Madani Insight

Risk Assessment of Job Creation Bill on Natural Forests and the Achievement of Indonesia's Climate Commitment

April 2020

Main Findings

If signed into law and implemented, Articles under the Job Creation Bill (*RUU Cipta Kerja*) that weaken the protection of natural forests and the environment will increase the risk of natural forests loss and potentially lead to the following situations:

1. Five provinces would lose all their natural forests due to deforestation: Riau in 2032, Jambi and South Sumatera in 2038, Bangka Belitung in 2054, and Central Java in 2056.
2. The opportunity to protect natural forests that could potentially be protected by an improved version of currently existing permanent moratorium policy[1] would be lost because such forests would have already been lost to deforestation. Four provinces with the largest reserve of natural forests outside Indicative Area of Permanent Moratorium (PIPPIB) at risk of being lost to deforestation are Central Kalimantan (3.5 million hectares), West Kalimantan (1 million hectares), Aceh (342 thousand hectares), and West Sumatra (254 thousand hectares).
3. The achievement of Indonesia's climate commitment (NDC target) in the forestry sector, especially from reduction of deforestation, would inevitably fail since the deforestation threshold of 3.25 million hectares between 2020 and 2030 required to meet such target would have been exceeded by 2025.
4. The opportunity to save 3.4 million hectares of natural forests located within palm oil permits area in the momentum of palm oil moratorium would be lost, mainly to meet the increasing target of domestic biodiesel consumption in 2024, but also to meet the growing demands of food consumption, industry, and CPO export. Two provinces with the largest size of natural forests within palm oil permits area that would be lost are Papua (1.3 million hectares) and East Kalimantan (528 thousand hectares).
5. Based on a study of 45 largest watersheds in 8 districts/cities in West Papua, natural forests outside PIPPIB and PIAPS (Indicative Social Forestry Area) that have not been burdened with license/concession is only 2.5% of the total remaining natural forests or only 85,473.66 hectares. If forest cover in PIPPIB and PIAPS failed to be protected, natural forest cover in the largest watersheds in West Papua would be reduced to only 0% -20% due to deforestation, which would disrupt the hydrological function in West Papua. However, if natural forests in PIPPIB and PIAPS were protected 100 percent, 32 of the 45 largest watersheds would still have forest cover at the rate above 50 percent until 2058 despite forest loss due to deforestation.

[1] Currently, the permanent moratorium of new permit policy as stated in the Presidential Instruction No. 5 of 2019 on the Stoppage of Issuance of New Permits and Improvement of Primary Natural Forests and Peatlands Governance is only applicable to natural forests classified as primary natural forests. Strengthening or improving this policy means expanding the protecting of this Instruction to include intact secondary natural forests that have not been encumbered with permits.

HOW WE CONDUCT THE ANALYSIS

We conducted the analysis by simulating several possible scenarios if Articles in the Job Creation Bill that could weaken the protection of natural forests and trigger deforestation were implemented. We refer to the analysis of the Indonesian Center for Environmental Law (ICEL)[2] and presentation of Andri Gunawan, Lecturer in Environmental Law, Faculty of Law of the University of Indonesia at a public discussion organized by the Student Executive Board of the Faculty of Law, University of Indonesia (20/2) regarding these Articles. [3] We then conducted a spatial analysis to ascertain the risks of natural forest loss due to deforestation if such Articles were implemented. The deforestation risk simulation was conducted using the average annual deforestation rate at the provincial level during the period of 2006-2018. We chose the deforestation rate and period based on the availability/completeness of data accessible to the public. The simulation is based on the assumption that the Job Creation Bill would weaken forest and environmental protection by revising certain Articles of the Environmental Law, the Forestry Law, and the Plantation Law. Considering the weak enforcement of the current regulations, the weakening of rules that protect forests and the environment to boost investment would escalate the risk of natural forest loss in Indonesia as well as catastrophe that follows it.

ARTICLES THAT HAVE THE RISK TO TRIGGER DEFORESTATION AND FOREST AND LAND FIRE

The Job Creation Bill consists of 11 clusters, covering important fields including the environment, spatial planning, plantation, and forestry. Of the 11 clusters, several Articles have the risk to weaken the rules on natural forests and environmental protection, which could be seen in the Table below.

No	Article's Provision	Notes	Potential Consequences
1.	Article 37 para 3 regarding revision of Article 18 of the Forestry Law	Removal of the 30% minimum threshold of forest area that must be maintained for each watershed and/or island	The setting of the minimum forest area threshold for each watershed (DAS) and/or island for at least 30% of the land area is based on the consideration that Indonesia is a

[2] ICEL. 2020. *Catatan Atas RUU Cipta Kerja Versi 19 Februari 2020,* available for download on www.icel.or.id.

[3] Presentation of Andri Gunawan, Lecturer of Environmental Law of University of Indonesia, delivered in Public Discussion on Omnibus Law: the Job Creation Bill, organized by Student Executive Board of the Faculty of Law, University of Indonesia on February 20th, 2020. Material is available for download on https://drive.google.com/drive/folders/1c_1wX-ti_uG2qyOnhoDAM2yTJdfUa7oT.

			tropical country with high rainfall and rain intensity; with wavy, hilly, and mountainous terrain topography sensitive to disturbance of water system balance such as flood, erosion, sedimentation, and lack of water.[4] **The removal of the mandate to maintain a minimum 30% of forest area risks triggering massive deforestation in areas beyond that threshold. On the other hand, any area with less than 30% of forest area remaining would no longer be obliged to increase their forest area as the last resort to face the climate crisis and ecological disaster.**
2.	Article 37 para 16 regarding revision of Article 49 of the Forestry Law	Permit holders would no longer be held liable for forest fires that occur in their work area. They would only be obliged to prevent and control forest fires in their work area.	Compared to other methods, clearing the land by burning is considered more economical. Burning forests would also degrade the land, make it easier to be classified as a convertible area for plantations and increase land availability. In addition, it would be easier for a company to take over the already degraded community-owned land because the land value has been reduced and the compensation would then be cheaper.[5] **For these reasons, the removal of strict liability principle and the absence of corporate obligations to be held liable for land/forest fires in its concession area increases the risk of land burning by corporations.**

[4] Explanation of Article 18 paragraph 2 of Law of The Republic of Indonesia No. 41 of 1999 on Forestry.
[5] World Resources Institute Indonesia. 2014. Kondisi Hutan Indonesia. p. 64.

3.	Article 30 para 14 on the Revision of Article 4 of the Plantation Law	Removal of the provision regarding the obligation to obtain Environmental Permit, suitability with Spatial Plan, and plantation suitability prior to obtaining Plantation Business Permit/IUP	Based on Law No. 26 of 2007, the formulation of Regional Spatial Plan must reflect many aspects, including environmental carrying and supporting capacity.[6] **The removal of provision that mandates suitablity with the regional spatial plan as a precondition in obtaining the Environmental Permit increases the risk of issuance of plantation permits that neglect the environmental carrying and supporting capacity.**
4.	Removal of Article 79 of the Environmental Law	Corporations that violate the Environmental Permit would no longer be punishable with suspension and revocation sanctions	The removal of such Article has the potential to eliminate the deterrent effect and reduce awareness of stakeholders regarding the importance of environmental protection and management as mandated in the Constitution of Indonesia Article 28 H and Article 33 paragraph 4.
5.	Article 30 para 1 on the Revision of Article 14 on the Plantation Law	The stipulation of minimum and maximum limit of land holding would be determined by the Central Government without regards to spatial suitability, land availability and geographic conditions.	The absence of provision that rules the minimum and maximum limit of land size holding risks increasing unemployment and poverty outside the plantation business area, which could trigger social conflicts. In addition, the removal of this clause would also hamper the agenda of Agrarian Reform and Social Forestry that aim to reduce inequality in land tenure and ownership and increase the welfare of communities living around forest area. The absence of provision regarding suitability with the regional spatial plan as a precondition to obtain a

[6] See Article 19, Article 22, Article 25 of Law No. 26 of 2007 on Spatial Planning.

			plantation business permit has the potential to trigger the issuance of plantation licenses that neglect the environmental supporting and carrying capacity.
6.	Article 23 para 3 on the revision of Article 88 of the Environmental Law	The removal of "without the need to prove fault" provision in the Article 88 of the Environmental Law has the potential to obscure the notion of strict liability.	The use of strict liability principle is favorable for investigators to process the defendant (concessionaire) in the court to hold them responsible for forest and land fires occurring in their concession area without having to prove the fault of the defendant in advance. It is sufficient for the investigators to prove that there have been forest/land fires in the defendant's concession area and that these fires have caused environmental losses.[7] This principle is powerful to catch corporations using destructive measures in their activities. For example, in 2016, the Ministry of Environment and Forestry registered a lawsuit against PT. Ricky Kurniawan Kertapersada (RKK), PT. Agro Tumbuh Gemilang Abadi (ATG), PT Palmina Utama (PMU), and PT. Waimusi Agro Jaya (WAG) in the case of forest and land fires using the principle.[8] The removal of strict liability principle would require the investigators to obtain hard proof before they could bring the corporation to court when fires occur in their concession area. This would hamper the investigators

[7] ICEL. 2019. Mengejar Tanggung Jawab Korporasi Pembakar Lahan, accessed from https://icel.or.id/berita/icel-dalam-berita/mengejar-tanggung-jawab-korporasi-pembakar-lahan/ on March 13th, 2020.
[8] Saragih, Samdysara. 2017. *Gugatan Karhutla, Dua Jurus KLHK Lawan 4 Perusahaan Sawit from https://ekonomi.bisnis.com/read/20170104/99/616692/gugatan-karhutla-dua-jurus-klhk-lawan-4- perusahaan-sawit* on March 12th, 2020.

			in catching the violating corporations and law enforcement would then be forced to focus only on direct perpetrators rather than the responsible land owner/permit holder.

Source: Indonesian Center for Environmental Law (2020) and various sources (processed)

Violations of rules that protect natural forests and the environment still occur frequently. Law enforcement against forest and land burners is also still far from optimum. Below are several cases that exemplify violations of rules in various laws that have served as "safeguards", such as the suitability with the spatial plan, suitability of geographical conditions, and responsibility for fires that occur in the work area:

- Issuance of permit without regard to the spatial plan is reflected on a case in Buol District, Central Sulawesi. In November 2018, the Minister of Environment and Forestry through Decree No. 517/2018 granted a license to release 9.964 hectares of production forest area to be converted into palm oil plantation by PT. Hardaya Inti Plantations. The designated area still had 7.862 hectares of natural forest cover or 78.9% of the total released area.[9] The Decree was met with strong objection from the Head of Buol District because the it was issued without regards to the regional spatial plan of Buol. Based on the Strategic Environmental Assessment (SEA) of Buol District, large-scale forest release and clearing are banned in Buol due to limited carrying capacity of its ecosystems and to prevent environmental impacts and declining water reserves.
- Spatial analysis conducted by Madani found that there are still 1,026,616.36 hectares of palm oil plantation permit in the 2019 Indicative Map of Moratorium (PIPPIB) that includes primary natural forests and peatlands located in conservation forests, protected forests, permanent production forests, convertible production forest, as well as the non-forest area. Primary natural forests and peatlands are both development constraints that must be put into consideration in development planning process in order to realize sustainable development as mentioned in the 2020-2024 Medium Term National Development Plan/RPJMN. Regardless, much primary forests and peatland are still included in permit area.[10]
- Madani's analysis shows that there is a positive correlation between deforestation, forest fires and opening of new palm oil plantations. This indication is clearly shown when deforestation and land and forest fire data are matched with data of immature plants. Moreover, referring to data regarding the size of deforestation and the number of hotspots in palm oil concessions areas from the GFW (Global Forest Watch) in 2018

[9] Koalisi CSO. 2019. *Shadow Report: Kemana Arah Implementasi Inpres No. 8 Tahun 2018 Berjalan*.
[10] RPJMN 2020-2024. 2020. *Development Constraint, Kondisi Daya Dukung Sumber Daya Alam dan Daya Tampung Lingkungan Hidup*. Chapter 1 p. 32.

and the number of hotspots in concession area during 2015 to 2017 from the Ministry of Environment and Forests (KLHK) (2018), it was indicated that the size of deforestation and forest fires have direct correlation.[11]

- Analysis by Greenpeace showed that the number of palm oil and pulp companies that have been sanctioned for land/forest fire in their concession is still very few.[12]

Existing Conditions of Natural Forests, Deforestation, and Forest and Land Fires

1. The Size of Natural Forest Cover, Forest Area, Primary Natural Forest Cover, and Natural Forests in PIPPIB

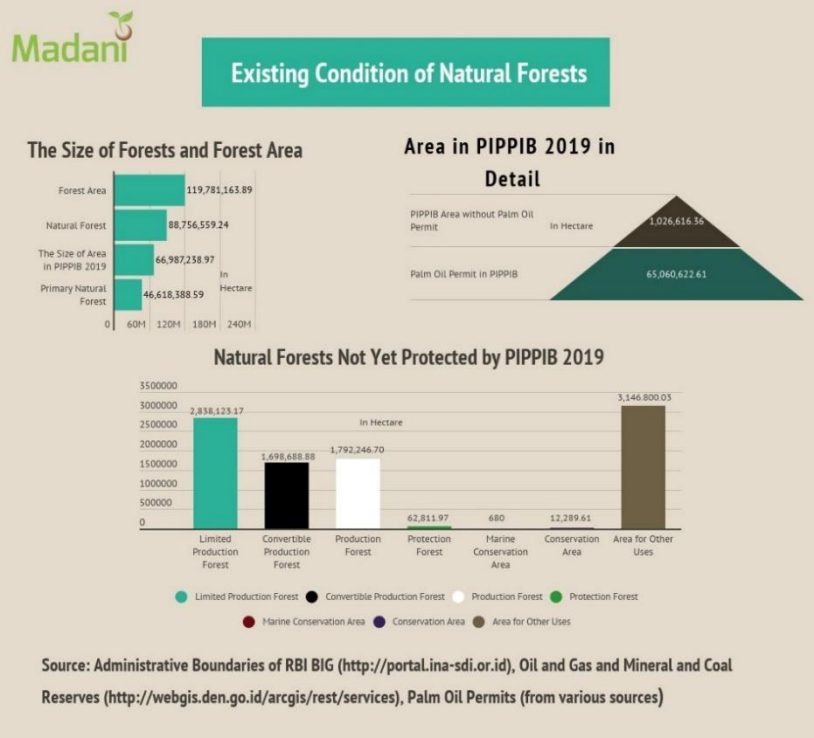

Figure 1. Existing Condition of Natural Forests

[11] Madani Berkelanjutan. 2019. *Madani Insight Vol. 1, Gambaran Industri Sawit Indonesia, Menjawab Asumsi dengan Fakta dan Angka*.

[12] Greenpeace. 2019. Briefer – *Krisis Kebakaran Hutan dan Lahan di Indonesia: Perusahaan Kelapa Sawit dan Bubur Kertas dengan Area Kebakaran Terbesar Tak Tersentuh Hukum*, accessed from https://www.greenpeace.org/indonesia/publikasi/3795/briefer-krisis-kebakaran-hutan-dan-lahan-di-indonesia-perusahaan-kelapa-sawit-dan-bubur-kertas-dengan-area-kebakaran-terbesar-tak-tersentuh-hukum/ on 13 March 2020.

The existing condition of Indonesia's natural forests can be seen in Figure 1 above. In 2018, the total area of Indonesia's natural forest cover is only 88,756,559.24 hectares,[13] while the total size of Indonesia's forest area reaches 119,781,163.89 hectares.[14] Not all natural forests are located within forest areas and not all forest areas are covered by natural forests. Of the 88 million hectares of the remaining natural forests, the total area of primary natural forest cover is only 46,618,388.59 hectares,[15] The rest are classified as secondary natural forests with lower protection status and hence are not protected by the new moratorium policy. In 2019, the Government of Indonesia has issued Presidential Instruction No. 5 of 2019 on the Stoppage of Issuance of New Permits and Improvement of Primary Natural Forests and Peatlands Governance (permanent forest moratorium).

The area protected by this policy can be seen in the Indicative Map of the permanent moratorium policy (PIPPIB) which will be reviewed every 6 months. In 2019, the size of PIPPIB area was 66,087,238.97 hectares.

However, based on the spatial analysis conducted by Madani, there are 1,026,616.36 hectares of palm oil permits inside PIPPIB 2019. If we exclude them, the area of primary natural forests and peatland that has not been burdened with license is just around 65,060,622.61 hectares. On the other hand, there are still a significant number of natural forests not yet covered by PIPPIB protection,[16] 2,838,123.17 hectares in the Limited Production Forest area, 1,698,688.88 hectares in the Convertible Production Forest area, 1,792,246.70 hectares in the Production Forest area, 62,811.97 hectares in the Protected Forest Area, 680.12 hectares in the Marine Conservation Area, 12,289.61 hectares in the Conservation Area, and 3,146,800.03 hectares in the Non-forest area (see Figure 1).

[13] Data Source: RBI BIG Administrative Boundaries (http://portal.ina-sdi.or.id), Oil and Gas and Mineral and Coal Reserves (http://webgis.den.go.id/arcgis/rest/services), Palm Oil Permits (from various sources).
[14] Data Source: RBI BIG Administrative Boundaries (http://portal.ina-sdi.or.id), Oil and Gas and Mineral and Coal Reserves (http://webgis.den.go.id/arcgis/rest/services), Palm Oil Permits (from various sources).
[15] Data Source: RBI BIG Administrative Boundaries (http://portal.ina-sdi.or.id), Oil and Gas and Mineral and Coal Reserves (http://webgis.den.go.id/arcgis/rest/services), Palm Oil Permits (from various sources).
[16] Mostly because they are legally classified as secondary natural forests, leaving them out of the PIPPIB protection although physically they are still intact natural forests.

Figure 2. Provinces with Forest Area and Natural Forest Cover <30%

Indonesian laws and regulations require every province to maintain at least 30% of forest area to meet the environmental supporting and carrying capacity. With the declining size of natural forests in Indonesia, 8 provinces in Indonesia have now passed the minimum threshold (see Figure 2).

Eight provinces that have fallen below the 30% threshold are East Java (28.395%), Lampung (27.64%), Bali (22.68%), Banten (22.3%), West Java (21.38%), Central Java (18.91%), Yogyakarta (5.97%) and Special Capital Region of Jakarta (0.69%) - See Figure 4. Besides Lampung, all the provinces are located in Java and Bali.

Meanwhile, there are 15 provinces in Indonesia with less than 30% of natural forests cover (See Figure 3). The provinces are Riau (17.7%), South Sumatra (9.31%), North Sumatra (22.48%), East Java (9.29%), Jambi (21.45%), South Sulawesi (29.12%), West Java (4.8%), South Kalimantan (19.21%), Central Java (2.87%), Lampung (8.49%), Bangka Belitung (13.45%), Banten (7.78%), Bali (16.61%), Yogyakarta (0.154%), and Special Capital Region of Jakarta (0.44%). This means that although some provinces still have forest area above 30%, parts of these areas are no longer natural forests. Therefore, the size of natural forest cover in these provinces is below 30%.

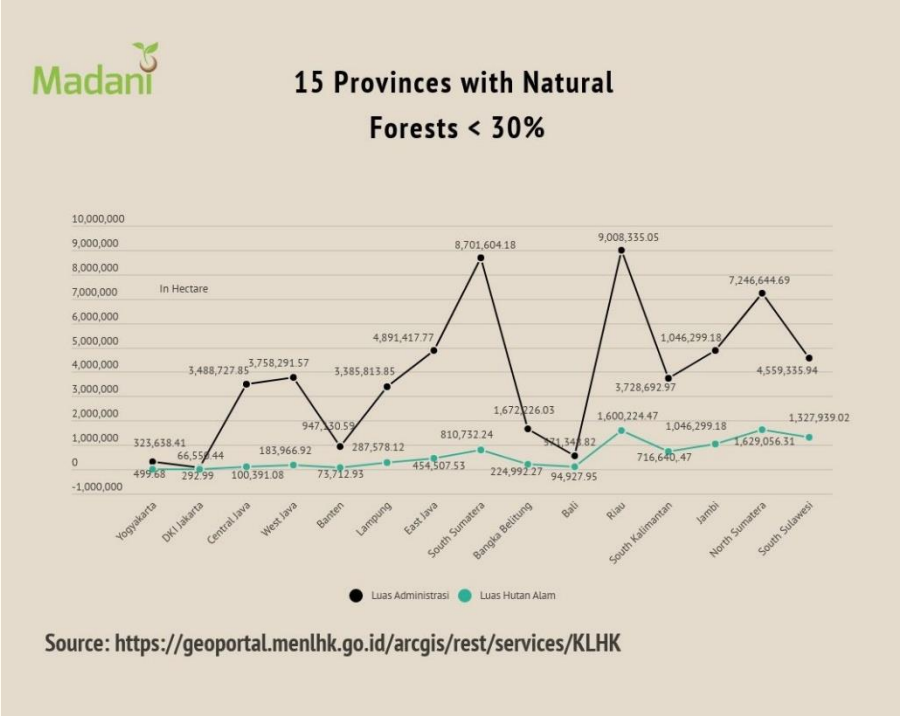

Figure 3. Fifteen Provinces with <30% of Natural Forest Area

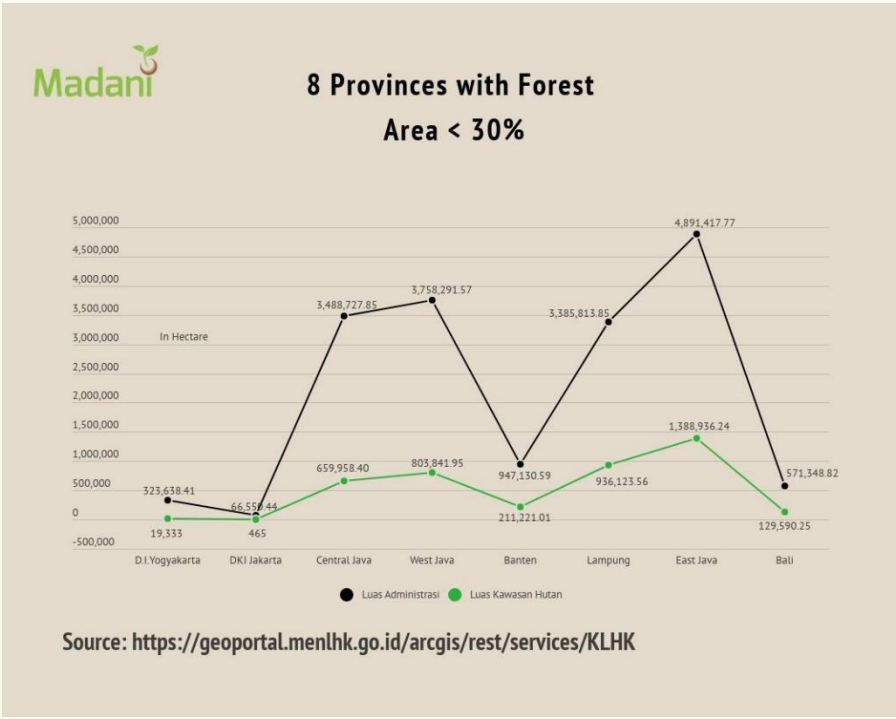

Figure 4. Eight Provinces with Forest Area <30%

2. The Rate of Deforestation and Forest and Land Fire

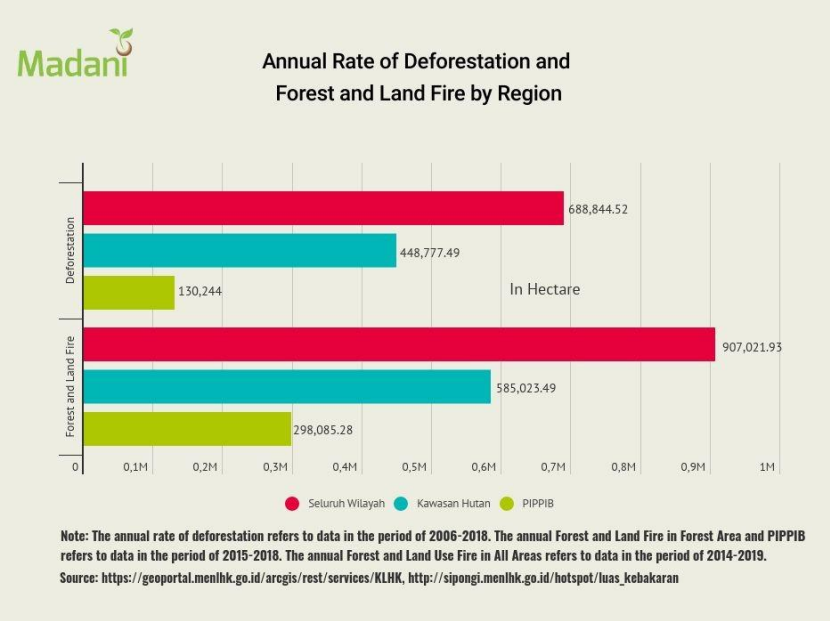

Figure 5. Annual Rate of Deforestation and Forest and Land Fires by Region

Based on data from the government, during 2006 to 2018, the highest number of deforestation occurred in forest area with the average rate of **448,777.49 hectares/year**, followed by deforestation in PIPPIB area of **130,244 hectares/year**. Overall, the average rate of deforestation in the period of 2006-2018, both for inside and outside the forest area, is **688,844.52 hectares/year.**

Quite similar to the rate of deforestation, the highest number of forest and land fires during 2015-2018 occur in forest area with an average rate of **585,023.49 hectares/year**, followed by forest and land fires in PIPPIB of **298,085.28 hectares/year**. The rate of forest and land use fire both inside and outside the forest area in the 2014- 2019 period is **907,021.93 hectares/year**.[17]

Deforestation and forest and land fires still occur in PIPPIB that should be protected. This is presumably because there are many open access areas from lack of monitoring by the government, which allows massive-scale deforestation to continue, the existence of permits/concessions within the PIPPIB area, and weak law enforcement against corporations that are clearing land using fire.

[17] Source: http://sipongi.menlhk.go.id/hotspot/luas_kebakaran. The calculation of annual average forest and land fire in each respective area (inside and outside the forest area) is based on the available shapefile data, which is from the 2015-2018 period, while the total national average rate of forest and land fire is based on the available SIPONGI tabular data, which is from 2014- 2019.

This analysis limits itself to simulating natural forest loss due to deforestation while the loss of natural forests due to forest and land fires will be attempted later. To simulate the loss of natural forests in each province, the rate of deforestation used is the average annual rate of deforestation in each province instead of the national average rate. This is to ensure that we obtain a proportional calculation since the rate of deforestation varies greatly from one province to another.

Projection of Natural Forest Loss if the Job Creation Bill were Implemented

With safeguards protecting natural forest removed or weakened by Articles in the Job Creation Bill, which subsequently increases the risk of deforestation, we simulated several possible scenarios until 2056 below.

1. Five Provinces Risk Losing All Their Natural Forests

Figure 6. Provinces Projected to Lose All Their Natural Forests to Deforestation

If we simulate the loss of natural forests in each province using the average annual rate of deforestation in each province and apply them on a linear basis, 5 Provinces are at risk of losing their entire natural forests due to deforestation by 2056 (See Figure 6), namely:

1. Riau, 1,600,224.47 hectares of its natural forests would be lost by 2032
2. Jambi, 1,046,299.18 hectares of its natural forest would be lost by 2038
3. South Sumatra, 810,732.24 hectares of its natural forests would be lost by 2038
4. Bangka Belitung, 224,992.27 hectares of its natural forest would be lost by 2054
5. Central Java, 100,391.08 hectares of its natural forest would be lost by 2056

2. The Opportunity to Protect Natural Forests Outside PIPPIB would be Lost

To achieve Indonesia's climate commitment, the government must strengthen the permanent moratorium policy to include natural forests that are still located outside PIPPIB. However, if some of the clauses in the Job Creation Bill were fully implemented, this would no longer be possible because the natural forests that have not been protected by or are located outside PIPPIB area would have been deforested.

Figure 8. Provinces Projected to Lose All Their Natural Forests Outside PIPPIB to Deforestation

By applying the average annual rate of deforestation in each province on a linear basis, 7 provinces would lose all natural forests outside PIPPIB area by 2056 (See Figure 8). These provinces are as follows:

1. South Kalimantan, 13,446.64 hectares of its natural forests outside PIPPIB area would be lost by 2020
2. Jambi, 18,418.66 hectares of its natural forests outside PIPPIB area would be lost by 2020
3. West Sumatra, 254,875.63 hectares of its natural forests outside the PIPPIB area would be lost by 2030
4. West Kalimantan, 1,026,612.16 hectares of its natural forests outside PIPPIB area would be lost by 2032
5. Aceh, 343,288.93 hectares of its natural forests outside PIPPIB area would be lost by 2038
6. West Nusa Tenggara, 85,805.71 hectares of its natural forests outside PIPPIB area would be lost by 2038, and
7. Central Kalimantan, 3,506,136.05 hectares of its natural forests outside PIPPIB area would be lost by 2056.

Of the 7 provinces above, 4 provinces with the largest number of projected natural forest loss outside PIPPIB due to deforestation are Central Kalimantan with 3.5 million hectares, Aceh with 342 thousand hectares, West Kalimantan with 1 million hectares, and West Sumatra with 254 thousand hectares.

3. The Achievement of Indonesia's Climate Target would be Challenged

In the First Nationally Determined Contribution (NDC), Indonesia set a target to reduce deforestation to under 3.25 million hectares by 2030 or maximum 325,000 hectares/year during the period of 2020 to 2030 using its own efforts or CM1[18] and with international assistance or CM2[19]. Indonesia risks failing to meet its climate target if the Articles in Job Creation Bill, which increases the risk of deforestation, were fully implemented.

On average, Indonesia's deforestation rate from 2006 to 2018 is 688,844.52 hectares/year. If we simulate the average value as the value of deforestation that eliminates forest, Indonesia would have exceeded the deforestation quota required to reach the 2030 NDC target by 2025 (Figure 10).

[18] Emission scenarios with mitigation scenarios and considering sectorial development targets.
[19] More ambitious emissions scenarios and considering sectorial development targets, if international support is available.

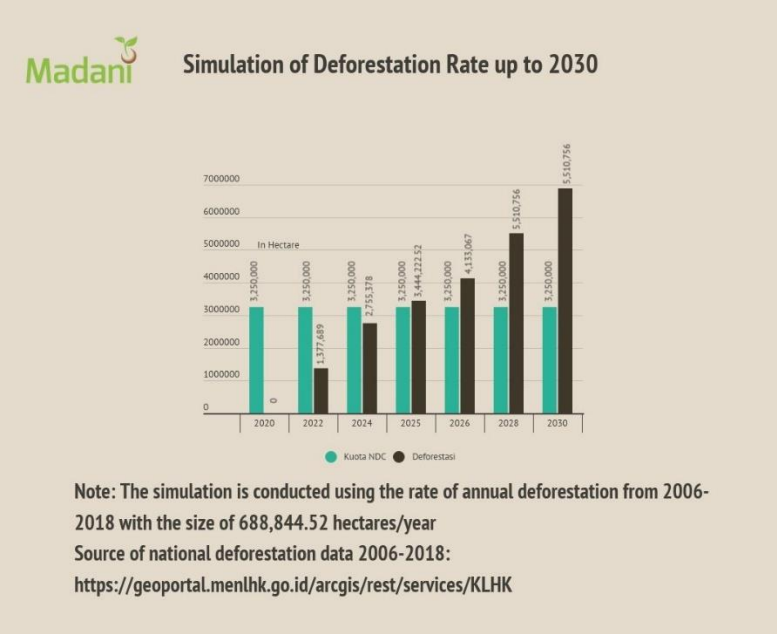

Figure 10 . Simulation of Natural Forest Loss due to Deforestation up to 2030

4. The Risk of Palm Oil Expansion to Natural Forests and Forest Area

The Job Creation Bill sets to remove the provisions in the Plantation Law that mandates palm oil plantations to obtain an Environmental Permit, ensure suitability with the regional spatial plan, and suitability of plantations as preconditions to obtain Plantation Business Permit (IUP). The bill also sets to eliminate the minimum and maximum limit for land holding so that it can be determined by the Central Government without regards to the suitability of location, land availability, and geographical conditions. At the same time, the bill sets to remove the 30% threshold of minimum forest area that must be maintained for each watershed and/or island. These would increase the risk of massive expansion of palm oil plantations to natural forests and forest area, especially with the existing biodiesel blending mandate (B30-B100) that has been announced by the government and the imminent expiration of Presidential Instruction No. 8 of 2018 on the Postponement and Evaluation of Palm Oil Plantation Licenses and Improvement of Palm Oil Plantation Productivity in 2021, which has temporarily stopped the issuance of new palm oil permits in forest area.

The 2020-2024 Medium-Term National Development Plan or RPJMN have included a target of domestic palm-based biodiesel consumption up to 17.4 million kiloliters[20] in 2024 with a CPO

[20] Appendix I of the Presidential Regulation No. 18 of 2020 on the 2020-2024 National Medium-Term Development Plan, p. II-16

production target up to 50.4 million tons.[21] To meet the demand for biodiesel plus the demand for food and industry in the country without reducing exports,[22] Indonesia will need an additional 21.4 million tons of CPO in 2024. If such amount were entirely fulfilled through land expansion,[23] we would need an additional 7.3 million hectares of land (low productivity scenario), 6.6 million hectares of land (medium productivity scenario), or 3.1 million hectares of land (high productivity scenario).[24] If the 17.4 million kiloliters of biodiesel needs were met entirely from land expansion without considering the growing needs in the food, industrial and export sectors, we would need an additional 5.4 million hectares of land (low productivity scenario), 4.9 million hectares of land (medium productivity scenario), or 2.27 million hectares of land (high productivity scenario).[25] With the removal of restrictions by the Job Creation Bill that would weaken the protection of natural forests and environment as described above, there is a high risk that the expansion of palm oil plantations for biodiesel will encroach on the remaining natural forests and set Indonesia's climate commitment to fail.

Based on the data from the Coordinating Ministry for Economic Affairs, there are currently 3.1 million hectares of palm oil plantations in forest area.[26] Spatial analysis conducted by Madani shows that there are 3.4 million hectares of natural forest cover in palm oil plantation permit area (HGU, IUP, and other non-definitive permits, including location permits), which, according to the Presidential Instruction 8/2018 (palm oil moratorium), could partly be saved. Papua has the largest number of natural forests located within palm oil plantation permit area, amounting to 1,363,244 hectares, followed by East Kalimantan with 528,785 hectares (See Figure 12). With the additional demand for CPO that keeps growing due to biodiesel policies and the ease of issuance for palm oil expansion permits into forest areas, Indonesia would lose its opportunity to save natural forests during the palm oil moratorium period. If the 3.4 million hectares of natural forests were lost, Indonesia would not be able to achieve its climate commitment since the deforestation quota of 3.25 million hectares would have been exceeded before 2030.

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[21] Appendix I of the Presidential Regulation No. 18 of 2020 on the 2020-2024 National Medium-Term Development Plan, p. 18.

[22] The alternative is to reduce CPO exports by half, namely from the projected figure in 2024 of 37.3 million hectares (assuming 6% export growth per year) to only 15.9 million hectares.

[23] To avoid land expansion altogether, national productivity must be increased to a minimum of 4.4 ton/hectares by using the current figure of palm oil cover or 16.3 million hectares. At present, the assumption of increased productivity is not possible to be used because the rate of increase in historical productivity is not significant, as well as the rate and target of replanting, and has not been supported by adequate funding despite the issuance of the Presidential Instruction No. 6 of 2019 on the National Action Plan for Sustainable Palm Oil Plantations in 2019-2024.

[24] Assumption for low productivity = 2.9 tons/hectares (data from Directorate General of Plantation with the assumption of 16.3 million hectares of land). Assumption for medium productivity = 3.2 tons/hectares (data from Directorate General of Plantation with assumption of 14.3 million hectares of land). Assumption for high productivity = 6.9 tons/ha (GAPKI productivity target). See https://ekonomi.bisnis.com/read/20190412/99/910998/gapki-targetkan-produktivitas-cpo-jadi-69-ton-per-hektare-per-tahun.

[25] Ibid.

[26] The Coordinating Ministry for Economic Affairs, "Pencapaian Inpres No. 8 Tahun 2018 tentang Penundaan dan Evaluasi Perizinan Perkebunan Kelapa Sawit dan Peningkatan Produktivitas Perkebunan Kelapa Sawit," presented in Jakarta, October 9th 2019.

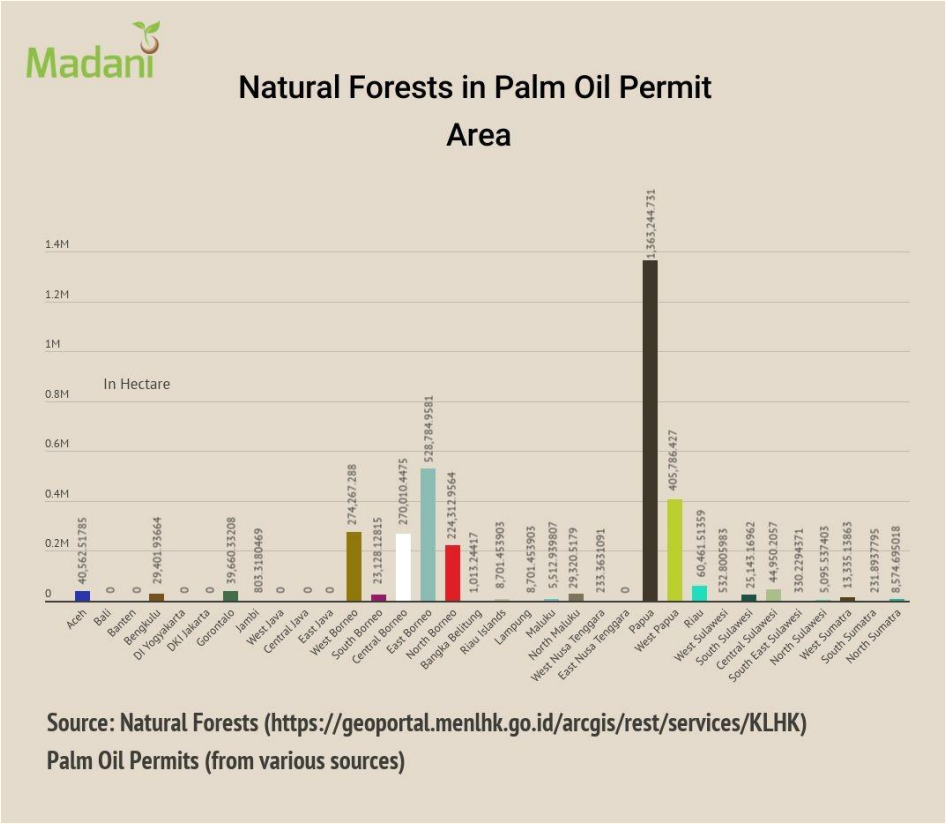


Figure 12. Natural Forest within Palm Oil Plantation Permit Area in 34 Provinces

5. Natural Forest Loss Projection and Threatened Watershed in West Papua

West Papua Province is one of the last strongholds of natural forests in Indonesia with an area of natural forest amounting to 8,850,738.24 hectares in 2018. Although the number looks significantly large, 73% or 6,452,986 hectares of natural forests in West Papua have been encumbered with permits and concessions.[27] Therefore, without a comprehensive permit review, sooner or later the natural forests will disappear or, at least, be degraded.

In the provisions of Article 18 of Law No. 41 of 1999 on Forestry, the minimum forest area that must be maintained for each watershed (DAS) and/or island is set at 30%. This is because forest is an important part of watershed ecosystem and will affect the water system, erosion and sedimentation of the watershed area. If the Job Creation Bill removed these provisions, the watershed ecosystem would be threatened.

[27] Madani's analysis found that such permits and concessions comprise 98,761 hectares of IUPHHK-HT, 532,390 hectares of palm oil plantations, 633,429 hectares of mineral and coal, 1,758,418 hectares of Oil and Gas, and 3,429,988 hectares of IUPHHK-HA. Data Source: RBI Provincial Boundary (BIG), MoEF Map Service.

West Papua has a well-maintained watershed ecosystem, but would be threatened with degradation due to the loss of natural forests. Madani simulated the loss of natural forest cover in West Papua's watershed area - not just a reduction in forest area - because in reality, it is the forest cover that plays the important role in protecting the watershed ecosystem.

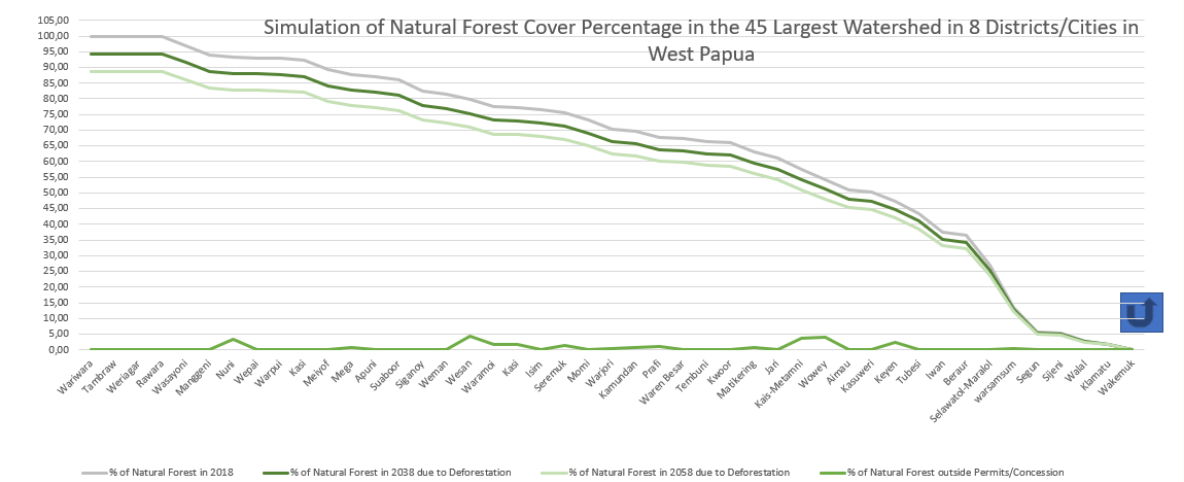
Madani conducted a simulation of natural forest loss in forty-five (45) main watershed ecosystems in 8 districts/cities of West Papua: Sorong District, Sorong City, South Sorong Dictrict, Maybrat District, Tambrauw District, Manokwari District, Arfak Mountains District, and South Manokwari District. These main watersheds have a total of 3,299,922.24 hectares of natural forests and most of the natural forest covers are above 60%.[28] Of the 3.2 million hectares of natural forests covering the 45 main watersheds, 2,311,234.50 hectares or 70% are located in PIPPIB and PIAPS area. Therefore, in theory, such forests cannot be given to large-scale permits or concessions.

However, the watershed ecosystems in those 8 districts/cities are still facing serious threats since most of the natural forests outside PIPPIB and PIAPS areas have been encumbered with permits/concessions. Of the 3.2 million hectares of remaining natural forests, only 85,473.66 hectares or 2.5% of forests outside PIAPS and PIPPIB are not yet burdened with permits.

If the forest cover in PIPPIB and PIAPS were not successfully protected and natural forests that have been burdened with permits/concessions eventually disappeared due to deforestation, with an average rate of annual deforestation in West Papua of 5,569.55 hectares / year, the percentage of natural forests in the 45 largest watershed ecosystems in West Papua would drop to only 0% - 20% and would affect the hydrological function in West Papua.

On the other hand, if natural forests within PIPPIB and PIAPS were maintained 100%, the percentage of natural forest cover in 32 of the 45 largest watersheds in the 8 cities/districts would be maintained at the level of 50% despite of the rate of forest loss due to the annual deforestation in West Papua by 2058.

[28] Madani uses the comparison between the size of natural forest cover and forest area because forest area does not necessarily contain natural forests. Therefore, the analysis used the risk of declining natural forest cover in watershed area instead of declining forest area.



The chart shows the simulation of declining natural forests due to deforestation in West Papua (5,569.55 hectares/year) in the 45 largest watersheds in the area under study. The grey dash line represents the percentage of natural forests in 2018, the dark green line represents the percentage of natural forests due to deforestation up to 2038, the light green represents the percentage of natural forests due to deforestation up to 2058. The purple dash line represents the percentage of remaining natural forests inside five types of concessions and outside PIPPIB and PIAPS. In general, if the protection function of PIPPIB and PIAPS were maintained, the percentage of natural forests would still be relatively high up to 2058. Conversely, if forest cover in PIPPIB and PIAPS failed to be protected, the percentage of remaining forests in the watersheds would drop significantly.

Figure 13. Simulation of Deforestation in Watershed Area of West Papua

Conclusion

If signed into law and implemented, Articles under the Job Creation Bill (RUU Cipta Kerja) that weaken the protection of natural forests and the environment will increase the risk of natural forests loss and potentially lead to the following situations:

1. Five provinces would lose all their natural forests due to deforestation: Riau in 2032, Jambi and South Sumatera in 2038, Bangka Belitung in 2054, and Central Java in 2056.

2. The opportunity to protect natural forests that could potentially be protected by an improved version of currently existing permanent moratorium policy 1 would be lost because such forests would have already been lost to deforestation. Four provinces with the largest reserve of natural forests outside Indicative Area of Permanent Moratorium (PIPPIB) at risk of being lost to deforestation are Central Kalimantan (3.5 million hectares), West Kalimantan (1 million hectares), Aceh (342 thousand hectares), and West Sumatra (254 thousand hectares).

3. The achievement of Indonesia's climate commitment (NDC target) in the forestry sector, especially from reduction of deforestation, would inevitably fail since the deforestation threshold of 3.25 million hectares between 2020 and 2030 required to meet such target would have been exceeded by 2025.

4. The opportunity to save 3.4 million hectares of natural forests located within palm oil permits area in the momentum of palm oil moratorium would be lost, mainly to meet the increasing target of domestic biodiesel consumption in 2024, but also to meet the growing demands of food consumption, industry, and CPO export. Two provinces with the largest size of natural forests within palm oil permits area that would be lost are Papua (1.3 million hectares) and East Kalimantan (528 thousand hectares).

5. Based on a study of 45 largest watersheds in 8 districts/cities in West Papua, natural forests outside PIPPIB and PIAPS (Indicative Social Forestry Area) that have not been burdened with license/concession is only 2.5% of the total remaining natural forests or only 85,473.66 hectares. If forest cover in PIPPIB and PIAPS failed to be protected, natural forest cover in the largest watersheds in West Papua would be reduced to only 0% -20% due to deforestation, which would disrupt the hydrological function in West Papua. However, if natural forests in PIPPIB and PIAPS were protected 100 percent, 32 of the 45 largest watersheds would still have forest cover at the rate above 50 percent until 2058 despite forest loss due to deforestation.

Based on the abovementioned risks and considering the vital role of natural forests for the environmental supporting and carrying capacities and to prevent disasters that will cause heavy material loss and casualties among Indonesian people, threaten food security, and weaken

climate resilience, the Parliament and the Government of the Republic of Indonesia must stop the Job Creation Bill debate, which will weaken natural forests and environmental protection.

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