COURSE REPORT

Monitoring Forest Restoration for Adaptive Management
(Delivered in Portuguese)
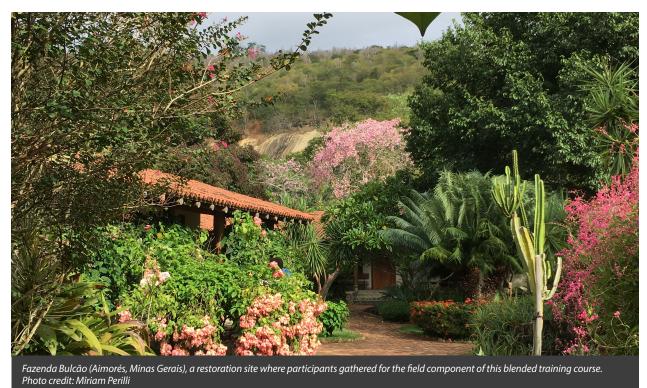
March 25 to May 19, 2019

A blended online and field course organized by:
The Environmental Leadership and Training Initiative (ELTI) at the Yale School of Forestry & Environmental Studies;
Instituto Terra; the UN Environment Brazil

With content and facilitation support from:
IPÊ - Institute for Ecological Research (Instituto de Pesquisas Ecológicas);
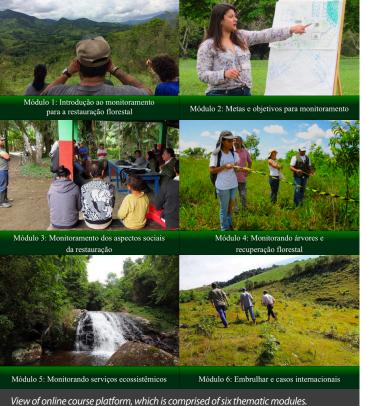"Luiz de Queiroz" College of Agriculture at the University of São Paulo (ESALQ-USP)

Summary: This online course was designed to help restoration professionals understand and deepen their knowledge about planning and carrying out monitoring activities in areas undergoing forest restoration. The course addressed the importance of monitoring for adaptive management, methods for matching indicators with restoration objectives, and techniques for evaluating the forest recovery, ecosystem services, and social processes of landscape restoration. The weeklong field component of the course allowed participants to see examples of successful restoration and practice monitoring skills first-hand. In the six-week online component, participants engaged with a series of presentations, live videoconference discussions, and exercises designed to link theory with practice and guide them in a process of developing individual plans for monitoring their restoration initiatives.

*Fazenda Bulcão (Aimorés, Minas Gerais), a restoration site where participants gathered for the field component of this blended training course.
Photo credit: Mîriam Perilli*

Yale SCHOOL OF FORESTRY &
ENVIRONMENTAL STUDIES

INSTITUTO TERRA

ONU
meio ambiente
Programa das Nações Unidas
para o Meio Ambiente

Módulo 1: Introdução ao monitoramento para a restauração florestal

Módulo 2: Metas e objetivos para monitoramento

Módulo 3: Monitoramento dos aspectos sociais da restauração

Módulo 4: Monitorando árvores e recuperação florestal

Módulo 5: Monitorando serviços ecossistêmicos

Módulo 6: Embrulhar e casos internacionais

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

Format: This blended online and field course was offered in Portuguese and was divided into thematic modules, each one lasting a week. The themes of each week were:

Online Module 1. Introduction to monitoring forest restoration

Online Module 2. Goals and objectives of monitoring

In-Person Field Week. Fazenda Bulcão, Minas Gerais, Brazil

Online Module 3. Monitoring social aspects of restoration

Online Module 4. Monitoring trees and forest recovery

Online Module 5. Monitoring ecosystem services

Online Module 6. International case studies and developing a monitoring plan

Course objectives:

- Present an introduction to the importance of monitoring forest landscape restoration;
- Provide information on the fundamental concepts necessary for planning forest landscape restoration and setting monitoring objectives;
- Empower participants to analyze monitoring goals and objectives and to select indicators;
- Present examples and key concepts for monitoring social and biophysical indicators of restoration success;
- Provide the opportunity for participants to think critically about who will do the monitoring activities and how to engage local communities;
- Provide participants with the opportunity to reflect on course topics and to create a preliminary monitoring plan for their individual context.
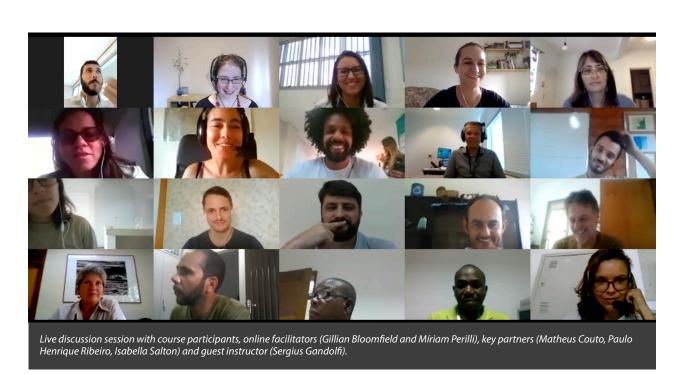

Monitoring exercises conducted during the field week in Minas Gerais, Brazil. Photo credit: Míriam Perilli

Six-week online component: The course was designed to facilitate the exchange of ideas and collaborative distance learning through the use of:

- Pre-recorded presentations by course instructors and guest lecturers;

- Interactive text-based presentations that provide a synthesis of core concepts;

- Suggested readings to complement the presentations;

- Case studies from Argentian, Brazil, Colombia, and Mexico;

- Weekly online live discussion sessions with the course instructors and invited guest experts;

- Weekly discussion forums, during which participants shared their thoughts and questions about the material and the challenges they face in their projects; and

- Assignments guiding the participants to create a final project: a preliminary monitoring plan for a restoration project.

Participants who completed the course requirements received a certificate of participation.

Pre-recorded presentation by guest speaker, Severino Ribeiro (top) and interactive text-based synthesis presentation (bottom).

Live discussion session with course participants, online facilitators (Gillian Bloomfield and Míriam Perilli), key partners (Matheus Couto, Paulo Henrique Ribeiro, Isabella Salton) and guest instructor (Sergius Gandolfi).

Weeklong field component: Given the diverse backgrounds of the course participants, the field course started with a review of the key concepts and principles of forest restoration. Participants explored the theory and processes involved in restoring tropical wet and dry forests and how those processes can be evaluated as part of monitoring forest restoration projects.

Participants then visited demonstration areas within the 710 hectare 'Fazenda Bulcão' site to observe restoration areas and learn about the monitoring activities which have been conducted on the site during the 20 years of recovery.

Participants practices monitoring skills by dividing into groups and collecting data about two sites with different age of recovering forest and which underwent different restoration techniques. They analyzed and discussed the results and implications of the monitoring information gathered at the sites.

Finally, participants heard a presentation and engaged in active discussion about the monitoring of socioeconomic indicators for restoration success.

Participants: This course was designed for a diverse audience, including professionals working in forest management, agriculture, rural development, environmental policy, agricultural extension, environmental education, academia and other environmental fields. Participation in the course was fully subsidized by the UN Environment Brazil.

The cohort of participants included 21 environmental professionals; 19 coming from different regions of Brazil and 2 participating remotely from São Tomé and Príncipe. Participants represented a variety of sectors including government, non-governmental organizations, private companies, and public-private partnerships.

Participants in the field component in Minas Gerais, Brazil. Photo credit: Míriam Perilli

Instructors and Coordinators:

Míriam Perilli, ELTI's Brazil Program Coordinator, and **Gillian Bloomfield,** ELTI's Online Training Program Coordinator, facilitated the delivery and management of the six-week online component of the course, with teaching assistance from Yale F&ES graduate **Alaine Ball**.

Paulo Henrique Ribeiro, Environmental Manager, Instituto Terra, facilitated the delivery and management of the weeklong field component.

Professor Sergius Gandolfi guiding participants on a site visit to a restoration area at Fazenda Bulcão. Photo credit: Míriam Perilli

Sergius Gandolfi from the "Luiz de Queiroz" College of Agriculture at the University of São Paulo (ESALQ-USP) served as the lead professor for the field component. Dr. Gandolfi recorded a lecture for the online component and offered feedback and insights to participants during the live videoconference sessions.

Florencia Montagnini, Senior Research Scientist at the Yale School of Forestry & Environmental Studies, and **Zoraida Calle,** ELTI's Colombia Program Coordinator, attended live discussion sessions and provided feedback on project work throughout the course.

Other primary contributors who provided pre-recorded video lectures and/or participated in live video conferences, included:

- **Tiago Pavan Beltrame,** Restoration Researcher, IPÊ - Institute for Ecological Research, Brazil
- **Matheus Couto,** UNEP-WCMC Brazil Focal Point, Brazil
- **Laury Cullen Jr.,** Senior Researcher and Project Coordinator, IPÊ - Institute for Ecological Research, Brazil
- **Amity Doolittle,** Senior Lecturer and Research Scientist, Yale School of Forestry & Environmental Studies, United States
- **Paula Pedro,** Executive Director of the Latin America and the Caribbean office, Abdul Latif Jameel Poverty Action Lab (J-PAL), Chile
- **Severino Rodrigo Ribeiro Pinto,** Chief Executive Officer of the Northeast Environmental Research Center (CEPAN); National Coordinator of the Atlantic Forest Restoration Pact, Brazil
- **Alexandre Sampaio,** Environmental analyst and researcher, Chico Mendes Institute for Biodiversity Conservation (ICMBio), Brazil
- **Izabella Teixeira,** Former Brazilian Minister of Environment, Brazil
- **Alexandre Uezu,** Senior Researcher and Project Coordinator, IPÊ - Institute for Ecological Research, Brazil

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 monitoring plans. Participants commented that having the field component at the beginning of the course was important as it allowed for a more immersive exchange of experiences and encouraged them to become more involved with the online modules in the later weeks. In the months following the course, ELTI will follow up with the participants to see how the course and final projects have influenced their professional development and the monitoring of their restoration efforts.

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