
MRV of Mitigation Activities – Baseline Report Series

This report is an output of the Technical Subgroup on MRV and Climate Change (SGT-MRV) of the Pacific Alliance (PA).

It is a component of the multi-year work plan defined by the SGT-MRV country focal points to deliver on the [Action Plan](#) of the PA formal Working Group on Environment and Green Growth (GTMACV) to achieve the presidential mandate No. 16 of the [Cali Declaration](#) of the Pacific Alliance (*June 2017*).

The MRV of GHG Mitigation Activities allows countries to monitor the progress made on their nationally determined contributions (NDC). This reduces uncertainty, improves transparency, and sparks collaboration and flows of information that significantly reduce the risks of climate and infrastructure finance.

Baseline reports on the MRV of GHG Mitigation Activities in Colombia, Perú, and Chile were prepared by technical experts in each country. The reports contribute to the analysis and strengthening of the Climate MRV priorities in the PA countries.

For more information on any of the individual MRV of GHG Mitigation Activities country reports, please contact the [principal investigator](#) or the [SGT-MRV coordinator](#). Past meeting reports are archived [here](#).

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Baseline Analysis for the MRV of Climate Change Mitigation Actions in Peru

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1. *Scope*

The baseline report on MRV of mitigation activities contributes to the analysis and diagnostics of needs in monitoring and accounting of mitigation actions in the Pacific Alliance countries, through the analysis of the state of development of these practices in the framework of the MRV systems in Peru, their commitments, policies, tools, and technological platforms.

2. *Country context*

With the signing and ratification of the **Paris Agreement**, Peru enters a new and challenging climate context, in which it must prepare for reducing emissions, to measure, report and verify them, and negotiate international climate funds to reinforce its financing. The Paris Agreement came into force on November 4, 2016 and on July 22, 2016, months before its entry into force the Peruvian Government demonstrated its leadership by becoming the first Spanish-American country to ratify the Agreement, through Supreme Decree N° 058-2016-RE. This leadership is specified in the presentation by the Peruvian State of its National Determined Contributions (NDC) to the UNFCCC. Peru's commitment is that, of the total of 30% of the emissions that Peru has committed to decrease, with respect to the 2030 baseline, 20% will be with public and private resources (proposal unconditional) and 10% will be support from international climate financing (conditional proposal). Peru is not a polluting country, but it is vulnerable to climate change; hence the interest in being part of the context of countries that fulfill their commitments.

Currently, Peru is continuing to learn and collaborate with countries in the region (such as the Pacific Alliance) and other countries, both developed (e.g. Environment and Climate Change Canada, ECCC) and developing ones. These collaborations allow exchange experiences, knowledge, and resources to achieve the fulfillment of the NDC.

In relation to the MRV of GHG emissions (mitigation initiatives), the Peruvian State designs and implements mitigation measures through methodologies proposed by the UNFCCC, voluntary standards or, failing that, by accepted methodologies in Peru after having followed the guidelines established by the Ministry of Environment (MINAM).

The reports to the UNFCCC contain updated information on the actions carried out to implement the objectives of the Convention, including the status of their emissions, removals, emissions reductions and increase of GHG removals, and allows the dissemination to the citizens with maximum advertising about the results and the level of progress in the implementation of the NDC.

Currently, Peru has submitted to the UNFCCC its Third Communication on Climate Change¹ and its First Biennial Update Report² (BUR).

¹ See document in: <http://www.minam.gob.pe/wp-content/uploads/2016/05/Tercera-Comunicación.pdf>

² See document in: <https://unfccc.int/resource/docs/natc/perbur1.pdf>

2.1. The Multi-Sectorial Working Group for NDC (GTM-NDC)

Before the GTM was formed, its predecessor was the Multisectoral Commission of temporary nature created by Supreme Resolution N° 129-2015-PCM between April and September 2015. The Commission was responsible for preparing the technical report containing the proposal of the Expected and Determined Contributions (iNDC) at the National Level before the UNFCCC.

Subsequently, the first Commission became the GTM and was commissioned to generate technical information to guide the implementation of the NDC, through Supreme Resolution N° 005-2016-MINAM; its work was carried out between February 2017 and December 2018.

The elaboration process of the NDC is framed within the objectives of the National Strategy on Climate Change. It was an articulated and multi-sectorial process, both between and within sectors. In order for the process to be successful the multi-sectorial and multilevel process was necessary, as it involved different directorates, affiliated agencies and even vice-ministries that are responsible for implementing the NDC. This multilevel approach involved the entire national, regional and local governments, through technical meetings and regular monthly information sessions which served for the coordination between different general directorates in order to define the measures and formalize their scope, identify those responsible for the implementation, establish sectoral and intersectoral strategies, articulate actions, adapt procedures and incorporate climate change in their processes.

The spaces for dialogue and discussion between liaisons (contracted external consultants), specialists and representatives from each sector have served to establish guidelines and gather the information necessary for structuring the Tentative Programming, as well as a space for ideas exchange and lessons learned.

From February to March 2017 there was a process of review and selection of information regarding climate change adaptation and mitigation and April and May 2017 was devoted to defining the methodology in terms of general guidelines and minimum contents of the tentative programming by sector. Between June 2017 and August 2018, tentative schedules were developed, defining mitigation and adaptation measures, their enabling conditions and environmental and social co-benefits, the goals and indicators and the quantification of direct and indirect costs. Finally, from September to December 2018, the work was formalized, validating, approving and presenting the Sectorial Tentative Programming (STP) for mitigation and adaptation.

In the formulation process of the STP, there was no space for public consultations, but there was a large number of work meetings, bilateral and multilateral coordination meetings. The mandate of the GTM-NDC was to elaborate a roadmap or tentative programming that allows for implementation of the NDC, in the short and medium term. The measures found, mostly belonged to a single government sector, but in some cases, they can be shared by two sectors, with the respective institutional arrangements being made.

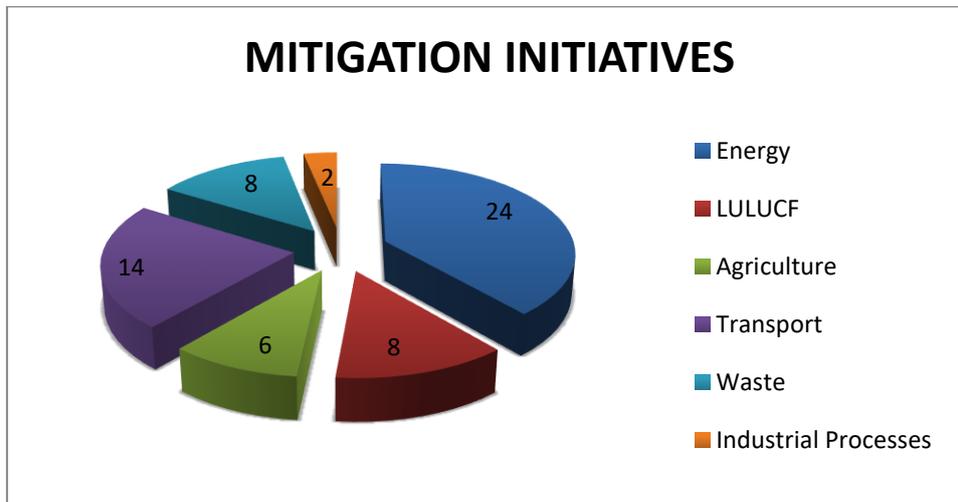
The list of mitigation measures was based on identifying first the needs of each sector; these determined the scope of the interventions and their goals, evidencing the enabling conditions that must be overcome for the measures to be implemented, describing the benefits and co-benefits that would be obtained thanks to that implementation, presenting the economic evaluation and the sources of financing, showing the necessary institutional arrangements,

identifying the roles of each involved actor and describing the forms of measurement, reporting and verification.

In the "Final Report of the Multi-Sectorial Working Group³" (GTM-NDC) of December 2018, there is an official list of mitigation initiatives, which was presented to the UNFCCC in September 2015 and considers a total reduction of 30% by 2030 which includes the conditional and unconditional goals. These measures represent priorities of the national and subnational governments and are framed within the Regional Climate Change Strategies. This means that all public entities involved must budget their compliance goals within the framework of their Institutional Operating Budgets (IOB), as well as apply them to their Results-Based Budget (RBB). The Ministry of Economy and Finance (MEF) will make available the necessary resources for this purpose and MINAM will monitor the progress of each sector.

Sixty-two mitigation initiatives across six sectors were presented, plus an additional option that represented the sum of the emission reduction potential from all sectors and that had not been considered in any of the 62 specifically defined options. The Energy sector had the greatest number of mitigation options, 24 (39% in stationary combustion) and 14 (22% in mobile combustion); followed by the LULUCF sectors, 8 (13%); Waste, 8 (13%); Agriculture, 6 (10%) and Industrial Processes, 2 (3%). The 62 mitigation options considered in the NDC proposal reached a total mitigation potential of 69.4 MtCO_{2eq}, which represents 23.3% of the projected emissions by the year 2030.

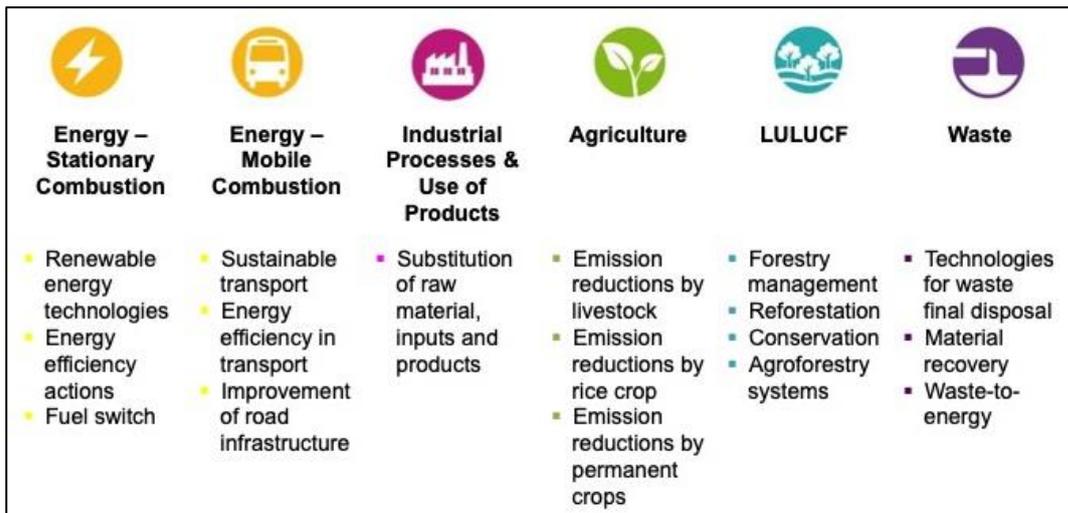
Figure 1: Peru mitigation initiatives



Source: Final report of GTM-NDC. December 2018
Elaboration: Prepared by the author

³ See document in: http://www.minam.gob.pe/cambioclimatico/wp-content/uploads/sites/127/2018/12/Informe-final-GTM-NDC_v17dic18.pdf

Figure 2: Emissions sectors and their components



Source: Final report of GTM-NDC. December 2018

Table 1: Official NDCs of Peru

Item	Results
Total goal	89.4 MtCO _{2eq} resulting in 30% emissions reduction by 2030.
Non-conditional goal	59.0 MtCO _{2eq} resulting in 20% emissions reduction by 2030.
Conditional goal	30.4 M tCO _{2eq} resulting in 10% emissions reduction by 2030.
Type	Reduction goal of GHG emissions determined against projected emissions in BAU scenario, that is, the relative rate reduction target.
Baseline	The BAU scenario is based on economic growth in the absence of explicit additional climate change policies, starting in 2010. The emissions trajectory of the BAU scenario would be as follows: in 2020 emissions would amount to 231.8 MtCO _{2eq} , at 2025 amount to 265.4 MtCO _{2eq} , and at 2030 amount to 298.3 M tCO _{2eq} .
Scope in emissions and GHG captures	The main GHG emissions that have been evaluated are carbon dioxide (CO ₂), methane (CH ₄), and nitrous oxide (N ₂ O). GHG emissions derived from solvents or precursor gases, due to the lack of data, are not recorded. Published values of the Global Warming Potential from the Second IPCC Report were used, in accordance with GHG inventories referred to UNFCCC: CH ₄ = 21 and N ₂ O = 310.
Coverage	National

Source: Final report of the GTM-NDC. December 2018

2.2. The Monitoring Platform for NDC

Adaptation and mitigation measures to climate change must be monitored through actions, provisions, processes and tools, in order to monitor and report on the level of progress in the implementation of these measures. This monitoring process is considered to be technical in nature. However, technical decisions may have social, economic and political implications that must be considered in national and subnational authorities' decision making.

The Framework Law on Climate Change (Law No. 3075, numeral 14.2) establishes that MINAM, as the National Climate Change Authority, is “responsible for the monitoring and evaluation of Nationally Determined Contributions, and reports on its implementation to the Secretariat of the United Nations Framework Convention on Climate Change”. In the same Law, ministries, regional governments and local governments are appropriate authority on climate change issues and, as such, promote, coordinate, articulate, implement, monitor and evaluate the whole climate change management in the scope of their jurisdictions⁴, and issue the corresponding regulations within the scope of their competences and functions (numeral 5.2).

For this reason, in its regulation, which is currently in public consultation, it proposes to create a platform for the monitoring of adaptation and mitigation measures, whose objective would be to monitor and report the level of progress in the implementation of adaptation and mitigation measures, their financing, access to payments for results, transfers of GHG reduction units, in addition to monitoring of NDCs⁵.

The scope of the NDCs Monitoring Platform is the following:

- Measurement, reporting and verification (MRV) of emissions, removals, emission reductions and increase in GHG removals.
- Monitoring and evaluation (M&E) of adaptation measures.
- Monitoring and reporting of climate financing.

Some products and results of the Platform are already tangible and are fully operational while others are in the design, development or implementation process. The following table presents these advances using the traffic lights method to reflect the state of their advancement.

Table 2: Progress in the implementation of climate change tools

Products			
INFOCARBONO	Operating		
Guides for developing national inventories	Published		
Carbon Footprint Peru		In design process	
National Registry of Mitigation Measures			In design proposal
MRV System of Mitigation Measures			In conceptual framework proposal
REDD Registry		In design process	
Climate Financing Registry		In design process	

Elaboration: Prepared by the author

⁴ It should be noted that INFOCARBONO also holds the sector authorities responsible for issuing periodic reports on GHG management in their respective sectors, in order to implement the National GHG Inventories (INGEI).

⁵ The Platform takes into account the principles and approaches established in articles 2 and 3 of the Framework Law on Climate Change and the guidelines of the Work Program of the Paris Agreement.

Regarding the **MRV system of mitigation measures**, as shown in the previous table, it is still in the proposal of a conceptual framework. It should be mentioned that MINAM and the sectors involved are concentrating first on national inventories.

Peru is governed by the MRV guidelines established by the IPCC and the Paris Agreement - Article 6 considers that the parties may choose to comply with their emissions reduction unilaterally or cooperate with each other to achieve greater ambition in their mitigation measures. If they decide to voluntarily cooperate, then they should apply a robust accounting that ensures, *inter alia*, the absence of double counting. This cooperative approach is aimed at promoting the mitigation of global emissions and allows the participation of developing and developed countries⁶.

Regarding its coverage, the Peruvian MRV emissions system is developed nationally and organizationally. The MRV of mitigation measures covers the national monitoring for the NDC, and for measuring, it consists of monitoring specific mitigation measures.

- National Measurement involves monitors the level of progress in the implementation of the NDC. It feeds on information from the INFOCARBONO and the National Registry of Mitigation Measures.
- Measurement at national, regional and local level monitors the level of progress in the implementation of a measure or a set of measures to reduce emissions or increase GHG removals through the National Registry of Mitigation Measures.
- The national level report contains the level of progress in the implementation of the mitigation NDC required by the UNFCCC and is also used to inform the Congress of the Republic.
- The report of mitigation measures is prepared by the owner or person responsible for the mitigation measure through the National Registry of Mitigation Measures, in accordance with the guidelines of the UNFCCC and the national authority on climate change (Ministry of Environment)

It must be considered that the MRV of emissions, removals, reductions and increase of GHG at regional and local level can be done voluntarily, according to local and regional capacities and circumstances⁷.

The Platform consists of different tools, such as:

- The National GHG Inventory
- The National Registry of Mitigation Measures, and
- The Carbon Footprint Registry.

This document will focus on the National Registry of Mitigation Measures, as a tool to monitor the progress of the mitigation measures established for compliance with the NDC. This follow-up is done in contrast to the baseline established for the NDC. The Registry provides information on mitigation measures and serves to make the corresponding adjustments to the national emissions inventory, in such a way that double counting is avoided when transfers of mitigation results are made internationally.

⁶ UNFCCC, Paris Agreement, 2015

⁷ Article 49, Regulation of the Framework Law on Climate Change

2.3. The National Registry of Mitigation Measures

One of the differences between the Paris Agreement and the Kyoto Protocol is that both industrialized and developing countries have commitments therefore there is a need for national registries in all countries.

The Regulation of the Framework Law on Climate Change (LMCC) of Peru delegates to MINAM the design of the National Registry of Mitigation Measures, whose objective is to collect information on the level of progress of mitigation measures emission reductions.

The Registry is established under the enhanced transparency framework of the Paris Agreement for emissions reduction accounting. It can be used to comply with the NDC and in domestic or international carbon markets or it can be used for climate finance programs based on results.

It is currently in the design phase with the first version released in December 2018, prepared by MINAM with support and funding from the Partnership for Market Readiness⁸ (PMR). The Registry will provide procedures and guidelines to ensure quality control to have robust accounting. It will also allow for recognition of reductions that are for NDCs or for those that are transferred through the cooperative approaches proposed in sub Article 6.2 of the Paris Agreement, referring to International Transfers of Mitigation Results (ITMO⁹). This will allow Peru to have the information to make the adjustments corresponding to their NDCs to reflect the emission reduction transfers to other NDCs and avoid double counting.

The quality control of the Registry will be carried out through procedures, guides and formats to obtain a robust accounting. This includes that the reductions can be estimated and measured in a robust manner, that the implementing entity is competent to manage the measurement, that it contributes to sustainable development and has co-benefits, that there is no double accounting, that the registry can verify reductions through a transparent processes, that there is traceability carried out by assigning each emission reduction, a date and a serial number, and that the reductions that will serve for NDCs can be clearly identified for those that are transferred internationally for others NDCs/other international commitments.

According to statements made by specialists from the MINAM - DGCCD, an incentive mechanism is being worked on for private and public sector organizations to register their emissions and emission reductions in the Peru Carbon Footprint program or another ad-hoc program, through a system that calculates emissions and verifies reduction or offset emissions. The incentive would be for companies to be in the MINAM registry and acquire state support for their reductions, which would make them more reliable in the international market when selling their reductions.

Eventually, this tool could generate a voluntary domestic carbon market that would allow mobilizing resources from the private sector towards mitigation measures that contribute to the NDC. To sell internationally they would have to use the National Registry of Mitigation Measures.

In the December 2018 version of the aforementioned document, MINAM specialists and consultants hired by the PMR, after an evaluation of the registry vendor market and considering

⁸ Source: <https://www.thepmr.org>

⁹ ITMO: Currently still under negotiation.

the capacities of the country, concluded that the outsourcing of the registration service could give better results, compared to other alternatives that were evaluated. For this reason, the company that was selected by bidding to provide the registration service is IHS Markit.

This would imply a minimum infrastructure and local staff for its administration and would allow them to focus their efforts on the requirements and procedures to manage the emission reductions, and at the same time have high quality infrastructure that would facilitate their access to carbon markets and payments for results, in addition to strengthening the national MRV system.

The mitigation measures that have been considered are:

Table 3: Categories of mitigation measures

N°	Category	Description
1	Governmental Mitigation Measures	They are actions or set of actions proposed by the public sectors, within the framework of their policies, plans, programs or sectorial projects and with the purpose of contributing to the compliance of the NDC in mitigation. The measures can be implemented by national or sub-national entities.
2	Mitigation measures that apply to external mechanisms of carbon credits	It is a project implemented by the private sector that is registered in the International Mechanisms such as the Clean Development Mechanism (CDM), the Voluntary Carbon Standard (VCS), the Gold Standard (GS) and the Mechanism of Sustainable Development (SDM) established in Article 6.4 of the Paris Agreement, which contribute to low-carbon development in the long term and could contribute to the compliance of NDCs in mitigation.
3	Mitigation measures under the Peruvian National Standard	Are those measures / projects adopted by state and/or non-state actors that must comply with guidelines, procedures and specific rules of the country, in order to reduce deforestation, degradation and increase the carbon stock (REDD+), generate reductions of creditable emissions or contribute to the implementation of the NDC in mitigation; for example, the implementation of the 32 landfills of the JICA-BID program with MINAM.
4	Mitigation measures that apply to international transactions	These are projects or programs established under bilateral agreements (ITMO) or within the framework of international reduction programs / plans (e.g., CORSIA) with the purpose of contributing to the mitigation commitments of the country.

Source: National Registry of Mitigation Measures – Design proposal. MINAM/PMR, 2018

One of the most important functions of the Registry is that it will be able to issue credits, that is, reductions of creditable GHG emissions, controlled and monitored by MINAM. A developer or proponent of a project or measure may initiate the issuance process, once it has been able to verify externally the emission reductions.

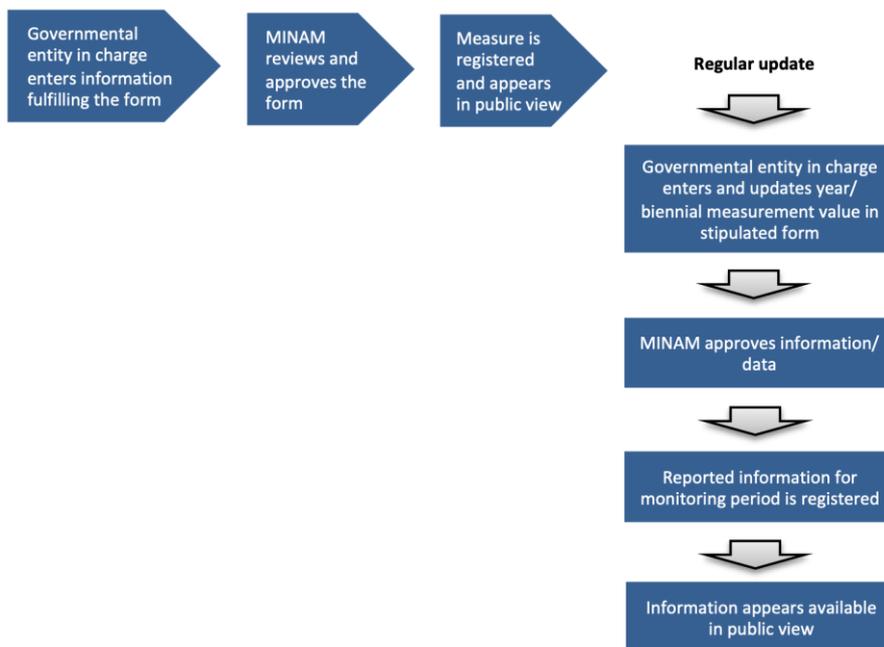
Another function of the Registry is that it may facilitate the transfer of emission reduction units between accounts of one or more users authorized by the Registry, which will be validated through a text message or e-mail. The notifications would be recorded in the system and notified to the respective parties, in such way that allows the administrator to review and approve the transfers before the transfer is visible to the recipient.

The withdrawal of units of emission reductions (carbon credits) is another function that the Registry will fulfill, in order to allow its final use, which may be for the compensation of emissions, the fulfillment of goals or objectives of the country, etc. Carbon credits that an entity purchases to offset its emissions must be withdrawn from the market and cannot be reincorporated.¹⁰

Finally, it will be possible to cancel emission reduction units (credits) issued in an external mechanism of carbon credits with the purpose of being converted to the Standard of Peru. The difference between cancellation and withdrawal of credits is that the cancellation refers to a change of standard, from an international to a national standard, so that the offsets can contribute to the NDC in mitigation or be transferred as ITMO. In this context, the registration of mitigation measures is the responsibility of each government sector and also its annual or biannual update, as appropriate, and throughout the implementation period of the NDC. MINAM will act as a regulatory entity, reviewing the information entered and giving its approval before the information is recorded.

The following figure shows an outline of the registration process of the measure:

Figure 3: Single access to information



Source: National Registry of Mitigation Measures – Design Proposal. MINAM/PMR, 2018

¹⁰ Source: <http://finanzascarbono.org/mercados/mercado-voluntario/desarrollo-proyectos/ciclo/comercializacion/>

When it comes to existing projects that have been developed under recognized international standards¹¹, the following two processes will be applied, according to what MINAM establishes.

Figure 4: Project registry process (window copy)



Source: National Registry of Mitigation Measures – Design Proposal. MINAM/PMR, 2018

Figure 5: Conversion process of credits from mechanisms outside of the Peruvian National Registry



Source: National Registry of Mitigation Measures – Design Proposal. MINAM/PMR, 2018

The above-mentioned processes are proposals that have been captured in the document worked by MINAM and PMR (December 2018), so it is still under review and opinion by the public and private sectors.

2.4. Use of market mechanisms

MINAM, as the national authority for climate change, the sectoral competent authorities on climate change and regional governments have the power to identify mechanisms to access and increase national and international funding, aimed to implement adaptation and mitigation measures.

2.4.1. Carbon markets

Peru participated in the event "Promoting the carbon market in the Americas: High Level Dialogue and Technical Workshops on Carbon Pricing and MRV in the Americas" (Santiago de Chile, January 2018) with the support of the Government of Canada, among other donors.

¹¹ These standards are: Verified Carbon Standard (VCS), Gold Standard (GS), Clean Development Mechanism (CDM) and Sustainable Development Mechanism (SDM)

These events were held within the framework of the Paris Declaration on Carbon Pricing in the Americas¹² and the Cali Declaration of the Pacific Alliance¹³. The aim is to initiate a series of exchanges between participant countries in order to strengthen MRV systems in the region and promote carbon pricing including carbon markets.

The **regulated carbon market** is governed under Article 6 of the Paris Agreement. The sub article 6.2 allows the transfer of emissions reductions from one country to another, under a bilateral agreement to ease the NDC compliance, while article 6.4 creates the Sustainable Development Mechanism (SDM) which is different from article 6.2 which will be overseen by the UNFCCC similarly as was done with the Clean Development Market (CDM) and the Joint Implementation (JI) mechanisms of the Kyoto Protocol. Reduction units generated by SDM emissions may be used for transfers to other countries under article 6.2 or for local carbon markets.

MINAM is working on a proposal so that Peru participates in these carbon markets to:

- Contribute to the sustainable development of the country.
- Contribute to the fulfillment of their NDCs (by facilitating the development of enabling measures and/or sharing a percentage of the emissions reductions) or at least not to be an obstacle for this fulfilment.
- Include emissions reduction actions in addition to those contemplated for compliance with NDCs.

2.4.2. Results of Internationally Transferred Mitigation Outcomes (ITMO)

The transfers can promote the reinforced deployment of low carbon technologies and accelerate the implementation of projects and programs in a cost-efficient manner. The Paris Agreement requests that the ITMOs:

- Safeguard environmental integrity.
- Prevent double counting.
- Be voluntary and authorized by the Parties.

Given that article 6.2 states that Parties must ensure environmental integrity, but there is no agreed upon definition of the “environmental integrity”, then at least Parties should have great confidence that every tonne of CO₂ transferred is a real tonne. For this, among other requirements a **solid MRV system** is needed in the context of an ITMO.

MINAM is working on a proposal so that Peru can participate in this mechanism and for that, it should develop two types of agreement: one representing the bilateral agreement between countries (MOPA¹⁴), and another linking the direct developers of the initiative with the MOPA for assuring ITMO payments to reach activities that reduce emissions and emissions reductions to reach the buyer.

¹² Signed in December 2017 by Canada, Colombia, Costa Rica, Chile and Mexico, as well as California States, Washington Alberta, British Columbia, Nova Scotia, Ontario and Quebec in order to compromise to implement carbon pricing as a central policy of climate action

¹³ Paragraph 5 of the document, in which Presidents require “...to intensify efforts in MRV in order to identify possible voluntary market mechanisms in the region”

¹⁴ MOPA: Mitigation Outcome Purchase Agreement

The schema suggested in the preliminary registry document shows the workflow for an ITMO.

Figure 6: The process for an ITMO



Source: National Registry of Mitigation Measures – Design Proposal. MINAM/PMR, 2018

2.4.3. External carbon credits mechanisms (CDM, VCS, GS, SDM)

The Verified Carbon Standard (VCS), Gold Standard (GS), Clean Development Mechanism (CDM) and Sustainable Development Mechanism (SDM) are international standards recognized for obtaining carbon credits. MINAM requires that projects be nested under the national programs, where a Peruvian National Standard is developed. The Program allows the fungibility of credits between programs and therefore accepts credits already created under these international standards. This allows the project developer conducting local or international transactions credits created under the national program and allows Peru not to deal with setting a standard for creating national credits, because it accepts the processes established in international standards.

2.4.4. Share emission reductions

The Paris Agreement involves not only developed countries but also developing countries in the global effort to reduce GHG emissions. In this regard, the NDCs represent the Peruvian goal of emissions reductions. Initiatives that are not part of the NDC or the BAU scenario, in principle, should be free to access carbon markets, provided they do not harm the NDC but rather, as far as possible, help strengthen compliance. A possible measure to ensure this aspect is to share part of the emissions reductions under an ITMO agreement. That is, that part of the emission reductions remains in the country.

MINAM is working on a proposal, which is yet at DGCCD level, so that Peru participates in this mechanism comprising:

- The establishment of a fixed percentage of transactions, so that part of the emission reductions remain in the country. The percentage level that can be obtained is directly related to the cost of reducing emissions (abatement cost) and the selling price.
- If one wants to participate in this scheme of sharing a percentage, it must be clear about the abatement costs for typical technologies of the Peruvian mitigation measures and have an idea of a minimum selling price that could be accepted by potential buyers.
- Another option is to replicate the experience of China, which is a simpler scheme because only a percentage of the selling value is taxed with a rate. This money raised to be meaningful in strengthening the NDC, should feed a Peruvian mitigation fund to comply with the NDC.

Once the DGCCD has completed the proposal, it will be reviewed by the Vi-ceministry of Natural Resources and the legal area of MINAM.

2.4.5. Domestic carbon market

The domestic carbon market is an opportunity to reinforce compliance with the NDCs, to create a mechanism to mobilize private sector resources and to finance mitigation projects without having to transfer emission reductions to another country - the proposal of which is still at DGCCD level.

The Carbon Footprint Peru is a tool for measuring GHG emissions in private and public organizations with the objective of improving data quality and promoting and recognizing the participation of private and public organizations in emissions management of GHG. In this way, private and public sector funds are mobilized to reduce emissions that contribute to NDCs, when the private sector wishes to voluntarily neutralize its carbon footprint.

The credits generated by the recognized voluntary standards could be used. In the future, ISO 14064-2 could be used or that follow GHG Protocol guidelines for specific sectors.

2.4.6. Implementation progress

According to information from MINAM, through its DGCCD, implementation efforts are being concentrated in the MRV system for National GHG Inventories (INGEI), given that authorities and specialists of the public sector must be informed, trained and use the tools that MINAM makes available: INFOCARBON, National Registry of Mitigation Measures, Registration of REDD Measures, among others.

As public officials in charge of gathering information on GHG emissions, they must understand and effectively use all of these tools, efficiently apply institutional inter-sectoral arrangements with the private sector and understand the science and the technique behind the adaptation and mitigation methodologies of climate change. For this reason, the use of INFOCARBONO is currently the priority.

Table 2 (see subsection 3.3) shows that the National Registry of Mitigation Measures, the REDD Registry and the Approval Procedure for initiatives for registration are being prepared by the technical team in charge of MINAM, in collaboration with the different sectors.

3. INSTITUTIONALITY, GOVERNANCE AND REGULATION

To monitor the mitigation actions in Peru, the Consultant carried out a general mapping.

3.1. General mapping of inter-institutional technical and technological tools

MINAM has three reference tools, which involve inter-institutional arrangements:

- The **National Strategy on Climate Change (ENCC)**, a guiding document that points out the policies and activities linked to climate change that are being developed in Peru, which is consistent with environmental management standards.
- The **National Plan of Environmental Action - PLANAA Peru 2011 - 2021**, strategic instrument of public management in environmental matters whose purpose is to achieve the sustainable, responsible, rational and ethical use of natural resources and

thus contribute to the integral, social, economic and cultural development of the human being, always in harmony with its environment.

- The **National Agenda for Environmental Action (AgendAmbiente) 2013 - 2014**, is the roadmap that gives coherence to the set of institutional proposals in the fields of biodiversity, climate change, water resources and environmental quality, seeking to ensure environmental governance so that public and private investments are sustainable and can meet the commitments assumed in Rio +20, the Millennium Development Goals, the Bicentennial Plan, the National Environmental Policy (PNA), the National Plan of Environmental Action - PLANAA Peru 2011-2021, and the Strategic Axes of Environmental Management. The formulation of AgendAmbiente 2015 - 2016 is currently underway.
- The **Framework Law on Climate Change, Law N° 30754**, which aims to establish the principles, approaches and general provisions to coordinate, articulate, design, execute, report, monitor, evaluate and disseminate public policies for integral, participatory and transparent management of climate change adaptation and mitigation measures, in order to reduce the vulnerability of the country, take advantage of the opportunities of low carbon growth and comply with the international commitments assumed by the State before the UNFCCC, with intergenerational approach.

3.2. General mapping of governance

The Peruvian NDC needs a solid system, technically validated and with political support for its implementation, for this reason the Framework Law on Climate Change establishes an institutional framework for the climate change integral management.

Adaptation and mitigation measures to climate change are incorporated into the policies, strategies, plans, programs and investment projects of the three levels of government, within the framework of their competencies and functions, in a coherent and complementary manner, under a participatory, transparent and inclusive process of the private sector and civil society, with special emphasis on indigenous or native people, in order to integrate the management of climate change and the development of the country in harmony with nature.

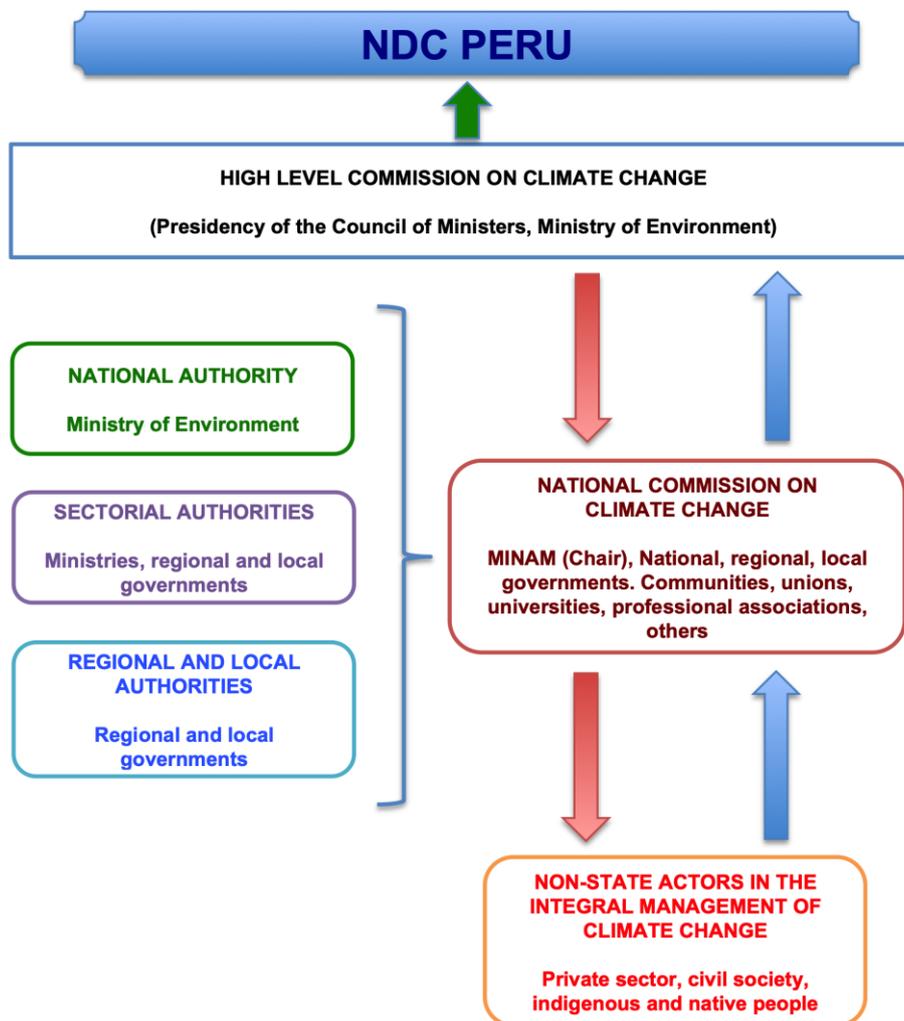
The governance of the Peruvian NDC is made up of 6 components:

- **National Authority:** MINAM is the national level within the framework of its competences.
- **Sectoral authorities:** These are the ministries, regional and local governments that constitute competent authorities in the area of climate change within their jurisdictions and issue the corresponding regulations within the scope of their powers and functions.
- **Regional and local authorities:** These are regional and local governments, within the framework of their powers and functions, granted by express law or through the decentralization process.
- **National Commission on Climate Change:** Chaired by MINAM; its function is to monitor compliance with public policies on climate change, as well as the international commitments assumed by the State before the UNFCCC. Its mandate is to elaborate proposals to contribute in the decision making of the State in the matter of climate change. It is made up of representatives of the national, regional and local governments, as well as communities, unions, universities, professional associations and others.

- **High Level Commission on Climate Change:** Proposes adaptation and mitigation measures for climate change and the NDC, its mandate is to issue a technical report for the focal point before the UNFCCC, in accordance with the international commitments ratified by Peru. It is chaired by the Presidency of the Council of Ministers and MINAM is the Technical Secretary.
- **Non-state actors in the integral management of climate change:** The private sector, civil society and indigenous or native people represent this segment. They recommend climate change adaptation and mitigation actions, such as the increase and conservation of carbon reserves and reduction of GHG emissions, among others.

The present organization chart of governance tries to graph the intervention of each actor involved.

Figure 7: Governance chart of NDC



Source: Law N° 30754, Framework Law on Climate Change.

3.3. General mapping of regulation and policy

Peru has been developing a sound environmental and climate policy since the 90s, as can be seen in the chronology shown in the following table, committing itself to the environment and to the fight against climate change. In the opinion of specialists interviewed by the Consultant, one of the challenges they face is the slowness by which these issues advance within each sector. The following is a chronological mapping of the main milestones of the regulations and environmental and climate policy.

Table 4: Environmental and climate change regulation and political framework

Regulation / Policy	Milestone date
Peru ratifies the United Nations Framework Convention on Climate Change	1993
Creation of the National Commission on Climate Change	1993
Creation of the National Council of the Environment (CONAM)	1993
Law of Protected Natural Areas, Law 26834	1997
Regulation of the Law on conservation and sustainable use of biodiversity	1999
Organic Law of Regional Governments	2002
Regional Climate Change Strategies	2002
National Agreement	2002
The National Climate Change Strategy is approved.	2003
Regulation of the Ecological and Economic Zoning (EEZ)	2003
National Strategy for Food Security 2004-2015. D.S. 066-2004-PCM	2004
Framework Law of the National Environmental Management System. Law 28245	2004
General Law of the Environment, Law 28611	2005
Regulation of the Law for the Promotion of the Biofuels Market, D.S. 013-2005-EM	2005
The Multiparty Committee on Climate Change and Biodiversity of the Congress of the Republic, takes office	2006
Law on the Rational Use of Energy, Law 27345	2006
The temporary regime of renewal of the automotive fleet is created to encourage the change of the energy matrix, D.S. 213-2007-EF	2007
The Ministry of the Environment is established, D.S. 1013	2008
Investment is promoted for electricity generation with water and other renewable resources, D.L. 1058	2008
Law for the Promotion of Investment in Electricity Generation with the Use of Renewable Energy, D.L. 1002	2008
Law of Water Resources. Law 29338	2009
The procedure for the evaluation and authorization of projects to reduce greenhouse gas emissions and carbon sequestration is approved. D.G. 002-2009 - MINAM	2009
The operation of the National Commission on Climate Change is adapted to the Law of Creation of the MINAM and to the Law of the Executive Power (LOPE). D.S. 006-2009-MINAM	2009
National Environmental Policy. It is the planning framework instrument that establishes adaptation actions and mitigation measures, D.S. 012-2009-MINAM	2009
Master Plan for Protected Natural Areas.	2010
The operation of the National Commission on Climate Change is adapted to the Law of Creation of the MINAM and to the Law of the Executive Power (LOPE). D.S. 006-2009-MINAM	2010
The Adaptation and Mitigation Action Plan for Climate Change (PAAMCC) is created	2010
Forestry and Wildlife Law, Law 29763	2011
National Disaster Risk Management System SINAGERD, Law 29664	2011
Regulation of SINAGERD	2011
Strategic National Development Plan to 2021. Multiannual Macroeconomic Framework (MMM) 2014-2017	2011
Considers climate change as a condition of economic development	

Regulation / Policy	Milestone date
National Plan of Environmental Action - PLANAA 2011 - 2021	2011
National Environmental Education Policy D.S. 017-2012-ED	2012
National Policy on Disaster Risk Management 2014-2021 (PLANAGERD)	2012
D.S. 11-2012-PCM Plan of Risk Management and Adaptation in the Agrarian Sector 2012 - 2021 (PLANGRACC-A). Interclima 2012	2012
National Policy for the Modernization of Public Management to 2021	2013
National Agenda for Environmental Action 2013-2014	2013
The conformation of the CNCC is extended to 35 full members with the right to vote. D.S. 015-2013-MINAM	2013
National Disaster Risk Management Plan 2014 - 2021 (PLANAGERD)	2014
National Competitiveness Agenda (2014 - 2018)	2014
The Internal Regulations of the CNCC are approved and the thematic working groups are created. R.M. N ° 262-2014-MINAM	2014
Law of Mechanisms of Retribution for Ecosystem Services. Law 30215	2014
The commercialization of the rights generated by conservation projects of the natural ecosystems present within ANP of national administration is approved. D.G. 001-2014-SERNANP	2014
Law of Creation of the INFOCARBONO	2014
The National Institute for Research in Glaciers and Mountain Ecosystems is created	2014
The Multisector Commission in charge of preparing the proposal of the iNDC, R.S. 129-2015-PCM	2015
The Sustainable Building Technical Code is created	2015
The National Strategy for Climate Change is approved, D.S. 011-2015-MINAM	2015
National Contributions (iNDC) are approved. Regulations of the Forestry and Wildlife Law	2015
Regulation of the Law of Mechanisms of Compensation for Ecosystem Services	2015
Framework Law on Climate Change, Law No. 30754	2018

Sources: First Biennial Update Report of Peru. MINAM, 2016 and others

3.4. Paris Agreement rulebook guidelines

The Rulebook was due for completion in COP 24 (Katowice, Poland), but it was not completed. It was agreed to work during 2019 on the detail of what is known as cooperation mechanisms (Article 6). These mechanisms were conceived as an instrument to help countries meet targets through the “transfer of emissions”. However, the technical and political complexity of the issue and the clashes of interests between countries and sectors have made it impossible to agree on this framework, whose design implies important economic fluxes and price signals that can alter competitive balances between countries.

The official document of the advance of the Rulebook can be found at the following link:

<https://unfccc.int/documents?search2=&search3=rules+book>

3.5. Transparency results of Paris Agreement (Article 13)

The Paris Agreement establishes a reinforced transparency framework for measures and support, with the aim of fostering mutual trust and promoting its effective implementation. It has a flexibility component that reflects the different capacities of the Parties and is based on collective experience.

In the case of Peru, flexibility to quickly adjust the national GHG inventory based on the ITMO transaction is needed to reflect its correct consistency. Before the eventual creation of this new modality of transaction, MINAM could consider the collection of a quota that could be in cash or

credits to be able to pay partially or totally for the maintenance of the registry that will be operated by an outsourced company.

The flexibility of the registration allows for the credits to be withdrawn in favor of another country (without the need for the buyer to have their own account). Also, another option would be if the buyer country had its own national registry, they could cancel the credits in the registry and make the issuance of those credits in its own national registry under an established procedure.

4. PROGRESS OF THE STATE OF DEVELOPMENT OF MITIGATION MEASURES

Between February 2017 and December 2018, the Multisectoral Working Group (GTM-NDC) prepared a report that provides technical information to guide the implementation of the Nationally Determined Contributions (NDC) of the country. The GTM-NDC was made up of 13 government sectors and the National Planning Center (CEPLAN).

The Consultant obtained updated information from MINAM in relation to the following actions:

- The Regulation of the Framework Law on Climate Change is in the stage of public consultation by indigenous communities. The consultation is expected to conclude in July. Subsequently, the ministries need to approve the final version which should be concluded by the end of this year, will initiate a round of revisions.
- The National Registry of Mitigation Measures and its procedure will be enrolled this year. MINAM is working on the design and procedures (see detail in subsection 3.3)
- MINAM has launched a call to develop two studies with the support of the PMR to facilitate access to international carbon markets, as indicated in Article 6.2 of the Paris Agreement. One to evaluate the feasibility of developing a carbon price mechanism in Peru, and the other, for the creation and designation of property rights for carbon credits.
- The Peruvian State, through MINAM, is conducting conversations with the Government of Switzerland to put together a climate change cooperation agenda regarding Article 6 (October 2018), with the following benefits for the country.
 - ✓ Increase ambition beyond the NDC.
 - ✓ Remove barriers / develop enabling conditions.
 - ✓ Promote activities that contribute to sustainable development.
 - ✓ Promote and strengthen the climate action of the private sector.
 - ✓ Generate capacity building in the public and private sectors.
 - ✓ Promote technological innovation.
- MINAM and Nordic cooperation (NEFCO) have been working together since 2013, when a collaboration agreement was signed. The purpose was to develop climate financing opportunities. NEFCO is responsible for a project together with the Nordic task force for global climate negotiations (NOAK) referring to the NAMA of solid waste in Peru, whose first phase culminated in August 2015. The second phase includes various consultancies that support the implementation of the sectoral program on solid waste in Peru. It started in 2016 and ended in 2018. As of this year, a new program began, the Nordic Initiative for Cooperation Approaches (NICA) that works on issues related to the Paris Agreement, in particular Article 6. NEFCO leads that initiative and builds on previous collaboration, with the objective to provide concrete support for the development of a regulatory framework that addresses the different forms of international collaboration and follow-up on pilot projects in implementation, so that Article 6 can be applied.

In addition, the consultant reviewed, analyzed and summarized a large amount of current information regarding progress, developing the following topics:

- Collection of information on the progress of mitigation measures.
- Alignment of prioritized actions in the NDC with sectoral and sub-national climate change plans, including the participation of the private sector through the corporate carbon footprint.
- Evaluation of the elements that make up these practices at the central and sub-national government level.
- Result of interviews and consultations with interested parties about the MRV of mitigation activities.

4.1. Multilevel institutional arrangements

The Registry of Mitigation Measures will allow monitoring of the country's emissions management for compliance with the NDC, and the information to make the corresponding adjustments in the national GHG inventories to reflect the emissions reduction transfers to other NDCs or other international commitments and avoid double counting.

Then, the Registry and national GHG inventories have a very important relationship, since they support each other to measure and report the emissions mitigation that is actually being achieved and avoid errors at the time of their accounting, in such a way that compliance with the principles of enhanced transparency of the Paris Agreement.

To fulfill this mission, the Peruvian State and its sectors have a visible and effective tool that is the National Inventory of Greenhouse Gases - INFOCARBONO (Supreme Decree N° 013-2014-MINAM-CMNUCC), defined as the set of actions oriented to the collection, evaluation and systematization of information referred to the emission and removal of GHG. It is the meeting place of national government entities and subnational governments for this purpose.

The central government prepares the Annual GHG Reports (RAGEI) that feed the INFOCARBONO and the responsible public entities are: Ministry of Agriculture and Irrigation, Ministry of Energy and Mines, Ministry of Production, Ministry of Housing, Construction and Sanitation, Ministry of Transport and Communications, and Ministry of Environment.

As can be seen in the following figure, the sectors of the national economy, represented by the central government through the aforementioned ministries, collect information from data providers of the direct actors (companies, universities, consultants, general public). Each sector involved elaborates its RAGEI and MINAM centralizes and validates this information, registers it in INFOCARBONO, reports it to the UNFCCC and disseminates it through the National Environmental Information System (SINIA) belonging to MINAM and through the National Institute of Statistics and Informatics (INEI).

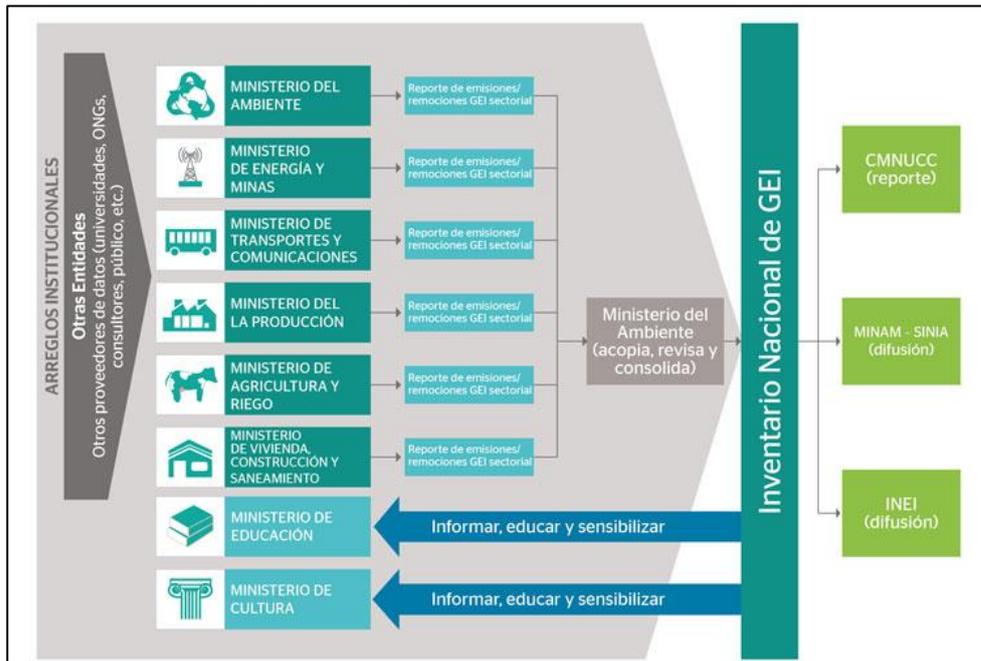
Likewise, MINAM has the mission of informing, educating and sensitizing the population in general about INFOCARBONO, through the Ministries of Education and Culture. Indigenous organizations are essential to achieve their involvement in climate change management and accompany them in their adaptation.

In the case of the private sector, as a source of information and directly involved in the collection of data for inventories, MINAM is designing a tool called Carbon Footprint Peru (see subsection 3.4.5), where private companies and public sector companies can voluntarily register the reduction of their emissions that they achieve, as a result of their mitigation efforts. The tool

will mainly record carbon footprints, verifications and offsets. Also, one can trade the reductions through the mechanisms that the Registry will provide.

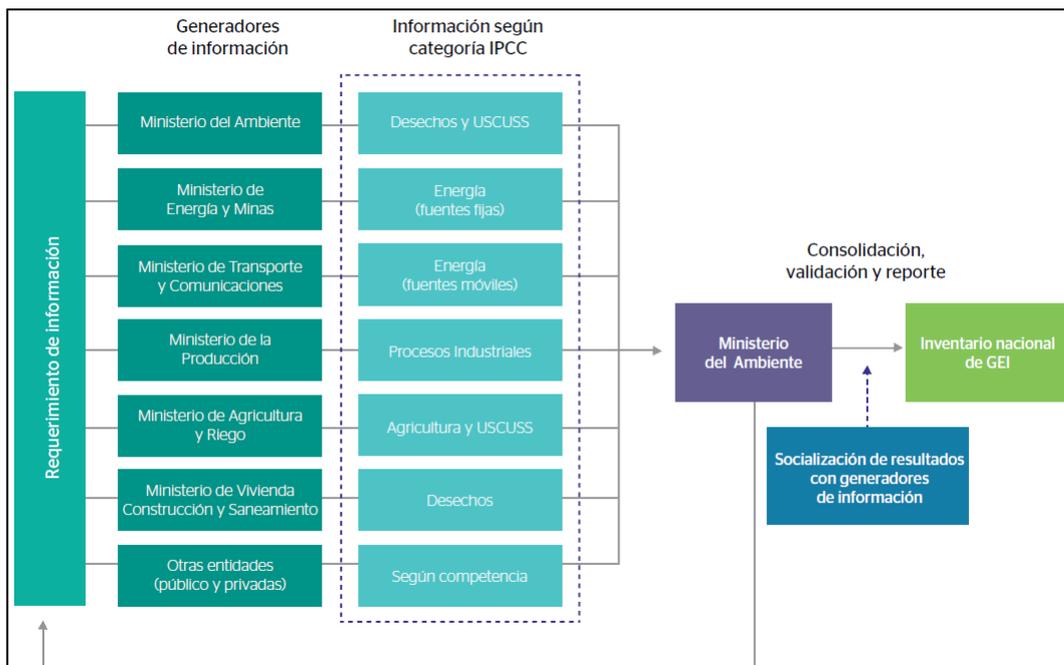
Institutional arrangements and monitoring of mitigation measures is the collaboration framework between the national government and subnational governments. Some of the mitigation measures are managed, monitored and reported by subnational governments (for example, in the case of solid waste), so this collaboration framework is very important.

Figure 8: INFOCARBONO operational diagram



Source: MINAM

Figure 9: INFOCARBONO institutional arrangements



Source: MINAM

Below is the progress made in the survey of the INGEI to date in the sectors identified, which have been compiled and analyzed by the Consultant through official documents and interviews with technical specialists from each sector involved. It is worth mentioning that there are sectors more advanced than others in relation to data acquisition, others with the identification of mitigation measures and others with their MRV systems.

As previously reported, the RAGEI are powered by information provided by subnational governments and the private sector. Advances in the design and implementation of MRV systems are included in this subsection. It should be considered that, according to the specialists of the DGCCD - MINAM, the efforts of the Peruvian State have been focused primarily on strengthening the tools and developing the capacities of the authorities and technical specialists in the implementation of the INGEI and that the mitigation measures shown below will be promoted and led by the public sector and will mostly be implemented by the private sector, with some measures that will be implemented in public sector entities.

4.2. Advances in Energy sector¹⁵

This sector is one of the most advanced in terms of information collection, due to the experience it has of annually elaborating the National Energy Balance (BNE) and periodic surveys on energy use and consumption in various economic sectors¹⁶. It is also the sector with the most Nationally Appropriated Mitigation Actions (NAMA) leads:

- NAMA of Renewable Energy Resources (RER) in interconnected systems in Peru.
- NAMA of Energy Efficiency.
- NAMA for Universal Access to Sustainable Energy.
- NAMA of Terrestrial Electric Transport

Each of the four NAMAs has baseline studies and their own MRV system. This year there will be the call for a study to assess and optimize MRV protocols for the NAMAs and design a single computer system for managing information relating to the actions of GHG mitigation considered and their respective indicators. Currently, there has been no MRV system implemented yet.

The PMR has supported MINEM for the recognition process of a standardized baseline by the UNFCCC through its Regional Collaboration Center (RCC) located in Panama. The standardized baseline has already obtained the validation of a Designated Operational Entity - AENOR, and the documentation is ready to be submitted to the RCC by MINAM, as the focal point of the Convention and the DNA. Currently, some consultations are being made to the RCC so that the baseline has a sectoral focus rather than a project-level approach.

Special emphasis should be given to the fact that the sector has calculated the emission factor of the National Interconnected Electric System (SEIN) in 2016: **0,4323 tCO_{2eq}/MWh** (for energy

¹⁵ The Energy sector, according to the IPCC classification, considers the GHG emissions that are produced by the burning of fuels. According to the characteristics of these emission sources, the sector is divided into two categories: i) Energy - stationary combustion, whose GHG emissions are generated by the combustion reaction of stationary sources; and, ii) Energy - mobile combustion, whose GHG emissions are generated by mobile transport or combustion. The mitigation measures of the Energy sector have been proposed by the following government sectors: Ministry of Energy and Mines, Ministry of Transport and Communications, Ministry of Production and Ministry of Housing, Construction and Sanitation.

¹⁶ This chapter excludes the transport sector, since it has its own development elaborated by the technical team of the Ministry of Transport and Communications. See subsection 4.5.

projects solar and wind) and **0,4119 tCO_{2eq}/MWh** (for projects other than solar and wind energy).

4.2.1. Implementation of mitigation measures

The estimated mitigation potential in this sector would represent a reduction of emissions of 10,07 MtCO_{2eq} accumulated to the year 2030. See details of the actions and their progress in [Annex 1](#). The mitigation measures in this sector are led by MINEM, through the DGEE, which has the task of identifying and prioritizing mitigation measures facing climate change to be implemented in the activities of its responsibility. The General Directorate of Electricity (DGE) and the General Directorate of Rural Electrification (DGER) are also involved.

4.3. Advances in the USCUS Sector

The identification of the 8 measures of the USCUS sector involved coordinated work with specialists designated by the National Forest and Wildlife Service (SERFOR) institutions, the National Service of National Protected Areas (SERNANP) and the National Conservation Program of Forests (PNCB)

4.3.1. Implementation of mitigation measures

The estimated mitigation potential in this sector would represent a reduction of emissions of 43,13 MtCO_{2eq} accumulated to the year 2030. See details of the actions and their progress in [Annex 1](#). Mitigation measures in this sector are coordinated by the MINAM through the National Forestry and Wildlife Service (SERFOR), which has the task of identifying and prioritizing mitigation measures to be implemented in the activities of its responsibility.

4.4. Industrial Processes Sector

Mitigation measures in this sector are related to the industrial manufacturing sector. The Ministry of Production leads the NAMA of the Cement Industry and the NAMA of the Brick Industry.

In the case of mitigation measures associated with the NAMA of Cement Industry, important inputs are available, they had been worked with other projects like the Low Emission Capacity Building (LECB Substantive Review), under which the international methodology for MRV of mitigation measures associated with cement was selected, known as “Getting the Numbers Right” (GNR) developed within the framework of the Cement Sustainability Initiative (CSI) of the World Business Council for Sustainable Development. With the support of the Project through the team of the MINAM - PRODUCE Agreement, was incorporated in the PRODUCE’s Tentative Schedule this MRV scheme. In parallel, through the Association of Cement Industry (ASOCEM) with support from the Interamerican Cement Federation (FICEM), the cement industry adopted this last quarter the use of “Getting the Numbers Right” (GNR).

A working group has been established for the development of the sectoral MRV and to establish agreements for its development and compliance during the implementation of the measures.

4.4.1. Implementation of mitigation measures

The estimated mitigation potential in this sector would represent a reduction of 13.84 MtCO_{2eq} accumulated to the year 2030. See details of the actions and their progress in [Annex 1](#).

Mitigation measures in this sector are led by the Ministry of Production, through the General Directorate of Environmental Affairs of the Industry (DGAAMI), which has the task of identifying and prioritizing mitigation measures facing climate change to be implemented in the industrial activities of its responsibility.

4.5. Transportation Sector

4.5.1. Implementation of mitigation measures

The mitigation potential estimated in this sector would represent a reduction of 8,53 MtCO_{2eq} accumulated by the year 2030. See details of the actions and their progress in [Annex 1](#).

Mitigation measures in this sector are led by the Ministry of Transport and Communications, through the General Directorate of Environmental Affairs (DGASA), which has the task of identifying and prioritizing mitigation measures against the climate change to be implemented in the activities of its competence.

4.6. Waste Sector

The Ministry of Environment, through the General Directorate of Waste Management (DGRS) has defined five mitigation measures that promotes the material and energy recovery of waste and final disposal of solid waste through the implementation of landfill sites, in accordance with the provisions of the new Law of waste integral management.

For this sector, the MRV has been defined for the planned measures, which has been integrated into the Information System for Solid Waste Management (SIGERSOL) as a basis for periodic monitoring of mitigation measures. SIGERSOL has been recognized in the Solid Waste Law to monitor GHG emissions associated with the operation of landfills and waste recovery plants. The MRVs have been included in the tentative programs in charge of the DGRS, which were officially presented to the MINAM's DGCCD in December 2018.

4.6.1. Implementation of mitigation measures

The mitigation potential estimated in this sector would represent a reduction of 3,57 MtCO_{2eq}, accumulated by the year 2030. See details of the actions and their progress in [Annex 1](#).

The mitigation actions of this sector are led by the Ministry of Environment, through the General Directorate of Solid Waste Management (DGRS), which has the task of identifying and prioritizing mitigation measures facing climate change to be implemented in the activities of its responsibility.

4.7. Agriculture Sector

In the agriculture sector and thanks to the leadership of the private sector, the NAMA of Cocoa, the NAMA of Coffee and the NAMA of Livestock have been developed. However, in its Mitigation Sectoral Tentative Schedule, the Ministry of Agriculture and Irrigation (MINAGRI) has

not made mention of it, because they are NAMAs led by companies and private sector associations. The mitigation measures presented are exclusively from the public sector.

4.7.1. Implementation of mitigation measures

The estimated mitigation potential in this sector would represent a reduction of 40,30 MtCO_{2eq}, accumulated to the year 2030. See details of the actions and their progress in [Annex 1](#).

The mitigation measures of this sector are led by the Ministry of Agriculture and Irrigation (MINAGRI), through the General Directorate of Agrarian Environmental Matters and Climate Change (DGAAACC), which has the task of identifying and prioritizing the measures of mitigation facing climate change to be implemented in the activities within its responsibility.

4.8. Housing and Construction Sector

The sector has developed and is leading the NAMA of sustainable building with city vision, which aims to reduce emissions through the implementation of a mandatory Technical Code for Sustainable Construction (CTCS) in new and existing buildings (retrofit). It should be taken into account that this NAMA includes emissions mitigation for energy savings, so the institutions responsible for this type of reductions must coordinate within the framework of their functions and according to the governance scheme, to avoid double counting.

4.8.1. Implementation of mitigation measures

The estimated mitigation potential in this sector would represent a reduction of 0,44 MtCO_{2eq}, accumulated by the year 2030. See details of the actions and their progress in [Annex 1](#).

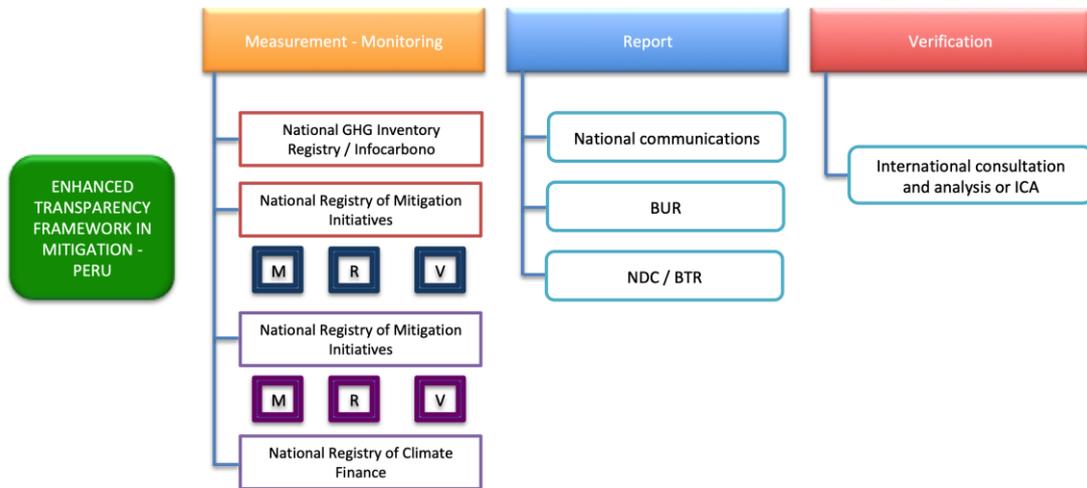
Mitigation measures in this sector are led by the Ministry of Housing, Construction and Sanitation (MVCS), through the General Directorate of Environmental Affairs (DGAA), which has the task of identifying and prioritizing mitigation measures to climate change to be implemented in the activities of its responsibility. The Directorate of Construction leads the NAMA of sustainable construction with city vision and is responsible for the measure of sustainable construction in new buildings, together with the MiVivienda Fund.

5. GAPS AND NEEDS OF MRV FOR EMISSION REDUCTION ACTIONS

5.1. Identification of existing gaps

The Paris Agreement has published the new obligations under the framework of reinforced transparency for the countries, in such a way that the MRV reporting capabilities of the emission reduction actions have a stricter scenario regarding the procedures and results to obtain. The following chart shows this new transparency framework.

Figure 10. Enhanced transparency of the MRV system



Source: MINAM
Elaboration: By the author

The interviews held with various specialists and authorities working on climate change, has allowed for the update of information on gaps and existing needs.

In this new scenario, the following gaps and needs have been identified, systematized in the following table.

Table 5: Identified gaps and needs

Identified gaps	Identified needs
Implementation of the National Registry of GHG Emissions	<p>Financial support: The National Register of mitigation initiatives is under development and once it is implemented, it will need to be incorporated into the public budget or will need to be an operation mechanism for user fees.</p> <p>Capacity building: For the operation of the registry it will be necessary to strengthen the capacities in the following spaces:</p> <ul style="list-style-type: none"> • In entities that report NAMAs or other GHG emission reduction actions. in such a way that they are familiar with the information requested of them as the quantification of the reductions, the necessary qualified measures, the progress in their indicators. • Within the MINAM it will be necessary for a qualified team to work on the implementation of the registry.
Implementation of mitigation measures in progress in the country. Specifically, some sectors that lead ongoing NAMAs have identified that they cannot advance in their implementation, because there is a lack of financial	<p>Financial support: Monetary support is required in order to carry out the studies to quantify the cost of the necessary measures to carry out the emission reductions, the costs that would entail overcoming the barriers (enabling conditions) for their implementation, among others. In addition, the resources obtained will allow the investment, operation and maintenance of the mitigation options identified in the NAMAS and other mitigation actions.</p>

Identified gaps	Identified needs
<p>support for the implementation of the measures that promote these NAMAs.</p>	
<p>Many of the sectoral human resources are not engaged full-time in climate change activities, but rather share their working time with other tasks and assignments.</p>	<p>Institutionality: The authorities of the public entities that are responsible for operating and maintaining the information on climate change must institutionalize the functions of the specialized technicians through the Organization and Functions Regulations (ROF) of the respective entity. In addition, provide for in the institutional budget of the following years, the hiring of a group of technicians who specialize and work in these activities exclusively. For these reasons, it is necessary that there be an exchange of experiences and best practices of institutionalization of climate change, through events of exchange of successful experiences or meetings of authorities of various countries, financed by the Peruvian State or through international technical assistance, which highlights the importance of the institutionality of climate change for the sustainability of mitigation actions.</p> <p>Capacity building: Sectoral sources of information in conversation with the Consultant, suggested the organization of specialized training courses in their respective areas, internships to more advanced countries in knowledge, as well as knowledge and experience exchange events in the country, with the purpose of strengthening your knowledge on these issues.</p>
<p>To this is added the high turnover of personnel in the public sector, which leaves knowledge gaps in the areas responsible for moving forward with the implementation of mitigation actions.</p>	<p>Institutionality: It is suggested the creation of a climate task force in each public entity responsible for developing and providing climate information, managing tools, platforms, etc. The support is the same as requested in the previous gap.</p> <p>Capacity building: If this task force is continually trained and allowed to share their knowledge and experience in national and international events, the feeling of being in a sustainable career is more real and the rotation of these specialists would be reduced to minimum. The requested support is to be able to participate in training courses, participate in exchanges of experiences, internships, etc. with national or international economic grant.</p>
<p>As a consequence of the two gaps shown above, the majority of sectoral specialists in climate change are not officially delegated to these activities as a labor function. Either the time they work is very short for their official</p>	<p>Institutionality: The authorities should formalize the work of the climatic task forces in the public entities responsible for feeding the INFOCARBONO and monitoring the mitigation actions of emissions. Since the INFOCARBONO is mandatory but the mitigation measures are not, in that sense it would be advisable for the</p>

Identified gaps	Identified needs
<p>commission, due to rotation, or it is not a priority in the area they work.</p>	<p>INFOCARBON to be updated and to give a new mandate referring to the mitigation measures. The requested support is for the authorities to participate more in climate change actions and make informed decisions.</p>
<p>Sectoral specialists have not yet gained knowledge at the level of international best practices to develop their work, both at the level of implementation of the National GHG Emissions Registry, and the use of tools and methodologies made available by MINAM to monitor the actions of mitigation and adaptation.</p>	<p>Capacity building: Specialists have suggested a more active participation in courses, workshops, technical meetings, internships, etc., which allows them to obtain international knowledge and share their experiences with their peers.</p> <p>Financial support: The use of technological tools that allow monitoring in progress of mitigation actions will be increasingly necessary, since many measures require field work. This measuring equipment can be acquired through international cooperation funds or climate funds.</p>
<p>The Multisectoral Working Group (GTM) has moved on to the phase of implementation of the national contribution, but an important gap has been identified in terms of capacity building and financial support for this process.</p>	<p>Capacity building: In order to generate the conditions to reach the goal of reduction established in the national contribution, it is necessary to strengthen the capacities at the national level in the following aspects:</p> <ul style="list-style-type: none"> • Establish and disseminate the guidelines to carry out the measurement, reporting and verification in each sector that generates reductions. • Strengthen the participation and work of government and private sector sectors to implement options to reduce emissions, which should include a road map and an action plan. <p>Financial support: Complementary financing is necessary for the following topics:</p> <ul style="list-style-type: none"> • The development of a methodology for the valuation of the enabling conditions for each emission reduction sector. • Finance the implementation of the enabling conditions identified. • Define direct and indirect costs, including environmental and social co-benefits of prioritized mitigation measures. • Identify the economic and financial instruments for the mitigation options selected, both those coming from the public and private sectors. • The elaboration of an engagement strategy, from a media and institutional approach of the private sector.

Sources: Miscellaneous documents, interviews with specialists and authorities
Elaboration: By the author

6. CONCLUSIONS

- Both the Framework Law on Climate Change (Law No. 30754) and its Regulation (pre-published and in the process of public consultation), consider the creation of a Platform for the Monitoring of Adaptation and Mitigation Measures.
- In the various sectors visited, there were technical specialists with different levels of knowledge regarding the work they are developing in relation to climate issues.
- These technical specialists have been entrusted with the responsibility of representing their sector and carrying out their work. However, some do it partially, combining their work time with other tasks. Others have not been sufficiently trained and are self-training in these subjects.
- During the investigation, it was difficult for the Consultant to identify and contact the technical specialists in each sector, because they are new to these activities or because they are not working on the climate issue. See list of specialists interviewed in Section 7.
- Interviews conducted with public sector technical specialists have allowed the gaps and needs to be updated. The experience of having jointly prepared the GTM-NDC Report has been a great help in deepening their knowledge. Now, the implementation of the results is the most difficult part because the intersectoral institutional arrangements must already be executed and due to the limited knowledge of the tools and methodologies that should be used.
- The enthusiasm and desire to learn from technical specialists is an advantage that should be taken advantage of through capacity building and institutionalization of their work.
- The progress made in each sector evaluated differs. Some are more advanced than others. This is because, in some cases, there is more support from the authorities, the self-training of each technician, the enabling conditions of the mitigation measures or financial support through mitigation actions in course (NAMAs with international financing, climate projects, technical assistance, among others)
- The limited participation of the academy, through the universities, deserves special mention. After Law N° 30220, the University Law, was enacted, they are preparing to be certified and, part of this preparation, is to increase the quality of teaching in the face of the new challenges of society and the labor market. For example, public universities must incorporate into their Institutional Operational Plan (POI) an Institutional Eco-efficiency Plan, they must also use efficient equipment with energy efficiency labeling in their facilities. All this contributes to the reduction of emissions in universities.

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Nº	Entity	Specific Area	Name	Charge
PUBLIC SECTOR				
1	Ministry of Environment (MINAM)	General Directorate of Climate Change and Desertification - DGCCD	Lorenzo Eguren Ciurlizza	Project coordinator
2	Ministry of Environment (MINAM)	General Directorate of Climate Change and Desertification - DGCCD	Manuel García-Rosell	Project coordinator
3	Ministry of Environment (MINAM)	General Directorate of Climate Change and Desertification - DGCCD	Freddy Garro	Project coordinator
4	Ministry of Environment (MINAM)	General Directorate of Waste Management – DGGRS	Katherine Riquero Antunez	General Director
5	Ministry of Environment (MINAM)	General Directorate of Waste Management – DGGRS	Yuliana Vidal	Specialist in waste management and subnational governments
6	Ministry of Environment (MINAM)	General Directorate of Waste Management – DGGRS	William Chata Yauri	Specialist in waste management and MRV systems
7	Ministry of Environment (MINAM)	General Directorate of Waste Management – DGGRS	César Dávila Romero	Specialist in waste management and MRV systems
8	Ministry of Energy and Mines (MINEM)	General Directorate of Energy Efficiency (DGEE)	Daniella Rough	Coordinator of Energy NAMAs
9	Ministry of Energy and Mines (MINEM)	General Directorate of Energy Efficiency (DGEE) Energy NAMAs Project	Alfonso Córdova Rau	Specialist in NAMA and MRV

10	Ministry of Production (PRODUCE)	General Directorate of Environmental Issues of Industry – DGAAI	Paloma Oviedo	Specialist in MRV systems
11	Ministry of Agriculture and Irrigation (MINAGRI)	General Directorate of Environmental Issues of Agriculture - DGAAA	Ivan Maita Gómez	Specialist in MRV systems
12	Ministry of Agriculture and Irrigation (MINAGRI)	General Directorate of Environmental Issues of Agriculture - DGAAA	Carlos Rueda Arana	Specialist in MRV systems
13	Ministry of Housing, Construction and Sanitation (MVCS)	General Directorate of Environmental Issues - DGAA	Isabel Málaga	Specialist in MRV systems
14	Ministry of Transport and Communication (MTC)	General Directorate of Environmental Issues - DGAA	Milagros Morales	Specialist in MRV systems
PRIVATE SECTOR				
15	National Society of Industry (SNI)	Sustainability committee	Patricia Valdez Castro	Head of committee
16	Peru 2021	General manager	Micaela Rizo Patrón	General manager
17	Peru 2021	Communication and project area	Aracelly Ramos	Head of communication and project area
18	"Climate commitment of Peruvian universities" Network - CCUP	Green Energy Consultoría y Servicios	Milene Orbeagozo Reto	CCUP Network administrator

The Consultant's work is based on a review and analysis of available documentation and on interviews conducted with specialists of all involved NDC's sectors. Consultant counted on the efficient administrative support of Green Energy for interviews and communication with appropriated counterparts.

Consultant compiled data and information considered trustworthy, both documents and interviews realized. For this reason, he denies responsibility for such data.