Developing a Localized and Area-based Conservation Priority Setting of the Useful Plants among Alangan Mangyans of Halcon Range, Mindoro Island, Philippines

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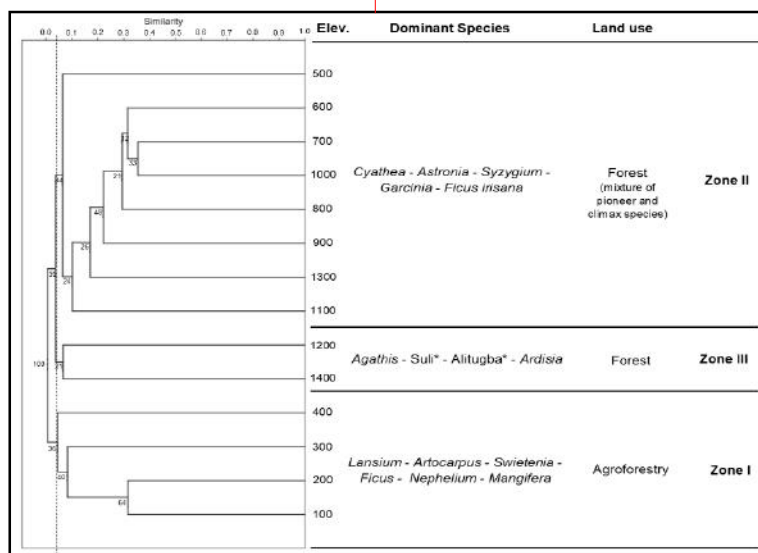
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Geographic and demographic information

Philippines

Oriental Mindoro

Paitan Village
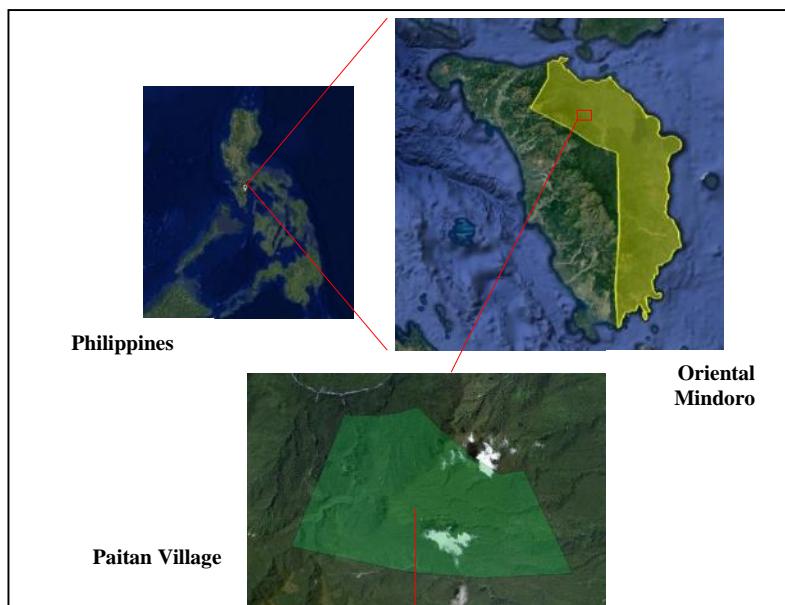
Country	Philippines
Province	Oriental Mindoro
District	Naujan
Size of geographical area	503.10 km^2
Number of indirect beneficiaries	102,998 persons
Dominant ethnicity	Mangyans

Size of project area	320 km^2
Number of direct beneficiaries	1,519 persons
Geographic coordinates (longitude and latitude)	13° 15' 58.4" N 121° 5' 37" E
Dominant ethnicity	Alangan Mangyans

Cluster diagram showing the forest zones and land uses along elevational gradients.

Ecosystem Types

X	Forest		Grassland	X	Agricultural		In-land water
	Coastal		Dryland		Mountain		Urban/peri-urban

Important species in the site

Common name (*Local name*)	Scientific name	Description
Almasiga	*Agathis philippinensis*	A large endemic tree in the Philippines noted for its expensive resin collected by locals. It has been listed as threatened species both in the national list and in the IUCN (Critically Endangered).
Kalingag	*Cinnamomum mercadoi*	A small tree used as medicine by local people
Balobo	*Diplodiscus paniculatus*	A native of lowland rainforest in the Philippines and is largely harvested for timber. It has high frequency of harvesting in the project site.
Betik	*Hopea plagata*	A large tree with available threat status in the Philippines, as well as in IUCN (Critically Endangered).

Agathis philippinensis

General introduction

Localized and area-based conservation priority setting has been a useful tool in conservation strategy. This study is the first attempt for a localized conservation priority setting of plants in the Philippines, integrating both ecological and socio-cultural dimensions of biodiversity. This study aimed to set conservation priorities of plant species that are useful to the Alangan people of Mindoro Island, southern Luzon, Philippines, a unique biogeographic region. Alangan tribes are part of the ethnic group, Mangyans. In the Philippines almost a hundred ethnic groups exist throughout the archipelago. Each group has its unique traditional practices in interacting with nature.

Key informant interviews were done to list the useful plants and the frequently harvested ones by the people as these could be vulnerable to various threat categories of the IUCN. Then actual field ecological assessment was conducted to verify the status of the plants in the nearby forest ecosystem. Using a point scoring procedure, seven criteria of the index (Conservation Priority Index) were applied to the important plant species for conservation priority setting (Table 1). This index utilized available bibliographic information, field surveys, and vegetation surveys. A multivariate analysis using non-linear principal component analysis was also performed.

Among the 199 plants used as food, medicine, fodder, etc., 72 species were frequently harvested. Applying the Conservation Priority Index, 17 species were categorized as medium priority plants for conservation at the local level and the rest were of low priority as identified from the non-linear PCA. None among the species got a high priority risk, signifying sustainable harvesting or utilization of forest products by the Alangan IPs. This result supports the various claims that IP practices are benign to nature. Nevertheless, there is a need for regular monitoring using the developed instrument to ensure conservation of plant biodiversity as well as the Alangan agroforestry culture.

Table 1. Conservative priority classification based on CPI score

Score	Priority level	Decision
1-12	Low	Sustainable for high-impact harvesting
13-24	Medium	Can be harvested with specific quotas
23-25	High	Requires strict regulation in harvesting

A portion of the agroforestry site in Paitan Village.

Contribution to Aichi Biodiversity Targets' Strategic Goal B

		Breakdown Target	How did you measure the outcome?	Result
Strategic Goal B	TARGET 5	The rate of loss of forests is at least halved and where feasible brought close to zero	Species inventory/enumeration of useful plants Number of FREQUENTLY harvested plants by the Alangan IP from the forest, through key informant interview.	Established baseline information: 199 plants used in various categories as food, medicine, fodder, lumber, handicraft, ornamental, etc. 72 frequently harvested plants identified by the Alangan Mangyans
		The loss of all habitats is at least halved and where feasible brought close to zero	Area in sq m	To be obtained after 5 years
		Degradation and fragmentation are significantly reduced	Area in sq m	To be obtained after 5 years
	TARGET 6	By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.		
	TARGET 7	Areas under agriculture are managed sustainably, ensuring conservation of biodiversity		
		Areas under aquaculture are managed sustainably, ensuring conservation of biodiversity		
		Areas under forestry are managed sustainably, ensuring conservation of biodiversity	Developed scoring system (1-5 with 1 as lowest) for the seven customized criteria for the Conservation Priority Index of a species using formula as follows: *Conservation Priority Index = Harvesting Risk + Economic Use + Cultural Use + Species Distribution + Relative Frequency + Global Threatened Status + National Threatened Status*	None were under high priority for conservation: There was sustainable utilization of forest resources. 17 out of 72 useful plants were considered of medium priority for conservation 55 out of 72 useful plants were considered of low priority for conservation
	TARGET 8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.		
	TARGET 9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.		
	TAGERT 10	Multiple anthropogenic pressures on coral reefs are minimized, so as to maintain their integrity and functioning		
		Multiple anthropogenic pressures on other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning	Number of households domesticating vulnerable wild plants	To be obtained after 5 years

Relations to other Aichi Biodiversity Target & SDGs
Legend: ● for direct *and* ■ for indirect contributions to the Aichi Biodiversity Targets and SDGs.

CBD Aichi Biodiversity Targets (https://www.cbd.int/sp/targets/)

Strategic Goal A				Strategic Goal B					
■	■		●	●		●	●		■
1	2	3	4	5	6	7	8	9	10

Strategic Goal C			Strategic Goal D		Strategic Goal E				
●	●	●	●	●		■	■		
11	12	13	14	15	16	17	18	19	20

UN Sustainable Development Goals (SDGs) (https://sustainabledevelopment.un.org/sdgs)

■	■				●		●	
1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
		■	●	■	●			
10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	

Any difficulties you found during your assessment

Coordination with local leaders and the community was quite a challenge due to lack of network of collaborators and inadequate telecommunication facility. Besides almost all local people were busy in their farm life tending agricultural fields, agroforest farms and gardens. The coming up with a formula in determining localized conservation priority of important species for the community was the first in the   Philippines, hence the identification of indicators and procedures were difficult due to lack of baseline data we can base from.

Key messages for the CBD in planning for the post-2020 Targets

IPSI should be sustained for post-2020 targets. IPSI has been efficiently establishing the global network to conserve beneficial human-nature interaction inside the SEPLS around the world. Incidentally, these ecosystems are ecologically and economically important, though had been neglected most of the times. Sustaining IPSI will enable all the members of this global network to interact and communicate on how to scale up in their existing conservation activities d how to overcome challenges as experienced by other partners.