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CASE STUDY

Improving Ecosystem Management to Strengthen Resilience to Extreme Weather in the Philippines

Project at a Glance

The majority of the Philippines' population—an estimated 105 million people—directly depend on watersheds for a variety of ecosystem services. These include the provision of water for human use and physical buffering from extreme weather events like floods and storms. However, logging, agricultural expansion and unsustainable farming practices have degraded many watersheds in the country over the last 50 years. Between 1969 and 2010, forest cover in the Philippines decreased from an estimated 36 percent to 22 percent; loss of forest cover in watersheds has seriously impaired their ability to lessen the impacts of extreme weather on communities. The USAID/Philippines mission's Emerging Champions for Biodiversity Conservation and Improved Ecosystem Services (ECBCIES) project helped to reduce community vulnerability to extreme weather and other climate events by improving the management of local ecosystems, particularly watersheds. *

Project Donors: United States Agency for International Development (USAID) and the European Union

Implementing Partners: Relief International, Bagobuk Marketing Association and the Philippines Department of the Environment and Natural Resources

Period of Performance: 2011-2015

Funding: $1 million from USAID (Biodiversity); €1.2 million from the European Union; $3 million from the Philippines government and local private entities

Ecosystem Services: Maintenance of ridge-to-reef ecosystem services, particularly physical buffering during extreme weather events and water provision

Project Focal Areas: Six key biodiversity areas in Palawan Province and on the island of Mindanao

Climate Stressors: Extreme weather and other climate events such as storms, droughts and floods

Direct Project Beneficiaries: ~600,000 people

**The project name was initially "Biodiversity Conservation through Management of Natural Resources (BCMNR)" when USAID assistance started and later changed.*

What's the Situation?

Intact ecosystems, such as forests, wetlands, mangroves and coral reefs, can provide resilience to the impacts of extreme weather by serving as physical buffers that control runoff, retain excess water, stabilize hillsides and shorelines, and dissipate wave energy. Intact ecosystems also maintain their water provision function for household use, agriculture and industry. In 2011 and 2012, Typhoons Sendong and Pablo hit northern Mindanao Island in the Philippines and triggered flash flooding that killed more than 4,000 people. Denuded local watersheds and inappropriate agricultural practices at large-scale plantations and small-scale farms contributed to local ecosystem degradation, which exacerbated the impacts of the typhoons. However, one agribusiness whose senior leadership champions sustainable environmental and social practices took measures before the typhoons to protect its farms from extreme weather; Unifrutti used **ecosystem-based adaptation (EbA) approaches** such as protecting and restoring forested areas in watersheds, planting cover crops to prevent soil erosion and establishing multi-layered vegetation along natural gullies to serve as shelterbelts to protect farms from high winds, heavy downpours and floods (Figure 1).

Several major storms followed in subsequent years, and local ecosystem degradation exacerbated storm damage in these regions. The storms, coupled with seasonal flooding, caused agricultural losses that forced local farmers into debt and threatened the agribusiness, fisheries and eco-tourism industries essential to community livelihoods. Unifrutti, in contrast to neighboring plantations, found that their farms fared better due to their early adoption of EbA approaches. Unifrutti's experience provided a tangible example to local farmers, other plantations and politicians on how EbA approaches could work in their communities.

Figure 1: Unifrutti's banana plantations using EbA practices--such as forest shelterbelts--had little damage during Typhoon Pablo in 2012. The red circle shows intact banana plants that were protected by forest shelterbelts. Photo courtesy of Relief International and Unifrutti.

To strengthen local ecosystem services and improve biodiversity conservation in the context of climate variability and change, Relief International (RI) worked with the national government, local communities and private sector partners to implement the Emerging Champions for Biodiversity Conservation and Improved Ecosystem Services (ECBCIES) project. The project implemented activities at a landscape scale in six key biodiversity areas around three main strategies:

- Strengthen capacity for improved natural resource management and environmental service delivery;
- Institute better governance and enforcement mechanisms for biodiversity conservation, including watershed management plans; and
- Broaden opportunities for environmental financing and enterprise development.

The project helped reduce community vulnerability to extreme weather events and strengthen climate resilience by improving management of local ecosystems using a payment for ecosystem services (PES) approach. Under PES arrangements, agribusinesses compensated local communities to protect and/or rehabilitate ecosystems. Payments collected from downstream water users, including agribusinesses, financed implementation of watershed management plans as users were incentivized by their need to ensure water supply and control water flows. The project introduced a broad constituency—government, private sector, agribusinesses, farmers and indigenous communities—to PES ventures and used PES to leverage support for EbA by providing immediate economic opportunities for local community members.

Emerging Champions Groups

What started as a request to RI from several local officials for assistance with watershed management grew into five emerging champions groups that advanced EbA and PES across six key biodiversity areas in Mindanao and Palawan. The groups consisted of more than 1,500 women and men from local government, indigenous tribes, local NGOs, community organizations and the private sector, including major plantations and tourism companies. The ECBCIES project facilitated working relationships among these entities and provided training and capacity building to coordinate their EbA and PES efforts to achieve impacts at a landscape scale. The emerging champions groups completed watershed management plans; adopted ordinances, contracts and MOUs; and committed more than $3 million of their own funds to continue the work.

Key Ecosystem-based Adaptation Activities

- **Support for local watershed councils to develop data-driven management plans using detailed natural resource and land use maps to prioritize ecosystem-based rehabilitation and protection interventions.**
- **Support for the establishment of 12 commercial nurseries to supply indigenous tree species for replanting and restoring forested areas in watersheds and denuded riparian stretches of rivers and streams.**
- **Establishment of five emerging champions groups to spearhead improved management of protected area buffer zones and biologically significant areas through activities such as replanting of denuded forests with endemic forest species and protection of old growth forest.**
- **Training for local participants to design, support, promote, implement and monitor EbA activities adjusted to local weather and resource conditions.**
- **Engagement with the agribusiness Unifrutti to disseminate its EbA farming approaches and support to incorporate these into guidelines for other agribusinesses in the project area.**

Why Ecosystem-based Adaptation?

Typhoon Sedong and the storms that followed galvanized a broad base of stakeholders—including government, indigenous groups, the private sector and local communities—to come together and examine EbA approaches. Unifrutti joined the project as an emerging champion to share its experience and to encourage broader adoption of EbA approaches through PES arrangements. A nature-based approach had multiple advantages for the local stakeholders in the Mindanao and Palawan regions compared with gray infrastructure: the effectiveness of EbA interventions such as reforestation in stabilizing sloping landscapes, the opportunity to scale up EbA approaches to an ecologically meaningful scale and the flexibility to develop different EbA strategies to address a variety of land uses and tenure regimes.

Key Project Results and Impacts

5

Landscape-level water management plans that incorporated EbA activities in key biodiversity areas, including areas that were home to indigenous tribes and endemic endangered species

10

Watershed management or park/buffer zone management plans developed and implemented

450,000

Hectares under improved watershed management

40,000

Hectares of forest area under protection

1,600

People trained (40% female) in a variety of technical, assessment and implementation skills related to EbA

3x

Increase in project financing for PES from an initial target of $1 million to $3 million in actual funding

112

Key local government officials and field personnel from the Philippines Department of the Environment and Natural Resources involved in screening and monitoring agricultural plantations received training on EbA implementation and monitoring

1st

PES ordinance passed in the Philippines (Libona Municipality) to collect water payments from downstream agribusinesses to sustainably manage upstream ecosystems

PHOTO: RELIEF INTERNATIONAL

Strategies to Support and Sustain Ecosystem-based Adaptation

Use a "learning by doing" approach to advance EbA: Project teams and consultants engaged local government staff, NGOs, community members, university students, indigenous tribes and the private sector in collecting data and developing and implementing EbA activities. Specifically, the project built the capacity of local actors to identify degraded ecosystems needing restoration and high biodiversity sites needing protection, collect water quality and other hydrological data, create water user maps, enhance mapping with information collected on the ground and from current satellite images, and develop EbA strategies using information from local watersheds, forests and agricultural land use patterns.

Build sustainability through EbA champions: The project engaged high-profile private sector partners, indigenous tribal leaders and local government officials as champions to create lasting support for EbA beyond the project's period of performance. Finding champions within the local government who recognized the value of EbA as a tool for economic growth and climate adaptation helped establish local regulations and ordinances to mainstream investment for EbA and PES with supportive regulatory frameworks.

Bring EbA champions together on a regular basis to build capacity, confidence and working relationships: Local champions for EbA included government officials, tribal chiefs and agribusiness operators who didn't engage routinely or at all before the project. The project supported knowledge sharing among these local champions on a range of EbA topics and encouraged PES agreements and ordinances beyond the initial project sites. The knowledge sharing will continue through forums supported by the local government that continue to reach out and attract new emerging champion partners and resources.

PHOTO: RELIEF INTERNATIONAL

Provide support to develop fair and equitable PES arrangements: The project field teams supported training to develop sustainable payment for ecosystem services schemes that didn't overburden consumers and also provided sufficient revenue to support project activities. The project gathered and shared cost and pricing information from other global efforts and forest rehabilitation programs in the Philippines.

Facilitate site visit exchanges to demonstrate EbA successes: Site visits supported by the project galvanized the target communities to put PES into practice to fund EbA activities at scale. International exchange visits enabled Filipino participants to see sites and communities in Costa Rica and Nepal that were in the same situation 20 to 25 years ago and to learn how EbA and PES had reversed severe environmental degradation, generated economic growth for local populations and helped communities adapt to climate change. Within the Philippines, site visits between Mindanao and Palawan allowed for knowledge sharing on developing ordinances for PES to fund EbA activities.

Sources

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About This Series

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