

COURSE REPORT

INTEGRATING RAINFORESTATION FARMING TO PROMOTE SUSTAINABLE AGARWOOD PRODUCTION IN THE PHILIPPINES

July 26-29, 2021

Baybay City, Leyte Philippines

An online course organized by:

Environmental Leadership & Training Initiative (ELTI)

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

Restoration Initiative for Sustainable Ecosystems (RISE)



Background: The Philippines is one of the world's 18 mega-diverse countries, which contain two-thirds of the earth's biodiversity with a very high level of species endemism. Unfortunately, the Philippines has suffered from wide-spread deforestation and forest degradation, threatening its rich biodiversity. According to the FAO definition, the Philippines has 7.2 million ha of forest ecosystems remaining, comprising approximately 24% of the total land area. However, it is estimated that between 2000-2005, the Philippines lost 2.1% of its forest cover annually, representing the second fastest rate of deforestation in Southeast Asia (after Myanmar) and the seventh fastest in the world. As a result, many of its forest-dependent species are now in jeopardy. Indeed, an

ELTI is an initiative of: **Yale SCHOOL OF THE ENVIRONMENT**



Dr. Bande welcoming participants to the RF farm of Dr. Fernandez

administrative order issued by the Department of Environment and Natural Resources (DENR) in 2007, reported 99 plant species that are critically endangered, 187 are endangered, 176 are vulnerable, and 64 are threatened.

In the Philippines, overexploitation to meet commercial demand has threatened the existence of many tree species, including *Aquilaria* species. *Aquilaria*, which is mostly found in the forests of Visayas and Mindanao, has long been exploited elsewhere in Southeast Asia, but only recently became the target for harvesting in areas near VSU. Known as agarwood or incense wood, the species in this genus are prone to a fungal infection which makes the heartwood aromatic. Agarwood is used for medical purposes in the Ayurvedic and Traditional Chinese medicine traditions. It also used to make aromatic materials for religious ceremonies in the Middle East and East Asia, as well as in the perfume industry. The DENR has made it illegal to buy, sell, collect, or transport *Aquilaria*, but hunters nevertheless still seek out this tree, which is destructively harvested.

In response to this intensive harvesting pressure, ELTI, VSU-ITEEM and RISE are working together to conduct a massive education and information drive to promote the sustainable use of *Aquilaria* by incorporating it into rainforestation farming (RF) systems. VSU developed RF in the 1990s as an agroforestry system that uses native species for sustainable forest restoration. RF has been accepted as an official reforestation strategy at the national level through the DENR Memorandum Circular No. 2004-06 which provides guidelines for integrating rainforestation farming in the development of open and denuded areas within protected areas and other appropriate forest lands.

Course Objectives:

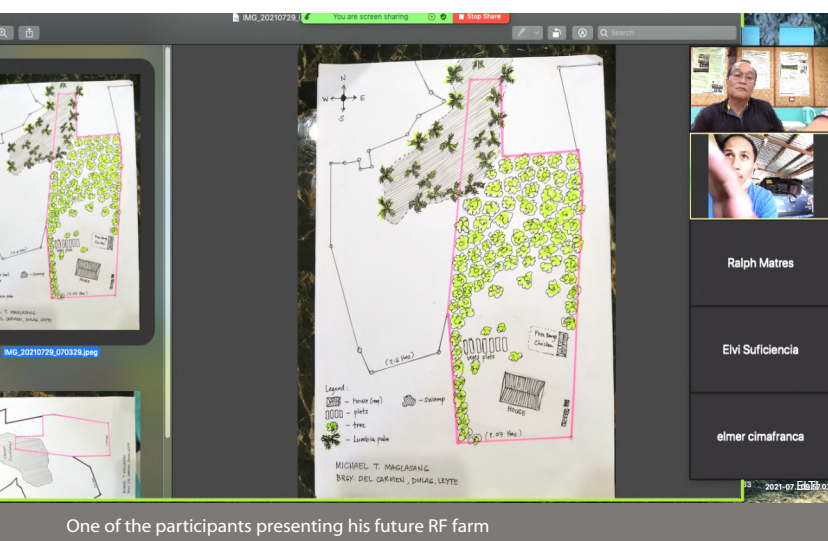
- provide a well-grounded understanding of the importance and value of forest ecosystems
- introduce the theory and principles underlying RF
- promote the sustainable cultivation of *Aquilaria* and use of agarwood
- assist participants in developing individual farm plans

Course Format:

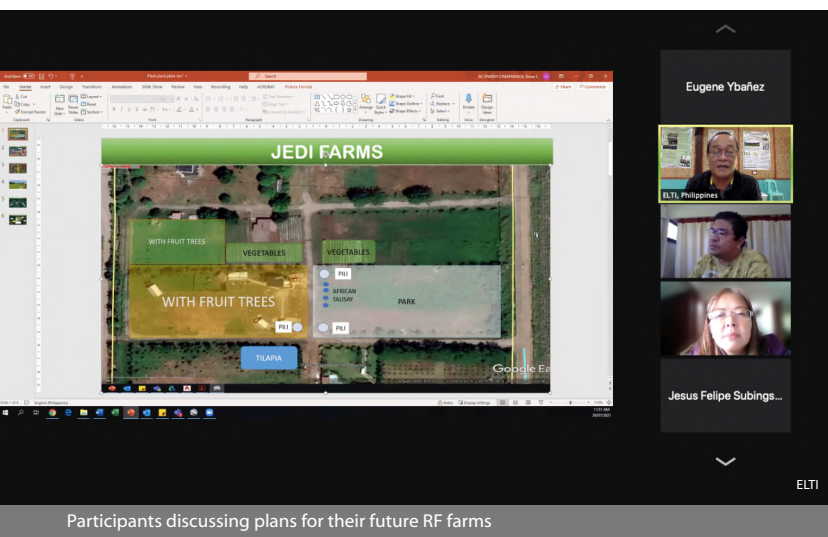
The four-day, online course was held every day from 9 AM until 12 noon (Philippines time).



Dr. Bande delivering his lecture on climate-smart agro-ecological production



One of the participants presenting his future RF farm



Participants discussing plans for their future RF farms

Program

Day 1

Course participants were welcomed online by Dr. Marito Bande (VSU-ITEEM faculty member) followed by a message by Dr. Guiraldo Fernandez, Jr. (VSU faculty member) on behalf of the President of VSU. An overview of the online training course was delivered by Joy Compendio (ELTI Philippine Program Assistant). Afterwards, Kleer Jeann Longatang (VSU-ITEEM faculty member) provided a lecture which highlighted the status of the Philippines as a biodiversity hotspot, and the economic value of the ecosystem services provided by the Philippine forests. Following a short ice breaker, Joy Compendio then gave an overview of the history, geographical distribution and the economic value of *Aquilaria* species.

Day 2

The first lecture was presented by Angelita Orias, (faculty member of VSU-ITEEM), which described the drivers of deforestation in the Philippines, the origins and main objectives of RF, and the process of RF site establishment. Dr. Fernandez and Mr. Eufrazio Maratas (RISE Executive Director), both of whom had developed RF sites with ELTI leadership program grants, then shared their experiences, discussing the challenges and insights in adopting RF on their own farms.

Day 3

Dr. Bande gave a presentation on developing a climate-resilient agro-ecological production system, which discussed the problems with monocultures, outlined approaches to conservation farming, and described several different approaches to integrating economically valuable crops, like abaca and cacao with local forest trees. Engr. Jimmy Pogosa (VSU-ITEEM faculty member) then gave a



Participants discussing the importance of native species in forest restoration and conservation



One of the participants planting a tree



Group photo at the RF farm of Prof. Posas

presentation on nursery establishment, fruiting phenology, seed treatment, collecting wildlings, and the development of a recovery chamber.

Day4

The participants were asked to create farm plans describing the current status of their own individual farms and how they hoped to integrate RF. Each participant was then given an opportunity to share their farm plans to the group. The ELTI, VSU-ITEEM and RISE team, as headed by Dr. Marlito Bande gave their comments and concerns about each of the farm plans. Since the course was just conducted online, it was discussed that the provision of a more detailed technical advices and idea will be delivered soon after visiting the participant's individual farm.

Course Participants:

A total of 22 individuals participated in the course. The participants were mainly from Ormoc City, Leyte, but several others joined from Jaro and Tacloban City. Some participants also involved their children in the entire four-day course with the aim of giving them new ideas about RF and other conservation farming techniques.

Follow-up: After the four-day training, the participants were very eager to visit actual RF farms. Although it was not initially included in the training design due to the Covid-19 pandemic, the organizers arranged for visits to two RF farms in Baybay City by using their own private vehicles and strictly following social distancing protocols. Thus, although it was not indicated in the training design, they were able to visit two Rainforestation farms in Baybay City by using their own private vehicles to follow the strict rules of social distancing due to the current Covid-19 pandemic. The first visit was in a 3-year



Prof. Posas discussing his 20-year old RF farm

old farm developed by Dr. Fernandez, who answered questions about the development and management of his site. To show how RF sites progress over time, the second visit was in a 20-year old demonstration farm in Marcos owned by Prof. Manuel Posas. Prof. Posas described the establishment of his site and the many benefits that have accrued over time. After the said event, the participants were given native tree seedlings for the start of their rainforestation advocacy.

This event received the generous support of Arcadia - a charitable fund of Lisbet Rausing and Peter Baldwin - and the Yale Poorvu Center for Teaching and Learning.