Integrated Tropical Peatland Management in Southeast Asia

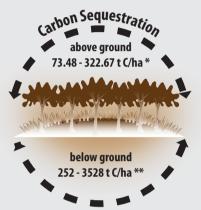
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■ What Are Peatlands?

Peatlands are wetland ecosystems that are characterised by the accumulation of organic matter (mostly semi-decomposed plant matter: trees, sedges, mosses) in waterlogged conditions over thousand of years.

■ Importance Of Peatlands

Climate Regulation: One of the world's largest carbon stores. Peatlands cover approximately 3% of Earth's surface but store 20-35% of all carbon on land.



* Page et al., 2012, ** Verwer, C. & Va der Meer, P., 2012

Valuable Biodiversity: Peatlands are habitat for unique fauna and flora, and are natural havens for tigers, orang-utans, sun bears, birds, fish, insects and hundreds of plants and timber tree species.

Water Regulation: Peatlands are composed of 90% water and 10% organic matter. Hence, they serve as important water catchments that regulate water supply.

Others: Provides abundant goods and services such as food, medicinal plants, etc.

Impacts From Peatland Degradation

Southeast Asia peatlands are disappearing at a rate of 2% per year and contribute significantly to:

- a) Peatland Fires: Drainage or drought can lower the water table, making the peatlands extremely vulnerable to fires which are extremely difficult to extinguish unless the water table is brought back to the surface. Peatland fires can release up to 2000 tonnes of CO₂ per hectare, as well as loss of peat and its vegetation. It causes haze that affects millions of people.
- b) Climate change: Major GHGs released from degrading peatlands are carbon dioxide (CO₂), methane (CH₄) and nitrogen dioxide (NO₂), which contribute to climate change.

Peatland ecosystem and its biodiversity need to be protected from unsustainable practices: National policies and laws: Well structured land-use policies and plans should be developed, the role of peatlands should be well defined and laws strictly enforced to prevent irresponsible acts to peatlands. Awareness and education: To educate communities and stakeholders on adverse effects of peatland degradation and to promote its wise use through an effective communication strategy, research, economic evaluation and information exchange. Conservation: Conservation: Conserve all remaining peatlands from degradation.

Sustainable Use

Degraded areas should be used wisely for:

Community livelihood:

Management of peatland resources for sustainable livelihood of local communities such as rattan, palms, *Pandanus* fish timber etc.

Nature tourism and management:

canoeing, bird watching and guide walks are good ways to promote publ awareness and peatland conservation.

Sustainable agriculture:

Peat soil is acidic and not recommende for agriculture. However, it can be use for shallow rooting crops such a pineapple and salak palms (Salacca sp. Crops and commodity plantations the require major drainage are not recommendated.

mended. To establish crops on peatlands, water managemen proper planning and guidelines are required to be strict adhered to.

Sustainable forestry:

Valuable timber species such as Ramin (Gonystylus banca nus), Jelutong (Dyera polyphylla), Kapur paya (Dryobalanop rappa) and several species of Meranti (Shorea spp.) groundurally in peat swamp forests. Jelutong provides wood for carving and latex used in the making of chewing gum. Sustain able forestry helps to protect, develop and manage thes

BEST MANAGEMENT PRACTICES

To ensure sustainability, an integrated management approach would ensure economic prosperity, environmental sustainability and societal well-being through sound water, soil and vegetation management.

Rehabilitation

Basic approaches for rehabilitating peatlands are:

i) Hydrological restoration and management is to manage the water table to prevent further decomposition, peatland subsidence, prevent vulnerability to fires and

Canal Blocking

Blocking of drainage canals would help restore peat hydrology and maintain the water level. Many methods are available to block canals. The 'tabat', a traditional Dayak method using timber and sand bags has been proven to be practical and cost-effective. The blocked canals can also collect organic matter and becomes part of the natural landscape. Using this traditional method, local communities can rehabilitate the peatlands effectively and blocked canal sections can be used to rear fish and provide water during dry seasons.



) Re-vegetation

Fast growing species can be planted to re-vegetate degraded peatlands and encourage natural regeneration. Extensive replanting may be necessary in severely degraded areas. Indigenous species are preferred, for example Mahang (*Macaranga pruinosa*), Jelutong (*Dyera polyphylla*) and Meranti (*Shorea* spp.).

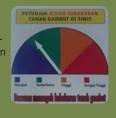
Fire Prevention and Control

Interventions

Fire prevention is a crucial part in preventing peatland degradation. Fires can be prevented through water management, enhanced vigilance and fire control measures. Fire prevention activities include blocking abandoned drainage canals, re-vegetation of degraded sites, fire awareness campaigns with local communities, and establishing local community fire brigades.

Fire Danger Rating System (FDRS) is a system that calculates the danger of a fire starting up based on information such as moisture, rainfall,

temperature and etc.
This helps to alert fire
managers and communities of possible fires in
specific areas and be
prepared.





such as REDD+ and zero burning initiatives help in reducing emissions, storing carbon and investing in low-carbon sustainable development.

Incentive

One example of incentive approaches is the "Buying Living Tree System" in Central Kalimantan where communities are rewarded for the number of living trees maintained on their lands. This helps to protect peatland forests and promote sustainable peatland manage-













Projects funded by











The ASEAN Peatland Forests Project(APFP), funded by GEF/IFAD, and led by the ASEAN Secretariat, aims to demonstrate, implement and scale up sustainable management and rehabilitation of peatland forests while the SEApeat project, funded by the European Union, seeks to reduce deforestation and GHG emissions via degradation of peatland forests in Southeast Asia.