

Chain Reaction Research is a coalition of Aidenvironment, Profundo and Climate Advisers.

Contact:

www.chainreactionresearch.com;
info@chainreactionresearch.com

Authors:

Sarah Drost, Aidenvironment
Barbara Kuepper, Profundo
Matt Piotrowski, Climate Advisers

With contributions from:

Haikal Sanjaya, Aidenvironment
Chris Wiggs, Aidenvironment



Indonesian Moratoria: Loopholes, Lack of Sanctions Fail to Stop Palm Oil-Linked Deforestation

June 2021

Indonesia's government responded to the country's loss of forests and peatlands and the 2015 fire and haze crisis with a forest-clearing ban, a moratorium on issuing of licenses for new oil palm plantations, and tightened peatland regulation. This report analyses gaps in the moratoria amid looser environmental legislation and recently rising palm oil prices and ways the government can create more effective policies to reduce deforestation.

Key Findings:

- **Overall deforestation rates in Indonesia have been slowing, but the causes are contested.** The Indonesian government attributes the decline to its forest and peat policies. Independent experts point to unusually wet weather, fluctuating palm oil prices, and the COVID-19 pandemic.
- **Recent increases in deforestation rates, fires, and degrading peatlands further challenge the government's claims on the effectiveness of its moratoria.** Kalimantan saw deforestation of 192,229 hectares (ha) in 2020, with 30 percent related to oil palm plantation development. The 2019 fire season largely exceeded the scale of the previous year despite the moratorium taking effect in 2018. An area of 6.6 million ha linked to 1,095 oil palm concessions overlaps with peat areas and is at risk of degradation.
- **Exploitation of moratorium loopholes and the lack of sanctions incentivize further deforestation.** The moratoria are considered weak in protecting primary forests and peatlands since they are not legally binding. Moreover, supervision and effective penalties for non-compliance are lacking.
- **Rezoning of moratorium areas and unprotected secondary forests form the major gaps in the primary forest and peatland moratorium.** The Ministry of Environment and Forestry allegedly changes the moratorium maps deliberately to accommodate the interests of plantation companies. The current clearing ban extends only to primary forests and peatlands and leaves 42.2 million ha of secondary forest potentially at risk of deforestation.
- **The palm oil moratorium is deficient on coordination, spatial planning, transparency, review and control of existing permits.** As a result, 638,136 ha of oil palm concessions overlapped with forest and peatland moratorium area in 2020.
- **Only 30 percent of peat needs to be protected under the peatland regulation.** This implies a potential risk of drainage and degradation for the remaining 70 percent of cultivable peatland. Moreover, permit holders can still continue to drain protected peat areas.

Indonesian deforestation rates slowed down, causes are contested

Government attributes decline to moratoria, experts point to rainfall, palm prices, Covid-19

Overall deforestation rates in Indonesia have been slowing, but the causes are contested. Government officials [attribute](#) the decline (Figure 1) largely to government policies such as moratoria on clearing primary forests and peatlands and the issuing of licenses for new oil palm plantations. Environmentalists [challenge](#) the government's claims and [point to](#) unusually wet weather in 2020 and fluctuating palm oil prices as factors contributing to its decrease. [CRR analysis](#) suggests that Indonesia's [economic contraction](#) and travel restrictions issued because of the COVID-19 pandemic were also among the contributing factors to this decline in 2020.

Figure 1: Indonesia's annual deforestation rates between 2011-2020



Source: Indonesian MoEF. Deforestation numbers represent millions of hectares.

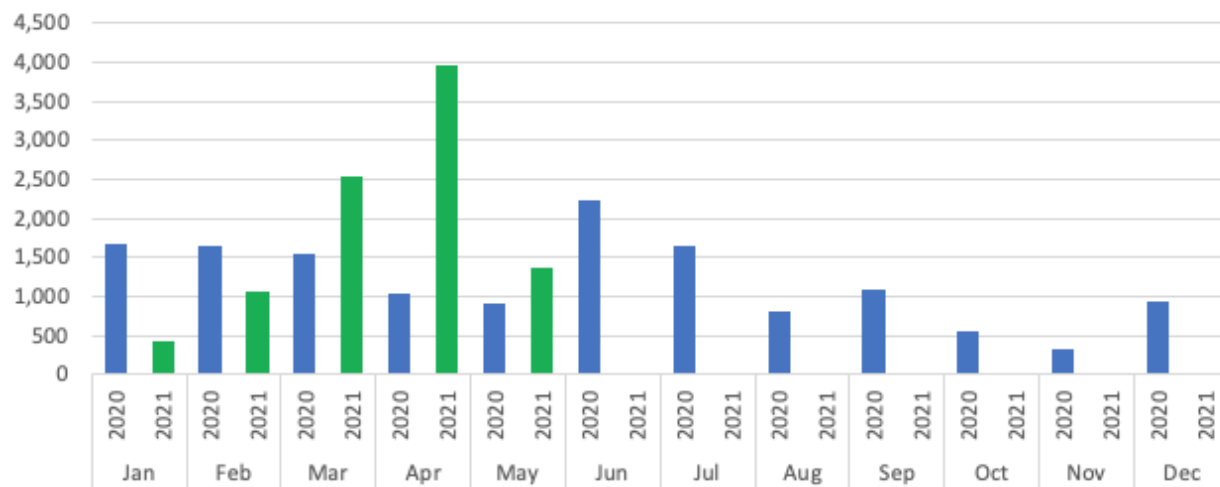
In 2020, CRR detected that deforestation within oil palm concessions in Indonesia, Malaysia, and Papua New Guinea was the lowest in the last three years. Detected deforestation totaled 38,000 ha in 2020, down 42 percent versus the 90,000 ha in [2019](#). The reduction of deforestation for oil palm cultivation was already visible in the [first half](#) of 2020. Continued [restrictions](#) because of the pandemic, in Indonesia and key [export markets](#), may explain the continued slow pace of deforestation in Q3 and Q4 of last year. However, [domestic demand](#) and [rallying](#) palm oil prices may result in increased land development in 2021.

Nevertheless, several key forest provinces in Indonesia are not part of this downward trend, and deforestation has actually [increased](#) in East Kalimantan, Maluku, and West Papua since 2017. After the palm oil industry cleared forests in Sumatra and Borneo for large-scale oil palm plantations, the industry has been expanding in Papua's forests since 2017. Civil society actors [point to](#) loopholes in the government moratoria that "haven't been able to stop the issuance of forest release decrees in Papua." The Corruption Eradication Commission (KPK) [found](#) that 24 plantation companies in West Papua hold oil palm concession permits for over 576,091 ha, of which 67 percent (383,431 ha) is located inside forested areas. The KPK [identified](#), until 2021, 10 companies operating in the region that were linked to violations of permits, deforestation of natural forests and peatlands and their conversion into oil palm plantations, and illegal burning of land.

A recent peak of nearly 4,000 ha of forest loss within one month inside the forest and peat moratorium area in Kalimantan counters government claims that overall deforestation rates in Indonesia are slowing. Since early 2021, deforestation figures in Kalimantan have been climbing, reaching a peak of

deforestation of 3,959 ha inside the primary forest and peatland area of Kalimantan in April 2021 (Figure 2). This level is nearly four times higher than the 1,049 ha of primary forest and peatland lost in April 2020. Apart from clearing for oil palm plantation expansion, the deforestation may also be linked to mining, timber, or other agricultural activities.

Figure 2: Peak 2021 forest loss in Kalimantan’s primary forest and peatland moratorium area (ha)



Source: Chain Reaction Research, based on [GFW GLAD Alerts](#) and forest and peatland moratorium [maps](#). Data from June 2021 was still unknown at the time of report publication.

Two moratoria, one regulation aim to protect Indonesia’s primary forests and peatlands

Reference is often made to a single Indonesian moratorium on forest clearance, but there are in fact **two main moratoria in place, along with one regulation, that aim to protect remaining natural forests and peatlands in Indonesia**. One moratorium focuses on specifically palm oil expansion (presidential instruction [8/2018](#)); the other moratorium bans the clearing of primary natural forests and peatland (instruction [5/2019](#)); and the peatland regulation sets rules for the depth of allowed peatland drainage (regulation [57/2016](#)). Only the latter regulation is legally binding (Figure 3).

Figure 3: Differences and similarities between two Indonesian moratoria, and one regulation

Indonesian moratoria	Forest and peat moratorium (instruction 5/2019)	Palm oil moratorium (instruction 8/2018)	Peatland regulation (57/2016)
Status	Permanent since Sept 2019, not legally binding.	Temporary (Sept 2018-Sept 2021), not legally binding.	Permanent since 2016, legally-binding regulation.
Mandate	Ban on any land use licenses for palm oil, mining, other agricultural activities on forest and peatland.	Ban on issuing new oil palm licenses. Palm oil only.	Ban on peatland exploitation. Sets rules on depth of allowed peatland drainage for palm oil, mining, and other agricultural activities.
Protected area	Primary forests and peatlands, no coverage of disturbed or secondary forests.	Forest Estate controlled by central government . Unclear if secondary forests are included.	Covers peatland (with protected status) in Protected Forest Areas and Conservation Forest Areas.
Monitoring	PIPPIB maps allow for area monitoring, although protected areas are allegedly removed from the map.	Difficult to monitor without public data and area maps, vulnerable to corruption.	Legal basis provides rules and regulation on monitoring and non-compliance.
Exemptions	Land use for food (rice, sugar cane, corn, sago, soybeans, and cassava), national defense and security, some forms of infrastructure, public safety.	Does not apply to forest and peatland within existing palm oil concessions or to natural forests controlled by local government.	Peatland (with cultivation status) can be planted as long as the groundwater level is maintained (< 40 cm below surface).

Source: Compiled by Chain Reaction Research, based on presidential instructions [8/2018](#) and [5/2019](#), and regulation [57/2016](#), and public news articles. PIPPIB is the "Indicative Map Postponement of Granting of New Licenses."

The permanent ban on issuing new permits to clear primary forests and peatlands, better known as the forest and peat moratorium, aims to protect 66.2 million ha of Indonesia's remaining forests and peatlands. The ban, first issued in 2011 and made permanent in 2019, prohibits the release of any land use licenses for palm oil, mining, and other agricultural activities on primary forest and peatlands. Primary forest area can consist of conservation forest (HK), protection forest (HL), limited production forest (HPT), permanent production forest (HP), convertible production forest (HPK), and other use areas/non-forest area (APL) (Figure 4). According to the latest Indicative Map for Suspension of New Permits ([PIPPIB 2021-1](#)) issued by the Ministry of Environment and Forestry (MoEF), the moratorium applies to 66.2 million ha of primary forest and peatland in Indonesia.

Figure 4: Land cover types in forested and non-forested areas in Indonesia in 2019

Land cover	Forest Area* (in millions of hectares)							Non-Forest Area (APL)	Grand Total	%
	Permanent Forest					HPK	Total			
	HK	HL	HPT	HP	Total					
	(1)	(2)	(3)	(4)	(5=1+2+3+4)	(6)	(7=5+6)	(8)	(9=7+8)	(10) ^e
A. Forested	17.4	24.0	21.4	17.8	80.6	6.3	86.9	7.2	94.1	50.1
- Primary forest	12.5	15.9	9.8	4.7	42.7	2.5	45.3	1.5	46.8	24.9
- Secondary forest	4.8	7.8	11.3	9.7	33.6	3.7	37.3	4.9	42.2	22.5
- Plantation forest ^b	0.1	0.3	0.4	3.5	4.3	0.0 ^c	4.3	0.8	5.1	2.7
B. Non-forested	4.5	5.6	5.4	11.4	26.8	6.5	33.4	60.3	93.6	49.9
Total Terrestrial Area	21.9 ^d	29.6	26.8	29.2	107.4	12.8	120.3	67.5	187.8	100.0
% Forested Area^e	79.6	81.0	80.0	61.0	75.0	49.1	72.2	10.7	50.1	

Source: Figure derived from MoEF/KLHK, 2020. HK – Conservation Forest; HL – Protection Forest; HPT – Limited Production Forest; HP – Permanent Production Forest; HPK – Convertible Production Forest; APL – Other Use Area/Non-Forest Area. *The Forest Area is a particular area appointed and stipulated by the Government to be maintained as a permanent forest. a. Percentages are calculated by dividing each row's Grand Total by Indonesia's Total Terrestrial Area (187.8 million ha). b. Plantation Forest is a forest cover class developed by humans (man-made), and includes all types of planted forests, both Industrial Plantation Forest and Planted Forest from reforestation/re-greening within or outside the Forest Area. It is determined based on image interpretation, and appears as a neat pattern on flat areas, in contrast to surrounding areas with different colors on non-flat/wavy topographies. c. The actual figure is 42.1 thousand ha. d. This figure refers to total terrestrial (land) area. e. Percentages are calculated by dividing each row's forested total (row A) by the total Terrestrial Area in the same column.

The palm oil moratorium applies only to the palm oil sector, while the other moratorium includes forest and peat clearing tied to other activities, such as mining and logging. Indonesia's president Joko Widodo enacted the palm oil moratorium, formally called the "Cancellation and Evaluation of Licensing of Oil Palm Plantations and Improvement of Oil Palm Plantations" in September 2018, in response to the [massive forest fires](#) that occurred in Indonesia's forests and peatlands in 2015. The moratorium covers [four main activities](#):

- 1) Cancellation of licenses and investments for new permits and/or expansion of existing oil palm plantation areas within forest areas;
- 2) Evaluation of existing licenses for oil palm plantations as well as business use rights for oil palm plantations in forest areas;
- 3) Allocation and distribution of land originating from the release of forested oil palm plantations for the community; and
- 4) Increased productivity of oil palm plantations through compliance with sustainable palm oil schemes and farmer institutional strengthening.

The peatland protection regulation sets binding rules on peatland clearing, burning, and drainage to prevent further degradation and fire exposure of Indonesian peatlands. In response to the 2015 [fire and haze crisis](#) and to align itself with the [Paris Agreement](#), Indonesia pledged to restore more than 2 million ha of degraded peatland by 2020. By the end of 2020, the deadline was [extended](#) to 2024 and now includes mangrove rehabilitation to the restoration initiative. In line with the restoration program, the

President launched the Peat Restoration Agency (BRG) in 2016, which is responsible for restoring damaged peatlands. The peatland protection regulation [57/2016](#), lastly revised in 2016, further sets legally compulsory rules to avoid peatland degradation and fire exposure.

The loss and degradation of peatlands has been particularly [severe](#) in Sumatra and Kalimantan, with only 7.4 percent of the peatland in Kalimantan and 6 percent of the peatland in Sumatra still untouched. Peatland plays an essential function in the ecosystem by preserving biodiversity, regulating water flows, and minimizing flood risks. Undisturbed and hydrated peatlands are less prone to fire outbreaks.

Moratoria loopholes, lack of sanctions incentivize continued clearing for palm plantations

Exploitation of moratorium loopholes and the lack of sanctions continuously allow for clearing of primary forest and peatland for oil palm plantation expansion. The permanent forest and peatland-clearing ban, coupled with a freeze on issuing of new oil palm licenses since September 2018, initially had an [effect](#) in decelerating the expansion of palm oil concessions. Nevertheless, environmental activists labeled the forest-clearing ban as “[propaganda](#)” and pointed to systematic loopholes in the moratorium. Moreover, the leading certification body on sustainable sourcing, the Roundtable on Sustainable Palm Oil (RSPO), recently [questioned](#) the effectiveness of the [three-year palm oil moratorium](#) on new licenses for palm oil plantations.

In the long run, both moratoria will not provide sufficient protection of Indonesia’s primary forest and peatland, as presidential instructions are [considered](#) weak legal instruments. There is currently [no firm legal basis](#) or enforcement of the moratoria that is legally binding to all (including for [local officials](#)), requires mandatory supervision, and contains effective penalties for non-compliance. Exploitation of loopholes and the [lack of sanctions](#), which have led to existing licenses being issued in [violation](#) of procedures, continuously prompt clearing of primary forest and peatland for palm oil plantation expansion.

To create more effective policies to reduce deforestation, the government could craft policy via a legally binding [presidential regulation instead of](#) the legally weak presidential instruction. Also, the government can extend regulation to secondary forests, as many of these areas still contain high biodiversity and tree cover. Moreover, without an effective [One Map policy](#), a policy aimed at standardizing and unifying spatial data across Indonesia, overlapping oil palm plantations in forest areas would likely continue to occur in the future. Other measures to increase the effectiveness of the moratoria include the [acceleration](#) of the review of existing palm oil plantation permits, enforcement of the law against violators of licensing procedures, rules for [zero new](#) peatland drainage, an equitable profit-sharing scheme between palm oil producing regions and the central government, and a [roadmap](#) for implementation of the palm oil moratorium.

Rezoning of moratorium areas, unprotected secondary forests form major gaps in the primary forest and peatland moratorium

The MoEF [allegedly](#) changes the primary forest and peatland moratorium maps deliberately to accommodate the interests of plantation companies. A [2021 Greenpeace study](#) on the practice and dynamics of issuing oil palm permits in West Papua found that companies get their concessions exempted from the clearing ban by rezoning protected moratorium areas. Every six months, the government releases revised moratorium maps. The investigation found that since 2011, 14 concessions in West Papua that contained areas previously included in the map as primary forest and seven concessions that contained peat were subsequently removed from the map prior to the new forest release decrees. The

companies could then move forward with plantation expansion claiming the areas did not contain any peat or primary forest.

[AwasMIFEE](#) found that several plantation companies in Papua have been successful in removing their concessions from the moratorium map since 2013, claiming the land was all secondary forest. Companies included in Papua's Boven Digoel district were PT Visi Hijau Nusantara, PT Wahana Agri Karya, PT Duta Visi Global, and PT Tunas Sawa Erma, the latter a subsidiary of Korindo. Satellite imagery showed that the requested areas consisted of a mixture of primary and secondary forest.

In 2021, the primary forest and peat moratorium coverage area decreased by approximately 2.8 million ha since the first released maps (accounting for 69 million ha) were released in 2011. The 2021 version of the moratorium coverage area map (PIPIB [2021/I](#)) points to an area of 66.2 million ha of primary forest and peatland. The [MoEF](#) attributes the decrease in the APL area ("other use area/non-forest area," Figure 4) to several factors, including updated licensing data and confirmation of permits issued before 2011, changes in spatial planning, and the outcomes of surveys of peatland and primary natural forests. However, NGOs [relate](#) the decrease in the APL area to the failure of the moratorium to protect natural forests and peatlands. Moreover, they [state](#) that if the moratorium is permanent, "changing the map should not be allowed anymore."

The forest and peatland moratorium does not protect secondary forests, with 42.2 million ha potentially at risk of deforestation. Out of the [42.2 million ha](#) of secondary forest, 12.6 million ha may see some form of protection as they are categorized under the forest categories HK (Conservation Forest) and HL (Protection Forest) (Figure 4). By definition, the current clearing ban extends only to "primary forests" and peatlands, leaving out disturbed and secondary forests. A [broader definition](#) of "natural forests" would have more than doubled the amount of forest area covered by the moratorium. Indonesia's secondary and degraded forests, covering [42.2 million ha](#) (Figure 4), are [by definition](#) forests "*regenerating largely through natural processes after significant removal or disturbance of the original forest vegetation by human or natural causes at a single point in time or over an extended period, and displaying a major difference in forest structure and/or canopy species composition with respect to pristine primary forests.*" [In practice](#), boundaries and transitions between primary and secondary rainforests are blurred.

CRR estimates that 8.6 million ha of secondary forests are most at risk since they are by design meant to be converted for transmigrations and agricultural purposes; moreover, they [lack any legal protection from deforestation](#). They consist of [3.7 million ha](#) of secondary forests inside the Convertible Production Forest (HPK), and [4.9 million ha](#) in the Other Use Area (APL) (Figure 4). Moreover, some plantation companies are [allegedly](#) clearing areas of primary forest within the forest and peat moratorium areas deliberately for the purpose of degrading them. When these areas are subsequently recognized as secondary forest, they are no longer protected under the scope of the moratorium.

The permanent ban on clearing primary forest and peatland [does not instruct](#) two relevant ministries linked to land use change and deforestation, the Ministry of Agriculture and the Ministry of Energy and Mineral Resources. The permanent forest-clearing ban instructs three ministries, Forestry, Home Affairs, and Environment, and five agencies, Presidential Delivery Unit for Development Oversight, National Land Agency, National Coordination Agency for Spatial Planning, National Coordination Agency for Survey and Mapping and the proposed agency to manage REDD+, the Indonesian Environmental Estate Fund ([BPD LH](#)), as well as governors and heads of district governments.

Palm oil moratorium is deficient on coordination, spatial planning, transparency, and review and control of existing permits

Lack of coordination and control between central and local level governments in Indonesia allows for allocation of new oil palm concessions in natural forest areas controlled by local governments. The current palm oil moratorium, wherein the central government prohibits the allocation of new palm oil concessions in the forest estate, [cannot](#) prevent the allocation of new concessions on natural forests controlled by Indonesia's local governments. Cross-agency coordination in issuing and controlling palm oil plantation permits (so-called *hak guna usaha*/cultivation rights, or HGUs) is [considered](#) weak and ineffective. There are few regional heads who are committed to implementing the palm oil moratorium policy. Only [five provinces and five districts](#) have publicly stated their commitments, while 19 provinces and 239 districts have not responded to this policy.

Moreover, the licensing mechanism is fragmented and vulnerable to [corruption](#). For instance, prior to local mayoral elections, regional offices provided more plantation permits, and more deforestation [occurred](#). This is incentivized by a lack of balanced [profit sharing](#) between palm oil producing regions and the central government. While the central government collects palm oil export levies, local governments oversee oil palm plantation management. This has an impact on the capacity of local governments to supervise the implementation of oil palm plantations and monitor environmental impacts.

CRR found that in 2020 absent regional spatial planning caused overlapping areas with over 600,000 ha of oil palm concessions inside the primary forest and peatland moratorium areas. After nearly three years of implementing the palm oil moratorium, [unsynchronized](#) determination of forest area boundaries and regional spatial planning causes unclear oil palm plantations status. CRR overlaid oil palm concession data of 2020 with the MoEF's moratoria area maps, revealing that 638,136 ha of oil palm concessions fall in the forest and peatland moratorium area in 2020 (Figure 5). This overlap was prevalent in nearly all of Indonesia's provinces. It [appears](#) that many plantation business permits issued by regents and mayors are not in line with the national spatial plan, and law enforcement is weak or inexistent. There are also no [sanctions](#) for non-compliance.

Figure 5: Overlap of palm oil concessions and forest and peat moratorium



Source: Chain Reaction Research; MoEF/KLHK, 2020.

The palm oil moratorium does not prevent companies from clearing forest and developing peatlands within existing palm oil concessions. If plantation companies have permits issued before May 2011, the year when the forest and peatland moratorium came into effect, they can still clear natural forests and peatland based on the original permit. Many large palm oil companies have, prior to 2011, already applied for or processed a so-called "[principal permit](#)," the first step companies take in the formal application process for a forest conversion permit. APL areas that still contain natural forests may not be included in the moratorium area map because principal permits [already exist](#) in the location.

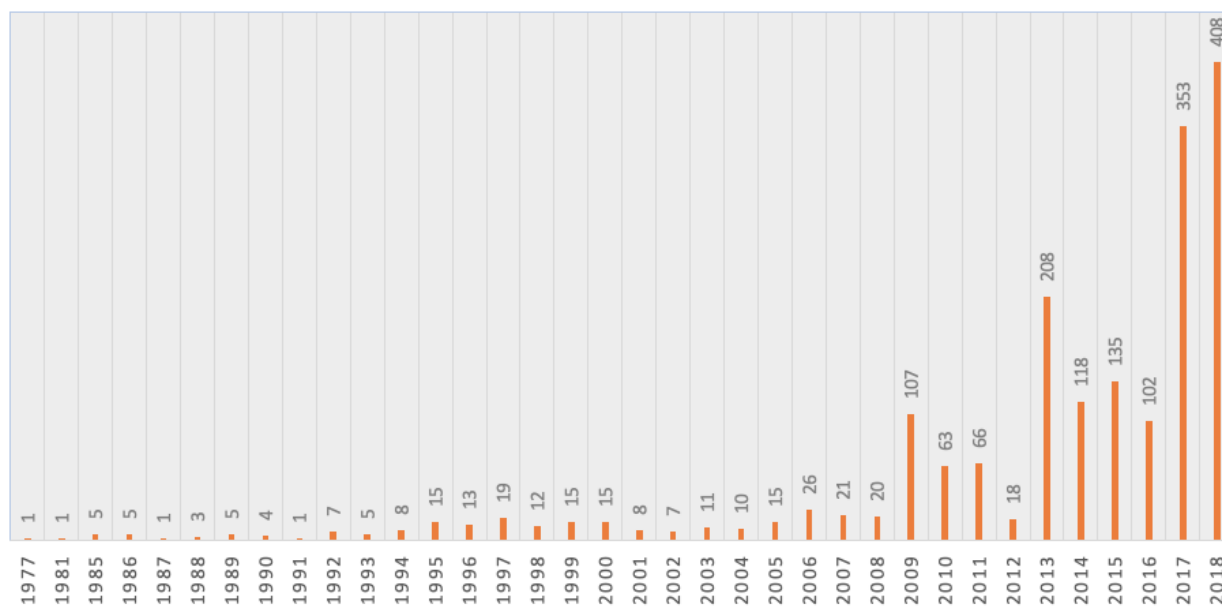
In principle, [activity 2](#) under the palm oil moratorium, an evaluation and greater scrutiny of existing permits, may counterbalance this loophole, but in reality, this mandatory permit review is not systematically implemented (see below).

Non-transparency on oil palm concession data has hampered oil palm plantation monitoring and governance since the palm oil moratorium came into force in 2018. A 2019 directive of the Coordinating Ministry for Economic Affairs, signed by the Deputy Minister for Food and Agriculture Coordination, [prohibits](#) information and data of oil palm plantations to be open to the public. This includes the public release of HGUs. These cultivation rights permits are one of the last in a [series of licenses](#) that oil palm companies must obtain before they can start full-scale commercial operations. A few public agencies do release (partial) HGU data, however, the release is not systematically, unverified, and often not

georeferenced. In Papua, the lack of transparency in the permit issuance process has [contributed](#) to a proliferation of oil palm concessions.

In theory, the palm oil moratorium does not allow for the release of new permits for oil palm plantations, or HGU. In practice, it is difficult to know how many HGU permits were granted after 2018 (Figure 6). The agrarian ministry does not [disclose](#) HGU information and maps, despite Supreme Court and local court rulings [ordering](#) that HGU must be accessible to the public. Moreover, after 2015 the MoEF [stopped publishing](#) the identities of companies that requested their concessions to be removed from the primary forest and peatland moratorium maps. A RSPO representative [emphasized](#) “the importance of openness of data and information related to palm oil, so that all parties, especially the public, can contribute to improving palm oil governance.”

Figure 6: HGU permits released per year 1977-2018 (with incomplete and lacking public HGU data)



Source: Chain Reaction Research, based on incomplete data of Ministry of Agrarian Affairs and Spatial Planning. Of the approximately 5,762 HGU released between 1977 and 2018, only 1,831 have full records on the release date and year. There is no public data on whether HGU was released after the palm oil moratorium came into force in 2018.

Many palm oil concession licenses have been issued in violation of procedures, and there is no evidence of a systematic mandatory review of all existing concessions in Indonesia. The provincial government together with the national anti-corruption agency, the KPK, found numerous administrative and legal violations in a [license audit](#) in West Papua. Violation of procedures included the absence of HGU licenses before planting, and the issuance of forest release decrees long after the deadline. In addition, Greenpeace research [states](#) that the MoEF may ‘still issue forest release decrees if no boundary survey has taken place. This effectively allows the ministry to continue processing old applications for forest release’. As a result, 22 palm oil companies in Indonesia had seen a release of their forest estate land between September 2018 and August 2020, after the palm oil moratorium was implemented.

Environmental activists [say](#) the national government should carry out a similar review for irregularities in already-licensed concessions, covering all of Indonesia, in line with activity 2 of the palm oil moratorium.

Moreover, the lack of access to HGU information is [raising](#) extra concerns that obtaining permits is often in violation of procedures.

It is also unclear what will happen after September 2021, when the temporary three-year palm moratorium will end, particularly in the context of loosened environmental protection legislation and rising palm oil prices. The enacting of the controversial so-called "[omnibus law](#)" in 2020, aimed at job creation and attracting investment, as well as the [revised mining law](#) (2020), is seen by [opponents](#) as environmental deregulation measures that possibly lead to increased deforestation. At least [35 global investors](#), as well as other [foreign institutions](#) including the International Monetary Fund, Baker McKenzie, and Moody's Investors Service, have expressed [concerns](#) over the weakening of environmental protections in the omnibus law. The law [removes](#) a stipulation that each province in Indonesia has to maintain 30 percent forest cover, makes it [easier](#) for exploitative businesses to operate in protected forest areas, and simplifies procedures to turn a piece of land from forest to non-forest area.

The omnibus law is coupled with the Indonesian government's recent [aspiration](#) to gather millions of hectares of farmland across Indonesia under the "food estate" program. NGO Madini Berkelanjutan has recently found that [1.57 million ha](#) of natural forests are located in areas targeted by the government for conversion into food estate area.

The ambiguity on the renewal of the palm oil moratorium takes place in a context wherein palm oil prices recently started to rise. In 2021, prices of palm oil reached [levels similar](#) to 2012, when the palm oil market was highly appealing and led to one of the years with the highest level of deforestation.

The peatland regulation continues to allow drainage and degradation in peatland classified as cultivation status and in palm concessions that already exist

While the peatland regulation prohibits degradation of all peatlands, peatland with cultivation status, which covers 70 percent of the total peat area, can still be drained with limitations to develop oil palm plantations. The peatland regulation divides peat ecosystems in "protection" and "cultivation" peat. It stipulates that the protected peatland should make up at least 30 percent of the peatland hydrological unit (PHU), or Indonesia's total peatland area of [24.7 million ha](#). Currently, peatland with protected status accounts for 12.4 million ha (50 percent), while the peatland with cultivation status covers an area of 12.3 million ha (50 percent). According to the 30 percent rule, 20 percent of the current protected peat area can still be potentially degraded.

Cultivation peatland can still be drained, as long as the groundwater level remains less than 40 cm below the surface. This implies that the remaining 70 percent of cultivable peatland has the potential to be degraded. Environmentalists fear that drainage at any level would lead to further degradation of peatland, loss of stored carbon, and increased risk of fire. Scientists say that the 40 cm standard is based on crop yields, rather than on recommendations of [peatlands science](#). According to [the Deputy head of BRG](#), the degraded peatlands will take 50-75 years to restore.

Plantation companies with existing oil palm plantation permits can continue drainage of vulnerable and protected peatlands. The MoEF [confirmed](#) that "*although the ministry would not be issuing any new permits to convert peatlands, those companies that already have permits and have been operating in peatlands would be allowed to continue.*" A Greenpeace [study](#) highlights how the government's current regulations are ineffective in protecting peatland and preventing it from burning, as companies continue to degrade the peat's hydrological function by "maintaining and extending canals, lowering the water table and expanding land clearance."

This infers that the drainage process may still occur in the peatland area until the permits expire, which can take decades, since permits may only terminate after [35-75 years](#). Upon expiry of the permit, the land must be returned to the government. By that time, most peatland will already be degraded.

Similar to loopholes in the forest and peatland moratorium, concession areas previously marked as peat were [removed](#) from the moratorium map before a forest release permit was granted. As described above, this is the result of alleged deliberate changes in the primary forest and peatland moratorium maps to accommodate the interests of plantation companies.

Despite legally binding peatland regulations, the legal measures chosen by the government are mostly administrative sanctions, and [considered](#) weak on enforcement. So far, for any damage in peatlands, the MoEF has [preferred](#) administrative steps, such as a compensation process without revoking the license or criminal sanctions against the violators of regulations in peat areas. From 2015-2019, [258 administrative sanctions](#) were imposed on perpetrators, with 51 criminal charges and 21 civil lawsuits filed. Eventually, the Ministry had filed 19 civil lawsuits and guilty verdicts in nine of these cases, and the companies were fined for material compensation and restoration. However, until April 2020, only one company complied and paid the fine. With weak monitoring and law enforcement carried out by the government, the rate of forest fires on peat will likely continue to occur and will likely have serious impact on both the environment and the social community.

Implications: Moratoria deficient in halting deforestation and fires

Palm concessions inside the forest and peat moratorium expanded after 2018

Based on available HGU data from the Agrarian Ministry, CRR identified a significant increase in the total oil palm concession area inside moratorium areas. But the reliability of the data is questionable, as the Ministry of Agrarian Affairs and Spatial Planning (BPN) does not systematically publish georeferenced data on palm oil concessions. Moreover, the data contains duplicates and erroneous calculations. Data of the BPN disclosed 6.8 million ha of oil palm concessions in Indonesia in 2018 and 2019, that grew to 17.4 million ha of concessions in 2020. The area of palm concessions inside the forest and peat moratorium grew from 125,696 ha in 2019 to 638,136 ha in 2020 (there is no data on 2018). Other public agencies, with unsynchronized reporting formats, disclose different numbers. The Indonesia Statistics Agency ([BPS](#)) reports 14.3 million ha of oil palm concessions in 2018, 14.4 million ha in 2019, and 14.9 million ha in 2020. Finally, the Directorate General of Plantation (Ministry of Agriculture) disclosed 14.3 million ha of oil palm concessions in 2018, 14.7 million ha in 2019, and 15 million ha in 2020 (Figure 7).

Figure 7: Unsynchronized data of public agencies on oil palm concessions in Indonesia

Palm oil concessions (million ha)	Agrarian and Spatial Planning Ministry	Indonesia Statistics Agency	Ministry of Agriculture
2018	6.8	14.3	14.3
2019	6.8	14.4	14.7
2020	17.4	14.9	15.0

Source: Chain Reaction Research, based on data of BPN, BPS, and the Ministry of Agriculture.

Despite differences in numbers, all figures point to expansion of palm concession areas. Based on the palm oil moratorium in place since September 2018, the area of oil palm concessions inside the forest and peat moratorium should not have been expanded.

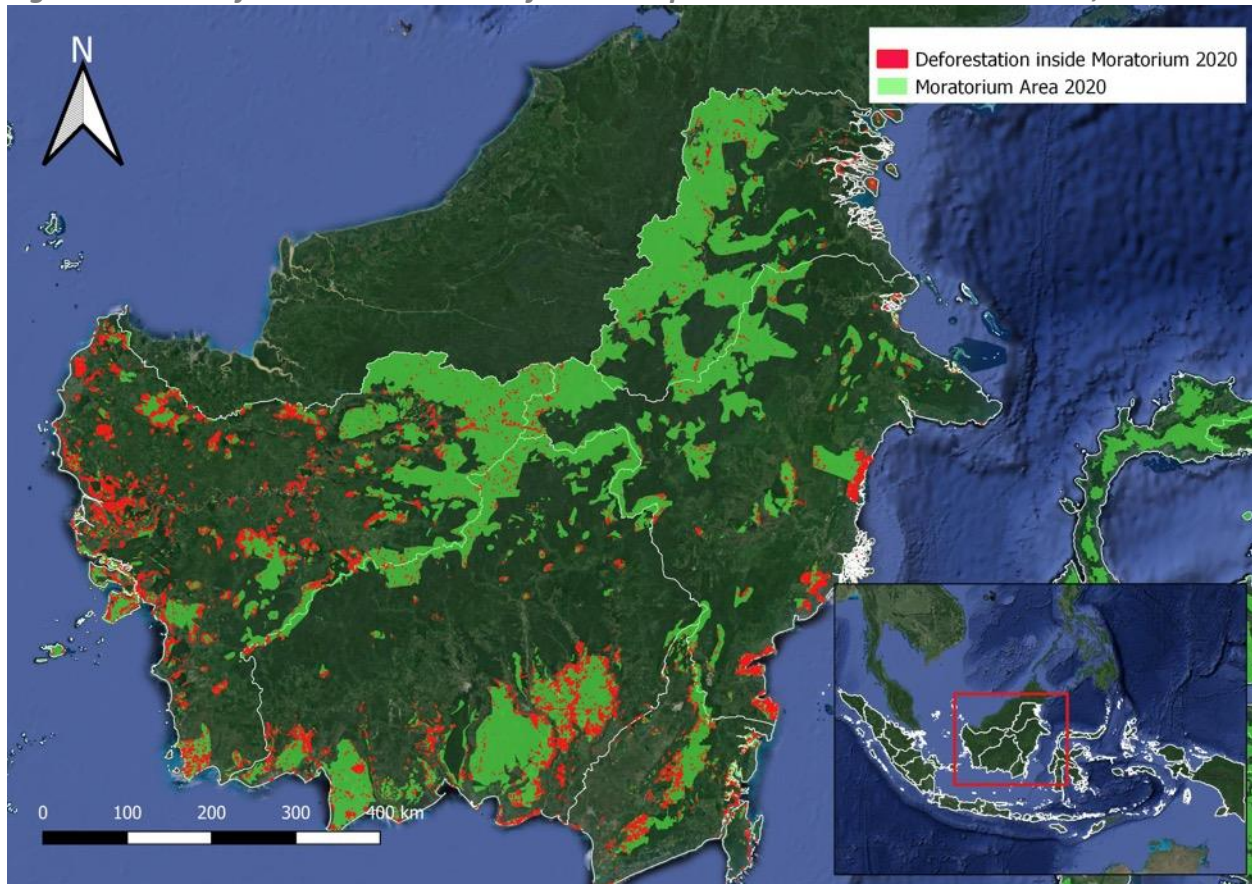
Deforestation and fires continue in primary forest and peatland

Despite the government's policies to protect natural forests, the expansion of the palm oil sector and other industries continues, and fires remain an annual occurrence in Indonesia. CRR analysis reveals that clearing in Indonesia's most affected region for recent deforestation, Kalimantan, totaled 192,229 ha in 2020. Thirty percent of that (56,932 ha) is related to palm plantation development (inside oil palm concessions), and 14,513 ha expanded inside the primary forest and peatland moratorium.

The latest revision of the moratorium map (2021/I) saw a **95,935-ha decrease of moratorium coverage area compared to the 2020 map**. The moratorium's coverage area decreased from 66,278,027 ha in 2020 period II to 66,182,094 ha in 2021 period I. The MoEF justifies the nearly 100,000 ha decrease of protected areas by [pointing to](#) permits released prior to 2011 that still needed to be registered in the moratorium maps. The peatland coverage area dropped from 5,317,696 ha to 5,288,971 ha in the latest revised map.

Figure 8 shows recent deforestation inside the forest and peat moratorium in Kalimantan in 2020, while Figure 9 depicts recent palm expansion inside the moratorium area in West Kalimantan.

Figure 8: 2020 Deforestation inside the forest and peat moratorium in Kalimantan, Indonesia



Source: Chain Reaction Research, based on [GFW Glad Alerts 2020](#), [PIPIB 2020/2](#).

Figure 9: Recent oil palm expansion in moratorium area in West Kalimantan



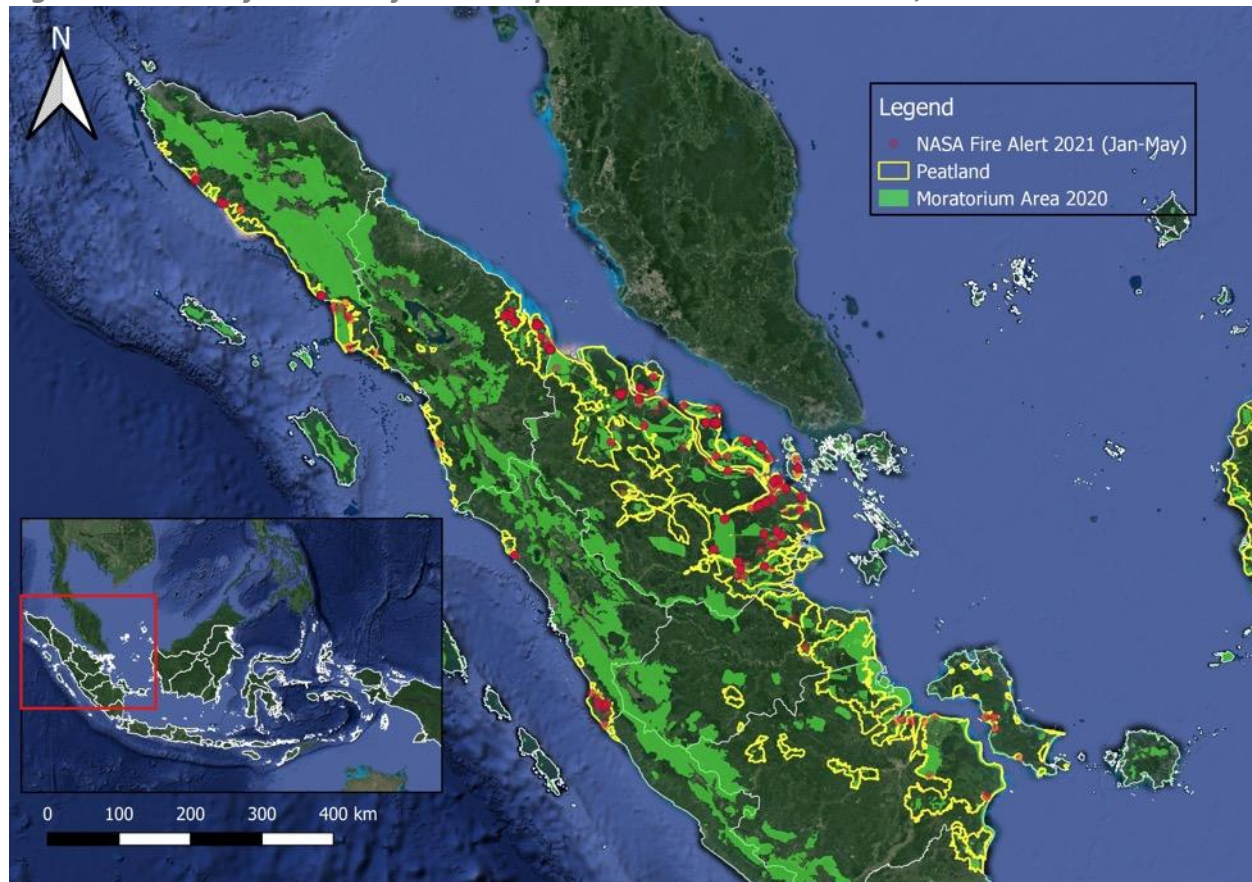
Source: Chain Reaction Research, based on www.planet.com, PIPPIB 2020/2.

The 2019 fire season largely exceeded the scale of the 2018 fire season, despite the moratorium coming into effect in 2018. Forest fires in Indonesia over the last three years are classified as high, with the majority occurring in peat ecosystem areas. NASA fire alerts [data](#) in Indonesia points to 81,373 alerts in 2017 and 171,393 alerts in 2018, with a peak of 398,990 alerts in 2019. By the end of September 2019, [857,756 ha](#) were burned, compared to [529,267 ha](#) burned during all of 2018. While there was a drop in

forest and peatland fires in 2020 ([17,800 alerts](#)), [environmentalists](#) largely attribute this to the unusual [wet weather](#) of 2020 and low plantation activity due to the COVID-19 pandemic.

Figure 10 below shows numerous fire alerts between January and May 2021 in Indonesia's primary forest and peatland moratorium area.

Figure 10: Recent fires in the forest and peat moratorium in Sumatra, Indonesia



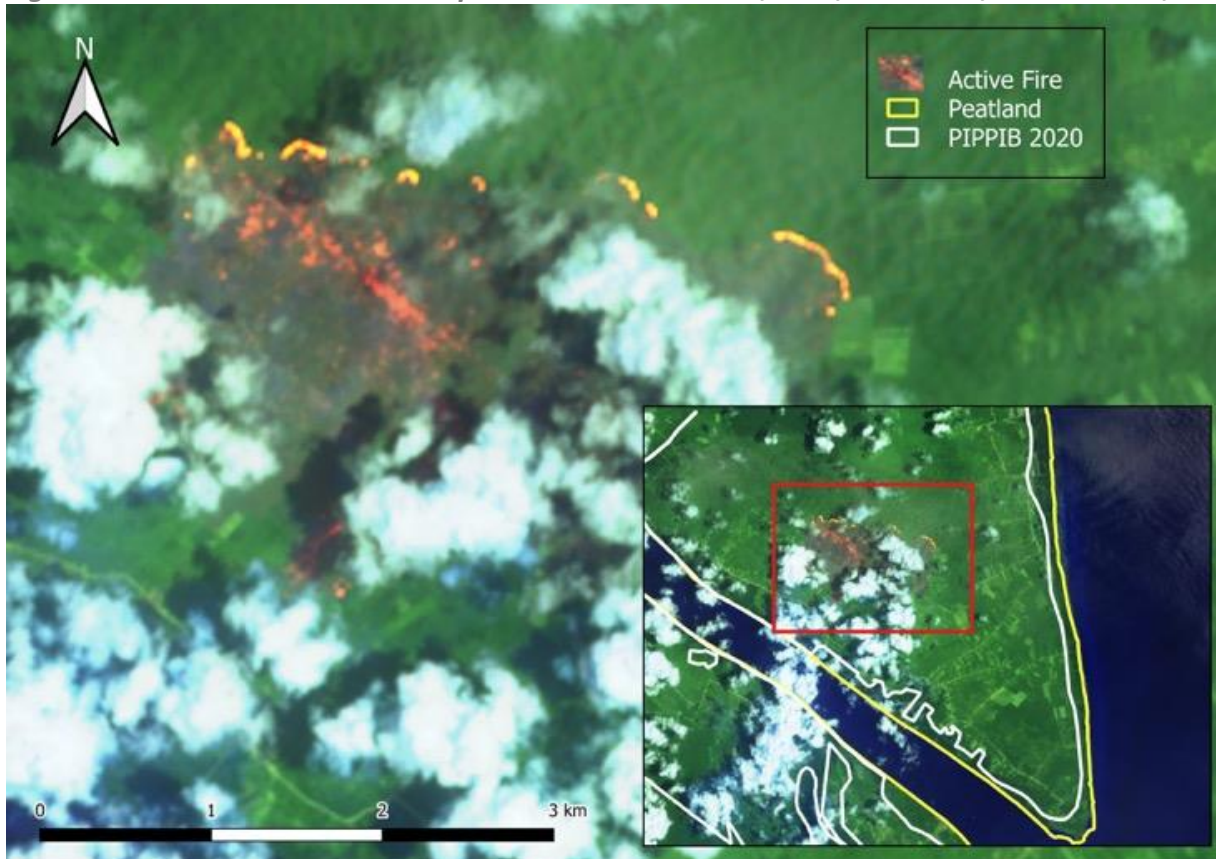
Source: Chain Reaction Research, based on [PIPIB 2020/2](#), [Peta Kesatuan Hidrologis Gambut Nasional](#) and [NASA VIIRS 2021](#).

6.63 million ha of peat area still at risk of degradation through expansion and drainage

CRR analysis reveals that 1,095 oil palm concessions cover 6.63 million ha, an area the size of Sri Lanka, operating on peat areas and are at risk of degradation through plantation expansion and drainage. CRR overlaid the 2020 oil palm HGU data with the 2020 Peat Hydrological Area data, finding numerous palm concessions inside peat areas that can still expand and drain the peatland with cultivation status. Of the total peat area of 24.1 million ha, 6.63 million ha was covered with oil palm concessions. Moreover, 35,471 ha (35 concessions) fall in the peat conservation area, which falls under the protected peat area. This area has the potential to increase more if the palm oil moratorium is not extended after September 2021.

The use of peatland for agricultural purposes remains high, especially for oil palm plantations. In 2019, Indonesian NGO Walhi [identified](#) 288 oil palm and acacia companies which had damaged 4.5 million ha of peat ecosystems in Indonesia in six provinces, despite the forest and peat moratorium. Coupled with weak sanctions for land destroying companies, the damage will likely remain high in the following years.

Figure 11: Fire in moratorium and peatland area in Jambi, Riau, Indonesia, on March 26, 2021



Source: Chain Reaction Research, based on [Sentinel 2 \(false urban color\)](#), [Peta Kesatuan Hidrologis Gambut Nasional](#), [PIPPIB 2020/2](#).

Disclaimer:

This report and the information therein is derived from selected public sources. Chain Reaction Research is an unincorporated project of Climate Advisers, Profundo, and Aidenvironment (individually and together, the "Sponsors"). The Sponsors believe the information in this report comes from reliable sources, but they do not guarantee the accuracy or completeness of this information, which is subject to change without notice, and nothing in this document shall be construed as such a guarantee. The statements reflect the current judgment of the authors of the relevant articles or features, and do not necessarily reflect the opinion of the Sponsors. The Sponsors disclaim any liability, joint or severable, arising from use of this document and its contents. Nothing herein shall constitute or be construed as an offering of financial instruments or as investment advice or recommendations by the Sponsors of an investment or other strategy (e.g., whether or not to "buy", "sell", or "hold" an investment). Employees of the Sponsors may hold positions in the companies, projects or investments covered by this report. No aspect of this report is based on the consideration of an investor or potential investor's individual circumstances. You should determine on your own whether you agree with the content of this document and any information or data provided by the Sponsors.