

Mangroves in Balibago

Balibago, the frontier barangay of the Municipality of Calatagan, Batangas has a total land area of about 423 hectares inhabited by about 3,350 people. The name of the village was taken from the local term “*bakhaw na Balibago*” referring to the trees that grows along with coastal area from the *Malvaceae* family (*Hibiscus tiliaceus* or *Thespesia populnea*). Anecdotal account reveals that Balibago used to have about 60 hectares of mangrove forest in 1960’s. To date, the forest shrank to only 19 hectares due to conversion into fishponds and indiscriminate cutting.

The increase in awareness among the fishers on the importance of mangroves has compelled the Samahan ng Maliliit na Mangingisda ng Calatagan (SAMMACA) to start reforesting the shoreline. In the same year, the Local Government Unit of Calatagan in partnership with Conservation International-Philippines (CIP) through the Coral Triangle Support Partnership (CTSP) Project funded by United States Agency for International Cooperation (USAID) assisted the Calatagan Mangrove Development Alliance (CALMADA) and the Youth for Environment Society (YES) to rehabilitate three hectares of mangrove area and establish a 1,000-square meter mangrove nursery.

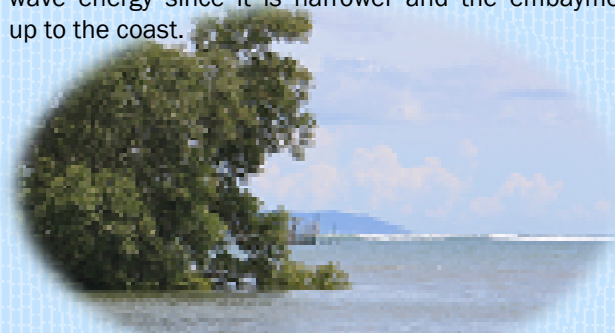
Sonneratia alba, *Avicennia marina* and *Avicennia alba* in sandy substrate and *Rhizophora stylosa* in the muddy substrates dominates the fringing mangrove area. Few natural regenerations of *A. marina* was observed at the landward zone of the mangrove forest.



Preparing for Climate Change

With the imminent acceleration of sea level rise, increase in frequency and strength of storms in the coming years, the natural buffers such as coral reefs and mangroves should be protected and rehabilitated.

The entire west coast of Calatagan is generally exposed to waves from South China Sea. The Balibago coast is expected to receive higher wave energy since it is narrower and the embayments extend up to the coast.



The low-lying and recently prograded coastlines and emergent islands are the most vulnerable to impacts of sea-level rise. In Calatagan, about 4,691 hectares of coastal plain, now mostly covered with mangrove and lined with fishponds, will be inundated by a 1-m rise of sea level. Agricultural lands that are about 1.5 to 2-km inland will be flooded if sea level rises by 2 to 3 m.

The impact of large waves and marine inundation in Balibago coast can be abated by the protection provided by mangroves. In addition, a wider mangrove belt would help improve the health of the coral reef. The sandy to gravelly sediments, mostly carbonate, along this coast are suitable for colonization of *Avicennia* and *Sonneratia*.

Between 1979 to present, an overall net land gain of about 81 m to as much as 300 m occurred along the Balibago coast due to natural mangrove progradation. Enhanced accretion would help reduce the potential impact of marine inundation due to the projected rise of sea level.

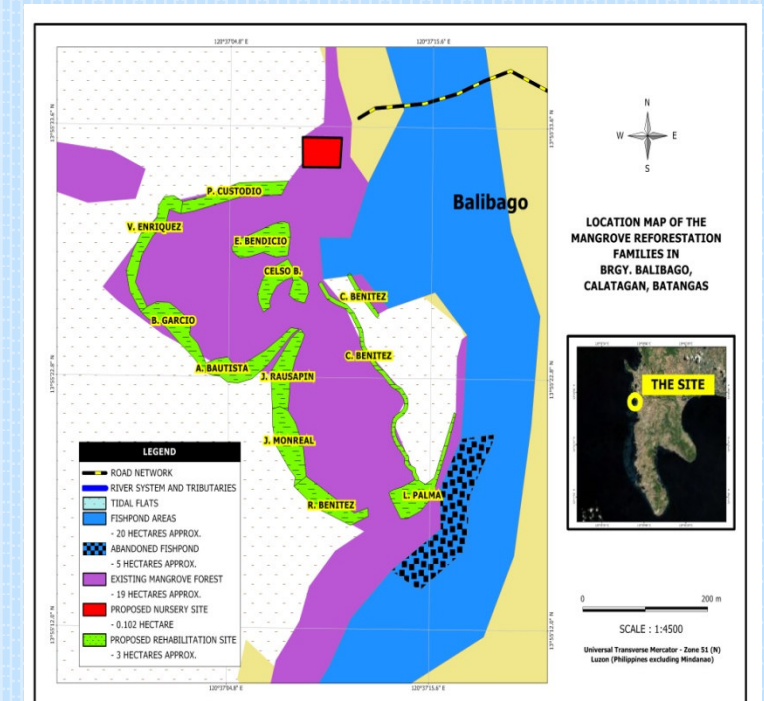
The coastal community of Calatagan will not go wrong with a wider and more continuous mangrove belt given the high vulnerability of the area to inundation, storm surges and tsunamis.

A Family Approach Project

Families are a strong force for forest conservation, hence a family approach to mangrove reforestation was implemented in Balibago. Each of the eleven (11) families adopted an average of 3,000 square meters of mangrove plot to plant, protect and manage. These families organized themselves as Calatagan Mangrove Development Alliance (CALMADA).

A total of 121,000 propagules of *Rhizophora* species were planted along the shoreline and open space with a spacing of 0.5 m X 0.5 m equivalent to an aggregate area of 3.15 hectares. The mangrove rehabilitation serve as demonstration and learning areas for all stakeholders who may engage in mangrove rehabilitation activities.

A year after planting, the plantation showed progressive performance with an indicative survival of 95 % and leaf production of 5 to 6 pairs of leaves manifesting growth and development.



Families rehabilitate mangrove areas

Nursery Production

To continue widen the mangrove belt of barangay Balibago, a 1,000-square meter nursery was established to produce at least 10,000 seedlings. The mangrove nursery caters to the need for small seeded propagules and wildlings for reforestation activities in Calatagan and nearby areas.

The nursery area is characterized by presence of few scattered trees of *Avicennia marina* and *Sonneratia alba* growing in a sandy clayloam and coralline substrates at the landward zone. The area is suitable for nursery establishment and enrichment planting for mangrove species as it satisfies the following criteria: 1)available source of brackish/ sea water, 2)proximity of the site, 3)area coverage and 4)drainage characteristic.

Seedlings for Sale

The nursery is also established as an income diversification strategy. Based on the business plan of CALMADA, the nursery will be able to generate an average revenue of P10,000 every

Three months from the sale of mangrove seedlings at P5.00 per seedling. The target market include the academic institutions which has outreach programs as part of their extension function, non-government organization and local government units.



Support Widen Our Mangrove Belt

To order seedlings and other information on the mangrove nursery and rehabilitation project, please contact us.

CALMADA
**CALATAGAN MANGROVE
DEVELOPMENT ALLIANCE**

MR. VIRGILIO ENRIQUEZ
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Brgy. Balibago, Calatagan, Batangas



Project Partners



Familyang nangangalaga ng
bakawan kalamidad ay
pinaghahandaan

Calatagan Mangrove Nursery and Reforestation Project

Managed by
**Calatagan Mangrove
Development Alliance
(CALMADA)**

Brgy. Balibago, Calatagan, Batangas