



An aerial photograph of a lush green hillside. A winding dirt road cuts through the landscape, leading from the foreground towards the horizon. The terrain is dotted with patches of cleared land, likely for agriculture, and the surrounding area is densely forested. The overall scene conveys a sense of environmental change and human impact on natural ecosystems.

INDONESIA DEFORESTATION 2023

AURIGA NUSANTARA - 21 MARCH 2024

The importance of deforestation data

Climate change



Biodiversity

Economy

Health

Existing deforestation data (1)

Category	Primary forest – University of Maryland (UMD)	Natural forest – Ministry of Environment and Forestry (KLHK)
Classification	Intact primary forest	Primary dryland forest Primary mangrove forest Primary peat swamp forest Secondary dryland forest Secondary mangrove forest Secondary peat swamp forest
	Non-intact primary forest	
Definisi	Intact primary forest is defined as a large contiguous block of forest, not affected by human activity, and having a minimum area of 50,000 hectares. Non-intact primary forest is defined as a smaller forest fragments and areas of forest closer to, and within zones of human activity and other disturbances. Such disturbances include road construction, intensive logging, and fires.	Forest categories cover seven land cover classes: primary and secondary dry forest; primary and secondary peat forest; primary and secondary mangrove forest; and plantation forest.

Sumber: [Turubanova, S., Potapov, P.V., Tyukavina, A. and Hansen, M.C., 2018.](#)

Sumber: [Margono, B., Usman, A.B., Budiharto, Sugardiman, R.A., 2016.](#)

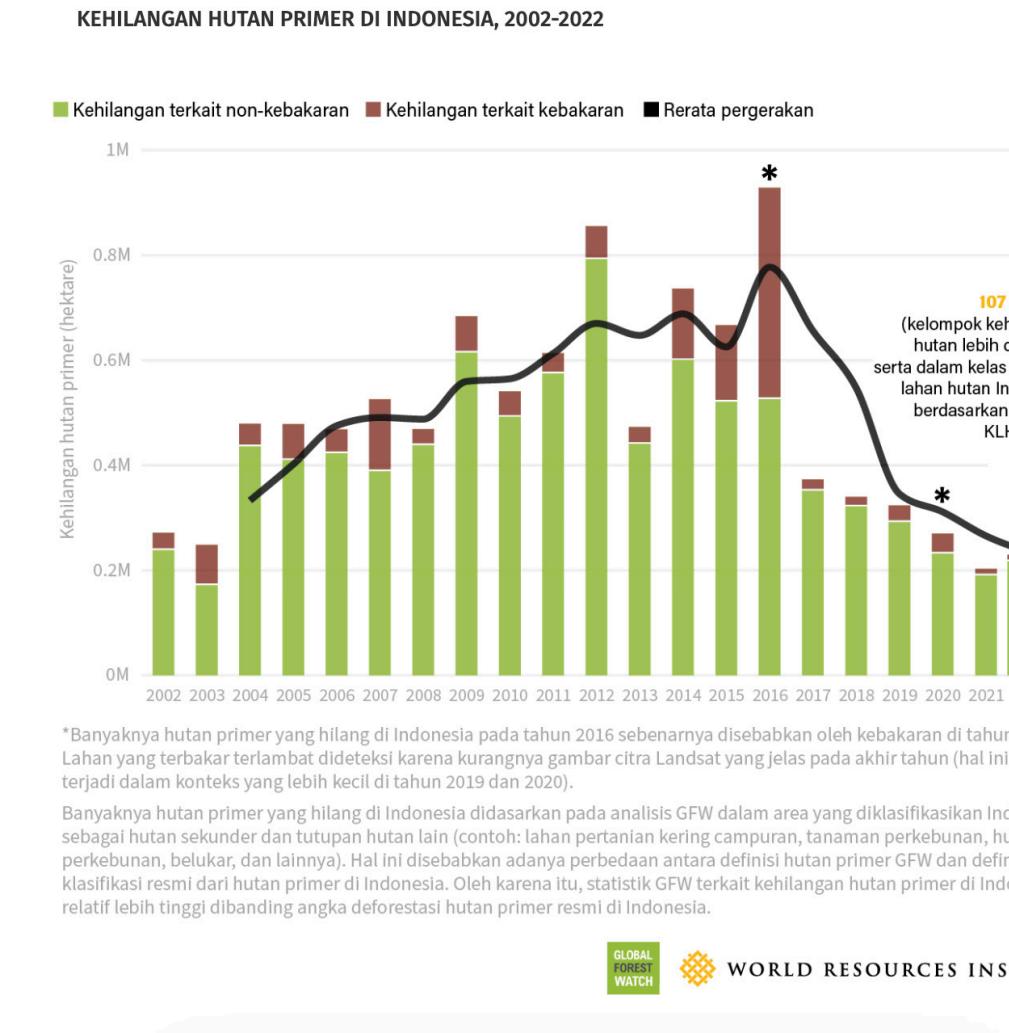
Existing deforestation data (2)

Category	Primary forest – University of Maryland (UMD)	Natural forest – Ministry of Environment and Forestry (KLHK)
Mapping method	Interpretation of Landsat satellite imagery using semi-automatic classification	Visual interpretation of Landsat satellite imagery using manual digitization
Satellite imagery acquisition period	January – December	July – June
Minimum mapping unit	0.09 hectares (30 x 30 meters)	6.25 hectares (250 x 250 meters)
Deforestation definition	Loss of at least 30% canopy cover in areas of primary forest. Every loss of canopy cover in stands of primary forest included in calculations of global primary forest loss (Hansen et al. 2013).	Changes from the seven forest land cover classes to non-forest classes (e.g., scrub, plantation)
Deforestation calculation	Gross (forest cover loss without calculating tree cover regrowth/reforestation)	Gross (forest cover loss without calculating tree cover regrowth/ reforestation); Net (forest cover loss minus gains from forest regrowth/ reforestation)
Data available for analysis	2001–2022 (annual)	1996, 2000, 2003, 2006, 2009, and 2011– 2022 (annual)



INDONESIA'S DISPUTED DEFORESTATION DATA

Indonesia's disputed 2022 deforestation data



Source: [world resources institute](#)

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Berita Foto

Berita Tapak

Menteri LHK, Siti Nurbaya dan Presiden/CEO World Resources Institute (WRI Global), Ani Dasgupta telah menandatangani MOU kemitraan teknis pada Februari tahun lalu, di antaranya, untuk

Menteri LHK: Bukan Beda Cara Baca Data

24 Januari 2024, dibaca 437 kali.

Nomor: SP.018/HUMAS/PPIP/HMS.3/1/2024

Source: [Ministry of Environment and Forestry](#)

Results of the joint analysis can be accessed on the Global Forest Watch website," Minister of Environment and Forestry, Siti Nurbaya insisted during a visit to the field in Sebangau National Park with United States Forest Service (USFS) Head, Randy Moore (Wednesday/24 January 2024).

Siti Nurbaya stated that steps in correcting Global Forest Watch (GFW) deforestation data were taken after conducting a joint review on the ground in June 2023.

The WRI/GFW website then displayed a deforestation figure of 107,000 hectares for Indonesia. Before this "correction", the figure for 2022 had been 230,000 hectares.

Independent forest mapping initiative

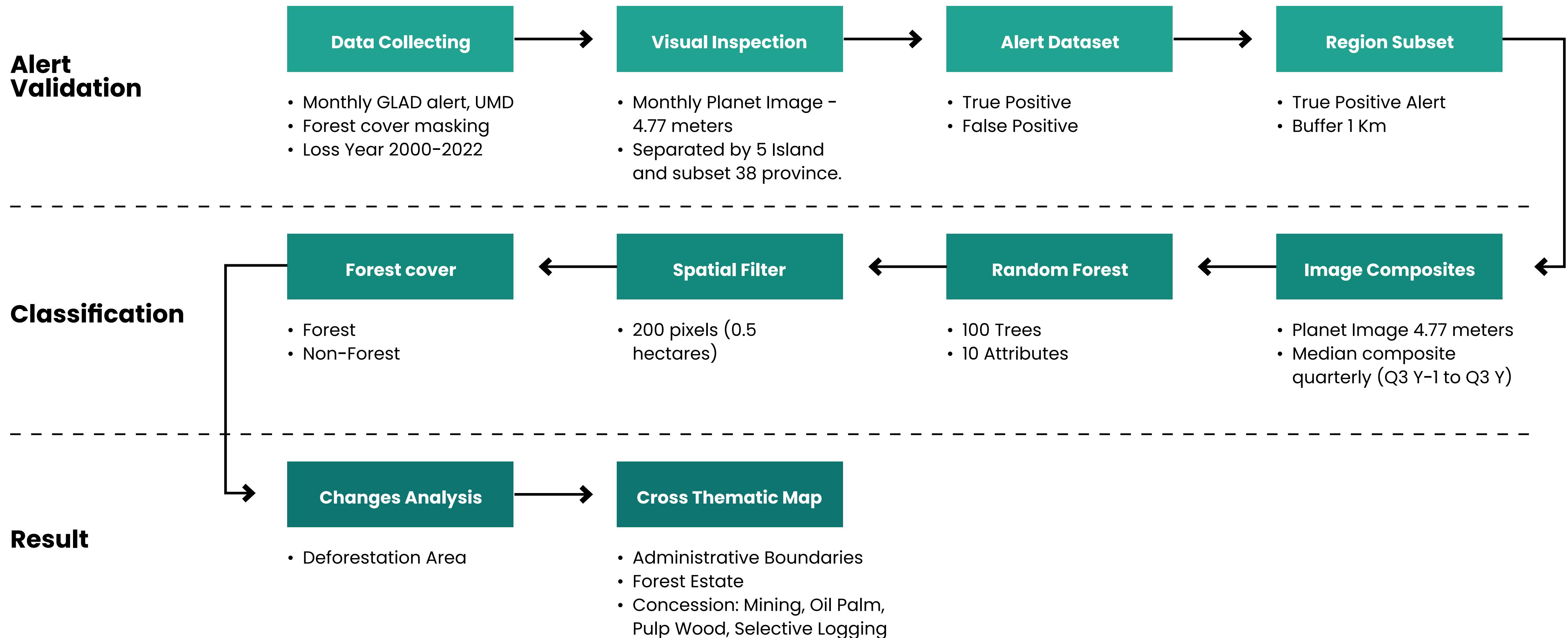
1. KLHK action “to correct” the GFW deforestation data was an intervention against an academic process. Conversely, KLHK has never informed the public about how it establishes its own deforestation data.
2. Auriga analyzed KLHK’s deforestation data for 2022:
 - As the mapping period was from July 2021 to June 2022, **it is erroneous to call it annual deforestation, or 2022 deforestation.**
 - KLHK used a minimum mapping unit (MMU) of 6.25 hectares, which is potentially unable to detect all occurrences of deforestation (those below the MMU).
 - Over the KLHK deforestation timeframe, 61,240 hectares of deforestation were found over and above the area of deforestation according to KLHK.
 - Throughout 2022, **73,000 hectares of deforestation were found over and above the area of deforestation in 2022 according to KLHK.**

Independent mapping of 2023 deforestation



METHODOLOGY

1. Stages and data processing



2. Validation of GLAD Alerts in Indonesia throughout 2023

Region	Total	False Positive	%
Java, Bali and Nusa Tenggara	4,479	484	10.81%
Kalimantan	173,603	19,785	11.40%
Maluku	13,526	1,121	8.29%
Papua	33,073	5,485	16.58%
Sulawesi	50,006	4,894	9.79%
Sumatra	81,839	7,102	8.68%
Total verified alerts	356,526	38,871	

1. The total number of alerts in Indonesia in 2023 was 2,568,954.
2. All of these alerts were overlaid with UMD's year of gross forest cover loss event (lossyear) data to eliminate possible repetition.
3. A total of 356,526 (14% of all alerts) were found and each was verified to find true-positive alerts that being used to develop the region of interest for classification steps.



INDONESIA DEFORESTATION 2023

An increase in deforestation (2022 vs 2023)

Deforestation in 2022:

GFW	: 230,003 hectares
KLHK	: 104,000 hectares
TheTreeMap	: 208,287 hectares
Auriga	: 230,760 hectares

Deforestation in 2023:

257,384 hectares

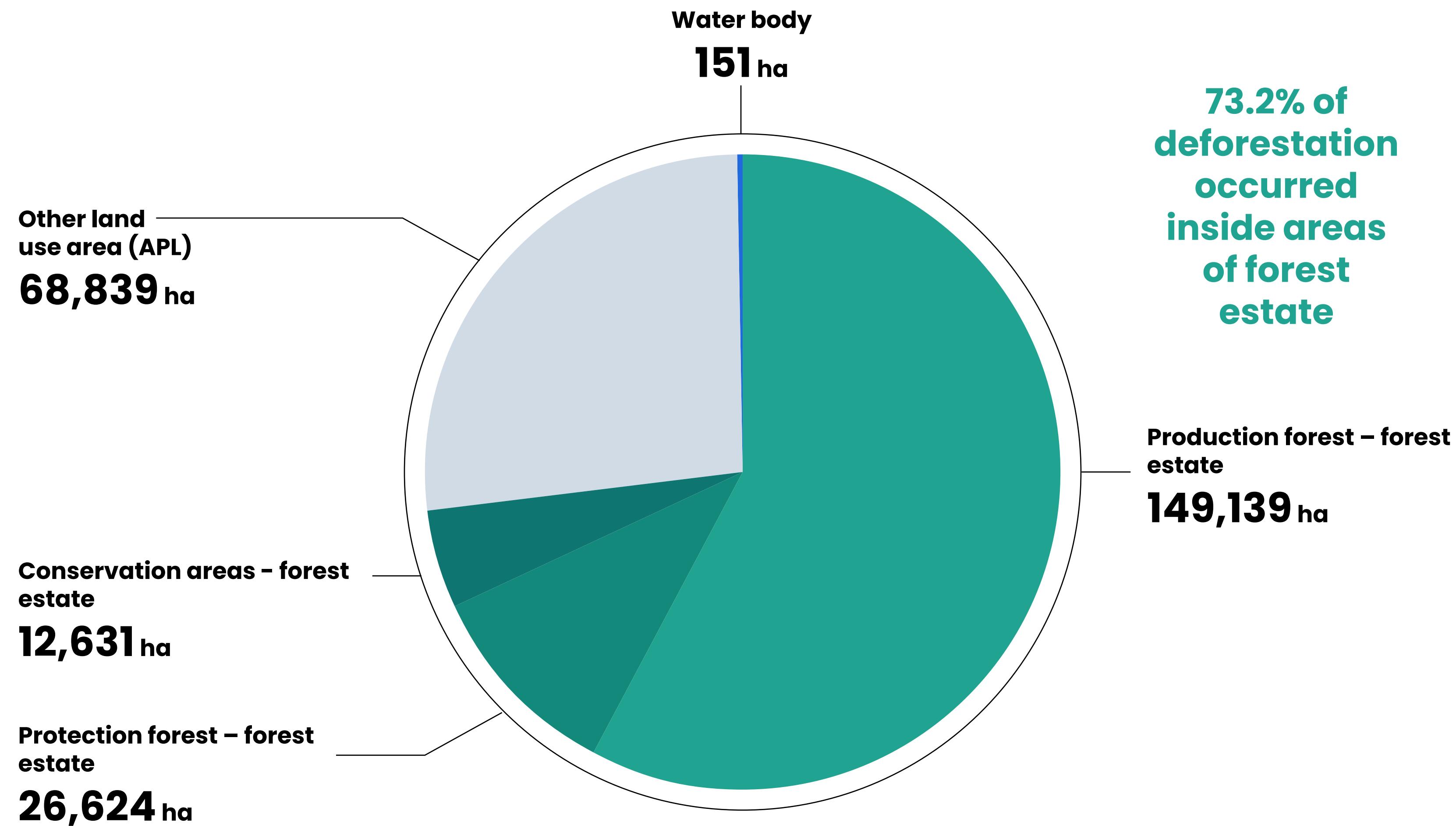
Deforestation distribution in 2023

The region with the greatest extent of deforestation: Kalimantan

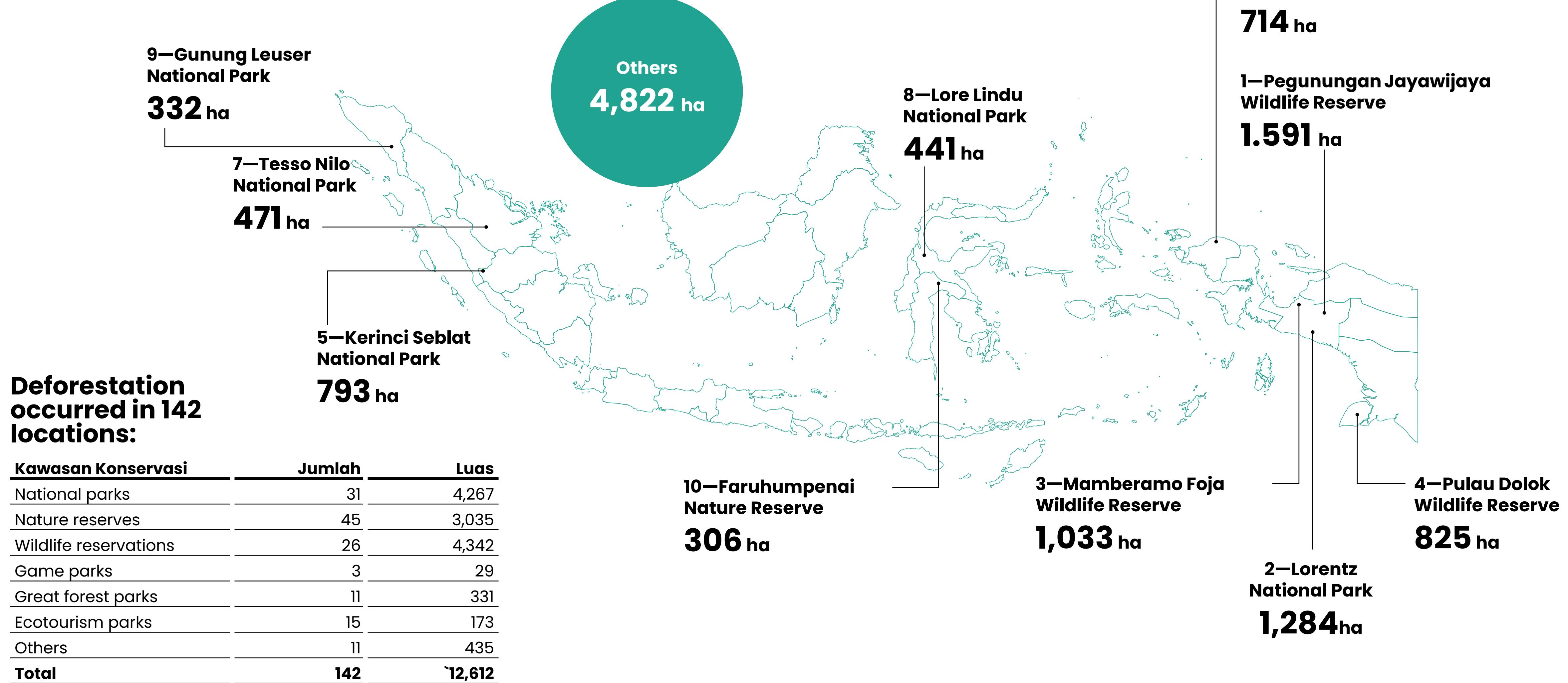
Provinsi	Luas
West Kalimantan	35,162
Central Kalimantan	30,433
East Kalimantan	28,633
Central Sulawesi	16,679
South Kalimantan	16,067
North Kalimantan	14,316
Riau	13,268
South Papua	12,640
Central Papua	11,336
West Papua	10,990
Others	67,860
Total	257,384

Range (ha)	Number of polygons	Total area (ha)
<1	24,984	17,731
1 - 6,25	32,003	73,308
6,25 - 10	2,576	20,171
10 - 100	3,829	90,702
100 - 500	152	27,911
500 - 1000	7	4,399
>1000	8	23,164
Total	63,559	257,384

Deforestation in forest estate (kawasan hutan) vs APL areas



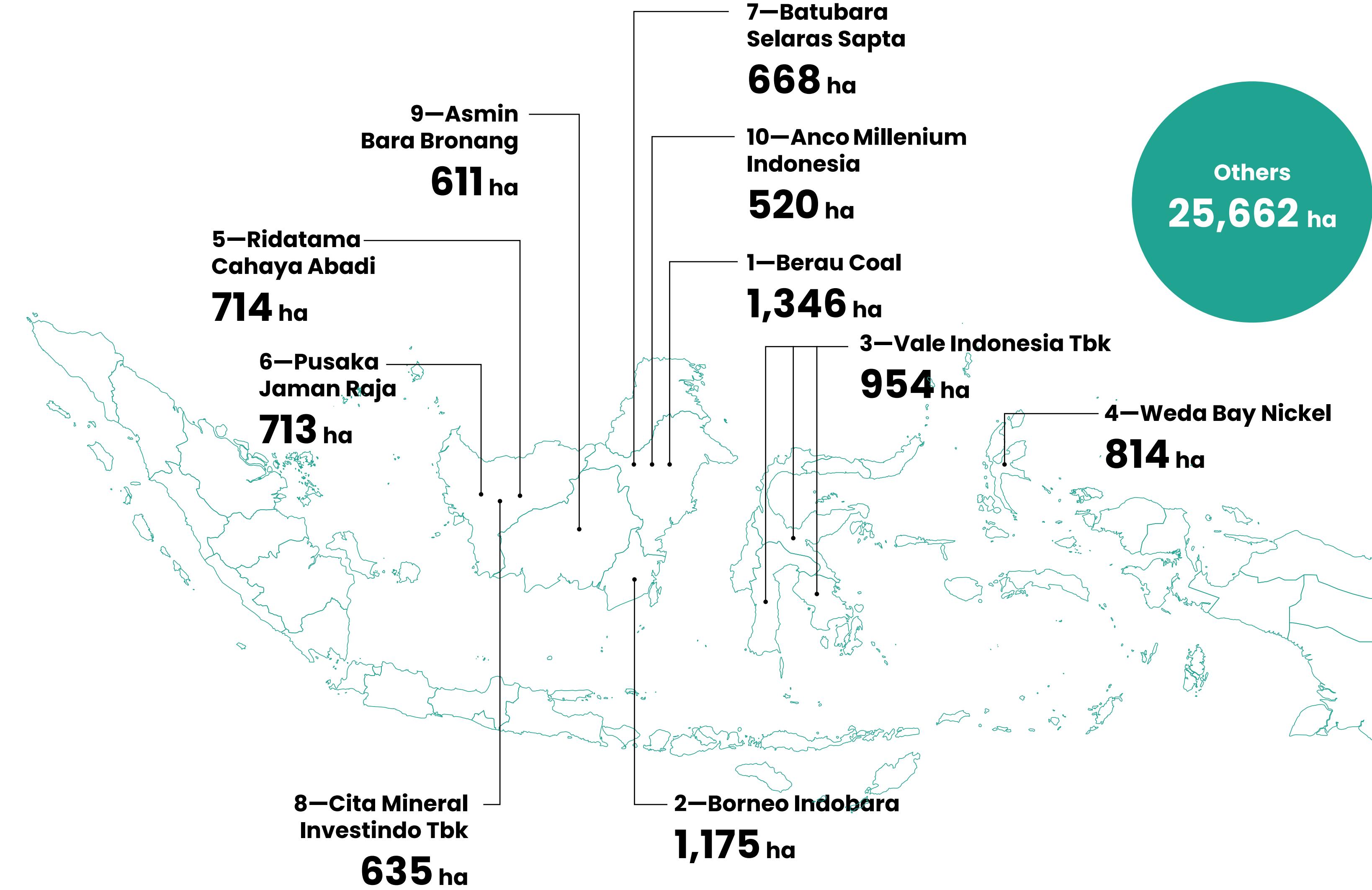
Deforestation inside conservation areas (12,612 ha)



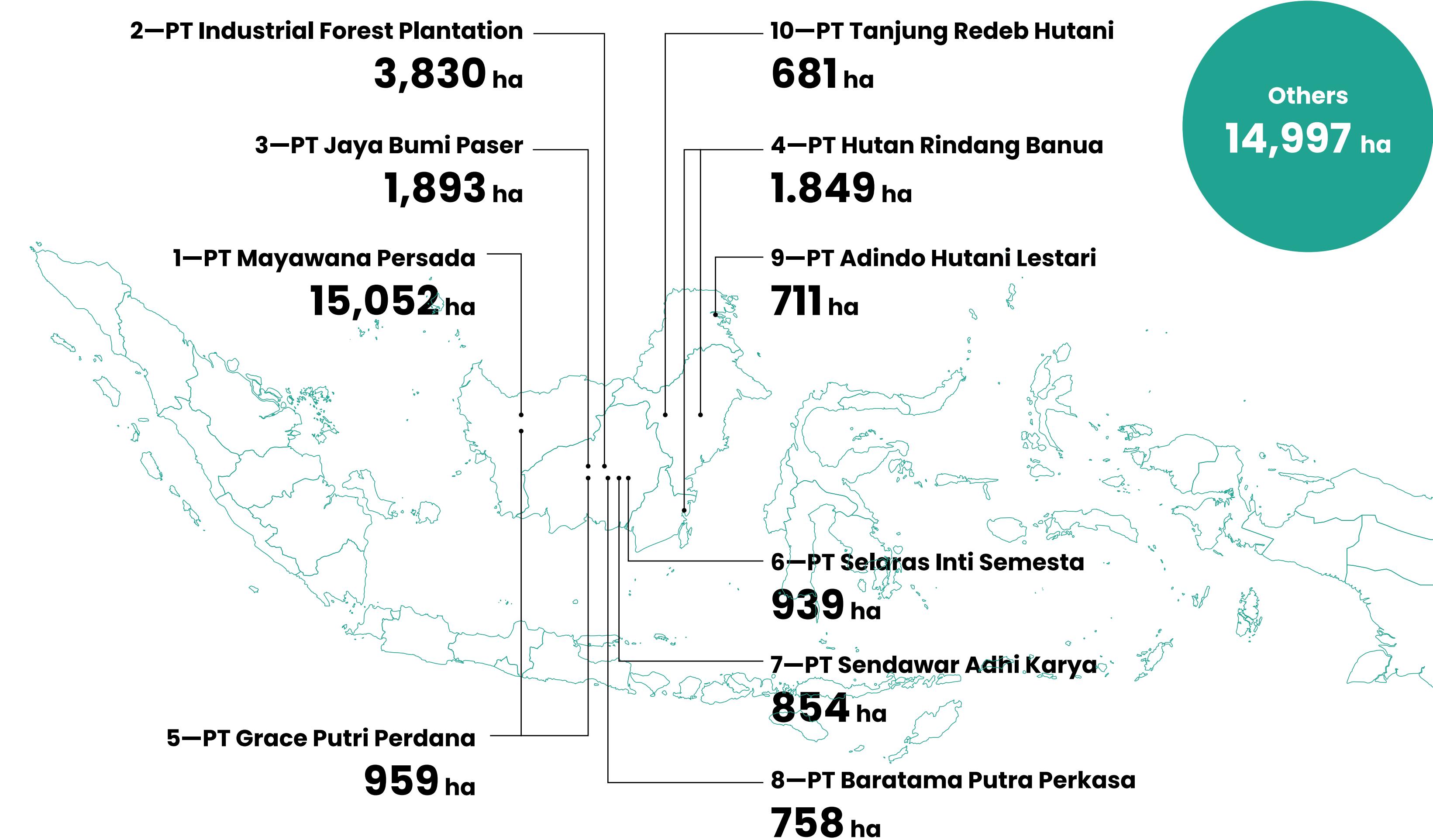
Deforestation inside concession areas

Note	Area (ha)
Timber plantations (HTI)	36,247
Logging concessions (HPH)	29,941
Oil palm plantations	20,745
Mining concessions	19,544
Mining / HTI	5,938
Mining / HPH	5,424
Oil palm / Mining	2,885
Oil palm / HPH	648
Oil palm / HTI	334
Oil palm / mining / HPH	19
Oil palm / mining / HTI	2
Total	121,728

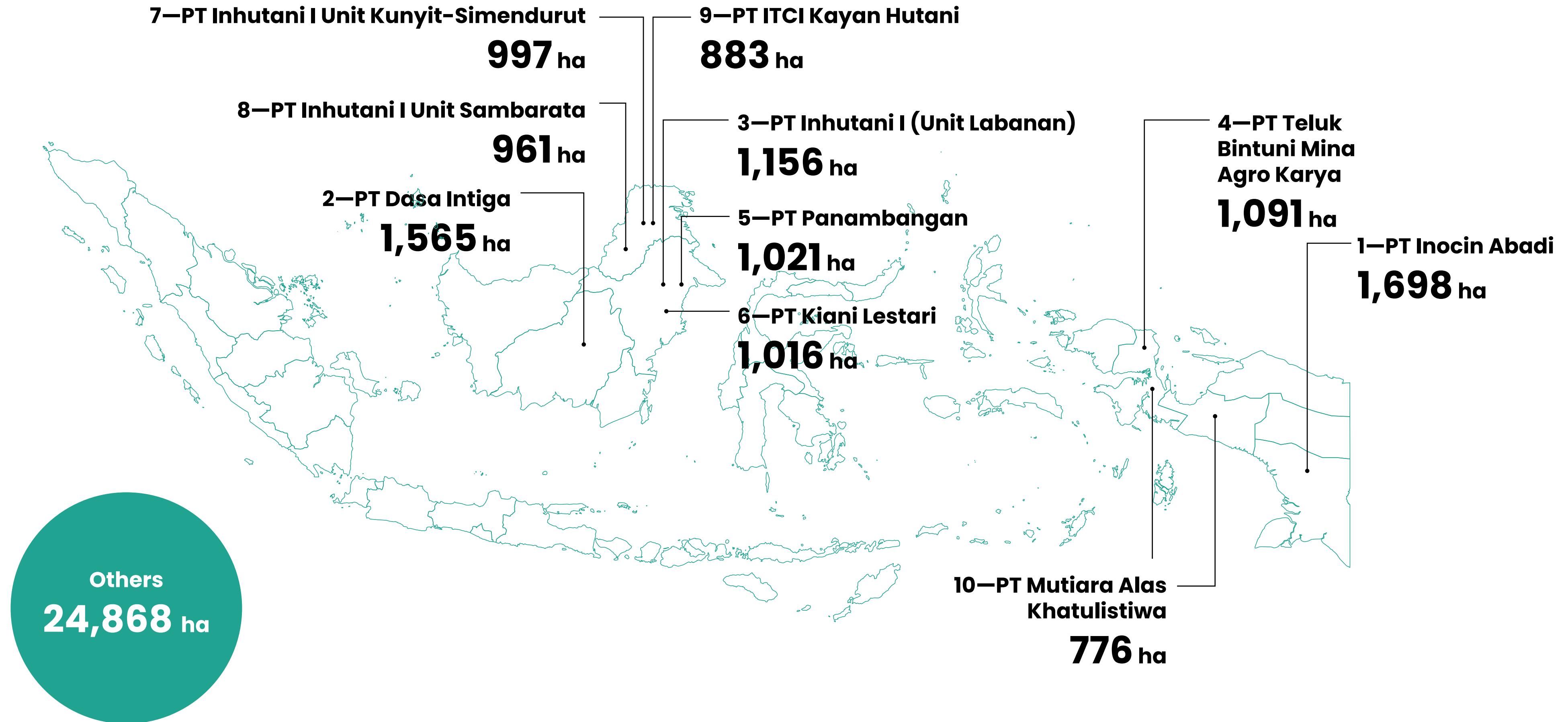
Deforestation inside mining concessions (33,812 ha)



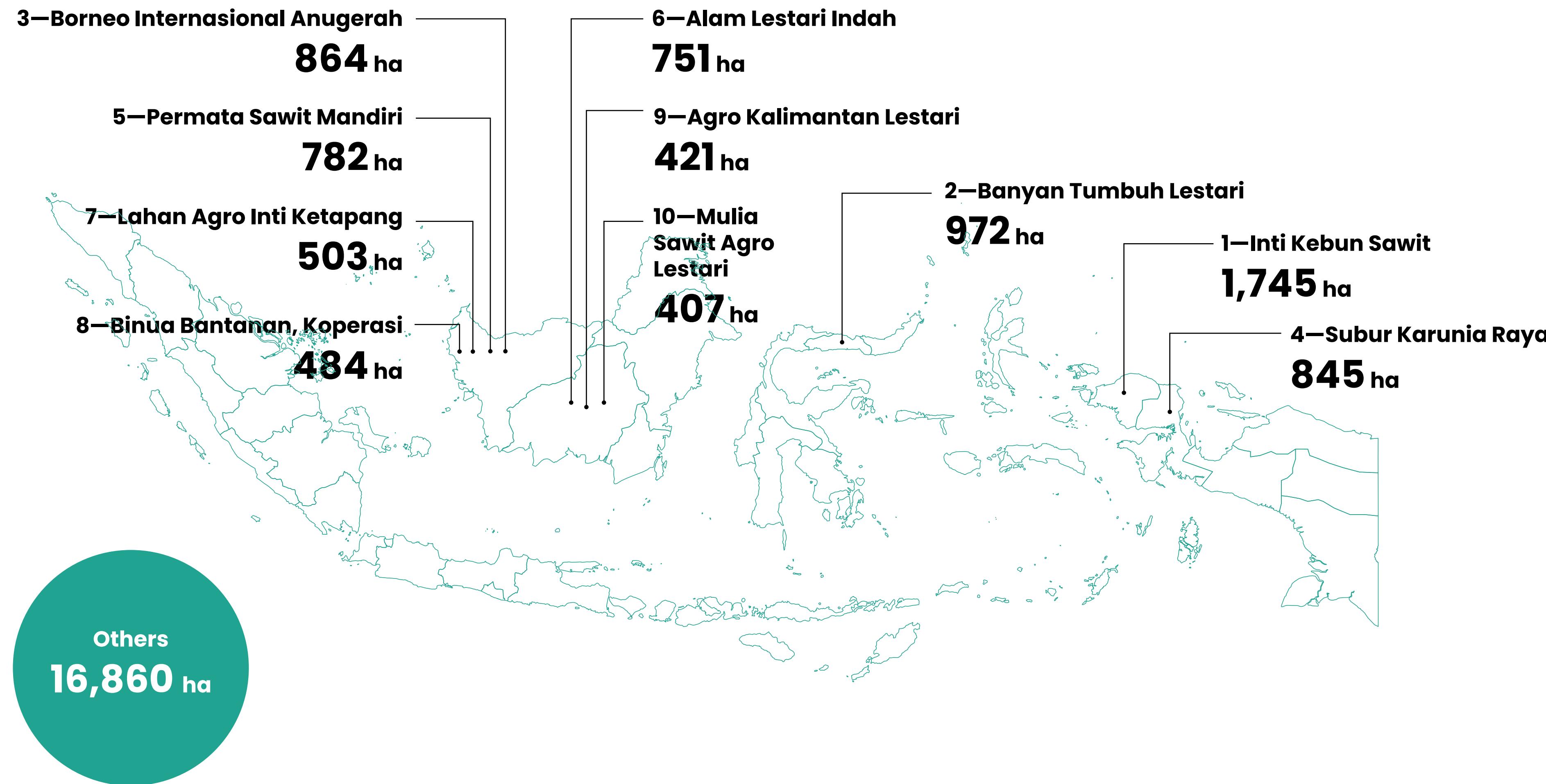
Deforestation inside timber plantation concessions (42,521 ha)



Deforestation inside logging concessions (36,032 ha)



Deforestation inside oil palm plantation concessions (24,634 ha)



DATA DIALOG (deforestation)

1. Different methodologies are highly likely to generate different data outcomes → such variety is necessary to present a comprehensive picture of deforestation, including identifying problems and causes.
1. Deforestation data for 2023 is available and can be accessed via Simontini at: <https://simontini.id/>

The government should make a legal breakthrough – like issuing a presidential regulation – to protect all remaining natural forest.