Alianza del Pacífico

Meeting Report

- National Climate MRV Systems –

Towards Connectivity & Alignment

Sub-grupo Técnico Informal de MRV y Cambio Climático de la Alianza del Pacífico

- Pacific Alliance -

Working Group on Environment & Green Growth

Bogotá

March 20-22. 2018

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Setting the Scene

In January 2018 in Santiago, Chile; at the first meeting of the Informal Technical Subgroup on MRV and Climate Change of the Pacific Alliance (**SGT-MRVCC**)[1], national government delegates from Mexico, Colombia, Chile, and Peru agreed on the importance of creating a multi-year work plan towards achieving the Presidential Mandate Nº16 from the Cali Declaration (June 2017) and delivering on many of the specific technical tasks in the Action Plan of its parent Working Group on Environment and Green Growth (**GTMACV**)[2].

To support these ambitious goals and innovation in regional collaboration, Environment and Climate Change Canada (ECCC) supported a two and a half day technical meeting of the SGT-MRVCC in Bogotá, Colombia in March 2018 with the objectives;

- Improve the connectivity and alignment between (and within[3]) the Climate MRV teams of the Pacific Alliance (PA) countries;
- Increase the awareness and familiarization of the scope and nature of the climate MRV systems in each PA country;
- Discuss the challenges, synergies and opportunities to improve climate MRV systems;
- Define a multi-year work plan that develops the technical and systemic capacity of Climate MRV systems between countries of the Pacific Alliance.

To inform the technical discussions of the delegates at the meeting in Bogotá, country consultants prepared comprehensive scoping studies on the state of climate MRV systems in each country. In addition, a survey of key institutional actors was prepared and circulated in each country to gather input on the needs and challenges of their national climate MRV systems. Finally, a catalog of additional country MRV resources was created, to centralize access to many of the principal reports on activities and climate MRV already available.

Pacific Alliance Climate Wiki (PA-Wiki) was created to host these documents and enable collaboration by members of the working group. Going forward, the PA-Wiki will continue to serve as a dynamic, interactive knowledge base to support the Pacific Alliance and disseminate future activities of the 2020 MRVCC Roadmap.

[1] *Subgrupo Técnico Informal de MRV y Cambio Climático*

[2] *Grupo Técnico de Medio Ambiente y Crecimiento Verde*

[3] e.g., between different ministries within a country, or between MRV of emissions and MRV of mitigation actions in the same country, or between MRV at the national vs the subnational level, etc.

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Overview of Country-specific MRV Systems

Colombia

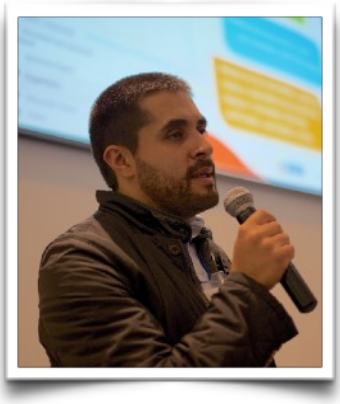
The National MRV system in Colombia is comprised of 3 focus areas; GHG emissions, GHG reductions and climate finance. The system has been shaped by the institutions of the National Climate Change System (SISCLIMA) who make decisions about mitigation and adaptation management.

Colombia MRV Systems Presentation:

Sebastián Carranza and Diana Camila Rodriguez

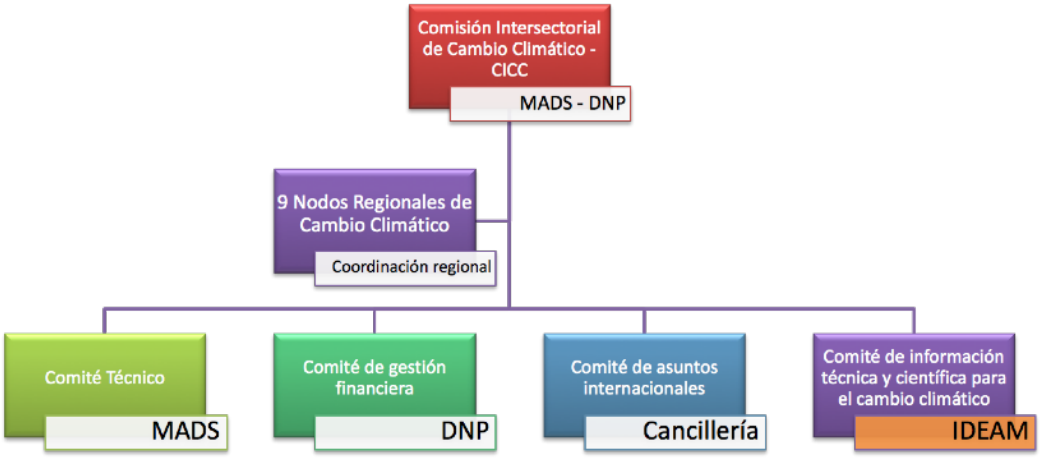
Dirección Cambio Climático
Ministerio de Ambiente y Desarrollo Sostenible
República de Colombia

- The Ministry of Environment and Sustainable Development (MADS) leads the theme of GHG reductions. They are mandated by the National Development Plan to administrator the National GHG Emission Reduction Registry and MRV system. In the coming months, MADS will be defining a resolution for regulation of the MRV system that establishes the criteria for additionality and other basic rules of the MRV system.
- The Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) leads the theme of GHG inventories. Recently, they have established information capture protocols and QA/QC for the National GHG Inventory.
- The National Planning Department (DNP) leads the theme of Climate Finance. DNP has created a platform that allows the measurement and tracking of financial flows across 3 categories: domestic public finance, private finance and international finance. This platform is linked to other public finance systems within DNP and the National Department of Statistics.



Ultimately, the 3 focus areas of Colombia's MRV System will be bundled together as a comprehensive GHG accounting management system. This is currently under development. The system will utilize information from the national inventory and National Registry of GHG Emission Reductions (RENARE) to track NDC progress—in line with the accounting principles and transparency framework of the Paris Agreement.

Colombia, Institutional Arrangements - SISCLIMA



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In the emissions accounting system, Colombia has worked to apply the "5 step methodology" for NDC accounting (see workshop presentation link below); currently they are at step 2 (selecting a calculation method to track the NDC). Meanwhile, they are using a spreadsheet to analyze the available information to assess actual progress towards the NDC.

PA Wiki Colombia

- Colombia Workshop Presentation: Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance
- Colombia MRV SWOT: Informe Sobre el Alcance, Naturaleza y Capacidades de MRV de GEI. (Spanish, English)
- Survey: Encuesta para el levantamiento de información sobre necesidades y retos comunes del sistema mrv de emisiones, reducciones y financiamiento de Colombia
- Review of Survey Results - Brechas y necesidades de las instituciones involucradas en el trabajo de MRV en los países.
- Colombia – Catalogue of MRV Resources

Notes and take-aways:

- In June 2017, the government approved Decree 926 establishing the rules and conditions that allow certain entities to offset their carbon tax obligation under the Carbon Tax Law (Law 1819).
- To date Colombia's MRV system advancement has been generic— approaches have developed independently and uniquely. Nevertheless, each programme has the same accounting rules under development, but they are not yet in public consultation.
- The reliance and overuse of consultants has led to information that is disorganized and scattered in various databases. As a result, national ministries and officials do not understand how information is obtained, how commitments are established, the role of each stakeholder or how to input data. Colombia has therefore been reducing the use of consultants and building the capacity of national ministries to conduct climate MRV.

Challenges:

- Update the inventories to improve the Biennial Update Report (BUR).
- Improve the transparency of climate funds received to date.
- Harmonize top-down and bottom-up GHG accounting methods.
- Resolve the best way to manage regional inventories with local capacities.
- Advance local technical and analytical capacities.
- Indifference among decision makers.
- Indicators to track NDC progress are not readily available, they do happen naturally. So these indicators and processes need to be created and utilized.
- Explain the specifics between the BAU and the 20% NDC target pathways.

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Perú

Peru was one of the early countries to ratify the Paris Agreement. However even before this, Peru had a climate MRV system based on the National Inventory Report. Presently, the NDC sets a target to reduce GHG emissions by 30% by 2030 (conditional on international finance) which represents a reduction of 80 $MtCO_2$. Peru anticipates that more than 60% of the reductions must come from LULUC and therefore is working on plans to achieve this goal.

Peru MRV Systems Presentation:

Lorenzo Eguren

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Ministerio del Ambiente
República del Perú

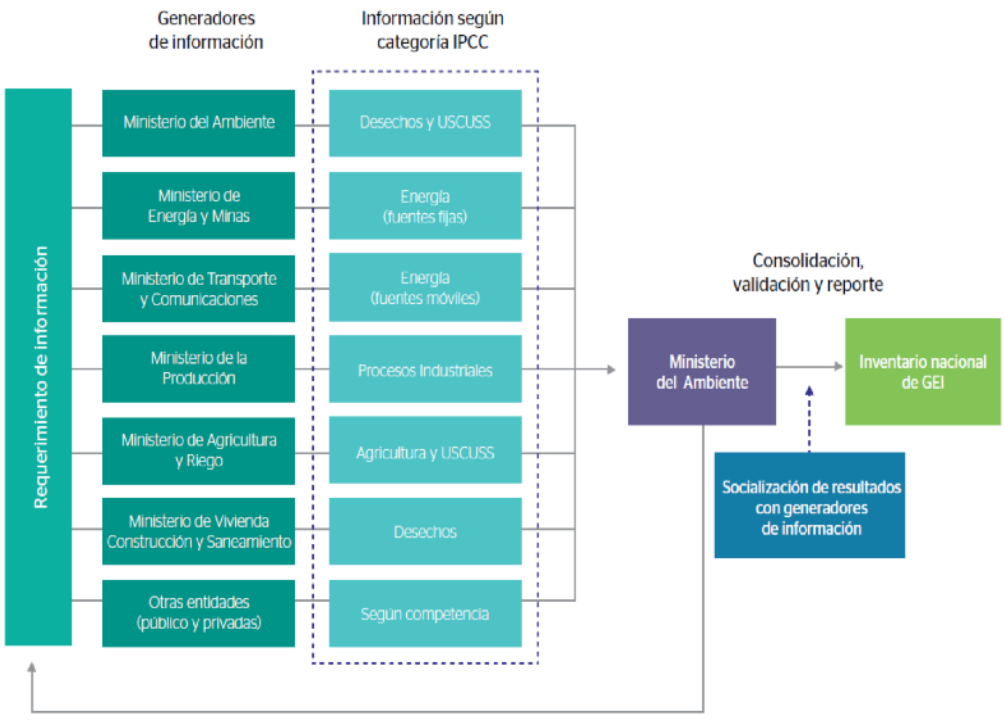
David Lescano

Consultor, ALWA - Ingeniería Sostenible
Perú

Two years after Peru started to publicly update their National Inventory Report, in 2014, a law was passed that created INFOCARBONO- Peru's national GHG Inventory System. INFOCARBONO is a legal framework that mandates the institutional arrangements necessary to produce the inventory, involving national sectoral inventories. INFOCARBONO represents a major transformation of the GHG management system in Peru, because before it, the National Inventory Report was developed by external consultants in coordination with the Ministry of the Environment (MINAM). Now, the National Inventory Report development is the responsibility of different sectoral ministries and led by MINAM). This is an important advance for Peru in terms of transparency and data traceability. It also helps to ensure that each ministry internally establishes and incorporates GHG management and reporting.

Peru has also recently passed the first Law on Climate Change (making it the fourth country in Latin America and the Caribbean to have one). This law gives authority to the MINAM to create instruments to comply with the NDC - one of these tools is the National Registry of Mitigation Initiatives. The registry tracks the actions towards achieving the NDC, including market related initiatives: ITMO (*internationally transferred mitigation outcomes*) and CORSIA (*carbon offsetting and reduction scheme for international aviation*) among others. There are other MRV systems also under development in Peru including:

Peru – Institutional Arrangements



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- A Carbon Footprint Registry (HC-Peru) used to estimate emissions from organizations and events using ISO 14064-1, the GHG Protocol Standard and the 2006 IPCC Guidelines, Procedures and emission factors.
- The National Registry of Support Received (RNAR) will monitor financial support received and public expenditures for projects in the RNIM.
- The National Registry of Mitigation Initiatives (RNIM) will include both mitigation and capture initiatives, including REDD. It will create, manage and publicize actions that are implemented in Peru to reduce emissions and provide transparency in the information that is reported on these reductions.

PA Wiki Peru

- Peru Workshop Presentation: Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance
- Peru MRV SWOT: Análisis del alcance del sistema de Monitoreo, Reporte y Verificación (MRV) en el Perú (Spanish, English)
- Survey: Encuesta para identificar la situación del MRV de las emisiones/reducciones de GEI en el Perú
- Review of Survey Results - Brechas y necesidades de las instituciones involucradas en el trabajo de MRV en los países.
- Peru – Catalogue of MRV Resources

Notes and take-aways:

- Peru has identified that the largest reductions for their NDC will be from the forestry sector
- They completed their first National GHG Inventory in 2010 and they provide guidelines for each sectoral ministry in order to complete and to complete their own inventory. Peru noted that a challenge with the National Inventory is automated data capture and processing and the need for enhanced QA/QC
- Peru is trying to capture investment however they identified a need to develop indicators
- National Strategy on Climate Change published in 2015 recognized 11 Strategic lines of action to reduce the impact of climate change including scientific research, policies and measures for the adaptation, international negotiations, policies and measures for the management of GHG emission, knowledge and information, promotion of projects, use of appropriate technologies, participation of society, forest management, fair compensation and ecosystem management.

Challenges:

- There is a need for Peruvian-based methodologies for many sectors/technologies
- Without a mandatory policy for large emitters to reduce their emissions there is no incentive.
- Demand for a critical mass of Peruvian Verifiers as currently Verification Services are imported.
- The forestry sector has compatibility issues with REDD+ which are causing inconsistencies
- Peru questions, how to generate emission reductions that can be accredited and marketable – how to be consistent
- Government leadership is needed to create clear emission reduction policies.

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Chile

Since Chile ratified the Kyoto Protocol in 2002, the National Government has been making progress in strengthening the institutional framework of Climate Change Policies, including the creation of the Ministry of Environment (MMA) in 2010 and the Office of Climate Change (OCC, now the Division of Climate Change (DCC)). Today, this is the entity that coordinates public policy on climate change at the national level.

Chile MRV Systems Presentation:

Francisco Pinto

División Cambio Climático
Ministerio del Ambiente
Chile

Chile completed their 1st National Communication (NC1) and first reported their National Inventory in 2000. Since then they have published a second communication in 2011, an updated GHG inventory 1990-2010 published in 2014 as part of the 1st Biannual Update Report (BUR), and the 3rd National communication NC3 and 2nd BUR in 2016. The National System of GHG emissions is led by the MMA and the emission estimates for each sector is based on the gathered information.

In 2014, the Government of Chile passed a 'Green Tax' reform that introduced for the first time, a tax on CO_2. This Green Tax entered into force Jan. 1, 2017 and applies to facilities that have emission sources (boilers, turbines) with thermoelectric generation potential ≥50 megawatts (MW). The Superintendent of Environment (SMA), governs the MRV of the tax and coordinates the tax collection with the Internal Revenue Service (SII) and the Treasury. Since the implementation of the tax, Chile has had to consider the development of MRV protocols so that the participating facilities also report their emissions to the authority, via the 'Register of Emissions and Transfer of Contaminants' (RETC). There are 94 installations subject to the Green Tax and therefore a new MRV System was created.

Chile's MRV system provides clear information that supports climate change diagnostics and the design and implementation of public policy. There is an MRV Technical Team in Chile (ETMRV-Chile), that brings together 9 institutions that work on MRV. ETMRV-Chile was formed in response to new requirements of the Paris Agreement and will strengthen domestic institutional arrangements in the country and improve communication and interaction between the different actors that monitor climate actions in Chile.

PA Wiki Chile

- Chile Workshop Presentation: Arquitectura del Sistema Nacional MRV de cambio climático en Chile
- Chile MRV SWOT: POLICY BRIEF - State of the art of monitoring, reporting and verification GHG schemes in Chile (Spanish, English)
- Survey: Encuesta para la recopilación de información sobre las lagunas y necesidades de las instituciones involucradas en el 'Equipo de trabajo de MRV en Chile' (ETMRV-CHILE)
- Review of Survey Results - Brechas y necesidades de las instituciones involucradas en el trabajo de MRV en los países.
- Chile – Catalogue of MRV Resources

Notes and take-aways:

- Setting policy gives confidence to the private sector to invest and really begin to reduce emission reductions. Transition is now happening in Chile thanks to earlier policy signals.
- Chile identified elements where they'd like to work within the PA framework:
  - Analyze the applicable accounting rules,
  - determine how to align the accounting rules within the subnational focus,
  - determine how to continue progress towards the NDC target, and
  - determine how to make MRV coherent, consistent, efficient and relevant for public policy.
- Chile also identified common challenges amongst the countries of the PA; such as how to articulate the distinct sectoral and sub-regional initiatives within the National MRV focus.

Challenges:

- There is a need to develop a consistent accounting rules framework in order to monitor mitigation actions in Chile.
- Chile noted, that verification is the theme least advanced due to the lack of institutionality. There is a need to have for more 3rd party verifiers. The National Institute for Standardization is using ISO 14065 to establish accreditation of verifiers— not only for the Green Tax but also for their other programmes. But in general, there are no protocols for third-party verifiers.
- How to incorporate a complete summary of mitigation activities in active MRV schemes— there is a need to develop MRV strategies that take the carbon budget into account for successive renewals of NDCs. This is fundamental to include in the ongoing work of the Pacific Alliance. This will help collaboration towards achieving the Paris Agreement objectives.

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México

Mexico MRV Systems Presentation:

Mireille Meneses and Yutsil Guadalupe Sangines Sayavedra

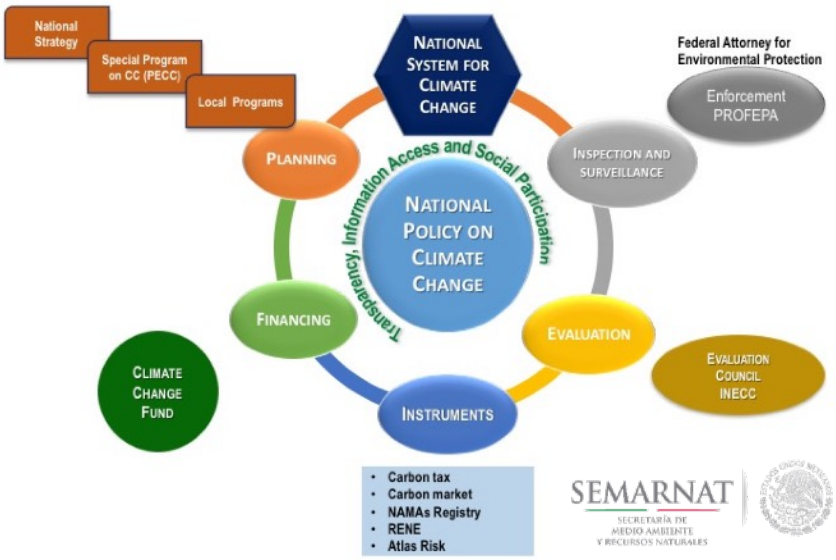
Secretaría del Medio Ambiente y Recursos Naturales, México

In Mexico there has been an ongoing focus on climate actions and several MRV systems have been developed to account for national GHG emissions, to report GHG emission reduction actions, and to track voluntary carbon markets.

In 2012, the Government of Mexico published the General Law on Climate Change (LGCC) making them the first developing country to pass a law on climate change. The LGCC established a number of public policy instruments, including the National Emissions Registry (RENE) and the regulations that define its technical operation. For example, RENE defines the annual reporting rules for businesses that emit over 25,000 tonnes CO_2 per year.

For the National MRV system, Mexico prioritized from the start that all sectors needed to participate and understand the decisions made, and the effect these decision may have on their sector. At the subnational level, Mexico has strengthened capacities for monitoring and reporting emissions and reductions in order for there can be cooperative and lasting learning across the country. Approaching regional entities has been done by the Ministry of Environment and Natural Resources (SEMARNAT) and the National Institute of Ecology and Climate Change (INECC) with programmes to strengthen capacities, divided by regions. SEMARNAT and INECC have prepared online materials for the Regional Administrations and INECC has launched 2 regional pilots on transport and waste in order to identify mitigation actions and be part of the NDC in agreement with what has been defined at the National level.

Mexico - General Climate Change Law Components



Mexico has also established mitigation technology pathways for the identified sectors (Energy, Fugitive Emissions from Fuels, Industrial Processes, Solvents, Agriculture, LULCF, Waste and Other) in the National Inventory, to work on identification of mitigation actions that can be implemented for achieving the NDC. There is a process to prioritize the mitigation actions and can adjust measures as new information is added. This has resulted in concrete projects ready for implementation by the next administration.

At the sectoral level the MRV systems are at different stages of advancement and are not homogenous. For example, the LULUCF sector has a specific law that mandates the creation of an MRV system for that sector, but the agriculture and fishing sector does not have this mandate. Moreover, the MRV actors involved in each sector are distinct and each group has diverse interests, which creates a challenge when coordinating the National MRV System.

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PA Wiki Mexico

- México Workshop Presentation: Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance
- México MRV SWOT: MEXICO SCOPING STUDY Pacific Alliance Country MRV Capacity Development Priorities Workshop (Spanish, English)
- Survey: Encuesta para la recolección de información sobre las necesidades de las instituciones involucradas en el Subgrupo de Trabajo para el MVR de México
- Review of Survey Results - Brechas y necesidades de las instituciones involucradas en el trabajo de MRV en los países.
- México – Catalogue of MRV Resources

Notes and take-aways:

- The institutional arrangements for MRV has clear objectives, as it requires the participation of actors and it's obvious that they have to evaluate and coordinate in order to improve and update the information to keep up with improvements in the GHG inventory and mitigation actions. It is critically important from the beginning that emissions management systems should be coordinated with mitigation actions and the strengthening of MRV capacities that allows actors to access the information.
- Identify financing mechanisms and additional economic instruments is a priority.
- Mexico is considering integrating agriculture into forestry and other land uses, as the agriculture sector is behind.
- Mexico is composed of 32 federated states, with relative independence from the federal government which makes the coordination, institutional arrangements, regulation and the bureaucratic apparatus rather complex.

Challenges:

- There is a challenge how to harmonize the MRV System across the subnational level.
- Verification is a challenge that Mexico noted they need to continue development.
- Permanent capacity building.
- Alignment with other instruments of national public policy.
- Mexico has well consolidated institutions but there are many systems so there is a need to coordinate all the sub-systems in order to move to an inclusive National MRV system that focuses on the NDC.
- There is a need to establish procedures to migrate from LULUCF (GL1996) to AFOLU (GL2006).

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MRV Surveys

In order to characterize and communicate the "MRV Landscape" in each country; an in-country survey was drafted by local experts and sent to key MRV institutional actors. The objectives of the survey in each country include;

- Understanding and self-rating the experiences of the key institutional actors with the country's MRV system;
- Obtaining feedback (gaps, needs, challenges) on specific MRV systems and tools, and;
- Understanding how the institutional actors can better cooperate to advance the development of the climate MRV system.

PA-Wiki: Survey Links

CHILE	Encuesta para la recopilación de información sobre las lagunas y necesidades de las instituciones involucradas en el 'Equipo de trabajo de MRV en Chile' (ETMRV-CHILE)
COLOMBIÁ	Encuesta para el levantamiento de información sobre necesidades y retos comunes del sistema mrv de emisiones, reducciones y financiamiento de colombia
MEXICO	Encuesta para la recolección de información sobre las necesidades de las instituciones involucradas en el Subgrupo de Trabajo para el MVR de México
PERU	Encuesta para identificar la situación del MRV de las emisiones/reducciones de GEI en el Perú

To achieve the common objectives, the technical experts in each country developed the surveys independently.

Response from Institutional Actors	Chile	Colombia	Peru	Mexico
Ministry of Energy	•		•	
Ministry of Environment	•	•		•
Ministry of Agriculture and Irrigation	•		•	
Ministry of Housing, Construction & Sanitation			•	
National Department of Planning		•		
Other Ministry Program or Agency	•			
Public Service Institute	•	•		•
Private National Institute	•			
Private Foundation or Company	•		•	
UN Program			•	
Total Number of Responses*	13	4	9	2

**(includes multiple responses per institution)*

In Chile, the MMA worked directly with the local expert to develop and distribute the survey from the Ministry to key institutional actors. Similarly, the technical experts in Colombia and Peru coordinated closely with the Ministry of Environment to develop the survey, but the survey was distributed to key institutional actors by the local expert and not as a ministerial communication. Lastly, in Mexico the survey was developed and distributed without ministry support.

A higher level of Ministerial involvement correlates with greater institutional survey response rate.

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Chile

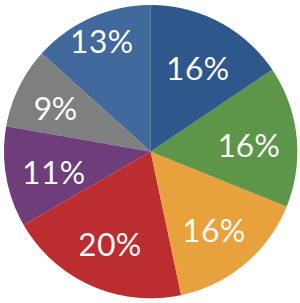

Figure 1: In the context of your organization's participation in ETMRV-Chile, in which of the following areas would you categorize the needs that your sector/ organization faces?

- Lack of financial resources
- Lack of reliable data & traceability
- Lack of data infrastructure & information technologies
- Lack of articulation with other public organisms
- Lack of formal governmental guidelines (methodologies, etc.)
- Lack of train professionals with in the organization
- Lack of trained professionals in collaborating organizations

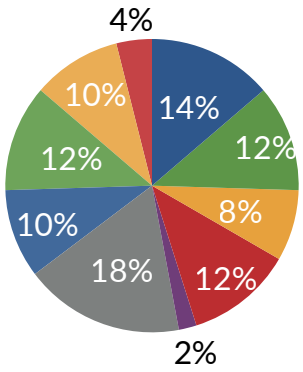

Figure 2: What are the needs of your sector/organization to participate in ETMRV-Chile?

- Need accounting rules for mitigation initiatives
- Need to develop baselines for mitigation initiatives
- Need BaU methodologies for mitigation initiatives
- Need a registry of emission sources
- Need approaches to follow up on mitigation initiatives - Other(s) - please state
- Need to strengthen the institutional arrangements and participation in ETMRV-CHILE
- Need ETMRV-Chile work plan & procedures
- Need reporting protocols for sectors that self monitor and report GHG emissions
- Need to train sector stakeholders on MRV of GHG
- Need to agree on a carbon budget for each sector

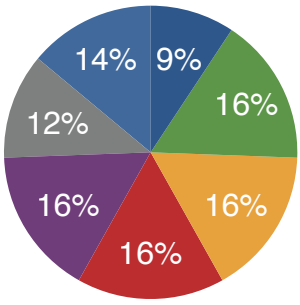

Figure 3: In the which of the following areas to you consider it essential to strengthen your organization's contribution to ETMRV-Chile?

- Environmental integrity
- Transparency
- Accuracy and Comprehensiveness
- Comparability and Consistency
- Double Counting
- Consistency
- Responsibility and accountability

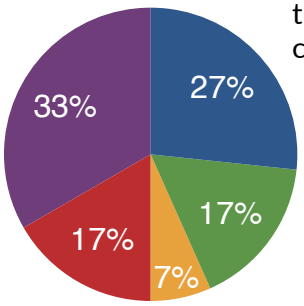

Figure 4: What do you consider are the cooperation spaces of your organization in the context of the recently started joining work of the Pacific Alliance on climate change?

- Selection of indicators to evaluate MRV in the new int'l climate regime
- Consensus on information in the NDCs in PA negotiations of the Paris Agreement.
- Definition of approaches to evaluate increased ambition in new NDCs
- Collaboration in the discussion & definition of carbon budgets by country/ sectors
- Consistent methodologies to compare mitigation initiatives between countries

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Colombia

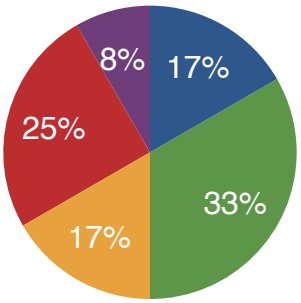


Figure 5: In which of the following areas do you consider it important to strengthen your Institution's contribution to the MRV System in Colombia.

- Preparation of MRV info for emissions, reductions, and climate financing
- Registration of MRV info of emissions, reductions, and climate financing
- Consolidation and analysis MRV info for emissions, reductions, climate financing
- Information report for the MRV of emissions, reductions, climate financing
- Validation / verification of MRV info for emissions, reductions, climate financing

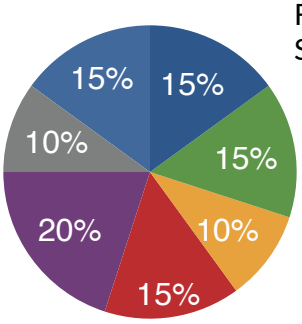


Figure 6: What are the need of your Institution's in contribution to the MRV System in Colombia.

- Availability of financial resources
- Availability of reliable data & traceability schemes
- Absence of data infrastructure & IT to maintain & exchange data
- Lack of a better articulation with other institutions of the MRV System
- Voids of governmental guidelines on National MRV System
- Lack of trained professionals within the institution
- Lack of trained professionals in external, collaborating institutions

Peru

Figure 7: Respondents were asked to rate National Inventory Report in terms of their Entity's involvement with monitoring.

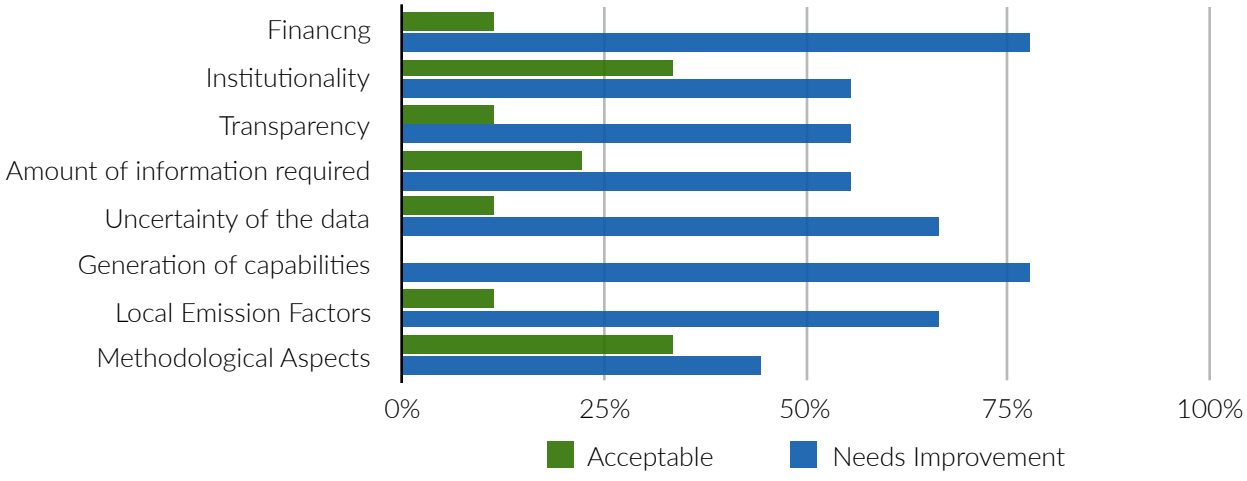


Figure 8: Respondents were asked to rate the National Registry of Mitigation Initiatives (RNIM) in terms of their entity's involvement with monitoring.

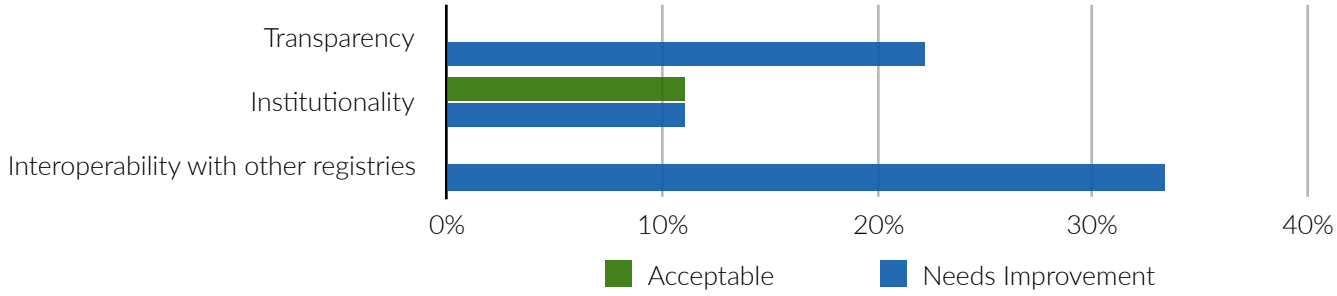


Figure 9: Respondents were asked to rate the Carbon Footprint Registry in terms of their Entity's involvement with monitoring

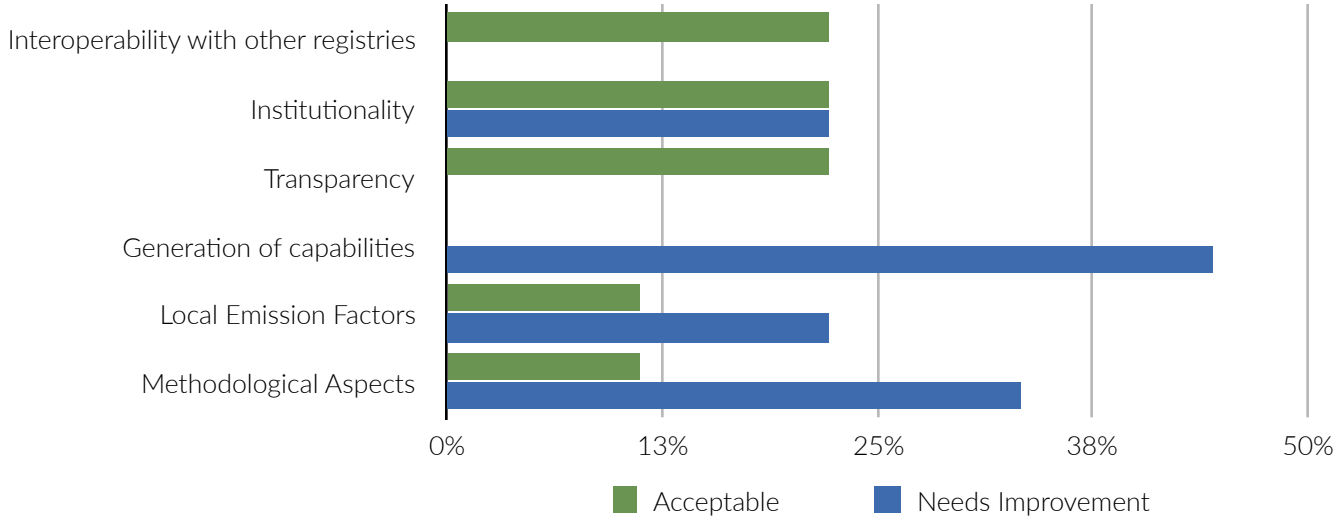
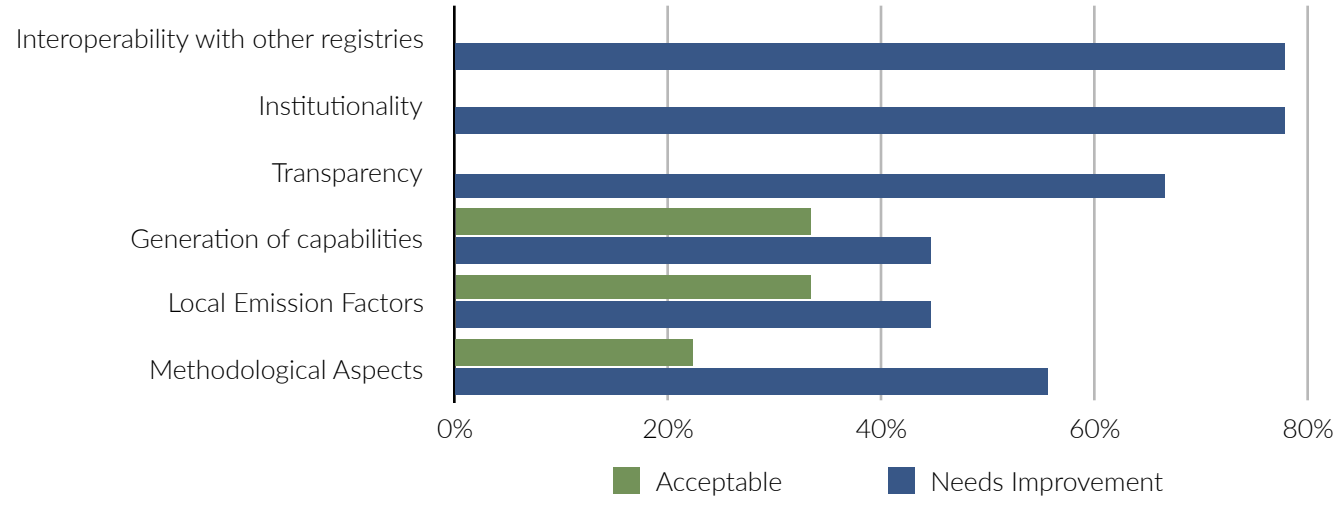


Figure 10: Respondents were asked to rate Reporting to the NDCs/NAMAs



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Mexico

Mexico had 2 responses; from SEMARNAT and the National Institute of Ecology and Climate Change (INECC). Although an analysis was not completed for these results, some important trends were noted in the responses.

Q: What are the needs and requirements of your institution/ organization to perform MRV?

- Need for additional financial resources to support MRV activity.
- Need staff training.
- Coordination mechanisms.
- The need for infrastructure and information technologies for data processing
- Need for training across the various sectors that carry out MRV activities.
- A common information platform that contains all MRV activity.

Q: Within the framework of the Paris Agreement and the NDC of Mexico, what are the needs of your institution/ agency for conducting MRV of GHG emission reductions and achieving the established targets?

- Need to develop methodologies to follow up on mitigation actions (guidelines for MRV systems of subnational governments, private sector, etc.)
- Need to develop technological platforms to carry out; a) the registration of projects and reduced emissions of GHG on the part of the actor, and b) the MRV of the actions by the institutional authority.
- Need to train various actors on MRV of emission reductions.

Summary of Take-Aways

These surveys are an important tool for the PA Country MRV Teams to better understand the strengths, weaknesses and opportunities of their MRV Systems within and between the countries.

Some of the take-aways from these surveys include:

- There is a need for improved articulation of the requirements of institutional actors to participate in the MRV of emissions to the National Inventory Systems.
- There is a lack of data infrastructure to store and share data between national agencies, cities, municipalities, companies, etc. to more efficiently monitor and report to the national MRV systems, as well as avoid double accounting issues.
- There is a need to strengthen coordination between the institutional actors, as well as with pubilc- private organizations.
- Areas where the institutional actors identified they needed to strengthen their contribution to the National Emissions Inventory included comparability and consistency; and monitoring and reporting as it relates to double accounting, accuracy, comprehensiveness and transparency.
- Countries need support and assistance to determine available domestic technical capacities, which will be the building blocks for developing effective MRV systems. Human resources capacity refers to the availability of skilled staff to support technical as well as nontechnical functions to fulfill the requirements of a robust MRV framework.
- There is a need to improve the registration and information reported to the National GHG inventories.

- Institutional actors require greater financial support to monitor and report to the national inventory.
- There is a diversity of MRV systems and frameworks within and across jurisdictions. To date, there has been minimal effort to harmonize these frameworks into a coherent system. Respondents note that there needs to be more interoperability between these frameworks

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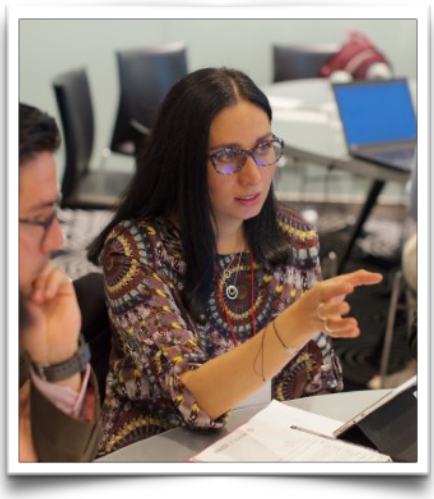
Round-table Breakout Discussions

Specific themes for the technical round table discussions were selected from recurrent topics that emerged in the PA Country MRV scoping studies prepared for this workshop. The goals for the technical table discussions included:



- Share experiences on various MRV policies and instruments
- Identify innovative MRV actions and good practice. Discuss challenges and gaps.
- Transfer knowledge and lessons learned in climate MRV matters between governments of the PA.
- Identify specific opportunities to scale and collaborate on climate MRV activities; and when appropriate identify mechanisms to link and reinforce the design and implementation of MRV collaboration between PA countries.

Workshop participants were asked to choose 1 table topic to attend in each session:

Morning Session

MRV Climate Finance
Domestic Institutional Arrangements
Harmonization of MRV

Afternoon Session

MRV & Carbon Pricing
Biennial Update Reports (BURs)
Governance & Legal Frameworks
Development of an MRV Landscape & Maturity Model

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Takeaways and Recommendations for the Roundtable Sessions

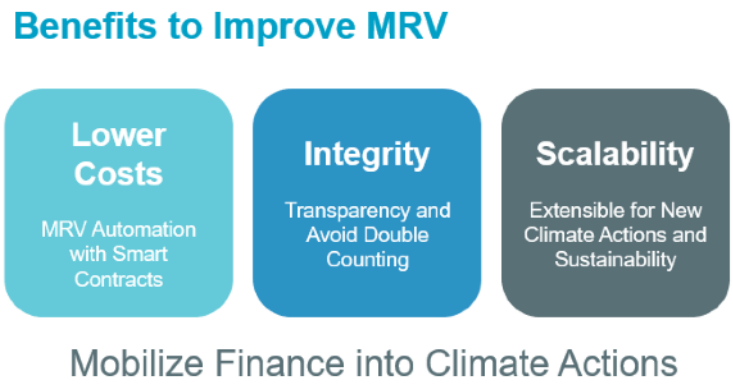
At the end of each session participants gathered to present the findings from their discussion and make recommendations to the group of potential activities for further work and cooperation between the Pacific Alliance Countries.

Table 1: MRV of Climate Finance

Table 1 Moderator: Juan Felipe Francio - DNP, Colombia

This table focused on Climate Finance as it relates to the publication of information and the need for a common methodology to understand the true impact of investment and to have the ability to compare the results between countries.

There were representatives from Chile and Colombia at the table and Chile noted that although they don't have an MRV of Climate Finance Platform like Colombia, they do generate and publish reports on Climate Finance and they plan to establish such a platform. Chile also noted that they share public spending in their NDC and they are beginning to add private and international investment. During the Summary Presentations after the breakout groups, Mexico noted thatSEMARNAT has a platform to track climate finance and each entity reports the fund received for programs/mitigation projects however they noted accuracy of this platform needs to be improved for the BUR.



Key Recommendations:

- Need to specifically define what is "Climate Finance."'
- Need to develop a methodology and agree on common minimum standards to measure climate finance within countries of the Pacific Alliance.
- Host discussions and forums to work on; what qualifies as "climate finance," what specifically are "mitigation actions," and what are "adaptation actions."

Table 2: Domestic Institutional Arrangements

Institutional arrangements are an important element to consider in the MRV System. This table focused on

Table 2 Moderator: Marcela Poulain - MMA ,Chile

the importance of understanding which institutions are participating in the MRV Systems within the country which will provide clarity on responsibilities across government and contribute to effective policy implementation. Due to the multi-sectoral and interdisciplinary nature of climate change and MRV, several ministries within a government are vital to MRV of GHGs, climate finance and mitigation.

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The group identified 3 gaps:

- Involvement of decision makers – national, subnational and sectoral. The issue is that there is a lack of knowledge when communicating with subnational and sectoral stakeholders.
- Information is available, but it is often classified in a way that prevents follow-up, it's difficult to report and it's not necessarily accurate, therefore there is a need to categorize.
- Difficulty identify institutional and subnational structures.

The group also noted the following questions:

1. How can we collect and report mitigation actions taken by:
    a. the private sector, and
    b. subnationals?
2. How can we invite them to contribute?
3. How can we use the information?

Key Recommendations:

- Focus on strengthening the capacities of:
    - entities in charge of coordinating information, and
    - subnational entities that provide data.
- Improve awareness and understanding of national and subnational authorities, of the importance of subnational integration and effective linkages between levels of governance, to achieving the NDC.

Table 3: Harmonization of MRV

Table 3 Moderators: Marian Van Pelt, ICF; and Sebastián Carranza - MADS, Colombia

The goal of the break-out table was to learn about the strategies that countries are implementing to reflect mitigation and reduction actions in emission inventories and identify the doubts and challenges faced in the application of the MRV harmonization approach. The table had participation of representatives from Colombia, Peru and Mexico and they identified four priority MRV areas to collaborate 1) landfill/ wastewater, 2) renewable energy and energy efficiency, 3) electrification and 4) Agriculture and Forestry.

The table also identified common MRV Harmonization challenges:

- There needs to be harmonization of MRV at the project and at the national inventory level.
- The Pacific Alliance countries are trying to tackle the harmonization challenge but are generally taking different approaches.
- Canada is also trying to harmonize and common reporting to the inventory under the PanCanadian Framework.

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- Countries noted the need to adjust the methodologies for both calculation of emissions and mitigation actions; as inconsistencies are presented as mitigation results are greater than the emissions reported in the inventory.

Marian Van Pelt, who is the Project Director for the USAID programme that supports the harmonization of MRV Systems in Colombia, summarized the steps that this methodology follows:

- Identify the GHG Sectoral impact standardized by IPCC,
- define the mitigation actions from which a policy derives,
- evaluate the results and methodologies of GHG accounting for mitigation activities (bottom-up) and the national inventory (top-down), and
- identify, prioritize and implement the harmonization needs between mitigation and emission inventories.

The objective of this approach is to define additional requirements for data collection, increase the level of inventory methodologies and link data from different reference levels.

Key Recommendations:

- Provide guidance on how to best reflect mitigation actions in the national emission inventories.
- Emphasize the importance of Governments to define and unify harmonization, focus on how to calculate uncertainty and integrate results with different levels of detail.
- Consult with countries on the importance of harmonizing MRV.

Table 4: MRV and Carbon Pricing

Table 4 Moderator: Marcelo Sánchez - MMA, Chilé

This table was attending by representatives from Chile, Mexico and Colombia. The table discussed 3 key elements:

- Tools or instruments countries are currently using or considering using related to Carbon Pricing.
- How to integrate these tool into the MRV systems.
- What are the commonalities between the countries and what could the PA do together in terms of MRV and carbon pricing tools.

All 3 countries that attended the table discussion noted that they have a carbon tax: Mexico has a carbon tax applied to fossil fuels, Colombia has a $3 tax applied to liquid fuels and Chile has a $5 tax applied to power generation above a specified amount generated. And Mexico shared their roadmap, simulations and discussions with the private sector. They have established rules for a two-year pilot project which will then lead to trading.

Mexico also raised an important point: there is already international cooperation and the PA should not recreate

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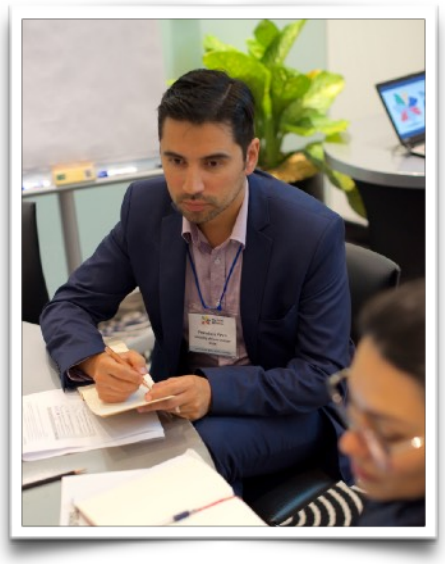
nor duplicate the work but use the existing platforms including the Cali Declaration and the Carbon Pricing in the Americas (CPPA) (includes continuous MRV improvement).

Key Recommendations:

- The table understood that they take similar political approaches to carbon tax but each PA adapts based on their situation. But how do the PA countries determine whether the tax is having an effect on emission reductions and reporting? Does the Carbon have a positive impact?
- Utilize the Cali Declaration, the Paris Agreement and the CPPA as the base to define common criteria and develop common standards.
- Create common protocols for bottom-up GHG measurement.
- Cooperate on the use of technologies related to carbon pricing and MRV.
- Establish best practice guidelines, on experiences of systemizing documentation.
- PA could look at best practices for establishing and maintaining an MRV system.

Table 5: Biennial Update Reports

Table 5 Moderator: Rodrigo Cabrera Lira - MMA, Chile



The table discussion on Biennial Update Reports (BURs) was attended by representatives from Peru, Chile and Colombia. BURs are reports submitted by non-annex I Parties to the UNFCC containing updates on their National GHG Inventories including the National Inventory Report, information on mitigation actions and needs and support received[4]. The table discussed the international characteristics of the Paris Agreement and the procedures each country uses to complete their BUR:

- Chile has a team at the Ministry of Environment that coordinates the request for information from the sectors after which they compile the report. [Second BUR – 2016]
- Colombia, has a similar completed by IDEAM however they require international financial support to prepare BUR. [First BUR – 2015]
- Peru had international cooperation and staff to complete their first BUR report however the second BUR is now being completed by the Ministry of Environment. [First BUR, 2014]

Key Recommendations:

- Improve data gathering procedures in the countries – currently there is no best practice example of regional data or sectoral data procedures.
- Strengthen interdepartmental cooperation – Ministries have different systems that don't necessarily align.
- Investigate opportunities and best practices for automation of data preparation, collection and quality control

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- Require an Assistance network to share information, best practices among the PA in order to more efficiently prepare BURs.

Table 6: Governance and Legal Frameworks

Table 6 Moderator: Diana Camila Rodriguez - MADS, Colombia

This table was led by Diana Rodríguez, a representative of the Ministry of Environment and Sustainable Development of Colombia and had the participation of representatives from Colombia, Peru and Chile. Diana discussed Governance and Legal Frameworks in the Colombian context and how it was necessary to understand:

- What is the MRV system?
- What governs this system?
- What are the components of the system?
- Who defines is and who is responsible for the management of information?

For this, it was necessary to translate the technical language of the MRV into a legal framework to define the calculations, regulation and data collection.

Key Recommendations:

- Develop strategies of governance that guarantee the continuity and sustainability of MRV from an administrative and financial perspective.
- Create methods and implement strategies for the integration of different sectors of government, such as National Statistics to create synergy and permanence for investment and planning decisions.
- Address the common concern on defining who "owns the benefits" (carbon bonds, ITMOs).
- The need to investigate how is governance supported by technology and accounting?

Table 7: Development of an 'MRV Landscape & Maturity Model'

Table 1 Moderator: Lisa Marroquin, ClimateCHECK

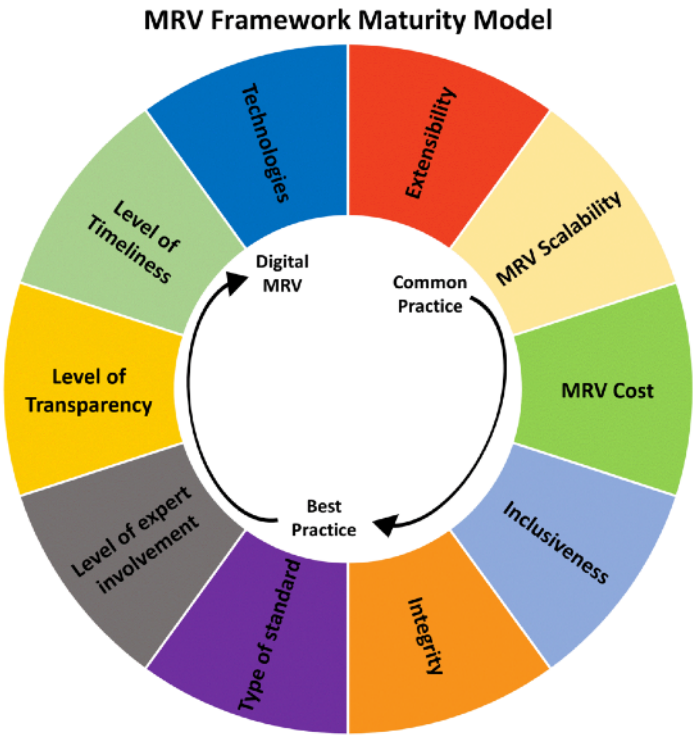
A high-level MRV Maturity model was created to facilitate conversation on assessing the level of MRV Maturity within each country in terms of level of application. The Maturity Model had 4 levels:

1. Manual
    - GHG calculations use data from various sources and data is often entered manually.
    - GHG calculations based on methodologies that might not satisfy program requirements.

2. Systematic
    - Meets minimum requirements of Programme .
    - Some automation of data but from various sources and file types.

3. Best Current Practice
    - Following Best practices for MRV but much of the information is still handled manually or is entered using outdated digital tools that have been built according to old systems and therefore they are not interoperable between frameworks.

4. Digital MRV
    - Phasing in elements and capabilities to 'digitize the audit trail' – i.e. digital/smart metering.



The table had participation from Chile, Mexico and Colombia and had a fruitful discussion that resulted in a number of questions:

- What are the best practices of each step in the model?
- How do we refine the model based on application? (i.e climate finance, GHG reporting, Projects, etc.)
- What are some examples of technologies used for digital MRV?
- How do you move up in the maturity model?

Key Recommendations:

- Continue developing and applying the model within countries of the Pacific Alliance to assess levels of MRV maturity. This exercise then could also be able to be applied to other MRV systems in the countries.

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Summary - the PA 2020 MRVCC Roadmap

In the first two-days of this technical collaboration, the Pacific Alliance country delegates and MRV experts identified and elaborated on a number of common themes related to innovating climate governance and improving, connecting and aligning national climate MRV systems. Those key issues and recommendations are summarized in this report.

This information then, was utilized to shape the agenda for the third and final day of the meeting— an intense half-day collaborative effort by the delegates to design a comprehensive regional work plan through 2020. Priority objectives were defined that established direction towards achieving the Presidential Mandate №16 from the Cali Declaration and many of the tasks in the Action Plan of the PA Working Group on Environment and Green Growth.

The resulting "PA 2020 MRVCC Roadmap" considers the gaps, challenges and recommendations identified during the previous days technical discussions and is hosted on the PA-Wiki. The roadmap is a living document that will continue to evolve in response to maturing priorities and emerging opportunities.

Importantly, the SGT-MRVCC will utilize this roadmap as a de-facto guide for efficiently converging and scaling capacity building activities towards innovating governance and strengthening and aligning the National Climate MRV systems in the Pacific Alliance. In effect, this will;

- match country and regional priorities with international donors and official development assistance;
- avoid overlaps and create co-financing opportunities;
- enable south-south learning opportunities and link projects across borders and time;
- disseminate information in order to share and build on experiences and lessons learned across the region, scaling interventions and accelerating technology transfer;
- track the progress of climate governance and MRV system improvements;
- inform the activities of the other PA working groups.

One of the first tasks in the Roadmap is to establish an "SGT-MRVCC Secretariat," to be located in Colombia in accordance with the rotating chair of the GTMACV. The Secretariat will then commence to design and schedule a progression of specific activities as regional collaboration matures.

PA2020 MRVCC Roadmap Themes

- Harmonization and cross-cutting themes
- Domestic institutional arrangements for MRV
- MRV of emission inventories
- MRV of mitigation activities
- MRV of climate finance
- MRV governance and legal frameworks
- Carbon pricing and economic instrument

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Appendix A – Acronyms

AFOLU	Agriculture, forestry and other land use
BAU	Business as usual
BUR	Biennial Update Reports
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
DANE	Departamento Administrativo Nacional de Estadística / National Administrative Department of Statistics ((Colombia)
DNP	National Planning Department (Colombia)
ECCC	Environment and Climate Change Canada
EF	Emission Factor
ETMRV- Chile	Equipo Técnico de MRV / MRV Technical Team - Chile
FINDETER	Financiera del Desarrollo, Ministerio de Hacienda y Crédito Publico / Development Financer, Ministry of Housing and Public Credit (Colombia)
GEI/ GHG	Gases de Efecto Invernadero / Greenhouse gas
GTMACV	Grupo de Trabajo en Medio Ambiente y Crecimiento Verde de la Alianza del Pacífco / Working Group on Environment and Green Growth of the Pacific Alliance
IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales / Institute of Hydrology, Meteorology and Environmental Studies (Colombia)
INECC	Instituto Nacional de Ecología y Cambio Climático / National Institute of Ecology and Climate Change (Mexico)
INFOCARBONO	Peru's national GHG Inventory System
IPCC	Intergovernmental Panel on Climate Change
ITMO	Internationally Transferred Mitigation Outcome
LGCC	Ley General de Cambio Climático / General Law of Climate Change (Mexico)
LULUCF	Land use, land-use change and forestry
MADS	Ministerio de Ambiente y Desarrollo Sostenible / Ministry of Environment and Sustainable Development (Colombia)
MEM	Ministerio de Energía y Minas / Ministry of Energy and Mines (Perú)
MMA	Ministerio de Medio Ambiente / Ministry of Environment (Chile)
MINAM	Ministerio del Ambiente / Ministry of the Environment (Perú)
MINAGRI	Ministerio de Agricultural y Riego / Ministry of Agriculture and Irrigation (Peru)
MRV	Monitoring, Reporting and Verification
NAMA	Nationally Appropriate Mitigation Action
NC	National Communication
NDC	Nationally Determined Contributions
OCC/DCC	Oficina, Departamento de Cambio Climático / Office, Department of Climate Change (Chile)
AP/ PA	Alianza de Pacífico / Pacific Alliance

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PA Wiki	The Pacific Alliance GTMACV online climate wiki tool
QA/QC	Quality Assurance/Quality Control
REDD	Reducing emissions from deforestation and forest degradation
REDD+	Reducing emissions from deofrestation and forest degradation, conservation of forest carbon stocks, sustainable development of forests and enhanceent of forest carbon stocks.
RENARE	Registro Nacional para Reducciones de Emisiones GEI/ National Registry of GHG Emission Reductions (Colombia)
RENE	Registro Nacional de Emisiones / National Emissions Registry (Mexico)
RETC	Registro de Emisiones y Transferencias de Contaminantes / Register of Emissions and Transfer of Contaminants (Mexico y Peru
RNAR	Registro Nacional de Apoyo Recibido / National Registry of Support Received (Peru)
RNIM	Registro Nacional de Iniciativas de Mitigación / The National Registry of Mitigation Initiatives (Peru)
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales / Ministry of Environment and Natural Resources (Mexico)
SGTMRVCC	Sub-grupo Técnico Informal sobre MRV y Cambio Climático de la Alinaza del Pacífico / Informal Technical Subgroup on MRV & Climate Change of the Pacific Alliance
SISCLIMA	Sistema Nacional de Cambio Climático / National Climate Change System (Colombia)
SMA	Superintendente del Medio Ambiente /Superintendent of Environment (Chile)
SWOT / FODA	Strengths, Weakness, Opportunities and Threats / Fortalezas, Oportunidades, Debilidades y Amenazas

Appendix B – Participant List

Amanda McKay	Canada	Environment Canada and Climate Change
Hassen Bahri	Canada	Environment Canada and Climate Change
Juan Pablo Forero Molano	Canada	Canadian Embassy Bogota
Katie Sullivan	Canada	IETA
Lisa Marroquin	Canada	ClimateCHECK
Scott A. Muller	Canada	ClimateCHECK
Felipe Cortés	Chile	Ministerio de Medio Ambiente
Francisco Pinto	Chile	Ministerio de Medio Ambiente
Marcela Poulain	Chile	Ministerio de Medio Ambiente
Marcelo Sánchez	Chile	Ministerio de Medio Ambiente
Rodrigo Cabrera	Chile	Ministerio de Medio Ambiente
Ana Derly Pulido	Colombia	Inst. de Hidrología, Meteorología y Estudios Ambientales
Beatriz Puello	Colombia	Financiera del Desarrollo, Ministerio de Hacienda
Byron de Jesús Cubillos López	Colombia	Departamento Administrativo Nacional de Estadística
Carlos Gomez	Colombia	Consultant
Diana Vargas	Colombia	Inst. de Hidrología, Meteorología y Estudios Ambientales
Diana Camila Rodriguez	Colombia	Ministerio de Ambiente y Desarrollo Sostenbile
Juan Felipe Franco	Colombia	Departamento Nacional de Planeación
Juan Pablo Gamboa Gomez	Colombia	Ministerio de Tecnologías de la Información y las Comunicaciones
Julian Carlos Duque	Colombia	Financiera del Desarrollo, Ministerio de Hacienda
Laura María Aranguren	Colombia	Consultant
Mariana Rojas Laserna	Colombia	Ministerio de Ambiente y Desarrollo Sostenible
Patricia Davila	Colombia	Ministerio de Minas
Sandra Granados	Colombia	Inst. de Hidrología, Meteorología y Estudios Ambientales
Sebastian Carranza	Colombia	Ministerio de Ambiente y Desarrollo Sostenible
Paula Andrea Lopez	Colombia	Inst. de Hidrología, Meteorología y Estudios Ambientales
Paola Andrea Acevedo Ramirez	Colombia	Departamento Administrativo Nacional de Estadística
Juan Carlos Arredondo	México	Secretaría de Medio Ambiente y Recursos Naturales
Mireille Meneses	México	Secretaría de Medio Ambiente y Recursos Naturales
Yutsil Guadalupe Sangines Sayavedra	México	Instituto Nacional de Ecología y Cambio Climático
David Lescano	Perú	Consultant
Lorenzo Eguren	Perú	Ministerio del Ambiente
Lisa Spafford	Switzerland	IETA
Marian Van Pelt	USA	ICF
Michael Cote	USA	Ruby Canyon Engineering

Appendix C - Workshop Agenda

Pacific Alliance - GTMACV
Taller de Bogotá
20-22 de marzo, 2018
Hotel W Bogotá

- Sistemas Nacionales de MRV -
Hacia la Conectividad y el Alineamiento

Sub-grupo Técnico Informal de MRV y Cambio Climático de la Alianza del Pacífico

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Objetivos del Taller:

- Mejorar la conectividad y el alineamiento entre y dentro de cada Equipo MRV de la Alianza Pacifica (PA);
- Familiarizacíon con el grado, el rango y la naturaleza del programa climático MRV de cada país PA;
- Explorar los retos, sinergias y discutir oportunidades de mejoras MRV;
- Trazar un camino para desarrollar capacidad hacia arquitectura MRV común dentro de la Alianza Pacifica.

Agenda:

Day 1: Arquitectura de Sistema MRV

9:00 Palabras de Bienvenida *(Ms. Amanda McKay, Environment Canada)*
Palabras de Colombia - Pacific Alliance.

9:30 Antecedentes del Taller

9:45 "PA-Wiki" : Introducción a "Collaborase" (*Lisa Marroquin*)

10:00 Actividad Rompehielos

10:30 *café*

10:45 Colombia
- Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance *(20 mn)*
- Panel Moderado con la delegación de Colombia *(45 mn)*

11:50 Perú
- Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance *(20 mn)*
- Panel Moderado con la delegación del Perú *(45mn)*

13:00 Almuerzo

14:15 México
- Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance (20 mn)

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- Panel Moderado con la delegación de México *(45mn)*

15:30 *café*

15:45 Chile
- Arquitectura MRV del Pais - pantallazo y repaso del Análisis del Alcance *(20 mn)* Panel Moderado con la delegación de Chile *(45mn)*

17:00 Resumen de las Encuestas
- *Brechas y necesidades de las instituciones involucradas en el trabajo de MRV en los países.*

17:30 Discusión: Que es necesario para lograr una arquitectura común?

17:45 Propuestas para un tema de mesa

19:00 Coctel de Bienvenida

Day 2: Análisis de los Componentes

- *Discutir y analizar componentes específicos de sistemas climáticos MRV, con la meta general de mejorar el entendimiento.*
- *Explorar arreglos de cooperación o colaboración.*

9:00 Resumen del Dia 1

9:15 Orientación hacia el dia

9:30 **Mesas Redondas, Sesión 1**
Mesas 1-4: Temas *(ver abajo)*

10:45 *café*

11:00 Las mesas presentan sus resultados

12:15 **Almuerzo**

13:30 **Mesas Redondas, Sesión 2**
Mesas 5-8: Temas *(ver abajo)*

14:45 *café*

15:00 Las mesas presentan sus resultados

16:00 **Conclusiones / Palabras de Cierre**

Day 3: Hoja de Ruta - Hacia una Colaboración Regional

9:00 - 12:00 *solo Delegaciones de Países AP MRV*

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Appendix D – Panel Discussions, Q&A

Colombia MRV Systems

Q: "How did Colombia achieve the alignment of the different IPCC sectors to the different economic sectors in the country? Can you share that methodology?" (Chile)

> **A:** (IDEAM) Inside the National Emissions Inventory reported in the NC3, there is an explanation of how we did the alignment, as well as the results of the emission distribution across the different economic sectors of the country.

Q: "Can you share more information about accreditation by the verifiers?" (Chile)

> **A:** (MADS) The procedure is similar to that used by the UNFCCC. In Colombia, there exists Designated Operational Entities (DOEs) for the CDM process accredited by the UNFCCC and there also exists accredited entities for the quantification of GHG by ISO 14064.
>
> They've learned that it is important to include in the verifications, the actual scope that the verifiers are accredited to verify. It is important to specify the actual sector.
>
> Colombia does not have an accreditation scheme under ISO14064, so it is necessary to develop the capacity to create such an accreditation organism.

Q: Regarding the 9 regions of Colombia and their emission inventories, how did you update that information to comply with the change in IPCC methodologies from 1996 to 2006? (In Peru there is a challenge that they've updated the methodologies for the national inventories and now the provincial inventories will have to be updated.)

> **A:** (IDEAM) The NC3 to the UNFCCC includes the inventories of the 33 departments with IPCC 2006 methodology. There are 9 regional nodes that facilitate the management of information to SISCLIMA. The 2006 methodology was applied to all the departments.

Q: What information was utilized and is it disaggregated to the department level for the regional inventories?

> **A:** (IDEAM) The information is regionalized for each IPCC module. It was a an expensive task because to identify where specifically the emissions were generated took a great deal of time and effort by consultants. The ideas is to continue using the IPCC 2006 methodology.

Q: Does RENARE identify emission sources in agreement with the same sources of the National GHG Inventory?

> **A:** (MADS) Yes, they are the same IPCC categories in agreement with the last report of the NC3. The problem is that the user does not know which is the source that their mitigation action is impacting, and probably does not know what is the maximum disaggregation that can their mitigation action have have. This calls attention to the need to develop the technical capacity of the persons that are utilizing RENARE.

Q: Does RENARE consider neutralizing emissions?

> **A:** (MADS) The transactional part also includes emission neutralization as a reduction, but only for fossil fuels, as the carbon tax enables this option. Nevertheless, it is important that the emission reduction is accounted to the mitigation action and not to what is actually generating the emission. This neutralization works from an economic perspective but it doesn't have an effect on the emission accounting.

Q: With the current changes in government at hand, what will be the most important challenges ahead?

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A: (MADS) The National MRV system has developed under the law that created the National Development Plan. These same elements should continue, including the continuation of the National Development Plan itself and always avoids creating new systems.

There also exists a Climate Change Law nested in the National Congress, which also creates the framework for the National MRV systemThe Intersectoral Climate Change Commission of SISCLIMA, should make reference to these systems and should take advantage of the acts of this committee so that the Ministers commit to these actions with out regard to what government or political party is in power.

The regulation of RENARE is also very important and is about to be launched and it will be launched from the MRV baseline(??check?)

(DNP) The entire MRV system has not been assigned to only one platform, but different processes that allows for it to continue working, independently of a change in government. We have been involving more institutions in the information management process and also with better quality information. Also the processes are formally consolidated with clear rules.

(MADS) IDEAM has been able to convert the inventories into part of the national statistic process that has distinct government timeframes. Also the other institutions will be able to strengthen and formalize the information generation process.

Q: How will you incorporate the voluntary corporate tool into RENARE or to the SNI?

A: (MADS) The platform was developed with the support of WRI and is based on the ISO 14063 corporate inventory scale. It is planned to link this with RENARE so the businesses can estimate their emissions at the same time they register their reductions with RENARE.

Q: Why do you want to do that to corporate mitigation actions in Colombia?

A: Well the first incentive that exists is the carbon tax. This permits the tax to not be charged via emission reductions that are registered in RENARE.

At the same time, if you want to visualize the corporate efforts towards the NDC this should be done via RENARE.

There does exist the opportunity for our path towards RETC to work from this corporate volunteer reporting programme to prepare and manage information a the private sector level from the voluntary and prepare them for the obligatory reporting under RETC.

Q: Have you been able to to achieve subnational reporting of emission reductions?

A: (MADS) Well, not yet, put we've seen that since before the existence of RENARE and the national government has promoted mitigation actions, the subnational governments have began working on climate actions thanks to programmes of international support. Fro all these initiatives the response has been that they should be registered on RENARE.

We need to align these initiatives with the national NDC information. There has been a review of the emission reduction estimates and there are a lot of doubts about the accounting methodologies a the project, city level.

Q: What challenges do you consider most important and what recent products are available?

A: (IDEAM) The issue of aligning the baseline with actualization of emission inventories. It is a risk for the suppliers of information to improve information with the coming pressure of also achieving the NDC.

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The inventory system will be designed this year, as this tool already needs to materialize. Also the preparation and delivery of the BUR2 will happen this year.

(DNP) The need to continue supporting these processes and finance MRV has been very useful due to the information it manages. We need to continue achieving a transparent measurement of the support received.

From the local level there are great challenges on how to articulate the national with the local to increase resources available at the local level.

Q: What are the biggest gaps and opportunities?

A: (MADS) Harmonizing top-down with bottom up information. Also information management from the entities in agreement with the different capacities that each institution has.

We are always looking for ambition in the platforms, but that's not why can stop advancing the to define conceptual themes. Capacity building in the private sector and local level is indispensable. Lastly, we need to help decision makers to understand the importance of information and the the key role they have in managing climate change.

Peru MRV Systems

Q: Who operates the INFOCARBONO registry?

A: The platform informs the national emission inventory reports. The law obligates the Ministries to report on it, but not the private sector. We need to establish mechanisms for the private sector to deliver information to the different ministries.

Q: The Financing MRV is in its initial stage, but what is known about the relationship with the other MRV elements?

A: It's complicated. There are pros and cons. Firstly, we want to analyze NDC progress in light of what is being invested, so that later we can determine if they should be related.

Q: Have you considered using 3rd party verification?

A: The pay-for-performance projects should have more robust MRV. In the sectoral policies the can create methodologies with buffers for uncertainty the same as having external verification. It can exist.

Q: Do you have a 3rd party verifier?

A: For now they will have to be from other countries, but we are working on an accreditation entity to see how we can certify more people and have a critical mass in this theme.

Because there is not so much actual demand for verifications, it is important to analyze how far we should go with the requisites for verification. For example, can there be flexibility in the application of methodologies.

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Q: With regard to transparency of transactions, have you had any discussion about the amount or carbon budget that you can be agreed upon?

> **A:** There is no budget. We still do not know how much each sector can contribute to reductions, but we need to continue advancing this theme. The markets are seen as a possibility to achieve the NDC, as the markets can already leverage other mitigation actions.

Q: In the RETC, or under the new climate change law, have you thought about something for the emissions registry so that it functions in the future as a carbon pricing instrument?

> A: Well there is no clear policy for carbon pricing instruments. In the RETC they are working to incorporate GHG emissions, which can be an important point of departure.

Chile MRV Systems

Q: Since you mentioned that articulation between institutions and programmes is very important, is there an example of articulation between institutions for information management in Chile that you can share?

> **A:** When the tax reform emerged, and the need to identify which establishments were subject to the green tax, the legal definitions in the law made the determination very clearly, but this did not facilitate the identification of where the information was. With RETC it was possible to determine the existing information, its quality and what were the principal gaps in the information. That was very useful because from then on you could work on a more consolidated platform and on the tasks of the installation to fill the voids in the quality of information. And today we can focus on building a better platform- such as how to incorporate information from other programmes, such as Huella Chile.

Q: With the dramatic, rapid transformation to clean electricity in Chile, what role did MRV play in that rapid transformation.

> **A:** It was a parallel path. In 2013, the new government came into power and had the goal of improved efficiency in the energy sector. Later they began negotiations between public and private sector leaders. In the call for tenders for energy, renewables began to participate with agents from the public and private sectors that resulted in the low energy prices we have today. At the same tie what happened was they created the MRV system for the energy sector that was compatible with the Technical MRV Team of Chile, since the Ministry of Energy was already a part of the Technical MRV Team.

Q: How do you establish the criteria for the inventory of contaminants?

> **A:** In Chiles there exists the National System of GHG Inventories. This system is led by the Ministry of Environment and each sector develops and elaborates their respective sectoral GHG inventories based on the sectoral information systems that they have. The system is ongoing and presents emissions since 1990 to 2014 and actually they are working on including 2015 data to be presented in the next BUR. In conclusion, each sector is responsible for their emissions in agreement with their sectoral capacities.

Q: How did you form the ETMRV-Chile? How do you coordinate in this team?

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A: The Ministry of the Environment is the entity that has the authority for managing climate change in Chile. Nevertheless, it's a cross-cutting issue across other sectors. The Ministry in the second meeting of the ETMRV presented a structure on how the the team would be comprised. It was agreed that the Ministry of the Environment would convene the other sectors to nominate a person for the relevant MRV themes. The other sectors are obligated to respond and from there the configure the technical MRV group that, also , deals with related themes of emissions accounting, the relation between GHG and RETC and also CORSIA.

Q: On payments for the green tax, what is the registration mechanisms, and what do they register? How do you define what and what isn't tradable?

A: There is the need to find an a balance between all the emission MRV mechanisms that we have. On one hand, is the carbon inventory, and on the other you have systems for declaring emissions from fixed sources of the RETC that report directly from the site. That means that in the end it is the installations who report both to the RETC and to the green tax.

There are 150 entities that report to the RETC and that allowed the creation of a baseline for the green tax. But later, the RETC analyzed the information that was reported and only 93 installations were subject to the green tax. With that, a new MRV system was created only for the green tax to be able to report from there all the detailed information that was needed to create a green tax, being that the installations already reported in different forms in other systems that already existed. For that, as they have the obligation to report GHG, it is important to not reinvent the wheel in the RETC— it only wants to complement this formula so that it can be linked to the Ministry of health.

Q: How have you managed RETC so that the corporate information can be published in the RETC?

A: The RETC has been functioning for many years, so the discussion with industry about publishing was resolved a long time ago. But in general, the information is viewed as positive. What is important is that it only shows the information in certain chains, but not the whole industrial production cycle. The Transparency law is quite rigorous and this helped support the discussion about publishing information.

Q: What is the relationship between critical contaminants and GHG?

A: In the RETC you have nearly 150 entities, reporting energy consumption and voluntary CO2. Because there exists the need to establish obligatory GHG reporting, we only have the voluntary GHG report to convert it to CO2 equivalent. Here it is important not to reinvent the wheel and utilize what already exists. IT will only be necessary to complement the forms to add an obligatory GHG report, and have in this way an "information mirror" that permits validation, for example of information from other systems such as Huella Chile. These conversations are happening inside the Ministry of Health as that is who is in charge of these forms.

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Q: In the case of the green tax, what was the interaction like with the Ministry of Housing/ Construction? What is the verification process to arrive at the payment of the tax.

> **A:** It was urgent to develop MRV of the carbon tax. Here it is very important, for example, the discussions of this group on how to differentiate the M, the R and the V.
>
> In Chile, the verification is what was first developed, it was a protocol for quality control and assurance to minimize error ranges in information. At the same tine, as inside the establishment of the tax, the majority of installations were electricity generation plants and they already were obligated to report their emissions , they took advantage o this same same report so that those same reports the reported GHG emissions. This allowed them to validate information and revise data.
>
> Later, inside the regulation you have the authority with the verifying entities. What does not exist are verification protocols. The next steps are to improve this protocol and define the verifying agency.
>
> There is a need to have a 3rd party verifier and then in the "Institute of Normalization" they are working on a standard verification for ISO 14065. Also the ANSI is important to work into the accreditation scheme of verifiers, not only for the tax but also for the other programmes.

Mexico MRV Systems

Q: The big challenge seems to be how to harmonize MRV systems across the subnational level. How have you faced the this challenge in the ETS system? And continuing with the NDC, how will you avoid double accounting int eh various MRV systems at the national and subnational level?

> **A:** In the ICA process of the BUR, part of the observations was that there exists very consolidated institutional arrangements nut that it is necessary to create synergies between the subsystems (RENE-PECC-NDC). For now, having only one MRV system is quite ambitious, but it will be initially focused on the NDC.
>
> With regard to the links between the inventory and RENE, the inventory is very consolidated and on the other hand REN is just working on information verification themes that are arising. For now, it will not be possible to articulate the 2 instruments, also because they have different scopes. In the future it will function to help analyze the bottom-up and top-down.

Q: How is the Mexican ETS going? How are you thinking to align the ETS with the region, like for example with California?

> **A:** En the development of the ETS regulations, we need to know the emission information for the participating installations. The MRV theme is vital for the ETS to function. With the possibility of alignment, the ETS regulations in California and Quebec indicate that the regulation should be equally strict and that the market has functioned for at least 3 years. Therefore, true linking would be able to happen inside of 3-5 years. They have identified that there should exist installation monitoring plans for continuing each year, linking the RENE emission with the verification themes of the reports. They are working on making adequate rules for RENE so that it is aligned with ETS rules in such a way that they are mutually aligned.

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The more we have our ETS information clear, the more clear it will be understand how to complement other MRV systems, at the national levels and with other ETS.

Q: How do you plan to have sufficient verifiers to to conduct verification of all the installations?

A: They established a procedure with the accreditation authority to realize the respective verifications. There they established the formats and requisites to be able to offer this service. The quantify of verifiers is a market theme and is not regulated by the government. Actually there are 8 businesses that provide this service and there are another 2 in the process of accreditation.

Q: What are the criteria to establish emission limits under the ETS?

A: There are various methods. You can do this based on historic information, international benchmarks, etc. The are collecting the information and and analyze who is reporting and their emission levels to have an idea how they are operating and in this way be able to establish a limit. Also, they are analyzing how each sector can contribute to the NDC goal.

Q: Are you advancing in the MRV of financing?

A: They have exercises to provide follow through on international support. They have registries in SEMARNAT, the agency of cooperation and other entities. What is complicated is the verification and ensuring that was is reported is the same information across different information sources.

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