Challenges to peatland restoration in Indonesia

Discussion topic:

- The complexity of activities in the PHU
- Use of fire on peatlands & recurrent fires
- Cross-border administrative restoration locations (district and province)
- The restoration site crosses the company's concession land
- Peatland subsidence and inundation
- Exposure of mineral soils (loss of peat)
- Heaps of treasures are found in the peatlands
- Restoration technology (types and materials)
- Suggestions and Recommendations

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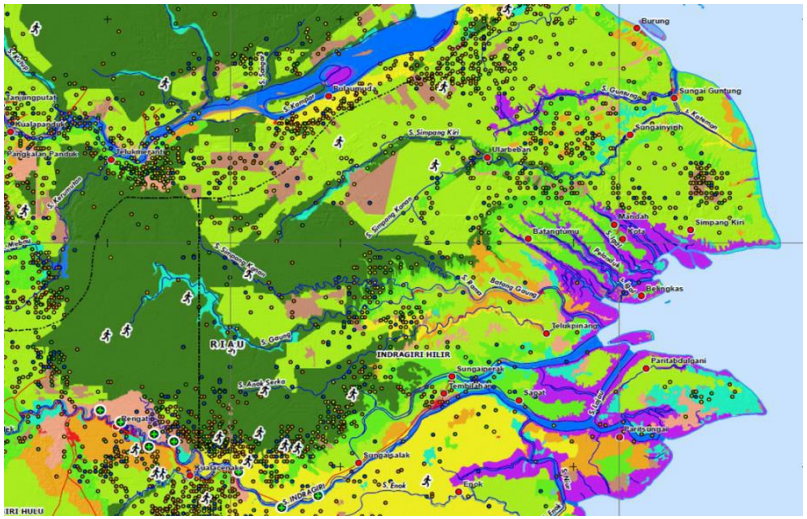
The complexity of activities in the Peat Hydrology Unit/ PHU/KHG

In one KHG/PHU, there are many different activities and interests, both private, public and government



The long and complex network of drainage canals inside the KHG has caused the peat to dry out in the dry season and eventually burn easily, and inundated in the rainy season due to the subsidence of the peatlands. E.g. Kerumutan Wildlife Reserve

Fire in Kerumutan area, Pelalawan Regency, Riau, Thursday (March 2014, above; Oct 2019 below)

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Use of fire on peatlands & recurrent fires

Peat land fire in Kabupaten Batanghari, Jambi. July 2019

Forest and Land Fire in Jambi Province (2019)

- Occurs repeatedly, almost every year in the same village(s) or district(s)
- Occur in the new Village(s) / District(s) that had never been burned
- Fires occur in oil palm plantations and community land
- Causes of fire: land clearing for oil palm, dispose of cigarette butts carelessly and land disputes
- Difficulty in extinguish the fire: no or far away location of water sources and remote locations and difficult to access

Anticipate future use of fire for pest control. E.g. Ganoderma

Peatland Fire In Jambi 2015-2019

July 2019: 102,52 Ha burned in Jambi (Forest Area 29,52 hectare, APL 73 Ha, BPBD Jambi. 27 Juli 2019)..
In 215 Ha (5 Aug)

Kabupaten: Muaro Jambi, Batanghari, Tanjab Barat, Tanjab Timur, Sarolangun, Tebo, Merangin, Bungo (umumnya di APL)

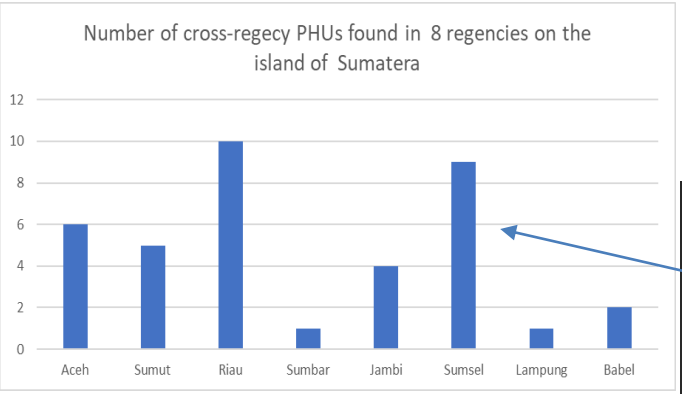
https://nusamedia.co.id/2019/07/27/kebakaran-hutan-dan-lahan-di-jambi/

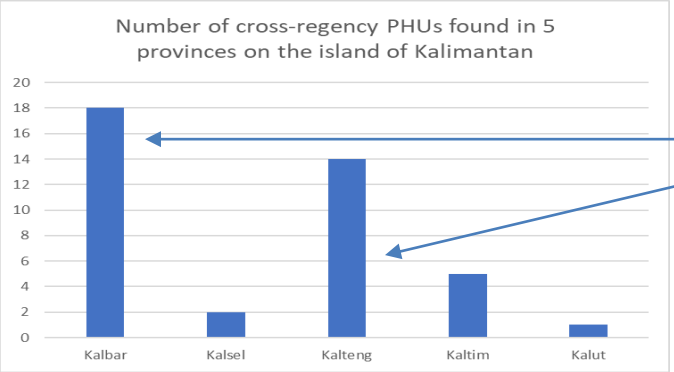
Peat burns (30 Ha) in Kumpeh Ulu, Muarojambi, Jambi. Foto: TARA FOTO/Wahdi Septiawan (kumparan.com) 30/7/2019

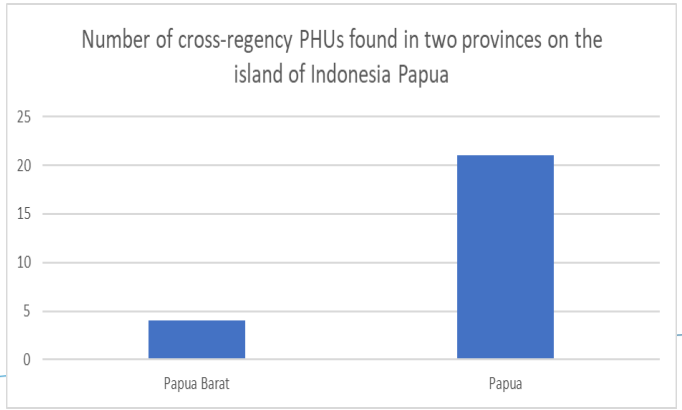
The prolonged dry season and followed by peat fires cause difficulties in peat restoration

The fires in August 2019 at the peat rehabilitation site funded by IPPF-WII, in Kelawa (central Kalimantan), caused the death of belangiran, gelam and sago plants. Replanting by Bengkalung Jaya Farmers Group was carried out during the rainy season around November 2019

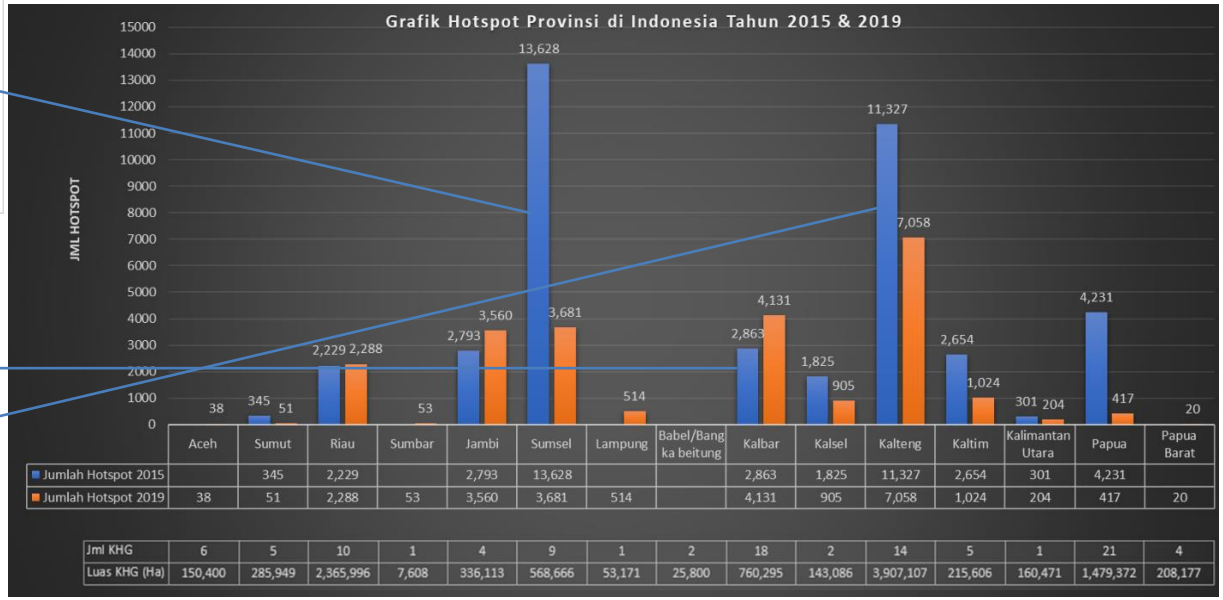
Cross-border administrative restoration locations (district and province)







Number of cross-regency PHUs found on the islands of Sumatra, Kalimantan and Papua (processed from the data source: KepMen LHK No SK.130 / MENLHK /SETJEN/PKL.0/2/2017)



No	Nama KHG	Kode KHG	Provinsi	Kabupaten	Luas KHG (Ha)
1	KHG Aek Silaut - Aek Menjuto	KHG.13-17.01	Bengkulu dan Sumatera Barat	Muko-muko dan Pesisir Selatan	13.085
2	KHG Lae Silabuhan - Lae Tambiski	KHG.11-12.01	Aceh dan Sumatera Utara	Aceh Singkil dan Tapanuli Tengah	12.835
3	KHG Sungai Air Hitam Laut - Sungai Buntu Kecil	KHG.15-16.01	Jambi dan Sumatera Selatan	Muarojambi, Tanjung Jabung Timur dan Banyuasin	183.856
4	KHG Sungai Lalan - Sungai Merang	KHG.15-16.02	Jambi dan Sumatera Selatan	Muaro Jambi dan Musi Banyuasin	84.091
5	KHG Sungai Pasang Kayu - Sungai Bam	KHG.72.10-76.01.002	Sulawesi Barat dan Sulawesi Tengah	Mamuju Utara, Sigi	28.534
6	KHG Sungai Salo Lariang - Sungai Pasa	KHG.72.10-76.01.001	Sulawesi Barat dan Sulawesi Tengah	Mamuju Utara, Sigi	19.265
7	KHG Sungai Omba - Sungai Aria	KHG.92.08.41	Papua dan Papua Barat	Mimika dan Kaimana	2.572

Tabel. The same PHU location, is in the area of 2 different provinces

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The restoration site crosses the company's concession land

Heavy equipment (for peatland restoration) must cross the PT XX oil palm plantation. To cross it and use their pontoons, as a means of transportation to cross the excavator to the OKH Tahura rehabilitation site, the project implementers are required to pay a 'Compensation Fund' of Rp. 20,000,000 (twenty million rupiah)

Rehabilitation site at OKH Tahura

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Peatland subsidence and inundation

If peatland area already severely subsided / inundated, hardly vegetation rehabilitation can be made.. Such condition may happen in peatland revegetation area

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Exposure of mineral soils (loss of peat)

Unproductive oil palm in the villages of Muara Ampolu and Muara Manompas (South Tapanuli Regency, North Sumatera, 2019, left, and in Mamuju, West Sulawesi, 2010, right); trees leaning due to peat have disappeared and now the mineral soil is exposed (Photo; I. Reza Lubis)

Oil palm plants in Mesuji Village, North Lampung- Sumatera, yellow leaves due to acid sulfate and not bearing fruit even though the plants are of productive age (Photo Lili Muslihat, 2010)

Vegetation rehabilitation in the above area will be difficult, although paludiculture should be applied

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Heaps of treasures are found in the peatlands

Treasure hunting activity in Pelimbang Village is suspected to be a relic of the Sriwijaya Kingdom-South Sumatera. (CNN Indonesia / Hafidz Trijatnika 9 Oct 2019)

The hunt for treasures in ex-burnt peatland area of the former site of Srivijaya Kingdom has occurred since 2005, then in peat fires in 2012 and 2015 indicated the presence treasure in Ogan Komering Ilir Regency (OKI). Furthermore, in early October 2019, in several locations of peatland fires in Tulang Selapan, Cengal and Air Sugihan Districts (peat age around 3000 years), Ogan Komering Ilir district (OKI), South Sumatra (including in several oil palm plantation concessions that caught fire) were found treasures from the kingdom of Srivijaya.

Peatland rehabilitation at this location will be challenged by the high value of treasure

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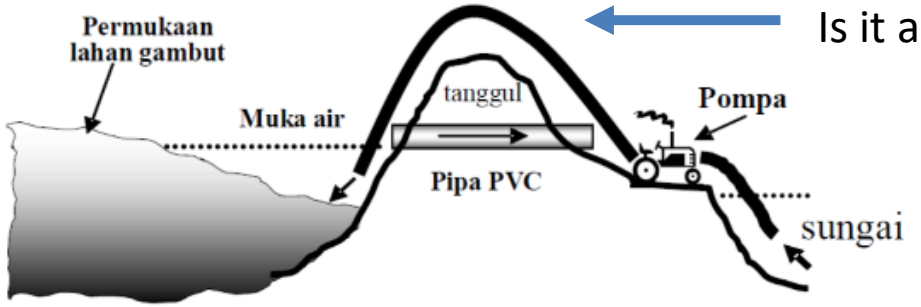
Restoration technology (types and materials)



Is it allowed ?

PP No. 121/2015 concerning Water Resources Exploitation, especially Article 5 Paragraph 3: Priority in granting licenses for Water Resources Exploitation, is prioritized for meeting basic daily needs.

PP No 122/2015 concerning Drinking Water Supply Systems, Article 11 concerning Shallow Well and Article 12 regarding Pump Wells).
Article 11, Paragraph 1: Shallow well is a means to tap and collect ground water that is used as a source of Raw Water for Drinking Water.
Article 12 Paragraph 1, stipulates that Pump wells are facilities in the form of wells aimed at obtaining Raw Water for Drinking Water made by drilling the soil at a certain depth.

Boreholes/ sumur bor

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Blocking of canal : what material to be used, its costs, availability, strength, legality etc

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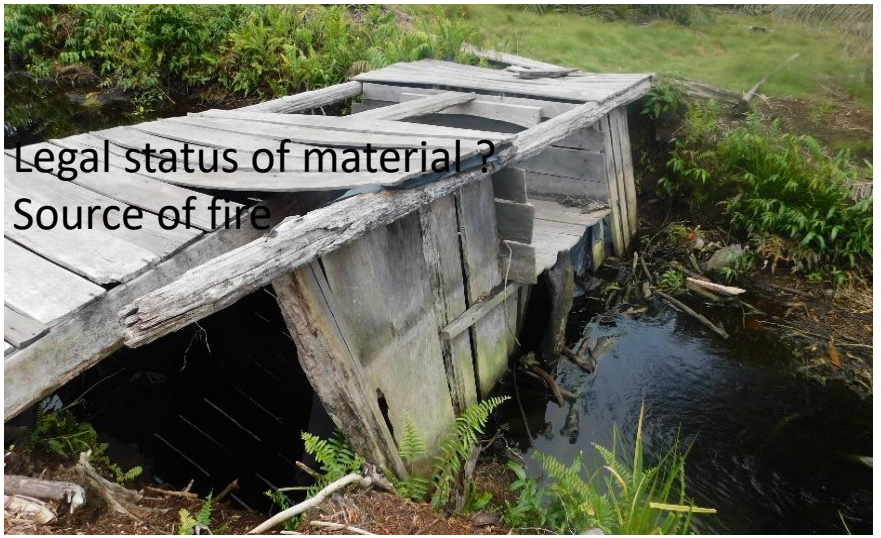

Which technology would you prefer?
What are the advantages and disadvantages

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The success of peatland restoration can only be achieved if all stakeholders' commitments continue, even though the project has ended

Drainage channels are the major cause of peatlands fire and degradation. Stop making new canals and closing/blocking the canals that already exist

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