

techniques was held at Batangas with peoples organizations from the provinces of Zambales, Bolinao, Quezon sharing experience in establishing community-based mangrove management. Community organizing initiatives resulted in the formation of CALMADA (Calatagan Mangrove Development Alliance-a family alliance of lantern fishers in Brgy Balibago), building of a 1,000sqm mangrove nursery with 10,000 potted mangrove seedlings and establishment of a three (3) hectare mangrove rehabilitation site with 240,000 mangrove propagules planted in Brgy Balibago, Calatagan.

### Mangrove management planning

Last 01Sept2010 a Mangrove Management Planning workshop was held at Tagaytay with the local government unit of Calatagan, Calmada, Balibago YES and fishers of Brgy. Balibago. The workshop yielded a VMG, Management structure, delineated MPA and action plans, the VGM are as follows:

**Vision:** Kaming mamamayan ng Balibago, maka Diyos at makakalikasan, ay nagkakaisa para sa ikabubuti ng kabuhayan ng aming nasasakupang barangay at para sa susunod na saling lahi.

**Mission:** Itaguyod ang magandang relasyon ng lokal na pamahalaan ng Calatagan at kumunidad ng Balibago. Ipagpatuloy ang pagmumulat ng kaalaman tungkol sa kahalagahan at pamamahala ng kalikasan.

**Goal:** Makapagtanim ng 20 ektariang bakawanan, mapalaganap ang kaalaman at mapalawak ang samahang nangangalaga ng kalikasan sa loob ng limang taon.



## Calatagan Mangrove Nursery and Rehabilitation-Marine Protected Area Barangay Balibago, Calatagan, Batangas

### Introduction

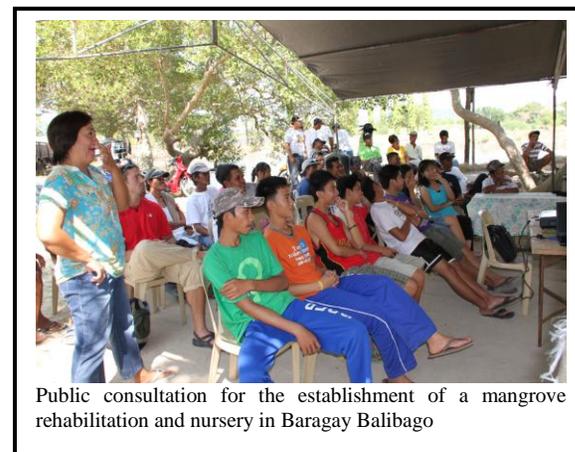
Destructive fishing practices and siltation from coastal development work in synergy with the effects of climate change to threaten the coastal marine habitats of this region. Low coastal resiliency to climate change impacts needs to be addressed.

This initiative was conducted to model a mangrove rehabilitation program that would mitigate the effects of climate change e.g. sea level rise through community-based approaches.

Mangroves are trees and bushes growing along mudflats and along shallow water coastal areas extending inland along rivers, streams, and their tributaries where the water is generally brackish. The mangrove ecosystem is dominated by mangrove trees as the primary producers. Mangrove interacts with associated aquatic fauna as well as social and physical factors in the coastal environment.

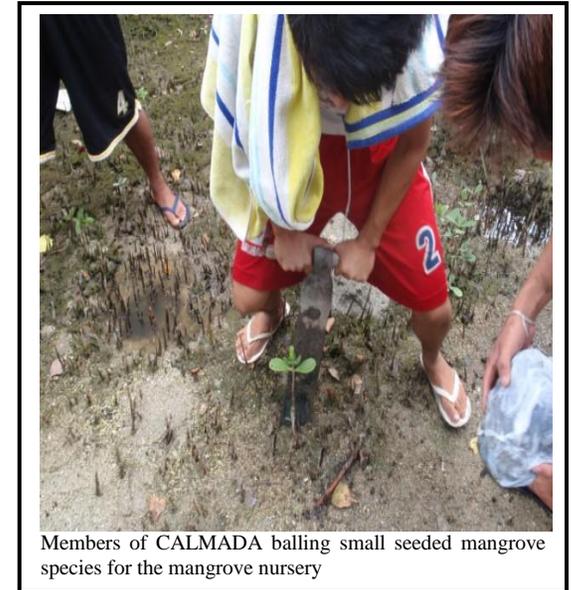
### Mangroves and Climate Change

According to the study made by Siringan et al. July, 2010 in Brgy Balibago, "the area is suitable for mangrove rehabilitation as indicated by the natural mangrove progradation that has occurred there over the past 31 years. The sediments there are suitable for colonization of *Avicennia* and *Sonneratia* which are natural colonizers of sandy substrate in exposed coastlines (Primavera and Esteban 2008). In addition, since these are already in abundance there, their wildings will have a higher chance of survival. Densification and widening of the mangrove belt would directly benefit the nearby reef. Sediment that can be directly transported to the reef front because of the more embayed reef front configuration and narrower reef flats can be reduced by the trapping function of a wider and denser mangrove. This function of mangroves is certainly needed here because of the presence of several rivers in this area. Enhanced accretion would help in reducing the potential impact of marine inundation due to the projected rise of sea level".



## Mangroves of Calatagan

Based on the study of Bravo and Bungabong, June 2010, A total of one hundred fifty nine point five (159) hectares of remaining mangroves was assessed in the nine (9) coastal barangays in Calatagan with twenty four (24) mangrove species coupled with eighteen (18) associates belonging to twenty one (21) families were identified and recorded. The most common and dominant mangrove species observed include *Rhizophora stylosa*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Avicennia marina*, *Avicennia*



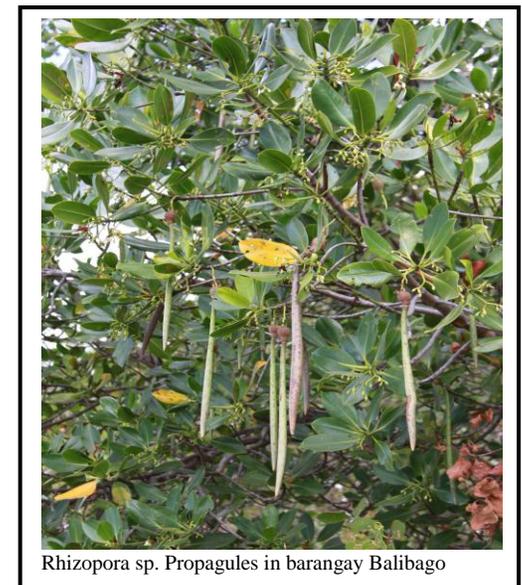
Members of CALMADA balling small seeded mangrove species for the mangrove nursery

*alba*, *Sonneratia alba*. A total of one hundred nine (109) has. Productive salt beds/fishponds were recorded from the nine (9) barangays. The biggest productive fishpond was observed in Barangay Gulod (30 has.).

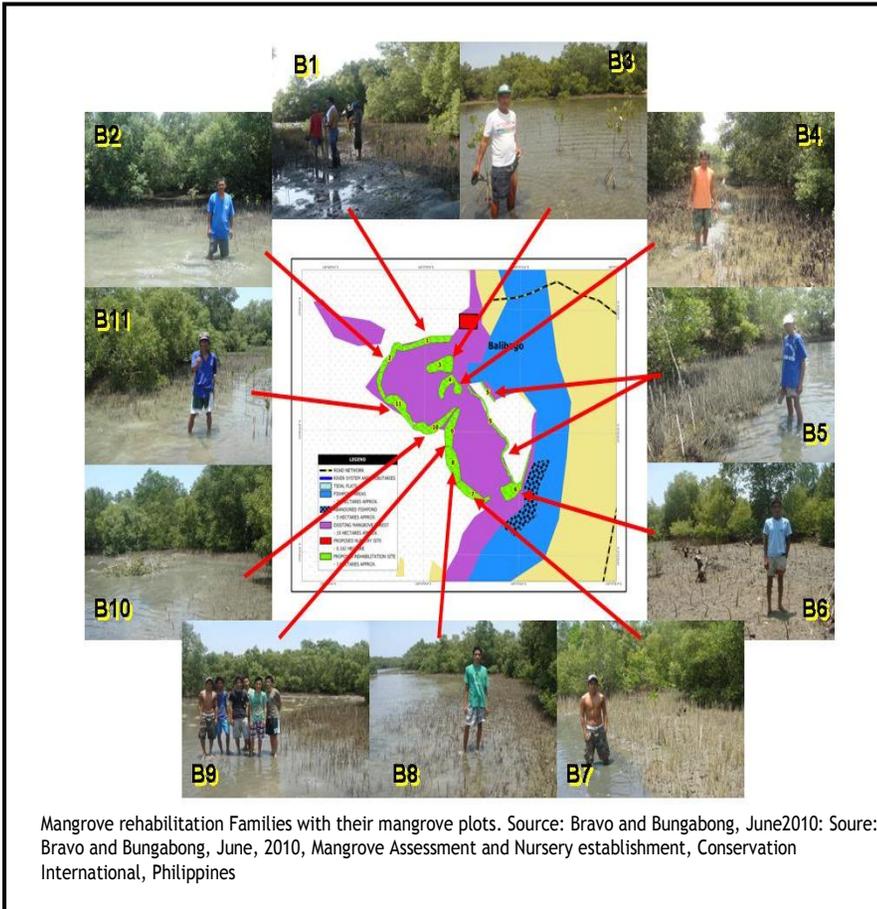
## Community organizing mangrove rehabilitation

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Increasing stakeholder knowledge base on mangrove management was done through cross visits on successful mangrove rehabilitation sites in Tubigon, Bohol, provincial (Bohol Environmental Management Office) and municipal (Tubigon) learning's were shared and documented. The workshop on mangrove management best practice e.g. nursery set-up and plantation



Rhizophora sp. Propagules in barangay Balibago



Mangrove rehabilitation Families with their mangrove plots. Source: Bravo and Bungabong, June2010: Soure: Bravo and Bungabong, June, 2010, Mangrove Assessment and Nursery establishment, Conservation International, Philippines

## Importance of mangroves

The mangrove fauna is made up of shore birds, some species of mammals (monkeys, rats, etc.), reptiles, mollusks, crustaceans, polychaetes, fishes and insects. Primary ecological functions of the mangrove ecosystem include: 1) provision of nursery and spawning grounds for fish, crustaceans (e.g. prawns, crabs) and support fisheries production in coastal waters; 2) produce leaf litter and detrital matter which are valuable sources of food for animals in estuaries and coastal waters; 3) protect the environment by protecting coastal areas and coastal dwellers from storm surges, waves, tidal currents and typhoons; 4) produce organic biomass (carbon) and reduce pollution in near shore areas by trapping or absorption and; 5) serve as recreational grounds for bird watching and observation of other wildlife.