Konservasi
Alam Nusantara
Untuk Indonesia Lestari

BLOG INTERVIEW WITH YKAN SCIENTIST

Peatland Restoration: Wider, Better, and More Aligned

Months into the implementation of the Kalimantan Peatland Carbon Project as part of the Natural Climate Solutions (NCS), Yayasan Konservasi Alam Nusantara (YKAN) has reiterated their commitment to support the Government of Indonesia to mitigate the climate change by advancing science on peatlands restoration especially in Kalimantan. The NCS is essentially a framework designed to complement decarbonization efforts to help countries meet and exceed their emission reduction target. To find out just how science can help in protecting and restore our natural peatlands, we talked to YKAN Forest Carbon and Climate Senior Manager, Nisa Novita.

How is the nature's role in achieving Indonesia's NDCs?

Nature poses a tremendous potential to absorb and store carbon emitted by anthropogenic activities. Dubbed as the biodiversity hotspot, working with nature is the most efficient strategy for Indonesia in mitigating climate change.

Indonesia offers the third largest Natural Climate Solutions (NCS) opportunity in pan tropics areas. Here, we are the first to calculate Indonesia's NCS mitigation opportunity using national data. The maximum NCS potential based on the historical baseline period from 2009-2019 is estimated at 1.3 ± 0.1 $GtCO_2e\ yr^{-1}$ in 2030. The mitigation potential NCS would surpass Indonesia's emissions reduction target as promised in the Nationally Determined Contribution (NDC) if implemented correctly and collectively.

As much as 74% of this potential comes from protection and restoration of peatland ecosystems, in which avoided peat decomposition, avoided peat fire and peat restoration offer the largest emissions reduction. Here, we can see that protecting and managing Indonesia's peatlands is a key to achieving the country's emissions reduction target by 2030.

Peatlands are one of the largest natural terrestrial carbon store which hold around 644 Gt of the global carbon. Peatlands restoration plays a crucial role in Indonesia's climate mitigation, particularly through rewetting to raise the water table in peatland areas. The restored peatlands yield lower carbon emissions from peat decomposition and can help to prevent fires that potentially release carbon into the atmosphere.

In what ways is the Kalimantan-Peatland Carbon Project designed to support Indonesia peatlands mitigation action? What is so unique about this project?

The Kalimantan-Peatland Carbon Project is designed to quantify the carbon reduction through rewetting program, as part of the NCS pathway. Its main work aims to measure the impact of peatland restoration in reducing GHG emissions. We are supporting the Government of Indonesia in finding a robust methodology to quantify the impact of peatland rewetting mitigation actions that is lacking in previous efforts. YKAN grabbed this untapped potential in collaboration with Tanjungpura University, Stanford University and Oregon State University.

The project identified the study sites in line with Badan Restorasi Gambut & Mangrove (BRGM) areas of interest for peatland restoration. We established monitoring plots in different land covers, including secondary forests, oil palm plantations, mixed agriculture, and shrubs, and divided them into drained and rewetted plots at each land cover. Once our methodology is verified, this project has the potential to be replicated in a wider area across Indonesia.

How is YKAN working to support effective implementation of the Natural Climate Solutions in Indonesia?

YKAN is a science-based organisation with the mission to protect lands and waters on which all life depends. That is why our main activities are science works that aim to give recommendations to policymakers through evidence-based research. Besides, we also do implementation and community works. Our scientists work on the primary data collection in our study sites to provide a ground check on the effect of peatland restoration. On the desk study, we reported that the maximum NCS mitigation potential in 2030 is estimated at 1.3 ± 0.1 $GtCO_2e$ yr^{-1} where 74% is derived from peatlands protection and restoration.

What are the activities that have been identified as priority in preserving Kalimantan peatlands ?

Kalimantan is among the top five provinces in Indonesia with the largest NCS mitigation potential vast peatland areas. But since 2009, 33% about a third of their peat forest has been converted into plantations, agricultural lands, and shrubs. We have identified that the priority to conserve its tropical peatland includes protecting the remaining primary and secondary forests, restoring degraded peatland, providing a best practice in water management in agricultural sites planted on peatland, conducting sustainable peatland management, and establishing an effective fire suppression management to avoid emissions from peatland fires.

What are the results or key findings from the activities up for now?

Although the research is still ongoing, our six monitoring plots of GHG measurements in Mempawah and Kubu Raya districts showed a preliminary result that rewetting could decrease net carbon emissions particularly in oil palm plantation sites. It implies that water management in cultivated peatland is a must and rewetting degraded peatlands offers positive benefits for climate change mitigation.

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