LEADERS IN ACTION

ACHIEVING FOREST LANDSCAPE RESTORATION THROUGH ONLINE LEARNING

Yale SCHOOL OF FORESTRY & ENVIRONMENTAL STUDIES

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Cover Photo: A woman shares experiences on land use and restoration practices in her community with stakeholders involved in the national ROAM assessment for Malawi — © IUCN/ Mirjam Kuzee
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INTRODUCTION

Forest landscape restoration (FLR) provides an opportunity to transform degraded lands into productive landscapes that yield numerous ecological, economic, and social benefits. Many countries have made large-scale commitments under the Bonn Challenge, a global effort to bring 150 million hectares of degraded and deforested land into restoration by 2020 and 350 million hectares by 2030. Achieving this commitment requires decision-makers to address the diverse ecological, socio-political, and economic factors that impact restoration efforts at different scales.

With such large targets, it is challenging to determine where to begin – and how to approach – the restoration process. The Restoration Opportunities Assessment Methodology (ROAM) was designed by the International Union for Conservation of Nature (IUCN) and the World Resources Institute (WRI) to provide a framework for countries and regions to identify, analyze, and prioritize restoration opportunities in order to develop a suite of restoration strategies for particular contexts.

From May 2016 to March 2017, the Environmental Leadership & Training Initiative (ELTI) of the Yale School of Forestry & Environmental Studies and IUCN conducted a series of six online courses, entitled "Forest Landscape Restoration in the Tropics." ELTI and IUCN offered these courses in English, Spanish, Portuguese, and French to 125 environmental practitioners from over 30 countries.

The objectives of this collaboration were to develop the capacity of diverse practitioners working on FLR in tropical developing countries, support future leaders of FLR and ROAM initiatives, and accelerate action on FLR and ROAM to meet countries' pledges to the Bonn Challenge. The course presented ROAM as a broad framework alongside academic knowledge and applied experience in FLR to provide individuals involved with FLR policy, planning, and implementation with a foundation to address a range of objectives in their restoration initiatives.

This booklet includes a collection of inspirational stories from alumni of the ELTI-IUCN online courses that illustrate the diverse ways in which they have made profound and positive impacts that they attribute to their participation in these courses.

The stories are featured on ELTI's website at elti.yale.edu and IUCN's website at iucn.org/forest.

ROAM Workshop in La Zafra, Antioquia, Colombia in October 2016. Photo includes IUCN Staff members Mirjam Kuzee and James McBreen along with ELTI-IUCN Course Participants David Echeverri López and Talía Waldrón (featured on page 8) — © Paola Isaacs

ACKNOWLEDGEMENTS

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ALPHONSE POLISI

BURUNDI STEPS TOWARDS A MORE HOLISTIC APPROACH ON FLR PLANNING AND POLICY

Alphonse Polisi — © Alain

More than 90% of Burundians rely on subsistence agriculture. As the population continues to grow, the same amount of land must feed more people, increasing pressures on land and other resources.

"The land has no time to rest," says Alphonse Polisi, the Director for Environment and Climate Change in Burundi's Office for Protection of the Environment (OBPE). "So we are working at the national level to raise awareness and restore landscapes that must continue to perform under growing pressure."

Alphonse believes the national government has a responsibility to promote more sustainable land-use decisions. He took the ELTI-IUCN online course Forest Landscape Restoration in the Tropics in October 2016 to expand his ability to guide and support the successful implementation of restoration opportunities.

The ELTI-IUCN course helped open Alphonse's eyes to the importance of holistically planning environmental management projects across institutions at the national level, and the identification and engagement of stakeholders throughout the process.

> *"I was very much interested in the discussion of stakeholder identification; everyone has knowledge and value to add to opportunities on the ground. Stakeholders must take the lead at the landscape level. They're a prerequisite for the success of our restoration opportunities.*
>
> *–ALPHONSE POLISI*

Along with improving stakeholder engagement, Alphonse has led an effort to gather and consolidate data from environmental management projects at the national level.

“We have involved 34 groups from different sectors, including ministries, NGOs, private organizations and associations: a task force for the national program of landscape restoration,” he says. “Through this program, the department of environment and climate change will compile data, practices, and technical guidelines.”

The database from this effort will support many objectives. It will allow the OBPE to monitor and coordinate landscape restoration at the national level. All restoration project and program planners will have access to the data, so they can learn from other partners’ approaches. Finally, it will allow Burundi to report on commitments, such as the Bonn Challenge.

“We have received an enthusiastic response to our efforts to coordinate FLR and provide a channel for exchange on FLR at the national level,” says Alphonse. “We are proud to position the OBPE as an institution to relay information on matters of environmental protection and, hopefully, help to restore the land’s productivity.”

Alphonse discussing achievements with the Minister of Water, Environment, Land Management and Urban Planning during Environment Week — © Alphonse Polisi

Acknowledgments
Alphonse would like to thank IUCN for the tools and documents they have produced, and the World Bank and IUCN who are working with the Government of Burundi on the current landscape restoration effort.

CHARLES KARANGWA

EASTERN AND SOUTHERN AFRICAN COUNTRIES IMPLEMENT AND COLLABORATE ON FLR

Charles Karangwa planting bamboo to protect Sebeya River bank in Rwanda — © IUCN

Numerous countries in eastern and southern Africa have demonstrated interest in FLR, making commitments to international goals such as the Bonn Challenge and supporting regional initiatives including AFR100. To translate these pledges into action, participating institutions need appropriate technical support and improved communication.

Charles Karangwa, IUCN's Regional FLR Hub Coordinator for eastern and southern Africa, works with different countries to enable cross-institutional planning for the restoration of degraded landscapes.

In May of 2016, Charles enrolled in the online course Forest Landscape Restoration in the Tropics to improve his knowledge and technical skills in FLR, and expand his professional impact.

After the course, Charles felt more confident to "bring a cross-institutional approach to FLR in different countries. I believe we will be more successful when governments, supporting institutions and local stakeholders can come together to apply ROAM to identify our restoration opportunities and the interventions that are best suited to achieving their goals. It also makes a huge difference while developing a restoration implementation strategy."

> *"Policy and decision makers need to consider the landscapes we all depend on. Forest landscape restoration is not only about forests but includes agricultural and pasture lands, catchments, water bodies, mangroves, and more.*
>
> *–CHARLES KARANGWA*

Charles has worked to raise awareness about ROAM in different forums at regional and national levels. This has yielded opportunities to support the initiation or continuation of ROAM across the region.

For example, after completing a national-level mapping of restoration opportunities, Madagascar now has plans to implement a ROAM assessment at regional and community levels. Rwanda is currently undergoing district-level assessments and has already started wide-scale restoration projects, with the aim to bring 18,000 hectares under restoration by 2018. Various government institutions, ministries, development partners, and private organizations have jointly formed a cross-sector task force to discuss forests, food, water and energy systems, helping to integrate FLR into various development strategies. In Uganda, Charles and his team at the FLR Hub are working with the Ministry of Water and Environment to restore the Aswa and Mount Elgon catchments.

"It's quite something to be proud of," Charles says. "The biggest change is the cross-institutional collaboration and coordination between different agencies, both public and private, to accelerate implementation of restoration activities and achieve national restoration targets."

Acknowledgements
Charles would like to thank the many authorities and ministries across Rwanda, Kenya, Uganda, Madagascar, Malawi, and Mozambique who have created a political environment that supports advocacy of FLR efforts. He also would like to thank IUCN, WRI, and FAO for providing technical support to these countries on the implementation of ROAM and integrating FLR into development agendas.

HIgh level Bonn Challenge Summit in Kigali organized by IUCN FLR Hub — © David Toovey

DAVID ECHEVERRI LÓPEZ AND TALÍA WALDRÓN

RESTORATION SUPPORTS COLOMBIA'S PEACE PROCESS

David Echeverri López — © Maria Cristina Roa

When peace was restored in eastern Antioquia, Colombia in 2006 after years of internal armed conflict, previously displaced inhabitants and former combatants returned to the region with a rare opportunity: to establish new livelihoods that integrate restoration with other sustainable activities on the region's 250,000 hectares of degraded land.

Many groups have become involved, including: the Regional Autonomous Corporation of the Negro and Nare Rivers (CORNARE), a government environmental authority; the Eastern Catholic University; and the Alexander von Humboldt Biological Resources Research Institute ('Humboldt').

Two representatives from those institutions – David Echeverri López, Biologist with the Forests and Biodiversity Group of CORNARE, and Talía Waldrón, Adjunct Researcher at Humboldt – felt that an FLR approach offered the flexibility necessary to support Antioquia's approximately 300,000 residents and advance their restoration and sustainable production goals.

> *"FLR has strong potential for advancing peace in Antioquia. It promotes the recovery of traditional land-uses, the conservation of biodiversity, and a foundation of pride that this land is an asset for all Colombians' prosperity.*
>
> *–DAVID ECHEVERRI LOPEZ*

IUCN invited David and Talía to participate in the ELTI-IUCN online course Forest Landscape Restoration in the Tropics so that they could give the region's FLR efforts a successful start with a ROAM assessment.

"After the course, I feel more confident in my understanding of the pathway to manage a ROAM assessment," David explained. "I expect that our work here will serve as a reference for the rest of the country."

Now, David and Talía are sharing what they learned in the course through workshops for the region's ROAM process. They're showing that restoration can benefit the landscape, local communities, and their agricultural and livestock production. In doing so, they're proving to domestic and international funders that restoration efforts in Antioquia are not only feasible but effective.

"The workshops helped us gather information on the inhabitants' livelihoods and priorities," Talía adds. "That knowledge helps us to prioritize and communicate the co-benefits of restoration. We are now using the results of these workshops and other information gathered by CORNARE and Humboldt to add a social dimension to the mapping of restoration priorities."

"With support from Humboldt and the Catholic University, CORNARE has gained recognition for its restoration efforts," David says. "For us it is a source of pride and inspiration to be recognized for nurturing sustainable development in this time of new peace."

Acknowledgements
David and Talía would like to thank María Berrio and Carlos Betancur (CORNARE), Jorge Sierra, Mayra Gómez, Daniela Marín, Ma Cristina Franco, and Andrés Camilo Gómez (Universidad Católica de Oriente), Wilson Ramírez, Paola Isaacs, Wilmer Marín, Camilo Correa, and Vivian Ochoa (Instituto Humboldt), representatives from Antioquia's tourism sector, and the communities of eastern Antioquia who shared their knowledge of their lands.

Mixed use landscape in El Zafra, Antioquia, Colombia — © James McBreen

ELIE HAKIZUMWAMI

BURUNDI BUILDS COORDINATION BETWEEN ORGANIZATIONS IMPLEMENTING FLR

Elie discussing the impacts of degredation with members of local communities — © Elie Hakizumwami

"Drive through Burundi and you will see isolated community restoration initiatives supported by a number of organizations," says Elie Hakizumwami, IUCN's Forest Landscape Restoration Policy Specialist for central and west Africa. "Greater coordination between the implementing organizations would multiply their impact."

Elie had been promoting FLR and ROAM already through policy and advocacy at national and regional events in western and central Africa, but he wanted to enhance his capacity to implement ROAM. So, he took the ELTI-IUCN course Forest Landscape Restoration in the Tropics.

In addition to increasing his ability to conduct ROAM assessments, Elie credits the course with expanding his ability to engage a wider diversity of stakeholders: "In the past, we would identify FLR options as a part of preparing workshops. Now, I better understand that involving underrepresented groups, namely women and indigenous groups, and discussing their experiences and working areas yields a broader, deeper variety of options. I found this very, very important."

> *"The course significantly improved my capacity to apply and coordinate the ROAM process at different levels. For instance, seven months after completing the course, I am now leading sub-national ROAM assessments in six provinces in eastern and northwestern Burundi.*
>
> *–ELIE HAKIZUMWAMI*

Elie has applied his expanded perspective to his work with larger organizations, too. For example, when he first began working with the government of Burundi, he focused on the Ministry of Water, Environment, Land Management and Urban Planning. After the course, he realized that the success of ROAM and FLR required the effective involvement of a broader array of institutions, ranging from more government ministries to organizations such as the World Bank.

"ROAM and FLR are inherently multi-sectorial and multi-disciplinary," says Elie. "This multi-stakeholder approach better ensures broader FLR buy-in, and a more productive relationship between actors."

Elie and his colleagues have supported the government of Burundi to establish a National FLR Taskforce and National FLR Program. This program will coordinate, monitor and report on FLR initiatives at national and international levels. Also, they're developing a consultation framework through which partner organizations can report their work implementing FLR in Burundi, a step toward greater coordination.

"We expect this framework will help ensure that FLR investments continuously improve soil erosion control, soil productivity, food security, economic opportunity, and increase carbon sequestration capacity in support of climate change mitigation," he says.

Acknowledgements
Elie would like to thank the Ministry of Water, Environment, Land Management and Urban Planning (MEEATU), the Ministry of Agriculture and Livestock (MINAGRIE), the World Bank, the Burundi Agricultural Research Institute (ISABU), the Burundi Geographic Institute (IGEBU), the Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), World Vision, and the German Society for International Cooperation (GIZ).

Identification of priority restoration areas and key restoration options in Burundi — © Elie Hakizumwami

GUSTAVO GATTI

RAISING AWARENESS ABOUT FLR OPPORTUNITIES IN PARÁ, BRAZIL

Gustavo Gatti — © Luiz Renato Corrêa

In June 2016, the Brazilian State of Pará launched "Pará 2030," a plan to improve indicators of social and economic development in the State. The plan includes restoring degraded forest landscapes to generate income in an environmentally sustainable way.

One actor in that effort is Gustavo Gatti, Director of Conserve Brasil, a Brazilian consulting firm. Conserve Brasil helped Imazon – a non-profit with decades of history working to conserve the Amazon rainforest – to define the key success factors of FLR in the Paragominas municipality and in the State of Pará, and to compile the restoration opportunities for the State of Pará.

Gustavo took the ELTI-IUCN course Forest Landscape Restoration in the Tropics to expand his capacity to develop and execute restoration strategies and assessments based on ROAM.

For Gustavo, the course's timing was perfect. While he was participating in the lectures and online discussions, he was able to apply the subject matter to his consulting engagements.

> *"It is very important to work at the landscape level. We should look at the potential for restoration to generate opportunities within a local economy. It's more than reversing environmental damage, it's encouraging a forest-based local economy that can lead to socio-economic development.*
>
> *–GUSTAVO GATTI*

Since February 2016, Conserve Brasil has collaborated with Imazon on a project that culminated in the 2017 publication of two reports: Diagnosis of Key Success Factors for Forest Landscape Restoration in Paragominas and Opportunities for Forest Restoration in the State of Pará.

"The reports are both a contribution to restoration planning, and an effort to raise awareness among policy makers at the municipal and state levels," says Gustavo. "We hope they will convince stakeholders to become more involved, to include components of ROAM in the broader planning process of restoration, and to incorporate Pará 2030 into Brazil's commitment to the Bonn Challenge. Both publications were influenced by my participation in the ELTI-IUCN course."

Acknowledgements
Gustavo would like to thank Imazon, WRI, BMU, Paragominas Municipality and the State of Pará for supporting this project, and also to the ELTI-IUCN team for their support during the course.

Gustavo facilitating the ROAM planning process in Paragominas, Pará, Brazil — © IMAZON

JAIRON CASTELLANOS

HONDURAS ENRICHES DIVERSITY OF RESTORATION TECHNIQUES FOR ITS NATIONAL PLAN

Jairon using a drone to collect images of different forest restoration techniques — © Omar Orellana

From 2013 to 2016, one third of Honduras' coniferous forests were destroyed by an invasion of southern pine beetle. In a country where wood is the primary source of construction material and cooking fuel, this scenario was a threat to the predominant way of life.

Instead, many groups are working to support the Secretary of Energy, Natural Resources, Environment and Mines to take these events as an opportunity to restore the nation's forested landscapes, beginning with ROAM. In one of those groups works Jairon Castellanos, Technician in the Forest Monitoring Unit of the Forest Conservation Institute of Honduras.

Jairon took the ELTI-IUCN online course, Forest Landscape Restoration in the Tropics, to expand his knowledge and capacity to support the creation of Honduras' national restoration plan and the country's Bonn Challenge commitment to restore one million hectares by 2020.

Jairon encountered skepticism and resistance when he presented to his team the expanded scope of restoration he acquired from the course.

> *"The case studies in the course, especially the one from Colombia, showed that both forest coverage and productivity could increase. That had a lasting impact on me. It helped me to see that restoration can be interpreted broadly, and to understand the different techniques that could be included in our national restoration plan.*
>
> *–JAIRON CASTELLANOS*

"My colleagues had a narrow view of what restoration could be: returning the land to its former undisturbed state," says Jairon. "Little by little, we are helping them understand that there are different ways of doing restoration that can maintain and improve existing land uses. This can be done in a way that improves ecosystem services while also enhancing the productivity of these areas. This was a big outcome from the course."

To advance this multifaceted view of restoration outcomes and techniques, Jairon and his team created a series of 'restoration handouts.' Each handout describes a different restoration technique – alley crops, windbreaks, home gardens, forage banks – and includes real examples from across the region, some of which are still active.

"The information I learned in the course has proven very valuable," Jairon enthuses. "It augmented my work monitoring restoration work through geographic information systems, and facilitated my ability to develop the restoration handouts. Now, we have the documents to help educate stakeholders about different restoration techniques. Next year, we hope to implement the national plan with broad support for these different techniques."

Acknowledgements
Jairon would like to thank Rommel Sarmiento, IUCN, and all the course participants who shared their experiences and knowledge.

Drone footage of the Flores community in Lempira, Honduras — © Jairon Castellanos

KOFFI ETIENNE KOUMAN

CÔTE D'IVOIRE TURNS IDEAS INTO ACTION USING ROAM

Visit to a plot of the classified forest of Anguédédou located in the Abidjan district — © Assamoi Yao Armand

Many Ivorians suffer the consequences of forest landscapes degraded by harmful farming practices such as bush fires and slash-and-burn crops: food insecurity, poor water quality, and conflicts over remaining arable land. It's one of the few experiences shared across Côte d'Ivoire.

"The country is comprised of over 60 ethnic groups. Each one of them is linked to a region, with its own way of using the land," says Koffi Etienne Kouman, Program Officer for Côte d'Ivoire's Directorate of Land Registration and Forestry Development. "We need to analyze and understand the realities of these populations before we can communicate the urgency of restoration to them and the government."

Koffi Etienne had a basic understanding of ROAM, but knew that taking the ELTI-IUCN online course Forest Landscape Restoration in the Tropics would make him more effective in his work advocating for restoration.

Koffi Etienne found the course's detailed exploration of the ROAM process especially helpful, and appreciated the opportunity to gain insights into strategies and perspectives from other participants.

> *"You have to think about turning restoration ideas and policies into actions on the ground. Here, that meant engaging the local leaders in each area. They are in direct contact with the population. They can promote these ideas, and ensure they're implemented.*
>
> *–KOFFI ETIENNE KOUMAN*

"After exchanging with other participants in the online course, I think today we are able to communicate better, in a way that the people understand," says Koffi Etienne. "The population is beginning to understand that there is an urgent need for restoration, for an investment in food security, watersheds, and soil quality."

Koffi Etienne has identified and begun to engage with a group of stakeholders essential for the success of this task.

"I very much want to set up a network of provincial authorities in the rural areas," he says. "These local leaders are the ones who can raise awareness among the rural populations. Thanks to what I learned about ROAM, we have a technique that will lead to action plans and decisions on the most appropriate activities for each province and ethnic group."

In addition to mustering popular support for landscape restoration, he and his department are planning a national-forest inventory. This marks an important step toward defining policies for the long-term restoration and conservation of the country's forests.

Acknowledgements
Koffi Etienne would like to thank the Ministry of Environment, Water and Forests, the Food and Agriculture Organization (FAO), the European Union (EU), the French Development Agency (AFD), and the University of Nangui Abroba.

Koffi Etienne (far left) with AKE Jerome, Elie Hakizumwami, Zana Inzan Ouattara, Ange-Marie Botroh and Dominique Endamana at a workshop on identifying restoration opportunities in degraded landscapes in Côte d'Ivoire — © Sehe Lou Bly Diane

MARTHA SAN ROMÁN

MAKING ENVIRONMENTAL POLICY IN SOUTHERN MEXICO MORE INCLUSIVE

Martha San Román — © Carlos Díaz

With limited resources available, Mexico's state and municipal governments take great care to prioritize and plan environmental management efforts.

One veteran of these challenges, Martha San Román, Director of Environmental Policy for the Administration of Environment and Natural Resources of the State of Campeche, took the ELTI-IUCN course Forest Landscape Restoration in the Tropics to expand her capacity to plan and oversee policies relating to landscape-level restoration.

"Before the course, I was worried the material would be too technical for me. I am not a forest engineer nor a biologist," Martha shares. "However, now that I have completed the course, I can say that anyone involved in decision-making in this field can and should take it."

After completing the course, Martha integrated elements from the ELTI-IUCN course into a three-day workshop for the state's Annual Operating Program (POA) for Environmental Policy Administration.

Martha guided discussions on topics such as: mapping; multi-stakeholder engagement; bringing together multiple sectors; and taking a comprehensive approach to setting environmental

> *"Restoration does not exclude harvesting from the land. On the contrary, if done strategically, it will lead to positive results, even for the landscape. We added this—and supporting principles—to a recent sustainability agreement with two neighboring states.*
>
> *–MARTHA SAN ROMÁN*

governance policy, prioritization of effort, and allocation of resources for the next year of operations.

"I'm especially proud that the POA's public policies take a bottom-up approach with significant outreach to communities and stakeholders," Martha says. "We are now working as a team with many sectors to ensure that economic growth is based on ecologically sound land-use planning and significant community buy-in."

In addition, rather than only focusing on restoration activities, the course helped Martha to think more broadly about the integrated nature of land-use decisions across a landscape along with the economic and social ramifications of restoration activities.

That inclusive, integrated approach led to outcomes such as an unprecedented collaboration between the decision makers of Campeche's agricultural and environmental sectors.

"Today, the Administration of Rural Development is one of our biggest allies in managing the implementation of a Fire Prevention Program," Martha enthuses. "Field burning for agriculture and livestock raising is a large barrier to sustainable land use and restoration in the Yucatan peninsula. This program's assertive planning is one of our team's biggest achievements, and a big step toward more sustainable land use."

Acknowledgments
Martha would like to thank the Governor of Campeche, Alejandro Moreno Cárdenas, and the Secretary of the Environment and Natural Resources of Campeche, Roberto Alcalá, for their support, trust and motivation.

Firefighters honored for their role in fighting forest fires in April 2017 as part of the Fire Prevention Program for Agricultural Activities in Campeche, Mexico — © Semarnat Campeche

MARTÍN REYES ACEVEDO

REGIONAL FORESTER CONNECTS WITH NATIONAL PEERS, SCALES UP RESTORATION EFFORTS IN PERU

Martin Reyes Acevedo explains the restoration opportunity mapping exercise to participants at an June 2017 workshop for ROAM in Padre Abad, Peru — © James McBreen

Deforestation in Peru's Aguaytía River Watershed increased dramatically after the construction of the Federico Basadre highway in the 1940s. When this highway connected Lima with Pucallpa, it led to more migration, forest conversion to agriculture, and other degrading activities in the Ucayali region.

Today, actors from multiple groups are collaborating to restore the area, including Martín Reyes Acevedo, a Research Associate for the World Agroforestry Center (ICRAF). They started exploring a landscape approach to restoration in the region, but were uncertain where to begin.

After learning about the potential of the Restoration Opportunities Assessment Methodology (ROAM), Martín enrolled in the course Forest Landscape Restoration in the Tropics to enrich his understanding of the methodology and how to incorporate it into his work.

After finishing the course, Martín says: "I now feel more confident to apply ROAM to designing a restoration plan for the Aguaytía watershed. I learned a lot by studying examples of restoration efforts from the region, and participating with the others in the course.

> *"I recommend this course for many reasons: you can participate according to your schedule; you get to learn from restoration efforts around your region, both successes and failures; and you get to network with colleagues, all of whom have in-depth knowledge to share.*
>
> *–MARTÍN REYES ACEVEDO*

Since course participants work at multiple scales, the connections they make with other participants allow them to build upon and strengthen each other's work.

For example, during opportunities for participant-to-participant feedback, Martín reunited with an important ally, Sara Yalle Paredes from Peru's National Forest and Wildlife Service and Authority (SERFOR). (See related story *Peru's national restoration efforts gather momentum*, page 30.)

"For her course assignment, Sara had compiled the ecological context, economic partners and spatial information about my study area," Martín enthuses. "Our interaction in the online course really helped the development of the proposal for the Aguaytía Watershed."

Since the course, Martín and his colleagues at ICRAF have continued to work with IUCN to support SERFOR to develop an assessment of restoration needs and opportunities for the Aguaytía watershed. Martín is applying ROAM's participatory approaches to engage with state government, local technicians, and community stakeholders and gather insights on restoration priority areas.

Once this subnational initiative is completed, Martín will work with these stakeholders to decide together on the most appropriate restoration activities and incentives for restoring the watershed's forested landscapes.

Acknowledgements
Martín would like to thank Peru's National Forest and Wildlife Service (SERFOR), the regional government of Ucayali (GOREU) and many district municipalities therein, the regional environmental authority of Ucayali (ARA), and members of civil societies and producers' associations.

Annual crops as part of a rotating crop system in Padre Abad, Ucayali, Peru — © ICRAF/Martín Reyes Acevedo

MICHELLE OJEDA

PHILIPPINES' FOREST MANAGEMENT BUREAU ADDS FLR TECHNIQUES

Michelle conducting a technical monitoring and evaluation at a National Greening Program site in Zamboanga Sibugay, Philippines — © Forest Management Bureau, National Greening Program Coordinating Office

Now in its second phase, the Philippines' National Greening Program (NGP) aims to accelerate the rehabilitation and reforestation of landscapes as a means to reduce soil erosion, landslides, and flooding.

"Even though our reforestation programs have been successful, there are still difficulties coordinating with various stakeholders," says Michelle Ojeda, Forester for the Philippines' Forest Management Bureau. "Since FLR is a new concept, we have few examples of successful domestic implementations of this approach to share with our stakeholders."

Michelle works in the Bureau's central office where she is involved in the planning and oversight of the NGP's implementation across the country. She took the ELTI-IUCN course Forest Landscape Restoration in the Tropics to expand her understanding of ROAM and her capacity to engage with stakeholders.

As the course progressed, Michelle realized how little she knew about landscape-level restoration, and became inspired to study more: "Right now I'm still reading new materials, re-reading course materials, and reviewing the lectures. And I'm sharing it with my colleagues. It's very helpful."

> *"Through the interaction with participants from different countries, I got to learn from their experiences on how to engage with stakeholders across social, geographic, and cultural borders. Now, I reference lessons and case studies from other countries in our program's planning.*
>
> *–MICHELLE OJEDA*

Michelle emerged from the course with a deeper understanding of ROAM and greater confidence to engage stakeholders.

"That's the most important thing I learned in this course: how to communicate with local people and convince them to help us," she says. "I learned that different people have different preferences and require different approaches. For example, when considering a project we propose, local people want information on the socio-economic benefits they can expect. This course taught me this strategy, and provided the case studies to convince stakeholders that FLR can benefit both people and the environment."

Michelle seizes every opportunity to share with her colleagues the knowledge she gained in the course. In the future, she hopes to plan a formal training to present some of the lessons learned from the course for her colleagues and other stakeholders.

Acknowledgements
Michelle would like to thank the World Bank, which provided her with the opportunity and funding to attend the course; ELTI and IUCN for all of the eye-opening lessons, and; the Philippines Forest Management Bureau for supporting her participation in the course.

Acacia mangium plantation established in 2011 by the National Greening Program in the province of Negros Oriental, Philippines — © Department of Environment and Natural Resources, Negros Island Region

MOSES EGARU

FARMERS IN NORTHERN UGANDA SOW SEEDS FOR FUTURE RESILIENCE

Moses conducting a water quality assessment in Rwizi catchment, southwestern Uganda — © Jasper Obua

Since the end of a 20-year civil war in 2007, the people of northern Uganda have leaned heavily on the region's forests and natural resources. Practices such as unsustainable charcoal production and subsistence agriculture have degraded the area's landscapes and water catchments.

In order to address this concern, Moses Egaru, a Program Officer for Water and Biodiversity at IUCN in northern Uganda, is coordinating a drought resilience program that takes a community-led approach.

"My major challenge was linking our efforts in the water and biodiversity program to the communities' traditional activities and economic needs," says Moses.

He took the online course Forest Landscape Restoration in the Tropics to expand his knowledge and capacity.

Moses's expanded knowledge and increased confidence have begun to show promising results.

"For the people of northern Uganda to adopt any restoration effort at scale, I knew it would have to be low cost," he says. "So I've coordinated trainings on farmer-managed natural regeneration [FMNR] for three districts: Lira, Otuke, and Alebtong."

> *"The online course helped me to understand the components of FLR, and how to connect actions at the grassroots level to the subnational and national levels in order to influence policy.*
>
> *–MOSES EGARU*

FMNR doesn't require capital investments to implement, and helps communities to select tree species with high environmental, cultural, and socio-economic benefits.

As of February 2017, 150 farmers have participated in the trainings. Each participant has committed one acre of farmland to practice and demonstrate the techniques he or she learns, and to pass on the training and challenge to 10 neighboring farmers.

"I am proud of what we've done, and also of what the communities have achieved," Moses shares.

Communities in the region have begun to see some of the benefits of restoring degraded landscapes: streams that were seasonal now flow year-round, the protected wetlands give better quality water in larger quantities, and some fishing is even possible.

On a larger scale, Moses has set strategic goals: "We have plenty of potential partners for restoration efforts, but we need a more coordinated approach for Uganda to meet its Bonn Challenge target to restore 2.5 million hectares of degraded and deforested landscapes by 2020. That's why I'm facilitating the development of landscape-level platforms where all stakeholders, led by government, can plan, share lessons, and engage on FLR."

Acknowledgements
Moses would like to thank the local governments of the Lira, Otuke, and Alebtong districts and World Vision for their help in facilitating the farmer-managed natural regeneration trainings.

A typical homestead within the Aswa catchment in northern Uganda. In the foreground is the shea butter tree (Vitellaria paradoxa), which is the dominant tree species in the landscape — © Moses Egaru

OHN LWIN

MYANMAR APPLIES ROAM AT THE NATIONAL LEVEL

Explaining the importance of governance for certification and timber trade at a Private Plantation workshop in Nay Pyi Taw, Myanmar May 25-26, 2017 — © Extension Division, Myanmar Forest Department

In August 2016, Myanmar launched the 10-year Myanmar National Reforestation and Rehabilitation Program (MRRP) with a mandate to enhance economic and environmental conditions through national reforestation and rehabilitation.

For help with this task, the Forest Department has commissioned The Nature Conservancy (TNC) Myanmar Program to facilitate the development of reforestation policy, and refine its forest management systems. This type of collaboration was unheard of in Myanmar before 2012, when the country transitioned from military rule to a democratic government.

"Before that time, all aspects of these projects were orchestrated by the central government: planning, financing, implementation, and maintenance," explains Ohn Lwin, a consultant for TNC-Myanmar, and 32-year veteran of Myanmar's Forest Department.

As part of an ongoing collaboration between IUCN and TNC on facilitating a national ROAM process for Myanmar, Lwin took the ELTI-IUCN course Forest Landscape Restoration in the Tropics. He recognized that the ROAM process aligns closely with Myanmar's movement toward greater transparency, inclusive planning and good

> *"The course offered something for every profession, background, and level of government. This was very impressive. I'm used to trainings oriented around a single operation, outcome, or role. Someday soon, I would like to lead a training like that, specifically for people in Myanmar.*
>
> *–OHN LWIN*

governance. He also saw an opportunity to increase the value he could add to TNC-Myanmar's work.

As Lwin had expected, ROAM's principles of engaging multiple stakeholder groups across sectors offered a promising framework. He has become a strong advocate for integrating ROAM into the MRRP.

Following the course, Lwin led a formal discussion and training about FLR and ROAM in the Forest Department, and presented on forest governance, market mechanisms, and policy development at workshops attended by representatives of private plantations, senior forestry officers, and forestry staff in May and July 2017. Recently, Lwin published an article on FLR and the Bonn Challenge in the July 2017 issue of a Myanmar forestry journal. He continues to seek opportunities to explain FLR and ROAM to other sectors, including agriculture, livestock, fishery, rural development and other government departments.

"Both government officials and private stakeholders are encouraging us to use the ROAM framework," says Lwin. "It is helping us to plan and implement the MRRP, including the plantation establishment and restoration process, which supports global initiatives such as the Bonn Challenge."

Acknowledgements
Lwin would like to thank ELTI, IUCN and The Nature Conservancy-Myanmar Program.

Stakeholder consultation meeting on forest management in Katha District (Forest Management Unit), Sagaing Region on February 7-8, 2017 — © Ohn Lwina

PAOLA AGOSTINI AND MEI XIE

WORLD BANK PARTICIPANTS CHAMPION ROAM TO PEERS AROUND THE WORLD

Mei Xie — © Mei Xie

A key component of the World Bank's approach to environment and natural resource management is empowering countries and institutions to help themselves and their environment by providing resources, sharing knowledge, building capacity and forging partnerships in the public and private sectors.

Before taking the ELTI-IUCN online course Forest Landscape Restoration in the Tropics, Dr. Mei Xie, Senior Natural Resources Management Specialist, and Paola Agostini, Global Lead for Forests, Landscapes and Ecosystems, at the World Bank, were unsure about how their institution could best support developing countries' efforts to restore degraded forest landscapes.

"We knew there was a lot that could be done, but we weren't sure where to focus," Mei recalls. "There are many actors governing and using the land in each country. We wanted to understand better how we could involve them in a meaningful way, during both preparation and implementation. Based on what we already knew about ROAM, we believed it would provide a useful framework that could help overcome this and related challenges."

> *"Being an economist, I really enjoyed the course's discussion on landscape ecology. I'm using the course's tools and methods in many of the programs I'm working on, from Burundi to Colombia to India.*
>
> *–PAOLA AGOSTINI*

At the time, Mei and Paola were producing an online course called Landscape 101, which included a Tools and Methodologies module. They wanted to include ROAM, and wished to learn more about it so they could address questions following their recommendation. They knew that the ELTI-IUCN course would provide a comprehensive learning package about ROAM.

The course did not disappoint. In fact, the participants became the presenters of workshops and trainings on the material shortly after completing the course.

"In our face-to-face training event in Kenya in July of 2016, in support of senior project managers and government representatives from 18 countries, I presented the ROAM steps, coupled with a hands-on exercise modified from the contents of the online course," Mei shares. "It was well received. Now, more countries have asked to participate."

Mei and Paola are now helping their colleagues and teams to design ROAM training for more countries. The World Bank has sponsored over 20 participants in several more ELTI-IUCN courses, and has since partnered with ELTI and IUCN to deliver a course for World Bank staff.

Acknowledgements
Paola and Mei would like to thank Mirjam Kuzee and her colleagues at IUCN's Global Forest and Climate Change Program for their partnership in landscape restoration.

Paola Agostini discussing the benefits of shade grown coffee in Burundi — © Asferatew Abate Abebe

SARA YALLE PAREDES

PERU'S NATIONAL RESTORATION EFFORTS GATHER MOMENTUM

Sara Yalle Paredes — © SERFOR

As Director of Sustainable Management of Forest Heritage for Peru's National Service for Forest and Wildlife, Sara Yalle Paredes had participated in several nationwide FLR efforts.

Success has varied due to challenges such as: gaining public participation and recognition of the benefits of restoration efforts, establishing consensus across organizational bodies on the objectives and opportunities for restoration, and securing funding.

Sara took the ELTI-IUCN online course Forest Landscape Restoration in the Tropics to build her capacity to plan, and engage multiple groups for unified restoration efforts.

Sara found the course's case studies especially instructive. Discussing other countries' restoration efforts – the successes and the failures – helped clarify her understanding of ROAM's process for FLR, identify several important planning stages absent from past restoration efforts, and define objectives, opportunities and the social context for restoration.

"After the course, I had the knowledge and communication tools to make a compelling argument for ROAM to my executive director and to the Minister of Agriculture," Sara says. "Now they're more involved in decision-making and dedicated to the process's success."

> *"I feel proud to have created a space for the systemized exchange of experiences and knowledge across different levels of government regarding the recovery of degraded areas. Together, we are building a national network of dedicated collaborators.*
>
> *–SARA YALLE PAREDES*

With the commitment of important collaborators, Sara is integrating aspects of the ROAM methodology into Peru's National Plan for the Recovery of Degraded Areas, mapping the opportunities for restoration and identifying priority areas for meeting Peru's commitment to the Bonn Challenge to restore 3.2 million hectares of degraded land.

At the sub-national level, Sara has been coordinating seven pilot FLR projects in different regions. Since Sara and her colleagues implemented principles of ROAM in those projects, the regional governments have committed more support for the restoration of larger areas. (See related story *Regional forester connects with national peers, scales up efforts in Peru*, page 20.)

Now, by strengthening the commitment to restoration at all levels of government, the national and sub-national plans for restoration include FLR's objectives and action-oriented steps, from the selection of degraded sites to the inclusion of diverse groups.

Acknowledgements
Sara would like to thank IUCN, the Food and Agriculture Organization, the World Resources Institute, Helvetas Andean Forest Program, the officials of regional and local governments, private industries, and the farmers and ranchers who live and work in the areas undergoing restoration.

The mosaic of land uses in Ucayali (Peruvian Amazon) — © ICRAF/Martín Reyes Acevedo

TANGU TUMEO

MALAWI INVESTS IN RESILIENT LANDSCAPES WITH NATIONAL ROAM ASSESSMENT

Tangu at a ROAM results validation workshop — © IUCN/Salome Begeladze

Malawi's past attempts to reverse the degradation of landscapes have largely taken a one-size-fits-all approach. As a result, forest cover, land productivity, and resilience of rural communities have continued to decrease.

"Sustainable agricultural techniques have been shared with farmers for over 20 years, and yet today adoption is as low as 10%. That's frustrating," says Tangu Tumeo, Principal Forestry Officer for Malawi's Ministry of Natural Resources, Energy and Mining.

In May of 2016, Tangu participated in the online course Forest Landscape Restoration in the Tropics. Though the course's subject matter wasn't new – she'd participated in an introductory training in 2015 – she attained a better command of the material when she "interacted with the other students in the online course."

"The course helped me understand the importance of a no one-size-fits-all approach to FLR," Tangu explains. "I have had very interesting discussions on what I learned from the course with my peers in the government and other institutions. Now, we all agree that it's important to account for variations in each district's biophysical

> *"We have invited delegates from 18 African countries to share the results of our ROAM assessment and a national strategy for implementation. Once they see our work, we believe they will return home motivated to drive their own forest landscape restoration efforts.*
>
> *–TANGU TUMEO*

characteristics, degradation factors, and to involve the people who live in or near the landscapes we're working to restore from the start and not only during implementation."

Tangu's participation was well timed. She and her team began Malawi's national ROAM assessment upon the conclusion of the online course.

With that assessment's report and implementation strategy launching in July 2017, Tangu is optimistic: "We've identified opportunity areas and come up with a National Landscape Restoration Strategy to focus the implementation of restoration interventions across the country efficiently and effectively. Malawi as it is has been given a great opportunity to turn things around. We have to see results in the next five years."

Out in the districts, Tangu engages her compatriots with fresh energy: "It's exciting to bring data and success stories to convince farmers and other stakeholders that a unified restoration movement incorporating agroforestry and sustainable agriculture is really the best way to go."

Acknowledgements
Tangu would like to thank IUCN, the World Resources Institute, Malawi's Department of Forestry, the USAID-funded PERFORM project, the government of Germany, and the UK Department for International Development.

Tangu having a focus group discussion with a group of women during a ROAM site visit in Mwanza district, southern Malawi — © IUCN/Mirjam Kuzee

ABOUT ELTI

ELTI is a capacity development initiative of the Yale School of Forestry & Environmental Studies that trains and supports people from all sectors and backgrounds on how to restore degraded tropical forest landscapes using strategies that are socially, technically and financially feasible and sustainable over time. The Yale-ELTI training model emphasizes the development of skill sets that participants can apply to their own restoration initiatives. Throughout the training experience, participants receive personalized guidance from specialists of the Yale-ELTI network of scholars and practitioners to develop a restoration plan. After the course, they can apply to ELTI's Leadership Program to receive financial and technical support to implement their own restoration courses and projects.

ONLINE TRAINING

Participants connect with world-renowned scholars and professionals from a range of countries working on applied forest restoration projects in the tropics. They learn how to design and implement effective, inclusive restoration policies and initiatives in their local communities. Each course features materials developed at Yale University and by our in-country partners.

FIELD TRAINING

Blending cutting-edge research, local wisdom and hands-on experiences, we explore the natural and social sciences aspects of conservation and restoration policy and practice. We frame the learning process and guide discussions at multiple scales from the global to the local. We help empower people to manage land sustainably in ways that support their regions' long-term needs and interests.

LEADERSHIP

Our alumni's creativity and passion makes the Leadership Program a unique component of our capacity-building paradigm. Rather than promote specific actions, we listen to the needs and interests of each individual and work with them to make their goals a reality. We provide technical assistance and guidance, but the ideas always come from our alumni.

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ABOUT IUCN

IUCN is a membership Union uniquely composed of both government and civil society organizations. It provides public, private and non-governmental organizations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together.

Created in 1948, IUCN is now the world's largest and most diverse environmental network, harnessing the knowledge, resources and reach of more than 1,300 Member organizations and some 16,000 experts. It is a leading provider of conservation data, assessments and analysis. Its broad membership enables IUCN to fill the role of incubator and trusted repository of best practices, tools and international standards.

IUCN provides a neutral space in which diverse stakeholders including governments, NGOs, scientists, businesses, local communities, indigenous peoples organizations and others can work together to forge and implement solutions to environmental challenges and achieve sustainable development.

Working with many partners and supporters, IUCN implements a large and diverse portfolio of conservation projects worldwide. Combining the latest science with the traditional knowledge of local communities, these projects work to reverse habitat loss, restore ecosystems and improve people's well-being.

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ukaiddirect.org

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