



WWF

NEWS

ISSUE 1

2018

WWF FOREST AND CLIMATE

CANOPY

NEWS AND INFORMATION FROM WWF'S INTERNATIONAL FOREST AND CLIMATE TEAM

Crowdsourcing a Better Way to Detect Oil Palm

From above, tropical forests are carpets of green rolling across the landscape. Produced by the chlorophyll in a plant's leaves, that green is what some satellites detect when scanning forests for signs of deforestation. This optical data can be crucial for forest monitoring, especially in hard to reach landscapes. However, the simple presence of green in a landscape can unintentionally obscure our ability to track one particular driver of deforestation – oil palm.

A joint WWF-NASA Jet Propulsion Laboratory project seeks to pierce through that obscurity with an innovative mapping algorithm, to be published later this year. Rather than simply detecting chlorophyll's distinctive green, this new approach responds to the structure of a forest canopy, separating mixed natural forests from homogenous oil palm plantations.

The algorithm itself is not the only innovative part of this story. Project leaders Naiara Pinto of JPL and Naikoa Aguilar-Amuchastegui of WWF Forest and Climate took a highly participatory approach to its development by crowdsourcing the validation process



© JAMES MORGAN / WWF-INTERNATIONAL

CONTINUED ON PAGE 9



WWF

NEWS

ISSUE 1

2018

WWF FOREST AND CLIMATE

CANOPY

NEWS AND INFORMATION
FROM WWF'S GLOBAL FOREST
AND CLIMATE TEAM

CONTACT US



/ wwff



/ wwfforestcarbon



/ forestclimate@wwf.panda.org

Why we are here

WWF Forest and Climate works to ensure that the conservation of tropical forests as carbon stores is secured by green economic development that benefits people, the climate and biodiversity in transformational ways.

www.panda.org/forestclimate

CANOPY IS ALSO AVAILABLE ELECTRONICALLY VIA
EMAIL. SUBSCRIBE AT: bit.ly/CNPY-nws



VIDEOS



COVER STORY

CROWDSOURCING A BETTER WAY TO DETECT OIL PALM.....1

© ID: 410830537 / SHUTTERSTOCK.COM

IN THIS ISSUE

FOREST AND CLIMATE NEWS 3

PUBLICATIONS..... 4

VIEWPOINTS.....23

REDD+ SPECIES: PERUVIAN SPIDER MONKEY ...17

REDD+ CAPACITY BUILDING

ESTIMATING FOREST BIOMASS USING LIDAR
CLOUDS 5

MAPPING THE LANDSCAPE OF FINANCE FOR REDD+
AND CLIMATE ACTION IN FORESTS 5

HOW THE BIOCARBON FUND WILL PILOT RESULTS-
BASED PAYMENTS FOR LANDSCAPES 5

JURISDICTIONAL APPROACHES - ADVANCING
RESPONSIBLE COMMODITY PRODUCTION 5

EQUITY & JUSTICE CONCERNS OF CARBON FORESTRY:
LESSONS FROM FIELD STUDIES 5

LEARNING AND SHARING TO IMPROVE PROGRAM
OUTCOMES - A HOW-TO GUIDE 5

FORESTS ON THE GLOBAL STAGE - COP23, GLOBAL
CLIMATE ACTION, AND THE GCF 5

ARTICLES

THE RAINFOREST'S COMEBACK..... 6

"YO PREFIERO EL AGUA" 8

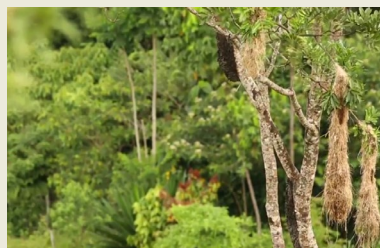
THE INDIGENOUS PEOPLE WHO JOINED TRADITIONAL
AND WESTERN WISDOM TO STUDY THEIR
TERRITORY11

BRINGING MORE VOICES TO INDIGENOUS TERRITORIAL
GOVERNANCE14

ADVANCING KNOWLEDGE OF "JURISDICTIONAL
APPROACHES" TO RESPONSIBLE COMMODITY
PRODUCTION16

REDD+ PEOPLE

INTERVIEW WITH PIA ESCOBAR GUTIÉRREZ.....12



KEY STORIES OF FORESTS AND CLIMATE: A PATH TO SUSTAINABLE TERRITORIAL DEVELOPMENT IN COLOMBIA

The Andean-Amazon Piedmont is home to some of the Andes' greatest concentrations of biodiversity, but the region is threatened by deforestation and environmental degradation. To counter these threats, WWF and our partners have developed a widely adaptable model for the inclusion of climate change guidelines into land-use regulation and planning.

WATCH: <http://bit.ly/2Ex9ekr>
MIRE: <http://bit.ly/2C3jjUG>



KEY STORIES OF FORESTS AND CLIMATE: TOWARDS GREEN DEVELOPMENT IN THE CONGO BASIN

Mai-Ndombe is a vital piece of the Congo basin, but it's here that worrying levels of deforestation and degradation are recorded. Through a jurisdictional REDD+ program, the Government of the DRC, WWF, and our local partners seek to confront the underlying causes of deforestation and degradation through an integrated green development vision.

WATCH: <http://bit.ly/2GV8VQF>
Regarde: <http://bit.ly/2G2117h>

FOREST AND CLIMATE NEWS

WWF COLOMBIA CELEBRA LA APROBACIÓN UNÁNIME DEL ACUERDO DE PARÍS POR PARTE DE LA CORTE CONSTITUCIONAL

WWF-Colombia – Así, Colombia se une a más de los 175 países que han ratificado el Acuerdo, dentro de los que se encuentra Estados Unidos y China, los dos países que más emiten GEI en el mundo, demostrando su voluntad inequívoca de hacerle frente a esta problemática.

MÁS: <http://bit.ly/2HlssSx>

WOMEN RISING

WWF-US – In the western reaches of the Democratic Republic of the Congo, where well-trodden footpaths supplant roads and native dialects still ring through the forest, women shoulder the burdens of daily life.

MORE: <http://bit.ly/2H9sMgf>

WWF CALLS FOR INCREASED FUNDING FOR FORESTS AT GLOBAL LANDSCAPES FORUM

WWF-Germany – At the start of the Global Landscapes Forum 2017, WWF calls on the German Federal Ministry for Economic Cooperation and Development (BMZ) to establish a forest fund with a budget of at least EUR 100 million per year for forest landscape restoration.

MORE: <http://bit.ly/2qG44th>

WHAT CAN WE LEARN FROM CANADA ABOUT INDIGENOUS CLIMATE FUNDS?

WWF-Colombia – What do an indigenous person from British Columbia and one from the Amazon have in common? Though they might seem far apart, they share an interest to find sustainable activities to ensure the wellbeing of their communities and the conservation of their territories. They are also alike in their need to access funding to advance their initiatives.

MÁS: <http://bit.ly/2H9gXGJ>
More: <http://bit.ly/2EWQFIf>

BUILDING CAPACITY TO MANAGE AND RESOLVE CONFLICT IN INDOONESIAN FOREST CONCESSIONS

WWF-Indonesia – Social conflict is mainly caused by overlapping land tenure permits between communities and industrial forest companies. Identifying social conflict at its early stage, and learning how to mitigate it, is key to conflict prevention and containment.

MORE: <http://bit.ly/2qJTocr>

WWF WELCOMES BRIDGESTONE'S NEW GLOBAL SUSTAINABLE PROCUREMENT POLICY

WWF-Japan – Following Michelin's 2016 and Pirelli's 2017 policies, Bridgestone, the world's largest tire and rubber company, becomes the first Japanese company to release a sustainable procurement policy addressing natural rubber.

MORE: <http://bit.ly/2HbULb4>

THE SAVING OF THE LUKI BIOSPHERE RESERVE WITH WWF SUPPORT

WWF-DRC – A short distance from the city of Boma in the Kongo-Central province, formerly Bas-Congo, in the extreme south-west of the Democratic Republic of Congo, lies a natural stronghold, the Luki Biosphere Reserve, created in 1976 and officially recognized by UNESCO, which covers an area of 33,000 hectares.

MORE: <http://bit.ly/2JV468R>



© KARINE AIGNER/WWF-US

PUBLICATIONS

The community of REDD+ practitioners and experts from around the world grows every day, and WWF's global Forest and Climate team is working to ensure that the capacity-building and informational materials it produces are available to a diverse audience.



© Day's Edge Productions / WWF-US

LOS SERVICIOS ECOSISTÉMICOS QUE BRINDA LA RESERVA COMUNAL AMARAKAERI: BIODIVERSIDAD, AGUA Y CARBONO

Esta investigación ahonda en los servicios ecosistémicos que provee esta reserva natural a las comunidades que habitan en ella (Harakbut, Yine y Machiguenga), es decir, el agua, la vegetación y la fauna. Una riqueza natural que revela las relaciones tan enraizadas que dan vida a esta reserva.

MÁS: [HTTP://BIT.LY/2HKEAMU](http://bit.ly/2HKEAMU)

TACKLING DEFORESTATION THROUGH A JURISDICTIONAL APPROACH: LESSONS FROM THE FIELD (FULL REPORT)

Jurisdictional approaches seek to align interests and coordinate actions among governments, businesses, local communities, and NGOs toward shared conservation, supply chain sustainability, and green development goals. This report offers a full synthesis of lessons learned and jurisdictional case studies from five leading jurisdictional initiatives.

MORE: <http://pand.as/2wg0qaE>

MAPPING FOREST FINANCE: A LANDSCAPE OF AVAILABLE SOURCES OF FINANCE FOR REDD+ AND CLIMATE ACTION IN FORESTS THROUGH 2017

A new report from Environmental Defense Fund and Forest Trends identifies the sources of funding currently available for REDD+ and climate action in forests and analyzes the challenges and opportunities for accessing and coordinating this finance.

MORE: <http://bit.ly/2supk8S>

REDD+ CAPACITY BUILDING

WWF Forest and Climate learning sessions are free and are designed to leverage and share REDD+ knowledge and expertise. We invite experts to present on a key issue so that REDD+ practitioners can have access to the latest information relevant to REDD+.

To watch an archived learning lesson or to register for an upcoming webinar, please visit: bit.ly/REDDlearn.

LEARNING AND SHARING TO IMPROVE PROGRAM OUTCOMES – A HOW-TO GUIDE

Maria Fernanda Jaramillo, of WWF Forest and Climate, explains how to embed learning and knowledge sharing into the program management cycle, providing a basic four-step approach and some practical tools to incorporate learning and sharing as part of a team, program, or organization's culture.

WATCH: <http://bit.ly/2BkNZMA>

MAPPING THE LANDSCAPE OF FINANCE FOR REDD+ AND CLIMATE ACTION IN FORESTS

María García-Espinosa of IUCN, Chris Meyer of EDF, and Josefina Braña-Varela of WWF discuss a newly launched report titled “Mapping Forest Finance: A Landscape of Available Sources of Finance for REDD+ and Climate Action in Forests through 2017,” and explain how this resource can help practitioners identify and access diverse sources of funding.

WATCH: <http://bit.ly/2Ev8gRA>

EQUITY & JUSTICE CONCERNS OF CARBON FORESTRY: LESSONS FROM FIELD STUDIES

Stephanie Paladino, Shirley Fiske, and Pamela McElwee, co-editors and author, respectively, of *The Carbon Fix: Forest Carbon, Social Justice, and Environmental Governance*, present some of the lessons provided by their recent collection of in-depth field studies of mostly REDD+ projects throughout the world.

WATCH: <http://bit.ly/2AjduxG>

JURISDICTIONAL APPROACHES – ADVANCING RESPONSIBLE COMMODITY PRODUCTION

Lloyd Gamble and Akiva Fishman of WWF-US discuss the findings of Tackling Deforestation Through a Jurisdictional Approach, which analyzed 5 leading jurisdictional initiatives and extracted key lessons to improve these strategies for commodity production and forest protection around the world.

WATCH: <http://bit.ly/2mddKZo>

FORESTS ON THE GLOBAL STAGE – COP23, GLOBAL CLIMATE ACTION, AND THE GCF

Josefina Brana-Varela, of WWF Forest and Climate, gives an overview of international developments in the forest policy realm, including the status of the UNFCCC negotiations, Global Climate Action, and the Green Climate Fund.

WATCH: <http://bit.ly/2gHmcl5>

HOW THE BIOCARBON FUND WILL PILOT RESULTS-BASED PAYMENTS FOR LANDSCAPES

Marco van der Linden from the World Bank highlights the objectives of the fund and walks participants through the ISFL Emission Reductions Program Requirements.

WATCH: <http://bit.ly/2GaeWWx>

ESTIMATING FOREST BIOMASS USING LIDAR CLOUDS

Mauro Assis, from INPE-Brazil, explains how to plan a LiDAR collecting data campaign and use the collected point clouds to estimate forest biomass.

WATCH: <http://bit.ly/2GFmMLb>

THE RAINFOREST'S COMEBACK

By Claudia Coronado, WWF-Peru



fertility come back to life for the first time,” says Edith Condori, project coordinator for WWF-Peru.

“From a pilot experience, it has been possible to determine which species, techniques and modalities work best and, today, the municipalities of Manu and Inambari will be pioneers in the recovery of their forests.”

The process starts in a lab, where CINCIA, in alliance with the Research Institute of the Peruvian Amazon, evaluates the presence of mercury in the soils of 42 hectares dedicated to experimental plantations in the forests of Cusco and Madre de Dios. In these highly disturbed lands, CINCIA’s team of scientists analyze the natural regeneration capacity of aquatic and terrestrial ecosystems affected by mining and test potential approaches to support those natural processes, to develop successful models of environmental restoration.

One of the proposed solutions to recover this land is the use of biocarbon, produced from biomass residues composed of chestnut peel and wood sawdust. “We turn this mixture into charcoal, and we apply it to the land that was degraded by the mining activity and that consequently is sandy.”

The charcoal alters the chemical properties of the soil and the availability of nutrients. It also increases the carbon present and provides a habitat favorable to microorganisms, returning the fertility to the soil. “Therefore, this land can recover its capacity to retain water, nutrients and microorganisms,” explains Francisco Román, Scientific Director of CINCIA.

In the last two decades, the department of Madre de Dios, located in the Peruvian Amazon, has increasingly struggled with illegal and informal gold mining.

As a consequence, the area known as La Pampa, located in the buffer zone of the Tambopata National Reserve, has been invaded by thousands of so-called artisanal gold miners. According to the [Monitoring of the Andean Amazon Project](#), 560 hectares of forest were destroyed in La Pampa just between April 2016 and September 2017.

In the last 15 years (2001-2016), an estimated 162,000 hectares of [forests have been lost](#) in Madre de Dios to mining, illegal logging, and land use change for agriculture or livestock.

The region reflects national trends; in 2016 164,662 hectares of the Peruvian Amazon were deforested.

It’s a complex issue. But now WWF, Wake Forest University (WFU), [CINCIA](#) and USAID are implementing an innovative approach for restoring landscapes deforested and degraded by artisanal gold mining. This partnership is applying new scientific and technological methodology to reverse some of the major impacts of mining in the country.

“This project, that began in 2015, initially aimed to recover 42 hectares in pilot plots. In 2018 it will reach an additional 140 hectares reforested with more than 155,000 trees, in two of the areas most affected by mining: the Madre de Dios district of Inambari and the province of Manu. Thanks to this initiative, we are seeing soils that had completely lost their

Innovation extends beyond the lab as well, not just in search of results but also to generate greater efficiency and better resource use within the project itself.

In line with this, the first high-tech forestry nursery has been built in Madre de Dios, in alliance with the District Municipality of Inambari, one of the areas most affected by gold mining in this region. The nursery supports the production of seedlings, reaching 240,000 units per year compared to the 10,000 that were achieved with traditional methods.

Similarly, today it is possible to monitor the progress of mining in the Amazon and know its impacts thanks to a geographic information decision support system developed jointly with WFU and CINCIA. This [virtual tool](#) also allows one to visualize the actions that are being undertaken to restore these areas.

The scale of these results has attracted more than simple interest. Local municipalities and ministries have joined the initiative, investing almost USD 800,000.

The Ministry of the Environment has committed to allocate over USD 300,000 for the Provincial Municipality of Manu to assume the task of reforesting and recovering 60 hectares, where it is expected to plant 66,000 trees throughout 2018 with the participation of 10 indigenous communities, including the Harakbut of San José de Karene, Puerto Luz, and Shintuya. The Ministry of Agriculture and Irrigation, through SERFOR (Peru's National Forest and Wildlife Service), has also committed to finance the recovery work conducted by the Municipality of Inambari.

The tangible commitment shown by Peruvians towards the conservation of their forests and this project was also highlighted this March, during Earth Hour.

That day, WWF, CINCIA, and the Municipalities of Tambopata and Inambari planted 1,000 trees in degraded areas. With the Mayors of Tambopata and Inambari joining as an Earth Hour Ambassadors, these trees will breathe new life into large areas of rainforest, increasing the impact of the reforestation and restoration initiatives.

"The most valuable aspect is the combination of science and political and social commitment. Now, the priority is to continue replicating this in other locations in the Amazon with the support of local and regional governments," concludes Condori.

Future plans for the project include the implementation of two new technified nurseries in the localities of Salvacion and Boca Colorado and providing the municipality of Manu with a modern Geographic Information System and drones whose photos and videos can facilitate the proper monitoring of work in progress.

"Science has been the starting point to tackle such a complex problem. From the research and experimentation of different options to find the most efficient production of seedlings, to the use of geo-spatial information to determine the most appropriate grounds for recovery and the use of drones for monitoring: science has been at the core of our conservation approach," says Nelson Gutiérrez, scientific leader of the initiative in WWF.

Biodiversity conservation is yet another reason why it is imperative to recover deteriorated landscapes and prevent further impacts. Madre de Dios is considered Peru's capital of biodiversity, and is internationally recognized as such, holding records in numbers of species, endemisms and others. There, a single tree can harbor more species of ants than all the British Isles

"We are using hundreds of camera traps and acoustic recorders to monitor the behavior of wildlife and are constantly surprised with the density and diversity of species, even in areas with human presence where there were serious impacts before, and where today activities are conducted in a sustainable and responsible manner," continues Gutiérrez.

182 hectares of recovered forests is a large area, and its impact is exponentially magnified when inserted in a landscape connectivity and recovery approach. "Through this project, we could be potentially connecting hundreds of thousands of hectares in the most biodiverse forest in the world," Gutiérrez concludes.

Through this project, technology, political commitment, and local peoples' engagement are working in greater harmony to ensure an ever greener future for Peru's southern Amazon.



Edith Condori



© WWF-COLOMBIA

Doña Blanca Criollo, standing next to her reforested plot in Sibundoy Valley, Colombia.

“YO PREFIERO EL AGUA”

By Emelin Gasparrini, WWF Forest and Climate

It's dusk when we rumble down the dirt road on the way back to Doña Blanca's house.

A *granadilla* grower, Doña Blanca Criollo spent her afternoon showing us around her single hectare of land in Colombia's southwestern Sibundoy Valley, returning home while we visited neighboring properties. Bounding out of her house, she beckons us inside with the promise of coffee and fresh cancharinas, small bites of fried dough studded with green onions.

We take off our muddy shoes and she leads us through the house to the kitchen in the back, a big open room with red brick walls that she and her husband had recently finished expanding. It is a warm and open space, especially as the evening air begins to chill outside. What she is most excited to show us is not the new size of the room, however, but the ordinary chrome sink installed in the counter. For the first time, Doña Blanca can pipe clean water from the spring on her land directly into her home.

The sink represents years of effort to restore the natural spring Doña Blanca and her family rely on by reforesting this hillside. Though the valley has been cultivated by its inhabitants for centuries, decades of intensifying small-scale dairy farming has deforested much of the area, undermining and polluting the natural water system. Some family plots on this hillside have been so

stripped of natural resources they may take just as long to recover.

So when Doña Blanca decided that she was tired of having to spend hours of her day treating their spring water to make it safe for her family, she set changes into motion that would impact the very landscape around her. She found a committed partner in WWF.

Doña Blanca was introduced to WWF in 2010, through the organization's efforts to help small-scale producers use more environmentally friendly ways of keeping cows and shift to more sustainable land uses in response to climate change. WWF works with these small-scale producers in the region encompassing the Sibundoy Valley through capacity building and micro-level territorial

.....
CONTINUED ON PAGE 10
.....

CONTINUED FROM COVER

with partners in the field from WWF-Indonesia to improve the results of the algorithm.

“This is an aspect that the remote sensing community has strong opinions about,” says Aguilar-Amuchastegui. “Some are against the use of crowdsourced information to validate products because not everyone knows how to interpret the data, but we challenge this because people on the ground know what’s there.”

He adds, “If things are done well and there are protocols to follow it could be a very powerful wave for algorithm developers to enhance products. We see it all the time to improve user end products when people sign up as beta testers, and developers use their information to make improvements. We are showing how science can also do that.”

Pinto agrees. “What most people don’t realize is that map making is very iterative – maps should not be static products. With remote sensing, we should use as much as we know about physics, but also allow local information to refine results.”

To facilitate the refinement, Pinto and Aguilar-Amuchastegui worked with Christoph Perger from [Spatial Focus](#) using IIASA’s online platform [LACO-Wiki](#), which is designed “for validating land cover and land use maps.” But first they first they had to generate data for their partners to validate.

The first iteration started with existing Synthetic Aperture Radar data for an area with known oil palm presence, and the model produced an oil palm presence likelihood map layer, known as a soft prediction. This kind of prediction produces a color gradient map, each color on the spectrum indicating the

model’s estimated likelihood of the presence of oil palm. From there, the information was converted into a presence/absence map, or hard prediction, which was used by LACO-Wiki to generate random points for the campaign. Now they were ready for validation.

LACO-Wiki took those validation points and, using data from existing online sources, displayed high spatial resolution satellite imagery hosted by platforms like Bing Maps, Google Maps, or Google Earth, of the location in that point along with whether the model had classified it as containing oil palm or not, prompting the user to mark whether the classification was correct or incorrect. This process served two functions, and the first was fairly standard: to assess the performance of the hard prediction produced by the algorithm.

But the second was decidedly less so: to collect information for model recalibration based on local knowledge of the area by the teams in Indonesia. Not only did this strengthen the results of the model, it allowed for the collection of additional areas where there is known oil palm presence, to build a larger data set to train the algorithm and improve the results. In this way, the partners in the field – the end users – become involved in the actual development of the algorithm and the maps instead of simply recipients of the information produced.

It also makes the process of assessing the confidence in the map results more quantifiable. Pinto adds, “Sometimes it is hard to quantify the errors, but through this process we can see – if I add the local information, how much did my model improve?”

The additional data was provided by the testing team after a capacity building

workshop, where Pinto and Aguilar-Amuchastegui showed them how to set up their own data to be able to run the algorithm without external assistance. “This makes it iterative and turns the process into a two-way street,” says Aguilar-Amuchastegui, “Local experts are not just validating an existing – static – final product, they are also given the tools to improve it if they want to.”

And those improvements have already produced results. In further iterations the mapping area was expanded to include all of southern-Central Kalimantan using Sentinel 1 data, and new oil palm areas have already been detected. In addition to publishing the results, the team is also planning a second capacity building workshop to further empower partners in the field and ensure the algorithm can be put to use.

Usability is crucial, because deforestation from oil palm expansion is an important issue beyond conservation, too. Global corporations that have committed to removing deforestation from their supply chains are also concerned about natural forests being converted into oil palm plantations.

As companies commit to more forest-friendly sourcing practices, they need better information about the commodities they are buying to make sure they are following through on those commitments. This algorithm will provide an additional layer of that information, which will support better conservation outcomes and commodity sourcing decisions to protect natural forests from the threat of oil palm expansion.

By Emelin Gasparrini, WWF Forest and Climate

planning – even down to the farm level. Like *Doña Blanca*, WWF understands the region is a special place, home to animals and habitats that can only be found on the slopes and valleys that fall from the Andes to the Amazon.

Building off of WWF’s work, the municipal government started a program to support reforestation. *Doña Blanca* sold her cows and used the funds to plant *granadilla*, a member of the passion flower family, freeing up half of her land for trees from the municipal program without any sacrifice from her livelihood. By the second half of 2011, saplings are growing on her upper plot.

In the years that followed, WWF supported *Doña Blanca* and several of her neighbors in the microbasin with capacity building programs. Part of this work was a collaboration between WWF and the regional environmental authority CORPOAMAZONIA to pilot a payment for ecosystem services program, but the process has also included trainings on environmentally friendly approaches to pest control and soil recovery to support natural regeneration.

All this work has paid off. Earlier, some of us had carefully climbed through the barbed wire fence around *Doña Blanca*’s forest plot to see her spring first-hand.

It’s a serene – if muddy – place. The quiet bubble of the water and wind in the leaves above our heads calms the slight kick of adrenaline that comes from successfully avoiding the fence’s metal spines or a slip up the damp slope. Without disturbing the natural mouth of the spring, she has installed a screen of netting to keep leaves and flowers out of the water, a series of pipes that lead down to her house, and even a small covered tank. Not all of the water is diverted to her sink, either. The water that doesn’t flow into the pipes to her sink follows its natural course towards the valley floor, cutting a narrow trench in the hillside. In this way, the spring still provides water for the homes and streams below.

But not all of *Doña Blanca*’s neighbors are convinced. Dairy farming is central to their livelihoods and their identity, and many have dedicated their entire lives – and their family’s lands – to the

industry. Of the 22 families living in this microbasin, 10 still refuse to participate in any of the sustainable land use programs.

On the way back to the truck, we walk past a plot where the soil has been so depleted it can barely support grass and is pock-marked with springs run dry when the trees were removed to make way for cattle. It’s a stark contrast to the vibrant tranquility of *Doña Blanca*’s small forest, and a reminder of the central role forests play in a landscape’s ecosystem.

As we sit in the grass next to her forest plot that overcast afternoon, *Doña Blanca* acknowledges that the process has not always been an easy one, and that there is still more to be done to convince these last hold-outs to change their methods. But, she says emphatically, “I prefer to have water.”





© EQUIPO TÉCNICO INDÍGENA LA CHORRERA

THE INDIGENOUS PEOPLE WHO JOINED TRADITIONAL AND WESTERN WISDOM TO STUDY THEIR TERRITORY

By Viviana Londoño Calle, WWF-Colombia

“Our grandparents knew our territory well, its sacred and productive places and the risks we assumed if we did not use resources appropriately. But part of that ancestral wisdom remained with them and was not registered or was difficult to translate into a language that would allow us to defend our territory and make decisions. Today we know how to access that information.”

These are the words of José Zafiama, a teacher of the Uitoto people and member of the Azicatch Indigenous organization, which brings together the Uitoto, Muinane, Bora, and Ocaina peoples of La Chorrera district in the Predio Putumayo Indigenous Reserve, the largest in the Colombian Amazon. José just finished presenting the results for the first ecosystem services analysis in his territory, and he cannot stop smiling. He knows that his community has achieved an important precedent for his territory that can become a key tool for the sustainable development of other indigenous peoples in the Amazon.

How did they carry out this analysis and create a technical guide to serve similar processes? Reaching La Chorrera is not easy. A flight is scheduled every two weeks and seldom follows a set itinerary, and the alternative boat trip can take more than fifteen days from the nearest city. Nevertheless, a team led by WWF and Fundación Puerto Rastrojo travelled continuously to the region for almost an entire year to form and train an indigenous technical team that could advance this initiative.

The objective was to create a pilot project for the evaluation of ecosystem services

from an indigenous viewpoint to both analyze the risks of forest transformation and the loss of ecosystem services and to strengthen indigenous governance. The result is a complete guide, which will be published in the following weeks, showcasing the methods used and the results obtained during its application in La Chorrera.

The achievements still amaze participants. In the words of Chela Umire, one of the women from the Muinane people who participated in the process, “We never thought we could learn something like this. At first everything seemed complicated, but we eventually learned how to use a GPS, to understand maps and find specific places, and to comprehend the size of our territory.”

Young and elderly women and men representing four indigenous peoples formed part of the team and joined their voices and knowledge to consider the contribution that an indigenous vision can make to forest conservation.

“This process allowed us to become close to our grandparents again, to work with women and with the four communities as a single team. I particularly liked preserving traditional wisdom and complementing it with western elements. We know our territory, but we knew very little about it technically and got to learn about it,” says José Miller Teteye, another member of the team from the Bora people.

This pilot project is part of the achievements of the REDD+ Indígena Amazónico initiative, RIA, which seeks to promote the integration of an indigenous viewpoint in conservation policies and REDD+ programs implemented in Amazonian countries like Peru, Colombia, and Ecuador.

COICA, the Indigenous Organizations Coordinator of the Amazon Basin, led the

RIA initiative in partnership with national and local indigenous organizations like OPIAC, with WWF’s support and BMUB-IKI’s financial backing.

Amazonian Indigenous peoples’ vision of their territories is vital to facing the current climate challenge and supporting governments in the implementation international commitments like the Paris Agreement. Pía Escobar, WWF’s focal point for the RIA project in Colombia, highlights that one of the most important achievements of the Chorrera pilot project is that it has given communities new technical tools to aid their contribution to climate change mitigation.

More than half of Colombia’s Amazonian forests are inhabited by indigenous communities, but until now it had been difficult for them to both identify and characterize the ecosystem services that make up the enormous value of their forests and to participate in processes to protect these services and make them visible. The Chorrera pilot project opens a door to show that the forests they inhabit serve purposes that go way beyond carbon storage.

La Chorrera is also the setting of one of the most painful pages in Colombia’s indigenous history. During the early twentieth century it was one of the epicenters of the rubber boom that resulted in the genocide of more than thirty thousand Indigenous People. “Our grandparents tell us that during the rubber fever Indigenous People were abused and thousands of them slaughtered.”

“It was a time of pain and suffering,” explains Tirso Candre, leader of the Ocaina indigenous people, as he describes the fallouts in the Amazon of the rubber boom. He adds, “We are regaining strength, advancing, and working on re-signifying our territory.”

La Chorrera has changed, and as the years go by, the four peoples that inhabit this region have begun participating in processes to promote a better use of their territory. Tirso is also one of the leaders of the ecosystem services evaluation project.

“Indigenous peoples have conserved forests because forests are like our mother. It is very important for us to keep taking care of productive spaces and sacred places, and this project is a tool to protect our territory, to make decisions. We want to keep conserving the forest, and now we have more information to do so,” says Tirso.

And their voices have travelled far. Representatives of the indigenous technical team have shared the pilot project’s results not only with neighboring communities and in indigenous regional spaces, but also in international settings like the United Nations Framework Convention on Climate Change.

Their story is the story of a people willing to demonstrate the value of an indigenous vision and of traditional knowledge in conservation efforts. And the process they have put forth proves that acknowledging this vision is the only path to ensure effective strategies for the sustainable use of the Amazon’s forests.

REDD+ PEOPLE

THE HUMAN ELEMENT

People play a crucial role in conservation, and partnering with Indigenous Peoples and local communities can ensure the long-term sustainability of conservation efforts. We sat down with Pia Escobar Gutiérrez, of WWF-Colombia, to learn how she is connecting with partners to bring more people into the process.

What is your role at WWF?

I work in the Cali office of WWF-Colombia, in the Governance and Sustainable Livelihoods program. Currently, I am leading a project on deforestation strategies, and coordinating the leadership of a capacity building process that supports Indigenous Peoples' governance.

What are you currently working on?

An important part of my work with Indigenous Peoples is a partnership with [OPIAC](#), the National Organization of Indigenous Peoples of the Colombian Amazon. Part of what we do is work together with the Ministry of Environment (MADS) to find ways for Indigenous Peoples' focuses and OPIAC's proposals to be included in MADS policies, like those on deforestation and forest management. We also run analyses on how OPIAC can access climate funding, and how Indigenous Peoples can be incorporated into national level commitments like NDCs and AICHI Targets.

With local level organizations, we support programs to enforce their territorial management processes. Some



© JOHANA HERRERA

of this has a technical focus, like developing training programs so Indigenous Peoples can generate monitoring data about their territories and the ecosystem services that are important to them, and some has a more political focus, like different ways to improve territorial administration or decision making. These are tools they can use to improve their territories as well as show society their value and the importance of conserving nature.

How did you get involved in this kind of conservation work?

I'm an anthropologist by training, and by certain coincidences of life I've always been linked into conservation. Various people in my family also work in conservation, and it's interested me since I was young. After university, I started work supporting more sustainable production systems, focusing on dairy, in the south of Colombia, and that was a natural transition into conservation. From the sustainable production and

conservation perspectives, it's always been my specialty to bring people, society, and culture into the process. It puts my academic training to practical use to transform societies and the world.

Working with people as a conservation strategy can often seem complicated. Why is it important to bring people into the equation?

It's not necessarily more complicated but, rather is more

complete. You have to include processes like dialogue and finding agreement, but my personal view is that working with people is a way to generate durable methods of conservation. As the world's population grows and we shift the way we use natural resources or into different areas, we need to be able to make better decisions to make a better world.

It's also hard to have successful conservation strategy without involving communities, because we don't conserve territories alone or in a vacuum. Communities have strategies of their own, and we need to be able to tap into them and support them to make our collective work better.

What does success look like, from your point of view?

For me, success is not dependent on big things – big results – but in the little

.....
CONTINUED ON PAGE 15
.....

BRINGING MORE VOICES TO INDIGENOUS TERRITORIAL GOVERNANCE

By Maria Fernanda Jaramillo, WWF-Colombia, and Emelin Gasparrini, WWF Forest and Climate



This early March day is a very special one for Betsilda, a young Shipibo woman from the Indigenous community of San Francisco in Ucayali, Perú. Today, she is one of 30 participants who will receive their University certificate in territorial governance in a ceremony at the Amazon Intercultural University in Pucallpa, Perú.

One year ago, Betsilda's community assembly elected her to be one of four students to represent them in the Programme. "This training changed my dreams; now I know I can do more for my people and my community. I have thought to be a woman leader of the community, to assume a position because nowadays women also have

the right to assume a position in the organization."

Betsilda is one of 9 women who have graduated from the Norad-funded Capacity Building Programme on Indigenous Territorial Governance (PFGTI, by its Spanish acronym) in Perú, and is part of the largest cohort of Indigenous women, 48 in total, attending the same trainings in countries across the Amazon. These women, along with 73 male students, come from communities that have access to very few, if any, capacity building programs.

Indigenous Peoples' capacity to govern their territories has a clear [connection to climate change](#).

Deforestation rates within tenured Indigenous lands are lower than in other forests, and Indigenous and communally held lands hold [about a quarter](#) of aboveground global carbon stores.

However, Indigenous communities in the Amazon often confront the daily challenges of territorial governance, as well as external threats, with scarce resources and tools and almost no opportunities to strengthen their capacities. And though they represent nearly 70% of the Amazon region's Indigenous population, the voices of women and young people are generally not included, because territorial governance issues are usually considered "men's affairs."

But this reality is changing. Designed over a two year process by Forest Trends as part of the [AIME consortium](#), Indigenous organizations, university partners, and WWF, the PFGTI provides practical tools to manage the problems facing Indigenous Amazonian territories of Brazil, Colombia, Ecuador, and Perú.

In addition to focusing on community members rather than representatives of Indigenous organizations, the PFGTI offers a formal capacity building program to others who are often not targeted participants. One of the conditions for a community to participate addresses this issue of access directly – of the four students each community elects to participate, at least one must be a woman, one must be a young person, and one must be an elder.

For one week every other month, students gather in a central location with their professors for face-to-face learning on topics as diverse as Globalization and Territory, Legal Frameworks, Indigenous Economy, Administrative Management, Climate Change and Environment, and Development and “Good Living.”

In addition to instruction, the PFGTI also has an immediate practical application. As part of their participation, students must develop a territorial governance project for their community. These are as varied as each community’s needs, and include projects focusing on women’s role in collecting native seeds as a strategy to increase food security, direct learning from community elders to strengthen traditional territorial management practices, and control and surveillance methods to protect sacred sites from external threats.

Participation numbers alone could illustrate the desire for this kind of information and support. The first cohort of students, which includes Betsilda, has 121 students enrolled across the four countries ranging in age between 14 and 70 years. Twenty different Indigenous groups are represented.

Betsilda’s fellow students also spoke to the need for this program. Leydi, a young Quillasinga woman from Colombia, added, “Territory is the basis of our existence as Indigenous Peoples. In this capacity building program, we have studied many topics that strengthen us to be able to defend it against threats and protect it from harm. We will only achieve [stronger territories] if we unite, it doesn’t matter if we are men or women, young or old. Unity is what will make us succeed.”

After the graduation ceremony, Betsilda and the other Peruvian students returned to their communities with their certificates in hand and a slate of governance projects already up and running. WWF-Peru is already planning to expand the program into additional communities. Students in Ecuador and Colombia will earn their certificates mid-summer, and in Brazil by the end of the year.

Carlos, a Shipibo man, underscored the personal and community benefits from his participation. “Now I feel capable of facing any situation, and I know how to orient myself, where to go, and who I need to talk to. That is what was missing in my community, [but now] each one of us, as authorities, knows what is the right direction.”

CONTINUED FROM PAGE 13

gains that we make with communities. For example, supporting the development of a technical team in an Indigenous Peoples organization that has the capacity to do an evaluation of their ecosystem services and can understand how they can use the data they generate to serve their organization and territory for the maintenance of their cultures is an important success.

When communities have access to information and trainings they are able to do new things or manage processes without outside experts, which can often complement our work. Building trust with local organizations or communities through open and honest dialogue and providing them tools that they can use to manage their territories for their own benefit is a success, and it happens step by step. I’m convinced that small investments are more effective than larger ones.

Is there one piece of advice you would give to people who want to work more closely with communities?

What’s most important is to learn to understand each other. Don’t believe that you are the wise one going in to teach the community how to do things. It’s a dialogue – not us teaching them how to be better but to understand how they live and their conservation processes and goals. For this you need their trust, which is my second recommendation. It’s important to find the ways to generate trust with communities so you can work together for common goals. We make common purpose by supporting their objectives and lending our skills to their goals.

ADVANCING KNOWLEDGE OF “JURISDICTIONAL APPROACHES” TO RESPONSIBLE COMMODITY PRODUCTION

By Akiva Fishman, WWF-US

Jurisdictional approaches are exciting the global agriculture and conservation communities.

Collectively, jurisdictional approaches refer to a suite of strategies for protecting forests and other ecosystems within landscapes that produce important commodities—like beef, soy, and palm oil—at a scale that broadens sustainability impacts from the farm level to an entire political territory. [These approaches hold great potential](#) to align stakeholder interests in improved production and conservation in a landscape, in particular by catalyzing scaled land use planning and access to more sustainable production practices.

The buzz around jurisdictional approaches is being heard in international fora as well. They featured prominently in the Tropical Forest Alliance 2020’s [recent annual report](#) and are listed among the top priorities of [TFA’s Action Agenda](#) released this year. And they took center stage in September at the 2017 annual meeting of the Governors’ Climate and Forest Task Force in Balikpapan, Indonesia. At this meeting, governors of subnational jurisdictions from across the world announced the [Balikpapan Statement](#),

which outlines an agenda for subnational governments to reduce deforestation by working with the private sector, protecting Indigenous Peoples’ rights, and securing financial support.

Despite the growing interest in jurisdictional approaches as a means to help achieve deforestation reduction targets articulated in the New York Declaration on Forests and the Sustainable Development Goals, information about what is being done on the ground continues to be scarce. In May, [WWF convened leading practitioners](#) to begin filling this knowledge gap by deeply exploring 5 jurisdictional pilots, focusing on what is working, what is presenting difficulties—and crucially in both cases, why. Close analyses of experiences in Ghana, Liberia, Colombia’s Orinoquia region, and Mato Grosso and Acre states in Brazil distilled 6 key learnings about critical elements of success and pitfalls to avoid.

We captured these key learnings in a report that WWF launched at the UN climate conference COP23 in Bonn, Germany. The paper discusses, for example, the foundational role that a supportive political climate played in putting Acre, Brazil’s jurisdictional initiative in place, the threat that a change in administration could pose going forward, and the mechanisms put in place to guard against future political backtracking. The case of Colombia highlights the need to balance rapid progress to develop an impactful initiative with effective and often time-consuming engagement of a range of stakeholders to ensure proper design and long term buy-in. The paper also includes an annex that provides brief and accessible story lines of each initiative in a format that allows easy comparison.

The [report assessing progress against the New York Declaration on Forests commitments](#) demonstrates more than

ever the need for action, innovation, and more integration of public and private sector strategies, describing increased commitments across supply chain actors, but also continuing and increased deforestation in many geographies and a dramatic funding imbalance. This report suggests that jurisdictional approaches, while still mostly nascent, may play an increasing role to achieve global forest conservation targets.



© WWF

REDD+ SPECIES

PERUVIAN SPIDER MONKEY

Common Name:

Peruvian Spider Monkey

Scientific Name:

Ateles chamek

Location:

Bolivia, Brazil, Peru

Status:

Endangered

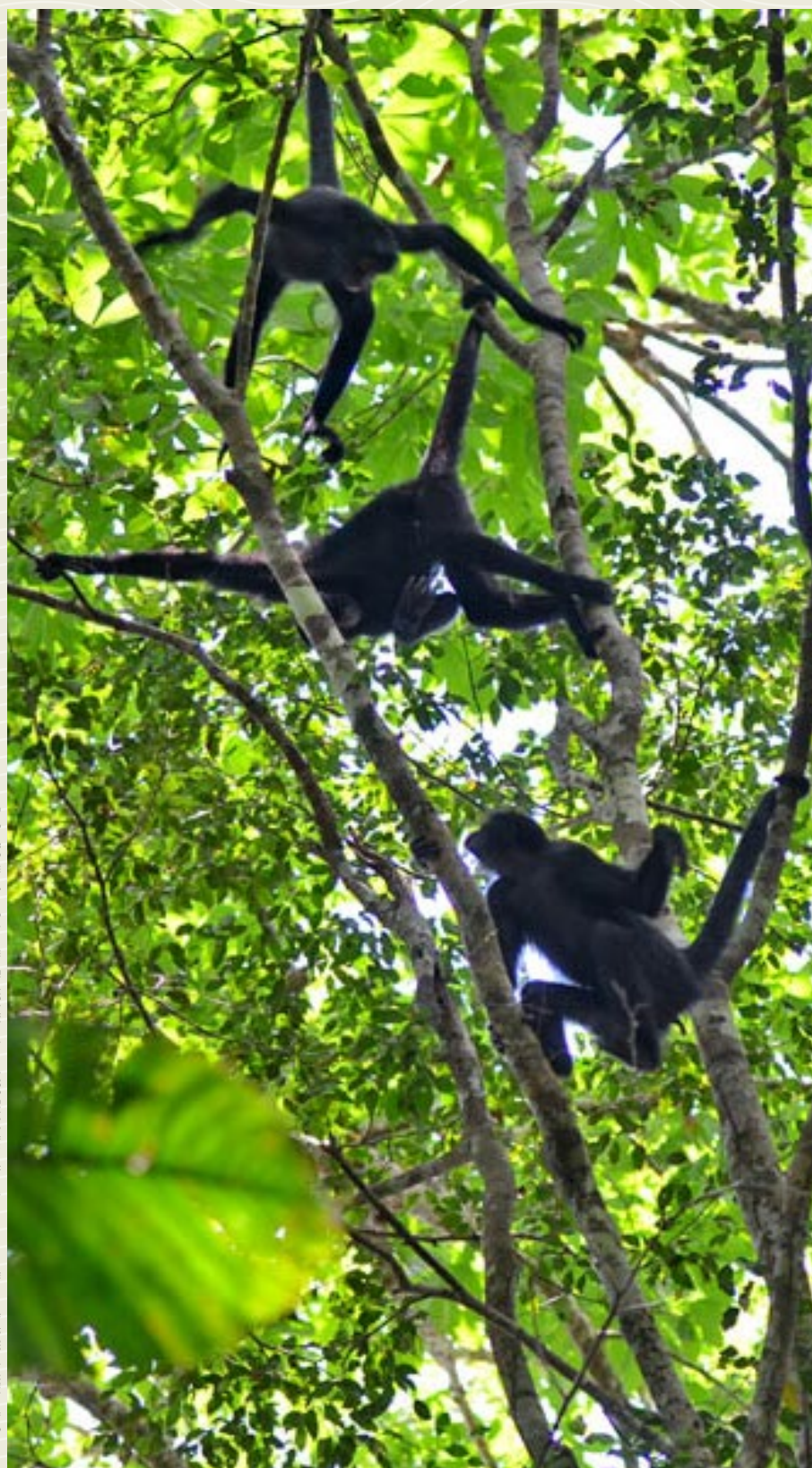
Read more:

[IUCN Red List](#) [Arkive.org](#)

Also known as the black-faced black spider monkey, the Chamek spider monkey, and the Marimono, the Peruvian spider monkey can be found in Bolivia and Brazil, in addition to its eponymous Peruvian ranges.

True to another of its names, the Peruvian spider monkey sports nearly entirely black fur and a dark muzzle. They also have the typical prehensile tail, which acts like a fifth limb and can grow up to three feet long, and only a vestigial thumb, both of which help them move through the canopy with agility. These monkeys live in groups of up to 30 individuals but spend most of their time in smaller subgroups of 2-4 individuals. Fruits compose the majority of their diet, but they are also known to eat young leaves, flowers, honey, bark, and the occasional small insect.

IUCN Red List downgraded their classification to Endangered in 2008, and reports a decreasing overall population trend, with a decline of at least 50% in the last 45 years. This decline is largely due to hunting, habitat loss from agricultural expansion and mining, and habitat degradation from selective logging. Other factors include their naturally late maturation and long inter-birth intervals, making it harder to recover from population loss.



By Geoff Gallica from Gainesville, FL, USA (Maquisapas) [CC BY 2.0 (<https://creativecommons.org/licenses/by/2.0/>), via Wikimedia Commons]

VIEWPOINTS

On the Future

“THE PROBLEMS FACING THE WORLD TODAY - THEY CHALLENGE ALL OF US EQUALLY. AND THE SOLUTIONS TO THESE CHALLENGES MUST COME FROM A REAL SENSE OF CONCERN AND CARE FOR OTHERS, FOR ALL SENTIENT BEINGS AND, FOR FUTURE GENERATIONS. WE MUST CARE ABOUT WHAT HAPPENS TO THIS EARTH.”

–His Majesty Jigme Khesar Namgyel Wangchuck, King of Bhutan.

On Including Women

“IT IS IMPORTANT TO INVOLVE WOMEN IN DECISION-MAKING EVEN MORE; THEIR VOICES NEED TO BE AMPLIFIED AND HEARD, NOT JUST ECHOES IN THE BACKGROUND.”

– Novia Widyaningtyas, Head of REDD+ Division of Indonesia's Ministry of Environment and Forestry.

On Indigenous Participation

“OUR PEOPLES ARE FULLY AWARE OF THE LONG-TERM CONSEQUENCES OF INDUSTRIAL PRACTICES THAT POISON OUR RIVERS AND DESTROY OUR FORESTS... WE DON'T OPPOSE ECONOMIC PROGRESS, BUT WE DO DEMAND TO BE INFORMED PARTNERS, WITH THE RIGHT TO VETO PROJECTS THAT WILL DESTROY OUR COMMUNITIES AND THE RESOURCES SO VITAL TO SLOWING CLIMATE CHANGE.”

– Edwin Vasquez, President of the Coordinating group of Indigenous Organizations of the Amazon Basin (COICA).

On Technology

“TECHNOLOGY, IF YOU LIKE, CAN RESOLVE PROBLEMS THAT OLD TECHNOLOGY HAS CREATED... SO, IN THAT SENSE TECHNOLOGY CAN HELP A LOT. BUT DON'T THINK FOR A SECOND THAT WE CAN ACTUALLY REPLACE NATURE BECAUSE THAT'S NOT POSSIBLE.”

– Marco Lambertini, Director General of WWF.

On the Inseparable Link between Forests and Climate

“THERE MUST BE ZERO TOLERANCE FOR PLANNED DEFORESTATION IN THE NAME OF CLIMATE CHANGE ACTION. COUNTRIES CANNOT BE ALLOWED TO PRETEND THAT A SUCCESSFUL BID TO END CLIMATE CHANGE DOES NOT INCLUDE IMMEDIATE ACTION TO PROTECT FORESTS. FAILING TO TAKE STRONGER ACTION NOW WILL CEMENT AN UNCERTAIN PATH FOR THE PLANET, FOR FORESTS, AND FOR PEOPLE.”

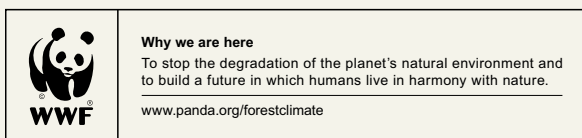
-- Josefina Braña-Varela, Senior Director, and Karen Petersen, Program Officer, of WWF Forests and Climate.

On Forests and the Paris Agreement

“FORESTS ARE THE ONLY PROVEN COST-EFFECTIVE APPROACH TO CAPTURE AND STORE LARGE AMOUNTS OF CARBON, WE SIMPLY WILL NOT MEET THE OBJECTIVES OF THE PARIS AGREEMENT WITHOUT STOPPING GLOBAL DEFORESTATION.”

-- Ola Elvestuen, Minister of Environment and Climate of Norway.

Photos and graphics © WWF or used with permission.
Text available under a Creative Commons licence.



© WWF Registered Trademark Owner © 1986, WWF-World Wide Fund for Nature
(formerly World Wildlife Fund), Gland, Switzerland