



PHOTO © Sigit Deni Sasmito, CIFOR || Tropical peat swamp forest carbon monitoring, Central Kalimantan

PEATLAND RESTORATION IN BORNEO, INDONESIA

SOMETIMES, IT TAKES A DISASTER

Globally, peatlands store twice the carbon than all the world's forests. So when Indonesia – which has more than a third of the world's tropical peatlands – blanketed much of Southeast Asia in a film of peat ash in 2015, the country and its neighbours were not the only ones that had a problem.

The Indonesian fires of 2015 scorched 2.6 million hectares of the archipelago, affecting Singaporean and Malaysian air almost as severely as Indonesian forests. When peat burns, its smoke does more harm to the air we breathe than coal. Thousands fell ill, and 69 million people were exposed to unhealthy levels of pollutants. When the dust settled, the Indonesian government added up losses amounting to \$16 billion. In a rare boon for the fight against deforestation, President Joko Widodo reacted decisively. He announced a moratorium on the draining and conversion of unopened peatland and established a National Peatland Restoration Agency (BRG), tasked with enforcing the moratorium and restoring two million hectares of degraded peatland. At the international level, the disaster prompted UNEP to establish the Global Peatlands Initiative – a partnership of more than 28 organisations working together to save peatlands.

Indonesia's policy interventions have already proved immense – primary forest loss there dropped 45% in

2018 compared with the period 2002-2016. In protected peatland areas, forest loss plummeted an incredible 88% between 2016 and 2017, reaching the lowest level ever recorded. There were other factors at play here, such as favourable weather conditions.

While it was fire that acted as the catalyst for change, it is not the only threat to Indonesia's peatlands. Agricultural conversion, mining and illegal logging are also culprits – as all involve the draining and disturbing of peatlands. Unfortunately when human activities overturn peat, carbon combines with oxygen in the decomposition process, and it is released as carbon dioxide.

Peatland restoration is hard work; it involves reforestation, yes, but also 'rewetting' the peat by damming decades-old canals built to drain water and transport illegally harvested logs. Rewetting peatlands helps restore its capacity to capture and store carbon, and if peat is wet, it is far less likely to burn. Rewetting is backbreaking work, but in Central Kalimantan – among the provinces hardest hit by the 2015 fires – hard work pays off. In a WWF-led project that has been running since 2004, local communities and governments have built 1,700 dams (re-flooding more than 300,000 hectares), established 70 tree nurseries, and re-planted more than 10,000 hectares of the most heavily degraded areas. Moreover, community partnerships and fire patrols have been established (involving more than 28,000 people) in order to maintain, manage and monitor the dams, replanting projects, and extinguish fire hotspots before they spread. To ensure long-term success, the project plans to re-flood 100,000 additional hectares by building 850 more dams and permanently establishing new community institutions to oversee the restoration.

Community empowerment programmes and peat rewetting are not just the remit of NGOs. In 2018, Indonesia's BRG restored over 480,000 hectares. In the three years since President Widodo launched the agency, BRG has restored degraded peatlands the size of a million football fields. By 2020, it wants 4.5 million football fields restored. While it's early days, the number and extent of fires are down significantly too.

NATURE'S CLIMATE STATISTICS

Despite only covering 3% of land globally, peatlands are Earth's largest terrestrial store of carbon, home to 550 billion tonnes. Peatlands lock away twice the carbon in forests and keep it locked up for thousands of years. Indonesia alone contains about 36% of the world's tropical peatlands, mainly concentrated on the islands of Sumatra, Papua and Kalimantan – a combined area twice the size of Ireland. The aforementioned WWF project is one of many initiatives in Central Kalimantan attempting to restore a total of two million hectares. There's plenty to do yet – around 7.2 million hectares of degraded Indonesian peatland is ripe for restoration. Compared to degraded sites, restored peatland has lower carbon emission rates and given time,

can even become net carbon sinks. In a project to restore peat swamps in Russia, 35,000 hectares are being restored by blocking drains and replanting vegetation – as a result, CO₂ emissions have reportedly decreased by about 200,000 tonnes of carbon per year.

Year on year, as much as 60% of Indonesia's emissions come from the burning, draining and conversion of carbon-rich peatlands. (Two thirds of global emissions from peat come from Southeast Asia, especially Indonesia). Yet Indonesia is a natural climate solutions success story in the making. According to estimates, the potential climate benefits of the moratorium policy in Indonesia over a 15-year period lies between 5.5 to 7.8 billion tonnes of CO₂e, which is equivalent to roughly all the greenhouse gases emitted by the US annually. In 2018, primary forest loss in Indonesia dropped to its lowest rate since 2003, continuing its decline from the previous year.

In the context of nature more broadly, peatlands also play a critical role in hydrological regulation and biodiversity conservation. For example, they are critical habitat – sometimes the only habitat – for many rare and endangered species including Sumatran tigers, orangutans, gibbons, and leopards.

KEY FIGURES

Globally, peatlands contain

550
BILLION TONNES
OF CARBON

(30 to 40% of global carbon).

Over a 15 year period, the peatland moratorium could prevent

5.5 - 7.8
BILLION
TONNES OF
CO₂e

entering the atmosphere.

4.5 MILLION
FOOTBALL
FIELDS

expected to be restored by 2020.

PROJECT BACKGROUND

Following the 2015, Indonesia introduced a raft of peatland protection policies and established a Peatland Restoration Agency to oversee them.

EXECUTING ENTITY

The Indonesian government and various NGOs.

FUNDING

The Indonesian government.

SDGs



LOCATION



VIDEOS & STORIES

<https://youtu.be/MbSw5qSRnJw>

<https://youtu.be/P6KQEAyluxU>

<https://youtu.be/vpt86m5Nud0>

<https://youtu.be/82Z9GdNiwE8>

CONTACT

<https://brg.go.id/>

Okta Simon, WWF:
osimon@wwf.id

Rosenda Chandra Kasih, WWF:
rkasih@wwf.id