

FORESTRY STATISTICS OF INDONESIA AND KOREA



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1. Status of National Land Use (2014-2019)

Year	Korea			Indonesia		
	Whole Country (ha)	Forest (ha)	Non-Forest (ha)	Whole Country (ha)	Forest (ha)	Non-Forest (ha)
2014	10,028,395	6,408,069	3,620,326	187,751,900	95,766,400	91,985,500
2015	10,029,535	6,400,272	3,629,262	187,751,900	95,028,000	92,723,900
2016	10,033,949	6,391,839	3,642,109	187,751,900	95,271,900	92,480,000
2017	10,036,372	6,383,441	3,652,931	187,751,900	93,949,700	93,802,100
2018	10,037,767	6,371,052	3,666,714	187,751,900	93,526,200	94,225,700
2019	10,040,128	6,363,549	3,676,580	187,751,900	94,114,100	93,637,800

Source: 2020 Statistical Yearbook of Forestry Korea and Statistics Indonesia (Retrieved from <https://www.bps.go.id/statictable/2020/07/13/2110/rekapitulasi-luas-penutupan-lahan-hutan-dan-non-hutan-menurut-provinsi-tahun-2014-2019-ribu-ha-.html>)

According to the table, the Forest area in Korea decreased while the Non-Forest area increased. Non-forest area includes paddy field, upland, marsh, miscellaneous areas, factory sites, pastures, roads, rivers, building sites, ditches, orchards, school sites, burial sites, and others. Meanwhile, the Indonesian forest area and non-forest area both decreased and increased throughout the five years. The lowest forest coverage was in 2019 (94,114,100 ha), and the highest coverage was in 2014 (95,766,400 ha). For non-forest, the lowest was in 2014 (91,985,500 ha) and the highest was in 2018 (94,225,700 ha).

In my opinion, the decrease in forested land and the increase in non-forested land in Korea happened due to the rise in population. The government converted forested areas to build more apartment buildings to accommodate the new generation. On the other hand, the ups and downs of forest and non-forested areas in Indonesia happened as a result of policy changes. There were production forests or social forest expansion, forest fires, agrarian reform, and so on. A larger country means more dynamics.

2. Population Projections

Year	Korea (person)	Indonesia (person)
2020	51,780,579	271,066,400
2025	51,905,126	284,829,000
2030	51,926,953	296,405,100
2035	51,629,895	305,652,400

Source: 2020 Statistical Yearbook of Forestry Korea and Statistics Indonesia (Retrieved from <https://www.bps.go.id/statictable/2014/02/18/1274/proyeksi-penduduk-menurut-provinsi-2010---2035.html>)

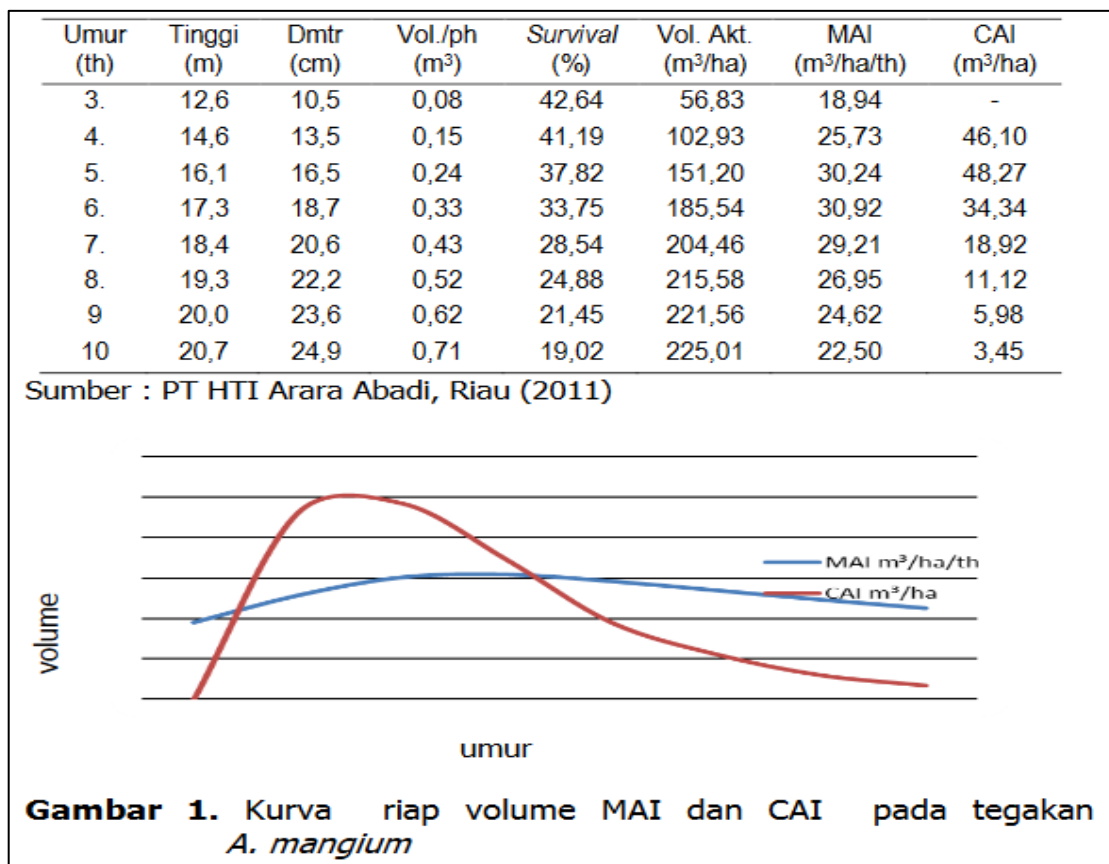
As stated in the table, the Korean population is expected to decrease in 2035, while the Indonesian population is expected to keep escalating. This phenomenon may be caused by the number of the productive population. Korea has a lower number since its youngsters tend not to have children and focus on their careers instead. In the meantime, the Indonesian birth rate keeps increasing. Young married couples in Indonesia still want to have children even though they're working.

3. Forest Area and Growing Stock by Province

There is no public data about Indonesian Forest Area and Growing Stock by Province. For Korean case, as mentioned in 2020 Statistical Yearbook of Forestry Korea, in 2019 Gangwon-do has the highest growing stock per ha (178.6) while Jeollanam-do has the lowest (124.8).

4. Forest Area and Growing Stock by Year

There is no public data about the Indonesian Forest Area and Growing Stock by Year. Nevertheless, according to the Development of Sustainable Industrial Plantation Forest to Support Pulp and Paper Industry in Indonesia (10 December 2020) presented by the Director of Production Forest Business Development at the Ministry of Environment and Forestry, Republic of Indonesia, there is some information about Industrial Plantation Forest productivity. The table and the line chart below show the research results on the productivity of PT. Arara Abadi before harvesting to assess Mean Annual Increment (MAI) dan Current Annual Increment (CAI):



Each Industrial Plantation Forest company having same species planted (for example *Acacia sp.*), may generate different productivity:

- PT. Arara Abadi in Riau Province could reach MAI 37 M³/Ha/year (4y rotation)
- PT. RAPP in Riau Province could reach MAI 25 M³/Ha/year (4-6 y rotation)
- PT. Musi Hutan Persada in South Sumatera Province could reach MAI 19 M³/Ha/year (6 year rotation)
- PT. Bumi Andalas Permai in South Sumatera Province could reach MAI 30 M³/Ha/year (4 year rotation)
- On average, in 2019, Indonesian Industrial Plantation Forest could reach ± 112 M³/Ha/rotation

5. 2015 Forest Area and % of Forest Area by Ownership

Korea and Indonesia have different forestry ownership systems. Below is the Korean 2015 Forest Area by Ownership.

a. National Forest

Land Area (ha)	Subtotal (ha)	Under Korea Forest Service			Under other government authorities (ha)
		Subtotal (ha)	Indispensable (ha)	Dispensable (ha)	
10,029,535	1,617,658	1,471,527	1,437,805	33,722	146,131

b. Non-national Forest

Land Area (ha)	Subtotal (ha)	Public Forest			Private Forest (ha)
		Subtotal (ha)	Provincial Forest (ha)	County Forest (ha)	
10,029,535	4,716,957	467,072	162,826	304,246	4,249,885

Both National and Non-national Forest combined is 6,334,615 ha, which took 63.17% of the whole land area. Meanwhile, Indonesia held 120.6 million hectares of land, and 63% of its total land area is designated as the national Forest Area, with most of the remaining public land being designated for other purposes (*Areal Penggunaan Lain*, or APL). In addition, 5.3 million hectares of its territorial waters have been designated as marine conservation areas (*kawasan konservasi perairan*) within the mandate of the Ministry of Environment and Forestry. These public forests and marine protected areas are designated on the basis of a Decree of the Minister of Environment and Forestry on the Extent of Indonesia's Forest Area and Marine Conservation Areas. As of December 2017, the total of these areas stood at 125.9 million hectares (The State of Indonesia's Forest 2018, Ministry of Environment and Forestry, Republic of Indonesia). Forest areas itself described as follows:

Land Use	Coverage (ha)	Unit
Production Forest	29,200,000	68
Limited Production Forest	26,700,000	
Convertible Production Forest	12,800,000	
Non-forest Areas	67,300,000	
Protection Forest	29,600,000	29
Conservation Forest	21,000,000	21

6. 2015 Forest Growing Stock and Growing Stock per Hectare by Ownership

There is no public data about the 2015 Indonesian Forest Growing Stock and Growing Stock per Hectare by Ownership.

7. 2015 Forest Area and Growing Stock by Forest Types and Age Classes

There is no public data about the 2015 Indonesian Forest Area and Growing Stock by Forest Types and Age Classes.

8. 2015 Forest Area and Growing Stock by Forest Types, Forest Land Classifications, and Age Classes
There is no public data about the 2015 Indonesian Forest Area and Growing Stock by Forest Types, Forest Land Classifications and Age Classes.
9. 2015 Forest Area and Growing Stock by Key Tree Species
There is no public data about the 2015 Indonesian Forest Area and Growing Stock by Key Tree Species.
10. Forest Fire Damages
There is no public data about Indonesian Forest Fire Damages based on causes. On the other hand, below are the numbers of reductions in forest and land fires from 2015 to 2017.

a. Fire Hotspot

Year	NOAA Satellite		TerraAqua Satellite		Trans boundary Haze Incident
	Number of Hotspot	Decreasing from Previous Year (%)	Number of Hotspot	Decreasing from Previous Year (%)	
2015	21,929		70,971		22 days
2016	3,915	82.15	3,844	94.58	4 days
2017	2,581	34.07	2,440	36.52	0 days

Source: The State of Indonesia's Forest 2018, Ministry of Environment and Forestry
Republic of Indonesia

b. Burnt Area (in hectares)

Year	Peat Land	Mineral Land	Total	Decreasing from Previous Year (%)	Emergency Response Day
2015	891,275	1,720,136	2,611,411		151 days
2016	97,787	340,576	438,363	83.21	0 days
2017	13,555	151,929	165,484	62.25	0 days

Source: The State of Indonesia's Forest 2018, Ministry of Environment and Forestry
Republic of Indonesia

Most of the forest fires in Indonesia came from land clearing conducted by the local community. As mentioned by the Ministry of Environment and Forestry (2018), community empowerment programs are conducted to establish community-level firefighting units and fire-free villages. Four thousand and one (4,001) Fire-Aware Villages (*Desa Peduli Api*) have been established with support provided by the Ministry of Environment and Forestry, district-level governments, and the private sector. Meanwhile, private-sector-supported Fire-Free Village (*Program Desa Bebas Api*) programs have been established in 218 villages. Community-level livelihood improvement programs have been facilitated in 87 Villages. Training has been provided to 56 villages. A land preparation without burning program has also been implemented to encourage communities to engage in activities such as composting, charcoal briquetting, vinegar production, and so on. One of many examples of the application of the program for land clearing without burning (*Pengolahan Lahan Tanpa Bakar*, PLTB),

is the one implemented by Mr. Taman, a member of the community from Klampangan Village, Palangkaraya City, Central Kalimantan province. He practiced fire-free peatland management through a combination of the productive planting of crops, the intercropping of Jelutung (*Dyera lowii*) with annual crops, and the drilling of wells.

11. Forest Diseases and Pests

There is no public data about Indonesian Forest Diseases and Pests.

12. Damages from Illegal Forest Activities

Illegal Forest Activities in Korea include secret logging, unlicensed cutting, illegal conversion of forest to other uses, and others. In 2019, the number of cases reached 3,121 cases with a total area of 895 ha, 219,808 m³ timber volume, and KRW 52,638,922 damages. On the other hand, in the period from 2015 to 2017, 13 cases of civil law enforcement were brought by the Ministry of Environment and Forestry Republic of Indonesia. Of these, 10 were brought to trial. Of these 13 cases, five resulted in *inkracht van gewijsde* or final legally binding judgments. The total penalty for compensation and restoration costs associated with environmental damage amounted to IDR 16.75 trillion or USD 1.2 billion (KLHK, 2018g in The State of Indonesia's Forest 2018, Ministry of Environment and Forestry, Republic of Indonesia). Further results of civil law enforcement are described as follows.

Type of Violation	Number of Companies				Damages Sought and Rewarded	
	Court Process	<i>Inkracht Van Gewijsde</i>	Court Decision	Total	Final Verdict in IDR	Damages Sought in IDR
Forest and Land Fires	1	3	6	10	474.22 billion	11.76 trillion
Environmental Damage	1	2		3	16.28 billion	27.48 trillion
Total	2	5	6	13	16.75 trillion	39.25 trillion

13. Status of Forest Land Conversion

There is no public data about the Indonesian Status of Forest Land Conversion.

14. Forest Protected Areas

There is no public data about Indonesian Forest Protected Areas. Meanwhile, according to the Ministry of Environment and Forestry Republic of Indonesia (2018), Protection forests play a major strategic role in protecting environmental life-support systems by regulating water supplies; preventing floods; controlling erosion; preventing sea water intrusion; maintaining soil fertility; providing adequate food and energy supplies for human life; and the maintenance of germplasm (living genetic resources such as seeds or tissues that are maintained for the purpose of animal and plant breeding, preservation, and research uses). In recognition of this vital role, the management of Protection Forests by dedicated Protection Forest Management Units (*Kesatuan Pengelolaan Hutan Lindung*, KPHL) is required at the ground level. At an operational level, the management of protected forests involves issues related to governance, protection, and rehabilitation. All these activities are now being conducted by a growing number of KPHL in cooperation with community stakeholders, with an emphasis on non-timber forest products and the provision of environmental services for community prosperity.

15. Area of Plantation Forests

Korean plantation forest is divided into coniferous forest (red pine, Korean pine, Japanese larch, pitch pine, Japanese red cedar, and others) and non-coniferous forest (chestnut and other species). On the contrary, there is no public data about the Indonesian Area of Plantation Forests based on tree species. Below is the number and extent of forest use licenses granted in Production Forest areas from 2011 to 2017.

Year	IUPHHK-HA		IUPHHK-HT		IUPHHK-RE	
	Natural Forest Selective Felling		Industrial Plantation Forests		Ecosystem Restoration	
	Extent (Mha)	Number of Units	Extent (Mha)	Number of Units	Extent (Mha)	Number of Units
2011	9.17	215	9.63	233	0.20	4
2012	9.83	238	9.83	238	0.22	5
2013	21.08	277	10.11	254	0.40	9
2014	20.13	273	10.54	277	0.52	13
2015	19.20	263	10.70	280	0.55	14
2016	19.30	268	10.84	286	0.62	16
2017	18.81	259	11.18	293	0.62	16

Note:
 IUPHHK-HA = *Izin Usaha Pemanfaatan Hasil Hutan Kayu Hutan Alam* (Business License for the Utilization of Timber Forest Products in Natural Forest)
 IUPHHK-HT = *Izin Usaha Pemanfaatan Hasil Hutan Kayu Hutan Tanaman* (Business License for the Utilization of Timber Forest Products in Plantation Forest)
 IUPHHK-RE = *Izin Usaha Pemanfaatan Hasil Hutan Kayu Restorasi Ekosistem* (Business License for the Utilization of Timber Forest Products in Ecosystem Restoration Forest)
 Mha = millions of hectares

Source: The State of Indonesia's Forest 2018, Ministry of Environment and Forestry Republic of Indonesia

Natural Forest Selective Felling and Industrial Plantation Forest are focused on timber production of round timber, sawn timber, plywood & LVL, chip wood, veneer, and pulp. In contrast, ecosystem restoration or IUPHHK-RE is a business license for developing the production forest area so that biodiversity and ecosystem balance can be maintained. Ecosystem restoration areas have a potentially important role to play in reducing carbon dioxide emissions and increasing the forest's carbon stock. These will be achieved through activities such as forest rehabilitation, conservation and maintenance of the forest, as protection from forest fires. The ecosystem restoration business is a multi-faceted business with multiple products, because it involves different types of businesses that may utilize the area (like eco-tourism), non-timber forest products, and ecosystem services. These multiple forms of businesses can operate even before ecosystem balance is restored. Forestry licences can contribute to the climate change mitigation through carbon market schemes, including Business Licenses for Utilization of Forest for Carbon Sequestration and/or Carbon Storage (IUP RAP/IUP PAN Karbon), which are now being awarded to some businesses (Ministry of Environment and Forestry Republic of Indonesia 2018).

16. Results of Tending Forests

There is no public data about Indonesian Results of Tending Forests.

17. Number of Households and Population Engaged in the Forestry Sector

There is no public data about Indonesian Number of Households and Population Engaged in the Forestry Sector. On the other hand, below is the Number and Percentage of Households in the Surrounding Forest Areas Who Practice Shifting Cultivation, 2004 and 2014 2004-2014.

Forest Areas	Number and Percentage of Households in the Surrounding Forest Areas Who Practice Shifting Cultivation, 2004 and 2014	
	2004	2014
Number of Households in the Surrounding Forest Areas	7,804,970.00	8,643,228.00
Number of Households in the Surrounding Forest Areas Who Practice Shifting Cultivation	259,959.00	242,866.00
Percentage of Households in the Surrounding Forest Areas Who Practice Shifting Cultivation	3.33	2.81

Source: 2020 Statistical Yearbook of Forestry Korea and Statistics Indonesia (Retrieved from <https://www.bps.go.id/indicator/60/1020/1/jumlah-dan-persentase-rumah-tangga-di-sekitar-kawasan-hutan-yang-melakukan-perladangan-berpindah-2004-dan-2014.html>)

Forest area is designated a particular region or set by the government to be protected as permanent forest. Households in the surrounding forest areas are households who live in rural villages in the inside and on the edge of the forest area. Shifting cultivation is an agricultural business activities that cultivate seasonal crops/food crops traditionally/shits inside and outside the forest area without attention to the preservation of forest resources, land, and water. Data Cited from Statistical Yearbook of Indonesia 2015 (Statistics Indonesia 2015).

18. Forest Households by Type of Work

There is no public data about Indonesian Forest Households by Type of Work.

19. Forest Households by Type of Economic Activity

There is no public data about Indonesian Forest Households by Type of Economic Activity.

20. Preparation of Forest Management Plan

There is no public data about Indonesian Preparation of Forest Management Plan.

21. Construction of Forest Roads

There is no public data about Indonesian Construction of Forest Roads.

22. Status of Private Forest Land Owners by Land Area Size

There is no public data about Indonesian Status of Private Forest Land Owners by Land Area Size.

23. Population Status by Age in Mountain Village

There is no public data about Indonesian Population Status by Age in Mountain Village.