



PERU

LAND USE, LAND-USE CHANGE
AND FORESTRY (LULUCF)

*Preserving Peruvian
Amazon rainforest :
a societal challenge*

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Preserving Peruvian Amazon rainforest : a societal challenge

By hosting COP20 in Lima in 2014, Peru has taken the place of a leader in the fight against climate change in Latin America. While deforestation and forest degradation are the largest source of CO₂ emissions from Peru with 143,000 ha disappearing in 2017 alone out of the 69 million ha in the country, the target of 0% deforestation by 2021 proclaimed by the government appears ambitious. The diversity of economic activities that destroy forests makes these goals difficult to achieve. Both industrial and family plantations of coffee, cocoa and palm oil, gold mining and logging operations each call for different measures. In parallel with the government setting up a legislative framework called the Framework Law on Climate Change of 2018 and the continued zonification of forests, NGOs, researchers, independent press, local authorities and local communities monitor, report and fight deforestation on the ground, often using the UNFCCC REDD+ program.

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1 • AMBITIOUS BUT SOMETIMES CONFLICTING NATIONAL OBJECTIVES

• **DEFORESTATION, THE LARGEST SOURCE OF EMISSIONS** • More than 50% of Peru's greenhouse gas emissions are due to the Land use, land-use change, and forestry (LULUCF) sector. Its relative share has decreased in the last decade in response to increasing emissions from other sectors (MINAM, 2016). The major role of the land sector in Peru's greenhouse gas results stems from the fact that 60% of Peruvian territory is covered by rainforest. These 69 Mha, 94% of which are part of the Amazon rainforest, make Peru the 2nd country in the world with the largest area of the Amazonian forest after Brazil (MINAM, 2016). As in Brazil, deforestation and forest degradation are political, economic and social issues that are decisive in reducing national and global emissions. In 2017 alone, the loss of the Peruvian Amazon forest is estimated to be 143 thousand hectares, 13% less than in 2016 but still a worrying figure because nearly 2 Mha of rainforest have disappeared in total between 2001 and 2016 (Finer et al., 2018).

• **AMBITIOUS COMMITMENTS AND REFINING THE LEGISLATIVE FRAMEWORK** • The Peruvian government is a historic signatory of international agreements on environmental issues, for example by ratifying the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1973, the Convention on Biological Diversity (CBD), United Nations Convention to Combat Desertification (UNCCD) and United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and recently the Paris Agreement on climate change in 2017. The Intended Nationally Determined Contributions (INDCs) submitted by Peru upon ratifying the Paris Agreement do not specify the means of implementing the commitments, but they set quantified targets for reducing emissions by 20% (30% in case of international financing and favourable conditions) compared to a Business as Usual scenario. For the LULUCF sector, these objectives translate into a reduction target of 48 Mt CO₂ eq compared to a Business as Usual scenario which forecasts 159 Mt CO₂ eq in 2030. In addition to its commitment under the Paris Agreement, the government of Peru has a goal of zero deforestation by 2021 – an ambitious goal announced several times by the Environment Minister at international conferences (COP14 in Poznan, COP15 in Copenhagen) and repeated by the President at the 65th United Nations General Assembly (CIFOR).

With these objectives in mind and after adopting the Forest and Wildlife Act and the National Strategy on Climate Change in 2015 and the National Strategy on Forests and Climate Change in 2016, in 2017 and 2018, the Peruvian government continued to strengthen its institutional and legislative arsenal. On 18 April 2018, the president of Peru issued Law No. 30754 (Congreso de la República, 2018) unanimously approved by the congress a month earlier, and made his country the 1st in Latin America to translate its commitments to the Paris Agreement into its legislative corpus. This law sets the main principles and provisions for articulating climate action in the country. Among the priority strategies to limit and adapt to climate change, the LULUCF sector is the main lever with the objectives of increasing carbon sinks, protection, conservation and sustainable management of forests, afforestation and reforestation and controlling land use and change of use. In terms of implementing the measures, the INDC planned in the Paris Agreement is defined as binding, and the Environment Minister is responsible for its follow-up. The Minister is now accountable to the congress through an annual report on climate action. The role of non-state actors is also a central element of the law defining the principle of transversality, according to which the action of the government relies on the involvement of the private sector, civil society and indigenous peoples, and the principles of transparency and accountability of the authorities to citizens whereby the authorities ensure access to public information on climate change for all citizens. As for concrete measures, one of the major advances brought by this new text is the obligation to use climate projections in environmental impact studies, for example for the construction of roads. The next step in the legislative process is the development of regulations that will specify how the law is

to be implemented, which is currently the subject of a participatory process called Dialoguemos (see Text box 1).

Dialoguemos

To encourage interest in the issue of climate change by all actors in society and ensure that each of their expectations is taken into account, the Ministry of the Environment has set up the Dialoguemos participatory process. The Ministry of the Environment has launched several Dialoguemos processes – on the implementation of the national contributions planned in the Paris Agreement, on the fight against deforestation via a financing agreement between Peru and Norway and via the REDD+ mechanism, on the fight against desertification and on the regulation of the framework law on climate change. For this, after the preparation of a “zero” document by the Ministry,

28 decentralised, multi-actor or multi-thematic workshops were conducted between June and September 2018. With the aim of gathering the contributions of all the actors in society, the workshops were open to all following simple registration, and some were held in five native languages – Quechua, Aymara, Shipibo Conibo, Awajún and Asháninka. For example, among the submitted contributions, a group of indigenous associations (including Aidesep, CNA and Onamiap) is pushing to be able to participate in the commission that will propose actions to combat climate change and for establishing an indigenous climate platform.

TEXT BOX 1

Despite these efforts, there are many contradictions between commitments and acts at the national level, as with the vote of 15 December 2017 on a law declaring the construction of roads in the Ucayali region a priority of national interest. Notably, this law paves the way for the construction of a 280 km motorway along the Brazilian border which environmental NGOs and associations of indigenous communities have been opposing for several years. According to the MAAP research programme (see “Researchers and NGOs organise real-time monitoring of deforestation”) which draws on the precedent of the Interoceanic Highway completed in 2011 connecting Brazil with 3 Peruvian ports and along which the deforestation fronts multiply, this new project would endanger 2750 km² of virgin forest a part of which is in protected areas.

2 • FROM MULTINATIONALS TO ORGANISED CRIME – DRIVERS OF DEFORESTATION

• **AGRICULTURAL EXPANSION** • With its many forms – agro-industrial or food, cocoa, coffee, palm oil, papaya, rice or maize, growing or raising – farming is the primary cause of deforestation in Peru. In terms of area, the agricultural expansion of small and medium-sized plots is responsible for most of the deforestation with 73% of deforestation on plots of less than 5 ha and 96% on plots of less than 50 ha in 2016. On the other hand, the sociology of the actors involved is more difficult to determine. The hypothesis of deforestation being caused mainly by small migrant farmers has recently been shown to be obsolete (Ravikumar et al., 2017) due to the diversity of types of small-scale deforestation. Small farmers sometimes use crop cycles on a stable total area with cycles of livestock, crops, fallow and forest. They then deforest secondary forests on fallow areas. Newcomers clear uncultivated areas, which represents deforestation of primary forest. Small farmers can also convert a set of plots that have been previously cultivated using a rotation system with fallow into single plots of intensive monocultures. All these causes are identified as the same type of deforestation, but they result in different carbon emissions and require different political actions to make them into sustainable practices.

The report of the national ombudsman released in 2018 (Defensoría del Pueblo, 2017) focuses on



deforestation caused by agro-industrial exploitation in Peru. This report highlights the failures of the government that led to the deforestation of 30,773 hectares between 2010 and 2014. Most of the time, these are Peruvian or international companies to whom the government allocates farm concessions. They acquire them by taking advantage of loopholes or corruption of regional governments, or local communities sell them to them, sometimes under pressure.

United Cacao

An example of investor land grabbing is described by sociologist Juan Luis Dammert Bello in his 2017 report (Dammert Bello 2017) that focuses on the company called United Cacao. Led by the American Dennis Melka, the United Cacao company based in the Cayman Islands arrived in Peru in 2012 and acquired several thousand hectares via its subsidiary Cacao del Peru Norte SAC, including the forests of Tamshiyacu in the state of Loreto, in order to found a cocoa plantation. United Cacao's strategy was based on obtaining higher yields than those obtained in West Africa (2.5 versus 0.6 t/ha) and on the forecast of a cocoa shortage compared to demand up to at least 2020. The goal was to become the largest cocoa plantation in Latin America. Neither the environmental formalities required at the national level, such as the soil survey or the environmental impact assessment, nor the official agreement of the regional government were validated before the start of operations. The scandal in the media and the government's legal actions to stop the activities were not enough and the plantation project continued to expand to occupy nearly 3,500 hectares of which 2,400 had been deforested. In May 2016, a dozen NGOs and indigenous communities wrote to the London Stock Exchange and regulatory authorities denouncing the illegality of the activities of United Cacao, which is listed on the market of alternative investments. In January 2017, United Cacao was removed from the London Stock Exchange and in February from the Lima Stock Exchange. Deforestation and planting activities have stopped in this area.

TEXT BOX 2

• **GOLD MINING** • Depuis le début des années 2000, le prix de l'once d'or a augmenté pour atteindre des niveaux records en 2013 et s'est aujourd'hui stabilisé à un niveau 4,5 fois supérieur à celui de 2000. Au Pérou, qui est le 6^e producteur mondial d'or, ce cours élevé stimule l'extraction artisanale et souvent illégale dans la forêt amazonienne, dont les couches géologiques sont favorables à la présence du minerai (Asner & Tupayachi 2017, Alvarez Berríos et Aide 2015). Pour extraire l'or des cours d'eau et plaines inondables, les mineurs rasant la forêt, explosent les rives des rivières et creusent avec des bulldozers pour atteindre les dépôts de graviers desquels l'or est extrait en utilisant arsenic, cyanide et mercure qui empoisonnent les cours d'eau.

Expulsion of gold miners in the Tambopata National Reserve

In the Madre de Dios region bordering Brazil where 50% of GDP is based on gold mining, the completion of the Interoceanic Highway in 2010 has improved access to remote areas. According to the Ministry of the Environment,

approximately 50,000 illegal miners extract 16 to 18 tonnes of gold each year. In 2016, even the Tambopata National Reserve – a protected area of 275,000 ha – was invaded by miners. In 2 years, more than 550 hectares of virgin forest have been deforested along the Malinowski River (Finer, Novoa & Olexy, 2017). However,

the government succeeded in stopping the extraction activity in 95% of the invaded area thanks to the intervention of the navy alongside the rangers (Daley, 2016). Even though this is a victory, it is not the end of the battle yet, as the illegal extraction activities have increased in the buffer zone around the nature reserve (Finer, Novoa, Olexy & Durand, 2017). And in 2017, the rate of deforestation in Madre de Dios

reached its highest level in 17 years with the loss of 20,826 hectares of which 1,320 were directly attributable to mining (Sierra Praeli, 2018). In the first half of 2018 alone, 1,725 hectares of forest were razed. Corruption and organised crime associated with illegal gold mining complicate the fight against these practices.

TEXT BOX 3

• **TIMBER LOGGING** • The forestry law that governs timber logging in Peru was revised in 2015, giving birth to SERFOR – the body in charge of the management of the resource of wood – under the supervision of the Ministry of Agriculture. Timber logging is permitted in certain forest categories for which concessions are granted which, depending on the type of forest, are supplemented by land use change or deforestation permits. All logging is subject to an annual operational plan validated by the regional authorities. This plan must accurately describe the inventory of the parcels in question and the trees selected for cutting or, in the opposite case, for protection. From its extraction in the forest to the sawmill, the warehouse or the port, all transported wood is accompanied by a document called a forest transport guide establishing the place of origin of the timber. Timber trade is also supervised at the international level. For example, the US–Peru Free Trade Agreement signed in 2009 includes a specific annex establishing the commitment of both parties to combat illegal logging. According to this annex, the United States may impose product or exporter audits in Peru and seek to verify the compliance of specific shipments with the power to impose sanctions in case of illegally logged timber.

OSINFOR, set up in 2000, is the institutional body responsible for controlling the use of forest resources and compliance with the rules for logging. In 2014, its controls led to the cessation of all activities at nearly 50% of the visited concessions due to serious and proven fraud. In 55% of the inspected concessions, timber was cut outside the concession boundaries, and 69% of the inspected concessions facilitated logging or transport of protected species (Finer, Jenkins, Sky & Pine, 2014). OSINFOR played a key role in the 2015 record capture of the vessel Yacu Kallpa vessel during Operation Amazonas 2015 (see Text box 4). More than 90% of the cargo destined for the Dominican Republic, Mexico and the United States was illegal. In July 2017, a family-run criminal organisation – “the beavers of the central forest” – active in the three regions of Junín, Ucayali and Lima – was dismantled thanks to the help of three employees of SERFOR (Urrunaga, Johnson, & Orbegozo Sánchez, 2018).

Despite the hope generated by these resounding successes, a report published in February 2018 by the British NGO Environmental Investigation Agency highlights the limits of the measures for fighting illegal logging of Peruvian wood (Urrunaga, Johnson & Orbegozo Sánchez, 2018). The authors describe the practices of falsifying certificates of origin, making up every piece of the forest inventories, the approval by local authorities of wrong annual operational plans allowing wood traffickers to export their products especially to China, the Dominican Republic, Mexico and the United States, with the authorities struggling to cope with the pressure from the forest industry. The EIA survey indicates that SERFOR is now publicly opposing the traceability measures and that its inspection reports have changed from 900 in 2015 to 23 in 2016 and 0 in 2017.



Operation Amazonas: an example of international and interinstitutional collaboration

Operation Amazonas is the product of interinstitutional collaboration between OSINFOR, the specialist in environmental issues FEMA, the Peruvian customs (SUNAT), INTERPOL and the World Customs Organization (WCO) (OSINFOR, 2016). At the heart of the operation, SUNAT systematically monitored all exports from the port of Iquitos via documents indicating the origin of the traded timber, the GTF. From these documents, OSINFOR officers were able to go into the field and verify the accuracy of the statements. FEMA was in charge of ensuring the legality of the inspection operations of SUNAT and OSINFOR. The WCO in direct contact with SUNAT allowed the inspection of the shipment of timber at its destination and INTERPOL sup-

ported the operation by identifying the criminal organisations involved in the trafficking. This unprecedented collaboration has paid off. In 2014, one hundred and forty-four places of logging were visited, of which 94% were found to be in violation, and led to the seizure 15,700 m³ of wood. In 2015, the controls of Operation Amazonas uncovered 433,000 m³ of illegally logged timber and exposed the practices of the ship Yacu Kallpa, which regularly traveled to the Dominican Republic, Mexico and the United States. The investigation revealed that among the 5 trips of the ship in 2015, 82% of the 32,000 m³ transported had an illegal origin. Seventy-one illegal timber containers were seized in Houston by US justice and the ship was detained in Mexico.

TEXT BOX 4

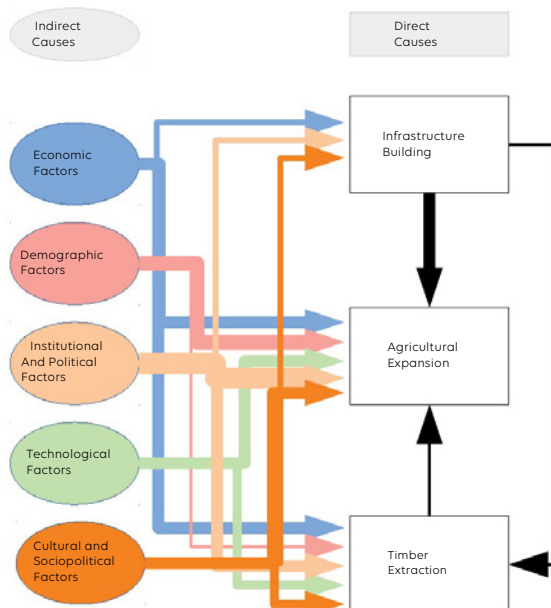


FIGURE 1. REPRODUCED FROM GEIST AND LAMBIN 2002. DIRECT CAUSES OF DEFORESTATION (RECTANGLES) INFLUENCE EACH OTHER (BLACK ARROWS) AND ARE INFLUENCED (COLOURED ARROWS) BY INDIRECT CAUSES (OVALS). THE SIZE OF THE ARROWS INDICATES THE RELATIVE IMPORTANCE OF THE INFLUENCES BASED ON THE STUDY OF THE 152 CASE STUDIES.

• INDIRECT DRIVERS OF DEFORESTATION •

Direct causes of deforestation (farms, mining, road construction) themselves have indirect drivers that are not always easy to identify, and they highlight the contradictions between environmental and economic objectives. A report from CIFOR (Center for International Forest Research) lists and highlights these complex factors, such as population growth via birth rates and internal migration – sometimes supported by state aid, increased demand for agricultural products and driven by increased purchasing power and international demand (coffee, gold, timber, palm oil and cocaine), national policies to support agricultural expansion and mining companies, or weakness of institutions or the lack of a precise judicial framework on land exploitation (Piu and Menton 2014). Quantifying the importance of each of these mechanisms is difficult, and it is a subject of debates.

In a study of the mechanisms that led to deforestation in 152 case studies, Geist and Lambin (2002) show that tropical forest deforestation can only be attributed to the synergy between direct causes (agricultural expansion, infrastructure development, wood harvesting) and indirect causes (demographic, economic or technological factors or institutional, cultural or socio-political policies) as explained in Figure 1. For example, the case of the extension of the Manu-Amarakaeri road, which has been in progress since 2015, was described in 2017 in a report by the newspaper Ojo Público (REF) rewarded by the Inter American Press Society, which highlights the institutional, economic and demographic factors that intermingle

to define the fate of many hectares of forest. The hectares in question are located in the buffer zone of the Amarakaeri Communal Reserve protected for its ecological value. The institutional factors in this case are double because while the national institutions refused the construction of the road, only one prosecutor and 12 forest rangers were assigned to ensure the application of the ban, and they did not manage to prevent the regional governor from getting the works carried out anyway with the support of a part of the local population. For these indigenous communities, the motivation is both economic and socio-cultural – the construction of a road is seen as a means to develop commercial activities, tourism and access to better medical and educational services. The same economic reasons are driving people in indigenous communities to participate in the illegal mining of gold and timber. Estimates for timber logging around the road are 80 m³ per week and by maintaining the current rate of progress of the road, it would mean that 43,000 hectares of forest could be lost by 2040.

3 • THE MANY TYPES OF BATTLE AGAINST DEFORESTATION

• **RESEARCHERS AND NGOS ORGANISE REAL-TIME MONITORING OF DEFORESTATION** • Spatial and aerial imagery has become a key element in the fight against deforestation in recent years thanks to collaboration between researchers, NGOs and public institutions that have developed a range of operational tools and broadcast platforms. Two main tools are now in use in Peru. The Department of Global Ecology of the Carnegie Institution (USA) has been developing CLASLite since 2009. It compares two successive images coming mainly from the LandsAT satellite to convert them into deforestation and forest degradation maps (Asner, Knapp, Balaji & Páez-Acosta, 2009). The GLAD alert system developed at the University of Maryland (USA) also uses images from LandsAT satellites at a 30 m resolution but automatically searches all LandsAT archives for changes in forest cover and produces weekly alerts. Advances in the field of imaging are numerous and fast, and the current limits are slowly being lifted as the cost of very high resolution imagery is becoming affordable and cloud cover is dealt with by using data from European satellites Sentinel-1 and 2 at a 10 m resolution and radar bands that are provided for free.

The tools for detecting deforestation provide very rich raw data, but at the scale of a country the size of Peru, their interpretation is essential to make sense of them. The statistical treatment of deforestation maps, the use of very high resolution images or the survey of specific areas by drones are some of the methods used to identify the type of deforestation detected by the algorithms. For example, roads cleared for timber extraction are difficult to detect on their own because few trees are cut down, but algorithms can identify the small straight line variations characteristic of forest roads. Data processing and dissemination of results is done in part by the developers, as is the case with the online platform of Global Forest Watch, a GLAD partner that has implemented a mobile app giving access to alerts from the field and allowing users to contribute by sharing their

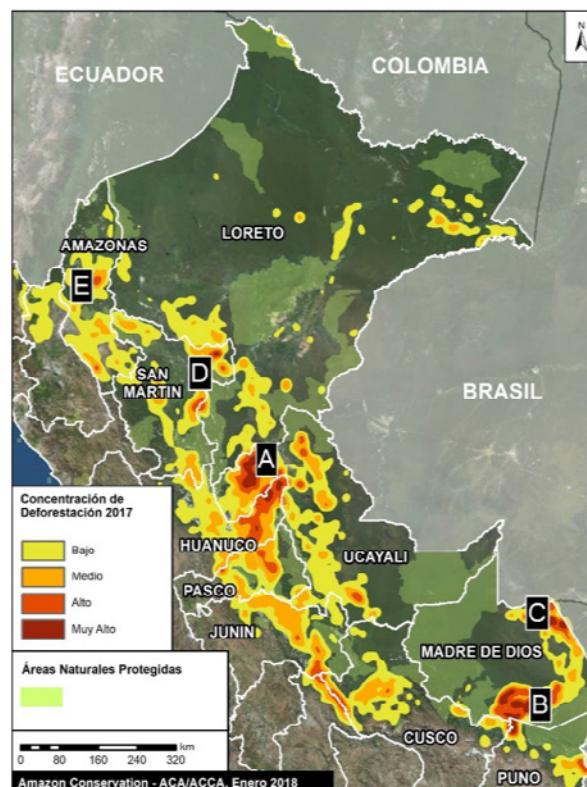


FIGURE 2. MAP DEVELOPED BY MAAP SHOWING THE HOTSPOTS OF PERUVIAN DEFORESTATION IN 2017



reports. The Peruvian Ministry of the Environment also uses GLAD alerts for its official Geobosques deforestation monitoring portal, which is intended as a tool to support political decision-making and awareness-raising and information for citizens. Users have access to the latest reports on deforestation in the country and, following registration, they may choose to receive continuous alerts or weekly newsletters for areas of their choice.

MAAP (Monitoring the Andean Amazon Project) whose website was launched in April 2015 by the NGO alliance of Amazon Conservation Association and Acca-Conservación amazónica is specialised in analysing the causes of deforestation events in the field. Their weekly reports point out concrete cases by showing high resolution images of the same area, for example, before and after the installation of a mining area. By decoding trends, hotspots (Figure 2), and the main causes of deforestation, MAAP's objective is to provide visual, easy-to-understand and high-quality technical information on deforestation in near real time.

• **THE ROLE OF LOCAL AUTHORITIES** • The process of decentralisation is underway in Peru as defined by a 2002 law that sets out the transfer of jurisdiction from the national level to the regional and local levels. On the environmental level, regions are responsible for controlling the use of natural resources in their territory and issuing permits, authorisations and concessions, and monitoring forest law enforcement. One of the functions of regional governments in this process is to achieve forest zoning and territorial planning (SERFOR, 2016) as a technical tool to support decision-making. Forest zoning consists in assigning one of four categories to each forest parcel in the region as defined by the national forest service SERFOR: ecological protection and conservation zone, permanent production zone, restoration zone, zone of special character (including reserves for indigenous peoples and areas of agroforestry or silvopastoralism). The criteria used to define the parcel categories are, for example, the type of forest (wet, dry, plain, mountain), the presence or absence of fragile habitats or the estimate of the volume of wood in the parcel. This classification should allow the regional governments to know the potential and limits of the use of the natural resources in their territory and to legally regulate the uses to avoid frequent conflicts between local population and mining operations or migrant farmers while limiting illegal practices. Zoning is driven by regional and local governments with the technical support of SERFOR, and is based on a participatory process through workshops that bring together local decision-makers, members of ministerial services and local communities. Since August 2018, the "national mosaic of satellite images" provides a map of the country's forests for free for both citizens and decision makers at a 1.5 m resolution composed of images of the French SPOT satellite from 2016 to 2018. One of the satellite's priority missions is to simplify forest zoning to accelerate its implementation. Out of 25 regions, by the end of 2017 only 4 regions had started properly zoning (Reaño, 2018).

• **REDD+ – FRAMEWORK OF PREFERENCE FOR ACTION BY NON-STATE ACTORS** • REDD+ (Reducing Emissions from Deforestation and Forest Degradation) is a programme of the United Nations providing funding for forest protection by allocating carbon credits that can be sold on the carbon market. In Peru, the national REDD+ strategy is currently in the process being defined under the coordination of the Ministry of the Environment. The government has chosen a nested approach, i.e. a combination between national scale and local scale, in line with the ongoing decentralisation in the country. Approximately 30 local or regional projects have already been voluntarily funded by private players, NGOs or by international cooperation (Althelia Text box), which should help to inform the definition of the national Peruvian REDD+ strategy by providing reference emission levels and tools for monitoring, reporting and verification. However, this multi-scale approach raises questions. Some REDD+ projects date back to 2008 when there was still no national REDD+ plan, and each project developed its own methodology, baseline and measurement criteria. These disparities complicate integrating these projects into a single national reference level of forest emissions, which is a prerequisite for the national REDD+ framework. The government's current plan

is to use historical data from 2001–2014 to establish this national reference level. Project-focused NGOs are critical of this approach because it does not reflect possible increases in deforestation in the future under socio-economic pressures and therefore minimises avoided emissions.

In parallel with these reflections, REDD+ projects continue to develop independently of the national strategy within the framework of the voluntary carbon market. In this case, projects can apply for certification and thus generate carbon credits that are sold on the voluntary carbon market mostly for communication purposes to companies not subject to quotas.

Althelia

On 21 May 2018, Althelia – a management company owned by a subsidiary of Natixis Bank specialising in investments impacting the natural resources sector – announced that two REDD+ projects financed by it will be integrated into the national commitments vis-à-vis the Paris agreement. In more concrete terms, it is a world first in which the nested approach by which projects developed by private actors guide the strategy and the national objectives is more concretely defined. The carbon credits generated by these two projects between 2015 and 2018 will therefore be logged in the country's emissions register, and project emission reductions will become part of the national baseline starting in 2018.

The Cordillera Azul National Park project was created to preserve an area of 1.3 Mha of primary forest located at the intersection of the Andes and the Amazon basin – the largest protected areas in the country. The project consists in supervising the forest management practices in the buffer zone of 2.5 Mha around the national park. Preserving the park has three simultaneous objectives. First, avoiding the emission of 15 Mt CO₂ in 6 years by preventing deforestation and forest degradation. Then, protecting the unique biodiversity that lives in the heart of the park with more than 6,000 species of plants, 600 species of birds and 80 species of large mammals, 11 of which are endangered species. And finally, providing

support to the approximately 400 indigenous communities in the buffer zone living on food crops in order to develop sustainable agroforestry systems of both food crops such as banana or cassava and cash crops such as coffee and cocoa. This project is based on the collaboration between the private Althelia Climate Fund in charge of financial aspects in the form of a loan of €8.55 million over 6 years repaid by the sale of the generated carbon credits and the Peruvian NGO CIMA-Cordillera Azul responsible for surveillance, biological monitoring, research activities as well as improving the skills of institutions and local populations. The Tambopata-Bahuaja reserve REDD+ project is supposed to avoid the emission of 4.5 Mt CO₂ in 7 years. The collaboration of Althelia with the Peruvian NGO AIDER and the National Service of Natural Protected Areas providing funding of \$12 million over 5 years should allow the preservation of 570,000 ha of forest in the area of Madre de Dios. The project focuses on two axes: developing the economic activity of local communities and protecting biodiversity. In 2014, 249 ha of agroforestry systems and 70 nurseries had been created thanks to funding from the project for technical and commercial support and the establishment of cooperative sales structures for production. Fauna and flora monitoring in the area as well as a patrol against illegal logging were also set up.

TEXT BOX 5

CONCLUSION

In conclusion, in recent years the Peruvian government has set up a rich institutional and legislative framework that should increase the government's capacity in its fight against deforestation. However, this regulatory framework, is fragile in the face of the economic interests of local actors and the lack of cohesion between the different layers of government to enforce laws. Civil society plays a key role in stimulating environmental action by developing local forest conservation projects and developing alternatives for their sustainable exploitation and tools for monitoring deforestation. The link between local initiatives and the national framework will be crucial in the coming years for maintaining a dynamic that is currently still struggling to produce results.

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