



# MANGROVE RESTORATION BRINGS IMPORTANT CHANGE TO RURAL PHILIPPINES

## The Challenge

Mangrove forests form a bridge between the land and sea. Easily recognized by their dense elevated roots which make them appear to be standing on stilts in the water, mangrove forests are comprised of tropical trees and shrubs that can not only grow in coastal salt water, but thrive in it.

Mangroves are increasingly recognized as providing critical ecological functions such as stabilizing coastlines, buffering against strong winds and waves, and providing habitat for terrestrial animals as well as spawning grounds for many fish species. There are approximately 80 species of mangrove trees in the world — 33 of which are found near the mouth of the Carood River in Cogtong Bay — making it the most diverse mangrove area in the Central Visayas region.



## Carood Watershed, Philippines

Established: 2010 | Area: 21 725 ha



## Facts

- The Carood Watershed Model Forest is located on the island of Bohol in the Central Visayas, Philippines. It is the fifth largest watershed in Bohol.
- The region is very rich in terms of bird and plant biodiversity, including many endemic species.
- Mangrove forests are extremely efficient carbon sinks – they can sequester approximately 18 kilograms of carbon per hectare each day.

In the Carood Watershed Model Forest, increasing food security and ensuring sustainable livelihoods is a daily balancing act for local residents. Farming and fishing are traditional economic activities in this predominantly rural area. Over the years, as with other mangrove forests the world over, Carood's mangroves have been depleted to make room for agricultural land, the creation of shrimp farms and infrastructure such as docks. They have also served as sources of fuelwood and timber for housing. The conversion of mangrove areas to other uses has resulted in flooding of agricultural lands and soil erosion, loss of economic opportunity as fish stocks decline, and poor water quality. Risks associated with climate change, such as severe weather patterns, have also increased which, with reduced mangrove forest cover, are more damaging.

While there are laws in place to protect the mangroves and surrounding landscapes, increasing population pressure and widespread poverty have led to unsustainable natural resource use. In order for the mangrove forests to be protected – and in so doing safeguard the livelihoods of rural people – Model Forest stakeholders understand that the initiative and drive to conserve these forests must come from themselves and involve youth as they are the instigator of change. They also realise that they need to examine the issue at a landscape scale to address multiple values and challenges present in the watershed.

## Finding a solution

Beginning in 2007, the Model Forest brought together six municipalities, under the banner of a Management Council, to discuss action plans for their watershed to combat flooding, enhance economic opportunities, restore degraded mangrove and forest lands, and improve water access and quality.

Through information campaigns, the Management Council began educating local people on the importance of mangrove conservation. Local youth are working to replant the mangrove forests and educate farmers and fishermen about the benefits these areas can bring to livelihood development, biodiversity conservation, environmental stability and climate change mitigation.

## Results and impacts

The Model Forest, in collaboration with a local community group (also known as a People's Organization), established a 50 hectare mangrove plantation of *Rhizophora* species in Cogtong Bay. So far, volunteer community members including youth and students have planted more than 500 000 propagules, a vegetative structure that can become detached from a plant and give rise to a new plant. To compliment information and other outreach activities, Model Forest partners also set up a one hectare "mangrovitum" (mangrove arboretum) comprised of 700 seedlings representing over 20 different mangrove species. The mangrovitum provides a study and laboratory area for the students of the Bohol Island State University and will be maintained by both the university and local community.

Many stakeholders have noted that popular education through youth engagement is working within the community to allow members to prepare for and mitigate climate change while offering them a new and more sustainable way of living now and into the future.

Organization and cooperation between the municipalities has been a challenge, but the promotion of watershed-scale thinking is making an impact on local community members. After witnessing improvements in the farmers' and fishermen's abilities to produce more food as a result of mangrove restoration and protection, more community members are becoming involved in the replanting and advocacy project.

"What we foresee for the future undertaking of the Carood Management Council is that we can introduce programs like tourism, agriculture and livelihood development so that the awareness of the people will be focused", says Sergio Amora, Mayor of Candijay, one of the six municipalities involved in the Model Forest, "because if they have their livelihoods and they have their incomes, they can conserve the environment."

### To find out more

- International Model Forest Network: [imfn.net](http://imfn.net)
- Carood Watershed Model Forest: [bit.ly/1f1sQ7D](http://bit.ly/1f1sQ7D)
- Video: [youtu.be/ngHbrbRVwtQ](http://youtu.be/ngHbrbRVwtQ)

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