



# Republic of Peru

## **INTENDED NATIONALLY DETERMINED CONTRIBUTION (iNDC) FROM THE REPUBLIC OF PERU**

*September, 2015*

## I. INTRODUCTION

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Since the ratification of Peru as a Party of the United Nations Framework Convention on Climate Change (UNFCCC), the country has maintained a position which is cautious of the national interests, collaborative in front of peer countries (in the context of the Latin America and the Caribbean region), and proactive in the pursuit of international synergies and convergence of decisions oriented to the ultimate goal of the UNFCCC.

Peru makes its best efforts regarding its commitment to the ongoing UNFCCC negotiating process for the approval of the new global climate agreement that will allow for the fulfillment of the objective described in Article 2 of the Convention.

The INDC responds to the reality and circumstances of the country, and aligns to the two pillars under which the 20<sup>th</sup> session of the Conference of the Parties (COP20) in Lima was conducted: sense of urgency and high level of ambition. Peru, with the presidency of the Conference of the Parties (COP) of the UNFCCC, demonstrated not only its commitment to organize the COP20, but also presented itself as a country responsible for its actions and one that envisages its development in an optimistic manner.

Peru is a country with low per capita and total emissions, with a global share of emissions of only 0.3%, of which approximately half of them generate through land use, land-use change and forestry sector activities (LULUCF).

On the other hand, however, Peru has seven out of the nine characteristics to be recognized by the UNFCCC as a "particularly vulnerable" country; these features are intensified by anthropogenic processes that cause the degradation of ecosystems and environmental pollution. The country also faces diverse threats of hydro-meteorological origin, as indicated by national emergencies and disasters, 72% of which are related to this kind of phenomena (extreme drought and rain, floods, frost, etc.).

Peru has gone through a rapid economic growth along the past ten years, which has helped to dramatically reduce poverty figures; this growth has led to significant progress in social inclusion, provision of basic health, education, and infrastructure, among other services. This has been achieved while complying with the country's international commitments and the domestic action necessary to face the conditions imposed by climate change.

Thus, we have been implementing innovative projects, based on domestic resources and contributions from international cooperation, in several regions and sectors in order to test and expand systems and strategies designed to address climate change, thereby enhancing the social and physical resilience of the territory. In parallel, we have been implementing different initiatives that are enabling the transformation of the national energy consumption and generation matrixes through switching fuels to natural gas, and promoting renewable energy sources which have given place to the connection of wind farms, solar and biomass power plants to the national grid, among other examples.

In this context, it is necessary to continue and increase the promotion, development and implementation of complementary and synergistic actions of mitigation and adaptation in order to meet the ethical responsibilities at the national and international levels, maintaining

a highly competitive economy that is in line with the new global trends, and to maximize the social and environmental benefits of efficient and inclusive productive sectors, as a result of sustainable use of natural resources,. In this framework, the iNDC considers both mitigation and adaptation components.

The iNDC has been founded upon a solid base of information and actions, being undertaken on climate change since 2003, which has allowed content to be developed and viable scenarios that fulfill strict selection and evaluation criteria to be proposed to the iNDC formulation process. This input has nourished a participatory process that included internal discussions over specific or ongoing viable proposals that are included in sectoral planning, for which existing sectoral plans, programs and instruments were considered. This formulation process has generated over 100 meetings at a political and technical level and has incorporated the advice of more than 300 experts.

In short, Peru has implemented the required effort to submit an iNDC based on initiatives in accordance with national circumstances and capabilities and in line with national economic development, poverty reduction and social inclusion goals. The initiatives will also pursue to maximize the overall benefit in adaptation and mitigation as a result of sound management of national forest resources.

Throughout this process it is considered that there is a need for constant updating and revision of the information basis and its evolution, as well as for the implementation and feedback actions needed in the context of national development.

The proposed iNDC will be subjected to ratification of the Congress, should it be required by the decisions of the UNFCCC. In this sense, the iNDC will be final only after the existence of a formally ratified global climate agreement or other agreements of the UNFCCC. Considering that this proposal is tentative, and that future agreements will not be retroactive, Peru also reserves the right to update or adjust the iNDC in line with the current proposal and with the agreements derived from the new global climate agreement under the Convention.

Pursuant to decision 1 / CP.19 and 1 / CP.20, the Peruvian State formally communicates the iNDC proposal and its complementary information.

## II. INDC IN MITIGATION

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### 2.1. Proposal of iNDC in Mitigation

The Peruvian iNDC envisages a reduction of emissions equivalent to 30% in relation to the Greenhouse Gas (GHG) emissions of the projected Business as Usual scenario (BaU) in 2030.

The Peruvian State considers that a 20% reduction will be implemented through domestic investment and expenses, from public and private resources (non-conditional proposal), and the remaining 10% is subject to the availability of international financing<sup>1</sup> and the existence of favorable conditions (conditional proposal).

### 2.2. Complementary information

#### i) Type and reference point.

The Peruvian proposal is an emissions reduction compared to a Business as Usual (BaU) baseline scenario starting in 2010, as reference year, and ending in 2030. The projection considers the total emissions and removals of the LULUCF sector. For transparency and a better understanding of the national effort, the document contains the emissions of the reference and target year, with and without the emissions from this sector:

**Table 11: GHG emissions - BaU scenario**

	Emissions (MtCO <sub>2</sub> eq) including LULUCF	Emissions (MtCO <sub>2</sub> eq) excluding LULUCF
2010 (base year)	170.6	78.0
2030 (target year)	298.3	139.3

The Peruvian State reserves the right to update the BaU scenario, based on new information available before 2020.

#### ii) Scope and coverage

- **Scope:** National
- **Considered GHG emissions:** the main GHG considered in the iNDC are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).
- **Sectors:** The categories considered in the 2010 National GHG Inventory are similar to those considered in the projections of the BaU scenario. In the BaU scenario

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<sup>1</sup> It should be noted that Peru will not assume conditional commitments that might result in public debt.

projections, the emissions from international aviation and freight were not considered due to lack of an agreed accounting framework; nor were considered emissions from rail or sea national transport, since they have marginal percentage participation in the subcategory "Transport" and detailed information is not available. The "Solvent and product use" category has zero emissions.

The period for implementation covers January 1<sup>st</sup>, 2021 to December 31<sup>st</sup>, 2030.

The Ministry of Environment (MINAM), as the national focal point for the UNFCCC, designed a process since 2014 in which three levels of dialogue were included:

- a) "Technical and scientific" with experts for the calculation of emissions, based on technical parameters and the estimation of the costs of mitigation options;
- b) "Technical and political" with representatives of the Ministries linked to the emission sources and mitigation options in order to gather technical opinions in the framework of political and sectoral plans; and,
- c) "High political level", for which a Multisectoral Commission (MC) was established at the level of Ministers or Deputy Ministers, responsible to develop the technical report containing the proposed Peruvian iNDC (Supreme Resolution N° 129-2015-PCM).

The MC incorporated the representation of the Presidency of the Ministers Council and the following Ministries: Economy and Finance; Energy and Mines; Agriculture and Irrigation; Transport and Communications; Production; Construction, Housing and Sanitation; Foreign Affairs; Education; Justice and Human Rights; Health; Culture; Development and Social Inclusion; and Environment. The last one held the Presidency of the MC, and assumed the role of Technical Secretariat.

As an input for the formulation and review of the progress and the preliminary results of the iNDC, a decentralized public consultation process was held. National and subnational governmental entities, and representatives of civil society, including indigenous organizations, participated to ensure that the iNDC was constructed with transparent and participatory criteria.

For the implementation process, channels and coordination mechanisms with relevant institutions and actors will be maintained, taking into account the results of the international agreements and consolidating the progress and commitments obtained.

In addition to governmental efforts, the participation of the national and international private sector, as well as the access to new financing sources and to international support, will enable that the level of expected emissions reduction, as well as the socioeconomic and environmental co-benefits related to the mitigation efforts, are fulfilled.

**iii) Assumptions and methodological approaches.**

To calculate the 2010 National GHG Inventory and national BaU projections (based on the estimation of sectoral BaU scenarios according to its own dynamics) the 1996 and 2006 Intergovernmental Panel on Climate Change (IPCC) guidelines and the 2003 Good Practice guidelines, national statistics and projections of population and Gross Domestic Product (GDP) were used. National experts, that coordinated with the relevant government sectors, developed the sectoral projections. The base year of the BaU projections were aligned with the 2010 National GHG Inventory.

We used the values of Global Warming Potential published in the Second Report of the IPCC, in accordance with the National GHG Inventories submitted to the UNFCCC (CH<sub>4</sub> : 21 and N<sub>2</sub>O : 310 ).

BaU projections consider the removals of the LULUCF sector.

**iv) Ambition, fairness and contribution to achieve the objective of the UNFCCC (Article 2).**

Based on the evaluation process, we can infer that there is sufficient room for upgrading the iNDC on subsequent review phases that are necessary in light of the decisions of the UNFCCC.

The Peruvian iNDC is fair and ambitious. In one side, the 2010 national GHG emissions accounted for only 0.3% of global emissions, with per capita emissions significantly lower than the average of Latin America and the world; but on the other side, Peru is among the most vulnerable countries to the effects of climate change. This combination means that even while the country must make an important economic and social effort in its adaptation process, it is committed to a significant reduction of GHG emissions which are based on extensive initial work for the participatory development of goals by 2030.

For the country, it is also ambitious to work actively in strengthening mechanisms and activities to introduce the mitigation variable in its planning processes, and for the achievement of its development goals, involving in the process all the stakeholders that will ensure economic, social and environmental sustainability, and resulting in improvements in competitiveness and social and environmental changes. The proposal has an increased ambition by incorporating and articulating forecasts and efforts on Climate Change adaptation.

Peru's proposal is - in short - in line with the ultimate objective of the UNFCCC by formulating emission reductions in the different activities at the national level.

**v) International Market Mechanisms**

At the time of submitting the iNDC proposal, the acquisition of emission reductions through existing or new international market mechanisms is not considered for its compliance. This is in order to avoid adjustments or duplications for ownership or accounting reasons. However, Peru is considering selling emission reductions provided this is not an obstacle for the compliance with the national commitment.

### III. INDC IN ADAPTATION

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#### 3.1. Precedents

After the results of the COP20 in Lima, the determination of the Parties to strengthen their adaptation actions was affirmed, and the Parties were invited to consider communicating their efforts in adaptation or the inclusion of a component referring to adaptation in their intended nationally determined contributions (INDC). Therefore, in line with decision 1 / CP.20 and within the framework of its national circumstances and development priorities, Peru assumes the challenge of submitting an INDC in adaptation.

The proposal is based on information from previous years, but with greater emphasis on information after 2003 due to the formulation of the National Climate Change Strategy and the Regional Strategies, the Second National Communication and the Adaptation and Mitigation Action Plan against Climate Change. The adaptation proposal is based on national and regional vulnerability studies, as well as those of prioritized basins, and the results of different projects and practical experiences on adaptation<sup>2</sup>. It is also based on the documents developed under the InterCLIMA<sup>3</sup> program, and on a set of goals already included in sectoral plans and programs, complemented with crosscutting goals and approaches that seek to incorporate effectively the topic of climate change in the development of the country.

Through the consultation process, the proposal has been enhanced by sectoral and stakeholders contributions working on different levels of government.

#### 3.2. Vulnerability and impacts of climate change in Peru

Peru has seven of the nine characteristics recognized by the UNFCCC to describe a country as "particularly vulnerable": low-lying coastal area, arid and semi-arid lands, areas liable to flood, drought and desertification, fragile mountain ecosystems, disaster-prone areas, areas with high urban atmospheric pollution and economies highly dependent on income generated from the production and use of fossil fuels<sup>4</sup>. The processes of ecosystem degradation and environmental pollution from anthropogenic origin exacerbate these conditions.

In addition, the country faces a high exposure to hydro-meteorological threats, where 72% of total national emergencies are related to this kind of phenomena, such as severe droughts, rains, floods, frost, among others<sup>5</sup>.

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<sup>2</sup> Interventions started with the PROCLIM Program in 2003, which allowed the analysis of the current and future vulnerability in the basins of Piura and Mantaro; and later with the "Second National Communication on Climate Change (CNCC2 in Spanish)", the "Regional Project of Adaptation to Climate Change (PRAA in Spanish)", the "Program for Adaptation to Climate Change (PACC in Spanish)"; the projects "Public Investment and Climate Change Adaptation (IPACC in Spanish)", "Glaciers 513", the Adaptation project based on Mountain Ecosystems "EbA Mountains" and others.

<sup>3</sup> Annual event that allows the elaboration of an updated report on the progress, challenges and priorities in the national management of Climate Change.

<sup>4</sup> National Strategy on Climate Change. Ministry of Environment 2015. Approved by Supreme Decree N° 011-2015-MINAM.

<sup>5</sup> Second National Communication on Climate Change. Ministry of Environment, 2010

Studies reveal that temperature and rainfall regimes are changing throughout the country. Climate scenarios predict water regime irregularities in 2030. In the Mountain regions, it is predicted that annual rainfalls would show deficiencies between -10% and -20%; in the northern and central Amazon area (high jungle) annual rainfalls it would be up to -10%, and in the northern and southern coast it would show increases between + 10% and + 20%. It is worth mentioning that the retreat of tropical glaciers in the country also modifies the hydrological regimes: seven basins studied in the "Cordillera Blanca" (mountain range) have exceeded a critical transition point in their retreat, showing a decline in the dry season discharge<sup>6</sup>.

Moreover, in rural areas and areas inhabited by indigenous people, development is largely based on primary and extractive activities that depend on vulnerable ecosystems; the agricultural sector uses 65% of the rural Economically Active Population (EAP); and over 80% of the EAP in the rural area live in poverty conditions and work in agriculture, fishing and mining.

Peru is exposed to the cyclical and adverse climate impacts of "El Niño", which affects primary sectors such as agriculture and fishery, and natural, economic and social infrastructure. Major events during the 1997-1998<sup>7</sup> "El Niño" registered losses of more than 3,500 million dollars (more than 4.5% of the 1997<sup>8</sup> GDP) mainly due to the impact on primary production sectors and infrastructure destruction. In addition, annual climatic events such as frost, drought and floods severely affect many different parts of the country. These phenomena are exacerbated and expanded due to climate change, including greater difficulties in forecasting their cycles and intensities.

Peru has 84 out of the 117 life zones of the world. This factor can determine that, even in the most moderate climate change scenario, the potential growth of the country will be adversely affected since many activities of high economic potential depend on eco-systemic resources that this diversity provides (such as the hydropower, agriculture, livestock and tourism sectors). Consequently, it is expected that extreme climate events, which are more frequent, would affect aggregate production, limiting the availability of resources, damaging infrastructure and consequently affecting national growth.

Finally, it is important to take into consideration that 76% of the population lives in urban areas, with an annual growth rate of 2.1%, whereas rural areas have grown at a rate of 0.01% per annum<sup>9</sup>. That is why it is essential to consider the vulnerability of cities and promote the concept of "Resilient Cities" as units of climate risk management.

Studies that quantify the impact of climate change on national economic growth show that in 2030, under a climate change scenario, real GDP would be lower than the GDP without climate change by 5.7% to 6.8%. In 2050, the gap would be between 20.2% and 23.4%. This is equivalent to an average annual loss between 7.3% and 8.6% of the potential GDP<sup>10</sup> up to 2050.

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<sup>6</sup>Baraer et al. Glaciers recession and Water Resources in the "Cordillera Blanca" (Mountain Range) in Peru. 2012

<sup>7</sup> Multiannual Macroeconomic Framework, 2015-2017 (Ministry of Economy and Finance, 2015)

<sup>8</sup> "El Niño" Lessons. Peru (CAF, 2000)

<sup>9</sup> National Institute of Statistics and Informatics, 2007

<sup>10</sup>Climate change and its effects in Peru (Vargas, 2009)



### **3.3. Priorities in adaptation**

The sectors and systems that the country needs to address on a priority basis have been identified based on available scientific information, processes of formulation of management and planning tools and consultations with relevant sectors, regions and civil society. In addition, it has been taken into account that these sectors / systems meet the defined prioritization criteria. These sectors / systems are:

- i) Water (Water resources)
- ii) Agriculture
- iii) Fishery
- iv) Forestry
- v) Health

In accordance with the determined sectors and systems that are vulnerable to climate change - and focusing on people and their livelihoods – the vulnerable populations that need to be addressed on a priority basis has been determined. These are: rural populations related to subsistence family farming and/or weak market linkages, many of them grouped in peasant and indigenous communities; small farmers; artisanal fishermen; native communities; small forest producers; and, from a health perspective, infants, women and seniors.

### **3.4. INDC Proposal in adaptation**

After a review of the vulnerabilities and adaptation priorities of the country, and based on the study of the national goals established by the current national planning documents (Bicentennial Plan, National Plan for Disaster Risk Management - PLANAGERD, Environmental Action Plan - PLANAA, Environment Agenda 2014) and sectoral planning documents (PLANGRACC-A<sup>11</sup>, Budget Programs, Integral Plan of mitigation and adaptation to the effects of climate change on public health, among others), the adaptation component is formulated for different sectors and prioritized systems.

The established goals try to reach a main objective for 2030: "Peru adapts to the adverse effects and takes advantage of the opportunities imposed by climate change."<sup>12</sup> Scopes, objectives and goals were identified under this vision for each sector / system. In addition, five crosscutting areas, where action must be taken in order to address adaptation effectively, are identified: disaster risk management, resilient infrastructure, poverty and vulnerable populations approach, gender approach and promotion of private investment in climate change adaptation. Goals are proposed for each one of them (see Table 2).

The objectives and goals are formulated in consultation with the relevant sectors.

It is worth mentioning that the instrument for complying with the goals established in the INDC in adaptation will be the National Adaptation Plan, whose formulation process begins in the last quarter of 2015.


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<sup>11</sup> Risk and Adaptation to Climate Change Management Plan, in the Agrarian Sector (Ministry of Agriculture and Irrigation, 2012)

<sup>12</sup> Objective corresponding to the 2021 Vision of the National Strategy on Climate Change (Ministry of Environment, 2015).

**Table 2: Summary of the iNDC in adaptation**

	<b>1. WATER</b>	<b>2. AGRICULTURE<sup>13</sup></b>	<b>3. FISHERY</b>	<b>4. FORESTRY</b>	<b>5. HEALTH<sup>14</sup></b>
Scope	Includes supply (resources) and demand (use): direct human consumption, agriculture and livestock, energy, mining and industry. It includes physical and eco-systemic infrastructure.	Considers protecting the sector and its contribution to the economy, and includes attending the most vulnerable groups (small and subsistence farmers).	Considers protecting the sector and its contribution to the economy, and includes attending the most vulnerable groups (artisanal fishermen).	Considers protecting ecosystem services that forests provide, and attend the most vulnerable groups (indigenous communities and small forest producers).	Considers increasing the adaptive capacity of health services in order to face CC, and the resilience of vulnerable populations to its effects.
Intermediate objectives	<b>Encourage and promote actions and projects that increase the availability of water in the context of CC.</b>	<b>Reduce the negative impact of climate change on the agrarian activity (agriculture, livestock and forestry).</b>	<b>Reduce the vulnerability of the fishery and aquaculture sector to Climate Change</b>	<b>Promote comprehensive land management with a landscape approach, oriented to increase forests resilience to CC, and reduce the vulnerability of local populations.</b>	<b>Reduce vulnerability and increase the population resilience to the health effects of climate change.</b>
Crosscutting areas/ Goals	<b>1. Disaster Risk Management<sup>15</sup></b> <ul style="list-style-type: none"> <li>Increase the number of prioritized districts, due to hydro-meteorological and climate events, that are monitored.</li> <li>Increase the number of people with education and knowledge in disaster risk management and adaptation to climate change.</li> </ul>				
	<b>2. Resilient Public Infrastructure</b> - Climate Shield of the National Public Investment System (SNIP in Spanish) <ul style="list-style-type: none"> <li>Incorporate guiding elements in the methodological guidelines for the development of public investment projects of the National Public Investment System (SNIP), that allow, for relevant sectors, performing these activities in a climate change context.</li> </ul>				
	<b>3. Poverty and Vulnerable Populations Approach</b> – adjustments to the design of programs and regulatory frameworks with adaptation criteria <ul style="list-style-type: none"> <li>Increase the number of programs and instruments against poverty that incorporate adaptation to climate change.</li> </ul>				
	<b>4. Gender and Intercultural Approach</b> <ul style="list-style-type: none"> <li>Formulation and approval of the Action Plan on Gender and Climate Change</li> <li>Encourage the participation of indigenous organizations in actions on climate change.</li> </ul>				
	<b>5. Promotion of private investment in adaptation</b> - evaluate the introduction of innovative mechanisms to encourage private investment that increase the resilience of vulnerable systems.				

 Goals conditioned to international funding

<sup>13</sup> Measures applied to all kinds of agriculture.

<sup>14</sup> The National Health System officially recognizes five functions: disease prevention, health promotion, health protection, health restoration and rehabilitation.

<sup>15</sup> Goals consistent with the 0068 Budget Program

### **3.5. Resources required for the development and communication of the iNDC in adaptation**

Peru is making a substantial effort to adapt to the combined effects of variability and climate change, and the proof of that is the large number of established goals that are part of national plans, budget programs and on-going projects, including those with international cooperation.

However, the country still needs international support in terms of funding, research, technology and capacity building to fulfill the proposed goals. The need to support the development and implementation of an effective monitoring, evaluation and reporting system is foreseen.

The proposed iNDC distinguishes goals that have funding from those conditioned to international funding.

## **IV. CROSSCUTTING APPROACHES**

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Mitigation and adaptation national policies and instruments incorporate a gender perspective to promote and ensure active, continuous, full and equal participation of women and men in the consultation and decision-making processes for the control and access to natural resources, management of GHG emissions and generation of mitigation and adaptation strategies. This is currently based on the implementation of the National Plan for Gender Equality 2012-2017 (PLANIG in Spanish) and the future Peruvian Action Plan on Gender and Climate Change (PAGCC-Peru in Spanish) which is framed in the National Strategy on Climate Change (ENCC in Spanish).

The implementation phase of the iNDC will maintain the intercultural and intergenerational foundation considered in the formulation phase.

## **V. COMMITMENT TOWARDS A NEW INTERNACIONAL CLIMATE AGREEMENT**

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### **5.1. Consensus Position:**

With respect to the negotiation towards a new climate agreement for the post 2020 period, Peru supports a global agreement that is a short and concise document by which a long-term system is established with legally binding obligations for all countries. Our country considers that the agreement should contain a global vision to be subscribed by all Parties and that is aimed to be achieved through individual and collective efforts in accordance with the principles of the Convention. It should also ensure that Parties progressively increase their level of ambition. At the same time, the agreement should be accompanied by decisions adopted during COP21 related to the implementation of commitments under the new agreement.

To ensure that the agreement will serve as an instrument that incentivizes and facilitates the ambition of countries, it should clarify and establish the necessary processes to renew in a

successive and periodic basis the nationally determined contributions in mitigation, adaptation and means of implementation components. Each one of the components has specific characteristics but the agreement must establish a link between them. Adaptation is key to respond to the impacts of climate change and the political balance between adaptation and mitigation is a priority in Peru. In addition, Peru has defined its mitigation commitment in order to participate in the collective effort to keep global warming below the 1.5 C° – 2 C°. At the same time, means of implementation are crucial to facilitate mitigation and adaptation activities in developing countries.

## **5.2. Details about the positions in adaptation and mitigation:**

### **a. Adaptation:**

- The new agreement should strengthen the political parity between adaptation and mitigation.
- In order to encourage ambition in adaptation, a qualitative global goal will be required, as well as collective and individual efforts that allow closing the gap in adaptation.
- Funding for adaptation must be strengthened and increased, including the Green Climate Fund.
- The exchange on experiences and best practices in adaptation must be strengthened between the Parties.

### **b. Mitigation:**

- A global goal for mitigation should be included. This goal will be met through the efforts of all countries in accordance to science and the principles of differentiated equity.
- Mechanisms that allow countries to increase their ambition and fulfill their commitments shall be established, such as market mechanisms.
- The mitigation component should include a system of rules, for example, to avoid double counting of emission reductions and to monitor the implementation of commitments allowing for the full aggregation of mitigation commitments. This is important to ensure the environmental integrity of the agreement.
- REDD+, as defined in the Warsaw framework and the related decisions, will be an important tool for the country to achieve its mitigation commitments, and there is the need to reinforce support for this mechanism under the new agreement.

In the negotiations, Peru is an active member of the Independent Alliance of Latin America and the Caribbean (AILAC, in Spanish). The other members of this negotiating group are Colombia, Costa Rica, Chile, Guatemala, Panama and Paraguay.

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