pantau gambut

Heavy equipment clears land at PT Satria Perkasa Agung Gaung FLEG in Riau

Photo Credit:
Kaliptra Andalas for Pantau Gambut

Dissecting the Puzzle of Peat Ecosystem Protection: Activities on Areas Subject to Permits

Pantau Gambut is an online platform for information on peatland ecosystems and progress updates on Indonesian stakeholders' pledges to protect and restore peatlands.

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Executive Summary

Peatland is a type of wetland that plays an important role in the ecosystem. It also plays a role in directly supporting livelihood of the people who live on and around it. Although the presence of peat is only about 3-5% of the earth's surface, it is estimated that peatlands can store twice as much carbon as forests worldwide[1].

Over time, the existence of peatland is increasingly threatened because of land conversion into plantations. The conversion started by clearing the tree cover in peat swamp forest and draining the peatlands through the construction of canals. This way the peatlands will become available to plant extractive species such as oil palm and acacia which generally grow on mineral soils. As a result, the peatlands lose its natural wetness and its water level as well. This eventually increases the rate of decomposition of organic matter and makes the peat dry, thus making it prone to burning.

Photo Credit: James Anderson/WRI

[1] Read https://www.cifor.org/publications/pdf_files/brief/6453-brief.pdf

Utilization of peatlands for extractive industrial crops has been carried out for a long time. Pantau Gambut analysis found that out of a total of 13.43 million hectares of peatland in Indonesia, 39% or around 5.2 million hectares of peatland are corporate work areas in the forestry or plantation sector.

Although peatland restoration activities have been carried out, peatlands are still prone to fires. In 2019 or four years after the commitment to restoration of peatlands by state and non-state actors have been strengthened, one of the biggest fire disasters happened. Additionally, peatland fires have also been identified in several concession areas that should have implemented restoration activities since the 2015 forest and land fires incident. With the occurrence of these peatland fires, the question then raises: **Is the mandate to carry out peatland restoration has been implemented by all companies in an appropriate manner?**

To answer the question regarding the peat ecosystems protection in concession areas, Pantau Gambut, an independent public initiative, studies and conducts field monitoring in seven provinces, namely Riau, Jambi, South Sumatera, West Kalimantan, Central Kalimantan, Papua and West Papua.

In this study, Pantau Gambut conducted remote sensing analyses and field observations on areas of peat inside concessions that were burned or indicated as having cleared land. In total, 1,222 sample points were visited, spread over 43 company concessions in 7 provinces.

The results of satellite image analysis by Pantau Gambut show the loss of as much as 421,221 ha tree cover in the peat area with a protected function in the concession area during the 2015-2019 period. Through field verification in 405 sample points of protected peat areas, Pantau Gambut found that there were extractive plantations in the form of oil palm or acacia in 64.4 percent of the sample points. Remaining sample points show abandoned land without any restoration efforts mandated by regulations.

Another Pantau Gambut satellite imagery analysis identified 1 million hectares of burned peatland in the concession area in the 2015-2019 period. More than 50 percent are areas with land use permits. Field verification at 482 points of burnt land in 39 companies shows that 67.8 percent has become abandoned land without any restoration efforts, while the rest is planted with extractive crops in the form of acacia or oil palm.

Photo Credit: Feri Irawan/Pantau Gambut

Pantau Gambut also visited 335 other sample points, which in the planning phase, either the Contingency Plan or the Annual Action Plan prepared by the Peat Restoration Agency. As part of this planning, there should be restoration infrastructure developed by the companies which are responsible for restoration. Pantau Gambut also found that 91.5% of the sample points did not have any restoration infrastructure at all. Only 1.8% have restoration infrastructure in good condition, either in the form of canal blocking or deep well. These observations indicate that the company has not fulfilled their obligation to restore the peatland ecosystem, whether it is the construction of canal blocks or revegetation of the area, especially in the companies' concession areas that have experienced peatland fires.

With the discovery of violations that are still being committed in the concession area, it is especially important to evaluate the implementation of restoration activities. Especially, on the reasons why the companies had not carried out peat restoration according to the government's mandate. Additionally, the government needs to improve the existing monitoring system to ensure the implementation and effectiveness of peat restoration in concession areas in a transparent manner.

In terms of regulatory framework, the Government of Indonesia has clearly formulated the substance of environmental protection and management on Law No. 32 year 2009 concerning Environmental Protection and Management as well as other derivative laws and regulations according to the relevant sector.

However, handling environmental cases, including forest and land fires is not an easy task and goes through a long stage. Experts who are competent both in determining legal decisions and collecting evidence of environmental violations are needed. Additionally, a necessary caution is needed for investigation process to collect scientific evidence and expert statements[2], related to environmental damage which can be used by judges as legal evidence, a process that will take a long time to resolve.

Finally, the company's lack of participation in peat restoration efforts is a threat to Indonesia's peat ecosystem. By improving the transparency of monitoring the implementation of peat restoration, ensuring the effectiveness of law enforcement which deter companies, and continuing to protect healthy peat through limiting the issuance of permits, we believe that peat restoration will undoubtedly have a positive impact on the state and society.

Photo Credit: Andika Putraditama/WRI Indonesia

[2] https://bawas.mahkamahagung.go.id/bawas_doc/doc/036_kma_sk_ii_2013.pdf

1. Growing Extractive Crops on Peatlands: Clearly Destructive, but Still Going Strong

Indonesia possesses the second largest amount of tropical peatland in the world after Brazil, with a total area of around 13.43 million hectares (ha)[3]. The majority of this peatland is spread across Sumatra, Kalimantan, and Papua. The preservation of peatland is crucial, both to safeguard biodiversity and to prevent further exacerbation of the climate crisis. For these reasons, all activity that takes place on peatland must be sustainable.

In Indonesia peat areas are divided into two categories according to their function (Figure 1): areas for conservation are called areas of "peat ecosystem protection function" (FLEG), while areas that may be cultivated are called areas of "peat ecosystem cultivation function" (FBEG).[4] Areas of FLEG protect and balance water systems, store carbon, and conserve biodiversity. The peat in FLEG areas commonly has a depth of greater than three meters. Areas of FBEG can be cultivated, but activities must be conducted in accordance with the carrying capacity of the peat.

Figure 1. Peatland Distribution and Peat Ecosystem Functions in Indonesia.
Sources: WRI Indonesia using Indonesia Center for Agricultural Land Resources Research and Development (Balai Besar Litbang Sumberdaya Lahan Pertanian) 2019; Ministry of Environment and Forestry (Kementerian Lingkungan Hidup dan Kehutanan) 2017.

[3] For ranking, please refer to https://forestsnews.cifor.org/50270/peta-baru-ungkap-lebih-banyak-gam-but-tropis?fnl=en while total area of Indonesian peatland is based on data of ministry of agriculture (2019)

[4] According to http://pkgppkl.menlhk.go.id/v0/wp-content/uploads/2018/10/buku-sk-menlhk-no.130-th2017_Penetapan-Peta-FEG-Nasional.pdf. The abbreviations come from the initials in Indonesian; FLEG is "Fungsi Lindung Ekosistem Gambut" and FBEG, "Fungsi Budidaya Ekosistem Gambut."

Peatland management and other activities are usually carried out by individuals or corporations. Peatland management by corporations is carried out by holders of business licenses (IUPHHK-HA for logging concessions in natural forest, IUPHHK-HTI for plantation concessions in production forest, and IUPHHK-RE or ecosystem restoration permits)[5] in forest areas and by owners of plantations (usually palm oil) operating under permits issued by central and/or local government (Figure 2). Permits are granted for a certain period of time to ensure that management activities are carried out in accordance with the designated land use and do not have a negative impact on the environment.

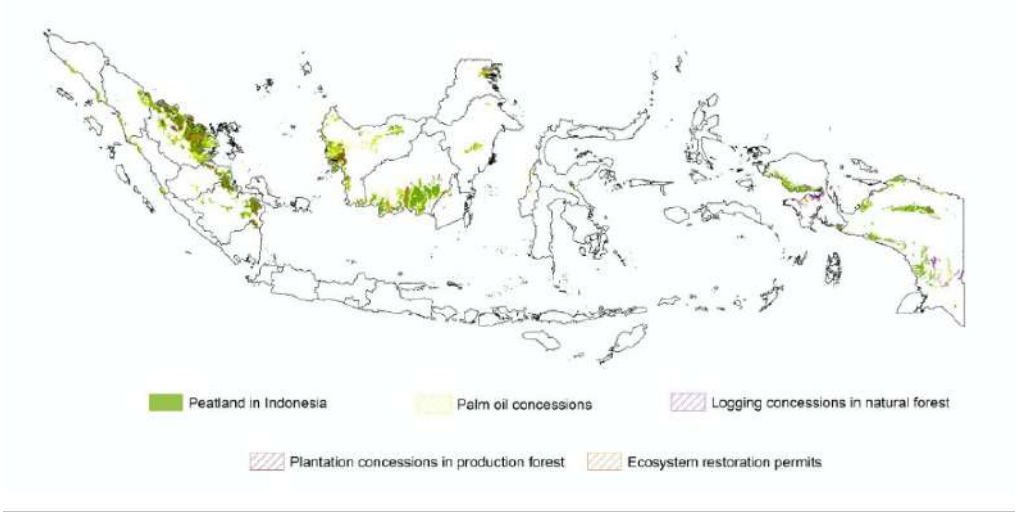
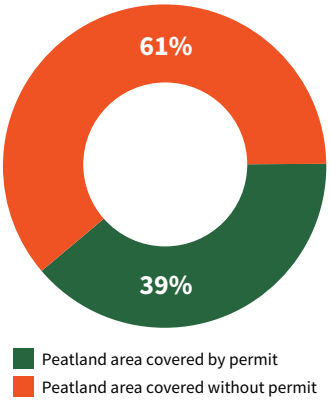


Figure 2. Map of Distribution of Areas with Permits on Indonesian Peatland.
Sources: WRI Indonesia using Indonesia Center for Agricultural Land Resources Research and Development (Balai Besar Litbang Sumberdaya Lahan Pertanian) 2019; Ministry of Environment and Forestry (Kementerian Lingkungan Hidup dan Kehutanan) 2019; Greenpeace 2017.

Analysis by Pantau Gambut, shows that 39 percent of Indonesia's peatland—around 5.2 million ha of the total 13.43 million ha—is contained within corporate concessions in the forestry or plantation sectors. The number includes many permits that were awarded long before the 2011 decision of the government, under former president Susilo Bambang Yudhoyono, to stop issuing new concession permits on peatland. This ban was made permanent in 2019 under the leadership of President Joko Widodo[6].

[5] The IUPHHK-HA is a license permitting the holder to log timber in natural forest (Business Permit for Timber Forest Product Utilization–Natural Forest; Izin Usaha Pemanfaatan Hasil Hutan Kayu dalam Hutan Alam). The IUPHHK–HTI is a plantation license for production forests (Business Permit for Forest Timber Product Utilization-Industrial Plantation Forest; Izin Usaha Pemanfaatan Hasil Hutan Kayu Hutan Tanaman Industri pada Hutan Tanaman). The IUPHHK–RE is an ecosystem restoration permit (Business Permit for Utilization of Timber Forest Product–Ecosystem Restoration in Nature Forest; Izin Usaha Pemanfaatan Hasil Hutan Kayu—Restorasi Ekosistem Dalam Hutan Alam).

[6] The government's policy to halt the issuance of permits for primary forests and peatlands may be read here: https://peraturan.bpk.go.id/Home/Details/116964/inpres-no-5-tahun-2019



	Peatland with Permit (Hectares; Ha)	Peatland without Permit (Ha)
Size	5.199.068,85	8.204.514,44
Total	13.403.583,294	

Figure 3. Peatland by Permit Status.
Source: Pantau Gambut 2021.

Figure 4. Peat Area with Permit and Without.
Source: Pantau Gambut 2021.

Of the 39 percent of peatland in Indonesia covered by licenses or permits, the dominant permit type is land-use rights (Hak Guna Usaha; HGU), which amounts to 2.300.122,43 ha of mostly oil palm plantations. Second come permits for plantations (IUPHHK-HTI) at 1.993.780,37 ha, followed by logging permits for natural forests (IUPHHK-HA) at 569.153,74 ha, and ecosystem restoration permits (IUPHHK-RE) at 336.012,31 ha.[7]

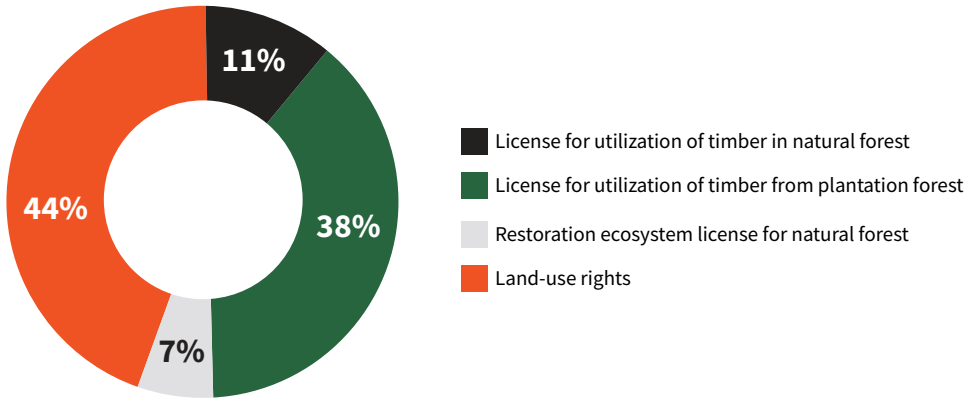


Figure 5. Indonesian Peatland by Concession Type
Source: Pantau Gambut 2021.

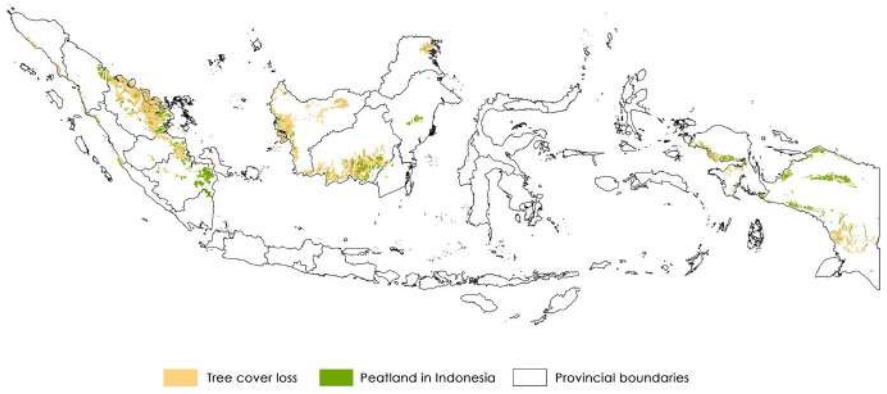


Figure 6. Tree Cover Loss on Indonesian Peatland
Source: WRI Indonesia using Global Forest Watch 2015–19; Indonesia Center for Agricultural Land Resources Research and Development (Balai Besar Litbang Sumberdaya Lahan Pertanian) 2019; and Ministry of Home Affairs 2017.

[7] The analysis was conducted using data released by institutions such as the Ministry of Environment and Forestry (IUPHHK-HA, IUPHHK-HTI, and IUPHHK-RE data for 2019) and Global Forest Watch (data on palm oil plantations). The researchers used GIS software in a set of geoprocessing tools.

In order to take a deeper look at the impact of activities in concessions on peatland ecosystems, Pantau Gambut identified tree cover loss using satellite imagery for the period from 2015 to 2019 over an area designated as FLEG, or protected peat, in 2017. Pantau Gambut found that 421.221,87 ha of tree cover on peat in concessions was lost during this period (Table 1).

Table 1. Tree Cover Loss on Land with Permit and Without

Area Type	Tree Cover Loss (Hectares)
Peatland with permit	421.221,87
Peatland without permit	115.696,16
Total	**536.918,03**

Source: Pantau Gambut 2021.

The tree cover loss parameters do not fully indicate that deforestation had occurred in the areas. However, the tree cover loss data did show that companies were conducting activities on protected peat. Based on the results of spatial analysis conducted by Pantau Gambut, of the total tree cover loss from 2015 to 2019, 268.738,78 ha was found in areas covered by HGU permits, 94.014,86 ha in areas covered by IUPHHK-HTI licenses, 39.698,8 ha in areas covered by IUPHHK-HA licenses, and 18.769,42 ha in areas covered by IUPHHK-RE licenses.

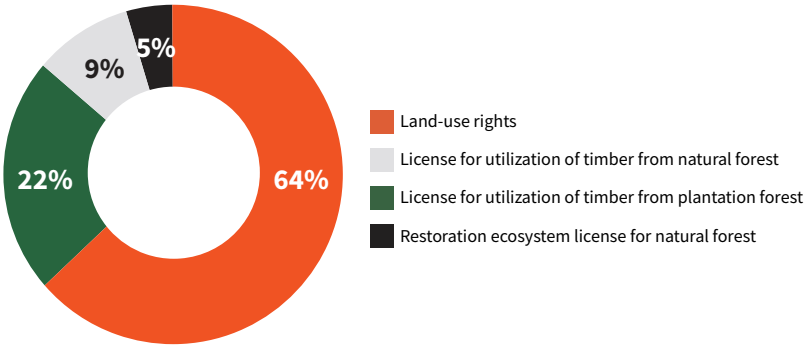


Figure 7. Tree Cover Loss on Peatland by Permit Type
Source: Pantau Gambut 2021.

This is important because, based on Government Regulation No. 71 of 2014 in conjunction with Government Regulation No. 57 of 2016, the presence of activity on protected areas—as evidenced by a reduction in area and/or volume of tree cover—indicates damage to the peat ecosystem, which must be immediately restored.

Fire on peatland

As is well known, peatland conversion is always accompanied by peat drainage, with the result that the peat becomes highly susceptible to fire as it is formed from organic material.[8] The horrific 2015 forest fires linger in the memories of all Indonesians. The intense fires caused grave economic losses, tormented residents, and burned 2.6 million ha of forest and land, including peatland.

[8] Read https://wri-indonesia.org/en/node/41056 and https://www.borneonaturefoundation.org/conservation/why-are-peat-swamp-forests-so-vulnerable-to-fire/

According to data from environment nongovernmental organization NGO Walhi[9], 439 companies in 5 provinces (Central Kalimantan, Riau, Jambi, South Sumatra, and West Kalimantan) were involved in the 2015 fires. Although the Indonesian government rushed to take steps to prevent fires, just four years later, in 2019, 160.000 ha of peatland burned in concessions[10].

Holders of concession permits must better prevent fires on peat and must increase their preservation and restoration activities: these activities must become key concerns for them. Law enforcement by the government toward companies burning land in their concessions must also be intensified. If supervision is not improved, it is not impossible that peatland in Indonesia will eventually be exhausted due to degradation and continuous fires.

Pantau Gambut aimed to observe trends in fires recurring between 2015 and 2019 based on burned area data published by the Ministry of Environment and Forestry (Kementerian Lingkungan Hidup dan Kehutanan). From 2015 to 2019, a total of 1.464.739,91 ha of peat was burned, with 70 percent being within concessions. Of the 1.464.739,91 ha burned, approximately 36 percent or 527.980,73 ha had burned more than once.[11]

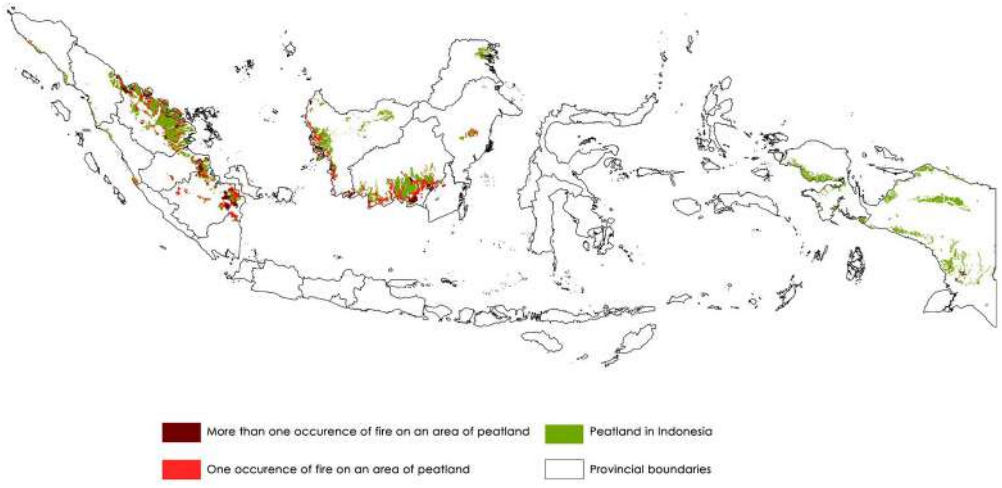


Figure 8. Fires and Recurring Fires on Indonesian Peat, 2015 to 2019
Source: Pantau Gambut using data on burned areas from the Ministry of Environment and Forestry (Kementerian Lingkungan Hidup dan Kehutanan) (2015–19)

Based on spatial analysis conducted by Pantau Gambut, the total burned areas in concessions from 2015 to 2019 period reached 1.020.376,04 ha, with 580.764,5 ha being in areas covered by HGU licenses, 168.988,1 ha in areas covered by IUPHHK-HTI licenses, 83.575,6 ha in areas covered by IUPHHK-RE licenses, and 187.047,9 ha

[9] Refer to https://www.mongabay.co.id/2015/10/06/berikut-korporasi-korporasi-di-balik-kebakaran-hutan-dan-lahan-itu/
[10] Based on analysis of Pantau Gambut (2020) to burned area data of KLHK (2015-2019), forestry concession data from KLHK and plantation concession from Global Forest Watch
[11] Pantau Gambut carried out its analysis of fires (fire occurring once in an area and fire occurring more than once in an area) by overlaying burned area data from the Ministry of Environment and Forestry for 2015–19.

in in areas covered by IUPHHK-HA licenses. With forest fires still occurring after 2015, questions are being asked about the implementation of the peat restoration policy in concession areas, especially since all parties agreed that the 2015 forest and land fires disaster caused enormous losses across many sectors.

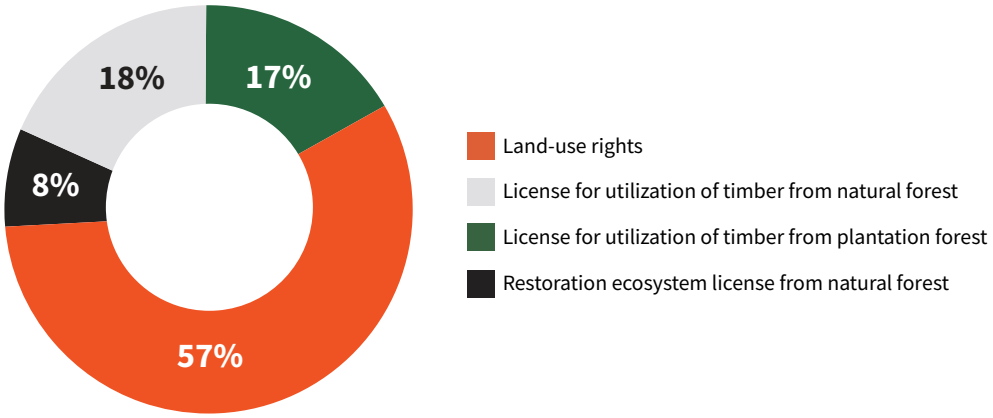


Figure 9. Burned Peatland in Concessions by Concession Type.
Source: Pantau Gambut 2021.

Peat restoration and achievements in concessions

In Indonesia, the authority to supervise peatland restoration in concessions lies with two state institutions, the Ministry of Environment and Forestry and the Peat and Mangrove Restoration Agency (Badan Restorasi Gambut dan Mangrove; BRGM), known until 2021 as the Peat Restoration Agency (Badan Restorasi Gambut; BRG). In terms of division of authority, the Ministry of Environment and Forestry supervises restoration in forestry concessions in forest areas, while the BRGM, in collaboration with the Ministry of Agriculture, supervises restoration in plantation areas (including palm oil).

Table 2. Peatland Restoration: Targets versus Achievements to End-2020

Institution	Target	Achievement by End-2020 (Hectares[Ha])
Ministry of Environment and Forestry	200 companies[a]	3.643.799,26[b]
Peat and Mangrove Restoration Agency (Badan Restorasi Gambut dan Mangrove; BRGM)	1.784.535 ha[c]	645.834[d]

Source: Directorate General of Pollution and Environmental Damage Control 2020; BRGM 2020
Note: [a] Based on 2015–19 Directorate General of Pollution and Environmental Damage Control Strategic Plan; [b] Directorate General of Pollution and Environmental Damage Control 2020; [c] Peat Restoration Agency (Badan Restorasi Gambut; BRG) decision SK.18/BRG/KPTS/2018; [d] BRGM 2020

Based on the annual reports of the Ministry of Environment and Forestry and the BRGM, restoration in concessions was carried out through to the end of 2020. However, the claimed achievements only give the total area in hectares and are not accompanied by information on how success is measured.

2. Government and Corporate Commitments to Conserving Peat in Concessions

a.Development of policies on protecting peat ecosystems

The commitment to protect peatland began with the issue of a decree stating that areas of peat thicker than three meters must be conserved **(Presidential Decree No. 32 of 1990).** The focus on peat ecosystems intensified in 2009 when peat protection was included in **Law No. 32 of 2009 on Environmental Protection and Management**, which became the guiding law on peat protection.

Two years later, the incumbent president, Susilo Bambang Yudhoyono, put on hold all new permits in primary forest and peatland in order to improve governance—in terms of permits and related matters in the context of reducing emissions arising from deforestation **(Presidential Instruction No. 10 of 2011).**

Tabel 3. Daftar peraturan terkait gambut di Indonesia

Year	Law/Regulation	Relation to Peat Protection
1990	Presidential Decree No. 32 of 1990 on Conservation Area Management	• Defines peatland and sets out criteria to assess which peatland should be protected • Foundation of the conservation of peat with a depth of more than three meters
2009	Law No. 32 of 2009 on Environmental Protection and Management	• Key regulation directly related to peat ecosystems • Sets criteria for assessing and responding to ecosystem damage, including damage to peat • Sets out how natural resources, including peatland ecosystems, should be conserved
2011	Presidential Instruction No. 10 of 2011 on Postponing the Granting of New Permits in Primary Forests and Peatland	• Aimed to improve governance in awarding of licenses • Aimed to improve governance in other matters in the context of reducing emissions due to deforestation

Year	Law/Regulation	Relation to Peat Protection
2014	Government Law No. 71 of 2014 on Peat Ecosystem Protection and Management	• First regulation to focus only on peat, building on Law No. 32 of 2009 • Regulates the management planning, use, control, maintenance, and supervision of peatland, and administrative sanctions • Strengthens the protection of peat ecosystems by designating 30 percent of the total area of all peat hydrological units as protected, with the center of the 30 percent being the peak of the peat dome
2016	Government Regulation No. 57 of 2016 on Modification of Government Law No. 71 of 2014	• Prohibited clearing of peat until clear information made available on which peatland was to be protected and which could be cultivated • Improves protection of peat ecosystems • Strengthens rules on preventing damage to peat ecosystems • Strengthens rules on restoration of the peat ecosystem • Adjusts administrative sanctions for individuals in charge of businesses and/or activities on peat that violate the provisions
	Presidential Law No. 1 of 2016 on Establishment of the Peat Restoration Agency	• Mandates the Peat Restoration Agency (Badan Restorasi Gambut; BRG) (now the Peat and Mangrove Restoration Agency (Badan Restorasi Gambut dan Mangrove; BRGM) to restore 2.7 million hectares (ha) of damaged peatland—damaged during the 2015 forest and land fires—in seven priority provinces: Riau, Jambi, South Sumatra, Central Kalimantan, West Kalimantan, South Kalimantan, and Papua
2017	Environment and Forestry Minister Law No. P.14/MENLHK/ SETJEN/ KUM.1/2/2017 on Procedures for Inventory and Determination of Peat Ecosystem Functions	• Designates peat management areas mainly for concessions • Begins land swap process for any company holding a concession of which more than 40 percent has been designated by the government for protection
	Environment and Forestry Minister Law No. P.15/ MENLHK/ SETJEN/ KUM.1/2/2017 on Procedures for Measuring Groundwater Levels at Peatland Ecosystem Organization Points	• Sets a reference level for peat wetness that concessionaires must adhere to within their concessions • Aims to increase efforts to protect the function of vulnerable and damaged peat ecosystems
	Environment and Forestry Minister Law No. P.16/ MENLHK/ SETJEN/KUM.1/2/2017 on Peatland Ecosystem Restoration Technical Guidelines	• Provides technical references for restoring peat in protected and cultivated areas • Provides indicators for recovery following restoration activities

Year	Law/Regulation	Relation to Peat Protection
2019	Presidential Instruction No. 5 of 2019 on Termination of Granting of New Permits and Improving Management of Primary Natural Forests and Peatlands	Requires ministries in the forestry and agriculture sectors, as well as governors, district heads, and mayors to stop issuing both recommendations as supporting documents for permits and location permits on peatland
2020	Presidential Law No. 120 of 2020 on Peat and Mangrove Restoration Agency	Duration of the BRG's mandate extended to allow it to meet peat restoration targets and accelerate rehabilitation of mangroves (name changed to the BRGM)

Sources: Various

Five years after Indonesia passed Law No. 32 of 2009 on Environmental Protection and Management, a technical regulation on the protection and management of peat ecosystems was issued **(Government Law No. 71 of 2014).** This law provides guidelines for peatland management with a focus on sustainability and preventing damage to peat.

Even with these regulations, however, Indonesia's haze disaster struck. The forest and land fires of 2015 were the worst in Indonesia since 1997 and caused major economic losses of approximately US$16.1 billion.

After this catastrophe, the Indonesian government intensified its efforts to protect peat. These efforts included the revision of **Government Regulation 71 of 2014**, which became **Government Regulation 57 of 2016.** This regulation includes new rules that were omitted from the previous version: opening new peat was prohibited until the government had completed its classification of peat ecosystem functions, at least 30 percent of the total area of a peat hydrological unit was designated as protected, monitoring points for groundwater levels in company concessions were to be established, responsibility for restoring peat ecosystems was allocated, and rules on preventing forest and land fires were laid out, as were rules on law enforcement in the context of peat.

Photo Credit: Danar Tri Atmojo for Pantau Gambut

The regulation clarified the responsibilities for peatland ecosystem restoration:

- Peat restoration in concessions is the responsibility of the holder of the concession permit.
- Peat restoration in nonconcession forest areas is the responsibility of the government.
- Restoration of peat in nonforest estate *(area penggunaan lain)* where no activity or concession permit has been awarded is the responsibility of the regional government.
- Restoration of peat in community areas or land held by customary law communities is the responsibility of the community or customary law community.

After the 2015 forest and land fires, President Joko Widodo formed the BRG in 2016 to focus on dealing with 2.67 million ha of damaged peatland in seven priority provinces: Riau, Jambi, South Sumatra, Central Kalimantan, West Kalimantan, South Kalimantan, and Papua. With the birth of the BRG there were two authorities in charge of peat restoration: the Ministry of Environment and Forestry, which focuses on restoration in forest areas, including in forestry concessions, and the BRG, now the BRGM, for plantation concessions and a number of nonforest areas in the seven priority provinces.

The regional governments, through gubernatorial mandates, formed regional peat restoration teams to ensure restoration activities, including hydrological restoration, of the peat ecosystem in each region. The regional peat restoration teams have a significant role in the implementation of peat restoration activities, which include wetting and replanting, as well as revitalizing the community's economy.

In addition, as part of the efforts to accelerate peatland restoration, the central government signed a memorandum of understanding (MoU) through the BRG with all prioritized peat restoration provincial governments (Riau, Jambi, South Sumatra, Central Kalimantan, West Kalimantan, South Kalimantan, and Papua). The MoU covers restoration planning, restoration education, construction supervision, infrastructure maintenance, and research in the context of peat governance.

In 2019, eight years after Indonesia temporarily stopped awarding new permits on peatland, President Joko Widodo finally made the moratorium permanent. He issued **Presidential Instruction No. 5 of 2019**, calling a halt to permits for business and/or other activities on peat. This step gives complete protection to peatland, especially in the context of improving ongoing governance and efforts to reduce emissions from deforestation and forest degradation. In the instruction, the president asked the Ministry of Environment and Forestry, the Ministry of Agriculture, as well as governors,

district heads, and mayors to stop issuing supporting recommendations and location permits for peatland. They were to refer to a map constantly updated and verified every six months by the Ministry of Environment and Forestry.

b. Corporate commitments on sustainable peat management

From the corporate side, a pledge to protect peat can be seen in commitments publicized by companies related to sustainable land management. Table 4 shows select corporate commitments to sustainable management of peatland.

Table 4. Select Corporate Commitments to Sustainable Management of Peatland

No	Company	Commitment
1.	APRIL Group, in its Sustainability Forest Management Policy, committed to:[a]	• Only developing areas without forests • Protecting high conservation value (HCV) and high carbon stock (HCS) areas • Starting May 15, 2015, stopping logging in natural forests • Supporting the conservation and restoration of natural forest and peatland ecosystems • Conducting assessments on a landscape scale and applying a landscape approach to optimize forest conservation and other land uses • Refraining from developing forested peatland • Forming a Peat Expert Working Group to provide input and recommendations on good management practices for plantation forests on peat. • Refraining from constructing canals in new development in plantation forests while awaiting input from the Peat Expert Working Group • Respecting the rights of indigenous and tribal peoples and rural communities • Adhering to its own strict "No Burn" policy • Following national legal requirements in dealing with the effects of fires
2.	Asia Pulp and Paper, in its Forest Conservation Policy, committed to: [b]	• From February 1, 2013, suspending all clearance of natural forest until the HCV and HCS areas have been assessed and identified • Only developing areas which are not forested, once identified through independent HCV and HCS assessments; its suppliers were also committed to the same • Ensuring that peatland forest is protected as part of its commitment to preserve HCV and HCS forest • Reducing greenhouse gas emissions on peatland by eliminating canals and other infrastructure in its concessions until the HCV area assessment and input from peat experts is complete • Seeking input and feedback from various stakeholders, including civil society, to avoid and resolve social conflicts

No	Company	Commitment
3.	Some companies, including Musim Mas, Golden Agri-Resources, Royal Golden Eagle, and Salim Group,[c] have published No Deforestation, No Peat, No Exploitation policies. They committed to:	• No deforestation • No development of HCS areas • No burning • Progressively reducing greenhouse gases from plantations • No development of peatland • Implementing or continuing to use best management practices for existing plantations on peatland • Where possible, exploring options for peat restoration in collaboration with experts and stakeholders, including the community • No exploitation of people and local communities • Resolving all grievances and conflicts in an open, transparent, and consultative manner • Respecting the rights of indigenous and local communities

Sources: [a] APRIL's Sustainability Policy can be found at www.aprilasia.com/id/keberlanjutan/kebijakan-tentang-keberlanjutan; [b] Asia Pulp and Paper's Forest Conservation Policy can be found at https://asiapulppaper.com/documents/115225/115817/APP+Forest+Conservation+Policy-ENGLISH+%281%29.pdf/a7951678-516a-5554-687d-3b0e847ac849?t=1587696985146; [c] Their No Deforestation, No Peat, No Exploitation policies can be found at www.wilmar-international.com/wp-content/uploads/2012/11/No-Deforestation-No-Peat-No-Exploitation-Policy.pdf; www.musimmas.com/sustainability/ndpe-roadmap/; www.goldenagri.com.sg/id/tag/ndpe/; www.rgei.com/sustainability/sustainability-framework ; www.simp.co.id/userfiles/csr/sustainability2018/index-en.html.

In addition, corporations have also voluntarily committed to certification systems to increase their market reach:

Forest Stewardship Council (FSC)

Certification under the Forest Stewardship Council (FSC) provides assurance that the products come from well-managed forests that provide environmental, social, and economic benefits.[12] The FSC has two types of certification:

a) Forest Management Certification guarantees that forest management practices carried out by concessionaires or landowners meet the FSC's standards for responsible forest management, balancing environmental, social, and economic concerns.

b) Chain of Custody Certification,(applies to FSC-certified producers, processors, and traders of forest products) guarantees that wood raw materials originate from FSC-certified forests. It also guarantees that FSC-certified raw materials are not mixed with uncertified raw materials along the production chain.

[12] More detail on the FSC can be found at https://id.fsc.org/id-id/sertifikasi-fsc.

The FSC has set out 10 principles, which are then interpreted into several criteria against which any organization wishing to obtain FSC certification is assessed. The 10 principles cover:

- Legal compliance
- Worker rights and working conditions
- Rights of indigenous peoples
- Community relations
- Forest benefits
- Environmental values and impacts
- Management planning
- Monitoring and assessment
- High conservation values
- Implementation of management activities

Indonesian Forestry Certification Cooperation (IFCC)

The Indonesian Forestry Certification Cooperation (IFCC) is a nonprofit organization aiming to encourage and improve sustainable forest management in Indonesia.[13] It certifies companies for sustainable forest management with a standard based on the Programme for the Endorsement of Forest Certification (PEFC). Any wood raw materials contained in products labelled with PEFC/IFCC are guaranteed to come from sustainably managed forests.

Roundtable on Sustainable Palm Oil

The Roundtable on Sustainable Palm Oil (RSPO)[14] is a nonprofit association bringing together seven types of stakeholder from the palm oil industry: palm oil producers, palm oil processors and traders, consumer goods producers, retailers, banks and investors, environmental NGOs, and NGOs focused on social issues. The RSPO aims to promote sustainable practices in palm oil which help reduce deforestation, conserve biodiversity, and respect the livelihoods of rural communities in palm oil–producing countries. The RSPO requires its members not to develop oil palm plantations on primary forest or other HCV areas, that plantations adopt accepted best practices, and that the basic rights and living conditions of millions of plantation workers, smallholders, and indigenous people are respected.

The RSPO has established two certification systems based on its Principles & Criteria. The first is designed to ensure that palm oil is produced sustainably, and the second to ensure the integrity of the trade in sustainable palm oil, ensuring that palm oil sold as sustainable has been produced on certified plantations.[15]

[13] Information on the IFCC can be found at https://www.ifcc-ksk.org/id/.
[14] For more detail, see the RSPO website at https://www.rspo.org/file/RSPO_factsheet_120705_25july.pdf.
[15] For more detail, see https://rspo.org/certification/supply-chains.

Photo Credit: James Anderson/WRI

In addition, the RSPO has set out eight categories against which it assesses whether palm oil has been produced sustainably:

1. Commitment to transparency
2. Legal compliance
3. Commitment to long-term financial and economic viability
4. Use of best practices by smallholders and mills
5. Environmental responsibility and conservation of natural resources and biodiversity
6. Responsible consideration of employees as well as individuals and communities affected by plantations and mills
7. Responsible development of plantations
8. Commitment to continuous improvement in key activities

3. Monitoring Methods

The aforementioned government regulations and corporate commitments on sustainable management of peat should be sufficient to prevent damage to peatland. However, since indications of violations are still being detected through satellite imagery as described in Section 1, the implementation by concessionaires of their commitments and responsibilities to protect peatlands needed investigation.

So far, information regarding restoration in concessions held by companies has not been made public. In contrast, peat restoration taking place outside concessions has been extensively publicized by the government on a spatial-based peat monitoring platform.

To answer the puzzle regarding peat restoration activities in concession areas, Pantau Gambut conducted collaborative field studies with local communities in seven provinces: Riau, Jambi, South Sumatra, Central Kalimantan, West Kalimantan, Papua, and West Papua.

Pantau Gambut chose to visit companies for which there were indications of recurring violations in their concessions between 2015 and 2019, including repeated fires and information that deep peat was being used for extractive crops. Pantau Gambut also considered additional information on company violations related to conflicts with communities. This information came from the Simpul Jaringan Pantau Gambut and the communities. Pantau Gambut investigated three parameters during its site visits:

1. Recovery of damaged peat in burned areas
2. Implementation of peat wetting in burned areas
3. Existence of land management and tree cover loss in protected peat areas

Pantau Gambut conducted random sampling and spatial clustering. It chose this method having examined the data on burned area and the massive clearing of peatland. The larger the burned or cleared area, the greater the number of samples taken, so it is assumed that the totality of the samples are representative of the conditions in the field.

Photo Credit: Danar Tri Atmojo for Pantau Gambut

Pantau Gambut used eight data sources in its investigation:

- Indonesian peatland data for 2011 and 2019 from the Indonesia Center for Agricultural Land Resources Research and Development
- Protection and Cultivation of Peat Ecosystem Function data for 2016 from the Ministry of Environment and Forestry
- Burned area data for 2015–19 from the Ministry of Environment and Forestry
- Concession area data for IUPHHK-HA, IUPHHK-HTI, and IUPHHK-RE for 2019 from the Ministry of Environment and Forestry, and data on HGU concessions from Greenpeace
- Data on restoration implementation in the BRG's annual action plan and contingency plan for 2017–18
- Tree cover loss data for 2015–19 from Global Forest Watch
- PIPPIB (indicative map of delay in granting new permits) data (as a parameter to determine the indication of the concession within forest moratorium, issued periodically by the Ministry of Environment and Forestry)
- Data on concession permits held by RSPO members and RSPO-certified members from Global Forest Watch

Following the fieldwork, focus group discussions were held with provincial and district governments of each province in order to obtain their views on Pantau Gambut's findings from the field.

4. Field Observation Results

The Simpul Jaringan Pantau Gambut team identified and verified 43 corporate concessions consisting of IUPHHK-HA, IUPHHK-HTI, and HGU concessions with 335 restoration implementation sampling points 482 points of burned areas, and as many as 405 points of tree cover loss in protected areas (the complete list of each company may be found in the Annexes).

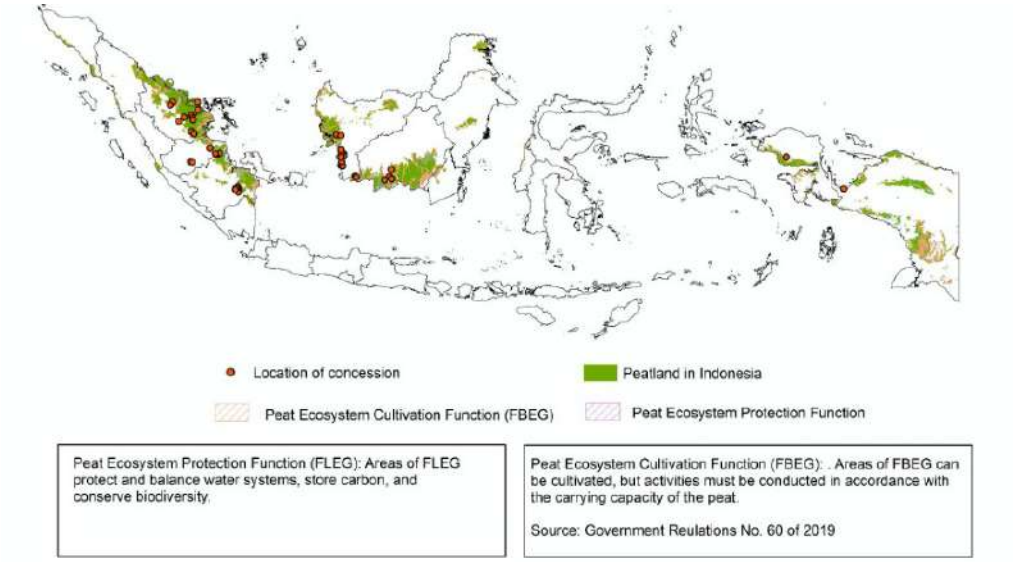


Figure 10. Companies Visited by Simpul Jaringan Pantau Gambut
Source: Pantau Gambut 2021

Pantau Gambut noted two points during its field monitoring, both of which require immediate attention:

a. **Most companies have not yet complied with the peat ecosystem restoration order.**

   According to Government Regulation No. 71 of 2014 in conjunction with Government Regulation No. 57 of 2016 **(articles 27 and 30),** concessionaires must address the issue of forest and land fires. They must be prepared to suppress fires and must restore damaged peat through hydrological restoration and/or rehabilitation of damaged areas.

Hydrological restoration may take the form of building peat wetting infrastructure and rewetting drained peat, while rehabilitation activities may involve replanting with species that have been identified as helping peatland to maintain its important role of supporting life.

In order to determine how far restoration and rehabilitation had been carried out, the Pantau Gambut coalition first conducted a desktop study and then verified this in the field.

- **Hydrological restoration is still not fully implemented by corporations.** Pantau Gambut has verified the restoration efforts within concession areas under the peat hydrological unit–based restoration directive issued by the BRG. Pantau Gambut used the BRG's planning document because public access to corporate work plans, which contain the peat ecosystem restoration plans, is limited.

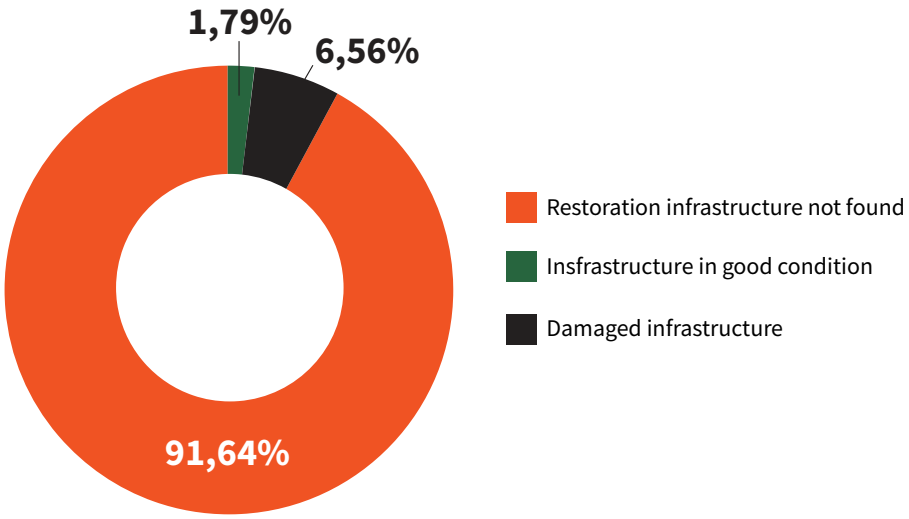


Figure 11. Restoration Implementation in Concessions
Source: Pantau Gambut 2021

To assess restoration implementation, 29 companies were visited in four provinces (Riau, Jambi, South Sumatra, and Central Kalimantan) out of the seven in the study. Evidence that restoration was underway was only found in 10 companies. At 91.64 percent of the 335 field monitoring points, there was no evidence that restoration was being carried out. At the remaining 8.35 percent of monitoring points, the companies had constructed canal blocks and drilled wells of varying standards.[16] The rewetting infrastructure plays an important role in the early stages of restoration, as it blocks the artificial canals which cause the peatland to dry out.

[16] The percentages come to 99.9 percent due to rounding.

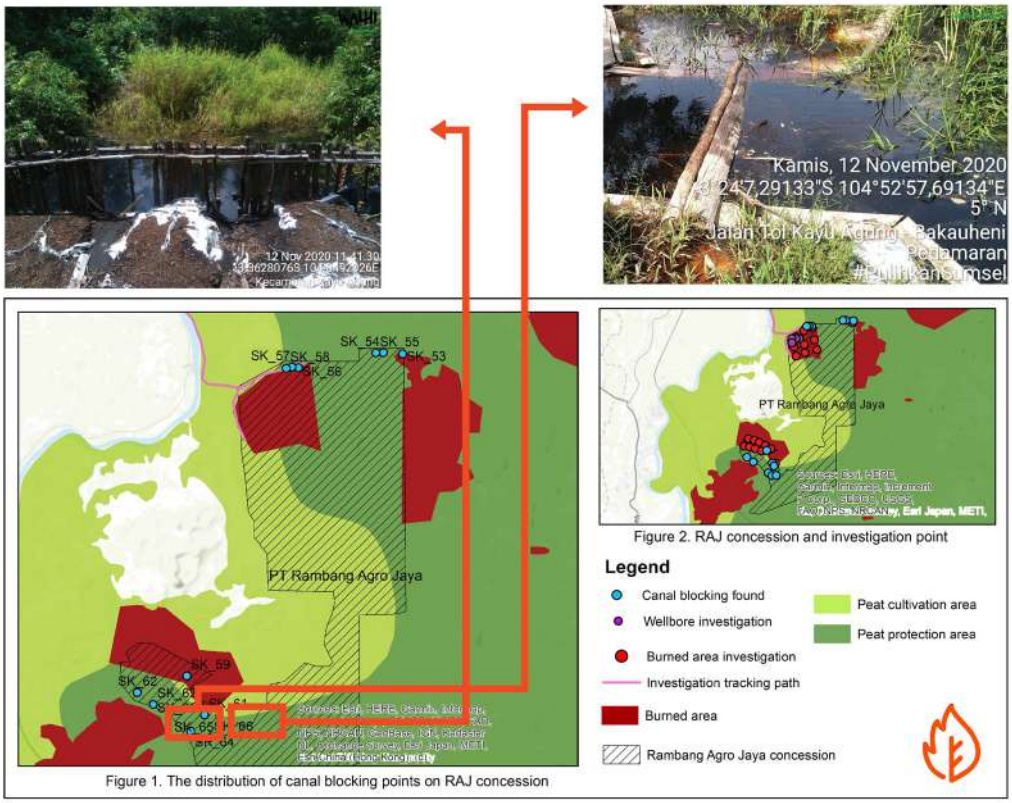


Figure 12. Damaged Canal Bulkhead within FLEG Protection Area close to Burned Area of PT Rambang Agro Jaya. *Source:* Pantau Gambut 2021.

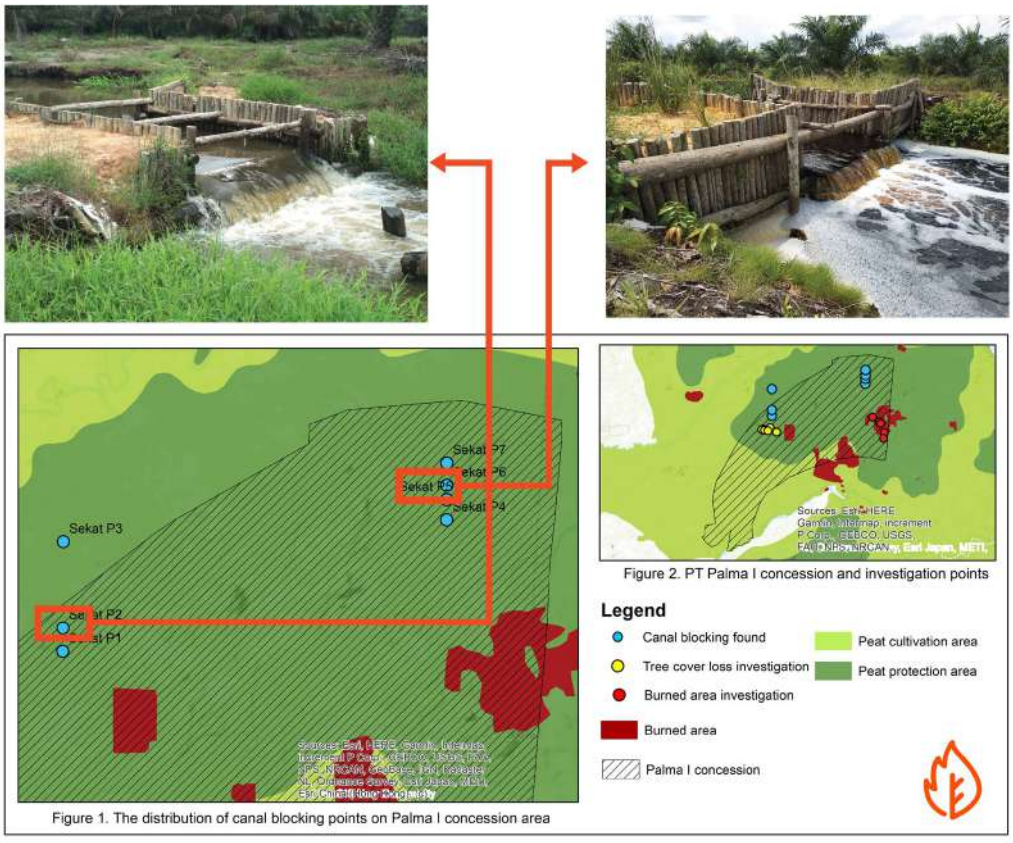


Figure 13. Well-Maintained Canal Bulkhead at FLEG Protection Area of PT Palma I. *Source:* Pantau Gambut 2021.

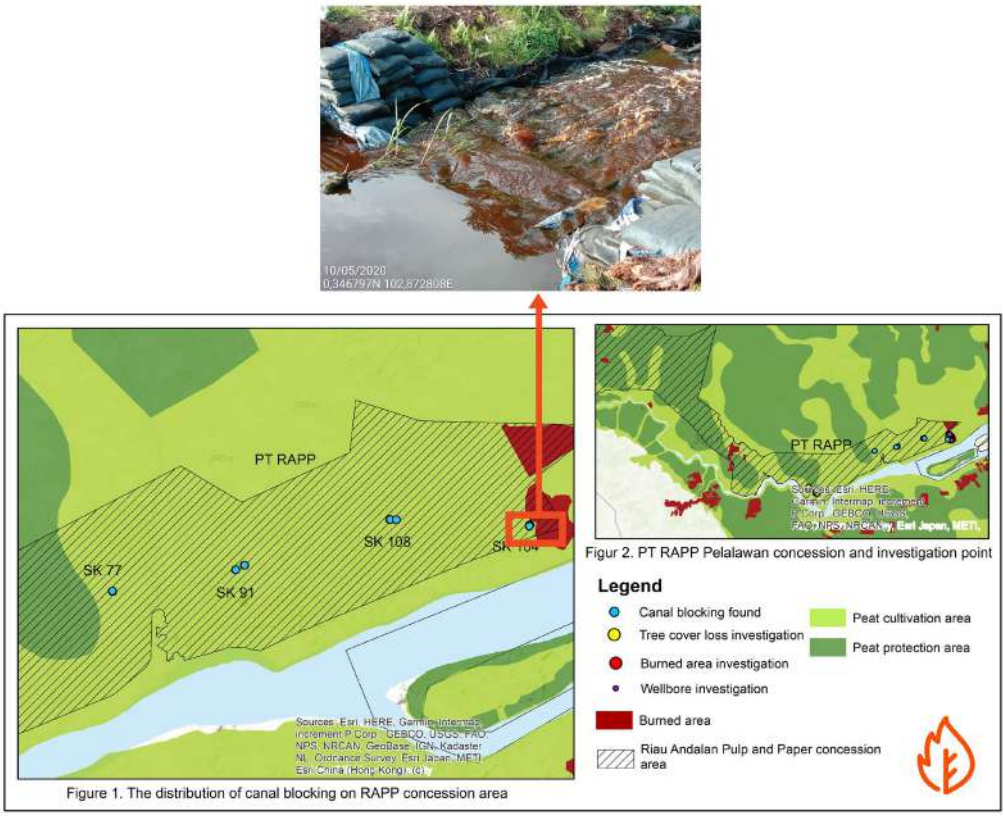


Figure 14. Stack of Sacks Blocking Canal in FLEG Protection Area close to Burned Area of PT RAPP Pelalawan. *Source:* Pantau Gambut 2021.

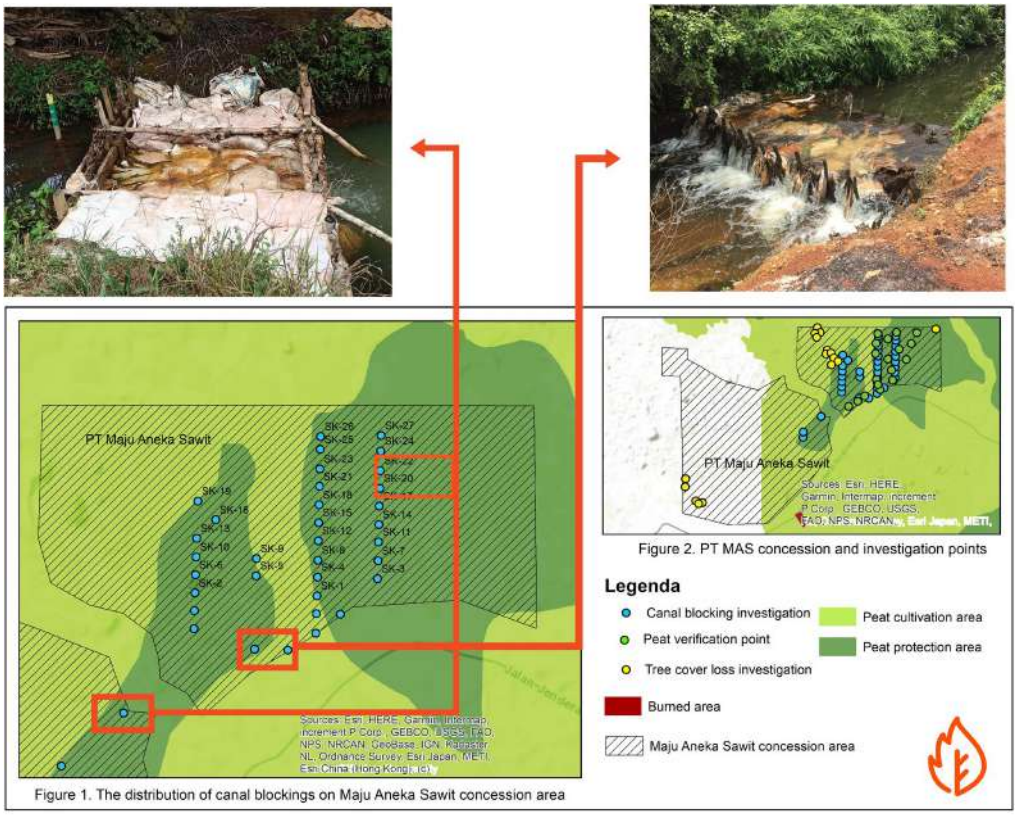


Figure 15. Canal Bulkhead in FLEG Protected Area of PT Maju Aneka Sawit. *Source:* Pantau Gambut 2021.

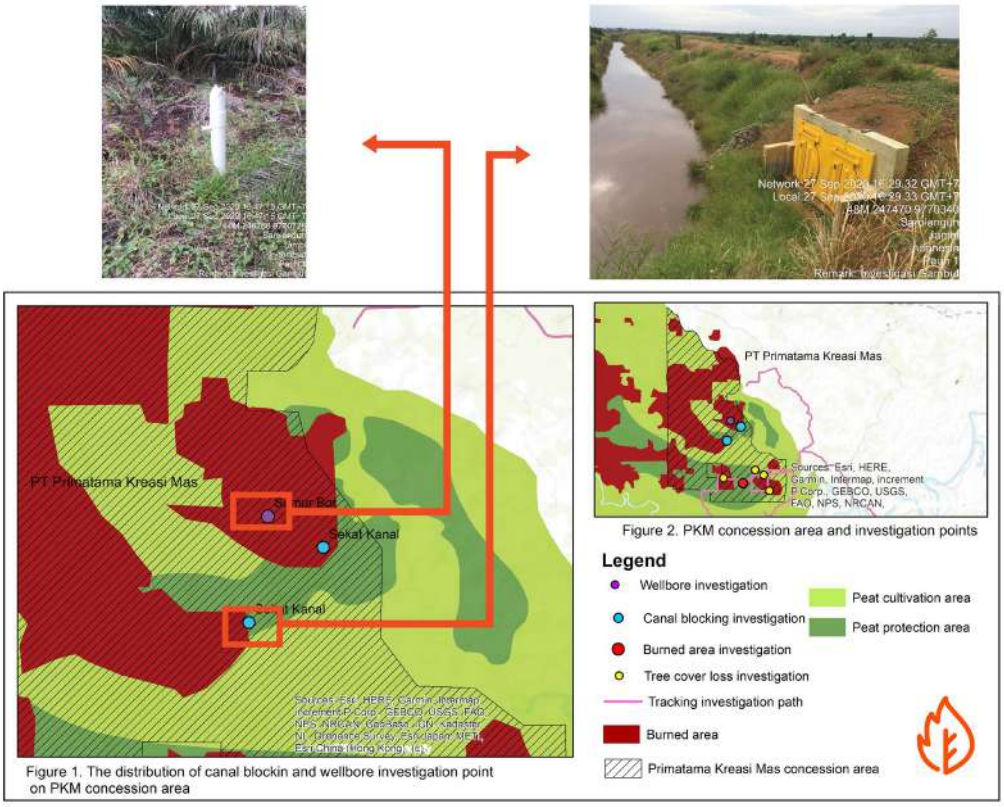


Figure 16. Canal Bulkhead and Borehole in Burned Area of PT Primatama Kreasi Mas. *Source:* Pantau Gambut 2021.

- **Extractive Crops Have Been Planted in Burned Areas That Should Be Restored**

  The field verification found that most burned areas have not been restored by the corporations. Instead, many have been replanted with extractive crops, either oil palm or acacia. Pantau Gambut assessed conditions at 482 sampling points in burned areas belonging to 39 companies in five provinces (Riau, Jambi, South Sumatra, Central Kalimantan, and West Kalimantan) of the seven in the study. It found that as much as 32.15 percent of burned areas had been replanted with extractive crops, either oil palm or acacia. It is clear within Minister of Environment and Forestry Regulation No. 77 of 2015 that the holder of a Forest Product Utilization Permit is prohibited from carrying out forest utilization activities in a burned area.

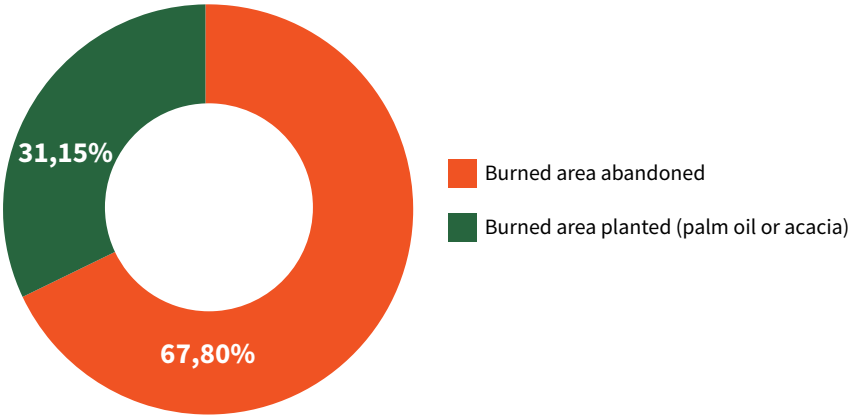


Figure 17. Corporate Responses to Burned Areas. *Source:* Pantau Gambut 2021.

Meanwhile, 67.8 percent of burned areas were neglected and overgrown with shrubs, a form of secondary succession. Allowing the burned area to regenerate naturally is indeed included within the legally permitted recovery criteria, but this only applies if the canals around the burned area have been blocked and the burned area is not disturbed by human activities.[17] This is a different situation from shrubs deliberately being left unattended but without barriers being placed in the artificial canals.

Corporations must be obliged to systematically deal with burned areas, starting from mapping the burned areas, revising annual work plans, preventing forest fires, and blocking canals, as well as securing concessions so that no one can enter and start a fire.

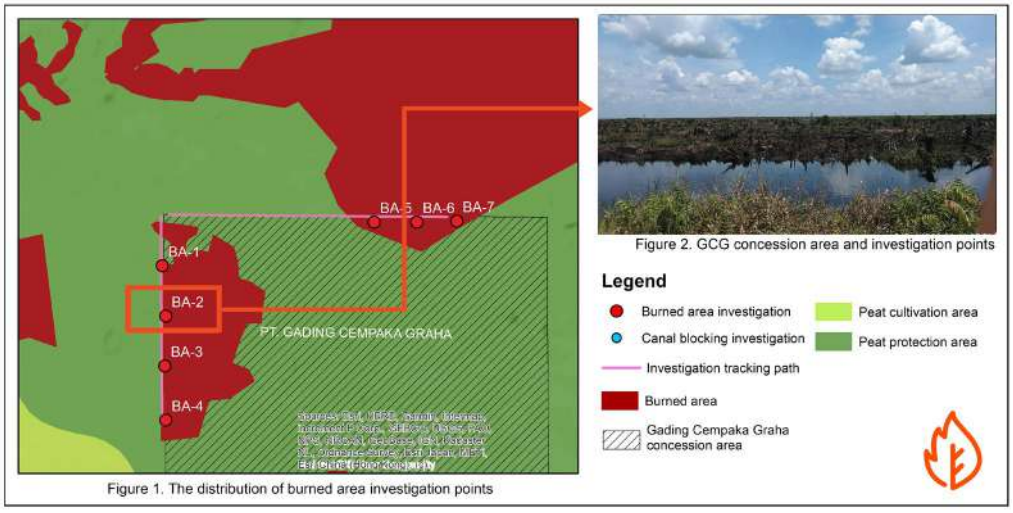


Figure 18. Burned Areas Not Restored by PT Gading Cempaka Graha. *Source:* Pantau Gambut 2021.

[17] According to Minister of Environment and Forestry Law No. 16 of 2017, natural regeneration may be categorized as a form of peat restoration if the artificial canal possesses an artificial bulkhead and is not disturbed by human activity.

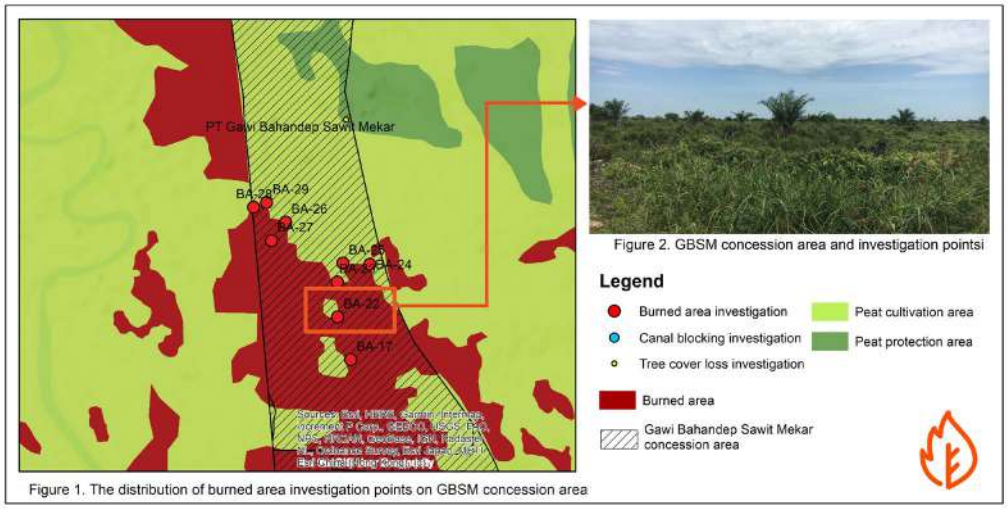


Figure 19. Burned Areas Replanted with Palm Oil by PT Gawi Bahandep Sawit Mekar. *Source:* Pantau Gambut 2021.

b. Protected FLEG Areas Cleared and Planted with Extractive Crops

As stated in Presidential Decree No. 32 of 1990, peat deeper than three meters must be protected. The detailed classification of peat areas has been made clearer since the Peat Ecosystem Function Map was published in 2017. According to Minister of Environment and Forestry Regulation No. 16 of 2017, the ability of peat to function as a protected ecosystem is said to be damaged if three conditions are present: artificial drainage, exposure of pyrite sediment, and loss of area and/or volume of land cover.

Pantau Gambut conducted a preliminary satellite image analysis of indicated tree cover loss in protected peat ecosystem functions within concessions. As a result, all companies visited in the field showed indications of carrying out activities in areas designated as protected peat ecosystem functions. The team also conducted field verification based on the reference points of the initial analysis and found surprising results, namely that land preparation and planting of extractive crops was taking place in the protected areas. At as many as 64.4 percent of the 405 sampling points in seven provinces (Riau, Jambi, South Sumatra, Central Kalimantan, West Kalimantan, Papua and West Papua), the area that had suffered tree cover loss had been converted and planted with acacia or oil palm, even though the peat should be protected.

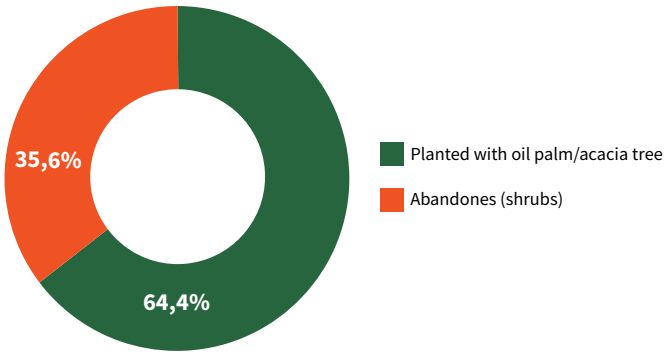


Figure 20. Tree Cover Loss in Protected FLEG Areas in Concessions. *Source:* Pantau Gambut 2021.

In addition, investigation results show that PT Putera Manunggal Perkasa, a subsidiary of Austindo Nusantara Jaya Group, is planting extractive crops in protected FLEG areas and even in HCV areas, though it claims in its annual report that its concessions are not located on peatland. This requires special attention considering that the remaining peat on the island of Papua is now increasingly under threat.

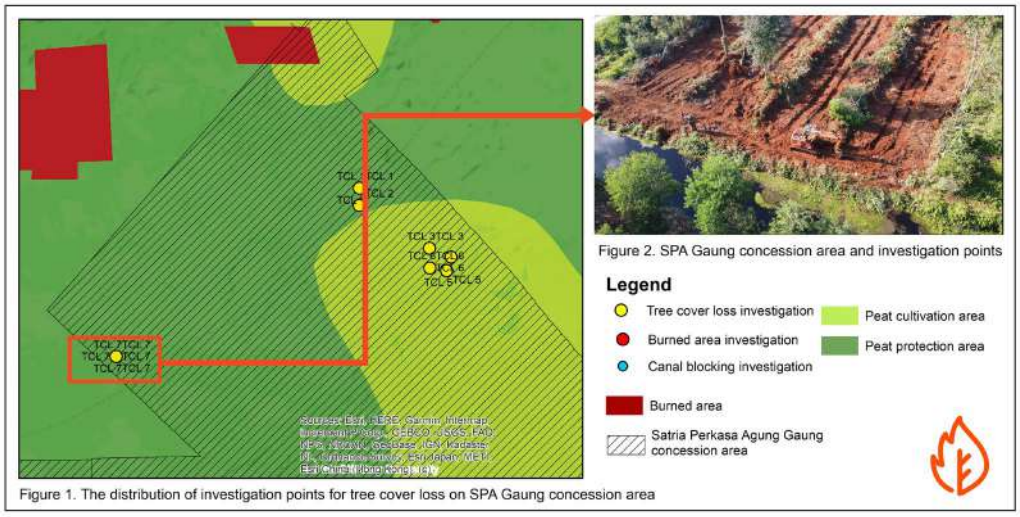


Figure 21. Heavy Equipment Clearly Used to Clear Land within the PT SPA Gaung FLEG. *Source:* Pantau Gambut 2021.

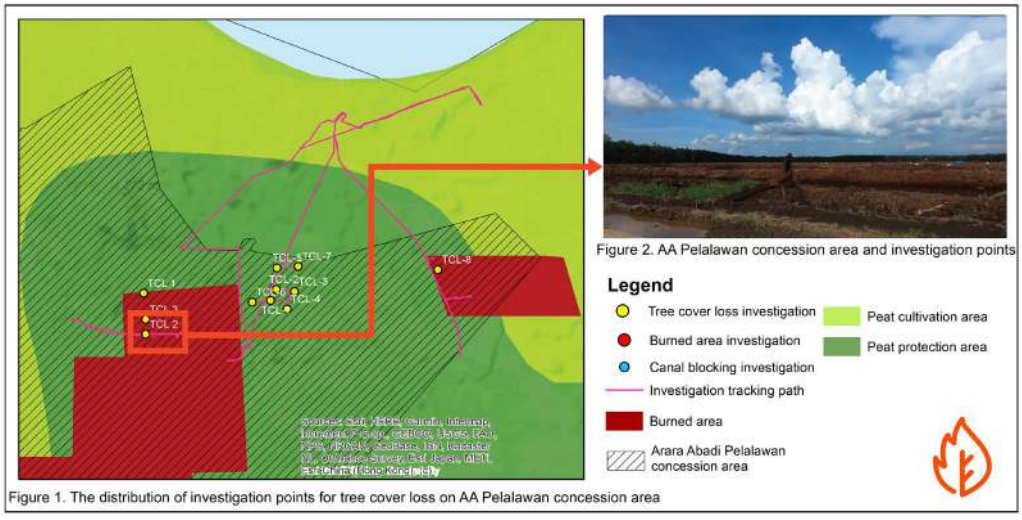


Figure 22. Heavy Equipment and Mess Hall Seen in Protected FLEG of PT Arara Abadi Pelalawan, Trees Being Cleared. *Source:* Pantau Gambut 2021.

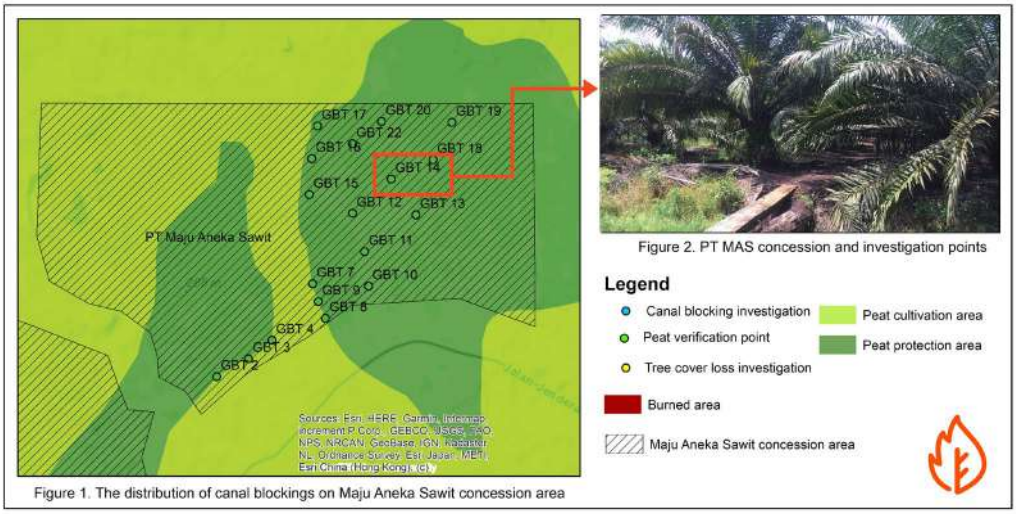


Figure 23. PT Maju Aneka Sawit Planted Oil Palms on Protected Peat Deeper than Four Meters. *Source:* Pantau Gambut 2021.

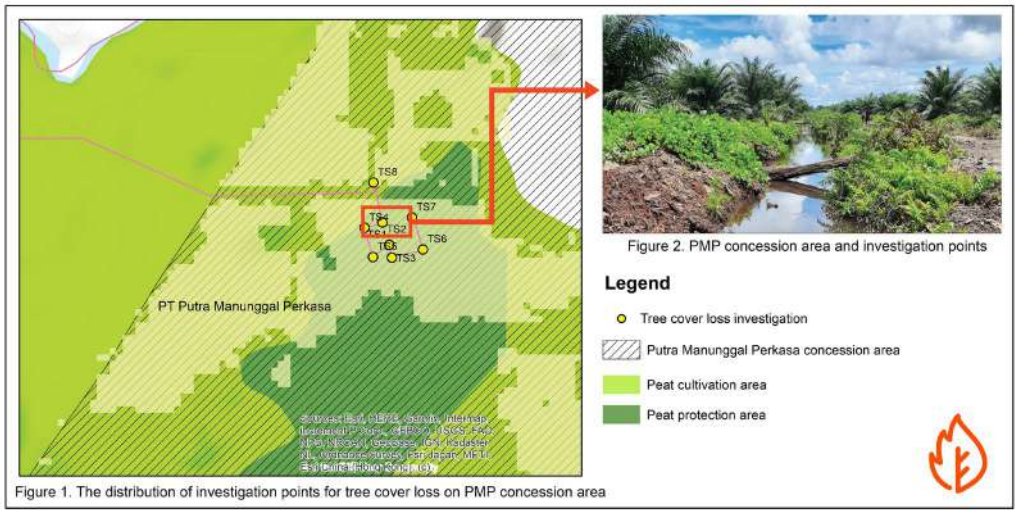


Figure 24. PT Putra Manunggal Perkasa Cut Canals into Protected FLEG and HCV Areas, Planted Oil Palms. *Source:* Pantau Gambut 2021.

5. The Challenges of Restoring Peat Ecosystems in Concessions

5.1 Transparency of peat restoration activities in concession areas

In accordance with article 5(c) of Minister of Environment and Forestry Law No. 16 of 2017, restoration must be carried out by business owners and/or anyone carrying out activities on peatland. The role of the government in restoration is to issue orders to restore degraded peatland based on its own field verification, validate recovery plans submitted by companies, and supervise and assess the restoration, which is carried out by the companies (Figure 25).

From 2015 to 2020, the BRG supervised restoration in concessions, targeting 1.772.712 ha of restored peat. In plantation concessions, 94.69 percent or approximately 530.924 ha of the targeted areas were supervised. In forestry concession areas, only 9.44 percent or 114.910 ha of the targeted areas were successfully supervised. In a report, the Ministry of Environment and Forestry claimed that 294 companies, or around 3.6 million ha of IUPHHK-HTI concessions, were successfully restored between 2015 and 2020.

However, there is no transparency regarding field monitoring or the methods used to measure the success of restoration carried out in compliance with regulations.

Land clearing activities cause peat degradation
Photo Credit: Ardiles Rante - HKV/Pantau Gambut

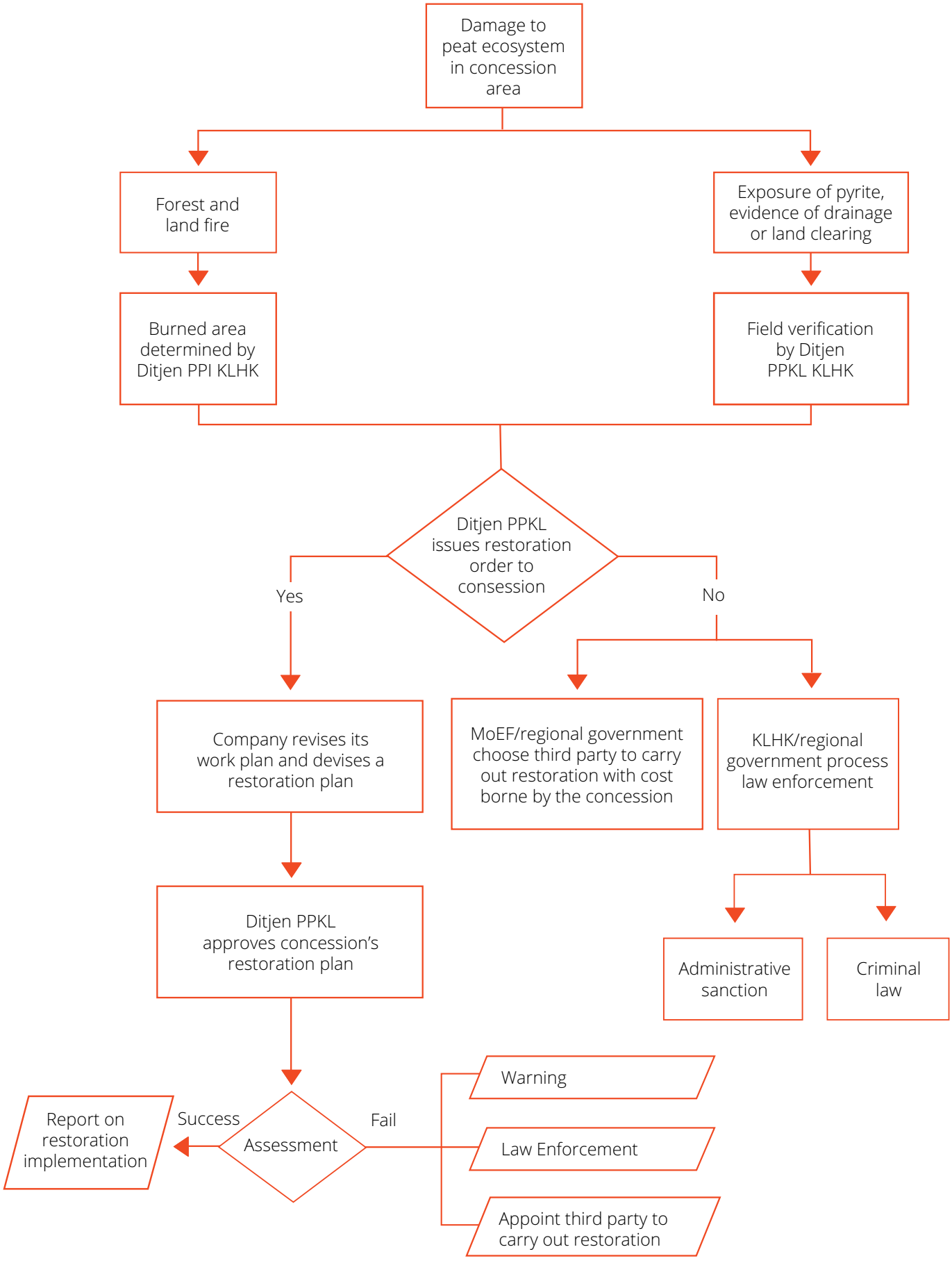


Figure 25. Peat Ecosystem Restoration for Concessions. *Source:* WRI Indonesia using information drawn from Minister of Environment and Forestry Law No. 16 of 2017.

Pantau Gambut found in its field observations that there are still areas of degraded peat that have not been restored. It is also important to evaluate the implementation of restoration activities in concession areas, especially the reasons why restoration of degraded peatland has not been carried out. It is a challenge for the government to build a system to ensure that the concessions carry out their restoration duties according to law.

Outside the concession areas, the Ministry of Environment and Forestry claims that 46.554,70 ha of community land had been successfully restored through rewetting activities by the end of 2020[18]. The BRG said at the end of 2020 that it had successfully restored approximately 835.288 ha of peatland in nonconcession areas through the "3R" activities of rewetting, revegetation, and revitalization.[19] Furthermore, the government, meaning both the BRG and the Ministry of Environment and Forestry, have published information on restoration in nonconcession areas online.[20]

Viewed from the broader perspective of an entire peat landscape, the positive impact of restoration carried out in a nonconcession area of a peat hydrological unit will be suboptimal if a concession in the same peat hydrological unit continues to be degraded, particularly if that concession is on a FLEG area that should be protected. According to regulations, the area must be protected and if found to be already in use, the company is obliged to revise its work plan and prepare a recovery plan. However, field observations found that many FLEG protection areas are either being prepared for planting or have already been planted with extractive crops.

Peatland in concession areas must be restored immediately, and restoration efforts must be made transparent, with information conveyed to the public. So far, government data, especially regarding land permits, location of concessions, work plans, land management plans, and even land restoration plans, are difficult to obtain. However, under Law No. 14 of 2008 concerning Openness of Public Information, every citizen has the right to seek, obtain, possess, store, manage, and convey information.

[18] Please check report https://ppkl.menlhk.go.id/website/filebox/931/210316150136LKj%20Ditjen%20PPKL%202020.pdf
[19] Based on the report of BRG https://brg.go.id/publikasi/
[20] Data on restoration in nonconcession areas is published by the BRG (https://prims.brg.go.id/) and the Ministry of Environment and Forestry (http://pkgppkl.menlhk.go.id/webgis/peta_tematik_sekat_kanal/).

5.2 Law enforcement toward complex cases of forest and land fires

Threats against the environment and natural resources are increasing in line with development and economic activity. Anthropogenic factors are influencing the current condition of natural resources and playing a role in forest and land fire disasters.

In terms of regulations, the Indonesian government has clearly formulated the essence of environmental protection and management in Law No. 32 of 2009 on Environmental Protection and Management, as well as in derivative laws and regulations in relevant sectors.

In order to protect the remaining natural resources and prevent environmental damage, including forest and land fires, there is a need for environmental law enforcement efforts that specifically handle cases differently from other cases. Forms of law enforcement against perpetrators include administrative sanctions, and civil and criminal charges.

Environmental cases, including cases of forest and land fires, are far from easy to resolve and various lengthy stages must be completed during the resolution process. Law enforcement requires experts who are competent in both determining legal decisions and collecting evidence of environmental violations. In addition, law enforcement must be cautious during the long process of investigations due to the necessity to collect scientific evidence from expert statements related to environmental damage which is then used by judges as legal evidence, and thus requires a significant amount of time.

Photo Credit: Feri Irawan/Pantau Gambut

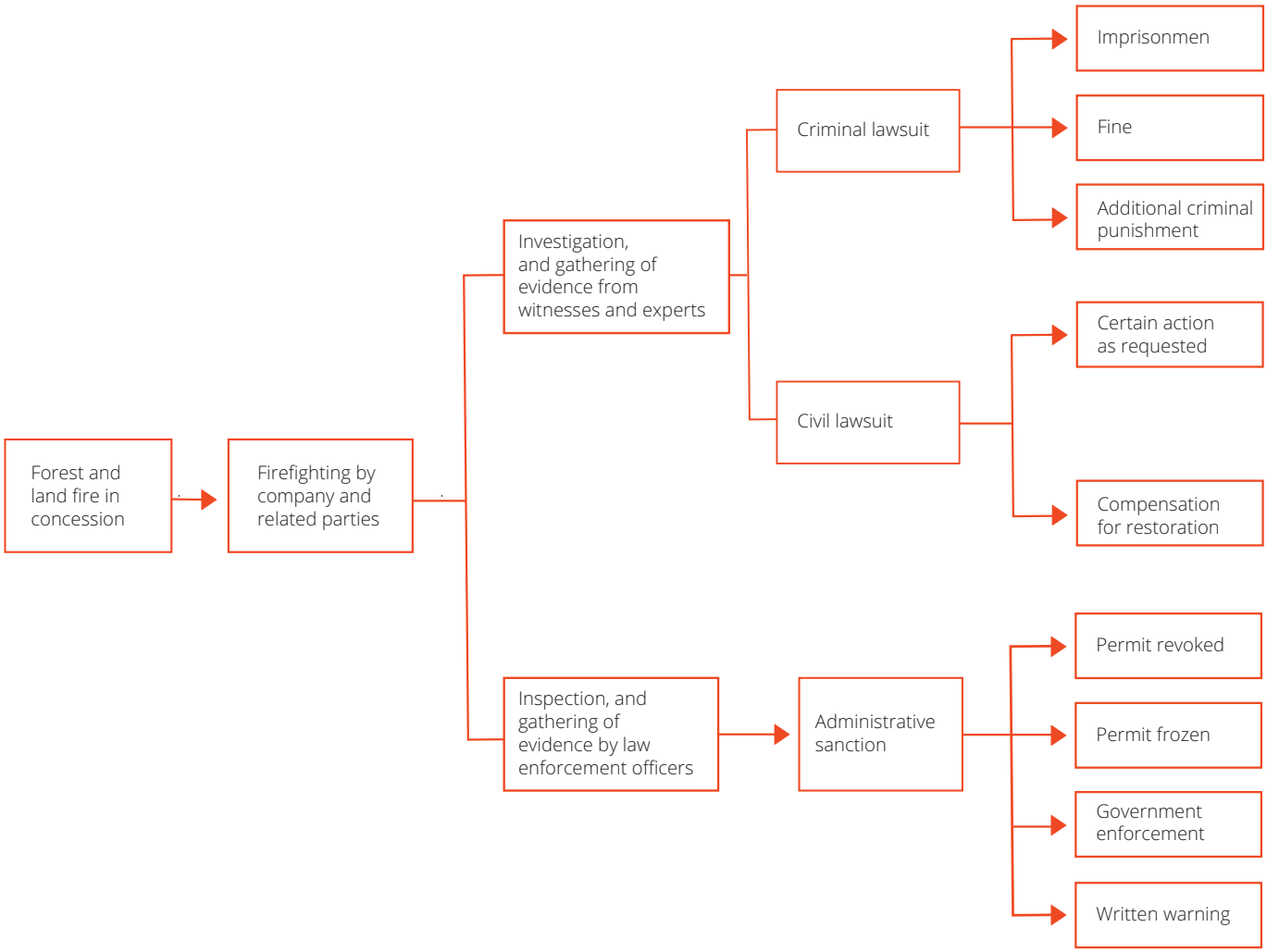


Figure 26. Progression of Law Enforcement in Cases of Forest or Land Fires in Concessions. *Sources:* Various 2017.

The lengthy legal process means peat that should have been restored quickly is neglected and at risk of burning again. In addition, any compensation paid under this legal process may not guarantee that the damaged peat area will be immediately restored; the compensation goes through the state treasury, and there is no clear message that the funds must be directly channeled for environmental restoration[21]. There needs to be an independent financial system for environmental issues, so that compensation is not mixed with other state funds, but is more easily distributed for environmental compensation.

[21] Refer to https://www.mongabay.co.id/2021/04/09/menyoal-pemulihan-ekosistem-dalam-hukum-lingkungan-di-indonesia/

6. When the Peat Is Damaged, the Community Grieves

Photo Credit: Julius Lawalata/WRI Indonesia

The allocation of concession licenses often results in conflicts with communities, which may have been living in the area for many years.

6.1 Tenure conflicts

Tenure conflicts are disputes over land title and management and use of forest areas[22]. Most tenure conflicts are caused by differences in data and differences in the interests of the opposing parties. A set of data may favor one party over the other, and in most cases it is the community that suffers. Forest Watch Indonesia estimates that a forest area of 17.6–24.4 million ha has conflicts related to overlapping claims involving the government (state forests), indigenous peoples, local communities, or permits.[23] About 500,000 farmers operating on peat have been evicted from their land as a result of the expansion of plantation concessions.[24]

[22] Please check PermenLHK RI No. P.84/Menlhk-Setjen/2015
[23] Quoting Forest Watch Indonesia on conflicts: https://fwi.or.id/publikasi/keterbukaan-informasi-publik-atas-dokumen-perizinan-investasi-berbasis-hutan-dan-lahan/?pid=3337137
[24] Quoting the Epistema Institute on tenurial conflicts in forest areas and on peatland: http://epistema.or.id/publikasi/kajian-konflik-tenurial-di-kawasan-hutan-dan-lahan-gambut/

A conflict over tenure occurred in the village of Tanjung Rangas, in the district of Seruyan Hilir District in Seruyan regency, Central Kalimantan. A conflict between the village and PT Gawi Bahandep Sawit Mekar began when the company started cultivating 130 ha of land belonging to the local community, which already had a land certificate (Surat Keterangan Tanah) for the area proving legal ownership. Since the company's activities began, the community has regularly protested in writing to the company and a third party has also carried out mediation on several occasions between the company and the community. No resolution has yet been reached and the landowners are unable to use their land, on which they had previously grown fruit.

The Pantau Gambut field survey found that land conflict is still occurring in Jambi between the village of Pematang Raman in the district of Kumpeh in Muaro Jambi regency and PT Putra Duta Indah Wood. Mapping carried out by the village administration shows that about 8.000 ha taken over by PT Putra Duta Indahwood is in fact included within the administrative area of the village. The village had planned to plant 6.000 ha of the disputed area for food and for crops to sell for additional income.

Photo Credit: Danar Tri Atmojo for Pantau Gambut

6.2 Environmental disasters

Environmental conflicts between the community and concessions occur due to changes in the environment following corporate activity that alters the surrounding environment. The environmental changes include frequent forest fires, changes in the quality of river water, floods, and drought.

One example is a conflict that occurred at the village of Lebak Belanti, located in the Sungai Sibumbung-Sungai Betok peat hydrological unit in South Sumatra. The community has suffered floods for 11 years because the peat can no longer store water due to the actions of PT Waringin Agro Jaya, which operates close to Lebak Belanti and has built a canal that blocks the river flow. The river now stops at Lebak Belanti and causes floods that inundate the residents' farmland.

Another impact of the conversion of peatland is the rampant forest and land fires which cause air quality to deteriorate and become harmful to health, especially for vulnerable groups such as pregnant women, young children, the elderly, and people with respiratory or heart problems.

In the short term, the smoke spreads through the air, irritating the eyes, nose, and throat, resulting in weeping eyes, runny noses, nausea, headaches, and upper respiratory infections. If peat is not restored and if efforts to prevent forest and land fires continue to fail, people may be exposed long term to haze. Long-term exposure is predicted to cause the premature deaths of up to 36.000 people per year across Indonesia, Malaysia, and Singapore[25].

[25] Based on research https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GH000191

Conclusions

Conclusions

a) Pantau Gambut found in the field that activities on peatland, especially the planting of extractive crops, were taking place not only in FBEG areas for cultivation, but also in the FLEG areas that should, according to government regulations, be protected.

b) Efforts to restore degraded peat, especially where degradation is due to forest and land fires, have not been carried out in several concessions visited. Some of the burned areas, which should have been restored by revegetating with native peat plant species, were replanted with extractive crops and no peat wetting infrastructure was found.

c) There is no transparency of data regarding the progress of peat restoration in concessions or the measurable impacts of peat restoration. The method used by the government to measure the success of the restoration it claims in its annual reports remains unclear.

d) Pantau Gambut observation and analysis results show that to date, the process of law enforcement toward forest and land fire cases in corporate concessions still requires significant work.

Recommendations

Recommendations

a) It requests the President of the Republic of Indonesia to stop all exploitation activities in FLEG peatland, which has been designated as in need of protection. Areas that have already been opened must be restored according to the existing regulations.

b) It requests concession permit holders to immediately identify areas of peat degraded due to forest fires, include them in their work plans, and begin restoration forthwith.

c) It requests the Ministry of Environment and Forestry to explain the parameters it uses in its annual report to claim success in restoration in concessions.

d) It requests law enforcers to simplify the legal process for environmental cases and increase the number of experts in environmental law.

Photo Credit: Danar Tri Atmojo for Pantau Gambut

Annexes

A. Observations in Jambi Province

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT. Pesona Belantara		V		V		Canal blocks were found damaged at 5 of the 10 sampling points.		V	Of the six sampling points, three burned areas were found to be overgrown with shrubs and natural succession.		v	Of five sampling points, all those that had suffered tree cover loss and conversion to oil palm were located on peat.
PT. Putra Duta Indah Wood		V		V		A canal block was found damaged at 1 of the 10 sampling points.		v	At three of the six sampling points, burned areas were overgrown with shrubs.		v	Of five sampling points, all those that had suffered tree cover loss and conversion to oil palm were located on peat.
PT. Sumbertama Nusa Pertiwi		V			V	No restoration was found at any of the five sampling points.	V (Oil palm)	V	At all of the five sampling points, unkempt palm trees were found among the shrubs.	V		At all four sampling points, it was found that the original tree cover loss had occurred on peat, which had been replanted with oil palms that had recently been treated, and some had recently been harvested.
PT. Bahari Gembira Ria	V (RSPO)				V	No restoration was found at any of the eight sampling points.	V (Oil palm)		At all four sampling points, no new burn marks were found. Only palm oil plantations	V		From four sampling points, it was found that the original tree cover loss of peat had turned into an expanse of treated palm oil plantations.

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT. Wira Karya Sakti		V			V	No restoration was found at any of the five sampling points.	V (akasia)	V	At all six sampling points, unkempt acacias were found among the shrubs.	V		At all five sampling points, the tree cover loss of peat had turned into an untreated expanse of acacias buried in thickets.
PT. Kaswari Unggul		V			V	No restoration was found at any of the five sampling points.	V (Oil palm)	V	At all five sampling points, oil palms were found growing randomly among ferns.	V	V	At all five sampling points, the tree cover loss of peat had turned into a well-tended stretch of oil palms.
PT. Primatama Kreasi Mas	V (RSPO)			V (Canal bulkhead and borehole)		Two canal blocks were found, one of which was damaged. One borehole was also found.	V (Oil palm)	v	At all six sampling points, young acacias had recently been planted and were partially overgrown with shrubs.	V	V	At all four sampling points, it was found that the lost peat tree cover had turned into scrub and untreated oil palms.
PT. Bahana Karya Semesta	V (RSPO)			V (Borehole)		One well-maintained drilled borehole was found.	V (Oil palm)	V	At all five sampling points, oil palms were found growing randomly among shrubs.	V	V	At all seven sampling points, the lost peat tree cover had turned into an expanse of oil palms, with shrubs in places.

B. Observations in Riau Province

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT Sumber Sawit Sejahtera		V				No restoration planning documents were found.	V (Oil palm)	V	Of the 25 sampling points in burned areas, most had been planted with oil palms, but some had been abandoned.	V (Oil palm)		From three sampling points, it was found that the original tree cover loss was peat at all points that had turned into palm oil plantations.
PT Arara Abadi (Pelalawan)	V (IFCC)				V	No restoration was found at any of the five sampling points.	V (Acacia)		At all six sampling points in burned areas, tended acacia plants had been planted.	V (Acacia)		At all eight sampling points, the tree cover loss had occurred on peat. Some areas are being prepared for planting.
PT Musim Mas	V RSPO)					No restoration planning documents were found.	V (Oil palm)		At all five sampling points, the burned area has been planted with tended oil palms.	V (Oil palm)		All seven sampling points with tree cover loss were found to be on peat. All had been turned into oil palm plantations.
PT Riau Andalan Pulp and Paper (pelalawan)	V (IFCC)			V (Canal bulkhead)		At two of the nine sampling points, canals were blocked with piles of sacks and concrete.	V (Acacia)		At all five sampling points, the burned area had been cleaned and planted with treated acacias.	V (Acacia)		All seven sampling points with tree cover loss were found to be on peat. All had been turned into acacia plantations.

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT Satria Perkasa Agung (Serapung)	V (IFCC)				V	No restoration was found at any of the nine sampling points.	V (Acacia)		At all nine sampling points, the burned area had been planted with tended acacias.	V (Acacia)		From three sampling points, it was found that the original tree cover loss was peat at all points that had turned into acacia plants.
PT Satria Perkasa Agung (Gaung)	V (IFCC)				V	No restoration was found at any of the five sampling points.	V (Acacia)		At all six sampling points in the burned area, tended acacias have been planted.	V (Acacia)		At all seven sampling points, the tree cover loss occurred on peat, and all had been replanted with acacia. Land preparation is also being carried out in this protected area.
PT Arara Abadi (Siak)	V (IFCC)				V	No restoration was found at any of the five sampling points.	V (Acacia)		At all seven sampling points, the burned area has been planted with tended acacias.	V (Acacia)	V	At all five sampling points, the tree cover loss occurred on peat, and all had been replanted with acacia, which was partially neglected and thickets of shrubs were found.
PT Arara Abadi (Bengkalis)	V (IFCC)				V	No restoration was found at any of the five sampling points.	V (Acacia)		At all three sampling points, the burned area has been planted with tended acacias.			No indication of tree cover loss was found either in the satellite image or in the field.

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT Sumatera Riang Lestari (Rangsang)		V				No restoration planning documents were found.	V (Acacia)	V	At the nine sampling points, some of the burned areas contained ferns and some acacias.	V (akasia)		At all four sampling points, the original tree cover loss occurred on peat, which is now covered with an expanse of acacias.
PT Agro Sarimas		V				No restoration planning documents were found.	V (Oil palm)		At all seven sampling points, the burned area has been planted with oil palms.		V	At all five sampling points the original tree cover had been lost. A thicket of scrub had grown back.
PT Palma I		V		V (Canal bulkhead)		No restoration planning documents were found, but canal blocks were found in the field.	V (Oil palm)	V	Of the five sampling points, some of the burned areas were filled with shrubs and some with oil palms.	V (Oil palm)		From the six sampling points, areas of peat that suffered tree cover loss had all been converted into oil palm plantations.

C. Observations in Central Kalimantan Province

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT. Gawi Bahandep Sawit Mekar	V (RSPO)				V	No restoration was found at any of the 25 sampling points.	V (Oil palm)	V	From the nine sampling points, the burned areas were palm oil plants that grew irregularly between the shrubs.	V (Oil palm)		Of the 39 sampling points, it was found that the original tree cover loss was peat at all points and all had been converted to oil palm plantations.
PT. Rimba Harapan Sakti	V (RSPO)				V	No restoration was found at any of the 47 sampling points.	V (Oil palm)		There were no burn marks or oil palms at any of the nine sampling points.	V (Oil palm)		Of the 21 sampling points, it was found that the original tree cover loss was peat at all points and it had been converted to oil palm plantations.
PT. Sarana Titian Permata	V (RSPO)				V	No restoration was found at any of the 25 sampling points.	V (Oil palm)		There were no burn marks or oil palms at any of the 11 sampling points.	V (Oil palm)		Of the four sampling points, two had been converted to oil palm plantations and two are HCV areas.
PT. Maju Aneka Sawit	V (RSPO)			V (Canal bulkhead)		Of the 37 sampling points, 9 were found to have canal blocks.			There was no burned area data found for the company.	V (Oil palm)		Of the 13 sampling points, it was found that the original tree cover loss was peat at all points and it had been converted to oil palm plantations.

D.Observations in Papua and West Papua Provinces

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT. Putera Manunggal Perkasa	V (RSPO)				V	No restoration planning documents were found.			No initial indication of burned areas was found.	V (Oil palm)		The company denies that it is working on peat, but at eight sampling points that a loss of peat tree cover was found. The areas had been converted to oil palm. In addition, the company's HCV area is indicated to have disappeared and been converted to oil palm.
PT. Nabire Baru	V (RSPO)				V	No restoration planning documents were found.			No initial indication of burned areas was found.	V (Oil palm)		From eight sampling points, it was found that the original tree cover loss was peat at all points and all had been converted to oil palm.

E. Recapitulation of South Sumatra Province Observation Results

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT Waringin Agro Jaya	V (RSPO)			V (bore-hole-outside the sample point)	V	Of the 17 sample points, 15 points were successfully taken but no sign of resto-ration. Boreholes outside the sample points are in good condition.		V	Of the 20 sample points, the burned areas were covered with shrubs, some were inundated		V	From 10 TCL sample points, all was covered with shrubs. No sign of new planting
PT Tempirai Palm Re-sources	V (RSPO)			V		Of the 20 canal blocking sam-ple points and 21 borehole points, no restoration was found on site. However, one canal block was found out-side the sample point (made of cement / concrete)	V	V	Of the 35 sample points, the burned area was observed to be an area of dark forest and shrubs. However, outside the sample point there were burned areas that had been planted with oil palm ranging from 1-2 years old			No TCL samples of protected forest was found in this company
PT Sampoer-na Agro tbk	V (RSPO)				V	Of the 7 sample points of canal blocking, no restoration was found		V	From 10 points burned area, the expanse was found covered with shrubs and inundated. However, there was a burned area which is located next to the company's palm oil plantations.			No TCL samples of protected forest was found in this company
PT Rambang Agro Jaya	V (RSPO)			V (canal bulk-head)		Of the 14 sample points of the canal block, 2 canal blocks were found to be damaged. Of the 4 drill sample points, no bore wells were found in the company's area		V	Of the 19 sample points burned area, all of the stretch is scrubby. However, there is a point adjacent to the company's productive land that has already been planted with palm oil			No TCL samples of protected forest was found in this company
PT Kelantan Sakti		V			V	Of the 14 canal block sample points, only 4 were success-fully taken and no canal blocking was found at all. The remaining 10 were taken using drones and no canal blocking was seen.	V		Of the 58 investigation sample points, there are burned areas that have been planted with palms ranging from 2-3 years old.			No TCL samples of protected forest was found in this company
PT Gading Cempaka Graha		V		V (canal bulk-head)		Of the 12 sample points of canal blocking, only 2 were found with canal blocks in bad condition, built using wood and gunny sacks.		V	From the 12 sample points, it was found that burned marks were still burnt and submerged in water			No TCL samples of protected forest was found in this company

F. Recapitulation of West Kalimantan Province Observation Results

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT Kayung Agro Lestari	V (RSPO)				V	no restoration planning documents were found		V	Massive BAs are located around the concession boundary of PT KAL. Of the 25 field sample points, the majority of burned areas were neglected and overgrown with shrubs		V	Massive TCLs are located in protected FEGs outside company premises. From a total of 13 field samples, the majority of protected FEGs have been cleared and allowed to overgrown with shrubs
PT. Arrtu Energy Resources	V (RSPO)				V	no restoration planning documents were found		V	From 20 field sample points, all burnt areas were neglected	V	V	From 11 field sample points, one point of palm oil plantation area was found in FLEG, while the rest was dominated by shrubs and some secondary succession trees.
PT. Golden Youth Plantation		V			V	no restoration planning documents were found		V	From the nine field points, the entire burned area was neglected and overgrown with shrubs		V	From 18 field sample points, 11 FLEG areas were found that were open and overgrown with shrubs, the rest, are trees and other secondary vegetation.
PT. Hutan Ketapang Industri	V (FSC)				V	no restoration planning documents were found			no burned areas were found within or the outer boundaries of the company	V		From two field sample points, acacia plants were found in the FLEG area at all points
PT. Mayawana Persada		V			V	no restoration planning documents were found		V	Of the 27 field sample points, no new extractive crops were found, the entire land was planted with shrubs or secondary succession	V		Of the 15 field sample points, 10 had been planted with acacia on the protected FEG, the rest are shrubs and secondary forest.
PT. Mohairson Pawan Khatulistiwa		V			V	no restoration planning documents were found		V	from four field sample points, all areas were neglected and overgrown with shrubs	V	V	Of the 19 field sample points, seven were found with well-grown acacia on FLEG, the rest were abandoned open areas
PT. Prana Indah Gemilan		V			V	no restoration planning documents were found		V	There were 15 sample points that were successfully taken and the land cover was in the form of shrubs		V	There are 16 sample points taken and the land cover is in the form of shrubs

Company	Voluntary Sustainability Certification		Remarks	Restoration Underway		Remarks	Burned Area		Remarks	Protected Peat Area		Remarks
	Yes	No		Yes	No		Oil palm / acacia	Neglected (shrubs)		Oil palm / acacia	Neglected (shrubs)	
PT. Putra Sari Lestari		V			V	no restoration implementation planning documents were found		V	There are 16 sample points that were successfully taken, the average land cover is in the form of shrubs. There are also areas where small trees have started to grow but are not extractive plants		V	There are 11 sample points that were successfully taken. The land cover is in the form of fern, shrubs, there are also areas that can be seen burnt and inundated
PT. Sinar Karya Mandiri		V			V	no restoration implementation planning documents were found	V	V	There are 16 sample points that were successfully taken. The dominant land cover is shrubs and fern, there are also sample points where there are palm oils but no burn marks are visible.	V	V	There were 42 sample points that were successfully taken and the land cover varied. The dominance of the land cover is in the form of shrubs and there are several visible areas of waterlogging and burn marks. Also found palm oil trees in the sample area with an age of 3-4?
PT. Buana Megatama Jaya		V			V	no restoration implementation planning documents were found		V	there are 12 sample points that were successfully taken. The land cover is dominated by shrubs. There were also burn marks at the site (scorched tree stumps)			
PT. Daya Tani Kalbar		V			V	no restoration planning documents were found	V	V	There were eight samples that were successfully taken, and it was dominated by shrubs. However, company acacia plants were also found in the sample locations that were successfully taken.	V		There were 21 samples that were successfully taken. The area of TCL is dominated by acacia plants. Some are well groomed and some are not. There were also areas of secondary forest.
PT. Limpa Sejahtera		V			V	no restoration planning documents were found	V		There were 21 sample points that were successfully taken and there were palm oils ranging in age from 3-5 years in the entire sample area taken. There are also findings of burnt areas that have just been planted with palm oil with an estimated age of <1 year (BA 13, BA 17 & BA 18)	V	V	There are 51 sample points that were successfully taken. Dominated by the company's palm oil area ranging from 3-5 years old and thickets. There were also areas that were newly planted with palm oils <1 year old (tcl 59)

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