

COURSE REPORT

Tropical Forest Restoration in Human-Dominated Landscapes

(Delivered in English)

September 25 to November 5, 2017

An online course organized by:

The Environmental Leadership and Training Initiative (ELTI)

Background: As the damaging effects of deforestation are being observed throughout the tropics, there has been increasing interest in the restoration of tropical forests and native tree cover. However, many restoration projects do not meet stated goals over time because the species and methods employed do not match the biophysical and social conditions of the restoration site. The various agencies and actors involved in restoring degraded and deforested lands oftentimes establish single-species tree plantations, in many cases using short-rotation exotic species which can do little to restore the biodiversity and functioning of forest ecosystems. Meanwhile, in the tropics there are hundreds to thousands of native tree species that have potential to provide economic and ecological benefits if used for the wide range of interventions that restore tree cover, such as reforestation, assisted natural regeneration and direct seeding. Understanding the ecological processes that relate to forest functioning and the socio-political contexts of landholders can guide decision-making and the development of strategies for effective forest restoration and sustainable land management.



View of part of Bosawas Biosphere Reserve from its eastern limit, which was the focal area for participant Jean-Yves Duriaux's final project. Photo credit: Jean-Yves Duriaux

ELTI is an initiative of the Yale School of Forestry & Environmental studies and was created with generous support from Arcadia, a charitable fund of Peter Baldwin and Lisbet Rausing (www.arcadiafund.org.uk).

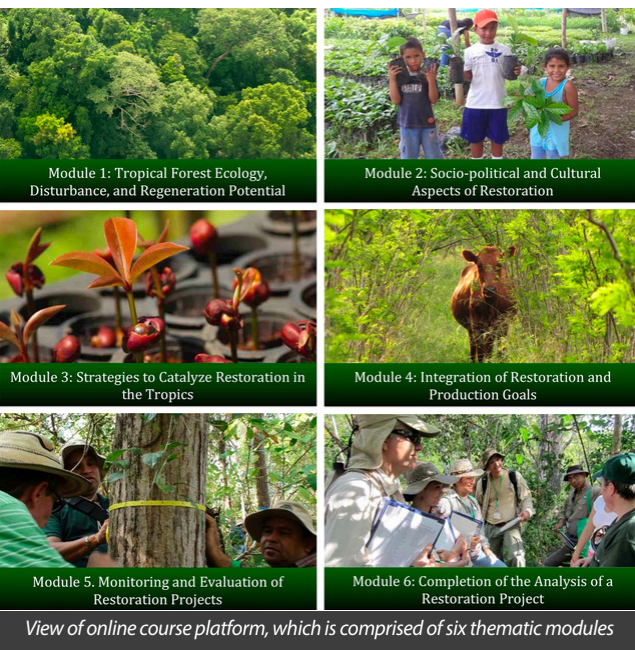


Live discussion sessions with lead instructor, Dr. Mark Ashton (left), and with guest experts, Dr. Florencia Montagnini and Jacob Slusser (right). Live sessions were held using videoconference software, "Zoom", which allowed for dialogue between course participants and invited guest experts.

This online course was designed to provide participants with an introduction to the concepts and techniques needed to plan and implement strategies for the restoration of forests and ecosystem services in multiple-use landscapes. The course was offered to practitioners and professionals looking to advance their knowledge about tropical forest ecology and restoration. The course included a series of presentations, discussions, readings, and activities that guide the development of a restoration management plan and the application of concepts learned in the weekly modules. Additionally, this course provided the opportunity for participants to meet and share experiences, concepts, and tools with each other, the ELTI facilitators, and guest experts.

Course Objectives:

- Present the basic principles of forest tropical ecology, natural and anthropogenic disturbances, and how those disturbances affect the potential for regeneration;
- Provide the knowledge to evaluate and compare an array of tropical forest restoration methodologies and how the biophysical and socioeconomic conditions of a site influence the decision-making about which strategies to utilize;
- Allow participants to analyze the ecological conditions, disturbance history, sociopolitical factors, and monitoring plans for the adaptive management of a specific restoration/reforestation program; and
- Provide the opportunity for participants to engage in critical discussion on a weekly basis.



View of online course platform, which is comprised of six thematic modules

Format: This six-week course was offered in English and was divided into thematic modules, each one lasting a week. The thematic modules were:

- Module 1.** Tropical Forest Ecology, Disturbance, and Regeneration Potential
- Module 2.** Socio-political and Cultural Aspects of Restoration
- Module 3.** Strategies to Catalyze Restoration in the Tropics
- Module 4.** Integration of Restoration and Production Goals
- Module 5.** Monitoring and Evaluation of Restoration Projects
- Module 6.** Completion of the Analysis of a Restoration Project

Educational Tools:

- Pre-recorded guest lectures that depicted the video of the guest speaker, along with the PowerPoint slides;
- Interactive presentations that provided a synthesis of core concepts;
- Suggested readings to complement the presentations;
- Case studies from Colombia, Indonesia, Mexico, Panama, the Philippines, Rwanda, and Sri Lanka;
- Weekly online live discussion sessions with the lead professor and invited guest experts;
- Weekly discussion forums, during which participants are asked to share their thoughts and questions about the weekly material; and
- Discussion forums for individual work towards the creation of a final project: a preliminary management plan for restoration on a site of professional interest or for a hypothetical site.

At the end of the course, participants who completed the course requirements received a certificate of participation.

Participants: Twenty environmental professionals participated in the course. Participants came from 14 different countries and represented a variety of sectors, including government, non-governmental organizations, private companies, academia, and public-private partnerships.



Case Study: Forest Rehabilitation in Old Pine Plantations in Sri Lanka

Peradeniya, Sri Lanka



N. Gunatilleke

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Interactive Case Study Presentation on forest rehabilitation in exotic pine plantations in Sri Lanka, by lead instructor, Dr. Mark Ashton.



*Photo showing the contribution of pioneer tree species (*Calliandra calothyrsus*) to control herbaceous competition and grass fires, at the project site of course participant, Neil Konrad Binayao III, in the Philippines. Photo credit: Neil Konrad Binayao III, Hineleban Foundation Inc.*



Photo of a Bukidnon woodcock chick (Scolopax bukidnonensis), a Philippine-endemic bird threatened by habitat loss, at the project site of course participant, Neil Konrad Binayao III. Photo credit: Neil Konrad Binayao III, Hineleban Foundation Inc.

Instructors and Coordinators: **Dr. Mark Ashton** from the Yale School of Forestry & Environmental Studies (F&ES) served as lead professor for this course. He participated in four live sessions and provided feedback on project work throughout the course. **Karin Bucht**, ELTI's Online Training Program Associate, facilitated the delivery and management of the course, with teaching assistance from **Asha Bertsch** (M.F. 2018, Yale F&ES). Other instructors who participated in live video conferences included:

- **Gillian Bloomfield**, Environmental Leadership and Training Initiative, United States
- **Zoraida Calle**, CIPAV, Environmental Leadership and Training Initiative, Colombia
- **Eva Garen**, Environmental Leadership and Training Initiative at Yale University, United States
- **Bradford Gentry**, Yale University, School of Forestry & Environmental Studies, United States
- **Florencia Montagnini**, Yale University, School of Forestry & Environmental Studies, United States
- **Jacob Slusser**, Environmental Leadership and Training Initiative at Yale University, Panama
- **Mark Wishnie**, The Nature Conservancy, United States

Outcomes and Follow-up: The majority of participants were actively engaged throughout the course, benefited from the feedback they received from the instructors and their peers, and successfully completed their preliminary management plans. In the months following the course, ELTI will follow up with the participants to see how the course and final project have influenced their professional development and the management of their individual restoration sites.

For more information: Please contact Karin Bucht, ELTI Online Training Program Associate (Karin.Bucht@yale.edu)