

COURSE REPORT

Mangrove Conservation, Management and Rehabilitation Training

March 10-14, 2014

A training organized by:

Environmental Leadership & Training Initiative (ELTI)

Zoological Society of London (ZSL)

Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC/AQD)

Foundation for the Philippine Environment (FPE)

Background: Located primarily in tropical and sub-tropical coastal regions, mangroves constitute less than 1% of all forest areas worldwide, but they play an extremely important role in providing environmental services. Mangroves serve as an essential nursery for coastal and offshore fisheries, provide an array of timber and non-timber forest products to local communities, and sequester and store a large amount of carbon, which helps to mitigate the impacts of global climate change. Mangroves also enhance sediment deposition and protect the coast from the destructive power of waves and storm surges—a point brought home during the Indian Ocean earthquake and tsunami of 2004, when communities with intact mangroves were generally less affected than areas where mangroves had been lost.



Despite being among the most productive ecosystems, mangrove forests have historically been undervalued. Around the globe, mangroves have been cleared for agricultural expansion and aquaculture and coastal development. Unsustainable forms of harvesting for timber, fuelwood, charcoal, woodchip and pulp production have also led to the degradation of the remaining mangrove forests. The world has seen a 50% decline in the total area of mangroves since the mid-twentieth century, making them one of the most threatened tropical ecosystems. Fortunately, though, this dire situation is starting to change as international, national and local governing bodies place greater importance on the conservation and restoration of these valuable forests.

In the Philippines, the increased awareness and efforts to conserve mangroves by the government



and the local communities were made especially evident in the wake of the Super typhoon Haiyan, which hit the islands of Samar and Leyte in the Eastern Visayas on November 8, 2013. Satellite imagery showed that around 28,000 hectares or almost 12% of the entire mangrove area of the country were affected by the storm surge and strong winds. In response to this impact, President Benigno Aquino Jr. issued a directive to the Department of Environment and Natural Resources (DENR) to restore the mangrove areas to maintain and expand the natural buffer against future storm surges. The DENR then allocated PhP 1 billion for a Mangrove and Beach Forest Development Project in Disaster-risk Areas across the country, which was on top of funds for mangrove rehabilitation already provided in the current National Greening Program (NGP) budget. The special PhP 1 billion fund was also designed to provide immediate livelihood benefits for the communities in typhoon-devastated areas of Eastern Visayas through a cash-for-work scheme, which consists of cleaning the mangroves, establishing nurseries and conducting large-scale planting and maintenance.

In support of this initiative, ELTI, in collaboration with the Zoological Society of London (ZSL), the Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC/AQD), and the Foundation for the Philippine Environment (FPE), held a field-based training on mangrove conservation, management and rehabilitation to guide and equip the communities from Eastern Samar with the basic technical know-how and skills for conserving, managing and rehabilitating mangroves in their own areas. The training was originally planned to take place on the island of Samar itself, but was relocated to the nearby island of Panay because of logistical constraints due to infrastructure damage by the Super typhoon.

Course Objectives:

- Increase awareness about the ecology of mangrove and beach forest ecosystems and their importance in providing environmental services through lectures and field visits;
- Introduce and develop hands-on rehabilitation methods, including germination techniques, wildling collection, site- and zone-species matching, and site maintenance;
- Showcase successful mangrove rehabilitation sites to demonstrate the ecological and social factors contributing to these efforts;
- Provide an understanding of community rights and obligations when participating in mangrove rehabilitation, conservation, and management projects through case studies and focus group discussions; and
- Facilitate the exchange of lessons and experiences among participants and resource persons.

Course Format:

Day 1: The training was officially opened with remarks by Dr. Evelyn Ayson (Officer-in-Charge, Training and Information Division-SEAFDEC), Dr. Takuro Shibuno (Deputy-Chief, SEAFDEC/AQD), Dr. Jurgenne Primavera (Chief Mangrove Scientific Advisor, ZSL), Ms. Raffy Domingo (Special Project Coordinator for Post-Yolanda Rehabilitation, FPE) and Ms. Hazel Consunji (Philippines Program Coordinator, ELTI). Dr. Primavera started off with an overview of mangrove biology and ecology, discussing the different ecosystem services and social values of mangrove forests and highlighting the importance of conserving and protecting them. Of particular relevance was the discussion of the role of mangrove forests as bio-shields from wave action and storm surges—a fact attested to by the participants, who were survivors of super typhoon Haiyan. Dr. Primavera also provided an introduction to the beach forest ecosystem, a threatened and often neglected forest ecosystem that is equally important in providing protection from coastal erosion and storm surges in areas where mangroves are not naturally found. She went on to present the DENR's proposed mangrove and beach forest rehabilitation plan for Eastern Visayas, walked the participants through a scientific critique of the plan and provided recommendations on how to implement it properly on the ground.

Day 2: The day began with interactive lectures by Ms. Rona Loma (ZSL) on the establishment of mangrove nurseries, germination techniques for some mangrove species, collecting wildlings, and care for seedlings in the nursery. Dr. Primavera followed with a discussion of appropriate planting techniques, emphasizing planting mangroves within the suitable tidal elevation (i.e., upper to middle intertidal zones), and planting the right species along the right tidal zone. The group then made its way to Dr. Primavera's personal beach forest nursery and a site where she planted some of the saplings for a brief course on taxonomy and ethnobotany. The group next visited the town of Leganes to see a municipality-led mangrove rehabilitation site, which had formerly been an abandoned fishpond. Mr. Wilson Batislaon (Leganes Municipal Agricultural Office) and Ms. Roma (ZSL) talked about the strategy undertaken by the municipality, together with ZSL, to enjoin the local schools and companies to participate in the project. After a question and answer session, Mr. Batislaon took the group around the site for a short tour. Mr. Christian Montilijao (ZSL) then led the group to another local government unit (LGU) initiative to establish a greenbelt facing the sea in the town of Dumangas. Here, Mr. Montilijao pointed out the difference in planted species compared to the previous site, which reflects a difference in substrate and exposure to wave action, and demonstrated how to carry out proper site maintenance.



Day 3: The group travelled on to the town of Pedada where the participants applied what they learned from the previous days in the field. Mr. Jofel Coching (ZSL) led the participants through hands-on exercises, such as collecting seeds and wildings, bagging them, and setting them up in a backyard-type of nursery. The group went through the steps of proper site preparation and planting. After enjoying a meal prepared by a local people's organization (PO), the group gathered to hear the story of how the PO, together with ZSL and the LGU, developed an eco-park around their intact mangrove forest area—a conservation measure recommended by ZSL to provide an alternative livelihood option for the community and to serve as an educational venue for the general public. The PO also discussed the process they underwent in implementing an experimental mangrove rehabilitation project in a heavily eroded coastal site using an improvised breakwater system. The participants then proceeded to the rehabilitation site to witness first-hand how ingenious collaborative efforts could overcome environmental and organizational challenges.



Day 4: The group visited another community-based mangrove eco-park project in Ibayay, Aklan. Having one of the most diverse, old-growth mangrove forest areas in the country, SEAFDEC and ZSL rallied the community and the municipality to officially declare the site as a Mangrove Eco-tourism Park. The park has evolved to become a prime eco-tourism destination, recently gaining support from the National Tourism Authority and thereby increasing employment and development opportunities for the community members. The participants used the park's newly renovated boardwalk for mangrove taxonomy exercises and the lecture hall for discussions on the eco-park's history and the communities' role in mangrove conservation and rehabilitation, which was led by Ms. Josephine Savaris (ZSL). Ms. Loma gave a presentation on conducting a mangrove damage and recovery assessment, which was followed by an impromptu proposal-writing workshop led by Mr. Jerome Montemayor (Philippine Tropical Forest Conservation Foundation/PTFCF). The goal of the proposal writing workshop was to solicit proposals from the PO participants, working together with their LGU counterparts, for an initial mangrove damage and recovery assessment in their areas. The mangrove assessment will give the participants a better idea of the appropriate rehabilitation strategy needed and guide them in re-defining their conservation and management plans.



Day 5: Ms. Savaris (ZSL) facilitated an open forum with the participants about the important lessons learned and valuable experiences they had gained from the training, and how they plan to apply them upon returning to their own communities. Small group discussions continued on as the participants finalized their proposals and submitted them to the PTFCF. After the course evaluation and distribution of certificates, the training came to a close with inspirational messages by selected participants and representatives from the different organizers.

Participants: The training included 19 participants from different municipalities in Eastern Samar representing LGUs, POs and non-government organizations. Representatives from FPE, PTFCF and the International Organization for Migration (IOM), which is an organization involved in typhoon relief operations in Eastern Samar and Leyte, also attended the training.

Outcome and Follow-up: Two weeks after the training and four months after typhoon Haiyan, ZSL led a team of scientists and practitioners, including Ms. Consunji, to conduct a rapid field assessment of the mangroves in Leyte and Eastern Samar. The survey revealed that the majority of mangroves in the area sustained only partial damage, or no damage at all, and that they are in the process of natural recovery. It was concluded that these mangroves only need some enrichment planting and protection, not massive reforestation as premised by the DENR's Mangrove and Beach Forest Development Project. The team wrote an editorial to advance its position, which was covered in the Philippine press (see, e.g., <http://www.gmanetwork.com/news/story/356518/scitech/science/p1-billion-fund-for-mangrove-rehab-misguided-scientists-warn>.)

The team also developed a Mangrove Damage and Recovery Assessment Guide for communities, which was shared with the training participants during a follow up Planning Meeting in Eastern Samar on April 9-11, 2014.

ELTI, together with other members of the Rain Forest Restoration Initiative (RFRI) and ZSL, will continue to work closely with the groups in the Eastern Visayas to provide support for their mangrove rehabilitation efforts.



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