

## COURSE REPORT

**Rainforestation Training  
for Climate-Resilient Recovery**

Inopacan, Leyte, Philippines  
May 18 – 20, 2017

**A course organized by:**

Environmental Leadership &amp; Training Initiative (ELTI)

Institute of Tropical Ecology &amp; Environmental Management of Visayas State University (ITEEM-VSU)

Local Government Unit of Inopacan



Degraded upland area of Inopacan, Leyte, dominated by *Imperata cylindrica*

**Background:** On November 8, 2013, one of the strongest tropical cyclones ever recorded hit the central Philippines. Super typhoon Haiyan (known locally as “Yolanda”) wreaked havoc particularly on Eastern Samar and Leyte provinces, causing over six thousand casualties and billions of dollars in damages. International and local aid agencies immediately focused on relief operations to provide the basic needs of the 4.1 million people displaced by the disaster, including temporary shelters, clean drinking water, food assistance, medical supplies and sanitation facilities. Rehabilitation efforts followed with the rebuilding of homes, roads and other critical infrastructure.



Dr. Marlito Bande discussing the performance of recently planted native tree species

One of the main sources of income in this region is coconut production; Eastern Samar and Leyte are the second highest coconut-producing region in the country, with almost 270,000 hectares combined. The typhoon damaged an estimated 33 million coconut trees, with 13 million totally destroyed in the two provinces. This has greatly impacted over a million coconut farmers who are already among the poorest and most vulnerable in the country. Some of the farmers have replanted their lands with coconut seedlings provided by aid groups and the national coconut agency; however, they still need to wait six to eight years for the trees to become productive. In the meantime, intercropping with vegetables and fruit trees is being promoted for subsistence and short-term income generation. In other areas, land is being abandoned or sold due to a lack of capital to rehabilitate the areas.

Rehabilitating natural ecosystems is crucial in post-disaster recovery to support human livelihoods and sustain the delivery of ecosystem goods and services, including a steady supply of water and protection from future extreme weather events. This is an integral part of a climate-resilient recovery strategy, where communities are not only provided with assistance to recover from climate change events but are also equipped to deal with future disasters better. The destruction of many of the region's coconut monocultures, in particular, provides an opportunity to rehabilitate the watersheds in such a way that not only supports local communities' agriculture and forest-based livelihoods, but that also preserves biodiversity and provides a more optimum supply of ecosystem services.

Realizing the need to address this gap in the rehabilitation efforts, ELTI and ITEEM-VSU designed a training program aimed at rehabilitating the damaged watershed areas in Eastern Samar and Leyte, while at the same time, augmenting the current farming system in the surrounding areas using the Reforestation approach—a participatory, native species-based reforestation/agro-forestry strategy developed by VSU and the German



Society for International Cooperation (GIZ, formerly GTZ) in the early 1990s. This training is the second in this series and is intended to serve as a modest yet concrete contribution to the long-term initiative to 'build back better' in the region.

**Objectives:** The specific aims of this training course were as follows:

1. To provide participants with a solid understanding of the principles of Rainforestation and its application in different ecological and social contexts;
2. To provide participants with a basic understanding of forest ecology and natural succession, and an array of restoration strategies;
3. To guide participants through the process of designing farm site and watershed management plans based on site-specific factors and user needs;
4. To teach participants the process and practice of establishing a Rainforestation site through hands-on experiential learning; and
5. To foster an exchange of experiences, lessons learned and best practices for applying Rainforestation in watershed areas.

**Course Obejectives:**

The training was held in an upland region of Inopacan which is characterized by thousands of hectares of degraded grassland and brushland, interspersed with coconut monocultures, tree gardens and secondary forest patches within riparian zones. The site also contains a 8.4 hectare research site managed by VSU-ITEEM in which the growth performance of a variety of native forest trees is currently being tested.



Participants making bio-fertilizer



Participants mixing rice hull with IMO2 solution to make organic fertilizer



Participants filling polybags with mixed potting medium

**Day 1:** The training was opened with introductory remarks by Hon. Pablito Celito Manapsal (Barangay Captain of Linao), Mr. Anecito Asencion (a representative from the Inopacan Mayor's Office), Dr. Jose Bacusmo (VSU Director for Research), Dr. David Neidel (ELTI Program Coordinator for Asia), and Dr. Efen Saz (VSU Director for Extension). Ms. Joyce Quiñones (ELTI Research Assistant) set the context for the first session by discussing the current state of biodiversity in the Philippines and the implications for the provisioning of environmental services. Dr. Guiraldo Fernandez (Head of the VSU Department of Liberal Arts and Behavioral Sciences) then discussed the importance of sustainable environmental management in avoiding natural resource conflicts by discussing research recently conducted in the neighboring watershed of Baybay City. Afterwards, Dr. Marlito Bande (Professor at ITEEM-VSU) provided an overview of Rainforestation, outlining the history and principles of the approach, the need to restore Philippine forests and biodiversity, and the opportunities and constraints to developing Rainforestation sites.

Following lunch, Ms. Angelita Orias (Lecturer at ITEEM-VSU) drew upon a recent analysis of the long history of Rainforestation establishment in the region to highlight a variety of factors that often contribute to the successful adoption of Rainforestation. Engr. Jimmy Pogosa (Lecturer at ITEEM-VSU) then discussed the methods and important site characteristics needed for establishing a low-cost nursery. Mr. Juanito Poliquit (VSU Eco-Farm & Resource Management Institute) discussed the steps needed to produce bio-fertilizer—a economically & ecologically-beneficial alternative to commercial fertilizers. Finally, Mr. Fedilito Almeroda (ITEEM-VSU) discussed propagation techniques for native trees species.

**Day 2:** The second day of the training consisted of a series of hands-on demonstrations. Mr. Poliquit walked participants through the steps needed to create different varieties of bio-fertilizer and had participants mix the bio-fertilizer in with potting media. Mr. Jimmy Pogosa and Dr. Marlito Bande then guided participants through the steps needed to fill the polybags, prepare small wildlings for transfer to the polybags in a way that reduces evapotranspiration while they reestablish their root systems, and



Participants discussing and making their own individual farm plans



Participant presenting his farm plan and receiving feedback from Dr. Bande



Distribution of seedlings to the participants in order to start their rainforestation farms

the installation of a recovery chamber, which serves as an intensive care unit for the wildlings.

In the afternoon, participants broke into small groups in order to develop their own individual or family farm plans, which they then presented to the larger group for course instructors to provide feedback. The participants then had a tour of the Rainforestation research site where they were introduced to the different experiments that are underway. It was important for participants to see these early stage Rainforestation sites so they have a realistic expectation about how quickly the trees will grow. The day ended with all the participants receiving a variety of quality tree seedlings for planting in their individual areas. ELTI and VSU had contributed the seedlings from a variety of native dipterocarp and pioneer species to jumpstart the restoration initiative.

**Day 3:** The third and final day of the training was comprised of a series of site visits to existing Rainforestation demonstration areas located in the vicinity of the VSU campus. Participants first went to the Patag site where they visited a community nursery and then a mixed species timber stand that had been established by the local People's Organization. They then visited the Marcos site, where they learned about Rainforestation agroforestry from the private landowner who had developed the site. Afterwards, they visited the original Rainforestation demonstration site on the VSU campus, as well as had brief introductions to some of the many research projects on native species that are currently underway.

Following lunch, a group of VSU students presented the results of survey that they had conducted to assess the current state of land use practices and resource use in Inopacan. One of the interesting results was that many of the people in Inopacan had not previously regarded their land as degraded. Based on comments following the presentation, however, it was clear that the participants were now aware of a variety of strategies for developing more productive land use practices. The training ended with closing remarks by Dr. Humberto Montes (Director of ITEEM-VSU) and the issuing of certificates by Dr. Montes and Dr. Neidel.



Training participants and resource people

**Participants:** The training was attended by 26 participants from Inopacan.

**Follow-up:** ITEEM-VSU and ELTI will continue to work with the training participants and monitor the establishment of their Rainforestation sites. They are also working with the Inopacan Mayor's Office and others to develop the upland region, where the training took place, as an integrated research/training area for a variety of sustainable land use practices. ITEEM-VSU and ELTI are also exploring opportunities with training program alumni and local partners in the region to replicate this training and develop additional restoration sites in the areas of Eastern Samar and Leyte that were most severely affected by the super typhoon.

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