plata and Atlantic Ocean.**

- 40) By 2030, a system for monitoring *meteo-oceanic*, sedimentological and topo-bathymetric variables of the Río de la Plata and Atlantic Ocean will have been implemented, reinforcing those areas that are highly vulnerable to extreme events (mouths, sandy beaches and ravines).

## **Water Resources**

*(relating to Paragraph 14 of the PNCC)*

**Promote the incorporation of climate change and variability and their effects in integrated water resources management, seeking to improve protection and security in the availability and quality of the resource, promote good practices, improve governance and promote research and integrated monitoring.**

- 41) As of 2030, 6 integrated watershed management plans have been formulated, approved and are being implemented.
- 42) By 2030, water security plans have been implemented in 15 drinking water systems; and at least two sanitation security plans have been implemented in two locations in the interior of the country, considering the respective conditions of climate change.
- 43) By 2030, appropriate technologies and procedures are in place to prevent, detect and reduce the effects of algal bloom events in priority areas.

## **Agriculture and Livestock**

*(relating to Paragraph 15 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for agriculture.**

- 44) By 2030, progress in the implementation of the National Adaptation Plan for the agricultural sector (NAP-Agro) is monitored and reported.
- 45) By 2030, new financial and risk transfer instruments have been developed and implemented, increasing insurance penetration in new areas compared to 2025.

**Promote the implementation of good practices in the different activities and processes of agriculture as a strategy for adapting to climate change, maintaining production, increasing resilience and reducing risks in agriculture and the environment.**

- 46) By 2030, the number of permits for the abstraction of water resources for irrigation and other agricultural uses is promoted and increased as an adaptation strategy to the variability in the rainfall regime and the risk of drought, based on the year 2025, subject to the availability in quantity and quality of water and within the framework of the National Water Plan, Law No. 16858 and Decree No. 368/018.
- 47) By 2030, comprehensive information systems for adaptive agricultural management are in place for the public and private sector, and research programmes have been promoted in rain-fed agriculture, horticultural and fruit crops, forage species and pastures that are best suited to climate variability.
- 48) By 2030, at least one adaptation measure to reduce animal heat stress has been implemented in at least 50% of dairy and confinement farms.

**Promote the development and implementation of adaptation measures that have synergies, parallels and co-benefits with climate change mitigation.**

- 49) By 2030, 100% of the 2012 native forest area will be protected, with the option of increasing it by 5%, particularly in areas of environmental protection of water resources, seeking to reverse degradation processes (892,460 ha).
- 50) By 2030, intermittent irrigation technology with variable lamina has been introduced on 5-10% of the rice cultivation area.
- 51) By 2030, 100% of the 2018 area of forest plantations for shade and shelter will be maintained, including silvopastoral systems, with the option of increasing this area by 10%, providing shelter and improved animal welfare conditions, particularly in the event of unfavourable weather conditions.



- 52) By 2030, good natural range and herd management practices have been incorporated in livestock production establishments in an area between 1,500,000 and 4,000,000 ha, leading to reduced vulnerability to climate variability in natural range-based livestock production systems.
- 53) By 2030, 95% of the agricultural area under Land Use and Management Plans, which include erosion reduction and organic matter conservation on agricultural land, has improved productivity and water storage capacity and reduced the risk of erosion from extreme precipitation events.
- 54) By 2030, good effluent management practices have been implemented in dairy farms, including the valorisation of effluents as soil improvers, reaching 50% of the national herd.

## **Energy**

*(relating to Paragraphs 18 and 20 of the NCCP)*

**Strengthen energy planning instruments by incorporating adaptation to climate change and variability, improve resilience and adaptive capacity of the system and infrastructure.**

- 55) As of 2030, the 2026-2030 Action Plan of the National Energy Adaptation Plan (PNA Energía) has been implemented.

**Identify and assess energy system risks in energy generation, transmission and distribution, as well as improve the resilience of current and future energy infrastructure to climate change.**

- 56) By 2030, an energy sector risk reduction guide for energy demand sectors has been developed and implemented.
- 57) By 2030, a work plan has been developed and implemented for vulnerability studies and identification of adaptation and risk reduction measures for critical infrastructure in the event of extreme events.

## **Tourism**

*(relating to Paragraph 19 of the PNCC)*

**Promote research and risk assessment on the effects of climate change on tourism, in order to improve the design of adaptation actions to be implemented in the medium and long term scenarios.**

- 58) By 2030, vulnerability and hazard analyses will have been carried out in the sector, according to tourism products and considering the trends determined by existing climate projections, agreed within the framework of the SNRCC.
- 59) By 2030, the National Tourism Plan 2030 will have been reviewed and updated with regard to the risk analyses carried out, in articulation with existing National Adaptation Plans.

**Promote the generation of and access to relevant, integrated and useful information, the use of meteorological information, early warnings and other climate risk management tools for decision-making by institutions and the population.**

- 60) By 2030 at least 4 tourism cities will have integrated weather and emergency alerts into their tourism information systems and trained their tourism operators and officials in the use of such information.

## 5. Contribution to mitigation<sup>6</sup>

Uruguay's targets for mitigating climate change by 2030 are presented below. These targets are fair and ambitious considering that Uruguay is a developing country, whose share of global emissions in 2019 was 0.03%, in which its GHG emissions come mainly from food production and which has implemented early on a series of measures that allowed 58% of the global primary energy matrix and 94% of electricity generation to be based on renewable sources by 2020.

Mitigation targets are set on the assumption that there will be no structural changes in the country's productive matrix.

### 5.1. Mitigation objectives

#### 5.1.1. Unconditional targets.

##### 5.1.1.1. Global targets to mitigate climate change

The global targets for mitigating climate change cover 99.2% of the gross GHG emissions (GWP<sub>100</sub> AR5) of the INGEI 2019.

GEI	Mitigation targets to 2030	INGEI Sectors (not including category 3.B. Land)
	Not to exceed the following emission level (Gg of gas)	
CO <sub>2</sub>	9.267*	Energy, IPPU, AFOLU and Waste 19.1% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5
CH <sub>4</sub>	818	Energy, AFOLU and Waste 60.5% of GHG emissions INGEI 2019 in GWP <sub>100</sub> AR5
N <sub>2</sub> O	32	Energy, IPPU, AFOLU (except subcategory 3.C.4. source <sub>FSOM</sub> ), Waste 18.9% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

\*The CO<sub>2</sub> target may be adjusted according to 2030 hydropower conditions, as detailed in chapter 8 of this CRC, as the availability of hydropower has a very important relative weight in the country's electricity matrix and is directly affected by climate change and variability.

GEI	Mitigation targets to 2030	INGEI Sectors (not including category 3.B. Land)
	Reduction in consumption in relation to a line of base	
HFC	Reduce by 10%. consumption in relation to the baseline set at based on the average consumption for the years 2020 to 2022	IPPU 0.8% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

<sup>6</sup> In this section, emissions information is presented in GWP<sub>100</sub> AR5 because the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement states in its Decision 18/CMA.1, paragraph 37 of the Annex: "Each Party shall use the global warming potential values for a 100-year time horizon contained in the Fifth Assessment Report (AR5) of the IPCC, or those contained in a subsequent IPCC assessment report approved by the COP/RA, to report aggregate GHG emissions and removals, expressed in CO<sub>2</sub> eq".

### 5.1.1.2. Specific GHG emission intensity targets for beef production.

The specific GHG emission intensity targets for beef production cover 62.1% of the gross GHG emissions (GWP<sub>100</sub> AR5) of the INGEI 2019.

GEI	Mitigation targets to 2030	Beef production
	Intensity reduction (GHG emissions per unit of product) compared to 1990	
CH <sub>4</sub>	Reduce by 35%. CH <sub>4</sub> emissions intensity per unit of product (Gg of beef live weight)	48.6% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5
N <sub>2</sub> O	36% reduction N <sub>2</sub> O emission intensity per unit of product (Gg of beef live weight)	13.5% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

### 5.1.1.3. Specific targets for conservation and enhancement of carbon stocks with respect to Land Use and Forestry.

Specific targets for conservation and enhancement of carbon stocks with respect to Land Use and Forestry: category 3.B. Land showed net removals in the 1990 - 2019 GHGI.

GEI	Carbon Pool / Land Use Category	Mitigation Targets to 2030
		Maintenance and enhancement of carbon stocks*.
CO <sub>2</sub>	Live biomass on Forest Land	Maintain 100% of the 2012 native forest area (849,960 ha).
		Maintain 100% of the effective area under plantation management. 2020 forestry (1,053,693 ha)
		Maintain 100% of the area of forest plantations for shade and shelter in 2018, including silvopastoral systems (88,348 hectares). ha)
	Soil Organic Carbon (COS) in Grasslands, Peatlands and Croplands	Incorporation of best practices in natural field and landscape management. breeding herd on 1,500,000 ha of natural pastureland
		Conserve 50% of peatland area by 2020 (4,756 ha)
		Maintain COS levels on 30% of the cultivated area under Soil Use and Management Plans by 2030 that have more than 30% of the length of the rotation with pasture.
		Increase COS levels on 15% of the crop area under Soil Use and Management Plans by 2030 that have more than 60% of the rotation length with pasture.

\*In brackets is the target value to 2030 expressed in hectares.

### 5.1.2. Targets conditional on specific additional means of implementation

The targets conditional on specific additional means of implementation presented below should be seen as separate from the unconditional targets included in 5.1.1 and imply greater ambition with respect to those targets. These conditional targets imply additional and specific provision of means of implementation, including finance, technology transfer and capacity building, to be provided by developed countries.

### 5.1.2.1. Global targets to mitigate climate change.

Global targets to mitigate climate change: cover 99.2 of gross GHG emissions (GWP<sub>100</sub> AR5) of the INGEI 2019.

GEI	Mitigation targets to 2030	INGEI Sectors (not including category 3.B. Land)
	GHG emission reductions (Gg of gas)	
CO <sub>2</sub>	960	Energy, IPPU, AFOLU and Waste 19.1% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5
CH <sub>4</sub>	61	Energy, AFOLU and Waste 60.5% of GHG emissions INGEI 2019 in GWP <sub>100</sub> AR5
N <sub>2</sub> O	2	Energy, IPPU, AFOLU (except subcategory 3.C.4. source <sub>FSOM</sub> ), Waste 18.9% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

GEI	Mitigation targets to 2030	INGEI Sectors (not including category 3.B. Land)
	Reduction in consumption relative to a baseline	
HFC	Reduce by 5%. consumption in relation to the baseline set at based on the average consumption for the years 2020 to 2022	IPPU 0.8% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

The targets listed in this section are independent of the targets listed in section 5.1.1.1 and their values were estimated as incremental to the unconditional values.

### 5.1.2.2. Specific GHG emission intensity targets for beef production.

The specific GHG emission intensity targets for beef production cover 62.1% of the gross GHG emissions (GWP<sub>100</sub> AR5) of the INGEI 2019.

GEI	Mitigation targets to 2030	Beef production
	Intensity reduction (GHG emissions per unit of product) compared to 1990	
CH <sub>4</sub>	Reduce by 2%. CH <sub>4</sub> emissions intensity per unit of product (Gg of beef live weight)	48.6% of GHG emissions INGEI 2019 in GWP <sub>100</sub> AR5
N <sub>2</sub> O	Reduce by 2%. N <sub>2</sub> O emission intensity per unit of product (Gg of beef live weight)	13.5% of INGEI 2019 GHG emissions in GWP <sub>100</sub> AR5

The targets listed in this section are independent of the targets listed in section 5.1.1.2 and their values were estimated as incremental to the unconditional values.

### 5.1.2.3. Specific targets for conservation and enhancement of carbon stocks with respect to Land Use and Forestry.

B. Land category 3.B. Land showed net removals in the INGEI 1990 - 2019.

GEI	Carbon pool Land Use Category	Mitigation Targets to 2030
		Maintenance and enhancement of carbon stocks*.
CO <sub>2</sub>	Live biomass on Forest Land	Increase by 5% the area of native forest in 2012 (42,498 ha).
		Increase by 10% the area of forest plantations for shade and shelter by 2018, including silvopastoral systems (8,835 ha).
	Soil Organic Carbon (COS) in Grassland	Incorporation of natural field and herd management best practices on 2,500,000 ha of natural grassland.

\*In brackets is the target value to 2030 expressed in hectares.

The targets listed in this section are independent of the targets listed in section 5.1.1.3 and their values were estimated as incremental to the unconditional values.

## **5.2. On mitigation targets and progressive ambition**

In terms of its contribution to GHG emissions, as in CDN1, Uruguay presents global targets to mitigate climate change by 2030 for the three gases  $\text{CO}_2$ ,  $\text{CH}_4$  and  $\text{N}_2\text{O}$ , and adds a target for hydrofluorocarbons (HFCs) that had not been considered in the CDN1 targets. As in CDN1, specific targets are also presented in relation to beef production, in terms of emissions intensity per unit of product (Gg of beef in live weight). These mitigation targets represent an advance in ambition compared to CDN1, as they show the country's efforts towards emissions stability and sustainable development. The country continues to develop, reducing emissions intensity. On the other hand, the present NDC shows a broader scope in terms of the GHGs considered. A relevant factor is that the global targets in this NDC2 were defined in absolute terms, in line with the Uruguay LCA scenarios, unlike NDC1, which presented targets in terms relative to GDP. The  $\text{CO}_2$  target implies a considerable slowdown in the growth of  $\text{CO}_2$  emissions. From 1990 until the start of the implementation of the first energy transformation between 2010 and 2014,  $\text{CO}_2$  emissions grew at an average annual rate of 2.9%, while the 2030 target reduces this rate to 1.3% per year. Regarding  $\text{CH}_4$  and  $\text{N}_2\text{O}$ , gases that come mostly from food production, the 2030 target confirms the path towards emissions stability that Uruguay presented in its LCA, both with annual growth rates between 1990 and 2030 below 1%.

Regarding the contribution to GHG removals, Uruguay presents specific targets for 2030 for the conservation and increase of carbon stocks for the different pools and land use categories, representing, as a whole, a progression in ambition in relation to CDN1, as detailed below.

Emission mitigation targets cover 99.2% of 2019 INGEI GHG emissions (without removals) according to GWP100 AR5 metrics, latest available INGEI and submitted to the Convention. Covers all INGEI emitting sectors: Energy, including Transport; IPPU; AFOLU; and Waste, and includes emissions of the gases  $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$  and HFCs. Excludes  $\text{SF}_6$  emissions,  $\text{N}_2\text{O}$  emissions from subcategory 3.C.4 Source FSOM.

In relation to the global targets, it is important to highlight that Uruguay has implemented a very ambitious set of early measures, especially in some key sectors such as Energy. Within the framework of the Energy Policy (2008-2030), significant efforts have been made to achieve a clean energy matrix, achieving 58% of the global energy supply to be renewable by 2020, and 94% for electricity generation. At the same time, a strategy to promote energy efficiency was developed, which allowed for a reduction in energy intensity at the national level.

The emissions intensity of the primary matrix ( $\text{CO}_2$  emissions over supplied energy in Gg/ktoe) shows the significant decoupling of emissions with energy sources: from 1.7 (2007-2011) to 1.4 (2012-2016) and 1.2 (2017-2021).

Early measures to decarbonise the electricity generation matrix have meant that Uruguay has already achieved the share of renewable energies that studies by the International Energy Agency (IEA) have shown to be the most important factor in the decarbonisation of the country's energy mix.

(IEA)<sup>7</sup> project only by 2050 in their roadmap on the path towards zero net emissions globally in that year (almost 90%). The high renewability of the electricity matrix presents the opportunity for the electrification of different uses, such as in the transport sector, to be a clear decarbonisation option, unlike what happens in less renewable electricity systems. However, this situation also implies that the remaining efforts to decarbonise the economy associated with energy emissions are increasingly challenging in technical, technological and cost terms and often have a marginal impact on the reduction of GHG emissions.

On the other hand, in the last 30 years, CH<sub>4</sub> and N<sub>2</sub>O emissions in Uruguay, mostly associated with food production and, in particular, beef production, have remained relatively stable and increases in production have been significant. This is mainly explained by the increase in productivity and efficiency of the systems, stimulated by national and international factors and by public policies that promote the adoption of technologies by the private sector, which has allowed the country to significantly reduce the intensity of emissions in agricultural production, particularly in beef production.

Emissions from the IPPU sector are directly linked to the level of activity in the industry and therefore variations in GHG emissions are entirely explained by variations in the sector. While the IPPU sector accounted for only 2.1% of the country's total GHG emissions in 2019, over the time series cement production accounted for 70% of the sector's CO<sub>2</sub> emissions, so this is where the main opportunities for decarbonisation lie.

It is also important to highlight the commitments undertaken by the country in the framework of the Montreal Protocol and those linked to the Kigali Amendment -ratified by Uruguay on 27 July 2018 through Law 19.644-, due to its relation with the objectives of the Paris Agreement. The objective of the Amendment is to phase down the production and consumption of HFCs (hydro fluorocarbons), which are potent GHGs with significant global warming potential. Since the entry into force of the Kigali Amendment on 1 January 2019, Uruguay is complying with the commitments undertaken, which involve, on the one hand, the implementation of a "Licensing System" for the control of consumption (import/export and transit) of HFCs and, on the other hand, the submission of annual reports on the consumption of these substances to the various bodies of the Montreal Protocol.

Regarding the waste sector, in 2019 Uruguay approved the Law on Integrated Waste Management, which strongly promotes the reduction of waste generation and positions waste as a resource, betting on the development of national capacities so that the final disposal of waste is not the basis of waste management. In 2021, the PNGR was developed and approved as a strategic planning tool that includes objectives, goals and lines of action, many of which constitute the main opportunities for climate change mitigation in this sector.

In this national context, this Uruguayan CRC proposes for the energy sector to continue deepening demand-oriented actions such as energy efficiency measures that are already being implemented in the different consumption sectors and to continue incorporating electric vehicles in the bus, taxi and remise, cargo and private sectors, within the general framework of sustainable mobility. To this end, the necessary charger infrastructure, which already has a relatively wide coverage throughout the national territory, will also be expanded, and the incorporation of fast and ultra-fast chargers needs to be accelerated. Process improvement actions will also be implemented in the country's refinery, with the aim of increasing efficiency and reducing emissions per unit of product. In the cement industry, the consumption of

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<sup>7</sup> [Net Zero by 2050 Report. A roadmap for the global energy sector](#)

energy per tonne produced from the use of filler in all cement produced by the two cement plants of the state-owned company Administración Nacional de Combustibles, Alcohol y Portland (ANCAP). This same action will reduce emissions from cement production and therefore the IPPU Sector, as the filler will replace part of the clinker, the production of which emits  $\text{CO}_2$  through chemical processes.

In addition to these actions, the country is working on several enabling frameworks and policies that will leverage mitigation actions. These include the approval and implementation of the Sustainable Urban Mobility Policy, which includes mobility planning in the territory, modal shift, emissions reduction, accessibility and affordability of public transport, among others. This policy foresees a space for institutional coordination of all relevant national and subnational actors through the Inter-institutional Commission for Sustainable Mobility that will be created for this purpose for its implementation. This policy will be supported in its implementation by some guides already elaborated (Guide for the Planning of Sustainable Urban Mobility, Guide on Electric Urban Mobility) and pilots developed and in progress. Furthermore, the approval and implementation of the National Circular Economy Strategy will provide the enabling framework and generate new opportunities for climate change mitigation in the future.

For the agricultural sector, the incorporation of good management practices for the natural field and the breeding herd in livestock production establishments will continue to be strengthened, which will contribute to further increase the productivity and efficiency of livestock systems and reduce the intensity of GHG emissions per unit of product, as well as prevent the loss and enhance the sequestration of organic carbon from the soil. The use of technologies and infrastructure for the management of effluents and manure generated by the national dairy herd will continue to be promoted with the aim of achieving a circular economy and minimising  $\text{CH}_4$  emissions and the implementation of technologies that improve efficiency in the use of nitrogen fertilisers and reduce nitrogen losses through volatilisation. On the other hand, some lines of work that are being developed at the national research level with objectives of reducing  $\text{CH}_4$  emissions for cattle and sheep and co-benefits with adaptation to climate change will be deepened, highlighting the development of a genetic improvement platform that strengthens the incorporation of genomics in current programmes and includes the estimation of the potential impacts of genetic improvement in the mitigation of GHG emissions. Complementarily, progress will be made in the generation of national information to quantify the mitigation potential of other alternatives identified for the country's livestock systems. These lines of work will generate new opportunities for climate change mitigation.

Given the importance of emissions from the AFOLU sector in the country, 75.2% of gross emissions according to INGEI 2019 and metric  $\text{GWP}_{100}$  AR5, as in CDN1, specific emission intensity reduction targets per unit of product (measured in Gg of beef in live weight) are included, which are more ambitious than those included in CDN1.

In relation to HFCs, in the framework of the commitments assumed under the Montreal Protocol and those linked to the Kigali Amendment, an unconditional global target is included to reduce HFC consumption by 10% by 2030 in relation to a baseline to be established by the country prior to 2024 based on the average HFC consumption from 2020 to 2022. This implies a greater scope in the gases included in the mitigation targets set out in this NDC and therefore a progression in ambition relative to NDC1.

For the Waste sector, within the framework of the PNGR, the country will continue to deepen measures that enable a greater proportion of household solid waste disposed of in final disposal sites to be reached by projects that have capture and burning of  $\text{CH}_4$ , promoting selective collection systems and strategies for the recovery of organic waste. The implementation of a National Strategy for the Prevention and Reduction of Food Losses and Waste is also foreseen, as well as an Action Plan in sectors such as food waste prevention and reduction.

The prioritised projects, which will provide the enabling framework and generate new opportunities for climate change mitigation in the future.

In terms of contribution to GHG removals, Uruguay includes a number of targets related to land use and forestry (corresponding to category 3.B. Land in the AFOLU Sector of the INGEI). B. Land in the INGEI 1990-2019, so the country has proposed to conserve and/or increase carbon stocks associated with different pools and the country's main land use categories (Forest Land, Grassland, Peatland and Cropland).

In relation to the Forest Land category, native forests in Uruguay cover 4.8% of the national territory and their felling is prohibited by the Forestry Law (with some exceptions specified therein) [2] . This, together with the provision of incentives in the form of tax waivers for native forest areas registered with the General Forestry Directorate of the MGAP, has made it possible to maintain the surface area of this ecosystem and its carbon stocks. On the other hand, the area of forest plantations increased significantly in Uruguay as a consequence of the approval and implementation of the Forestry Law, which has directly influenced the INGEI 1990-2019 with an important contribution to the <sub>CO2</sub> removals of the AFOLU sector. Forest plantations for shelter and shade are of great importance for livestock production in the country, as they provide welfare conditions for the animals, so maintaining their surface area is strategic for the country. Recognising the key role of forests from the point of view of climate action, for this category Uruguay proposes to maintain the area of native forest in order to conserve the carbon stock of its living biomass, biodiversity and ecosystem services, as proposed in CDN1. With regard to forest plantations, it is proposed to maintain an effective area under management greater than the area included as a target in CDN1, in which GHG emissions/removals associated with the forestry production cycle itself will be given. With regard to forest plantations for shade and shelter, including silvopastoral systems, it is proposed to maintain a larger area than that included as a target in the CDN1, in which carbon stocks of living biomass are conserved and conditions are generated to reduce the impacts of climate change on livestock production.

In relation to the Rangeland category, the country has been promoting a paradigm shift in the management of the natural range, which consists of adjusting forage supply, regenerative management and management of nitrogen inputs and outputs. This change will continue to deepen in the coming years through the incorporation of good natural range management practices in livestock production establishments, which will contribute to prevent the loss and enhance the sequestration of soil organic carbon. Therefore, for this category, the country intends to increase the area of natural grassland incorporating good natural range management practices in relation to the area targeted in CDN1, in order to conserve and/or increase soil organic carbon in that area.

In the case of peatlands, Uruguay intends to conserve the area surveyed in 2020, which is greater than the area included as a target under CDN1, in order to maintain the organic carbon contained in the peat. These peatlands are mainly located within the Ramsar site Humedales del Este and their conservation is considered relevant in the framework of the implementation of the Ramsar Convention.

Finally, in relation to the Cropland category, it is proposed to maintain soil organic carbon (COS) in the area of crops under Soil Use and Management Plans (PUMS) in 2030 that have more than 30% of the length of the rotation with pasture and to increase COS in the area of crops under PUMS in 2030 that have more than 60% of the length of the rotation with pasture. This objective is relevant for Uruguay considering that practically the entire agricultural area of the country is under PUMS, mandatory by law since 2013, which require a crop rotation tending to avoid the degradation of the land.



These measures prevent erosion and promote production systems based on crop and/or crop-pasture rotations that maintain higher levels of organic matter in the soil compared to traditional monoculture practices, improve productivity and water storage capacity and reduce the risk of erosion in the event of extreme rainfall events.

Uruguay's mitigation objectives must be analysed considering that it is a developing country, particularly vulnerable to the effects of climate change, which must continue to advance on the path of sustainable development, generate greater opportunities for its inhabitants, combat poverty and destitution, achieve a greater level of equity in its society and produce food in a sustainable manner for a growing world population, with the least possible impact on the climate system.

Together, these mitigation targets reflect greater ambition in Uruguay's contribution to the ultimate objective of the Convention and the purpose of the Paris Agreement, based on equity and the principle of common but differentiated responsibilities and respective capabilities, and reflect the country's effort to increase its ambition relative to the previous NDC.

Mitigation objectives are differentiated between unconditional and conditional on specific additional means of implementation. The latter refer to finance as well as technology development and transfer and capacity building. A number of conditional measures have been identified that, should the country receive specific additional means of implementation, can be implemented for the achievement of the conditional targets included in item 5.1.2. of this CRC.

### **5.3. Mitigation measures**

#### **5.3.1. Unconditional measures**

##### **Energy Sector (including Transport)**

*(relating to Paragraphs 17 and 18 of the NCCP)*

- 1) By 2030, energy efficiency measures have been deepened in the different consumption sectors, covering various uses, sources, equipment and building envelopes.
- 2) By 2030, energy consumption per tonne of cement has been reduced from the use of filler in all cement produced by ANCAP's two cement plants.
- 3) By 2030, the incorporation of electric vehicles and the corresponding charging infrastructure has been deepened by accelerating the availability of fast and ultra-fast chargers. In the case of collective passenger transport, the fare subsidy is modified to give greater impetus to zero-emission mobility.
- 4) By 2030, process improvement actions have been implemented at the refinery, which increase efficiency and reduce emissions per unit of product.

##### **Industrial Processes and Product Use Sector - Mineral Industry**

*(relating to Paragraph 20 of the NCCP)*

- 5) By 2030, the use of clinker per tonne of cement has been reduced as a result of the incorporation of 13% filler use in the cement produced by ANCAP's two cement plants.

## **Industrial Processes and Product Use Sector - Use of ozone-depleting products**

*(relating to Paragraphs 4 and 20 of the NCCP)*

- 6) As of 2024, HFC consumption has been frozen at the baseline consumption value as part of the country's Montreal Protocol and Kigali Amendment commitments.
- 7) By 2029, the consumption of HFCs has been reduced by 10 per cent relative to the baseline, within the framework of the country's Montreal Protocol commitments and those linked to the Kigali Amendment.

## **Agriculture Sector - Beef production**

*(relating to Paragraph 16 of the PNCC)*

- 8) By 2030, best management practices for natural range and breeding herd management have been incorporated into livestock production establishments on 1,500,000 ha to prevent loss and enhance soil organic carbon sequestration.
- 9) By 2030, a breeding platform has been developed with methane emissions reduction targets for cattle and sheep, without losing sight of livestock productivity, that strengthens the incorporation of genomics into current programmes and includes the estimation of the potential national-scale impacts of breeding on GHG emissions mitigation and co-benefits with climate change adaptation.
- 10) By 2030, national information has been generated on the use of methanogenesis inhibitors in livestock systems, their GHG emission mitigation potential and their co-benefits with climate change adaptation.
- 11) The potential impact at national level of animal health issues on methane emission reductions for cattle and sheep and their co-benefits with climate change adaptation has been estimated for 2030.

## **Agriculture sector - Other activities**

*(relating to Paragraph 16 of the PNCC)*

- 12) By 2030, technologies that minimise methane emissions due to effluent and manure management are used in 55% of the national dairy herd.
- 13) Technologies that improve the efficiency of nitrogen fertiliser use are implemented in at least 25% of the area under winter crops and maize and sorghum by 2030, allowing for a reduction in nitrogen losses through volatilisation.

## **Land Use and Forestry Sector**

*(relating to Paragraphs 12 and 16 of the NCCP)*

- 14) By 2030, 100% of the 2012 native forest area (849,960 ha) has been maintained, within the framework of the provisions of the Forestry Law and seeking to reverse the degradation processes.
- 15) By 2030, 100% of the 2020 effective area under forest plantation management (1,053,693 ha) has been maintained, following the Forestry Policy and where applicable the Forestry Environmental Management Guidelines.
- 16) By 2030, 100% of the 2018 area of shade and shelter plantations has been maintained, including silvopastoral systems (88,348 ha).
- 17) By 2030 at least 50% of the 2020 peatland area (4,829 ha) has been protected.
- 18) By 2030, crop production systems that include rotations with sown pastures occupying more than 30% of the rotation length are implemented on at least 30% of the agricultural area under Land Use and Management Plans in 2030.

- 19) By 2030, crop production systems that include rotations with sown pastures occupying more than 60% of the rotation length are implemented on at least 15% of the agricultural area under Land Use and Management Plans in 2030.

#### **Waste Sector - Solid Waste**

*(relating to Paragraph 21 of the NCCP)*

- 20) By 2030, 80% of the tonnes of household solid waste disposed of in final disposal sites will be disposed of in projects with methane capture and flaring, with or without electricity generation.
- 21) By 2030, a National Strategy for the Prevention and Reduction of Food Losses and Waste and an Action Plan in prioritised sectors are being implemented, incorporating the climate change dimension in a cross-cutting manner.
- 22) By 2030, selective collection systems have been promoted to reduce the tonnes of recyclable waste sent to final disposal and the impact on the reduction of GHG emissions has been determined.
- 23) By 2030, the incorporation of organic waste recovery strategies in departmental waste management plans has been promoted.

#### **Waste Sector - Industrial Waste Water**

*(relating to Paragraph 21 of the NCCP)*

- 24) By 2030, the methane capture level of 2021 has been maintained with technologies that reduce CH<sub>4</sub> emissions, reaching industries that produce at least 12% of the total emissions generated in the Industrial Wastewater category.

### **5.3.2. Measures conditional on specific additional means of implementation**

The measures conditional on specific additional means of implementation presented below are to be considered independent of the unconditional measures included in section 5.3.1. and reflect higher ambition with respect to those measures. Where measures overlap in both sections, their target values were estimated as incremental to the unconditional target values. Their implementation assumes additional and specific provision of means of implementation, including finance, technology transfer and capacity building, to be provided by developed countries.

#### **Energy Sector (including Transport)**

*(relating to Paragraphs 17 and 18 of the NCCP)*

- 1) By 2030, surpluses of renewable electricity will be used to replace part of the use of fossil fuels in industry, commerce and services, in particular by replacing 20% of fuel oil consumption in steam generation in the industrial sector (not including the pulp and paper sector).
- 2) By 2030, 6% of petroleum coke consumption has been replaced by rice husk or other low or zero emission fuels in the cement industry.
- 3) By 2030, 30% of 0 km light passenger vehicle sales will be electric vehicles.
- 4) By 2030, renewable alternatives have been incorporated into diesel through co-processing of fats and oils in refinery and/or biofuel blends up to 7%.
- 5) By 2030, the percentage of bioethanol blending in petrol has been increased to 11%.
- 6) By 2030, 600 hydrogen fuel cell-powered freight vehicles have been added to the fleet.

- 7) By 2026, the Electric Mobility Plan has been developed which integrates the different lines of action in equipment and infrastructure and aligns efforts with the Long Term Climate Strategy.
- 8) By 2028, the Plan for the Decarbonisation of energy consuming sectors (industrial, commercial, services, residential) including the life cycle of buildings has been drawn up.
- 9) A refinery conversion plan has been drawn up for 2028.
- 10) By 2030, regulation, capacities and incentives have been developed in the framework of the implementation of the Green Hydrogen Roadmap.

#### **Industrial Processes and Product Use Sector - Mineral Industry**

*(relating to Paragraph 20 of the NCCP)*

- 11) By 2030, the use of clinker per tonne of cement has been reduced as a result of the use of up to 7% filler in the cement produced by ANCAP's two cement plants.

#### **Industrial Processes and Product Use Sector - Use of ozone-depleting products**

*(relating to Paragraphs 4 and 20 of the NCCP)*

- 12) By 2030, new technologies in refrigeration and air conditioning have been promoted to encourage a switch to refrigerants that do not damage the ozone layer and have the lowest possible global warming potential.
- 13) By 2030, the technical and economic availability of new technological alternatives has been ensured in order to promote this replacement.
- 14) By 2030, technological conversion has been promoted in those enterprises using HFCs in the commercial and industrial sector.
- 15) By 2030, technological reconversion in the cold chain has been promoted.

#### **Agriculture Sector - Beef production**

*(relating to Paragraph 16 of the PNCC)*

- 16) By 2030, 2,500,000 ha of livestock production establishments have incorporated best management practices for natural field and livestock herd management to prevent the loss and enhance the sequestration of soil organic carbon.

#### **Agriculture sector - Other activities**

*(relating to Paragraph 16 of the PNCC)*

- 17) By 2030, methane capture systems from effluent and/or organic waste management have been implemented in at least 10 farms to reduce methane emissions.
- 18) By 2030, technologies that improve the efficiency of nitrogen fertiliser use have been implemented in at least 10% of the area under winter crops and maize and sorghum, allowing for a reduction in nitrogen losses through volatilisation.

#### **Land Use and Forestry Sector**

*(relating to Paragraphs 12 and 16 of the NCCP)*

- 19) By 2030, the area of native forest has been increased by 5% compared to 2012 (42,500 ha additional).
- 20) By 2030, the area of plantations for shade and shelter in 2018 has been increased by 10%, including silvopastoral systems (8,835 additional ha).

- 21) The average annual rate of natural grassland loss for the period 2026-2030 is 50% (0.685% average annual rate for the period 2026-2030) compared to the national average rate for the period 2000-2015 (1.37%).

### **Waste Sector - Solid Waste**

*(relating to Paragraph 21 of the NCCP)*

- 22) By 2030, the Food Loss and Waste information system has been consolidated through the implementation of measurement strategies and the development of specific indicators, taking into account the information needs for the estimation of GHG emissions.
- 23) By 2030, strategies for the recovery of organic waste, prunings and treatment sludge have been promoted to reduce the tonnes of waste sent to final disposal and the impact on the reduction of GHG emissions has been determined.
- 24) By 2030, material circularity has been promoted for the reduction of GHG emissions related to the production from virgin raw materials and the impact on the reduction of GHG emissions has been determined.

### **Waste Sector - Industrial Waste Water**

*(relating to Paragraph 21 of the NCCP)*

- 25) By 2030, industrial wastewater treatment systems have been upgraded with technologies that reduce CH<sub>4</sub> emissions. This development includes the implementation of new systems for capturing and burning CH<sub>4</sub> in anaerobic treatment, reaching treatment systems where 28% of emissions are produced.

## 6. Cross-cutting and capacity building measures.

This section includes the main cross-cutting measures that contribute to climate-resilient development [3], capacity building and knowledge generation. To implement the proposed measures, Uruguay may use means of implementation to be provided under the Convention, both in terms of financing, technology transfer and capacity building and strengthening.

- 1) By 2030, the National Public Education Administration (ANEP) promoted and incorporated environmental education for climate change in all educational subsystems (initial and primary, secondary, technical-technological and education training), recommending its approach in the respective curricula with disciplinary contents and didactic methodologies in diverse pedagogical frameworks from a social and territorial point of view.
- 2) By 2030, at least one annual training session on national and international climate agenda issues will be held for decision-makers at both national and sub-national government level.
- 3) By 2030, training for labour reconversion/training will be carried out to strengthen competencies associated with green and blue jobs, particularly considering the inclusion of women and socially vulnerable populations.
- 4) By 2030, the topic of climate change will be incorporated into the public sector's training offer.
- 5) In 2030, the link between the SNRCC and the Uruguayan Antarctic Institute will be strengthened in order to seek synergies and possible lines of joint work.
- 6) By 2030, annual "Open Climate Data" initiatives (competitions and/or trainings) are implemented to promote the use and generation of open data by citizens, organisations and institutions, and contribute to the implementation of open government policy.
- 7) A 2030 is developing a national platform with accessible and inclusive climate change-related content and learning resources.
- 8) By 2030, annual calls and competitions are promoted to recognise innovative initiatives and good practices developed by young people on climate change issues.
- 9) By 2030, a network of climate change communicators is consolidated at country level.
- 10) By 2030, a space for youth representation will be created within the framework of the SNRCC, which will provide technical support to strengthen their participation and influence in climate public policy processes.
- 11) By 2030, the gender and climate change technical capacities of at least 80% of the gender mechanisms of the three levels of government will be strengthened.
- 12) By 2030, the gender policy of the agricultural sector includes climate change adaptation and mitigation considerations.
- 13) By 2030, 2 social perception studies on impacts and responses to climate change have been carried out, including adolescents and young people.
- 14) By 2030 all measures linked to data generation will incorporate disaggregation by age group or simple age, or at least one category referring to children and adolescents.
- 15) By 2030, Uruguay will have incorporated climate risk into financial sector risk analysis, having agreed on methodology and procedures among public sector actors.
- 16) By 2030, the climate change dimension, in particular in relation to greenhouse gas emissions, has been incorporated into environmental pre-consents, operating permits and other permits.

for which GHG emissions are relevant. For this purpose, the sectors, magnitudes and characteristics of undertakings from which the relevant information will be requested will be defined.

- 17) By 2030, guidelines for the estimation and reduction of GHG emissions of companies and organisations will have been designed taking into account the national context.
- 18) By 2030, a voluntary registry of company GHG emissions, reductions and offsets will be implemented, based on the principle of environmental integrity.
- 19) By 2030, a support and financing instrument for R&D&I in Climate Change has been designed and operationalised to effectively contribute to the reduction of knowledge gaps for the fulfilment of the CRC and with the LCA as a horizon.
- 20) As of 2025, a framework document for the incorporation of climate change adaptation and mitigation objectives into economic policy has been approved and is in the process of being implemented, in particular in the integration of these objectives into the general tasks and different areas of the Ministry of Economy and Finance.
- 21) By 2030, the regional water resources councils and the basin and aquifer commissions have deepened their agenda on climate change and variability, sustaining participation and improving the processes of planning, management and control of water resources for the short, medium and long term.

## 7. Second Adaptation Communication

### 7.1. Introduction

#### 7.1.1. Relationship between the content of this Adaptation Communication and the Annex to Decision 9/CMA.1

Elements of the Annex to Decision 9/CMA.1 [4].	Table of contents of this Adaptation Communication.
(a) The circumstances, institutional arrangements and national legal frameworks.	7.2.1) National legal frameworks and arrangements institutions.
(b) Impacts, risks and vulnerabilities, as appropriate.	7.2.2) Impacts, Adaptation and Risk in Uruguay.
(c) National priorities, strategies, policies, plans, objectives and measures in relation to adaptation	7.3) Ex Ante Adaptation Cycle
(d) The implementation and support needs of developing country Parties, and the support that has been provided to them	7.10) Means of Implementation
e) The implementation of adaptation measures and plans, in particular:	7.4) Ex-post adaptation cycle, progress and results obtained.
i) Progress and results achieved;	7.4.1) First Nationally Determined Contribution and first Adaptation Communication. 7.4.2) National Adaptation Plans.
(ii) Adaptation efforts by developing countries to development, so that they are recognised;	7.5) Adaptation efforts to make them recognised.
(iii) Cooperation to enhance adaptation at national, regional and international levels, as appropriate;	7.8) Cooperation to enhance adaptation
(iv) Obstacles, difficulties and shortcomings related to the implementation of adaptation;	7.6) Barriers to implementing adaptation.
(v) Good practices and lessons learned, and the exchange of information;	7.7) Good practices and lessons learned.
(vi) Monitoring and evaluation	7.9) Monitoring and Evaluation
(f) Adaptation measures and/or economic diversification plans, particularly those involving co-benefits of mitigation	The potential mitigation co-benefits are explained under each of the adaptation measures included in the Annex.
(g) How adaptation measures contribute to other international frameworks and/or conventions	The contribution to other international frameworks and/or conventions, such as the SDGs, Sendai, Loss and Damage, the New Urban Agenda, are explained in each of the adaptation measures included in the Annex.
(h) Gender-sensitive adaptation measures and traditional knowledge, indigenous peoples' knowledge and local knowledge systems related to adaptation, where relevant	The gender perspective is mainstreamed throughout ComAd2. It should be noted that each of the adaptation measures included in the Annex has been categorised with respect to the potential impact of measures to address gender inequalities.
(i) Any other information related to the adaptation.	The contribution to the components of the global goal on adaptation, specifically reducing vulnerability and enhancing adaptive capacities, is explained under each of the actions. included in the Annex.



Own elaboration considering the elements for the adaptation communication in the annex to decision 9/CMA.1.

### 7.1.2. Process for the preparation of the Second Adaptation Communication.

Figure 1 outlines the process followed in the formulation of the ComAd2 in Uruguay. The diagram shows the different stages from the start of the first activities carried out by the climate change adaptation working group (GdT.ACC) in the framework of the SNRCC in March 2022, until the submission of the ComAd2 to the UNFCCC in December 2022. The different phases or stages of the process included the application of some methodological guidelines in accordance with the stages and their objectives, encouraging interdisciplinary participation, the cross-cutting nature of the adaptation processes and the transparency that the technical approach allows, based on a schedule with specific milestones.



Figure 1: The ComAd.2 Elaboration Process

### 7.1.3. Main activities carried out

The preparatory phase was key to making decisions on the structure and components to be included in ComAd2, building on the precedent of the first adaptation communication (ComAd1) that used the first INDC (INDC1) as a vehicle for submission to the UNFCCC and adding the guidance of Decision 9/CMA.1 and Decision 18/CMA.1, Section IV. This background allowed defining the sections of the present submission and planning the formulation, composition and format of the new generation of climate change adaptation measures, as well as reiterating Uruguay's decision to use the second NDC as the vehicle for submitting ComAd2.

The **retrospective** review of the linked adaptation processes, initially focused on the CDN1 and the National Adaptation Plans, allowed for a critical assessment of achievements, barriers, challenges, good practices and lessons learned in the processes, experience that, added to other tools that make and contribute to adaptation, allowed maturing the form and substance behind the objectives of adaptation and therefore the design and programming of the respective measures.

The **Priorities** emerge as part of the methodological process implemented for the definition of the measures, analysing the advances, challenges and previous experiences. Gaps that need to be addressed were identified, as well as the related needs to make progress in tackling complex processes; continuity, improvement and scaling up of initiated programme lines, in addition to new lines derived from previously initiated and/or developed processes.

The incorporation of the **Transversal Approaches** has been key in the whole process of the elaboration of Uruguay's ComAd. The participatory process for ComAd2 began with the joint and representative participation of the SNRCC institutions, giving way to instances by thematic areas without failing to consider the interrelation between areas, returning to joint instances to share each of the advances. Mainstreaming in this ComAd2 integrates the gender perspective from an intersectional approach, as well as other fundamental aspects that make up adaptation, such as risk reduction, co-benefits with mitigation, EbA and loss and damage reduction. The cross-cutting nature of this approach is due to the participatory construction carried out by the responsible institutions within the framework of the SNRCC, as well as by other actors with additional experiences and perspectives that contribute complementary elements that are sometimes overlooked due to institutional bias.

**Transparency** has been fundamental throughout the process, from the socialisation of the timetable and work scheme, to virtual and face-to-face meetings, both general and specific. More than 15 virtual meetings were held with the entire GoT.ACC; more than 30 meetings with institutional and technical representatives of the adaptation areas, including cross-cutting subgroups; and two face-to-face workshops for exchange. These are some of the elements that ensured constant **consultation** and technical participation throughout the process.

## 7.2. Context of Adaptation in Uruguay

Uruguay understands adaptation to climate change as a national priority. The efforts made in recent decades to strengthen public policies, programmes and specific measures on adaptation are confirmed by the most recent actions carried out with a planning and implementation vision, driven by the CDN1, the national adaptation plans and the ECLP. The latter is the instrument that summarises the main reasons for prioritising adaptation [5]:

- a) It is imperative to build capacities for adaptation and resilience in order to reduce risks and mitigate the impacts of climate change.
- b) It is essential to measure and make explicit the adaptation efforts made and to plan the necessary actions, in accordance with national possibilities, to strengthen climate action in terms of adaptation and risk reduction.
- c) It is desirable to contribute to the strengthening of a global governance that registers a political and financial resource mobilisation parity between adaptation and mitigation, so it is considered strategic to direct national efforts to the contribution to the achievement of the GGA and the Global Stocktake as foreseen in the Paris Agreement.

In addition, it is necessary to highlight that other fundamental reasons why Uruguay considers adaptation as a national priority are: i) high exposure: both because of its dependence on weather conditions, variability and climate change for the development of its main economic activities, such as agro-industrial production and a growing and dynamic tourism sector, and because of the location of the population, assets and main infrastructure in risk areas, considering, for example, that 70% of the Uruguayan population is located in coastal departments; ii) high vulnerability: specifically due to the high sensitivity and susceptibility of the territorial spaces that concentrate both the main economic activities (such as the countryside, cities and coastal areas) and the most vulnerable social sectors and ecosystems, in the face of the potential changes projected in the medium and long term; and iii) the still incipient response and adaptation capacities in the face of these increasingly evident changes.

### 7.2.1. National legal frameworks and institutional arrangements

The national frameworks for adaptation, complementary to those presented earlier in this document, can be found in Figure 2, where the PNCC and ComAd1 are identified as the main legal and technical frameworks that, among other tools, give rise to the development of the National Adaptation Plans; and the SNRCC as the horizontal coordination sphere, which, by decree, is represented by public institutions, academia and non-governmental organisations that research and work on climate change issues.

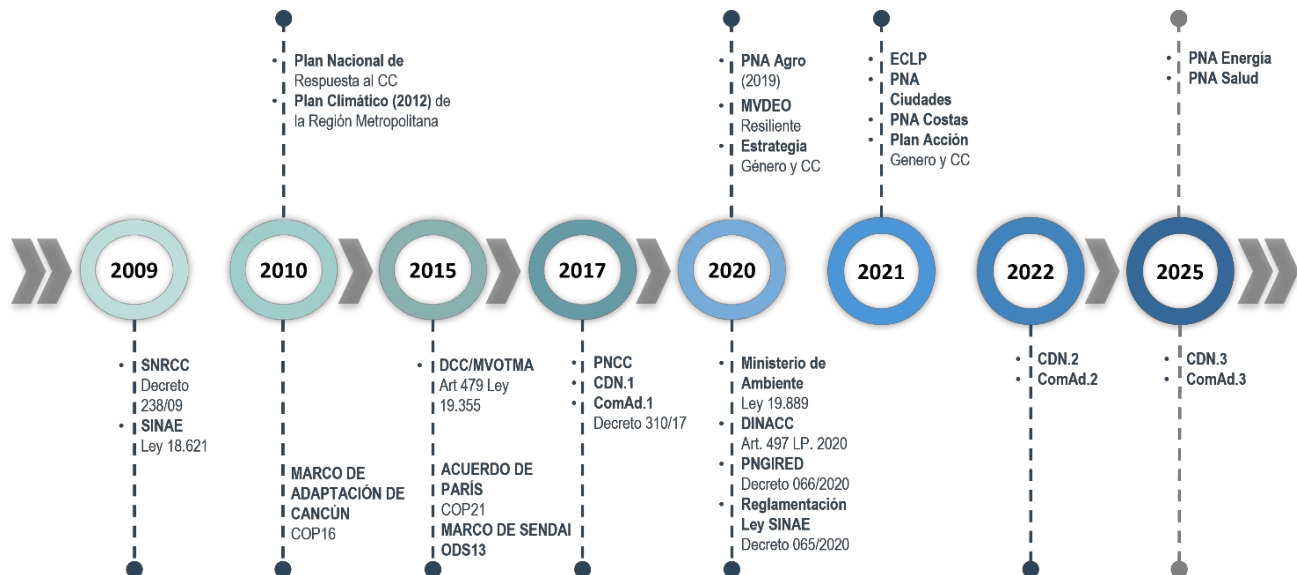


Figure 2: Key Milestones for Adaptation and Risk Reduction in Uruguay.

At the time of submission of ComAd1 to the UNFCCC in 2017, Decision 9/CMA.1 guiding the elaboration of adaptation communications had not yet been adopted. However, the elements included largely correspond to those that were later incorporated in the annex to the Decision, forming a robust background to the negotiation process, as well as towards the development of ComAd2.

In accordance with the Cancun Adaptation Framework and the Paris Agreement (art. 7.7) and given sectoral adaptation or adaptation by management area, Uruguay has developed three national adaptation plans so far.

The **NAP-Agro** (2019) aims to guide the design, coordination and prioritisation of policies, programmes and projects that seek to address the climate vulnerabilities of different agricultural production systems and aims to achieve a paradigm shift towards a path of resilient development adapted to climate variability and change in the agricultural sector. [6]

A **NAP-Cities** (2021) has also been developed which aims to reduce vulnerability to the effects of climate change by building adaptive capacity and resilience in cities, infrastructure and urban environments; and to facilitate the integration of adaptation measures seamlessly into existing and new adaptation policies, programmes and activities in specific development planning processes and strategies for cities and spatial planning.

Similarly, the **NAP-Coasts** (2021) established as objectives to incorporate the adaptation perspective in the development and implementation of the coastal zone policy framework; to strengthen capacities at national, departmental and municipal levels related to climate risk management and adaptation in coastal ecosystems through the training of human resources and the funding of specific actions, as appropriate in terms of budgetary competencies at the respective levels of government, promoting

the preservation of natural coastal spaces and processes threatened by climate change and variability. It also aims to contribute to sustainable development from an equity perspective by ensuring a more resilient, more adapted and more aware society in the coastal zone.

The **NAP-E** and the **NAP-Health** are under preparation.

In 2021, Uruguay also submitted its LCA to the UNFCCC in accordance with Article 4.19 of the Paris Agreement. The LCA aims to agree and make explicit a long-term vision on GHG emissions and removals, as well as adaptation, resilience and risk reduction to 2050. In this way, the ECLP fits into the narrative of planning, implementing and monitoring adaptation and resilience actions towards mid-century, in line with climate science and in alignment with the aspirational goal of  $\text{CO}_2$  neutrality.

The aforementioned plans integrate the gender perspective in a cross-cutting manner, consistent with the principle of social equity considered in the PNCC, expressed in the National Gender and Climate Change Strategy (2019) and the SNRCC's National Gender and Climate Change Plan (2021).

### **7.2.2. Impacts, adaptation and risk in Uruguay**

Climate change entails risks, resulting from the interaction of three components: threat or hazard, exposure and vulnerability. Risks are the potential for adverse consequences to occur on a set of elements that make up a socio-technical system within an environment of uncertainty. [7] [8] These adverse consequences, i.e. the materialisation of risks, are manifested in the form of impacts that in turn can affect development and governance trajectories or hazards directly or indirectly through climate change. [9]. The contextualisation of climate change adaptation within a risk framework arises to avoid or moderate harm, or take advantage of beneficial opportunities, through the planning, design and implementation of actions, activities, plans, programmes and policies that create the conditions to adjust to the current or projected climate and its effects. [10]

Strategies for adaptation to climate change, within a risk framework and in line with the GGA set out in the Paris Agreement, require efforts to increase the adaptive capacities and resilience of socio-ecological systems, and to reduce vulnerabilities intrinsic to the systems and those arising from other socio-economic processes that aggravate and enhance both the probability of occurrence and the magnitude of impacts.

#### **7.2.2.1. The effects of climate change in Uruguay**

Uruguay is geographically located in a region of great climatic variability on all time scales, with an average annual temperature of  $17.5^{\circ}\text{C}$ , ranging from around  $20^{\circ}\text{C}$  in the northeast to around  $16^{\circ}\text{C}$  on the Atlantic coast. This average has increased by about  $0.8^{\circ}\text{C}$  over the last 65 years, with greater warming in the east in all seasons. [11]. Summer in the Northern region reaches temperatures comparable to tropical regions, while winter is a season of frequent transient cyclones and anticyclones (5-7 days in duration) with warm and cold fronts moving latitudinally, causing damage to infrastructure and property along the coastal zone. [12].

Uruguay's climate shares characteristics with the south-eastern region of South America and the climatic conditions of our region depend on factors that go beyond these geographical limits. On the one hand, a natural variability of the annual climate can be established, which induces very large changes in rainfall. Observations indicate an increase in the order of 10-20% during the spring, summer and autumn seasons (1961-2017) in most parts of the country. Beyond the annual variations, the climate exhibits a

interdecadal variability, generating anomaly patterns similar to those of El Niño, but with longer time scales. During the warm phase of these oscillations, Niño events tend to be more frequent and intense than in the cold phase. [13]

Superimposed on natural variability is the signal of climate change, which is not restricted to a change in average rainfall or temperature conditions in a region, but is generally accompanied by changes in the frequency of occurrence and intensity of meteorological (e.g. cold and heat waves) and hydroclimatic (e.g. droughts) extremes. According to several studies, sea level rise in Montevideo has been estimated at 11 cm, of which 2-3 cm corresponds to the last three decades. [14] The variation is even more significant in the remaining tidal stations along the Uruguayan coast (La Paloma, Punta del Este, Colonia). [15]

In Uruguay, the most frequent and most impactful phenomenon is flooding [16], causing the annual evacuation of populations<sup>89</sup> (between 2015 and 2019, 85,000 people were evacuated and self-evacuated due to flooding alone) and affecting adequate sustenance (food, housing, health), as well as economic losses due to losses and damage to private and state-owned goods and services. The most frequent types of flooding are riverbank and gully flooding, coastal flooding, storm drainage flooding due to urbanisation and flooding related to hydraulic infrastructure failures. There are currently 11 localities with a very high risk of flooding, 15 with a high risk and 42 with a medium risk, totalling 68 localities. [17]. It should be clarified that, although the greatest number of registered affectations are derived from hydrometeorological phenomena<sup>10</sup>, anthropic and/or technological conditioning factors are not ruled out as causes and aggravations of the impacts.

Agricultural production is particularly sensitive to environmental conditions. The traditional climate vulnerability is deepened as a result of climate change, resulting in production losses and variations in crop and pasture production. The most important climatic events in terms of risks to agricultural production are droughts, excessive rainfall, heat waves, frosts, storms, strong winds, hail and lack of cooling hours. In turn, the impacts vary in each production system [18] in the case of droughts, where different studies indicate that the worst droughts in the last 20 years were recorded in 1999/2000 (very severe), 2003/2004 (severe), 2008/2009 (very severe), 2011/2012 (severe) and 2017/2018 (severe) [19] with economic losses, linked to lower yields for most agribusiness sectors. In the pilot report on the assessment of losses and damages due to climate-related events, for 2018, 32 types of events were identified that generated losses and damages of almost 564 million dollars. [20]

On the other hand, the energy sector continues to be heavily dependent on hydroelectricity, which is affected by the high variability of rainfall, and both floods and droughts affect its availability in a system that has little storage capacity.

It is necessary to emphasise that Uruguay is working to collect more information, with a higher level of completeness, focused on the recording of impacts and their respective evaluation of losses and damages caused; the evaluation of actions for the reduction of vulnerability; and the economic evaluation of the implementation of climate change adaptation measures.

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<sup>8</sup> See summary table in [Uruguay's voluntary national report](#) for the fulfilment of the Sustainable Development Goals. Years 2019 and 2021; SDG 13: Climate Action.

<sup>9</sup> [View event history viewer of the Comprehensive Risk and Affect Monitor \(MIRA\)](#)

<sup>10</sup> See [SINAE report](#) on the most significant events that occurred between 2015 and 2019.

### 7.2.2.2. Climate projections and scenarios for Uruguay

Uruguay's climate projections for the 21st century (Figure 3) were based on ten models [21] that tightly represented Uruguay's climate; each model was run for the SSP245, SSP370 and SSP585 scenarios for two time horizons; short-term (2020-2044) and long-term (2075-2099).

When contrasting the observed and simulated evolution of mean annual temperature in Uruguay for the period 1961-2014 with projections for the end of the 21st century, an almost linear increase in mean annual temperature is observed, as well as regional differentiations. Uruguay's annual cumulative precipitation shows high interannual variability ranging from -5 to 10% over the short-term horizon, and from -7 to 35% over the long-term horizon. [12]







Variable	Estaciones	Horizonte	Escenarios		Regionalización
			SSP245	SSP585	
		2050	0.5-1.5°C	0.5-1.5°C	Gradiente este - oeste
		2100	2°C	2-4°C	Gradiente este - oeste
		2050	0.3-0.5°C	0.6-0.9°C	Calentamiento uniforme
		2100	1.5°C	2.8- 3.5°C	Calentamiento uniforme
		2050			Sin tendencia definida
		2100	↑ 30%	↑ 60%	Máximos en el litoral norte
		2050	↑ 20%	↑ 30%	Todo el país, máximos en el norte
		2100	↑ 50%	↑ 90%	Todo el país, mayores valores en el noreste

Figure 3: Model projections for temperature (CMIP5) and precipitation (CMIP6) at the seasonal level.

Own elaboration with data obtained from the report on Climate Projections over Uruguay, Product carried out in the framework of the NAP-Coasts and the NAP-Cities, MVOTMA - Faculty of Sciences Agreement. [21]

Future projections show a gradual positive trend with an increased occurrence of extreme events. The interannual phenomenon with the greatest impact on rainfall in Uruguay is ENSO. The CMIP5 model shows that extreme events associated with ENSO tend to increase in frequency as global temperature increases. In addition, La Niña-related extreme events could become more frequent, particularly three-month drought events over a short-term horizon. Heat waves in our country would increase in frequency and duration by the end of the century, mainly in the northern region. [12]

In turn, the projected mean sea level rise for the RCP8.5 scenario is 80 cm by the end of the century. The two typical situations that cause an extreme rise in the level of the La Plata River are related to coastal cyclogenesis and the arrival of fronts from the south. Along the coasts of the Rio de la Plata and the Atlantic Ocean, flash floods are caused by a combination of meteorological and hydrological effects. The occurrence of high tides with large atmospherically induced storm surges raises the mean sea level by three metres above its normal level, causing the elimination of beaches and dunes, damage to coastal infrastructure and risks to navigation. [15]

## **7.3. Ex ante adaptation cycle**

### **7.3.1. Adaptation objectives**

Article 7 of the Paris Agreement sets out the global goal on adaptation which is to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change with a view to contributing to sustainable development and achieving an adequate adaptation response in the context of the temperature goal mentioned in Article 2<sup>11</sup> [1] In order to link national adaptation efforts with the elements set out in the GGA, this adaptation communication has defined general objectives and specific objectives for each adaptation area, this adaptation communication has defined general objectives and specific objectives for each adaptation area, and an effort has been made to set out the qualitative contribution of each of the proposed adaptation actions in order to establish a strategic framework for the implementation of ComAd2.

The general objectives are:

#### **In relation to increasing adaptive capacity:**

- a) Strengthen information systems for decision-making, generating, incorporating and improving information, with technical and scientific validation, linked to the consequences of climate change and the implementation of adaptation actions.

#### **With regard to vulnerability reduction:**

- b) Reduce the impacts of climate change on socio-ecological systems; reducing losses and damages in the various productive areas and sectors, through the implementation of climate change adaptation actions.

#### **In relation to strengthening resilience:**

- c) Strengthen partnerships for climate governance, policy, planning and technical instruments, with a cross-cutting approach to climate change, especially adaptation.

### **7.3.2. Cross-cutting approaches to adaptation**

Climate change is cross-cutting and, consequently, it is necessary to incorporate interdisciplinary approaches, the involvement of national, departmental and local government actors, and the participation of academia, civil society and the private sector. To achieve effective and efficient adaptation, adaptation must be part of state, national and departmental agendas, plans, programmes and projects, and of scientific, social, economic and environmental studies and research.

It is essential to articulate transversally between the different areas that have competences on the adverse effects on biodiversity and ecosystems, water resources, human health, cities and territory, coastal zones and productive sectors, within a climate risk framework that not only moderates impacts, but also reduces physical and social vulnerability and increases adaptive capacities.

This cross-cutting approach should include human rights, a gender perspective from an intersectional approach that recognises vulnerabilities and respects differential capacities, generates the necessary conditions for the development and implementation of climate actions, increases knowledge, promotes awareness and community-based adaptation, reduces losses and damages, includes adaptation to climate change and the impacts of climate change.

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<sup>11</sup> Article 2(a) To keep the global average temperature increase well below 2°C above pre-industrial levels, and to pursue efforts to limit this temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of



climate change.

ecosystem-based, strengthen climate services and promote co-benefits with mitigation actions.

Within the cross-cutting approaches, the National Gender and Climate Change Strategy was launched in 2019, with the objective of promoting the integration of this perspective in the implementation of Uruguay's NCCP and in all climate policy instruments, including the Nationally Determined Contributions, the National Adaptation Plans, the Monitoring, Reporting and Verification system, the INGEI and the Green Climate Fund Country Programme. Furthermore, in 2021, the Gender and Climate Change Action Plan was developed, which defines and prioritises activities oriented towards the goal of gender equality.

In the light of the Strategy and Action Plan, categories were established in relation to the potential impact of measures to address gender inequalities:

- a) Neutral: Does not involve gender mainstreaming
- b) Gender-sensitive: Gender mainstreaming through the generation of basic sex-disaggregated information, but does not necessarily imply corrective actions.
- c) Responsive: Measures that integrate corrective actions to address gender inequalities, to recognise or diminish gaps in gender-structured sectors; which may include transformative measures that promote cultural and structural changes.
- d) Blind/Potentially sensitive or Responsive: Measures that are originally gender blind and do not have sex-disaggregated information or contain corrective actions, but have a potential direct impact on gender gaps and/or the possibility of generating basic information to identify gaps.

As part of mainstreaming and in line with decision 9/CMA.1, the following are included in this communication for each measure: gender categorisation, co-benefits with mitigation, loss and damage, the link to the Sustainable Development Goals and contributions to the global goal on adaptation (see Annex 1).

### **7.3.3. National adaptation measures**

The following are the specific climate change adaptation objectives and the respective measures, including the definition of their scope in terms of management and/or results, that Uruguay plans to achieve in order to contribute to the global goal on adaptation. The measures identify the main priorities, by area and/or sector, information needs, implementation and support, adaptation plans and actions in order to mitigate adverse effects of climate change.

To implement the proposed measures, Uruguay may use means of implementation to be provided under the Convention, both in terms of financing, technology transfer and capacity building.

## Cross-cutting adaptation measures

### Climate Information and Services

(relating to Paragraph 7 of the NCCP)

**Strengthen information systems for decision making, improving the available information and knowledge on the risks derived and enhanced by climate change, accounting for frequency, severity and impacts on people, significant assets and the environment.**

- 1) By 2030, there is a geographic information system that includes the components of the main socio-natural risks susceptible to being enhanced by climate change.
- 2) By 2030, an updated system of information and reporting on emergencies and impacts of socio-natural phenomena will be available, considering greater efficiency in the information and its sources, homogenisation of variables, analysis of magnitude, intensity, frequency, impact, causality and its relationship with climate change.
- 3) By 2030 a Climate Services Information System has been developed and made available in open data format.
- 4) By 2030, official climate change projections to 2050 and 2100, based on the best available scientific information and climate change scenarios, have been agreed, updated and made available within the framework of the SNRCC.
- 5) By 2030, a *mesoscale* atmospheric model and a *nowcasting* system for the development of very short-term forecasts are in place, as well as human resources trained in their generation and updating.
- 6) By 2030, an inter-institutional group for the governance of climate services has been formed and is operational, within the framework of the National Meteorological Council and the SNRCC.

### Disaster Risk Reduction

(relating to Paragraph 10 of the NCCP)

**Strengthen integrated emergency and disaster risk management with the incorporation of a climate change perspective.**

- 7) By 2030, an information system has been designed, updated and set up, based on the comprehensive risk and impact monitor (MIRA), for multi-risk analysis, estimating the probability of occurrence, impact, response and recovery capacity, in the face of socio-natural phenomena that could potentially occur due to the effects of climate change.
- 8) By 2030, the periodic updating and development of tools for prospective, corrective and/or compensatory management of the risk of emergencies and disasters at the departmental level has been promoted.
- 9) By 2030, at least three guides for private sector companies to assess climate risks and identify adaptation measures will have been developed and made available.

**Strengthen governance related to the generation of knowledge and interoperability of information regarding the risks configured in Uruguay and the associated emergency and disaster events. It implies coordinating, planning and promoting the production of relevant knowledge and information.**

- 10) By 2030, new areas of work have been generated and existing working groups between the SNRCC and the SINAE have been strengthened, promoting integrated risk management with a climate change perspective.
- 11) By 2030, seven flood-prone cities have incorporated a flood early warning system, integrated into the action and communication protocol, which improves inter-institutional interaction and the dissemination and communication of warnings and alerts to the population and the actors involved in emergency response and care.

## **Loss and Damage**

*(relating to Paragraph 10 of the PNCC)*

**Strengthen processes for recording, measuring and assessing the impacts of adverse weather-related events and their chains, in order to estimate losses and damages at national, local and sectoral levels.**

- 12) By 2030, a work plan for Loss and Damage assessment has been implemented, including mechanisms and procedures to improve the recording, storage, estimation and visualisation of loss and damage at national, local and sectoral levels, caused by socio-natural events and their respective impact chains.
- 13) By 2030, an information system associated with the impacts on energy infrastructures has been developed and implemented to quantify losses and damage to the system due to climatic causes.
- 14) By 2030, processes for recording and assessing impacts of climate-related adverse events will have been improved to quantify and estimate losses and damages in the tourism sector by improving databases and information sources.

## **Migration and Displacement**

*(relating to Paragraph 8 of the PNCC)*

**To understand Uruguay's situation in relation to migratory movements and human displacement due to conditions linked to climate change and its derived chains of impacts.**

- 15) As of 2030, a database has been developed that reports on the situation in Uruguay regarding the influence and impact of climate change on migration and human displacement to, from and within Uruguay, considering an intersectional approach.

## **Measures for the main areas of adaptation**

## **Health**

*(relating to Paragraph 9 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for the area of Health.**

- 16) By 2030, the 2026-2030 Action Plan of the National Health Adaptation Plan has been implemented. (NAP Health)
- 17) By 2030, the consequences of climate change on occupational health have been assessed for the definition of policies for the prevention and promotion of occupational health.
- 18) By 2030, epidemiological and entomological surveillance has been strengthened, as well as the development and implementation of early warning and response systems for vector and disease outbreaks resulting from or enhanced by the effects of climate change.

**Strengthen governance in the area of health to address issues related to climate change and its effects, within the Ministry of Public Health and related institutions, in the framework of the SNRCC.**

- 19) By 2030, a technical working group on climate change has been created, institutionalised and put into operation within the Ministry of Public Health, which develops the cross-cutting programme line of climate variability and change in health policies, plans and programmes.

## **Cities, Infrastructures and Spatial Planning**

*(relating to Paragraph 11 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for cities and spatial planning.**

20) The 2026-2030 Action Plan of the National Adaptation Plan for Cities and Infrastructure (NAP Cities) has been implemented by 2030.

**Deepen the adequate incorporation of adaptation to climate change and variability in land-use planning instruments, urban planning and management, urban landscape, building regulations under a climate risk framework and incorporating the ecosystem-based adaptation approach.**

- 21) By 2030 all departments have incorporated climate change adaptation measures and climate risk reduction strategies in new and revised Land Use Planning Instruments.
- 22) By 2030, 100% of cities with very high, high or medium flood risk levels have flood risk maps for riverbank flooding, drainage, and/or sea level rise and storm surges.
- 23) By 2030 support materials have been updated and disseminated to incorporate climate change and variability into the planning of Uruguayan cities.
- 24) By 2030 the implementation of the National Urban Stormwater Drainage Plan has started.
- 25) By 2030, all departments have incorporated ecosystem-based adaptation in at least one urban locality as a strategy to improve habitat conditions in urban environments and optimise their climate performance.
- 26) By 2030, parameters with the dimension of adaptation to climate change and variability have been incorporated into the departmental regulatory bodies, in reference to the design, construction and maintenance of housing, infrastructure and equipment, considering territorial particularities.

**Promote the generation of financing instruments for the implementation of adaptation actions that improve the resilience of cities to climate change and its effects.**

- 27) By 2030, a public-private financing instrument to improve climate resilience in new and/or existing buildings and urban infrastructure, including an ecosystem-based adaptation approach, will be implemented.

**Promote the development of sustainable and resilient infrastructures in the face of climate variability and change that contribute to reducing greenhouse gas emissions.**

- 28) By 2030, all operational household and similar waste disposal sites operated by municipalities have conditions that reduce the risk and likelihood of impacts from adverse climate change events.

## **Biodiversity and Ecosystems**

*(relating to Paragraph 12 of the NCCP)*

**Promote the integration of climate change, its effects and adaptation strategies into planning and policy instruments focused on the conservation, protection and restoration of natural ecosystems, to ensure the provision of ecosystem goods, services and functions.**

- 29) By 2030 the National Biodiversity Strategy, the National Protected Areas System Strategic Plan, Marine Spatial Planning and the Land Degradation Neutrality Strategy incorporate climate change and variability.

- 30) A legal instrument for the protection and restoration of wetlands, based on their ecosystem services and their contribution to climate change adaptation, is being implemented by 2030.
- 31) By 2030, risk analysis and specific targets and actions on adaptation to climate change and variability are incorporated in 100% of the Protected Areas with approved and updated Management Plans as of 2025.

**Incorporate and deepen risk assessment with a climate change perspective and its effects on biodiversity and ecosystems, and increase the valuation of the role of ecosystems in adaptation, for the design of instruments and measures for risk reduction and ecosystem-based Adaptation.**

- 32) By 2030, a risk analysis on biodiversity and key ecosystems considering climate change effects has been developed and data will be available through an information system.
- 33) By 2030, guidelines on managing risks to biodiversity and ecosystems linked to climate change and variability have been developed and key actors have been trained to implement them.
- 34) By 2030, knowledge and valuation of ecosystem functions and services associated with reducing climate change vulnerabilities of key ecosystems and their mitigation co-benefits will have increased.

### **Coastal Zone**

*(relating to Paragraph 13 of the NCCP)*

**Strengthen policy and adaptation planning instruments for the coastal zone in the face of climate change and variability.**

- 35) By 2030, Law 19.772 on the National Guideline for Territorial Planning and Sustainable Development of the Coastal Space of the Atlantic Ocean and the Río de la Plata will have been regulated.
- 36) By 2030, the 2026-2030 Action Plan of the National Plan for Adaptation in Coastal Zones (PNA Costas) will have been implemented.
- 37) By 2030, a guidebook for incorporating climate change vulnerability assessment into EIA and SEA processes in the coastal zone will have been developed using the best available scientific information, and key stakeholders will have been trained to implement it.

**Promote the conservation and reduction of vulnerability of the coastal zone threatened by climate change and variability through ecosystem-based adaptation measures.**

- 38) By 2030, 100% of vulnerable components of the coastal zone will be included in plans or programmes for adaptation to climate variability and change by defining their level of protection and/or implementing ecosystem-based adaptation measures for both conservation and restoration.

**Encourage the generation of financing instruments for the implementation of adaptation actions in the coastal zone.**

- 39) By 2030, a public-private financing instrument for the implementation of adaptation measures in the coastal zone will be designed and implemented.

**Implement a system for monitoring the coastal dynamics of the Río de la Plata and Atlantic Ocean.**

- 40) By 2030, a system for monitoring *meteo-oceanic*, sedimentological and topo-bathymetric variables of the Río de la Plata and Atlantic Ocean will have been implemented, reinforcing those areas that are highly vulnerable to extreme events (mouths, sandy beaches and ravines).

## **Water Resources**

*(relating to Paragraph 14 of the PNCC)*

**Promote the incorporation of climate change and variability and their effects in integrated water resources management, seeking to improve protection and security in the availability and quality of the resource, promote good practices, improve governance and promote research and integrated monitoring.**

- 41) As of 2030, 6 integrated watershed management plans have been formulated, approved and are being implemented.
- 42) By 2030, water security plans have been implemented in 15 drinking water systems; and at least two sanitation security plans have been implemented in two locations in the interior of the country, considering the respective conditions of climate change.
- 43) By 2030, appropriate technologies and procedures are in place to prevent, detect and reduce the effects of algal bloom events in priority areas.

## **Agriculture and Livestock**

*(relating to Paragraph 15 of the PNCC)*

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for agriculture.**

- 44) By 2030, progress in the implementation of the National Adaptation Plan for the agricultural sector (NAP-Agro) is monitored and reported.
- 45) By 2030, new financial and risk transfer instruments have been developed and implemented, increasing insurance penetration in new areas compared to 2025.

**Promote the implementation of good practices in the different activities and processes of agriculture as a strategy for adapting to climate change, maintaining production, increasing resilience and reducing risks in agriculture and the environment.**

- 46) By 2030, the number of permits for the abstraction of water resources for irrigation and other agricultural uses is promoted and increased as an adaptation strategy to the variability in the rainfall regime and the risk of drought, based on the year 2025, subject to the availability in quantity and quality of water and within the framework of the National Water Plan, Law No. 16858 and Decree No. 368/018.
- 47) By 2030, comprehensive information systems for adaptive agricultural management are in place for the public and private sector, and research programmes have been promoted in rain-fed agriculture, horticultural and fruit crops, forage species and pastures that are best suited to climate variability.
- 48) By 2030, at least one adaptation measure to reduce animal heat stress has been implemented in at least 50% of dairy and confinement farms.

**Promote the development and implementation of adaptation measures that have synergies, parallels and co-benefits with climate change mitigation.**

- 49) By 2030, 100% of the 2012 native forest area will be protected, with the option of increasing it by 5%, particularly in areas of environmental protection of water resources, seeking to reverse degradation processes (892,460 ha).
- 50) By 2030, intermittent irrigation technology with variable lamina has been introduced on 5-10% of the rice cultivation area.
- 51) By 2030, 100% of the 2018 area of forest plantations for shade and shelter will be maintained, including silvopastoral systems, with the option of increasing this area by 10%, providing shelter and improved animal welfare conditions, particularly in the event of unfavourable weather conditions.

- 52) By 2030, good natural range and herd management practices have been incorporated in livestock production establishments in an area between 1,500,000 and 4,000,000 ha, leading to reduced vulnerability to climate variability in natural range-based livestock production systems.
- 53) By 2030, 95% of the agricultural area under Land Use and Management Plans, which include erosion reduction and organic matter conservation on agricultural land, has improved productivity and water storage capacity and reduced the risk of erosion from extreme precipitation events.
- 54) By 2030, good effluent management practices have been implemented in dairy farms, including the valorisation of effluents as soil improvers, reaching 50% of the national herd.

## **Energy**

*(relating to Paragraphs 18 and 20 of the NCCP)*

**Strengthen energy planning instruments by incorporating adaptation to climate change and variability, improve resilience and adaptive capacity of the system and infrastructure.**

- 55) As of 2030, the 2026-2030 Action Plan of the National Energy Adaptation Plan (PNA Energía) has been implemented.

**Identify and assess energy system risks in energy generation, transmission and distribution, and improve the resilience of current and future energy infrastructure to climate change.**

- 56) By 2030, an energy sector risk reduction guide for energy demand sectors has been developed and implemented.
- 57) By 2030, a work plan has been developed and implemented for vulnerability studies and identification of adaptation and risk reduction measures for critical infrastructure in the event of extreme events.

## **Tourism**

*(relating to Paragraph 19 of the PNCC)*

**Promote research and risk assessment on the effects of climate change on tourism, in order to improve the design of adaptation actions to be implemented in the medium and long term scenarios.**

- 58) By 2030, vulnerability and hazard analyses will have been carried out in the sector, according to tourism products and considering the trends determined by existing climate projections, agreed within the framework of the SNRCC.
- 59) By 2030, the National Tourism Plan 2030 will have been reviewed and updated with regard to the risk analyses carried out, in articulation with existing National Adaptation Plans.

**Promote the generation of and access to relevant, integrated and useful information, the use of meteorological information, early warnings and other climate risk management tools for decision-making by institutions and the population.**

- 60) By 2030 at least 4 tourism cities will have integrated weather and emergency alerts into their tourism information systems and trained their tourism operators and officials in the use of such information.



#### 7.4. Ex-post adaptation cycle, progress and results achieved.

The main progress and results, barriers and challenges, and lessons learned and good practices achieved through the implementation of Uruguay's main adaptation instruments are presented below.

##### 7.4.1. Uruguay's first Nationally Determined Contribution and Adaptation Communication

**Main achievements and progress:** The first NDC incorporates a number of instruments for adaptation planning, including NAPAs. The first generation of NAPAs, in addition to national-level planning of actions to address the consequences of climate change in five priority areas, develops, promotes and incorporates scientific knowledge from academia.

The design and operation of a system for monitoring the adaptation actions included in ComAd1, through the definition of progress indicators for implementation, stands out as an achievement.

The categorisation of measures according to the potential impact on gender inequalities under the Gender and Climate Change Strategy and the Gender and Climate Change Action Plan, by virtue of the work of the SNRCC Gender Working Group, is evidence of the progress made and an effort for recognition that Uruguay seeks to make visible. This process involved multiple actors, resulting in a process of capacity building on the link between adaptation measures and gender inequalities.

**Main barriers and challenges:** The main challenges in ComAd1 focus on the resources available for the implementation of adaptation actions and the monitoring and evaluation of adaptation actions.

In terms of resources, extensive mobilisation of knowledge, technologies and funding is necessary for the design and implementation of actions that generate positive impacts. In addition, the limited technical capacities in national institutions should be highlighted. While there is scope, readiness and special technical capacities for articulation within the SNRCC, they need to be strengthened by including more representatives and improving participation within the various areas of the SNRCC.

Regarding the monitoring and evaluation of adaptation actions, on the one hand, there are difficulties arising from the multidimensional nature of adaptation, which frames the system in an extensive series of multi-causal indicators whose temporal variation depends on the incidence of other environmental, social and economic factors. On the other hand, there is a lack of international benchmarks for adaptation in terms of i) development of indicators, ii) monitoring of policies, plans and measures, and iii) evaluation of effectiveness towards reducing vulnerability, increasing resilience and mitigating disaster risk. [22]

Another major challenge is linked to the development and adoption of NAPAs, and how they will contribute significantly to future monitoring of adaptation and vulnerability and their relationship to the next ComAds. Each NAPA will be challenged to generate an internal Monitoring, Evaluation and Learning framework, towards a long-term horizon (2050) through five-year action plans, equipped with a matrix of indicators to track each action stipulated in them, as well as their impact on the country's climate vulnerability.

From a gender perspective, the effort to make sectoral gender mainstreaming processes compatible with climate change processes, whether these are plans, strategies or independent projects, is recognised. In addition, the definition of gender analysis still faces the challenge of the lack of sex-disaggregated, updated and available data, especially at the local level. Both processes require the deployment of technical resources and specific budget allocations to be integrated into the Nationally Determined Contributions.

**Key lessons learned and good practices:** The decision to include an adaptation section in the first NDC, and that this was also considered the first Adaptation Communication as an integral part of the first NDC, brings greater visibility and visibility to adaptation and its balance with mitigation; highlights the adaptation efforts being made by Uruguay by providing information to the Global Stocktake; and is conducive to achievements, good practices, needs, barriers and challenges being better known and understood.

To seek inter-institutional participation in the design, implementation, monitoring, and evaluation of adaptation actions, from an articulating perspective that requires the interdisciplinary involvement of various areas and sectors, favours the multidimensional transversality of adaptation.

There is a strong commitment to continuous improvement in the transparency of NDC monitoring. The multidimensional and qualitative nature of adaptation creates challenges for accurate monitoring based on numerical metrics. However, methodologies for monitoring have been proposed that succeed in quantifying progress towards the targets of ComAd1 adaptation measures.

The integration of the gender perspective has shown the relevance of generating enabling conditions for intersectoral implementation based on: the creation of a stable Working Group with members representing the Specialised Units and/or Gender Commissions of each Ministry, coordinated by the DINACC of the MA and the governing body of the country's Gender Public Policies, the National Women's Institute of the Ministry of Social Development; the establishment of a common intersectoral strategy, which established the common criteria for integrating the gender perspective in the first CRC, including the National Adaptation Plans; and the establishment of possible goals and the incorporation of gender categorisation in the public follow-up display of the CRC.

#### **7.4.2. National Adaptation Plans**

The NCCP provides a strategic framework for addressing the challenges of climate change and variability through adaptation. The First NDC, as an instrument for implementing this Policy, prioritises within ComAd1, the development, approval and initiation of the implementation of National Adaptation Plans: NAPs for Coastal Zones, NAPs for Cities and Infrastructure, NAPs for the Agriculture sector; NAPs for Energy and NAPs for Health, based on detailed information on hazards, exposure, sensitivities and adaptive capacities of socio-ecological systems.

Both the incorporation of local, technical and scientific knowledge on the consequences of climate change, as well as decision-making to respond to its effects, were defined in accordance with the thematic particularities behind each NAP, and the planning of adaptation actions was focused on iterative mechanisms of consultation and adjustment with actors representing the specific area or sector. The SNRCC has been an active actor in each of the NAPA elaboration processes.

#### 7.4.2.1. National Adaptation Plan for the Coastal Zone (NAP-Coastal)

**Main achievements and progress:** The transfer of knowledge from international researchers (IH-Cantabria) to local researchers (University of the Republic) and governmental entities was ensured through the implementation of training strategies for technicians, professionals and decision-makers from Ministries and local governments.

In addition, the following are highlighted: coordination between administrations and integration of competencies beyond sector fragmentation; regional cooperation in addressing common issues; a long-term vision with an adaptive management approach; the provision of a general framework that can be targeted to local specificities and at different scales, from national to local.

Uruguay developed co-owned platforms (National Environmental Observatory; Viewer of the CRC Monitoring System), to ensure the long-term sustainability of the adoption of climate modelling and vulnerability assessment technology and to foster information and knowledge exchange between all levels of government and between academic and civil society networks.

To date, the NAP-Coasts is conceived as a working method that recognises all priorities related to climate variability and change throughout the decision-making processes. In this sense, this mechanism aims to cover all the structures necessary to generate the knowledge to be applied in strategic planning.

**Main barriers and challenges:** Coastal adaptation involves many challenges. Responses to climate change in the coastal zone will need to be multidisciplinary, socially complex, long-term and flexible to change. Without effective adaptation to the impacts of coastal climate change there will be major implications for Uruguayan society and the long-term sustainability of the coastal zone. Governments, businesses, communities and individuals all have a role to play in responding to climate change. However, the role of governments will be particularly important as effective adaptation actions will be largely underpinned by planning reform and updated building codes and practices led by the NCCP.

Technical barriers identified to address the impacts of climate variability and change in the coastal area included lack of quality data or lack of access to existing data, methodologies and tools to assess climate change risks and to implement adaptation measures or establish metrics and procedures to evaluate adaptation processes. Other barriers included coordination between national and local levels and lack of qualified human resources.

Historical databases and high-resolution dynamics projections developed by national researchers were necessary for impact quantification at the local scale. The improved national database and information systems on variables associated with marine dynamics now also serve as a reference for integrated coastal zone management, operational oceanography, infrastructure construction, coastal zone risk management, ecosystem resilience and tourism management.

Understanding the local impacts of climate change is an inherently dynamic process, and ongoing assessment and adjustment is necessary to propose effective adaptation measures. For ten years (2012-2022), Uruguay has focused on promoting the reduction of the gaps between the

existing knowledge and diagnosis of coastal vulnerability through public consultation activities on the need for adaptation measures.

Finally, most of the measures that could involve the participation of the private sector do not present, at least in the short term, economic benefits or profitability; the assets that will be mostly affected are public assets (beaches, waterways, port infrastructures) and therefore the investment and initiative will be mainly of the state. In this context, it should be properly identified what incentives the private sector (households, companies, financial sector) could have to get involved and design the most appropriate instruments to channel this participation, including surely public and private collaboration, and at national and sub-national level.

**Key lessons learned and good practices:** Evidence indicates that adaptation planning at the national level is stimulating adaptation planning at the departmental level. The maturity of adaptation planning instruments varies across departmental governments. Efforts to access adaptation finance have been strengthened and the development of technical assistance supported by national, departmental and multilateral funds has increased.

The successful adoption of climate modelling technology has not only enabled Uruguay to develop its NAP-Coasts, but also to enhance its capacity and secure funding for the implementation of adaptation measures. Therefore, the adoption of new technological developments has directly resulted in the achievement of two of the country's key adaptation objectives of the CRC.

Knowledge co-creation, capacity building and implementation of adaptation measures were coordinated among the six departmental governments through the implementation of 103 workshops to assess local stakeholder perceptions, incorporate knowledge from the scientific community and design adaptation responses to climate change. A total of 210 actions were identified, of which 33% concerned capacity building in departmental governments, 26% focused on coastal spatial planning and 25% proposed knowledge creation and the search for technological solutions.

By promoting the EbA approach throughout adaptation planning, initiatives to implement sand fences were supported, which proved to be successful in the medium and long term for the recovery of dune dynamics, and which included the participation of the local community and academia in different cases. This has allowed evidence to be generated on the benefits of EBA versus other types of hard measures, a path that needs to be pursued in greater depth.

The gender approach makes it possible to measure inequalities in access to and control of resources, as well as in participation in decision-making in the coastal zone. The technology made it possible to assess physical vulnerability from which the potentially affected social composition could be determined. In addition to the general impact on housing, the alteration of coastal space is also relevant because it serves for recreational purposes and as a transit zone to essential services, including health, education and access to employment. A gender approach was fundamental to analyse the differential uses and to determine precisely how this will be affected, allowing social vulnerability to be established from a process that integrates the needs of the population according to their specific reality.

#### 7.4.2.2. National Adaptation Plan for Cities and Infrastructures (NAP - Cities)

**Main achievements and progress:** Progress in institutional processes such as the elaboration of departmental plans for integrated risk management, climate action, rainwater and urban water drainage, and tree-planting plans and ordinances, among others, should be highlighted.

In terms of education and training, it was possible to promote lines of work for research, teaching and extension related to adaptation to climate variability and change (AVCC). These include curricular courses, vocational training activities, continuing education and non-formal education, research programmes on climate, public spaces and buildings, sustainable drainage, nature-based solutions (NBS), new technologies and materials, and the design of specific projects.

**Main barriers and challenges:** One of the main challenges of the NAP-Cities relates to the formulation, coordination, implementation and monitoring of the five-year action plans that follow up, promote and implement the adaptation actions identified and prioritised at the time of their elaboration. This can only be achieved by maintaining the principle of flexibility and adaptive management of the plan, the focus on knowledge improvement and continuous monitoring, evaluation and learning from each implementation cycle.

Another relevant challenge is linked to the continuity of partnerships and resource allocation through future changes in administrations and political authorities during the implementation horizon of the NAP-Cities.

In some institutions, changes in administration and authorities have brought changes in priorities and discontinuity in certain key adaptation activities; in some cases, after a period of slowing down, technical teams are resuming them, favouring continuity in climate policies and commitments.

It is also relevant to note that there are lines of work that still need to be prioritised. In particular the development and application of guidelines for the planning or implementation of HCV measures in different fields and the carrying out of studies on different topics.

**Main lessons learned and good practices:** Articulation in adaptation processes is key to ensure their implementation and continuity. During the NAP-Cities process, many of the enabling conditions were prepared for the development of the activities of the Uruguay-Argentina Regional Project: Adaptation to Climate Change in Cities and Vulnerable Coastal Ecosystems of the Uruguay River<sup>12</sup>, to be implemented between 2021 and 2024 and constituting an opportunity to apply and evaluate AVCC measures.

The Uruguay-Argentina Regional Project, as an articulating instrument between adaptation planning and implementation, includes actions such as: the diagnosis and restoration of key ecosystems for adaptation; the strengthening of networks in the territory to increase resilience in vulnerable communities; the redevelopment of land located in areas at high risk of flooding through the creation of public parks.

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<sup>12</sup> The Regional Project between Uruguay and Argentina: Adaptation to Climate Change in Vulnerable Cities and Coastal Ecosystems of the Uruguay River is financed by the [Adaptation Fund](#). Its general objective is to build resilience in cities and vulnerable coastal ecosystems of the Uruguay River, both in Argentinean and Uruguayan territory, through the development of instruments, tools and experiences for the planning and implementation of adaptation, as well as the management of the impacts and risks of climate change and variability.

One of the good practices to be highlighted focuses on ensuring the continuity of the technical approach to planning work, articulated with implementation. In this sense, the technical committee for the revision and formulation of the NAP-Cities has taken on a promotional and implementation role, as a driving group<sup>13</sup> representing the state institutions linked to the issue.

The NAP-Cities, in addition to incorporating a gender and generations with a human rights approach as a guiding principle of the document, categorises all measures according to their potential impact on gender inequalities. Within the interactive tool for monitoring the 41 measures of the NAP, it is possible to see the relationship of their potential impact on gender inequalities, with respect to the threats, the strategic lines of the document, by department and locality.

Regarding the EbA and BNS approach, a guide to key ecosystems for adaptation in Uruguayan cities to cope with floods, coastal erosion and high temperatures was generated in the framework of the NAP-Cities, particularly for use in territorial planning instruments such as local plans. This is a starting point for strengthening the baseline information on ecosystem services for climate change adaptation in cities. The Uruguay-Argentina Regional Project includes among its expected results the generation of evidence on the benefits of BNS for adaptation, both at the micro scale, with the implementation of green and blue infrastructure in a city in Uruguay, and at the macro scale, with the incorporation of adaptation measures in a protected area, under the concept that maintaining ecosystems in a good state of conservation increases resilience at the territorial level.

#### **7.4.2.3. National Adaptation Plan for the Agriculture and Livestock Sector (NAP-Agro)**

***Main achievements and progress:*** Since 2019, the NAP-Agro has been a strategic instrument for guiding public policies with a long-term vision of the productive, environmental, social and institutional dimensions. It seeks to integrate actions to adapt to climate variability and change for the agricultural sector and, at the same time, to identify gaps in knowledge and capacities to reduce vulnerability to the impacts of climate change and variability by building adaptive capacity and resilience. It also seeks to integrate the issue in a coherent manner into agricultural development policies and adaptation plans at the national level.

Since 2019, regarding the implementation of the co-innovation approach, to promote ecological intensification strategies in livestock systems, the Livestock and Climate project<sup>14</sup> is being implemented. To date, without a significant increase in input use, production per animal and per unit area and economic income have improved. This improvement in resilience was achieved while demonstrating a reduction in GHG emissions per ha and a decrease in GHG emissions intensity per kg. The results of two years of project implementation in an adverse climate context show a way to build resilience in natural field-based livestock systems through forage and herd management.

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<sup>13</sup> Working Group on Adaptation to Climate Change in Cities.

<sup>14</sup> The objective of the project is to promote the sustainable increase of productivity in free-range livestock farming and the income of farming families, while contributing to climate change mitigation, restoring degraded lands and improving the resilience of the systems.

In 2022 the Ministry of Livestock, Agriculture and Fisheries started the implementation of the SARU project<sup>15</sup> which addresses the four dimensions of the NAP-Agro 2050 strategy.

The project will implement various actions in line with the NAP-Agro that contribute to farm sustainability processes through the promotion of biodiversity in the farm system, maintenance or restoration of natural areas and the protection and efficient use of natural resources, maintaining or increasing ecosystem services. The project also prioritised equipping with technologies and infrastructure for effluent management, and the development of a pilot project that seeks to facilitate access to yield and/or investment insurance for summer crops, through the granting of economic support to participating producers.

**Main barriers and challenges:** The monitoring of progress in the implementation of the NAP-Agriculture detected that there are gaps in the information for reporting the indicator framework. Only 53% of the indicators could be reported completely. For the rest of the indicators there are gaps in the information or there are no sources of information for their calculation. Although progress in adaptation in agricultural systems requires a multidimensional analysis, it can be affirmed that progress was detected for the indicators calculated.

With regard to the 2025 action plan, the evaluation of the NAP-Agro identifies a number of challenges: a) Implementation was affected by both changes in funding sources and budget availability; b) Some measures were difficult to evaluate as the work plans do not have specific measurable targets; c) The most common barriers identified during the evaluation process of the implementation of the NAP-Agro action plan are the lack of institutional capacities, lack of funding sources, difficulties in institutional articulation, barriers to the adoption and transfer of technologies for production systems adapted to climate variability and change.

**Main lessons learned and good practices:** Regular monitoring is key to assess the progress of the NAP-Agro and to guide policies that contribute to the stated objectives. Monitoring of the indicator matrix and action plan was carried out in 2022. The exercise showed the need to strengthen statistics and indicators and the capacity to provide continuity to monitoring and verify that indicators are capturing the particularities of climate change adaptation in the agricultural sector.

With regard to the Action Plan, a series of initiatives and projects were implemented with a focus on institutional integration that seek to achieve both an improvement in the resilience of production systems by promoting agroecological transitions that allow for an improvement in the use and conservation of natural resources, improve the living conditions of people working in the sector and at the same time provide benefits in terms of reducing GHG emissions.

Some of the lines of work implemented since the launch of the NAP-agro are highlighted below:

- *Progress in lines of research* in integrated work with the National Institute for Agricultural Research and the University of the Republic that generate inputs to help develop production systems that are less vulnerable to climate.

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<sup>15</sup> The objective of the SARU is to: "strengthen public agricultural systems and rural producers to increase mitigation actions and adaptation to climate change and promote agro-ecological production".

- *Creation of the National System for Innovation and Rural Development (SNIDER) in order to direct, articulate and coordinate the design and implementation of the different actions aimed at Sustainable Rural Development.*
- *Information and monitoring of the agro-climatic situation to improve decision-making for climate risk management in agricultural establishments:* Monthly monitoring of indicators such as Available Water in soils, rainfall and its anomalies, Normalised Difference Vegetation Index (NDVI), Standardised Precipitation Index, Forestry Risk Index, Heat Stress Index in cattle, among others. In conjunction with the National Agricultural Information System of the MGAP (SNIA), the Agroclimate and Information Systems Unit of the INIA (GRAS Unit) and the Uruguayan Institute of Meteorology (INUMET).

The NAPAgro includes a gender perspective as a cross-cutting issue and addresses the role of rural women in particular. As part of the process for the elaboration of the NAP-Agro, nine Adaptation Dialogues were held with rural women active in dairy, livestock and horticultural production systems. At the same time, a survey was carried out in family and medium-scale dairy, livestock and horticulture farms, including gender aspects, in order to obtain differentiated information.

The 2025 Action Plan also incorporated specific measures such as: the incorporation of gender mainstreaming actions in policies to support family production; the implementation of affirmative policies focused on rural women and youth; the emphasis on the integration of women as target beneficiaries in the framework of promoting the adoption of Good Agricultural Practices and the integrated management of pests, diseases and weeds. The document incorporates gender-sensitive measures from the 2025 Action Plan, some of which are aimed at young people. Among them, the implementation of affirmative policies targeting rural women and youth. Regarding the Strategy 2050 indicators, some are gender-sensitive, such as access to agro-climatic information, membership in rural organisations, training processes and access to funds, among others.

#### **7.4.2.4. National Health Adaptation Plan (NAP-Health)**

***Main achievements and progress:*** Uruguay is currently initiating the process for the elaboration of its NAP-health. In the first instance, key actors from academia, professional societies and international agencies have been identified, while the technical teams of the Ministry of Public Health have been sensitised on climate change and health.

***Main barriers and challenges:*** In the process of developing this Plan, it has been identified that climate change is not only an environmental health problem but also a threat to general public health [23]. For this reason, the formation of a technical group on health and climate change has been proposed, made up of different areas (Directorates, Divisions, Departments and Programmes) that make up the organisational structure of the Ministry of Public Health (MSP).

One of the main challenges in terms of climate change is posed by vector-borne diseases such as dengue and leishmaniasis. Both, with clear climatic conditioning in their transmission cycle, have emerged epidemically in the last decade in Uruguay.

[24] [25] However, the challenge lies in generating models that consider environmental feasibility, as well as other determinants such as population movements, vector and reservoir ecology and socio-cultural conditions.



Another major challenge will be to mainstream health into the climate agenda. Currently the focus is on the sector's adaptation to meet the challenges of climate change. However, it would be desirable to consider and estimate the health benefits of measures in other sectors such as agriculture, energy and transport.

#### 7.4.2.5. National Energy Adaptation Plan (NAP-E)

**Main achievements and progress:** The NAP-E is in its development phase and is expected to be completed in 2023. The first milestone in the elaboration process dates back to 2020, when a roadmap for the development of the plan was drawn up. At that stage, consultation workshops were held with stakeholders from academia, government, public and private sectors, which allowed for a preliminary identification of the vulnerabilities of the energy system to climate change, and the information and knowledge gaps existing in the country.

The second stage of this preliminary phase was carried out in 2021-2022, with an in-depth study of the Plan's governance, the structuring of the NAP-E and the definition of the studies to be carried out for the analysis of climate risks and vulnerabilities.

- *Governance:* A Steering Committee was created, composed of the Ministry of Industry, Energy and Mining (MIEM) -the institution leading the NAP-E-, the MoE, the public energy companies UTE and ANCAP, and the OPP.
- *Structure of the NAP-E:* The main lines of action were defined for the definition of measures: Energy supply and energy demand; Securing / protection of current and future infrastructure; Climate emergency management / disaster risk reduction; Awareness raising, institutional strengthening and capacity building; Integration of adaptation into energy and climate planning processes.
- *Analysis of Climate Risks and Vulnerabilities:* a study was defined under the robust decision making methodology (RDM) for the analysis of the electricity sector, framed within the methods of decision making under deep uncertainty (DMDU). These methods are suited to the development of robust and adaptive policy strategies in contexts of high uncertainty, such as those that exist particularly in the energy sector and the climate issue. Work is currently underway to define local teams for the implementation of the studies during 2023.

**Main barriers and challenges:** Some information and knowledge gaps have been identified for carrying out projection studies of climate variables relevant to the energy sector; in particular, long and consistent series of solar irradiance, average wind speed and wind gusts, among others. These databases have begun to be built in the country since the installation of wind farms and photovoltaic solar energy, but their data have series that are at best 10 years old.

As for extremes, phenomena that are much more punctual and difficult to observe and predict, such as thunderstorms, hail storms, wind and precipitation extremes, they are more difficult to study due to the lack of adequate instrumentation and measurement networks.

As for the analysis of the impacts of these phenomena on energy supply, infrastructure and users, it is also challenging to register damages and losses in the country, an aspect that will be one of the focuses of action of the NAPE.

On the other hand, the mainstreaming of the concept of adaptation in the energy sector is also a challenge on which the NAP-E will take action, through measures that seek to improve the understanding of the issue by all actors in the sector.

In particular, the energy sector, and mainly the electricity sector, already has a long history of adaptive response measures, mainly to resource variability conditions for hydropower generation; as hydropower accounts for approximately 40-50% of electricity generation and the high inter-annual variability of rainfall generates very changeable supply scenarios. While this can be an advantage, it also generates an inertia that is sometimes difficult to break when other dynamics of energy resource availability must be incorporated in the long term, due to climate change.

**Main lessons learned and good practices:** The fact that the elaboration process is being carried out in a participatory manner with the main actors in the sector (academia, government, state-owned companies, private companies, etc.) in order to include different visions and move forward together, facilitates understanding and will undoubtedly facilitate the stage of elaboration, discussion and implementation of adaptation measures.

In addition, the leadership and commitment shown by the government, as well as the coordination with the entire mitigation and adaptation ecosystem in the country, which is carried out through the SNRCC, is fundamental for the development and implementation of the Plan.

## 7.5. Adaptation efforts to be recognised

**Planning:** Uruguay has dedicated significant time and resources to strengthen adaptation planning by area and sector, as well as the inclusion of cross-cutting issues, including climate risk management, flood risk mapping and land-use planning, with a focus on gender, diversity, human rights and generations throughout the process.

**Training, Awareness Raising and Participation:** In the process of drafting the PNCC, the NAPs and the CRC there has been progress to highlight in the mainstreaming and weight of adaptation in public policies and development policies, in relation to the process of the Sustainable Development Goals and the 2030 Agenda (SDGs). To achieve this, the articulating role of the SNRCC and the departmental governments has been substantive. It should also be noted that these documents were produced in a participatory manner, which has strengthened legitimacy and awareness. The gender issue, as a cross-cutting aspect of the policies, has also been made visible and implemented through these processes. The work of the technical teams has been remarkable and has been strengthened over time by improving planning, communication and reporting systems.

**Integration of the perspective of children and adolescents:** Uruguay has made progress in integrating the perspective of adolescents and young people, recognising their right to participate in the design of the second CRC and contributing to strengthening training and empowerment aspects. The challenge is to increase child-sensitivity across the board, recognising that children bear a disproportionate share of the burden imposed by climate change. Extreme weather events such as floods, droughts, cold and heat waves pose unique threats to children's health and well-being. Vulnerability to climate change is visible in economic, physiological, social, political and environmental dimensions, and for this reason, it is a priority that climate change commitments defined by different public policies are child-sensitive.

**Relocations as housing policy:** Uruguay has advanced in the process of mainstreaming climate change adaptation in housing policies, where relocation policies, promoted and monitored by the first CRC, constitute concrete efforts for recognition, highlighting that such actions are carried out with national funding.

**Ecosystem-based Adaptation:** Uruguay has prioritised adaptation measures with a focus on EbA in the process of preparing its NAPAs. The efforts made for their implementation can be identified in coastal management, specifically in pilot sites that have allowed validation of their effectiveness and replicability along the coastal zone. In addition, sustainable urban drainage systems (SUDS) have been implemented in several cities, in a joint effort between the national and departmental governments and academia, laying the foundations for incorporating this approach into the development of the future National Urban Drainage Plan.

**Diversification of the energy matrix:** Uruguay has stood out as one of the countries with the highest proportion of renewable energy in its electricity matrix, despite being a developing country. This transformation, which has been carried out early and with national effort, has allowed not only a rapid decarbonisation of the electricity matrix, but also an increase in energy sovereignty and a decrease in the uncertainty of the cost of supplying the demand (CAD). On the other hand, with regard to climate change adaptation, the first energy transition can be considered as a major adaptation measure. The diversification of the electricity matrix towards non-traditional renewable sources has made it possible to reduce dependence on one of the fundamental sources of electricity in our country, hydropower, which is affected by the AVCC. The capacity installed in other energy sources such as wind, solar and biomass has made it possible to reduce the vulnerability of the system to low hydropower which, before the energy transition, led to the use of significant percentages of fossil fuels as an alternative and complementary energy source. Currently, the country has an electricity system that allows it to maintain very high levels of renewable sources even if rainfall levels are below or well below the historical average, thanks to the diversification of its electricity matrix.

**Flood risk maps (MDRI):** Currently in Uruguay there are 11 towns with a very high risk of flooding, 15 with a high risk and 42 with a medium risk, totalling 68 towns. Of these, 9 have MDRI approved by the departmental board, 7 have an MDRI prepared, another 7 are in the process of being prepared, and in 27 cities there is progress and studies have been carried out. In addition to the efforts to elaborate new risk maps, the first updates of some of those already elaborated are being carried out. Risk mapping is a dynamic process, the information available for risk characterisation is increasingly greater and of better quality, and the dynamics in the territory are changing, in this sense the aim is to get closer to the best possible risk map with the updates.

**Gender mainstreaming:** Gender mainstreaming involved technicians and decision-makers with different initial levels of approach to the issue, which resulted in a strengthening of capacities regarding the link between the measures of the first CRC and inequalities. In this first phase, categorising 100% of the measures involved in the first CRC meant mobilising capacity-building strategies and awareness-raising on gender and climate change respectively, as well as sectoral gender analyses to identify specific gaps and risks. The review and update of the first categorisation in 2021 showed a significant increase in gender-responsive measures, indicating that there is a set of gender-responsive actions involved, which are integrated in the respective planning.

## 7.6. Barriers and challenges to implementing adaptation

One of the main challenges is to ensure that adaptation is included as a fundamental part of the country's development strategy, under a framework for climate risk management that includes adaptation measures that are flexible to the socio-territorial context, so that it is possible to moderate or avoid irreversible damage and simultaneously generate co-benefits.

Long-term planning, and the human and financial resources allocated for this purpose, can be conflicting between areas experiencing current difficulties. An important issue for the success of these initiatives is to reduce current climate vulnerability while strengthening the adaptive capacity of the population and strengthening the resilience of systems. Development objectives are consistent with adaptation goals, especially when they offer complementary benefits such as investments that improve incomes and increase tolerance to climate stressors (such as high temperatures, lack of water, and floods). Development gains often increase human (and other types of) capital and could improve adaptive capacity to climate change. It is noted that, in several areas, the most attractive adaptation measures are those that offer development benefits in the short term and reduce vulnerability in the long term. In this sense, adaptation costs will initially be allocated to preventive measures, while in the long term reactive measures will increase in importance.

In accordance with the ComAd2 elaboration process, explained in section 7.1.2, a workshop<sup>16</sup> was held with the institutional technical referents of the SNRCC linked to adaptation, in which the following barriers to the implementation of adaptation were identified:

**Knowledge and Technology:** Lack of knowledge, lack of access to information and difficulty in accessing information are severe constraints to adaptation. In the country, several constraints associated with this category were detected: i) Lack of climate information: The scarcity and lack of data recording and the difficulty in obtaining high resolution, high quality and continuous climatic, oceanic and hydrological series, together with the existence of few complete national studies, pose challenges for dealing with changes in climate variability and identifying trends in the impacts of extreme events. This situation hinders studies of the frequency and variability of the frequency and magnitude of extreme events, as well as analyses of present and future climate impacts and vulnerability. ii) Lack of studies associated with climate action and inaction: Studies linked to the cost-benefit of implementing adaptation actions and the costs avoided, as well as the recording of impacts related to events derived from climate change and variability in most areas (agriculture, water resources, biodiversity and ecosystems, coasts, health, cities) to improve the assessment of losses and damages. iii) Lack of adequate dissemination of information: Studies are often left in the form of internal reports that are not widely disseminated and are difficult to access. (iv) Lack of integrated and interdisciplinary studies: The complex interactions between climate and non-climatic forcings make it difficult to assess impacts and projections, limiting the understanding of the complex interactions between natural and socio-economic systems.

**Governance:** Institutional capacity is a key factor that can potentially constrain the adaptation process. In several institutions, lack of mandate or prioritisation of the issue, as well as lack of information or professional capacity to select and implement adaptation options is a constraint. Lack of coordination among the various actors in governance networks (government, market actors, NGOs) is often a major national constraint. For

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<sup>16</sup> [Digital Citizen Participation Platform](#) for the elaboration of CRC2 on Climate Change.

Therefore, the challenge in adaptation planning and implementation is to determine "who" decides which options are appropriate or mal-adaptation options and which options are successful or unsuccessful. An exchange of ideas between sectors with different views and interests is necessary to try to reconcile positions and move forward in a consensual manner. The constant and varied interactions between climatic, environmental, economic and social factors highlight the need for integrative actions that address the diverse challenges facing human and natural systems.

**Financing for climate action:** Uruguay is a country particularly vulnerable to the adverse effects of climate variability and change. This is especially due to its open economy based heavily on agro-industrial production and services, and the important tourism sector centred on the coastal zone, which is home to more than 70% of the country's population. In the pilot report on the assessment of losses and damages due to weather-related events, for the year 2018, 32 types of events were identified that generated losses and damages of almost USD 564 million. The country has made significant progress in establishing the baseline, diagnosis and adaptation planning, by finalising three NAPAs and initiating the elaboration of two others. It is therefore essential that funding is made available to enable progress from planning to actual implementation of the adaptation measures identified as priorities through the NDC2 and NAPAs.

Access to finance for the implementation of adaptation is a political priority for Uruguay, although, in a complementary way, the country has been a pioneer in the implementation of early mitigation measures. Access to and availability of funding sources for adaptation actions, at national and mainly sub-national levels, from both international and public sources, remains a challenge. Additional international resources are needed to address adaptation, both through traditional and innovative mechanisms. Addressing adaptation as early as possible helps to avoid future costs related to loss and damage. In this sense, adaptation needs to be understood in its strategic importance and there needs to be a global response to balance resources for mitigation and adaptation in the shortest possible time.

**Engaging the private sector:** Adaptation to climate change impacts is not the sole responsibility of governments, but requires the cooperation of multiple parties [26]. In this framework, involving the private sector in the identification of climate change risks, as well as in response measures and adaptation is a priority for Uruguay. While in the first instance the focus is on the role of the private financial sector (risk management options, insurance or financing of large projects), the implementation of adaptation actions is broader and encompasses different types of private companies; be they small farmers, small and medium-sized enterprises or even multinational companies [27]. This diversity of actors requires a greater effort to identify the different motivations and incentives that will guide their actions and the potential for them to participate in different adaptation strategies and measures. On the one hand, productive activity generates impacts that can reduce the adaptive capacities of a territory (e.g. impacts on coastal ecosystems) or of certain communities. On the other hand, the risk linked to the effects of climate change is greater for certain production chains or lines of business. The vision of companies on the need to adapt is conditioned by several factors: their previous experiences, insofar as companies that have already experienced negative impacts due to current climate variability and extreme events tend to be more committed to climate change adaptation; whether the affectation or impact is registered on public goods (e.g. beaches) or private goods (agricultural production); the uncertainty of future climate impacts and the short-term horizon used in business management.

[28] Moreover, companies would be more willing to adapt if they receive incentives or subsidies to help them cope. Finally, given the research requirements that these processes entail, the

The provision of knowledge, technology and information guidance to this sector is a key challenge in facilitating the incorporation of adaptation into companies' business models.

**Ecosystem-based Adaptation:** Although Uruguay prioritises the EbA approach in its planning, more efforts are needed to link ecosystem functions and services at the territorial level to the reduction of specific vulnerabilities, to build cases and good practices that include cost-benefit or cost-effectiveness analyses, and to make EbA explicit when they are used. Technical capacities at national and sub-national levels, as well as those of the private sector such as infrastructure and construction services companies, need to be strengthened with this approach. If it is a challenge to access financing for adaptation, it is even more challenging when it comes to EbA, as it requires a greater effort in the initial design of solutions and the analysis of their cost-effectiveness. It is therefore essential to generate knowledge of EbA applied to the territory and make it visible as an effective alternative, with a focus on environmental integrity.

**Political will:** in some cases creates constraints or barriers that slow down the planning and implementation of adaptation options and reduce the range of options and opportunities available for action, creating tensions between long-term needs and short-term action. Administrative changes sometimes lead to shifting priorities in agendas and discontinuity of plans, programmes and projects. Capacity building at all levels of public administration is needed to align objectives and development pathways and to make visible the synergies and co-benefits between adaptation measures and improvements in environments, infrastructure and people's quality of life.

#### **7.7. Good practices and lessons learned:**

**Inter-institutional, multi-level and transdisciplinary governance.** The generation of a framework for inter-institutional governance and a multi-level and transdisciplinary approach to climate change adaptation is a good practice to highlight, which Uruguay intends to maintain and deepen. The adaptation measures of CDN1 and ComAd1 are implemented within the framework of the SNRCC and the NAPAs created their respective technical committees within the framework of the SNRCC, which were maintained as a technical decision-making and advisory body throughout the development of adaptation planning in each sector or territory. These committees were made up of technicians from each unit of the SNRCC institutions with competences in the productive sector or territory addressed, experts from the University of the Republic, and representatives of the departmental governments.

Creating and maintaining a national inter-institutional arena where shared objectives for climate change adaptation are established, adaptation actions are designed, implemented, monitored and evaluated, progress is transparently shared and transdisciplinary participation is ensured, enriches results, institutionalises processes, and builds capacity at national, sub-national and academic levels.

Evidence also indicates that adaptation planning at the national level is stimulating adaptation planning at the departmental level. Multi-level governance allows for dialogue between national and departmental levels, and the encouragement and progress of some departments in adaptation planning and implementation, resulting in a maturity of adaptation planning instruments that varies across departmental governments. These are key components to ensure the sustainability of adaptation in Uruguay and that planning is transformed into implementation based on local contexts.

**Ecosystem-based Adaptation.** Considering that adaptive capacities depend on environmental integrity, biodiversity conservation and ecosystem health, and recognising the role that ecosystems can play in the design of solutions, the EbA approach has been strengthened for the design of

ComAd2 measures, increasing in number and ambition the measures in the area of biodiversity and ecosystems compared to ComAd1, as well as mainstreaming the approach in other areas.

**Transparency, monitoring, evaluation and learning.** The relevance of measuring and reporting climate change adaptation has been demonstrated. The methodologies used to monitor ComAd1 adaptation measures, which were able to quantify progress towards the targets set, have made it possible to translate into concrete methodological processes the meaning of adaptation for the local context, define the baseline and estimate progress on adaptation priorities, as well as what remains to be done. Due to the multidimensional and qualitative nature of adaptation, these methodological processes need to be updated and improved for a much more accurate monitoring, starting from the moment of designing the measures. At the same time, it is important to establish a mechanism for monitoring, evaluating and learning from the measures in terms of progress in their implementation, as adaptive management is a fundamental part of climate change adaptation processes. Likewise, the definition of metrics and indicators for monitoring adaptation measures has made it possible to identify crossovers, co-benefits and sometimes *trade-offs* with climate change mitigation measures. In this way, synergies between adaptation and mitigation and possible points of conflict are made visible, which is key to ensure the efficiency of the efforts and resources allocated to implement the measures, as well as to report on their progress.

**Generation of open access information and data.** The existence of quality and freely accessible data and records on hydroclimatic events at national and regional scales within the country, as well as the losses and damages generated by them, is recognised as a priority for improving the adaptive capacities of the country and productive sectors. Uruguay has made significant progress in terms of its governance and open data policy, in the generation of integrated information systems and visualisers, and in the collection of evidence and data, which it should continue to strengthen.

**Stakeholder participation.** One lesson learned is that there is willingness and interest on the part of local communities, civil society associations, micro, small and medium-sized enterprises, the third level of government and young people - as affected actors, but also as drivers of development at the local level - to participate in the identification of vulnerabilities and the planning and implementation of solutions to increase adaptive capacity and manage risks in the face of climate change. In this regard, it has been identified that there is a need to develop or strengthen processes and tools tailored to the areas of activity of each stakeholder group to ensure increasingly efficient participation.

**Gender mainstreaming.** The review and update of the ComAd1 gender measures carried out on the first categorisation of the year 2021 showed a significant increase in gender-responsive measures, indicating that there is a set of gender-responsive actions involved, which are integrated in the respective planning.

## **7.8. Cooperation to enhance adaptation at national, regional and international levels**

In a framework of climate risk, with increasingly frequent and severe impacts and uncertainty, it is essential to strengthen cooperation at national, regional and international levels to improve the implementation of adaptation actions.

At the national level, Uruguay has the SNRCC, an inter-institutional technical exchange forum, made up of different ministries and other bodies, such as the congress of mayors, various civil society actors and academia.

As part of the functioning of the SNRCC, in addition to the coordination group (GdC), several working groups have been formed by technical representatives of the institutions according to the various topics related to climate change. In the case of adaptation, there are two directly related groups, the Working Group on Adaptation to Climate Change (WGCA) and the Working Group on Adaptation in Cities, which was initiated in the framework of the elaboration of the NAP Cities and which, after its submission to the UNFCCC, is responsible for reviewing, updating and defining the five-year work plans and promoting the adaptation actions of the NAP Cities. There is also a network working group with the municipalities of the coastal departments, Colonia, San José, Montevideo, Canelones, Maldonado and Rocha, to follow up on the actions being planned within the framework of the NAP Coastal.

Other Working Groups that have been formed, with more cross-cutting themes but which contribute to the development of adaptation actions are: on Loss and Damage; on climate services; on gender; and on education, communication and awareness-raising.

At the regional level, participation is accentuated in areas where the relevance of climate change adaptation has been highlighted, such as the Meeting of Environment Ministers of MERCOSUR and the Community of Latin American and Caribbean States (CELAC).

On the other hand, in addition to the possibility of advancing in regional climate change adaptation projects, both the EU's Cooperation Programme with Latin America and the Caribbean - EUROCLIMA, as well as the Ibero-American Network of Climate Change Offices (RIOCC), constitute important spaces for the exchange of good practices at the regional level.

As concrete initiatives at the regional level, the Binational Project (Uruguay - Argentina): Adaptation to Climate Change in Cities and Vulnerable Coastal Ecosystems of the Uruguay River is being implemented. This project is financed by the Adaptation Fund and its programme enables the implementation of pilot adaptation actions to reduce vulnerability to floods and improve knowledge and management of river ecosystems. Uruguay is also part of the development, together with Argentina, Bolivia, Brazil and Paraguay, of the Strategic Action Plan of the La Plata Basin (PAE), which promotes adaptation actions focused on integrated water resources management, risk management, sustainable land management, research and technological development, among others.

At the international level, Uruguay participates actively in the climate change negotiations that take place mainly within the UNFCCC. In this context, Uruguay considers compliance with the provisions on international cooperation established in the UNFCCC and the Paris Agreement to be particularly relevant.

It also stresses the importance of achieving the global adaptation goal set out in the Paris Agreement, for which it is essential to make solid progress and strengthen international cooperation to address the challenges on methodological, empirical, conceptual and political visions to achieve this goal.

In this sense, Uruguay is committed to working to contribute to the global goal on adaptation, as well as to the global balance in relation to adaptation, and as a concrete action, the presentation of three national adaptation plans (NAPA Agro, NAPA Coasts, NAPA Cities and Infrastructures) as well as two additional ones that are in the process of being prepared (NAPA Health and NAPA Energy), in addition to the first ComAd and the present one, stand out.



## **7.9. Monitoring and Evaluation**

The adaptation measures included in the first CRC have been monitored and the assessment of progress in their implementation has been reported in detail in the public viewer of its monitoring system<sup>17</sup>. Efforts have been made to show progress in the implementation of adaptation measures, generating management indicators based on the fulfilment of milestones or stages defined for each measure, which account for progress in a transparent manner, making it possible to express it in a quantitative way.

The evaluation of adaptation actions in terms of impact continues to be a challenge, both for the follow-up of ComAd1 and for the follow-up planned for this ComAd2. In addition, there is the challenge of migrating towards a monitoring, evaluation and learning (MEL) framework that is emerging as an international trend. However, it is considered that this metric, in addition to monitoring the management of adaptation actions, allows for the assessment, adjustment and adaptation of methodological processes to improve the development of strategies and actions to reduce vulnerability, increase adaptive capacities, identify risks, strengthen the resilience of socio-ecological systems and significantly reduce Losses and Damages.

Another aspect to highlight of the MEL framework is the opportunity for learning, exchange of good practices and the potential for improvement in adaptation processes, considering: the influence of the particular context where adaptation actions are implemented; the changing climate circumstances that require greater flexibility as an intrinsic principle in adaptation processes; the uncertainty about the direct and collateral effects of adaptation actions; and the need to generate co-benefits with local development and social welfare of the population.

The monitoring and evaluation of ComAd2 measures linked to the NAPs will be supported by the monitoring and evaluation plans defined within each NAP. This will imply a parallel effort and a need for coordination and mutual support between the responsible teams.

Progress on the MEL on adaptation of ComAd will be reported in Biennial Transparency Reports, in accordance with the guidelines set out in the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement Guidelines (Decision 18/ CMA.1).

MEL's work will include reviewing, monitoring and updating gender measures in each of the ComAd measures, continuing the efforts already made to achieve a gender-responsive monitoring system.

## **7.10. Means of implementation**

This National Adaptation Communication is considered necessary and a priority for Uruguay to face the challenge of climate change and advance on the path of sustainable development. Uruguay is a country particularly vulnerable to the effects of climate change, which will need to generate more opportunities for its inhabitants, combat poverty and destitution, and achieve a higher level of social equity while conserving its ecosystems and biodiversity.

The implementation of this Communication will only be possible through access to means of implementation external to the country, mainly from non-reimbursable funds, but also through access to financing on preferential terms, technology transfer, capacity building, etc., as well as through the development and implementation of a new strategy for the implementation of the Communication.

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<sup>17</sup> See [UNCRC Progress Visualiser and other related indicators](#).

and foreign direct investment from developed countries. Uruguay understands that the availability of means of implementation provided by developed countries is a prerequisite for the implementation of climate action to take place in a framework of just transition and climate justice.

Uruguay has a track record of compliance and transparency in receiving external means of implementation for climate action. The implementation of this ComAd and climate urgency require that the flow of means of implementation into the country accelerates considerably. In this sense, Uruguay is an ideal destination for the implementation of pilot actions that can then be replicated in other countries.

Beyond the adaptation efforts implemented and to be implemented in Uruguay, the impacts of climate change result in losses and damage to Uruguayan society, livelihoods, infrastructure and ecosystems, and Uruguay needs access to funds specifically designed for this purpose.

## **8. Information to facilitate clarity, transparency and understanding of the Second Nationally Determined Contribution**

### **8.1. Scope and coverage**

Uruguay's NDC2 mitigation targets cover emissions of the gases CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O and the consumption of HFCs that occur in the national territory and which together account for 99.2% of Uruguay's CO<sub>2</sub>-eq emissions in the INGEI 2019 (GWP<sub>100</sub> AR5).

In respect of the provisions set out in the Paris Agreement, only the unconditional targets in Section 5.1.1 shall be bindingly subject to the procedures of the enhanced transparency framework for action and support defined in Article 13 [1] and to any provisions relating to the non-punitive and non-adversarial mechanism to facilitate implementation and promote compliance defined in Article 15 [1], and as decided by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

### **8.2. Main assumptions**

Uruguay's NDC2 mitigation targets were defined considering the country's current development path, not including structural transformations of its productive matrix by 2022 and considering official economic growth projections covering the period 2022-2026 and assuming potential GDP growth between 2027 and 2030.

To define the 2030 CO<sub>2</sub> target value for Section 5.1.1.1, the following fleet of electric vehicles is assumed: 900 buses, 600 taxis, taxis, remises and digital applications, 5,000 utility vehicles and 20,000 light-duty vehicles. It also assumes the following process improvements at the ANCAP refinery: substitution of fuel oil consumption by natural gas, increased condensate recovery and advanced control in some processes and equipment. In turn, to define the target value conditional on specific additional means of implementation, a fleet of approximately 600 hydrogen trucks is assumed.

### **8.3. Methodology for estimating emissions and removals**

Uruguay's NDC2 mitigation targets were prepared using the 2006 IPCC Guidelines. They will be monitored using this or another methodology in accordance with the Intergovernmental Panel on Climate Change and approved by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

### **8.4. Implementation and reporting period**

The implementation of CRC2 can start before 2026 and its effects will be reflected in the Biennial Transparency Reports submitted between 2028 (INGEI 1990-2026) and 2034 (INGEI 1990-2032), given that in order to calculate the values of the indicators in section 5.1. it is necessary to have an estimate of the INGEI 2031.

### **8.5. Types of unconditional and conditional targets and measures conditional on specific additional means of implementation**

Uruguay's unconditional NDC2 mitigation targets to 2030, as well as the mitigation actions included in Section 5.3.1, may include the use of Foreign Direct Investment, the

The Kyoto Protocol's Clean Development Mechanism, Article 6 of the Paris Agreement [1], as well as various means of implementation support, including finance, technology transfer and capacity building.

Uruguay's 2030 NDC2 mitigation targets of Conditional scope, as well as the mitigation measures included in Section 5.3.2, shall be supported by specific additional means of implementation, such support being primarily, but not exclusively, external public non-reimbursable and/or concessional finance. In all cases these supports will be defined by Uruguay and so reported on a case-by-case basis and in relation to the corresponding conditional objectives in Section 5.1.2 and/or measures in Section 5.3.2.

#### **On measures under Chapters 4 and 6:**

The measures listed in Chapters 4 and 6 have been considered necessary and a priority by Uruguay to address the challenge of climate change through adaptation and capacity building and knowledge generation. However, the full implementation of these will require support from means of implementation, including financing, technology transfer and capacity building.

### **8.6. Definition of target year and data sources to facilitate the monitoring of mitigation targets under Article 13 of the Paris Agreement and decisions 1/CP.21 and 4/CMA.1**

#### **Definition of target year and identification of sources to verify global GHG emission targets:**

- The target year is 2030, from 1 January to 31 December 2030;
- CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions will be those reported in the INGEI 2030 considering those subcategories of emissions estimated in the INGEI 2019 (last INGEI available at the time of preparing the CDN2), without considering category 3.B. Land (category according to IPCC 2006 Guidelines) or subcategory 3.C.4, source F<sub>SOM</sub>, which depends directly on category 3.B. Land. This source accounted for less than 0.78% of national emissions in the INGEI 2019 (without considering category 3.B. Land). B Land showed net removals over the entire 1990 - 2019 series and for this category specific targets for conservation and enhancement of carbon stocks are set with respect to Land Use and Forestry.
- Emissions of SF<sub>6</sub> are not included, as it represents less than 0.003 % of national emissions (without considering category 3.B Land).
- The CO<sub>2</sub> target in Section 5.1.1.1 may be adjusted according to 2030 hydraulicity conditions as follows:
  - In the event that hydropower generation in 2030 is greater than or equal to 6,070 GWh<sup>18</sup>, the 2030 target value, in Gg CO<sub>2</sub>, will be the value given in Section 5.1.1.1 of this CRC;
  - In the event that hydropower generation in the year 2030 is less than 6,070 GWh, the value of the 2030 target in Section 5.1.1.1 of this CRC, in Gg of CO<sub>2</sub>, shall be increased by the value resulting from subtracting the CO<sub>2</sub> emissions from category "1. - Electricity generation" of the year 2030, the CO<sub>2</sub> emissions from exported electricity generation of the year 2030 and 440 Gg of CO<sub>2</sub> corresponding to the level of emissions from electricity generation in a year of average hydraulicity, according to the following formula:

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<sup>18</sup> Generation level assuming average hydraulicity value.

- Target value 2030 (in Gg CO<sub>2</sub>) =  $X + (Z - Y - 440)$
- Being:
  - X = 2030 CO<sub>2</sub> target value as stated in Section 5.1.1.1 of this CRC, Gg.
  - Z = CO<sub>2</sub> emissions of the category "1. - Electricity generation" in the year 2030, according to INGEI 2030, Gg.
  - Y = CO<sub>2</sub> emissions from exported electricity generation in the year 2030, published in the National Energy Balance 2030, Gg.
  - 440 = Level of CO<sub>2</sub> emissions from electricity generation in a year of average hydropower considering projected energy demand to 2030, Gg.
  - (Z - Y - 440) shall be less than or equal to 1,350 Gg CO<sub>2</sub>.
  - If (Z - Y - 440) is negative, the value 0 shall be taken.
- The HFC consumption reduction target is defined in relation to a baseline to be established on the basis of the average consumption for the years 2020 to 2022, as indicated in the text of the Kigali Amendment to the Montreal Protocol approved in 2016; this value will be reported to the Ozone Secretariat as appropriate.
- The consumption (assimilated to import) of HFCs will be as reported as activity data in the INGEI 2030.

**Definition of target year and identification of sources to verify specific GHG emission intensity targets for beef production:**

- CH<sub>4</sub> and N<sub>2</sub>O intensity in 2030 (Gg Gas/Gg live weight of beef) is estimated as the average of the annual intensities for the period 2027 - 2031 without considering the annual maximum and minimum values in the calculation, with CH<sub>4</sub> and N<sub>2</sub>O emissions for the years 2027 to 2031, emissions are those reported in the INGEI, considering only CH<sub>4</sub> emissions from enteric fermentation and manure management and N<sub>2</sub>O emissions from direct and indirect emissions in managed soils from the excretion of non-dairy cattle grazing. Beef production, measured as Gg of beef in live weight, for the years 2027 to 2031, will be as reported in the Statistical Yearbook of the Directorate of Agricultural Statistics (hereinafter: DIEA) of the Ministry of Livestock, Agriculture and Fisheries (hereinafter: MGAP).

**Definition of target year and identification of sources to verify specific targets for conservation and enhancement of carbon stocks with respect to Land Use and Forestry:**

- Area of native forest: area reported for the year 2030 in the Forestry Cartography of the General Forestry Directorate (hereinafter: DGF) of the MGAP.
- Forest plantation area: effective area under forest plantation management in 2030, reported in the Agricultural Statistics Office (DIEA).
- Area of forest plantations for shade and shelter, including silvopastoral systems: 2030 area of forest curtains, shelter and shade forests, including silvopastoral systems, reported in the DGF-MGAP Forest Cartography.
- Area of pastureland under good management practices of the natural field and the breeding herd: this is the result of the systematisation of information gathered from a survey of livestock producers on the management of the natural field and the practices carried out with cattle and sheep.
- Peatland area: the peatland area in 2030 will be obtained from mapping work using satellite imagery and field verification.

- Crop area: The cropped area under Soil Use and Management Plans of the year 2030 will be obtained from the database of the PUMS management system of the General Directorate of Natural Resources of the MGAP. The area that allows COS levels to be maintained will be the area of crops that include pastures in more than 30% of the rotation length. The area that allows increasing COS levels will be the area of crops that include pastures in more than 60% of the rotation length.

#### 8.7. Base years, base year values or latest available data of the mitigation targets of the CRC2

##### Latest available data on global GHG emissions targets:

- 6,707 Gg  $\text{CO}_2$ , according to INGEI 2019 (latest INGEI available at the time of preparing the CDN2), without considering category 3;
- 760 Gg  $\text{CH}_4$ , according to INGEI 2019 (latest INGEI available at the time of writing of the CDN2), without considering category 3;
- 25 Gg  $\text{N}_2\text{O}$ , according to INGEI 2019 (latest INGEI available at the time of writing of the CRC2), without considering category 3.B Land and subcategory 3.
- Metric tons for each HFC, according to activity data reported in the INGEI 2019 (latest INGEI available at the time of compiling the CRC2). The values are presented in the table below:

Gas	Metric Ton
HFC-32	25,018
HFC-134	89,578
HFC-125	51,038
HFC-143a	26,543
HFC-227ea	0,900
HFC-152ND	-
HFC-23	-
HFC-245fa	-
HFC-365mfc	-

##### Base years and base values of specific GHG emissions intensity targets for beef production:

- Emissions of  $\text{CH}_4$  from enteric fermentation and manure management of non-dairy cattle and direct and indirect emissions of  $\text{N}_2\text{O}$  in managed soils from excretion of non-dairy cattle for the period 1987-1989 and 1991 are estimated by technicians of the Office of Programming and Agricultural Policy (OPYPA) of the Ministry of Livestock, Agriculture and Fisheries (MGAP). These emissions for 1990 are taken from the INGEI for that year. Beef production (Gg of beef in live weight) for the period 1987 to 1991 is also estimated by the aforementioned office. Detailed information on the calculation methodology is available in the study by Bervejillo, J and García, F. published in the OPYPA Yearbook 2018<sup>19</sup>. The values are presented in the table below:

<sup>19</sup> [Yearbook 2018 OPYPA](#), MGAP Edition 26.

Absolute values						
Gas and Activity	Unit / Year	1987	1988	1989	1990	1991
CH <sub>4</sub> Beef Cattle (GCV)	Gg	517.76	546.55	532.87	485.06	469.49
N <sub>2</sub> O Beef Cattle (GCV)	Gg	15.69	16.57	16.15	14.70	14.23
Live weight of cattle produced	Gg	850.11	656.09	346.96	567.88	714.94
Relative values - Intensity						
Gas and Activity	Unit / Year	1987	1988	1989	1990	1991
CH <sub>4</sub> Beef Cattle (GCV) / Live weight of beef cattle produced	Gg/Gg	0.61	0.83	1.54	0.85	0.66
N <sub>2</sub> O Beef Cattle (GCV) / Live weight of cattle produced	Gg/Gg	0.02	0.03	0.05	0.03	0.02
Base Values						
Gas and Activity	Unit / Year	Values				
CH <sub>4</sub> Beef Cattle (GCV) / Live weight of beef cattle produced	Gg/Gg	0.78				
N <sub>2</sub> O Beef Cattle (GCV) / Live weight of cattle produced	Gg/Gg	0.02				

- Emission estimates can be modified, affecting the results, due to improvements in estimation methodologies. When a change in estimates is made for a given year, GHG emissions and removals for the entire series, including the base year, must be revised and eventually recalculated to obtain a consistent time series. In the latter case, estimates of the values for the years 1987, 1988, 1989 and 1991 are calculated from the implied emission factor for the year 1990 multiplied by the number of heads in the corresponding year.

#### Base years, base year values or latest available data for the specific targets for conservation and enhancement of carbon stocks with respect to Land Use & Forestry

- -Area of native forest: 2012 area, reported in DGF-MGAP Forest Mapping (base value: 849,960 ha);
- -Forest plantation area: effective area under forest plantation management in 2020, reported in DIEA (base value: 1,053,693 ha);
- -Shade and shelter forest plantations: 2018 area of shelter and shade curtains and coppices reported in DGF-MGAP's 2018 Forest Mapping and area of silvopastoral systems estimated from mapping work carried out in 2020 using satellite imagery and field verification (base value: 88,348 ha);
- -Area of rangeland under good management practices for natural range and breeding herds: this is the result of the systematisation of information gathered from a survey of livestock producers carried out in 2020 on the management of natural range and practices for cattle and sheep (latest available value: 652,455 ha);

- -Peatland area: the peatland area was obtained from mapping work carried out in 2020 using satellite imagery and field verification (total area 2020: 9,513 ha);
- -Crop area: Crop area under Soil Use and Management Plans is obtained from the database of the PUMS management system of the General Directorate of Natural Resources of the MGAP. The area that allows COS levels to be maintained is the area of crops that includes pasture for more than 30% of the rotation length (latest available value, year 2021: 570,299 ha). The area that allows increasing COS levels is the area of crops that includes pastures for more than 60% of the rotation length (last available value, year 2021: 271,482 ha).

#### **8.8. International transfer of mitigation outcomes under Article 6 of the Paris Agreement**

Uruguay does not rule out participating in international markets for the transaction of GHG mitigation results, prioritising the fulfilment of its NDC2 commitments as communicated in this instrument. Any transfer of GHG mitigation results under Article 6 of the Paris Agreement, of those units that have been achieved in Uruguayan territory, must have the express authorization via ministerial resolution of the Ministry of Environment, acting as the competent national authority for the purposes of the implementation and application of the UNFCCC and the Paris Agreement. All those GHG mitigation results achieved in Uruguayan territory, which have not been authorised for transfer, will be counted towards the achievement of Uruguay's mitigation targets under the NDC2.<sup>20</sup>

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<sup>20</sup> The use of language that does not discriminate between men and women is one of the concerns of our team. However, there is no agreement among linguists on how to do this in our language. In this sense, and in order to avoid the overload of using o/a in Spanish to mark the existence of both sexes, we have opted to use the classic generic masculine, on the understanding that all mentions of this gender always represent both men and women.



## Acronyms and Acronyms

**EBA:** Ecosystem-based Adaptation  
**AFOLU:** Agriculture, Forestry and Other Land Uses  
**ANCAP:** Administración Nacional de Combustibles, Alcohol y Portland (National Administration of Fuels, Alcohol and Portland)  
**ANEP:** National Public Education Administration  
**AR2:** Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)  
**AR5:** Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)  
**AVCC:** Adaptation to Climate Change and Variability  
**CAD:** Cost of Demand Sourcing  
**NDC:** Nationally Determined Contribution  
**NDCN1:** First Nationally Determined Contribution **NDC2:** Second Nationally Determined Contribution **CELAC:** Community of Latin American and Caribbean States **CH<sub>4</sub>:** Methane  
**CMA:** Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement  
**CMIP:** Coupled Climate Modeling Inter-comparison Project  
**UNFCCC:** United Nations Framework Convention on Climate Change  
**CO<sub>2</sub>:** Carbon dioxide  
**ComAd2:** Second Adaptation Communication  
**COS:** Soil Organic Carbon  
**DGF:** Directorate-General for Forestry  
**DIEA:** Bureau of Agricultural Statistics  
**DINABISE:** Dirección Nacional de Biodiversidad y Servicios Ecosistémicos (National Directorate of Biodiversity and Ecosystem Services).  
**DINACC:** National Directorate for Climate Change  
**DINACEA:** Dirección Nacional de Calidad y Evaluación Ambiental (National Directorate for Environmental Quality and Assessment).  
**DINAGUA:** National Water Directorate  
**DINAVI:** National Housing Directorate  
**DINOT:** Dirección Nacional de Ordenamiento Territorial (National Directorate of Territorial Planning).  
**DNE-Sinae:** National Emergency Directorate of Sinae.  
**ECLP:** Long-term Climate Strategy for Low Emission and Climate-Resilient Development  
**ENACE:** National Strategy for Action on Climate Empowerment  
**ENSO:** El Niño Southern Oscillation  
**FSOM:** Nitrogen mineralisation related to the loss of soil organic matter as a result of changes in land use or mineral soil management.  
**GoT.ACC:** Climate Change Adaptation Task Force  
**P&L WG:** Working Group on Loss and Damage  
**GHGs:** Greenhouse Gases  
**Gg:** Gigagrams  
**GGA:** Global Goal on Adaptation **GWP:** Global Warming Potential  
**ha:** Hectare  
**HFCs:** Hydrofluorocarbons  
**R&D&I:** Research, Development and Innovation  
**INGEI:** National Greenhouse Gas Inventory  
**INUMET:** Uruguayan Institute of Meteorology  
**IPCC:** Intergovernmental Panel on Climate Change

**IPPU:** Industrial Processes and Product Use  
**JNM:** National Migration Board  
**ktoe:** Kilotonnes of oil equivalent  
**MA:** Ministry of Environment  
**MDRI:** Flood Risk Map **MEF:** Ministry of Economy and Finance **MERCOSUR:** Mercado Común del Sur (Southern Common Market)  
**MGAP:** Ministry of Livestock, Agriculture and Fisheries  
**MIEM:** Ministry of Industry, Energy and Mining **MINTUR:** Ministry of Tourism  
**MSP:** Ministry of Public Health  
**MRREE:** Ministry of Foreign Affairs  
**MVOT:** Ministry of Housing and Spatial Planning  
**MVOTMA:** Ministry of Housing, Land Management and Environment **NDVI:** Normalised Difference Vegetation Index **N<sub>2</sub>O:** Nitrous oxide  
**SDGs:** Sustainable Development Goals  
**IOM:** International Organisation for Migration  
**OPP:** Office of Planning and Budget  
**OPYPA:** Oficina de Programación y Política Agropecuaria  
**PAE:** Plan de Acción Estratégico de la Cuenca del Plata  
**CBPs:** Perfluorocarbons  
**pMRV:** Programming, Monitoring, Reporting and Verification  
**NAP-Agro:** National Plan for Adaptation to Climate Variability and Change for the Agricultural Sector **NAP-Cities:** National Plan for Adaptation to Climate Variability and Change in Cities and Infrastructures  
**NAP-Coastal:** National Adaptation Plan for the Coastal Zone to Climate Variability and Change  
**NAP-E:** National Adaptation Plan for the Energy Sector  
**NAP-Health:** National Adaptation Plan for the Health Sector **NCCP:** National Climate Change Policy  
**PNGR:** National Plan for Waste Management  
**PNGIRED:** National Policy on Integrated Emergency and Disaster Risk Management.  
**PUMS:** Soil Use and Management Plans  
**RCP:** Representative Concentration Trajectories (Representative Concentration Pathways)  
**RIOCC:** Ibero-American Network of Climate Change Offices  
**SARU:** Agro-ecological and Resilient Systems in Uruguay  
**SbN:** Nature-based Solutions  
<sub>SF6</sub>: Sulphur hexafluoride  
**SINAE:** National Emergency System  
**NARS:** National Farming Information System  
**SNIDER:** Sistema Nacional de Innovación y Desarrollo Rural (National System for Innovation and Rural Development)  
**SNRCC:** National System for Responding to Climate Change and variability  
**SUDS:** Sustainable Urban Drainage Systems  
**UTE:** Usinas y Transmisiones Eléctricas del Estado (State Owned Power Plants and Electric Transmissions)

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# **ANNEX**

CROSS-CUTTING	MEASURES
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CLIMATE	INFORMATION AND SERVICES
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(relating to Paragraph 7 of the PNCC)

Strengthen information systems for decision-making, improving the available information and knowledge on the risks derived and enhanced by climate change, accounting for the frequency, severity and impacts on people, significant assets and the environment.

#1	GIS on risk and climate change	Climate Information and Services		
By 2030, there is a geographic information system that includes the components of the main socio-natural risks susceptible to being enhanced by climate change.				
Contributions to the Global Adaptation Goal				
Enhancing adaptive capacities: Improving risk assessment actions and design and planning of measures for risk reduction and adaptation to climate change, through the provision of geo-referenced layers with information on the main socio-natural hazards, the main elements exposed to these hazards, functions for the estimation of physical vulnerability and agreed indicators. to define social vulnerability.				
Mitigation co-benefits.				
Unidentified.				
Contribution to Loss and Damage Assessment				
It provides tools for the identification of the main exposed elements (people, significant assets, critical infrastructure and environmental systems) to socio-natural hazards, which can be potentiated by climate change.				
National Framework		Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 CDN.1: Action 101 PNGIRED Axis 3		Potentially responsiva	SDGS 5, 11, 13 Sendai. Priority 1	DNE-Sinae

#2	National database on emergencies and impacts.	Climate Information and Services	
By 2030, an updated system of information and reporting on emergencies and impacts of socio-natural phenomena is available, considering a greater efficiency in the information and its sources, homogenisation of variables, analysis on magnitude, intensity, frequency, impact, causality and their relationship to climate change.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Improves processes and protocols for reporting and collecting information on emergency response and its impacts on territories, unifies criteria, procedures and indicators, and provides information to generate greater knowledge on how climate variability and change affects the national reality.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage Assessment.			
Contribute to the knowledge of the impacts of climate-related events and their associated costs.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 PNGIRED axis 3.1.4 & 4.3	Potentially responsive	SDGS 5, 11, 13 Sendai priority 1	DNE-Sinae

#3	Climate Services Information System	Climate Information and Services
By 2030 an information system on climate services has been developed and made available in open data format.		
<b>Contributions to the Global Adaptation Goal</b>		
<b>Increased adaptive capacities:</b> Improved conditions for the elaboration of climate change variability studies and projections and improved decision making based on historical and trend information in the different sectors of the country.		
<b>Mitigation co-benefits.</b>		
Unidentified.		
<b>Contribution to Loss and Damage Assessment.</b>		

It provides information on the climatic phenomena recorded in a given period of time, improving the association between the magnitudes of these phenomena and the potential impacts on the territory.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 CDN.1 Action 96. PNGIRED axis 3.1.4 & 4.3	Potentially responsive	SDGS 5, 11, 13 Sendai priority 1	Inumet

#4	Climate Change Projections	Climate Information and Services	
By 2030, official climate change projections for 2050 and 2100, based on the best available scientific information and climate change scenarios, have been agreed, updated and made available within the framework of the SNRCC.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Having agreed climate projections allows for progress in inter-institutional and interdisciplinary coordination, improves conditions for research development, simulations and design of adaptation measures. It also enables better conditions for decision-making.			
Mitigation co-benefits.			
It provides information for decision-making on the design of mitigation measures.			
Synergy with the Loss and Damage mechanism.			
It allows scenarios to be generated on changes in variables sensitive to climate change, and to estimate in a quantitatively the negative effects caused by these changes.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 PNGIRED axis 3.4	Potentially responsive	SDGS 5, 11, 13 Sendai priority 1 and 2	Inumet; SNRCC; Udelar

#5	Very short-term forecasts	Climate Information and Services	
By 2030 a mesoscale atmospheric model and a nowcasting system are in place for the development of very short-term forecasts, and human resources trained in their generation and updating.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Generates real-time information enabling forecasts that reduce uncertainties, describing weather conditions in high detail at a local scale, allowing for improved weather forecasting. emergency response, monitoring and surveillance of potential risks from adverse weather events.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage assessment			
It reduces the window of uncertainty of social and economic impacts caused by adverse weather events.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 CDN1, FT.96 & 97 PNGIRED axis 3.6	Potentially responsive	SDGS 5, 11, 13 Sendai priority 4	Inumet; SNRCC

#6	Governance of climate services		Climate Information and Services	
By 2030, an inter-institutional group for the governance of climate services has been formed and is operational, within the framework of the National Meteorological Council and the SNRCC.				
Contributions to the Global Adaptation Goal				
Increased adaptive capacities: enables effective climate information to be produced and shared with stakeholders. end-users for the design of measures to reduce and transfer risk.				
Mitigation co-benefits.				
Unidentified.				
Input to Loss and Damage Assessment				
Generates conditions for the use of timely information related to hydro-climatic events to moderate losses and damages due to such events.				
National Framework		Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 CDN1, FT.97, PNGIRED axis		Potentially responsive	SDGS 5, 11, 13 Sendai priority 2	Inumet; SNRCC

3.3			
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## DISASTER RISK AND REDUCTION

(relating to Paragraph 10 of the PNCC)

**Strengthen integrated emergency and disaster risk management with the incorporation of a climate change perspective.**

#7	Multi-risk analysis information system	Disaster Risk Reduction	
By 2030, an information system is available, based on the comprehensive risk and impact monitor (MIRA), for multi-hazard analysis, estimating the probability of occurrence, impact, response and recovery capacity, in the event of a disaster.			
socio-natural phenomena that are likely to be enhanced by climate change.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Having an up-to-date tool with information on the main hazards, vulnerabilities, system capacities and probability of occurrence improves coping capacities and the design of measures to reduce specific vulnerabilities, derived by those risks that are caused and enhanced by climate change.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
Improve conditions for assessing and recording information on impacts on the territory.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13 PNGIRED Axis 3	Potentially responsive	SDGS 5, 11, 13 Sendai, Priority 1	DNE-Sinae

#8	Integrated risk management planning.	Disaster Risk Reduction	
By 2030, the periodic updating and development of tools for prospective, corrective and/or compensatory emergency and disaster risk management at the departmental level has been promoted.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Prevention, reduction and mitigation capacities are improved and optimised, planning, coping and recovery from emergencies and disasters at the departmental level.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
It has the potential to collect and systematise information related to impacts on the territory.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7 and 10 PNGIRED axis 3.4; points 4.2, 4.6 and 5.	Potentially Responsible	SDGS 5, 11, 13 Sendai 7 goals and 4 priorities	DNE Sinae SNRCC; MA.

#9	Private sector risk assessment	Disaster Risk Reduction	
By 2030, at least three guides for private sector companies to assess risks will have been developed and made available to them. and identify adaptation measures.			
Contributions to the Global Adaptation Goal			
Increasing adaptive capacities: New tools are generated to act in a preventive and reactive manner in the face of risks and potential impacts derived or enhanced by climate change in the private sector.			
Mitigation co-benefits.			
The proposal for adaptation measures to be implemented by the private sector shall take into account that they are low GHG emission measures and promote co-benefits with mitigation measures in the sector of activity. corresponding.			
Contribution to Loss and Damage Assessment			
Knowledge of risk and the application of adaptation measures has the potential to moderate the costs associated with the impacts of climate events.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7 and	Potentially Responsible	SDGs 5, 11, 13; Sendai A-G	SNRCC

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Strengthen governance related to the generation of knowledge and interoperability of information regarding the risks configured in Uruguay and the associated emergency and disaster events. It implies coordinating, planning and promoting the production of relevant knowledge and information.

#10	Strengthening risk governance.		Disaster Risk Reduction
By 2030, new areas of work have been generated and existing working groups between the SNRCC and SINAE have been strengthened, promoting integrated risk management with a climate change perspective.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Work spaces and tools for integrated risk management with a climate change perspective are strengthened and deepened, articulating between the SNRCC and the SINAE.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage Assessment			
The articulation between the institutions of both systems is strengthened, improving the recording, reporting and methodologies for the analysis of the effects of adverse events in the territory.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7 and 10	Potentially Responsive	SDGS 5, 11, 13 Sendai A-G	DNE Sinae SNRCC

#11	Early Warning Systems	Disaster Risk Reduction	
By 2030, seven flood-prone cities have incorporated a flood early warning system, integrated into the action and communication protocol, which allows for improved inter-institutional interaction and dissemination and communication of warnings and alerts to the population and the actors involved in emergency response and care.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Reduces the likelihood of severe impacts, prevents loss of life and reduces the economic and environmental impacts of flooding.			
Enhancing adaptive capacities: Improving the country's ability to prepare for floods by enabling individuals, communities and organisations exposed to the hazard to prepare and act. in an appropriate manner and with sufficient advance notice			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
Reduces the economic, social and environmental impacts caused by floods, preventing losses and associated damage.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 8, 10 & 14; CDN.1: Measure #73; PNGIRED axis 3.6	Potentially Responsible	SDGs 5, 6; 13; Sendai priority 4	MA: DINAGUA

## LOSS AND DAMAGE

(relating to Paragraph 10 of the PNCC)

**Strengthen processes for recording, measuring and assessing the impacts of adverse weather-related events and their chains, in order to estimate losses and damages at national, local and sectoral levels.**

#12	Estimation of loss and damage due to adverse events	Loss and Damage	
By 2030, a work plan on Loss and Damage assessment has been implemented, including mechanisms and procedures to improve the recording, storing, estimation and visualisation of loss and damage at the level The following table presents the national, local and sectoral impacts caused by climate-related events and their respective chains of impacts.			
Contributions to the Global Adaptation Goal			
Enhancing adaptive capacities: Contributes to the design of adaptation actions to: avoid, minimise and cope with impacts, enhance resilience and increase the resilience of socio-natural systems.			
Mitigation co-benefits.			
Knowledge of Losses and Damage associated with climate change events allows for the design of measures that have the co-benefit of capturing greenhouse gases.			
Input to Loss and Damage assessment			
It contributes to knowledge, assesses, quantifies and enables the design and projection of measures to address, reduce and recover from the impacts of climate change.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraphs 6, 7, 10 and 13	Potentially responsive	SDGS 5, 11, 13	SNRCC; GoT P&L

#13	Impact Information System Energy infrastructures.	Loss and Damage	
By 2030, an information system associated with the impacts on energy infrastructures has been developed and implemented to quantify losses and damage to the system due to climatic causes.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Relevant information is generated on the state of vulnerability of the energy system components, to improve decision making on the design of actions for energy system adaptation.			
Mitigation co-benefits.			
Unidentified			
Input to Loss and Damage assessment			
It generates tools for the registration of losses and damages in the sector.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 18 & 20	Potentially Responsible	ODS: 5, 7, 9 & 13	MIEM; GoT P&L

#14	Damage and losses in the tourism sector	Loss and Damage	
By 2030, processes for recording and assessing impacts of climate-related adverse events will have been improved to quantify and estimate losses and damages in the tourism sector by improving databases and information sources.			
Contributions to the Global Adaptation Goal			
<b>Increased adaptive capacities:</b> Conditions for recording, assessing, measuring and quantifying impacts in the tourism sector are improved, allowing for the design of adaptation and risk reduction measures and improving the information for decision-making.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
Improve the recording of impacts and their effects on the tourism sector.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 19	Potentially Responsible	ODS 5, 11, 12, 12, 13, 14, 15	MINTUR, SNRCC, GoT P&L

## MIGRATION AND DISPLACEMENT

(relating to Paragraph 8 of the NCCP)

To understand Uruguay's situation in relation to migratory movements and human displacement due to conditions linked to climate change and its derived chains of impacts.

#15	Migration and Climate Change	Climate Information and Services	
As of 2030, a database has been developed that reports on the situation in Uruguay regarding the influence and impact of climate change on migration and human displacement to, from and within Uruguay, considering a intersectional approach.			
Contributions to the Global Adaptation Goal			
<b>Increasing adaptive capacities:</b> Generates knowledge on the number of people entering and leaving the country, or moving internally, due to problems arising from and exacerbated by climate change and their social and economic status, in order to improve decision making and promote actions and policies that reduce the vulnerabilities of the population. these population groups.			
Mitigation co-benefits.			
Unidentified			
Contribution to Loss and Damage Assessment			
Generates information on the socio-economic impacts on specific population groups			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 7 & 8.	Sensible	ODS 5, 10, 11, 13 Sendai E IOM EIM 2021-2030	MRREE - JNM; SNRCC

## MEASURES BY AREA OF ADAPTATION

### HEALTH

(relating to Paragraph 9 of the PNCC)

Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for the area of Health.

#16	NAP Health Follow-up	Health
As of 2030, the 2026-2030 Action Plan of the National Health Adaptation Plan has been implemented. (NAP Health)		
<b>Contributions to the Global Adaptation Goal</b>		
<b>Vulnerability Reduction:</b> Adaptation policies, programmes and measures are improved, adapted and developed at national and local levels to protect and reduce the health impacts of those people who, due to pre-existing health conditions, socio-economic status, occupational activity or the stage of life they are in, may be affected by extreme and slow-onset events resulting from climate change.		
<b>Enhancing adaptive capacities:</b> Adaptation policies, programmes and measures are improved, adapted and developed at national and local levels to address the specific needs arising from the impacts of climate change.		
climate change in the health sector.		
<b>Mitigation co-benefits.</b>		
Reduction of emissions in the health sector infrastructure, through the implementation of measures that, in addition to improving the conditions of safety, operability and continuity before, during and after the occurrence of an emergency, will also reduce the risk of		
The use of energy efficiency strategies and waste management, among others.		
<b>Input to Loss and Damage assessment</b>		
Generate information on how climate change impacts affect the health sector.		

National Framework		Categorisation Gender	International Frameworks	Responsible
NCCP, Paragraph 9		Potentially Responsible	SDGS 3, 5, 13	MSP
#17	Occupational health and climate change		Health	
By 2030, the consequences of climate change on occupational health have been assessed for the definition of policies for the prevention and promotion of occupational health.				
Contributions to the Global Adaptation Goal				
Increased adaptive capacities: Information and monitoring of the main climate hazards affecting occupational health, as well as the vulnerabilities of workers, is improved.				
Mitigation co-benefits.				
Unidentified.				
Input to Loss and Damage assessment				
It presents a system for recording and monitoring the impacts of climate change on occupational health.				
National Framework		Categorisation Gender	International Frameworks	Responsible
NCCP, Paragraph 9		Potentially Responsible	SDGS 3, 5, 13	MSP

#18	Epidemiological and entomological surveillance systems		Health
By 2030, epidemiological and entomological surveillance has been strengthened, as well as the development and implementation of early warning and response systems for outbreaks of vectors and diseases derived or potentiated by the effects of vector-borne diseases. of climate change.			
Contributions to the Global Adaptation Goal			
Vulnerability Reduction: Improves the availability of timely information on climate-sensitive diseases, while allowing for the study of changes in spatial and temporal patterns of vector distribution and The aim is to identify disease occurrence rates for the design of prevention and response plans for potential outbreaks.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
Improve records on the implications for care and response to outbreaks and diseases for economic evaluation.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP, Paragraph 9	Potentially Responsible	SDGS 3, 5, 13	MSP

**Strengthen governance in the area of health to address issues related to climate change and its effects, within the Ministry of Public Health and related institutions, within the framework of the SNRCC.**

#19	Strengthening Climate Governance in Health	Health
By 2030, a technical working group on climate change has been created, institutionalised and put into operation within the Ministry of Public Health, which develops the cross-cutting programme line on climate variability and change. in health policies, plans and programmes.		
Contributions to the Global Adaptation Goal		
<b>Increased adaptive capacities:</b> Conditions are improved for mainstreaming health, risk and climate change in documents, plans, policies, programmes, as well as for the design, implementation and monitoring of the health, risk and climate change agenda. monitoring of climate change adaptation actions in the different components of the health sector.		
Mitigation co-benefits.		
Unidentified.		
Contribution to Loss and Damage Assessment		

Improve conditions for tracking, monitoring and reporting the impacts of climate change events on the sector, and their implications for associated losses and damages.

<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP, Paragraph 9	Potentially Responsible	SDGS 3, 5, 13	MSP

## CITIES, INFRASTRUCTURES AND SPATIAL PLANNING

(relating to Paragraph 11 of the PNCC)

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for cities and spatial planning.**

#20	NAP Cities	Cities, Infrastructures and Spatial Planning	
By 2030, the Action Plan 2026-2030 of the National Adaptation Plan for Cities and Infrastructure has been implemented. (PNA Cities).			
Contributions to the Global Adaptation Goal			
<b>Vulnerability Reduction:</b> The implementation of the Cities NAP improves the conditions of cities and urban environments in the face of the effects of climate change and variability through the adaptation measures included in its strategic lines: Changes in the urban habitat and Integrated Management of the risk of emergencies and disasters.			
<b>Adaptive Capacity Building:</b> The strategic lines on Spatial Planning and Planning in Cities and on Capacity Building, Awareness Raising and Communication provide tools that contribute to improving the information available on the effects of climate change and specific actions for adaptation to climate change, as well as generating technical and political instruments, such as guidelines and regulations, which together improve the conditions for decision-making, planning, response and evaluation of society in the face of the effects of climate change.			
and consequences of climate change.			
Mitigation co-benefits.			
Potential co-benefit contingent on the type of measure, such as those using the ecosystem-based approach to adaptation, or promoting energy efficiency, among others.			
Input to Loss and Damage assessment			
Potential linkage subject to the type of measures for the assessment, categorisation and quantification of risks and impacts arising from climate change and variability.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	SNRCC: ACC GoT in Cities

**Deepen the adequate incorporation of adaptation to climate change and variability in land-use planning instruments, urban planning and management, urban landscape, building regulations under a climate risk framework and incorporating the ecosystem-based adaptation approach.**

#21	AVCC in Management Instruments Territorial	Cities, Infrastructure and Spatial Planning	
By 2030 all departments have incorporated climate change adaptation measures and climate risk reduction strategies in their new and revised land-use planning instruments.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Through climate change adaptation strategies such as: densification patterns in safe areas and land occupation; preservation of permeable soil; green areas and key natural spaces for their ecosystem services; proper management of municipal solid waste; waste management infrastructures and wastewater treatment plants; and the use of sustainable development strategies. climate-resilient sanitation and drainage; promotion and use of public spaces, among others.			
Mitigation co-benefits.			
Potential co-benefit, linked to the characteristics of the measures to be incorporated into the management instrument territorial, such as those that promote ecosystem-based adaptation.			
Input to Loss and Damage assessment			
Potential co-benefit linked to risk reduction, resulting from the measures implemented.			
National Framework	Categorisation Gender	International Frameworks	Responsible



NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	MVOT - DINOT
#22	Flood Risk Maps in Cities	Cities, Infrastructures and Spatial Planning	
By 2030, 100% of cities with very high, high or medium flood risk levels have flood risk maps for riverbank flooding, drainage, and/or sea level rise and storm surges.			
Contributions to the Global Adaptation Goal			
Vulnerability Reduction: The Flood Risk Map categorises flood-prone land according to risk levels. Through its approval in the framework of the TO instruments, measures to manage the risks associated with each zone are established.			
Increasing adaptive capacities: Improving the capacities of human resources and institutions that allow for response and planning around flood risk in cities.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage Assessment			
It contributes to a better and faster assessment of losses and damages after an event. Allows assessment of losses and damages avoided from proposed adaptation measures.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 8, 10, 11 & 14 CDN.1: Datasheet #74 PNGRED, Law 18621	Sensible	SDGS 5, 6; 13 Sendai Meta G	MA: DINAGUA

#23	AVCC in City Planning.	Cities, Infrastructure and Spatial Planning	
By 2030 support materials have been updated and disseminated to incorporate climate change and variability into the planning of Uruguayan cities.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: The instruments of territorial planning and sustainable development integrate a repertoire of actions and adaptation measures that, according to the particularities of the different areas and considering the type of instrument, territorial governance, reduce the vulnerability of the populations linked to the area of application of the instrument, likewise, these materials increase awareness of risks.			
climate change and its derivatives and the implications for planning decisions.			
Mitigation co-benefits.			
Co-benefit potential, linked to the characteristics of the measures to be incorporated into the land-use planning instrument, such as those promoting ecosystem-based adaptation.			
Input to Loss and Damage Assessment			
Potential co-benefit linked to risk reduction, resulting from the measures implemented.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	MVOT - DINOT

#24	National Urban Stormwater Drainage Plan	Cities, Infrastructure and Spatial Planning
By 2030 the implementation of the National Urban Stormwater Drainage Plan has started.		
Contributions to the Global Adaptation Goal		
<b>Vulnerability Reduction:</b> Sustainable drainage infrastructure combines green, blue and grey infrastructure, incorporates the perspective of climate change, city dynamics and includes multiple benefits: flood reduction, heat island reduction, water quality improvement and ecosystem protection in the city.		
urban environments, among others.		
Mitigation co-benefits.		
The use of non-renewable energy in buildings is reduced. The energy consumption used for the operation of storm drainage systems (e.g. water treatment and pumping) is also reduced.		

Input to Loss and Damage assessment				
Potential effect on reducing impacts and decreasing losses and damages due to flooding.				
National Frameworks		Categorisation Gender	International Frameworks	Responsible
PNCC: Paragraph 8, 10, 11 & 14 Law 19.772; PNAguas: P02		Potentially Responsible	SDGS 5, 6; 13 Sendai Meta G	MA: DINAGUA
#25	EbA in cities and infrastructure		Cities, Infrastructure and Spatial Planning	
By 2030, all departments have incorporated, in at least one urban locality, the adaptation-based approach. in ecosystems as a strategy to improve habitat conditions in urban environments and optimise their climate performance.				
Contributions to the Global Adaptation Goal				
<b>Vulnerability Reduction:</b> The application of EbA in urban localities and environments contributes to the reduction of vulnerabilities in urban environments, improves the quality of urban spaces, increases resilience to climate change and increases the quality of urban spaces. climate change and variability in the face of rising temperatures and increased precipitation.				
Mitigation co-benefits.				
They enhance carbon sequestration and reduce energy consumption linked to thermal conditioning by increasing of temperatures.				
Input to Loss and Damage assessment				
Costs associated with health impacts are reduced due to improvements in public space.				
National Framework	Categorisation Gender	International Frameworks	Responsible	
NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	SNRCC: ACC GoT in Cities	

#26	National building regulations.		Cities, Infrastructure and Spatial Planning	
By 2030, parameters with the dimension of adaptation to climate change and variability have been incorporated in the departmental regulatory bodies, in reference to the design, construction and maintenance of housing, infrastructure and facilities, taking into account territorial specificities.				
Contributions to the Global Adaptation Goal				
Reduced vulnerability: Buildings perform better against events associated with Climate Change and Variability and improve comfort and habitability conditions for users.				
Mitigation co-benefits.				
The implementation of this regulation will have an indirect impact on the reduction of emissions from energy consumption.				
Contribution to Loss and Damage Assessment				
Unidentified.				
National Framework	Categorisation Gender	International Frameworks	Responsible	
NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	MVOT: Dinavi SNRCC: ACC GoT in Cities	

**Promote the generation of financing instruments for the implementation of adaptation actions that improve the resilience of cities to climate change and its effects.**

#27	Financing adaptation in cities.	Cities, Infrastructure and Spatial Planning
By 2030, a public-private financing instrument is in place to improve climate resilience in new and/or existing buildings and urban infrastructure, including an adaptation-based approach. ecosystems.		
Contributions to the Global Adaptation Goal		
Reduced vulnerability: Buildings perform better against events associated with Climate Change and Variability and improve comfort and habitability conditions for users.		
Mitigation co-benefits.		

The implementation of the instrument for resilient buildings leads indirectly to a reduction of emissions from energy consumption.

**Input to Loss and Damage assessment**

Unidentified.

<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP Paragraph 11	Potentially Responsible	SDGs 5, 11, 13; UN Habitat III NAU	SNRCC

Promote the development of sustainable and resilient infrastructures in the face of climate variability and change that contribute to reducing greenhouse gas emissions.

#28	Waste - Disposal Sites	Cities and spatial planning	
By 2030, all operational household and similar waste disposal sites operated by municipalities have conditions that reduce the risk and probability of impacts from adverse events. emissions from climate change.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: The design of climate-resilient waste management infrastructures and the improvement of their operation are favoured, so that adverse climatic phenomena (floods or extreme heat events) do not result in damage to the facilities or alterations to their normal operation, thus avoiding impacts. environmental consequences of these events.			
Co-benefits in mitigation.			
In the case of methane capture and flaring, the same action contributes to both mitigation and adaptation. In the NDC 2 of mitigation measure is included.			
Input to Loss and Damage assessment			
Unidentified.			
National Framework	Categorisation Gender	International Frameworks	Referrer
NCCP Paragraph 21, PNGR	Potentially Responsible	SDGs 6, 11, 14 and 15	DINACEA (MA)

## BIODIVERSITY AND ECOSYSTEMS

(relating to Paragraph 12 of the PNCC)

Promote the integration of climate change, its effects and adaptation strategies into planning and policy instruments focused on the conservation, protection and restoration of natural ecosystems, to ensure the provision of ecosystem goods, services and functions.

#29	Update of Biodiversity Strategies and Plans	Biodiversity and Ecosystems	
By 2030 the National Biodiversity Strategy, the Strategic Plan of the National System of Protected Areas, Marine Spatial Planning and the Land Degradation Neutrality Strategy incorporate land-use change into the National Biodiversity Strategy, the Strategic Plan of the National System of Protected Areas, t h e Marine Spatial Planning and the Land Degradation Neutrality Strategy. and variability.			
Contributions to the Global Adaptation Goal			
Enhancing adaptive capacities: Improving diagnostic and planning activities for the conservation of biodiversity and inland, coastal and marine ecosystems, as well as the ecosystem services they provide, by incorporating early risk analysis and management of the effects of variability and change. and the contribution of biodiversity and ecosystems to adaptive capacities.			
Mitigation co-benefits.			
Potential contribution given the capacity of ecosystems to be carbon sinks when in an adequate state of conservation, including actions for monitoring and conservation of ecosystems.			
Input to Loss and Damage assessment			
Potential input including actions for ecosystem monitoring and conservation.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE

#30	Wetland Protection and Restoration	Biodiversity and Ecosystems
A legal instrument for the protection and restoration of wetlands, based on their ecosystem services and their contribution to climate change adaptation, is being implemented by 2030.		
Contributions to the Global Adaptation Goal		

<b>Vulnerability Reduction:</b> Recognises and ensures the conservation or restoration of ecosystem functions and services provided by wetlands, including their contribution to climate change adaptation, such as reducing the impacts of extreme events, floods and droughts, on cities, ecosystems and communities.			
<b>Mitigation co-benefits.</b>			
Protects, conserves and restores wetlands as potential carbon sinks.			
<b>Input to Loss and Damage assessment</b>			
It reduces the likelihood of severe impacts that can lead to losses and damage from extreme and slow-generating events.			
<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE

#31	Protected Area Management Plans	Biodiversity and Ecosystems	
By 2030, risk analysis, as well as specific targets and actions on adaptation to climate change and variability are incorporated in 100% of the Protected Areas with approved and updated Management Plans as of 2030. 2025.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Improved knowledge on the effects of climate change on biodiversity and ecosystems of special relevance in the national territory, and generates the capacity to restore adaptive capacity, decrease vulnerability and exposure of sensitive species and/or ecosystems in protected areas. At the macro scale, protected areas with ecosystems in good condition in themselves contribute to increase the adaptive capacities of the territory and society.			
Mitigation co-benefits.			
Protected areas conserve ecosystems of particular relevance for climate change mitigation.			
Input to Loss and Damage Assessment			
It generates databases on impacts on biodiversity and ecosystems of special relevance.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE

Incorporate and deepen risk assessment with a climate change perspective and its effects on biodiversity and ecosystems, and increase the valuation of the role of ecosystems in adaptation, for the design of instruments and measures for risk reduction and ecosystem-based adaptation.

#32	Climate risk analysis on biodiversity		Biodiversity and Ecosystems	
By 2030, a risk analysis of key biodiversity and ecosystems considering the effects of climate change has been developed and data will be made available through an information system.				
Contributions to the Global Adaptation Goal				
Increased adaptive capacities: Improved knowledge about the effects of climate change on the biodiversity and the country's key ecosystems, as well as generating the capacity to plan specific actions to reduce vulnerability and exposure to future changes.				
Mitigation co-benefits.				
Unidentified.				
Input to Loss and Damage assessment				
It generates databases on biodiversity and ecosystem impacts.				
National Framework	Categorisation Gender	International Frameworks	Responsible	
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE	

#33	Guidelines for Biodiversity Risk Management	Biodiversity and Ecosystems
By 2030, guidelines on managing risks to biodiversity and ecosystems linked to climate change and variability have been developed and key actors have been trained to implement them.		
Contributions to the Global Adaptation Goal		

<p><b>Vulnerability Reduction:</b> Knowing the risk and understanding vulnerabilities, through the application of the guidelines, specific actions will be carried out to prevent and reduce the possible impacts of climate change effects on biodiversity and ecosystems, as well as to strengthen coping actions.</p> <p><b>Increased adaptive capacities:</b> The response of environmental managers to potential effects of climate change is improved by increasing understanding and incorporating management methodologies in existing tools.</p>			
<b>Mitigation co-benefits.</b>			
Potential contribution, given the capacity of ecosystems to be carbon sinks when in an adequate state of conservation, including increasing their adaptive capacity by better managing the risks to ecosystem health themselves.			
<b>Input to Loss and Damage assessment</b>			
Improves risk management and reduces the likelihood of loss and damage from extreme and slow-onset events, and also enhances the generation of information on the state of ecosystems and impacts in the face of changes of variables affected by climate change.			
<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE

#34	Ecosystem Services and Climate Change	Biodiversity and Ecosystems	
By 2030 there will be increased knowledge and valuation of the ecosystem functions and services associated with the reduction of climate change vulnerabilities of key ecosystems and their mitigation co-benefits.			
Contributions to the Global Adaptation Goal			
Enhancing adaptive capacities: Recognises, makes visible and promotes the conservation of functions and services of key ecosystems in climate change adaptation by associating them with specific vulnerabilities, describing the necessary state of health of the ecosystem to provide these services.			
Mitigation co-benefits.			
Potential contribution, given the capacity of ecosystems to be carbon sinks when in an adequate state of conservation. Increased knowledge of ecosystem services linked to climate change adaptation could also include ecosystem co-benefits for mitigation.			
Input to Loss and Damage Assessment			
It generates information on the relationship between ecosystems and their buffer function in the face of the effects of climate change, thus enabling the establishment of measures for the protection of ecosystems and the value they represent for anthropic systems.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 12	Potentially Responsible	SDG 6; 13	MA: DINABISE

## COASTAL

## ZONE

(relating to Paragraph 13 of the PNCC)

**Strengthen policy and adaptation planning instruments for the coastal zone in the face of climate change and variability.**

#35	National Coastal Guideline Regulation	Coastal Zone
By 2030, Law 19.772 on the National Land Use and Development Guideline will have been regulated. Sustainable Development of the Coastal Space of the Atlantic Ocean and the River Plate.		
Contributions to the Global Adaptation Goal		
Increased adaptive capacities: Decision-making will be strengthened by having clear criteria for the definition of vulnerable components, and georeferenced information on the entire coastal zone of the country.		
Mitigation co-benefits.		
Unidentified.		
Contribution to Loss and Damage Assessment		
The measure will provide knowledge to promote the valuation of losses of vulnerable ecosystems to the impacts of climate variability and change.		

National Frameworks		Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 13 Law 19.772		Potentially Responsible	SDGs: 5, 13 and 14 Convention of Biodiversity	MA (DINABISE, DINACEA, DINACC), MVOT (DINOT), Municipalities, Municipalities.
#36	Operational Plan 2026-2030 NAP Coasts		Coastal Zone	
By 2030, the 2026-2030 Action Plan of the National Adaptation Plan for the Coastal Zone (PNA Costas) will have been implemented.				
Contributions to the Global Adaptation Goal				
<b>Vulnerability Reduction:</b> The implementation of the Coastal NAP improves the conditions of coastal zones, including urban environments, ecosystems and infrastructures, to the effects of climate change and variability through the adaptation measures included in its strategic lines.				
<b>Increasing adaptive capacities:</b> The Five-Year Operational Plan is a reference framework for the coordination and implementation of adaptation measures between the different bodies and actors with competence and strategic interests in the national coastal zone, which seeks to integrate climate variability and change in the processes of adaptation to climate change.				
planning, management and participatory processes.				
Mitigation co-benefits.				
Unidentified.				
Contribution to Loss and Damage Assessment				
The implementation of the NAP-Coasts implies the use of methodologies for the cost-benefit analysis of the implementation of adaptation measures and could therefore provide economic estimates to be used in the damage assessment.				
and losses from extreme events impacting the coastal zone.				
National Frameworks		Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 13 Laws: 19.772; 16.466; 18.303;		Potentially Responsible	SDGs: 5, 13 and 14 Biodiversity Convention	MA (DINABISE, DINACEA, DINACC), MVOT (DINOT), Municipalities.

#37	EIA and SEA guidance with vulnerability mapping		Coastal Zone
By 2030, guidance will have been developed to incorporate climate change vulnerability assessment into Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) processes in the coastal zone. using the best available scientific information, and key actors will have been trained to implement it.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Decision-making will be strengthened with regard to the identification and assessment - in advance - of the environmental consequences of a project not yet implemented in the face of climate variability and change, with the aim of eliminating, mitigating or compensating its negative environmental impacts both in the area of action as well as its area of influence.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
The measure will provide knowledge for the assessment of losses of vulnerable ecosystems to the impacts of climate variability and change.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 13 Laws 19.772; 18.308.	Potentially Responsible	SDGs: 5, 13 and 14 Biodiversity Convention	MA (DINABISE, DINACEA, DINACC), MVOT (DINOT), Municipalities.

**Promote the conservation and reduction of vulnerability of the coastal zone threatened by climate change and variability through Ecosystem-based Adaptation measures.**

#38	Conservation of vulnerable components	Coastal Zone	
By 2030, 100% of vulnerable components of the coastal zone are included in plans or programmes for adaptation to climate variability and change by defining their level of protection and/or implementing adaptation measures. ecosystem-based, both conservation and restoration.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Specific measures are designed and developed, incorporating the ecosystem-based approach to adaptation, within local adaptation plans and programmes, to protect, conserve and restore vulnerable elements of the coastal zone.			
Increased adaptive capacities: Relevant information is generated on the state of vulnerability of the components of the coastal system, to improve decision-making on the design of adaptation actions for its protection, conservation and restoration, as well as for monitoring the evolution of the implementation of adaptation measures. such actions.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
The measure will provide knowledge on the assessment of losses of vulnerable ecosystems to the impacts of climate variability and change.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 13 Laws 19.772; 18.308; Decrees: 349/005; 178/2009; 221/2009.	Potentially Responsible	SDGs: 5, 13 and 14 Biodiversity Convention	MA (DINABISE, DINACEA, DINACC), MVOT (DINOT), Municipalities.

**Encourage the generation of financing instruments for the implementation of adaptation actions in the coastal zone.**

#39	Funding for coastal adaptation		Coastal Zone
By 2030, a public-private financing instrument for the implementation of adaptation measures in the coastal zone will be designed and implemented.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Specific adaptation measures are implemented that improve coastal zone conditions, including urban environments, ecosystems and infrastructure.			
Enhancing adaptive capacities: Improving national conditions to cope with the impact of vulnerability and climate change by enabling households, communities and organisations exposed to climate change to adapt to the impacts of climate change.			
implement adaptation measures.			
Mitigation co-benefits.			
Potential. Adaptation measures to be financed by the instrument shall be low in GHG emissions and promote co-benefits with mitigation measures, if applicable.			
Input to Loss and Damage Assessment			
The measure will provide knowledge for the valuation of losses of vulnerable ecosystems to the impacts of the variability and climate change.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 13 Laws 19.772; 18.308.	Potentially Responsible	SDGs: 5, 13 and 14 Biodiversity Convention	MA (DINABISE, DINACEA, DINACC), MVOT (DINOT), Municipalities.

**Implement a system for monitoring the coastal dynamics of the Río de la Plata and Atlantic Ocean.**

#40	Coastal monitoring system	Coastal Zone
By 2030, a system for monitoring meteo-oceanic, sedimentological and topo-bathymetric variables of the Río de la Plata and Atlantic Ocean will have been implemented, reinforcing those areas that are highly vulnerable to extreme events (mouths, sandy beaches and ravines).		
Contributions to the Global Adaptation Goal		



<b>Vulnerability reduction:</b> Monitoring at different spatio-temporal scales improves the assessment of risk to coastal erosion and flooding and its corresponding adjustment in a climate change scenario, enabling the development of early warning systems.			
<b>Increasing adaptive capacities:</b> Understanding coastal dynamics involves understanding the configurations of stability and their ranges of variability at different scales, identifying thresholds that when exceeded lead to the system to a new configuration of stability and understanding the processes involved in the corresponding transition are of high relevance for the management of the coastal system.			
<b>Mitigation co-benefits.</b>			
Unidentified			
<b>Input to Loss and Damage Assessment</b>			
The measure will provide information on changes in the monitored areas and generate knowledge for the assessment of coastal ecosystem losses.			
<b>National Frameworks</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP: Paragraph 13 Laws 19.772; 18.308.	Potentially Responsible	SDGs: 5, 13 and 14 Biodiversity Convention	MA (DINABISE, DINACC, DINAGUA), Municipalities.

## WATER RESOURCES

(relating to Paragraph 14 of the NCCP)

Promote the incorporation of climate change and variability and their effects in integrated water resources management, seeking to improve protection and security in the availability and quality of the resource, promote good practices, improve governance and promote research and integrated monitoring.

#41	Basin and Aquifer Plans	Water Resources	
As of 2030, 6 integrated watershed management plans have been formulated, approved and are being implemented.			
Contributions to the Global Adaptation Goal			
Vulnerability Reduction: Allows for improved water resource management.			
Increasing adaptive capacities: Improving the capacities of human resources and institutions through actions that enable the analysis and dissemination of basin information by means of: characterisation of the basin, characterisation of water resources (including analysis of variability and extreme events), uses and pressures in the basin (including extreme events and if information is available, climate change is considered); Information systems and models (hydrological, management and water quality; tends to include scenarios of extreme events and climate change); Monitoring of water quantity and quality (surface and groundwater); Strengthening and coordination of water resources management and management (including extreme events and climate change); Monitoring of water quantity and quality (surface and groundwater); Strengthening and coordination of water resources management and management (including extreme events and climate change). Institutional; Water education, communication, research and capacity building.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage Assessment			
It generates conditions to contribute to the planning, management and control of water resources, decreasing the loss and damage from the impacts of adverse events resulting from climate change.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 14 CDN.1: Measure #85	Potentially Responsible	SDGS 5, 6; 13 Sendai Meta E	MA: DINAGUA

#42	Water Security Plans	Water Resources
By 2030, water security plans have been implemented in 15 drinking water systems; and at least two sanitation security plans have been implemented in two locations in the interior of the country, considering the conditions related to climate change.		
climate.		
Contributions to the Global Adaptation Goal		

<b>Vulnerability Reduction:</b> Safety plans reduce the likelihood of potential public health risks that can occur anywhere in the water supply system (water source, treatment, etc.), distribution networks and household installations), also applicable to the entire sanitation service chain.				
<b>Mitigation co-benefits.</b>				
Unidentified.				
<b>Input to Loss and Damage Assessment</b>				
Potential effect on reducing impacts on health and on distribution and sanitation networks.				
<b>National Frameworks</b>		<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP: Paragraph 11 & 14 Law 19.772; PNAgua: P02		Potentially Responsive	SDGS 5, 6; 13 Sendai Meta E	MA: DINAGUA
<b>#43</b>	<b>Water Quality</b>		<b>Water Resources</b>	
By 2030, appropriate technologies and procedures are in place to prevent, detect and reduce the effects of algal bloom events in priority areas.				
<b>Contributions to the Global Adaptation Goal</b>				
<b>Increased adaptive capacities:</b> new tools are generated to act reactively in the face of impacts derived from or enhanced by climate change in aquatic systems, reducing the risk of affecting: the availability of drinking water, productive systems that are conditioned by water quality, water quality areas, and the environment. recreational activities, etc.				
<b>Mitigation co-benefits.</b>				
Unidentified.				
<b>Input to Loss and Damage assessment</b>				
It reduces the costs associated with the impact of algal blooms.				
<b>National Framework</b>		<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP, paragraphs 13 and 14.		Potentially responsive	ODS 3, 5, 6, 6, 13, 15	MA: DINACEA

## AGRICULTURE

(relating to Paragraph 15 of the PNCC)

**Monitor and evaluate progress in the implementation of prioritised adaptation actions and targets for Agriculture.**

<b>#44</b>	<b>National Adaptation Plan for Agro</b>	<b>Agriculture and Livestock</b>
Progress on the implementation of the National Adaptation Plan in the agricultural sector is monitored and reported by 2030. (PNA-Agro).		
<b>Contributions to the Global Adaptation Goal</b>		
<b>Vulnerability Reduction:</b> Guides the design, coordination and prioritisation of policies, programmes and projects that seek to address the climate vulnerabilities of different agricultural production systems and aims to achieve a paradigm shift towards a path of resilient development adapted to climate variability and change in the agricultural sector.		
<b>Increased adaptive capacities:</b> Enables changes in processes, practices and structures that have place in a system to moderate potential damages or take advantage of potential opportunities associated with climate variability and change.		
<b>Mitigation co-benefits.</b>		
Building more resilient and adaptive systems allows for increased productivity per unit of output. emissions over and above the increase in GHG emissions.		
<b>Contribution to Loss and Damage Assessment</b>		
The National Agricultural Adaptation Plan itself constitutes a tool to contribute to the registration or reduction of loss and damage.		

National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#45	Financial and risk transfer instruments	Agriculture and Livestock	
By 2030, new financial and risk transfer instruments have been developed and implemented, increasing insurance penetration in new lines compared to 2025.			
Contributions to the Global Adaptation Goal			
Increasing adaptive capacities: Managing the risk of loss and damage to production systems and infrastructure, associated with increased frequency of extreme events, allows producers to recover from the effects of extreme events. partially their investments and the continuity of production in a shorter period of time.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage assessment			
It contributes to reducing economic losses due to extreme events.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

**Promote the implementation of good practices in the different activities and processes of agriculture as a strategy for adapting to climate change, maintaining production, increasing resilience and reducing risks in agriculture and the environment.**

#46	Permits for irrigation and other agricultural uses	Agriculture and Livestock	
By 2030, the number of permits for the abstraction of water resources for irrigation and other agricultural uses is promoted and increased, as an adaptation strategy to the variability in the rainfall regime and the risk of drought, based on the year 2025, subject to the availability in quantity and quality of water and within the framework of the National Plan.			
Water Law, Law N° 16858 and Decree N° 368/018.			
Contributions to the Global Adaptation Goal			
Decreased Vulnerability: Producers have water reservoirs, equipment, and other tools. to cope with prolonged periods of water scarcity, allowing yield losses to be reduced through irrigation water use.			
Mitigation co-benefits.			
It will allow animals to avoid performance losses due to either thirst or lack of feed, and contributes in improve the indicator of GHG emissions intensity per kg of meat.			
Input to Loss and Damage assessment			
It contributes to the adaptation of the production system to cope with periods of water scarcity.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#47	Research programmes	Agriculture and Livestock
By 2030 there are comprehensive information systems for adaptive agricultural management for the sector. public and private, and research programmes have been promoted in rain-fed agriculture; horticultural and fruit crops; fodder species and pastures that are best suited to climatic variability.		
Contributions to the Global Adaptation Goal		
<b>Increased adaptive capacities:</b> it allows for the generation of knowledge for different areas, which together with the dissemination of knowledge will make it possible to generate tools to reduce vulnerability to extreme events and/or events caused by climate change. It provides information for decision-making on actions to reduce vulnerability to extreme events and/or those caused by climate change. adaptation that is feasible and available to producers.		
Mitigation co-benefits.		

In particular for fodder species and pastures, the fact that no major losses in fodder supply can be detected as of the end of the year is a major concern.			
The use of extreme event resistant species has co-benefits in improving the GHG emissions intensity indicator per kg of meat, as animals such as sheep and cattle do not lose weight.			
<b>Input to Loss and Damage assessment</b>			
It helps to reduce yield losses in different production systems and to start to identify those cultivars and species that are best adapted to the periodicity of extreme weather events.			
<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#48	Thermal stress	Agriculture and Livestock	
By 2030, at least one adaptation measure has been implemented to reduce heat stress of animals in at least one country. at least 50% of dairy farms and in confinement.			
Contributions to the Global Adaptation Goal			
Decreased Vulnerability: Production systems with measures to reduce heat stress are less vulnerable to heat stress. vulnerable to extreme temperature and other climatic events. As a result, there are fewer death losses and higher productivity.			
Mitigation co-benefits.			
The measure contributes to improving the GHG emissions intensity indicator per kg of meat.			
Input to Loss and Damage assessment			
It contributes to reducing economic losses due to extreme temperature events (cold and heat).			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

**Promote the development and implementation of adaptation measures that have synergies, parallels and co-benefits with climate change mitigation.**

#49	Native Forest	Agriculture and Livestock	
By 2030, 100% of the 2012 native forest area is protected, with the option of increasing it by 5%, particularly in areas of environmental protection of water resources, seeking to reverse degradation processes (892,460 ha).			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Native forest areas provide shelter and shade in livestock systems and provide support services for water quality conservation and soil erosion prevention.			
Mitigation co-benefits.			
Ecosystem services that contribute to the targets of the Convention on Biological Diversity and the Convention to Combat Desertification.			
desertification.			
Input to Loss and Damage assessment			
Unidentified.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#50	Intermittent irrigation in rice cultivation.	Agriculture and Livestock
By 2030, intermittent irrigation technology with variable lamina has been introduced in 5-10% of the area under irrigation. rice cultivation.		
Contributions to the Global Adaptation Goal		
Increased adaptive capacities: Promotes more efficient irrigation water use practices with the potential to reduce the volume required during the crop cycle when winter and spring rainfall is low. water reserves for irrigation are limited.		
Mitigation co-benefits.		

Potential reduction of methane emissions from rice cultivation.			
<b>Input to Loss and Damage assessment</b>			
Unidentified.			
<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#51	Shade and Shelter Forest Plantations	Agriculture and Livestock	
By 2030, 100% of the 2018 area of forest plantations for shade and shelter, including silvopastoral systems, will be maintained, with the option of increasing this area by 10%, providing conditions for protection and improved animal welfare, in particular in unfavourable weather conditions.			
Contributions to the Global Adaptation Goal			
Reducing Vulnerability: Safeguarding conditions and animal welfare in production systems are favoured. The use of the product in livestock farming, particularly in unfavourable climatic situations (against wind, solar radiation, rainfall and temperature changes) and contributes to increasing production efficiency in animal production systems.			
Mitigation co-benefits.			
It contributes to the conservation of carbon stocks contained in living biomass, among other carbon pools. present in these lands.			
Contribution to Loss and Damage assessment			
It contributes to reducing economic losses due to extreme temperature events.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#52	Good Management Practices for natural range and breeding herds	Agriculture and Livestock	
By 2030, good natural range and herd management practices have been incorporated in livestock production establishments in an area between 1,500,000 and 4,000,000 ha, leading to a reduction of vulnerability to the climate variability in natural field-based livestock production systems.			
Contributions to the Global Adaptation Goal			
Vulnerability Reduction: Preserves the biodiversity of the natural countryside, improves the efficiency of natural livestock systems, promotes water quality conservation services and reduces soil erosion impacts.			
Mitigation co-benefits.			
The implementation of the set of changes in natural range grazing and cattle herd management practices contributes to reducing GHG emissions, increasing soil organic carbon sequestration (COS), and reducing GHG emissions intensity per unit of product.			
Input to Loss and Damage assessment			
It contributes to reducing economic losses.			
National Framework	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#53	Land use and management plans	Agriculture and Livestock
By 2030, 95% of the agricultural area under Soil Use and Management Plans, which include erosion reduction and organic matter conservation on agricultural land, has improved productivity and the capacity of the agricultural sector to produce more food. water storage and reduced the risk of erosion in extreme precipitation events.		
Contributions to the Global Adaptation Goal		
<b>Decreased Vulnerability:</b> The pasture phase of an agricultural rotation promotes the accumulation of organic matter in the soil, which leads to a greater capacity to retain more water content in the soil, reducing the vulnerability of <b><i>the soil to soil erosion</i></b> . vulnerability to water deficit and soil loss through erosion.		
Mitigation co-benefits.		

It contributes to conserving and increasing soil organic carbon stocks.			
<b>Input to Loss and Damage assessment</b>			
It contributes to reducing economic losses.			
<b>National Framework</b>	<b>Categorisation Gender</b>	<b>International Frameworks</b>	<b>Responsible</b>
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP

#54	Effluent management on dairy farms		Agriculture and Livestock	
By 2030, good effluent management practices have been implemented on dairy farms, including the valorisation of effluents as a soil improver, reaching 50% of the national herd.				
Contributions to the Global Adaptation Goal				
Vulnerability reduction: Helps to conserve the quality of water resources by reducing the amount of nutrient-loaded effluents discharged into watercourses.				
Adaptive Capacities: Improve soil conditions to increase dairy herd production.				
Mitigation co-benefits.				
Effluent management systems with zero discharge to streams provide GHG emission mitigation benefits especially methane gas. In addition, it contributes to reducing nitrous oxide emissions from fertilisers. nitrogenous substances.				
Contribution to Loss and Damage Assessment				
Unidentified.				
National Framework	Categorisation Gender	International Frameworks	Responsible	
NCCP: Paragraph 15, 16	Potentially responsive	SDGS 2, 13, 15	MGAP	

## ENERGY

(relating to Paragraphs 18 and 20 of the NCCP)

**Strengthen energy planning instruments by incorporating adaptation to climate change and variability, improve resilience and adaptive capacity of the system and infrastructure.**

#55	Action Plan 2025 - 2030 NAP Energy		Energy
By 2030, the 2026-2030 Action Plan of the National Energy Adaptation Plan (NAP-Energy) has been implemented.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: Specific measures are designed and developed to reduce the vulnerability of the sector to the effects of climate change.			
Increased adaptive capacities: Relevant information is generated on the state of vulnerability of the energy system components, to improve decision-making on the design of energy system actions.			
adaptation.			
Mitigation co-benefits.			
Reduction in GHG emissions by diversification of the matrix using renewables with different sources.			
Input to Loss and Damage Assessment			
It reduces losses due to the impacts of adverse events, generates continuity of supply and generates tools for recording losses and damages in the sector.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 18 & 19 20	Potentially Responsive	ODS: 5, 7, 9 & 13	MIEM

**Identify and assess energy system risks in energy generation, transmission and distribution, and improve the resilience of current and future energy infrastructure to climate change.**

#56	Guidance for the adaptation of the goods and services production sector		Energy
By 2030, a guide for risk reduction in the energy sector has been developed and implemented for the energy sectors. of energy demand.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: A tool is generated for the assessment, identification and implementation of adaptation and risk reduction measures in the production sector of goods and services, both public and private. private.			
Mitigation co-benefits.			
Unidentified			
Contribution to Loss and Damage Assessment			
It reduces losses due to impacts of adverse events by ensuring continuity of energy supply and generates information for recording impacts in the sector.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 18 & 19 20	Potentially Responsive	ODS: 5, 7, 9 & 13	MIEM

#57	Vulnerability studies on critical infrastructure	Energy
By 2030, a work plan has been developed and implemented for vulnerability studies and identification of adaptation and risk reduction measures for critical infrastructure in the event of extreme events.		
Contributions to the Global Adaptation Goal		
Vulnerability reduction: adaptation and risk reduction actions are identified and implemented in critical infrastructures of the electricity system.		
Increased adaptive capacities: Relevant information is generated on the state of vulnerability of the energy system components, to improve decision making on the design of actions for energy system adaptation.		
Mitigation co-benefits.		
Unidentified		

Input to Loss and Damage Assessment			
It reduces losses due to the impacts of adverse events, generates continuity of supply and generates tools for recording losses and damages in the sector.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP: Paragraphs 18 & 20	Potentially Responsible	ODS: 5, 7, 9 & 13	MIEM

## TOURISM

(relating to Paragraph 19 of the NCCP)

**Promote research and risk assessment on the effects of climate change on tourism, in order to improve the design of adaptation actions to be implemented in the medium and long term scenarios.**

#58	Risk analysis according to tourism products.		Tourism
By 2030, vulnerability and hazard analyses will have been carried out in the sector, according to tourism products and considering the trends determined by existing climate projections, agreed upon in the framework of the SNRCC.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: Having the information corresponding to the analysis and evaluation of risks and impacts, favours coping capacities and the design of measures to reduce specific vulnerabilities, derived from those risks caused and enhanced by climate change.			
Mitigation co-benefits.			
Unidentified.			
Input to Loss and Damage Assessment			
It contributes to the knowledge of the impacts of climate-related events and their associated costs.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 19	Potentially Responsible	ODS 5, 11, 12, 12, 13, 14, 15	MINTUR, SNRCC

#59	Updated National Tourism Plan 2030		Tourism
By 2030, the National Tourism Plan 2030 will have been reviewed and updated with regard to the risk analyses carried out, in articulation with existing National Adaptation Plans.			
Contributions to the Global Adaptation Goal			
Increased adaptive capacities: It has tools for the design of adaptation actions and decision making that, when applied, reduce the vulnerabilities identified and allow key tourism destinations to adapt resiliently to the conditions that climate change will bring about.			
Mitigation co-benefits.			
Depending on the actions identified and prioritised, it would allow for a reduction in greenhouse gas emissions, through the application of measures for energy efficiency, waste management, and protection and ecosystem maintenance.			
Input to Loss and Damage Assessment			
Depending on the actions identified and prioritised, it will allow for a reduction in the impacts generated by extreme and slow-generation events, as well as tools for recording and quantifying them.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 19	Potentially Responsible	ODS 5, 11, 12, 12, 13, 14, 15	MINTUR, SNRCC



Promote the generation of and access to relevant, integrated and useful information, the use of meteorological information, early warnings and other climate risk management tools for decision-making by institutions and the population.

#60	Tourism Information Systems and Alerts.		Tourism
By 2030 at least 4 tourism cities will have integrated weather and emergency alerts into their tourism information systems and trained their tourism operators and officials in the use of such information.			
Contributions to the Global Adaptation Goal			
Vulnerability reduction: It reduces the impacts of extreme events and protects the local population and tourist visitors by providing them with timely information on weather warnings, emergencies and other risks that may affect them.			
Increased adaptive capacities: Tools are available to act preventively and reactively to risks and extreme events in major tourism cities. The knowledge and response capacity of operators and officials to possible impacts and risks arising from climate change is improved, resulting in a better understanding of the impacts of climate change. multiplier effect through traction on visitor and tourist behaviour.			
Mitigation co-benefits.			
Unidentified.			
Contribution to Loss and Damage Assessment			
It contributes to the generation of information for the recording of possible impacts in the event of the emergence of warnings of emergency.			
National Frameworks	Categorisation Gender	International Frameworks	Responsible
NCCP Paragraph 19	Potentially Responsible	ODS 5, 11, 12, 12, 13, 14, 15	MINTUR, SNRCC.