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Sustainable Interventions for Biodiversity, Oceans and Landscapes

Newsletter #8 (SPECIAL ISSUE)

Sukat ng Kalikasan: The ambitious goal to measure the Philippines's natural treasures



Among the 193 countries in the world, the Philippines holds the unfortunate distinction of being one of the most vulnerable. The archipelago, located within the highly volatile Pacific Ring of Fire, topped the World Risk Index in 2022, making it the country with the greatest risk from extreme natural events and climate change.

Data from the World Bank show that since 1990, around 565 natural disasters have struck the country, killing 70,000 people and causing damage amounting to a whopping P1.3 trillion (\$23 billion). In 2022 alone, 18 tropical cyclones entered the Philippine Area of Responsibility (PAR), with five making landfall. The National Disaster Risk Reduction and Management Council (NDRRMC), an inter-agency working group under the Department of National Defense, routinely provides reports as soon as a typhoon exits the PAR. These reports paint a picture of the fallout by looking at related incidents; affected population; casualties; roads and bridges; power; water supply; communication lines; status of airports, flights and seaports; stranded passengers and vessels; suspended work and classes; declarations of states of calamity; and pre-emptive evacuation and assistance provided. On top of these, NDRRMC assigns cost estimates of the damage on three areas: houses, agriculture, and infrastructure.



FEATURE

Sukat ng Kalikasan (cont'd)

What about nature?

Despite this long list, however, there is a glaring lack of a substantial report on the impact of natural disasters on the country's natural resources and biodiversity.

“When electricity and communication have been restored, we're back to normal. What we don't account for is the effect of these disasters on the environment,” Dr. Neil Aldrin Mallari, Ecosystems Integration Specialist of USAID's Sustainable Interventions for Biodiversity, Oceans and Landscapes (SIBOL) project said in a televised interview.

This gaping hole in the country's post-disaster assessment became all the more pronounced when in December 2021, Super Typhoon Odette (international name: Rai) hit the archipelago. The Category 5-equivalent super typhoon posted damages worth P51.8 billion (\$1.02 billion), making it the second most devastating typhoon in Philippine history, second only to Super Typhoon Yolanda (international name: Haiyan) in 2013. The super typhoon halted USAID SIBOL's work in Palawan and Siargao, where it was previously working on identifying drivers of deforestation and degradation.



As the dust settled, the project pivoted in early 2022 to refocus its work on assessing Odette's impact on the Puerto Princesa Underground River National Park, Cleopatra's Forest Reserve in Palawan; and the Siargao Island Protected Landscape and Seascape. By zooming in on mangled mountains and battered biodiversity, USAID SIBOL looked at how the super typhoon altered the constitution of the affected protected areas, laying the groundwork for a framework that would, for the first time, account for the critically important biological, ecological, and cultural values of ecosystems and the benefits they provide.

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FEATURE

Sukat ng Kalikasan (cont'd)



The Sukat ng Kalikasan Framework

Dubbed “Sukat ng Kalikasan” (translated as ‘measurement of nature’), the framework aims to guide the country’s natural resource managers in identifying the country’s conservation targets and priorities and help in measuring conservation impacts. Sukat ng Kalikasan combines two globally accepted frameworks: the High Conservation Value Areas (HCVA) and Natural Capital Accounting (NCA) frameworks, based on the United Nations System of Environmental Economic Accounting.

HCVAs are critically important areas of natural and social significance found in various ecosystems. They serve as guides in determining what needs to be conserved and protected. NCA measures the stocks and flows of natural resources and the benefits they provide—a scorecard that keeps track of all the valuable things people require, utilize, and enjoy from nature, like trees, water, and clean air. It gives an idea of the extent to which resources can be used before they reach critical levels or become depleted. By combining the two into one framework, natural resource managers are given a powerful tool in understanding the overall state of nature.

To localize the use of the HCVA-NCA framework, USAID SIBOL looked at six components most relevant to the Philippine setting. These are species; ecosystems; rare and threatened ecosystems; regulating and maintenance services; provisioning services; and cultural services. By looking at the conditions of the first three, the Sukat ng Kalikasan framework can help approximate the monetary value of the last three, collectively referred to as ecosystem services. Together, these components can inform policymakers and bureaucrats’ decisions related to the consumption, conservation, and protection of natural resources.

FEATURE

Sukat ng Kalikasan (cont'd)

For example, experts identify a mangrove forest (ecosystems) as a high conservation value area. They then account for the benefit it provides when it stores carbon from the atmosphere (regulating and maintenance services). By assigning a monetary value to the role of mangroves in reducing greenhouse gas emissions, governments get a clear picture of the importance of these ecosystems vis-à-vis development plans such as land reclamation.

Policymakers are given actual cost-benefit analyses of what the people stand to gain or lose from decisions that will impact the environment.

In response to Super Typhoon Odette, USAID SIBOL used the Sukat ng Kalikasan framework to assist management authorities in determining the extent and severity of damages inflicted on biodiversity, ecosystems, and ecosystem services. The findings were chilling. In Palawan, at least 60% or around 125,000 hectares of forests had been defoliated, fallen, or uprooted. In Siargao, initial findings confirmed extensive damage to the island's vegetation. This “green assessment” was used to determine post-disaster mitigation measures and draft a recovery plan that outlined science-based recommendations to management authorities in the affected areas.

Beyond disasters and into the future

USAID SIBOL is also working on various applications of Sukat ng Kalikasan. These include providing a more accurate estimate of the extent of fishery harvesting and exploitation in marine protected areas; developing a protocol to quantify the contribution of mangroves in absorbing carbon; establishing national forest, coral and fisheries assets accounts; improving the Philippine Biodiversity Strategy and Action Plan;



FEATURE

Sukat ng Kalikasan (cont'd)

streamlining data capturing and information management systems of the Department of Environment and Natural Resources (DENR); improving the management effectiveness of protected areas; supporting biodiversity friendly enterprises; improving environmental law enforcement tools; and strengthening the capacity of law enforcers to go after environmental crimes. These activities are all underpinned by the assumption that if the government can accurately assess the conditions and measure the value of the country's ecosystems, the Philippines is in a better position to safeguard its natural resources through policies based on science. From March to August this year, USAID SIBOL conducted various meetings and focus group discussions with national government agencies and other stakeholders to introduce the Sukat ng Kalikasan framework and dig deeper into current management structures to determine strategies on further streamlining natural resource governance. The responses from the participants were motivating and supportive, tempered only by their assessment of the government's current capacity to adopt the framework.



But as far as the DENR is concerned, accounting for the country's natural capital is an endeavor they can get behind. In her message during the Public Hearing of the Committee on Economic Affairs (Subcommittee on Philippine Ecosystem and Natural Capital Accounting System Law and Blue Economy) last May, DENR Secretary Maria Antonia Yulo-Loyzaga expressed her agency's support for the proposed Philippine Ecosystem and Natural Capital Accounting System (PENCAS), a bill that would create a law that would, in essence, legislate the use of Sukat ng Kalikasan on a national level.

FEATURE

Sukat ng Kalikasan (cont'd)



“The DENR strongly and categorically supports the legislative measures that aim to institutionalize PENCAS, which will not only provide us with a snapshot of the environment and its contribution to the economy. PENCAS help map possible directions in the development of the nation beyond traditional indicators and allow us to explore multiple trajectories for social, economic, and environment development from the valuation of our natural resources,” Loyzaga said.

Early next year, the project will launch the Sukat ng Kalikasan toolkit to government partners for pilot implementation.

“Sukat ng Kalikasan is a change agent. Its framework and toolkit is equipping natural resource managers and decision-makers on how to more accurately reflect and assess trade-offs when utilizing natural resources in the Philippines. The more accurate and understood those trade-offs, the more confident the government can be in its approach to short- and long-term strategy for the use and preservation of those resources. When we know nature’s real worth, we become more effective stewards for both ourselves and our environment, which sustains us. This is reflected in the government’s interest in passing the PENCAS bill,” USAID SIBOL Chief of Party Kathy Wachala said.

FEATURE



Batak tribe fights to regain livelihood in northern Palawan

Puerto Princesa City, PHILIPPINES – Nestled deep within the remote village of Sitio Kalakwasan, within the heart of Barangay Tanabag in northern Puerto Princesa City, Palawan, thrives a centuries-old indigenous community known as the Batak tribe. To reach them, one must embark on an hour-long trek along rugged dirt roads, traversing a labyrinth of shallow rivers. Despite the passage of time, the Batak tribe has been able to preserve their indigenous

cultural practices, many of which are inextricably linked with nature. But in the afternoon of December 17, 2021, the tribe would lose much of what they valued. While they were busy tending to their families, harvesting forest products and hunting boars, violent winds blew and torrential rain started to pour. Super Typhoon Odette struck the entirety of northern Puerto Princesa City. A few hours later, the river near the Batak settlement swelled beyond its banks, the strong currents sweeping everything in its path.

”We were forced to seek shelter in the uplands, behind huge trees and canopy covers,” the locals recalled. After the super typhoon, they had nothing left other than a barren land littered with debris from destroyed houses. None of the 63 houses were spared in the village and all their community infrastructure such as the tribal hall, plaza, school, church, water facilities and hanging bridge were all destroyed.

Fortunately, no one was hurt or died in the catastrophic event. Weeks later, the Batak tribe had to build temporary shelters on the mountain slopes just above their previous settlement. But on top of losing their homes, they also lost their main source of livelihood—almaciga harvesting. Almaciga (*Agathis philippinensis*) trees thrive in the higher elevations of Puerto Princesa City, specifically in the mountainous areas of barangays San Rafael, Tanabag, Concepcion, Binduyan, Langogan, Tagabinet, and New Pangangan that are within Cleopatra’s Needle Critical Habitat (CNCH).

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The trees are a source of resin—a natural extract used as adhesive, plastic, coating, varnish, paint or incense. Because of its high market demand, indigenous groups in northern Puerto Princesa City have been engaging in resin collection for decades, making up 80% of their income.

“We stopped harvesting for months after the typhoon. Huge uprooted trees blocked the trails to the almaciga area,” Erwin Mauricio, 33, father of four and an almaciga harvester, shared. “The huge uprooted trees blocking the trails made it near impossible to pass, especially if you’re carrying a 50-kilogram sack of resin from the upland,” he added. They would have to access the area by passing through a river but this was also difficult especially with strong water current on rainy days.

Before the typhoon's onslaught, Erwin and his fellow harvesters earned around PhP22 (\$0.4) for every kilo of almaciga resin which they could immediately sell to a buyer in their community. They harvest at least four sacks—50-kilogram each—of almaciga resin in a month which totals to around P4,000 in revenue. They could harvest more depending on the amount of food they bring in the uplands, but usually their supplies last for three to five days.

After the typhoon, they endured months of no harvesting. They also had to engage in more unstable sources of income such as construction work and quarrying. For the latter, they needed to fill 100 sacks with around 50 kilos of sand to earn a measly P600 (\$10.5). It would also take them a few weeks just to sell the sacks of sand to a quarrying company.

“It was more difficult compared to when we were harvesting almaciga,” Erwin said. “We had no other food source that time aside from the relief goods we received from outside help.”



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To make matters worse, the Batak tribe's permit to collect resin expired on December 20, 2022. Supposedly, their resource use permit approved by the Department of Environment and Natural Resources (DENR) allowed them to collect 320,625 kilograms of almaciga resin. But due to the devastation caused by the typhoon, they failed to even collect half of that allowable amount. Late last year, the City Environment and Natural Resources Office (City ENRO) of Cleopatra's Needle Critical Habitat (CNCH) conducted a community meeting in Sitio Kalakwasan. The Batak chieftain took this opportunity to raise their concern on harvesting almaciga resin. The Batak were willing to clear the trails but lacked food, equipment and other essential requirements to pursue it. As a response, the City ENRO created a composite team from the Batak community and engaged local partners to coordinate a trail clearing activity going to the almaciga area in the uplands of Barangay Tanabag. The United States Agency for International Development (USAID), through its Sustainable Interventions for Biodiversity, Oceans and Landscapes (SIBOL) project,



joined the City ENRO, City Disaster Risk Reduction Management Office (CDRRMO), Department of Environment and Natural Resources (DENR), Palawan Council for Sustainable Development (PCSD), barangay local government unit of Tanabag, and other city offices in providing various necessities for the trail clearing.

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USAID provided food and clearing materials to every volunteer. These complemented the provisions of the CDRMO which included food packs for the volunteers and their families, fuel and transportation. The DENR and the barangay local government unit of Tanabag also monitored the activity. The PCSD provided the chainsaw units for use during the trail clearing. Additionally, the City Health Office provided vitamins and medicines, and the City Engineering Office provided oil for the chainsaw units. USAID, through SIBOL, enhances conservation science systems, improves economic incentives and strengthens environmental law enforcement for a more effective natural resource management protected areas in the Philippines.

SIBOL is a five-year environmental project working in four sites: Siargao Island, Masinloc-Oyon Bay in Zambales, Puerto Princesa Subterranean River National Park and Cleopatra's Needle Critical Habitat, and Mt. Mantalingahan Protected Landscape in Palawan.



During the trail clearing, 17 Batak community members and four forest patrollers volunteered. Four almaciga harvesters served as chainsaw operators to cut down huge uprooted trees while the rest brought machetes. “I worked as a chainsaw operator during the trail clearing,” Erwin shared.

FEATURE

Batak tribe fights to regain livelihood in northern Palawan (cont'd)



The volunteers were divided into four teams assigned in different weeks between October 29 to November 28, 2022. They had to stay the entire week in the mountains, and brought with them food and hammocks. After the activity, the trail clearing team successfully covered up to 14 kilometers starting from Sitio Kalakwasan and removed a total of 187 fallen/uprooted trees obstructing the trails.

In December 2022, the almaciga harvesters resumed their operation for a while. Prior to the expiration of their permit that month, they transported resins to concessionaires on December 19 and 20.

After months of no harvest, they sold a total of 38,000 kilograms of almaciga resins worth around

P1.1 million (\$19,315). When their permit expired, they had to halt operations once more. On April 26, 2023, the DENR renewed their permit. The Batak harvesters resumed operations and were once again allowed to harvest up to 150,000 kilograms of almaciga resin in the uplands of Sitio Tina in Barangay Tanabag.

“In two days, I could harvest one sack of resins weighing 50 kilos, equivalent to around P1,500 (\$26.3),” Erwin said.

With at least four sacks in one month, he and his fellow harvesters can already support the needs of their family. As further support in sustaining almaciga resin collection in CNCH, USAID, together with City ENRO through its Puyos Patrollers are currently conducting almaciga assessment to determine the current condition of the almaciga trees in CNCH after Super Typhoon Odette. They map almaciga areas for future monitoring, sustainable management and utilization. .USAID’s SIBOL previously trained the Puyos Patrollers—stewards of the critical habitat—is conducting almaciga assessment and mapping. They learned data capture methodologies, such as survey design in the form of datasheets, and data models through EarthRanger—a software solution used to collect and provide data in real-time. Many of the Puyos Patrollers belong to indigenous communities in CNCH. “The trail clearing was a huge help for us, because we can already access the almaciga area again... We are very thankful to those who helped us,” Erwin said.

KEY EVENTS FOR THE NEXT TWO QUARTERS

- International Mountain Day - December 11
- Sukat ng Kalikasan toolkit launch - first quarter 2024
- Green Recovery Plan roadshow - January 2024
- World Wetlands Day - February 2
- International Day of Women and Girls in Science - February 11
- World Pangolin Day - February 18
- World Wildlife Day - March 3
- International Women's Day - March 8
- International Day of Forests - March 21

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ABOUT SIBOL

Launched in 2020, the Sustainable Interventions for Biodiversity, Oceans, and Landscapes (SIBOL) is a P1.35-billion natural resources management and biodiversity conservation project of the United States Agency for International Development in partnership with RTI International. SIBOL works closely with the Department of Environment and Natural Resources, the Department of Agriculture's Bureau of Fisheries and Aquatic Resources and the Palawan Council for Sustainable Development. The Center for Conservation Innovations, Forest Foundation Philippines, Zoological Society of London, and the Resources, Environment and Economics Center for Studies, comprise the consortium partnering with RTI.

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