



URUGUAY'S GREENHOUSE GAS INVENTORY EVOLUTION AS A COMPONENT OF THE MRV FOR THE COUNTRY'S NDC

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ACTION AREA: ————— Cross-cutting

FOCUS AREA: ————— M&E

COUNTRY: ————— Uruguay

SECTORS

INVOLVED: ————— Cross-sectoral

TIMEFRAME: ————— 1996-ongoing

CASE SUMMARY: ————— Uruguay is a high-income developing country with an agroindustry-based economy. Even if the country has only accounted for 0.07% of the total global greenhouse gas (GHG) emissions in 2012, Uruguay's agroindustry and livestock related activities are an important source of methane (CH₄) and nitrous oxide (N₂O), being the main source of GHG in the country (for more information see MVOTMA and SNRCC, n.a.).

The country has shown a strong domestic and international commitment facing climate change challenges early on through its adhesion to the United Nations Framework for Climate Change (UNFCCC) in 1994. The GHG inventory system reflects the evolution of the institutional arrangements and capacities in place that support the data collection and processing, particularly between the Ministry of Housing, Land Planning and Environment (MVOTMA, for its acronym in Spanish), the Ministry of Livestock, Agriculture and Fisheries (MGAP) and the Ministry of Industry, Energy and Mining (MIEM).

On a domestic level, from the early 1990s on, Uruguay continuously worked on creating a robust policy framework to mainstream climate change into the national and sectoral policies while building the necessary institutions to implement them. In 2009, the Coordination Group of the National Response System to Climate Change and Variability (SNRCC) was created, which constitutes the main institutional arrangement for climate change-related topics. SNRCC coordinates MRV-related activities. Subsequently, the governance mechanisms were reinforced with the establishment of the National Environment, Water and Climate Change Office of the Presidency of the Republic (SNAACC) and the National Environmental System (SNA) both established by the Cabinet Council in 2016¹. In 2017, the National Climate Change Policy (NCCP) was adopted (see República Oriental de Uruguay, 2017) creating a strategic instrument to guide the country to a low-carbon economy, providing a framework for Uruguay's first Nationally Determined Contribution (NDC). Uruguay ratified the Paris Agreement (PA) in 2016 and presented its first NDC in 2017 after enacting the NCCP.

¹ Created jointly with the SNAACC by decree 172/2016. Available at: <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/laws/4765.pdf>

The monitoring, reporting and verification (MRV) system was conceived as an instrument to monitor the country's NDC objectives to be reported to the UNFCCC. The GHG inventory is and will be a key information source to calculate the emissions and removals that are related to the mitigation measures prioritised in the NDC. The MRV system design has a wider scope, also considering adaptation and other





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measures besides GHG-related ones. The MRV system is to be operational by the end of 2019 and will support the country's accountability² towards its population and compliance with the government's commitments made in its NDC³.

The development of the GHG inventory and MRV system are considered good practice due to the strong political and technical commitment within public institutions. Coordination arrangements have been created and improved while building the necessary capacities to operate the systems. The unlocking of important domestic resources and coordination of efforts enables feedback loops and continuous improvements of the MRV system and GHG inventory, which contribute to the fulfilment of the NCCP and NDC objectives.

BACKGROUND:

Uruguay is considered one of the most stable countries in terms of politics and law enforcement in Latin America, having achieved a strong social and economic development. It is categorised as a high-income developing country and has almost alleviated extreme poverty. Agriculture represents 5.6% of the country's Gross Domestic Product (GDP). Products related to the sector (derived from livestock (27%), agroindustry (14%) and afforestation) represent over 40% of its exports (OEC, 2017). Thus, Uruguay is one of the largest producers of food in the world in relation to its population, able to supply around 28 million people, nine times the population of the country. Depending on the methodology used - either Global Warming Potential (GWP) or Temperature change Potential (GTP), both used by Uruguay in their 2014 GHG Inventory - CH₄ and N₂O emissions from the agriculture, forestry and other land use (AFOLU) activities account for the major GHG emissions in the country (MVOTMA and SNRCC, 2017b).

Uruguay is one of the few countries in Latin America that has presented its 4th National Communication (NC) in 2016 and its 2nd Biennial Update Report (BUR) in 2017, fulfilling the mandates of articles 4 and 12 of the UNFCCC. Article 12 of the convention obliges all Parties, in accordance with article 4, paragraph 4, to communicate information relevant to its implementation, including with regards to emissions and removals (United Nations, 1992). Its first national GHG inventory for the year 1990 was presented in 1997 in its 1st NC. These reports present the evolution of emissions in the 1990, 1994, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012 and 2014 series and have upgraded the reporting methodology to the 2006 Intergovernmental Panel on Climate Change (IPCC) guidelines for the GHG inventory of 2014. The use of more detailed guidelines lead to more accurate and specific inventories, which is particularly important for Uruguay as it pursues improvements in productivity and efficiency of AFOLU activities to reduce GHG emissions. The country has developed the required capacities to quantify GHG emissions every two years and to display that data online for public inquiries (MVOTMA, 2019).

Beyond the GHG inventory, Uruguay has built a robust policy framework to mainstream climate change into the national and sectoral policies, while establishing the necessary institutions to support the implementation of those policies. The major stepping stones are as follow:

- 2009: Creation of the SNRCC as the main institutional mechanism for climate change matters, enhancing participatory and cross-sectoral coordination
- 2015: Submission of the Intended Nationally Determined Contribution (INDC)
- 2016: Creation of the Water and Climate Change Office of the Presidency of the Republic (SNAACC) to strengthen, articulate, and coordinate Uruguay's climate change related public policies at the highest political level.
- 2016: Ratification of the Paris Agreement (PA)

² The Planning and Budget Office assesses public policies in terms of the public value generated, the sustainable development goals agenda and gender issues. Climate change policies are also reviewed and evaluated.

³ Commitments available at: https://www.opengovpartnership.org/sites/default/files/Uruguay_ActionPlan_2018-2020_EN.pdf

- 2017: Adoption of the National Climate Change Policy (NCCP) as the most important strategic guide to a low-carbon development with a 2050 vision and sectoral lines of action considering the economic, environmental and social dimensions. It considers that the NDC is one of the instruments that will contribute to achieving the goals contained in the NCCP among other mitigation and adaptation projects and programmes, and will be monitored annually by a transparent, comparable, trustable and timely system.
- 2017: Submission of Uruguay's 1st NDC for the period 2017-2025. The NCCP sets the framework to design the NDC under a participatory and technical process. The NDC recognises the nature of a developing country with the right to develop with the lowest GHG emission intensity possible while reducing vulnerability and increasing resilience. The NDC includes conditional and unconditional emission reduction commitments, followed by measures to mitigate GHG emissions, to increase the country's resilience to climate change, to adapt to the effects of climate change and to build capacities/develop knowledge. The last section of the document provides guidance on data gathering to increase transparency and facilitate the monitoring, reporting and verification (MRV) of the country's NDC objectives and proposed measures, while taking into account existing, projected or potential policies and the availability of funding, technology and/or capacities.

The NDC was designed through a comprehensive technical assessment, which achieved to reflect the country's development priorities, highlighting its national circumstances and capacities. The NDC's conditional and unconditional mitigation objectives for 2025 are: (i) global objectives by GHG emissions intensity regarding the evolution of the economy (gas emissions intensity per GDP unit), (ii) specific objectives for GHG emission intensity regarding food production (gas emissions intensity per kg of beef cattle measured in live weight) and (iii) specific objectives for the LULUCF sector (measured in hectares) (Oriental Republic of Uruguay, 2017)

The MRV system tracks the NDC mitigation objectives. To this end, the national GHG inventory will be a key information source to calculate the emissions and removals that are related to the implementation of the mitigation measures prioritised in the NDC. Additional data will be required such as, among others, GDP estimations, sectoral statistics and projections. In addition to that, the monitoring of the NDC also includes the adaptation and capacity building measures which will utilise data from different sources besides the GHG inventory system.

Given that the NDC operationalises the NCCP, the MRV system will likewise enhance the country's transparency and accountability regarding the implementation of public policies.

Currently piloting 30 NDC measures but still under development, the MRV system will be accessible online for public inquires by the end of 2019 concurring with the termination period of the current government. The Climate Change Division (CCD) within the MVOTMA, who acts as an operative and executive body on climate change domestically (presiding the SNRCC and coordinating the NCCP and NDC implementation) expects to leave a well-organised operational MRV system for the new government starting in 2020.



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ACTIVITIES: — Although the GHG inventory system and the MRV system are interlinked, Uruguay's government has two separate work streams to address each system. While the GHG inventory has consistently improved over the last twenty years, MRV efforts have been more prominent in the last two years since the PA adoption and the NDC submission. However, a strong institutional and policy framework allows good coordination and synergies between the two. The following activities highlight how the work around both systems is helping to build a strong path for Uruguay's commitments under the PA and its NDC submission.

(I) NATIONAL GHG INVENTORY SYSTEM (SINGEI IN ITS SPANISH ACRONYM)

Although some challenges remain (such as more detailed and higher quality data from tracking mitigation measures for sectors other than AFOLU), Uruguay has developed a national system for GHG inventories, which is constantly upgraded and improved. The system has five components, detailed in the 2nd BUR as follows (Uruguay, 2017):

- **INSTITUTIONAL ARRANGEMENTS AND ENTITIES INVOLVED:** The MVOTMA is in charge of the elaboration, coordination and presentation of the GHG inventories in the country and to the UNFCCC. Up to 2006, the MVOTMA elaborated sectoral inventories in coordination with other ministries (this assignment was included within the SNRCC framework after its creation in 2009), assuming the main workload. Since the 2006 national inventory, and after coordination arrangements were reinforced and capacities were further developed, the MGAP and MIEM were able to report on the AFOLU and energy emissions respectively, leaving the leading coordination role and the final report elaboration to the MVOTMA. In addition to that, the MVOTMA still estimates the emissions of the industrial processes and waste sectors.
- **DATA METHODS AND SYSTEMATISATION:** Since the national inventory of 2014, the country uses the IPCC inventory software (version 2.54) for the direct sectoral emission prioritisation and estimation. For the indirect estimations, supplementary electronic worksheets have been developed for every sector. The main outcome is a national and sectoral database which contains all the information and its sources, activity data and emission factors. In addition to that, every sector codes the categories and subcategories assessed considering the data characteristics and estimation parameters used as part of the method employed. The databases are stored in the electronic documentary management system of the SINGEI.
- **QUALITY CONTROL AND ASSURANCE:** Quality procedures and checking-lists have been implemented – not only for reviewing the used methods but for activity data, emission factors and parameters employed to identify any errors before making information public. In addition to that, a cross-sectoral review has been conducted between the members of the working groups, which included the assessment by national experts and the directly involved ministerial officers in charge of the estimations. This good practice seeks to improve the transparency of the results, the comprehensiveness of the estimations, the coherence of the time series, the comparability with other country inventories and the accuracy of the calculations. Since the 2010 national inventory, the assessments are also reviewed externally as part of this activity.
- **ARCHIVE SYSTEM:** The databases are stored in the electronic documentary management system of the SINGEI, which is managed by the MVOTMA with a remote access for every sectoral working group. The MVOTMA is in charge of compiling the national database from the sectoral information provided in designed templates and formats according to an established procedure.

• **INVENTORY CYCLE AND PLANNING FOR IMPROVEMENTS:** The opportunities for improvement of the GHG system (tools, reports, etc.) are included in the sectoral reports and are documented in the final national report prepared for the UNFCCC. There is a plan for improvements established for the following national inventory.

(II) MRV SYSTEM

As mentioned before, the MRV system is still under development and monitors the country's progress on its NDC commitments.

• **RATIONALE:** Uruguay's NDC has clear quantitative mitigation goals, split by type of GHG and specified for each sector (including food production as a specific activity) and it includes specific measures that the country is already implementing as well as plans to implement those goals. In addition to that, the NDC also includes adaptation objectives, adaptation plans and measures needed in the country coupled with adaptation priorities, implementation plans and support needed to reach the objectives. The NDC further addresses current and future capacity building and knowledge creation measures from Uruguay's NCCP.

• **DESIGN CONCEPT:** The MRV system measures progress and results of the objectives and measures included in the NDC, which are both quantitative and qualitative. The system comprises:

- i. A monitoring matrix (so far on excel) which includes the commitments set in the NDC and the indicators to monitor those commitments. It will also include an additional column to monitor gender aspects for a group of related measures. It is expected that the impact will be somehow quantified in terms of vulnerability reduction and other social aspects and included in additional columns of the monitoring matrix;
- ii. Technical specification files for every measure which include indicators' definitions, calculations and reports;
- iii. Key actor maps for every measure and respective indicator, including government and non-government institutions;
- iv. A road map on how the measures are to be implemented;
- v. Finance and investment: This section is currently under development and includes (i) understanding the cost of implementing the NDC measures in terms of investments and sources and; (ii) monitoring how the different financial resources reach the measures

• **INSTITUTIONAL ARRANGEMENTS:** The MVOTMA coordinates the MRV system and the members of the working group that designed the NDC within the SNRCC run it, giving it a strong framework and continuity to the process that enabled to design the NPCC and the NDC. The NDC group is now called the PMRV group (Programming, monitoring, reporting and verification group for the NPCC and NDC). This group coordinates closely with the working groups involved in the GHG inventory system to obtain the information regarding sectoral emissions required for the monitoring indicators.



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INSTITUTIONS

INVOLVED: ————— Some members of the SRCC are (for other members and advisors see SNRCC, 2018b):

- Ministry of Housing, Land Planning and Environment (MVOTMA)
- Ministry of Livestock, Agriculture and Fisheries (MGAP)
- Ministry of Industry, Energy and Mining (MIEM)

COOPERATION

WITH: ————— The United Nations Development Programme (UNDP) through the Global Environmental Facility (GEF) for the NC and BUR preparations, as well as the Economic Commission for Latin America and the Caribbean (ECLAC), have been involved in the work conducted for GHG inventories.

The MRV system activities are supported by UNDP through the Capacity Building Initiative for Transparency (CBIT) for activities related to energy, agriculture and LULUCF. The programme Euroclima+ has supported the monitoring and evaluation activities for health, tourism and other sectors, implemented by the International Foundation for Public Policies and Management in Ibero-America (FIIAPP) and the German Development Cooperation Agency (GIZ). Through its NDC Invest initiative, the Inter-American Development Bank (IADB) is supporting Uruguay by providing technical assistance to approach the private sector. The IADB is also supporting the SNAACC for finance-related activities.

FINANCE: ————— The different ministries and public institutions in Uruguay invest their own resources through their technical capacities to lead the work done related to the GHG inventory and MRV system.

Regarding technical cooperation and always in line with national priorities, the main sources of funding have been the European Union, among multiple other donors (for example, for GEF activities).

- IMPACT OF ACTIVITIES:** —————
- **ROBUST INFORMATION TO SUPPORT THE DEVELOPMENT OF AN AMBITIOUS NDC:** The advances achieved in the GHG inventory system contributed to design an ambitious NDC coherent with national priorities and circumstances. The GHG inventory system allows to build and monitor the indicators of the MRV system.
 - **ENHANCED COHERENCE AND SYNERGY:** The work done both for the GHG inventory and MRV system constantly contributes to enhancing the inter-agency coordination for achieving the national objectives established in the NPCC and NDC. The different work groups under the SNRCC work in a coherent and synergistic manner, and are able to complement their efforts by developing strong local technical capacities and establishing agreed procedures.
 - **INFORMED POLICY-MAKING:** The main impact is perceived in the policy-making decisions related to climate change, nurtured by robust information and data gathered in both systems.

WHY IS IT

- GOOD PRACTICE:** —————
- **POLITICAL BUY-IN:** The work done under the GHG inventory and MRV system reflects the initiative and leadership of the different key ministries related to climate change in the country. There is positive perception of the strong commitment of these institutions with transparent, high quality and accurate technical information to support policy planning and implementation.
 - **STAKEHOLDER ENGAGEMENT:** The SNRCC has enabled a space for constant exchange and coordination between the groups involved in the work being done for both systems. These spaces create room for improvement and feedback, while at the same time creating local capacities.

- **TECHNICAL FEASIBILITY:** The MRV as well as the GHG inventory system have successfully integrated other support-related programmes and projects (such as the National Communication and the Biennial Update Report), which keeps strengthening the work done.

SUCCESS FACTORS: —————

- **BUILDING EFFECTIVE INSTITUTIONAL ARRANGEMENTS:** Key institutional arrangements and trusting relationships have been established between the members of the different working groups to work together to achieve better outcomes, which is reflected in the local technical resources invested for both work streams.
- **STRONG NATIONAL TECHNICAL CAPACITIES:** In the case of the GHG inventory system, the country has installed and maintained capacities within the key ministries, which allows capitalising the knowledge developed on that matter. In the case of the work done by the PMRV, having the same technical team which was part of the NDC design makes it easier to build the monitoring indicators and identify the sources of information.
- **A STRONG POLICY FRAMEWORK:** The country has a strong climate change policy framework, which enables a better aligned work as the necessary synergies exist that are required to articulate the different ongoing activities.

OVERCOMING BARRIERS / CHALLENGES: —————

WHAT WERE THE MAIN BARRIERS / CHALLENGES TO DELIVERY?

CAPACITY

Lack of technical capacities in development of GHG inventory systems

INFORMATIONAL

Limited information and data presents a challenge to achieving a robust system.

INSTITUTIONAL

There was a lack of involvement of relevant sectoral ministries.

HOW WERE THESE BARRIERS / CHALLENGES OVERCOME?

The GHG inventory system is the result of a process that took several years to mature and that is still improving. Developing technical capacities was a key factor that allowed the country to make important advances on the quality of the inventory through time. The government invested domestic resources, coupled with the support of cooperation projects, to install and maintain capacities in the key ministries involved in GHG emissions reporting.

By investing domestic resources, and also with the support of cooperation projects, the country is working on having more accurate and detailed data to nurture both the GHG inventory and MRV systems.

The engagement of key ministries in the work done for both the MRV and GHG inventory systems has been the result of a progressive and better understanding of climate change implications in sectoral and national activities, plans and objectives.

LESSONS LEARNED: —————

- **SECURE GOOD INTER-INSTITUTIONAL COORDINATION TO BUILD INFORMATION SYSTEMS:** To establish robust information systems, effective coordination among government institutions needs to be built through time and be constantly reinforced in terms of capacities and other resources.
- **CREATE A ROBUST FRAMEWORK:** Political will is necessary to establish a robust framework with clear priorities, which also nurtures the work done at a more technical level.



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HOW TO REPLICATE

- THIS PRACTICE:** —————
- **INVEST IN DOMESTIC CAPACITY-BUILDING** as it has a direct impact on achieving a robust MRV system.
 - **SET CLEAR CLIMATE CHANGE POLICIES AS A GUIDE TO ESTABLISH THE WORKING AGENDA AND PRIORITIES**, making it easier to identify linkages and synergies that make the work more efficient and aligned.
 - **SET UP A CORE COORDINATION SPACE FOR TECHNICAL EXCHANGE** such as the SNRCC to validate and motivate cooperative work among key actors.
 - **ENSURE STRONG POLITICAL WILL FROM THE HIGHEST LEVEL** to endorse work done within the ministries at the technical level.

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FURTHER KEY

RESOURCES: —————

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WEBSITES:

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- MVOTMA on its climate change activities: <http://www.mvotma.gub.uy/politica-planos-y-proyectos>
 - MVOTMA on the GHG inventory system: <https://www.mvotma.gub.uy/sistema-ingei/inventarios-nacionales>

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