



Submission for the Asia Pacific Regional Consultation on Nature-Based Solutions
Children and Youth Major Group
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Children and Youth Major Group submission to the intergovernmental consultation following up on the UNEA Resolution 5/5 (UNEP/EA.5/Res.5) on Nature-based Solutions in reply to the co-chairs' invitation *to provide input in relation to the overall aim of the intergovernmental consultations and the three specific tasks for the consultations specified in the resolution.* CYMG presents its contributions to the following points:

1. The overall aim of the intergovernmental consultations
2. Examples of best practices

The overall aim of the intergovernmental consultations

The Children and Youth Major Group is pleased to take part in the consultations happening for this region, as a way to share the vision of the global youth on what we can do to contribute to the implementation of nature-based solutions in solving/mitigating the effects of the climate change in the natural world and human societies. We share the vision that young people should also be considered when thinking about nature-based solutions since we can contribute to the discussion around the topic by sharing our novel ideas and the projects that young people have done.

We at CYMG believe that nature-based solutions can be a great tool in achieving some of the Sustainable Development Goals, but that would only work if there is cooperation (whether multilateral or bilateral) between Member States and other Stakeholders. We also stand for our common philosophy that nature-based solutions should be implemented taking into account the welfare of the communities most affected by the triple planetary crisis, in order to best benefit them.

This is a compilation list of projects that utilize nature-based solutions as way to combat the consequences of the climate crisis, and for this submission, we compiled four examples from the Asia Pacific region. For each one, we have written a summary of their goals and development process as well as their outcomes and sources of finance.



Examples of best practices

Asia Pacific

Indonesia

The Pemuteran Bay Coral Protection Foundation aims to address the collapse of local fish stocks by implementing artificial coral reefs and creating a locally-managed Marine Protected Area (MPA) to restore marine biodiversity.

Nature-based Intervention:

- In the face of devastating fish stock collapse and loss of coral reefs due in part to destructive fishing techniques such as reef bombing, the village of Pemuteran on the Indonesian island of Bali has engaged in a combination of approaches which have reportedly resulted in positive ecological and socioeconomic outcomes. Firstly, the foundation has overseen the installation of 70 'Biorock' technology artificial reefs, consisting of steel-frame structures through which a low voltage electric current is passed, attracting calcium carbonate buildup and becoming an effective substrate for the establishment and rapid growth of coral. Secondly, the foundation, working closely with the national enforcement agencies to ensure compliance, has supported the reintroduction and enforcement of locally-managed Marine Protected Areas (MPAs) which strictly forbid unsustainable fishing practices. Lastly, other activities organized by the foundation have contributed to the regeneration of the coral reefs and fish stocks, such as the planting of vetiver grass on shorelines to reduce erosion and excessive run-off, as well as waste and sewage management. According to project reports, the 70 structures span two hectares, reportedly making this the largest coral reef nursery restoration project globally.

Overview of context and outcomes:

- Biorock corals have been shown to grow three to five times more quickly than natural coral, and are also more resilient to the effects of temperature fluctuations, with coral survival rates between 16-50 times higher.

Adaptation:

- The Biorock coral reefs have reportedly been shown to absorb wave energy, reducing beach erosion and the risk of disaster impacts. According to a project report by the Equator Initiative, Biorock was found to be more effective than sea walls at reducing beach erosion, since waves deposit sand on the shoreline, building up the beach instead of eroding it.



Ecosystem health:

- According to project reports, local coral reefs have been restored and fish populations have been replenished. The abundance and diversity of marine species around the reefs have reportedly grown substantially, including populations of dugongs, which were considered locally extinct prior to the project.

Socioeconomic outcomes:

- Fish stocks, which are critical to the food security and livelihoods of the villagers, have reportedly been replenished. As a result of the restored reefs and marine biodiversity, the area has become a popular ecotourism destination for diving and thus the number of jobs in the local tourism industry has reportedly increased substantially. Further successful efforts to drive tourism have included the creation of unique reef art installations and the reinvestment of private tourism proceeds into conservation activities.

Finance:

- The project has received financing from village funds, the UNDP, and the Global Coral Reef Alliance.

Cambodia

Monks Community Forest is an 18,261-hectare evergreen forest in northwest Cambodia in which a unique approach to law enforcement based on Buddhist principles demonstrates the power of linking conservation with traditional customs and beliefs.

Nature-based Intervention:

- In response to widespread deforestation, the monks of Samraong Pagoda acquired the legal right to protect the surrounding forest, established patrol teams, demarcated the forest's boundaries, and raised environmental awareness among local communities. Now Cambodia's largest community forest, it is co-managed by a committee of diverse stakeholders and, while logging and hunting are prohibited, villagers may use traditional fishing methods, collect fallen timber for construction, and harvest non-timber forest products (NTFPs). Moreover, villagers are encouraged to fish, collect materials for their shelters, and harvest non-timber forest products such as bamboo, wild ginger, fruit, and mushrooms for subsistence use and for traditional medicines, as well as to sell in local markets.

Overview of context and outcomes:

- Because of their role in Khmer society as moral and spiritual leaders, the involvement of monks in the management and patrolling of the Monks Community Forest brings



legitimacy to forest protection efforts and has reportedly served as a powerful deterrent to forest crimes including illegal logging and hunting. The monks have been able to cultivate a conservation ethic among villagers living near the MCF by explicitly linking nature conservation to the life of the Buddha, and to Buddhist principles such as karma and living a moral life. As a result of awareness-raising efforts, most Buddhist villagers see forest protection as benefiting them spiritually.

Climate change mitigation:

- While not quantitatively evaluated or reported by the study, it is probable that the initiative has contributed to climate mitigation through the creation of and continued monitoring of the 18,261-hectare community forest which has reportedly prevented deforestation. Monks Community Forest is one of thirteen community forests involved in Cambodia's first reduced emissions from deforestation and forest degradation (REDD) carbon offset projects.

Ecosystem health:

- Patrolling and awareness-raising activities have reportedly reduced logging, hunting, and land clearing inside the Monks Community Forest, likely greatly helping to safeguard the area's biodiversity. The area is known to be home to a number of threatened species, including the Sun bear, gibbon, gaur, slow iris, leopard, Green peafowl, Greater and Lesser adjutants, pangolin, and dholes.

Socioeconomic outcomes:

- According to a project report, the harvest of NTFPs, especially mushrooms, from the Monks Community Forest can be very lucrative constituting an important cash source for local villagers. Over 3,700 people from six villages participate in and benefit from Monks Community Forest Activities. The vast majority of participants and beneficiaries are poor farmers who are often economically marginalized without land titles. The community forest provides resources, benefits, and services such as shelter, subsistence crops, and commercial products, all of which are essential for their survival and well-being. The income from the new REDD projects has the potential to provide sustainable financing for protection activities and livelihood support to local communities over the long term.

Finance:

- The project has received funding from the UNDP, the NGO Buddhism for Development, Community Forestry International, and income through REDD+ in partnership with the Forestry Administration.



Borneo Highlands on the border of Malaysia and Indonesia

A trans-border alliance between local indigenous populations sharing a cultural heritage on the island of Borneo works to preserve indigenous culture and knowledge, promote sustainable agriculture, and conserve the island's largest intact forested and traditionally farmed catchment.

Nature-based Intervention:

- Local indigenous groups came together to create the Forum Masyarakat Adat Dataran Tinggi Borneo (FORMADAT) or the Alliance of the Indigenous Peoples of the Highlands in the Heart of Borneo to advance conservation and development goals. FORMADAT promotes sustainable agriculture techniques, agroforestry, the use of diverse and native varieties of rice, and the establishment of nurseries to breed distinctive species of local fruit which have been domesticated and bred over generations. The inhabitants of the highlands use a traditional wet rice farming system and cultivate native fruit and rice varieties, often partnering with NGOs and gaining organic and fair trade certifications to access niche markets. The traditional wet rice farming method involves the use of a wet paddy system irrigated by mountain waters. Once the rice is harvested, water buffalo are released to churn and fertilize the soil. This system allows for greater food production as opposed to shifting agriculture and also maintains the integrity of the local water supply as communities do not rely on chemical inputs for agriculture. Agroforestry has been practiced sustainably by the local communities for generations through which they derive timber, medicinal plants, foods, dyes, and materials for handicrafts. FORMADAT created a Cultural Field School in 2011 to preserve local knowledge and educate locals and tourists about the cultural and agricultural practices of the area.

Overview of context and outcomes:

- The island of Borneo is politically divided between Malaysia, Indonesia, and Brunei. In the highlands of Borneo, the Dayak Lundayeh/Lun Bawang, Kelabit, and Sa'ban peoples of Indonesia and Malaysia share a cultural and historical heritage. The highlands of Borneo exhibit the largest surviving intact forested and traditionally farmed catchment on the island.

Adaptation:

- The nurseries created have reportedly increased the variety of nutritional options and richness of fruit varieties available. The nurseries are also seen by local communities to serve as a buffer against climate change impacts on agriculture.

Ecosystem health:

- FORMADAT has reportedly improved the conservation of agrobiodiversity through the promotion of diverse rice and fruit varieties.



Socioeconomic outcomes:

- FORMADAT has trained more than 300 farmers in internal control systems (ICS) with the aim of helping them attain organic certification. Partnerships with NGOs have provided access to niche markets; however, international distribution and transport challenges remain.

Finance:

- The project received financial support from the WWF, the Lundayeh Ethnic Association, the Indonesian Department of Education, the International Tropical Timber Organization, and the UNDP.

Sri Lanka

Bioremediation, restored vegetation, and organic farming methods have been implemented to reduce high levels of groundwater nitrate contamination and boost food production.

Nature-based Intervention:

- In order to reduce dependence on chemical fertilizers, restore existing water resources, and regenerate the local ecosystem, the community engaged in bioremediation and biological fencing around production and planting areas. Bioremediation is the process of using organic microbes to clean up contaminated soil or groundwater. First, deep-rooted trees were planted close together to form a root mat that would facilitate the uptake of contaminants. Bioremediation requires a carbon-rich environment; therefore, coconut peat and straw were added to the sandy soil. As the surrounding trees grew, their leaf fall and detritus naturally provided the organic matter required for bioremediation. Furthermore, in order to boost agricultural production as well as restore the weakened local ecosystem, trees able to withstand salt-laden sea breezes were planted as wind-breaking fences. Within and around the plant fences, monocropping was replaced with more organic agricultural methods. Nearly 8,000 plants of fifty-four different species were planted on the project site. The intervention's success inspired its implementation in over 1,000 wells in Kalmunai on the opposite coast of Sri Lanka.

Overview of context and outcomes:

- In response to traditionally low and increasingly erratic rainfall in the region, local communities in Kalpitiya Peninsula had begun to withdraw water for crop and domestic use from the underlying aquifer. However, a high dependence on chemical fertilizer for monocropping had caused nitrates to seep into farm and domestic wells. Not only does such contamination contribute to the release of nitrous oxide, a greenhouse gas, but also implicates local health and well-being. At the start of the project, it was reported that 64% of local infants had methemoglobin levels above the recommended range, a consequence of nitrate contamination. Additionally, the stability of local vegetation had



been compromised by increasing temperatures, salt-laden winds, and the clearing of formerly protective mangroves and other trees for shrimp and agricultural production.

Climate change mitigation:

- Although not quantified, it is likely that the observed increase in local tree and vegetation cover will strengthen the carbon sequestration potential of the region. The increased uptake of organic farming methods will likely contribute to mitigating the escape of nitrous oxide, a greenhouse gas.

Adaptation:

- The transition from monocropping has reportedly increased crop diversity allowing harvesting throughout the year, an important risk reduction outcome in the face of the forecasted likely climate change-induced impacts on seasonal predictability.

Ecosystem health:

- Soil fertility was reported to have increased, likely reducing community dependence on chemical fertilizer. Trees planted in the lagoon landscape are expected to help protect the coastline and recover habitats for both aquatic and terrestrial species.

Socioeconomic outcomes:

- Water testing showed a decrease in levels of nitrates from 58.5 milligrams per liter in 2004 to 12.1 milligrams per liter in 2008. Although not measured, this is likely to reduce the health consequences of high nitrate levels. As a result of improved soil quality and more organic farming methods, garden owners reported a greater ability to use harvests for domestic consumption.

Finance:

- Funding for the project came from the National Water Supply and Drainage Board.