Apfp-SEApeat
ASEAN Peatland Forests Project - Sustainable Management of Peatland Forests in Southeast Asia

Projects funded by: IFAD Investing in rural people; gef; European Union
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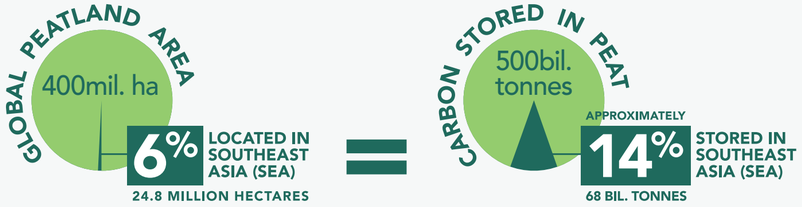
PEATLANDS AND CLIMATE CHANGE IN SOUTHEAST ASIA

The role of drainage and fire on peatland carbon emissions and the 2015 haze crisis in SE Asia

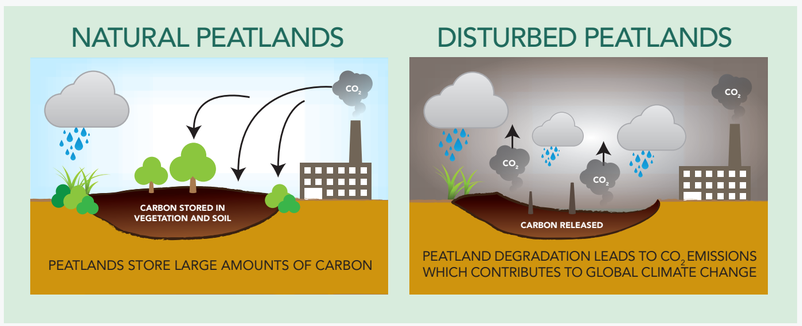
PEATLANDS: A CARBON SINK

Globally, peatlands are the most important terrestrial carbon sink, storing more than 500 billion tonnes of carbon. This represents 30% of the world's soil carbon and twice as much carbon as the biomass of all the world's forests combined. Tropical peatlands are estimated to store about 88.6 billion tonnes of carbon, while 77% of it is located in peatlands in Southeast Asia. This carbon is stored mainly in the form of peat with a lesser amount in living tree biomass. Undisturbed tropical peatlands play a key role in climate regulation by absorbing large amounts of CO_2.



SOURCE: Page *et al.* (2011)

Peat containing at least 65% organic matter, comprising of partially decayed organic matter. Peat is formed in waterlogged condition and absence of oxygen, over thousand of years when the rate of accumulation exceeds the rate of decomposition.



DEFORESTATION AND FOREST DEGRADATION IN TROPICAL PEATLANDS MAINLY CAUSED BY

AGRICULTURAL

conversion to oil palm & acacia plantation

+

FORESTRY

DRAINAGE FOR CULTIVATION AND LOG EXTRACTION

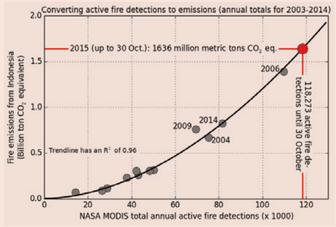
which lowers the water table in peatlands, enabling the peat to oxidize, thus releasing CO_2 into atmosphere. This will continue as long as the drainages exist.

Leaving behind dried peat that is easily combustible and is very susceptible to fire. When peat fire occurs, it can penetrate beneath the peat layer, making it difficult to put out and can continue to smolder for weeks (or months), producing huge amount of CO_2 and smoke (haze) in short time. Emission from drained peatlands and fire contributed significantly to global GHG emission.

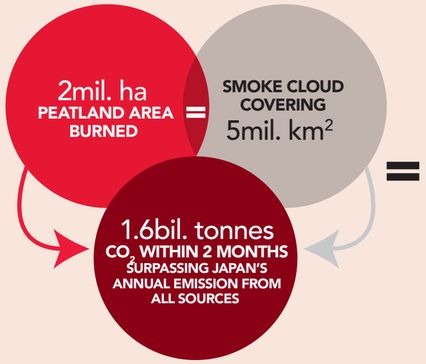
QUICK FACTS

SOUTHEAST ASIA HAZE 2015

Arguably the worst in this decade, as thousands of hectares of peatlands in Sumatra and Kalimantan (some are intact forests) were deliberately and illegally set on fire, causing thick, yellow and acrid haze across ASEAN countries.



Fire emission from Indonesia fire.
SOURCE: Van der Werf. (2015)

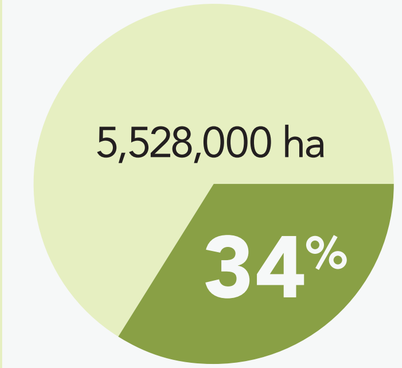


3,300 PSI in Indonesia
(Pollutant Standards Index)

Millions of residents evacuated

500,000+ with respiratory illnesses

100,000 premature deaths are expected



ARE STILL COVERED WITH RELATIVELY INTACT FORESTS (WEST PART OF SE ASIA).

SOURCE: Miettinen *et al.* (2012)

MITIGATION RECOMMENDED

AVOIDING NEW EMISSIONS FROM LAND USE CHANGE

RESTORATION OF PEATLANDS TO REDUCE EMISSIONS AND ENHANCE SEQUESTRATION

IMPROVED MANAGEMENT PRACTICES TO REDUCE EMISSIONS FROM EXISTING PRODUCTION SYSTEMS

WATER MANAGEMENT, FIRE PREVENTION AND CONTROL

REWETTING AND HYDROLOGY RESTORATION OF DRAINED PEATLAND IS THE MOST COST-EFFECTIVE WAY OF REDUCING EMISSION FROM DRAINAGES AND FIRE.