



The Eleventh Hour for Riau's Forests

Two global pulp and paper companies will decide their fate

WWF Indonesia
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Introduction

This background document provides an overview of the state of the forests in Sumatra's Riau province. It documents the province's rapid rate of forest loss over the last two decades associated with the expansion of two industries – paper and palm oil. The report illustrates how Riau's pulp and paper industry, dominated by the two multi-national companies APP and APRIL, is the driving force behind this forest loss.

The report concludes with a call for a 'precautionary approach' to further forest clearing in Riau. It recommends that no natural forest areas should be cleared without prior assessments that identify "high conservation values" and outline measures needed to protect those values. Such measures are urgently needed to protect Riau's last remaining forests and the tigers and elephants they support.

WWF and local NGO partners are continuously monitoring the environmental performance of APRIL and APP. WWF Indonesia is issuing periodic "Monitoring Briefs" on the activities of the two companies, including their contribution to the protection or loss of forest conservation values in Riau. The briefs are posted on the [WWF Indonesia website](#)¹. This document should be viewed in connection with the briefs.

Forest Loss in Riau

Riau Province, on the Indonesian island of Sumatra (Equator and 101°E), is the home of two of the world's largest pulp mills, produces more than two thirds of Indonesia's pulp², and is covered with more timber plantations and more oil palm concessions than any other province in Indonesia³. Between 1988 and 2005, half of Riau's forests disappeared at an average rate of 170,000 hectares per year or 460 hectares per day (Table 1). The loss of some of the most diverse forests on earth (Gillison 2001⁴ and LIPI 2003⁵) is accelerating rapidly. The annual rate of forest cover loss was 2.2% in 2002, 4.2% in 2004 and 6.8% in 2005 (Table 1).

Table 1-- Forest Cover Change between 1982 and 2005 (based on data from [UNEP World Conservation Monitoring Centre](#) [1982], the Indonesian Ministry of Forestry [1988 and 1996], and interpretation of Landsat images by WWF [2000-2005]). See also Map 1.

Year	Total Area (hectares)	% of Riau Mainland Area	Total Forest Loss (hectares)	Years between Analyses	Average Annual Loss (hectares)	Average Annual Loss of Previous Cover (%)
Riau Mainland	8,223,198	-	-	-	-	-
Riau Forest Cover 1982	6,415,655	78%	-	-	-	-
Riau Forest Cover 1988	5,623,601	68%	792,054	6 years	132,009	2.1%
Riau Forest Cover 1996	4,159,823	51%	1,463,778	8 years	182,972	3.3%
Riau Forest Cover 2000	3,363,120	41%	796,703	4 years	199,176	4.8%
Riau Forest Cover 2002	3,216,374	39%	146,746	2 years	73,373	2.2%
Riau Forest Cover 2004	2,944,065	36%	272,310	2 years	136,155	4.2%
Riau Forest Cover 2005	2,743,198	33%	200,867	1 year	200,867	6.8%

As the forests go, so do the species they harbour. [Only one out of four elephants found during surveys in 1985 was still counted in 2003, more have been dying every year since then.](#)⁶ Compressed into smaller and smaller forest patches and forced to feed in the oil palm plantations and fields that replaced their forests, many elephants have clashed with the farmers and plantation managers who have invaded their habitat.

Poisoned, shot and captured, they have been disappearing as fast as their forests⁷ (Figure 1). After a series of high profile elephant killings in late 2005 and early 2006, the Indonesian Minister of Forestry decided to prioritize elephant conservation in Riau Province. Elephant conservation means habitat protection. Habitat protection means forest conservation. Forests important for elephants are high conservation value forests.



Figure 1-- A direct consequence of forest loss: elephant family poisoned near Mahato village in February 2006; one of the ten elephants captured near Libo Forest Block and abandoned without food, water or medical care in March 2006; first of the ten elephants who died on 14 April from tetanus infection in leg wounds cut by extremely tight and rusty chains (Photos: Samsuardi/WWF Indonesia).

Causes of Forest Loss in Riau

The disappearance of Riau's forests is a direct consequence of the rapid expansion of two industries:

1. Since the early 1980s, natural forest has been cleared legally and illegally to establish plantations for the **palm oil industry**. Initially, a few large companies were responsible for the clearing. But since 2000, community groups (local peoples and migrants from other provinces) have been driving most of the conversion of natural forest to oil palm. Companies tacitly support such community "development". Their mills purchase the oil palm crops produced by the communities.
2. Since the mid 1990s, natural forest has been cleared legally and illegally to feed the mills and / or to establish monoculture fibre plantations **of the pulp and paper industry** ("industrial timber plantations" or HTI).

Whether in the name of oil palm or of timber plantation development, forest clearing in Riau has provided a steady source of mixed tropical hardwood (MTH) for the two resident pulp & paper companies – **Asia Pulp & Paper Co. Ltd. (APP)** and **Asia Pacific Resources International Holdings, Ltd. (APRIL)**. Often the development of those plantations was licensed, but sometimes the forests were cleared illegally. Sometimes the forests were cleared and the plantations were not even established. The operators were only interested in the timber and did not invest in the planting. The land was left barren with the forest gone, elephant and tiger habitat destroyed, the soil eroding and an economic opportunity wasted. The pulp companies' arrival in Riau and their insatiable hunger for "any" wood thus created a market for wood from sometimes illegal, often questionable but always unsustainable conversion of forests to plantations or wastelands.

Since 2001, WWF has urged both resident pulp mills to refuse wood from illegal or "dubious" sources to remove this market incentive for illegal forest clearing. The results were mixed. During occasional spot checks, WWF's Forest Crime Unit found that APRIL accepted illegally harvested logs from the Tesso Nilo Forest Block as late as September 2002 and APP as late as July 2004. *Eyes on the Forest (EoF)*, a joint project of WWF and two Riau NGO networks **Jikalauhari** and **Walhi Riau** that investigates the chain of custody of timber from Riau's natural forests to the final buyers, found evidence that APP accepted wood from illegal sources on two occasions in 2005. According to an *EoF* investigation in March 2005⁸, a truck loaded timber from an illegal logging operation in Libo Forest block on 17 March 2005 and delivered the timber to the APP mill on 18 March 2005. According to an *EoF* investigation in May 2005⁹, three trucks loaded timber from illegal logging operations in Senepis forest block on 27 May 2005, and delivered the timber to the APP mill on 28 May 2005. According to *EoF* reports, both APP and APRIL were sourcing timber from highly questionable Bupati licences as late as May 2006¹⁰. The Central Government is now verifying the questionable licenses that "allowed" the sourcing of that timber.

Government policy allows the establishment of timber plantations only on barren land, grasslands, bush, or

very degraded forest. Companies are requested to micro-delineate and maintain healthy productive forests and forests with conservation values before establishing timber plantations. Inspections of company operations on the ground and interpretation of satellite images clearly show that this has not occurred.

Forest Loss and Pulp Mills

Today, APP and APRIL together produce around 4.2 million tons of pulp annually in Riau. Both companies are creating timber plantations and are slowly increasing the supply of plantation wood to their mills. However, the proportion of plantation fibre in their total wood supply is still very low. The best available estimates from 2004 and 2005 indicate that both mills still relied on the clearing of natural forests for about 70 percent of their total wood supply. Applying conversion factors for processing wood into pulp used by AMEC, a Canadian consulting firm hired to audit APP's wood supply in 2003, WWF calculated that about 170,000 hectares of natural forests were cleared to feed APP and APRIL's pulp mills in Riau in 2005¹¹. This number is remarkably close to the average annual loss of 160,000 hectares of Riau forest detected on satellite images between 2002 and 2005 or the 200,000 hectares of forest loss between 2004 and 2005 (Table 1). Interestingly, annual forest loss in Riau dramatically slowed to an average of 75,000 hectares annually between 2000 and 2002 (Table 1), the two years after APRIL and especially APP (with a US\$13.9 billion debt) slid into a major financial crisis.

Data published by *Eyes on the Forest*¹² illustrate the vast control pulp giants APP and APRIL have over the fate of Riau's forests. In 2005, timber plantation concessions covered 21.5% (1,771,376 hectares) of Riau's mainland area (Table 2, Map 1). 38.1% (674,765 hectares) of that area was still covered by natural forest, representing one quarter (24.6%) of the natural forest remaining in Riau. The two companies will therefore decide the fate of a quarter of Riau's remaining natural forest, they will determine whether this forest is protected from their own clearing operations, illegal loggers, and/or forest fires. 103,205 hectares of natural forests were cleared inside timber plantation concessions between 2004 and 2005 (Table 2). But 170,000 hectares of natural forests are estimated to have been pulped by APP and APRIL during that time. About 40% of the mills' natural wood supply thus came from other areas: forests legally and illegally cleared mostly inside of concessions dedicated to the establishment of oil palm plantations.

Table 2-- Timber Plantation Concessions and Natural Forest Cover in Riau and Jambi and Relationships with APP and APRIL.

	Size of Area (ha)	% Riau Mainland Area	% Total Timber Plantation Concessions in Riau	Forest Cover 2004 (ha)	% Forest Cover 2004 in Mainland	% Forest Cover in Concessions	Forest Cover 2005 (ha)	% Forest Cover 2005 in Mainland	% Forest Cover in Concessions	Forest Loss (ha) 2004-2005
Riau Mainland	8,223,198	-	-	2,944,065	35.8%	-	2,743,198	33.4%	-	200,867
APP Associated Timber Concession in Riau Mainland	679,424	8.3%	37.1%	228,377	7.8%	33.6%	198,629	7.2%	29.2%	29,748
APRIL Associated Timber Concession in Riau Mainland*1	546,629	6.6%	29.9%	193,899	6.6%	35.5%	156,096	5.7%	28.6%	37,803
Timber Concessions with unknown association in Riau Mainland	545,323	6.6%	29.8%	349,591	11.9%	64.1%	320,040	11.7%	58.7%	29,550
Subtotal: Timber Concession in Riau Mainland	1,771,376	21.5%	96.8%	771,867	26.2%	43.6%	674,765	24.6%	38.1%	97,101
APRIL Associated Timber Concession on Riau Islands	57,807	-	3.2%	31,117	-	53.8%	25,013	-	43.3%	6,104
Total: Timber Concession in Riau Mainland & Island	1,829,183	-	100.0%	802,984	-	43.9%	699,779	-	38.3%	103,205

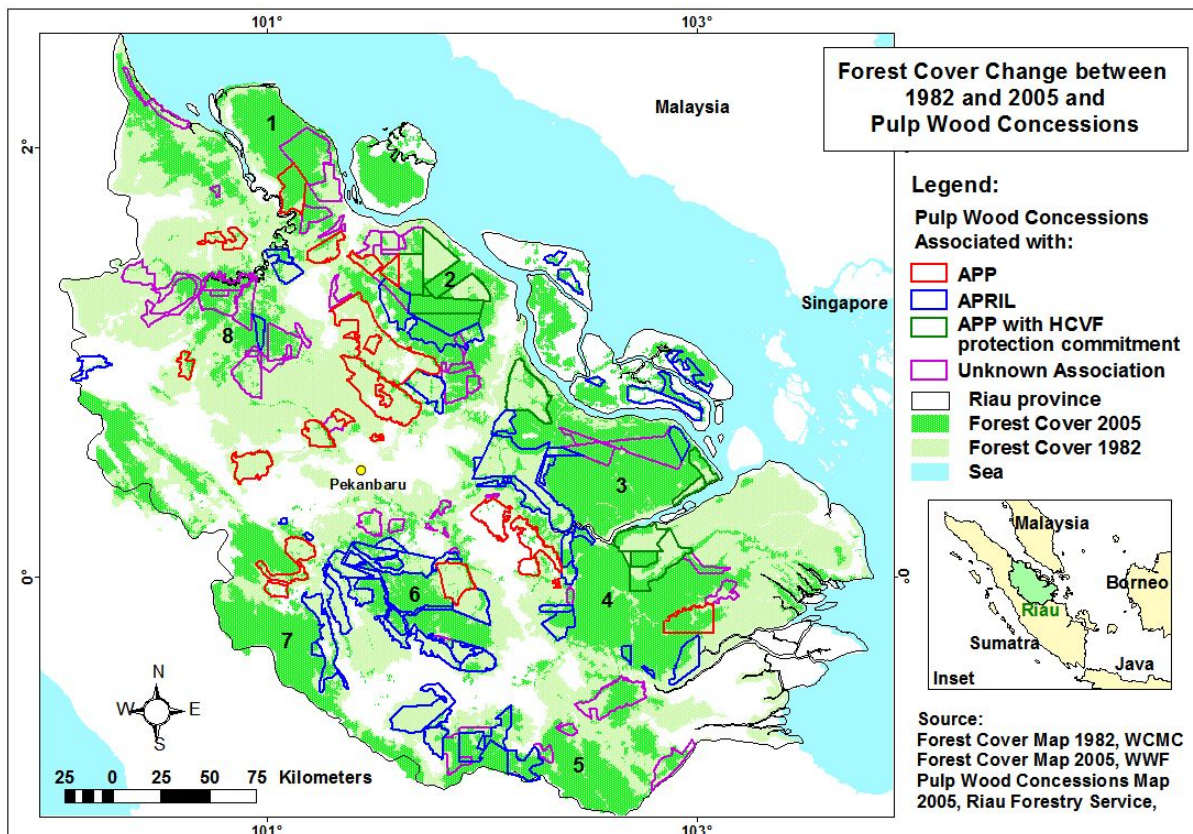
*1 Three concessions which APRIL considers "not feasible for plantation" are excluded from the calculation.

(Data Sources: Size of Area (hectares): Dinas Kehutanan, Forest Cover 2004 and 2005: WWF Indonesia, Associated Pulp Mill: Dinas Kehutanan, APRIL, public documents by APP.)

Riau's Forests with High Conservation Values

In 2003, WWF Indonesia commissioned a study to identify Riau's forests with high conservation values using *The High Conservation Value Forest (HCVF) Toolkit for Indonesia*¹³. The preliminary HCVF

analysis¹⁴ identified eight remaining large forest blocks, scattered across Riau (Map 1). The authors considered each to be a HCVF under the *precautionary principle* as they were large landscape level forests (High Conservation Value 2) that likely hosted viable populations of rare, threatened and endangered species, such as Sumatran elephants and tigers (High Conservation Value 1). They were to be protected by the forest managers until more detailed studies had been conducted. The HCVF Toolkit for Indonesia states: “An important component of the management of HCVFs is the application of the Precautionary Approach. HCVFs are, by definition, the most important forests from a conservation or social perspective (depending on the HCVs identified). Therefore, it is critically important that the values identified are not lost. But with the current level of knowledge about forests and how they function, it is not possible to be sure in every case that a particular management strategy will work. Therefore, it is essential to use the precautionary approach when dealing with HCVFs.”



Map 0-- Change of Forest Cover from 1982 to 2005 and Timber Plantation Concessions. Eight major forest blocks remaining in Riau: 1. Senepis, 2. Giam Siak Kecil, 3. Kampar Peninsula, 4. Kerumutan, 5. Bukit Tigapuluh, 6. Tesso Nilo, 7. Rimbang Baling and 8. Libo Forest Blocks.

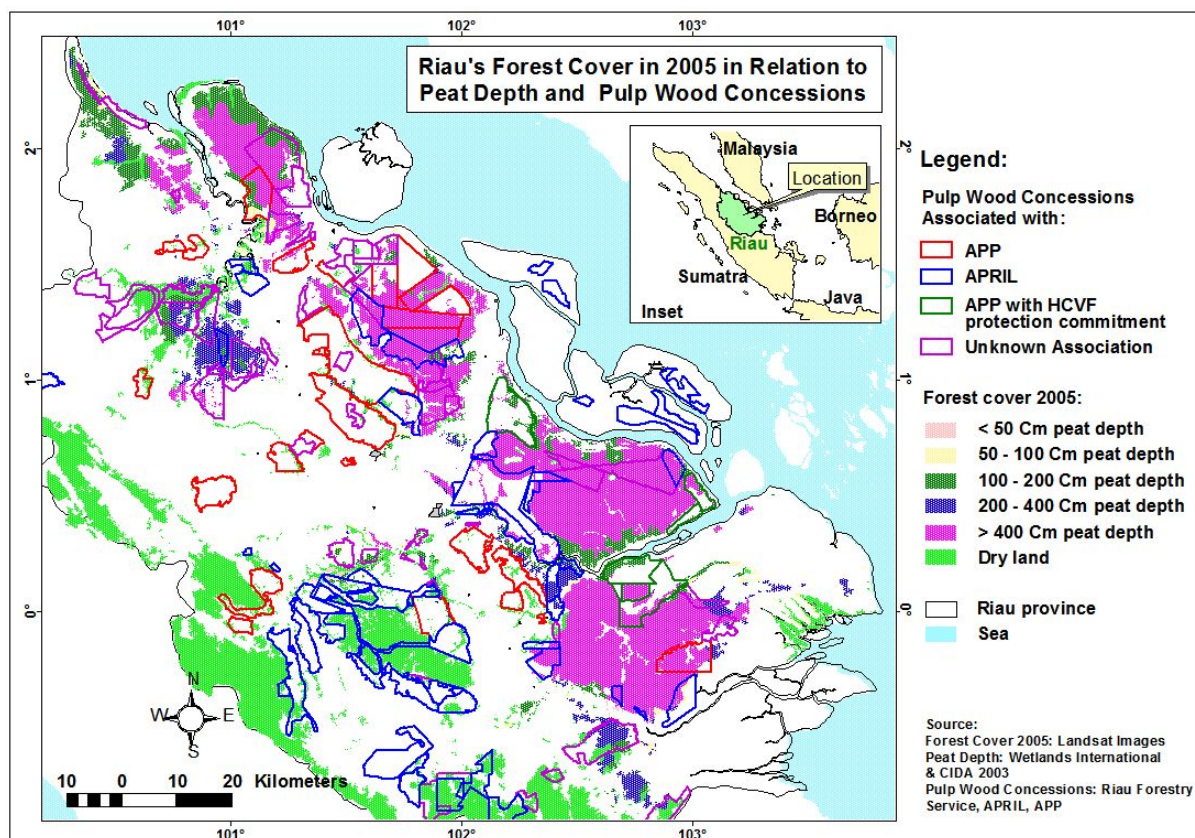
Since the original HCVF study, several of the eight potential HCVF blocks have been studied in more detail¹⁵. These studies influenced both of Riau’s resident pulp and paper companies to make commitments. APP committed to protect HCVF identified in four of its Forest Management Units (see the WWF Monitoring Brief on APP) but continues logging in all others. APRIL went far beyond APP’s commitments by deciding to not convert any more natural forest until their conservation values have been mapped and protected. APRIL’s President of Global Fibre Supply said: “It is our policy that we do not source fibre from areas of high conservation value. The process of identification of High Conservation Value Forests is further reinforced with the Indonesian HCVF Assessment Toolkit which was developed and published in 2003”¹⁶.

In Riau, identification and protection of HCVF, whether or not valid government licences to convert the natural forest have been issued, is more important than ever. As more and more natural forests are fragmented and eventually cleared to produce paper and palm oil for the world market, the value of the remaining forests dramatically increases – for biodiversity and pharmaceutical resources, for the endangered Sumatran elephants and tigers they host, and for the local communities who depend on them. These values have to be identified and protected as soon as possible.

Already, Riau's elephants and tigers have run out of space. If forest loss and degradation continue, [Riau's Elephant Tragedy](#)¹⁷ will escalate. It will soon be matched by a Tiger Tragedy, eventually leading to the local extinction of these species.

The environmental services provided by Riau's forests, including their hydrological and carbon storage functions, will further deteriorate. Floods, power outages and epidemics will get worse. The annual forest and land fires in Riau's peat lands will further increase as will their enormous impact on public health and global warming.

Tropical peatlands play a crucial global role in carbon storage and climate moderation, and 13% of all of Southeast Asia's peatlands are found in Riau. As Riau's dry lowland forests began to disappear, Riau's plantation industries turned to the province's peatlands with often catastrophic results such as collapsing peat domes and failing oil palm and timber plantations. On 26 January 2006, the "[Riau Declaration on Peatlands and Climate Change](#)¹⁸" was endorsed by experts on peat land and global climate issues from 12 countries at a workshop entitled "Vulnerability of Carbon Pools in Tropical Peatlands." The declaration recommended that all stakeholders "*stop the further conversion and/or drainage of deep peat and peat domes*" and take all necessary actions for rehabilitation and responsible use of tropical peat lands. The declaration concludes that the emission of carbon dioxide from peatlands in Southeast Asia caused by unsustainable management practices (drainage of peat for oil palm and timber plantations, agriculture, unsustainable logging, forest and land fires) are one of the single largest sources of green house gas emissions globally, equivalent to 10% of the average global fossil fuel emission over the past 10 years. Riau's plantation industries, with their continued clearance of natural forests on peatlands, their drainage and following soil subsidence of peatlands for plantation development, and the often rampant forest and land fires within their concessions, are thus major contributors to global warming.



Map 0-- Riau Forest Cover in 2005 related to Peat Depth and Timber Plantation Concessions. Forests in 'pink' are above peat with depths of more than four meters. Some forests in 'blue' may also be above peat with depths of more than three meters.

From a legal standpoint, development of plantations on peat lands is highly problematic. The government of Indonesia prohibits the clearing of forest above peat with depths of more than three metres¹⁹. Many of Riau's peat lands are deeper than 3 metres, yet many timber plantation concessions are located on such soils (Map 2,

all forests in pink and some of the forests in blue). These forests should not be cleared. Existing government laws are already in place to prevent many of the catastrophic effects caused by the clearance of peat forests predicted above. Companies could easily avoid causing such effects by abiding by existing laws and regulations.

WWF Calls for 100% HCVF-Free Fibre Supplies

For both companies, it is unlikely that the wood supply in 2006 will be very different from that in 2005. A similar amount of natural forest is likely to be converted to supply the two pulp mills this year. For several years, both companies have promised their customers short deadlines by which they would exclusively provide pulp and paper made from plantation fibre. Currently, [APRIL promises to be natural wood free by 2009²⁰](#), and [APP promises to reach that target by 2008²¹](#). Yet WWF has received reports from various sources that APP's acacia plantations, especially those in their third generation and on peatlands, are failing. APRIL's plantations are younger. The quality of their peatland plantations and the viability of their third generations remain to be seen. As both companies are unwilling to reduce production at their respective pulp mills, large scale failures of plantations on precarious soils would mean that natural forest will remain the mills' main source of fibre for a long time to come.

APRIL has publicly committed to protect and exclude all high conservation value forests from its global wood supply and will thus look for non-HCVF alternatives should its plantations suffer the same fate as APP's.

APP has not made such a far reaching commitment. Instead, the company's position to maintain and increase its mills' productions combined with the fact that its plantations are failing spell doom for Riau's forests (see 'WWF Monitoring Brief' on APP).

To protect what remains of Riau's forests, WWF recommends that no conversion license should be issued, or forest cleared, without a prior assessment of high conservation values in the forest and surrounding landscape and identification of measures needed to maintain and enhance such values. Such assessments should apply the *High Conservation Value Toolkit for Indonesia*, which recognizes several conservation values of forests: their biodiversity, their function as habitat for key endangered species, the environmental services they provide for downstream cities and communities, and their cultural and economic importance for local communities. This approach should be supported by all actors – government, companies and community groups involved in forest clearing, companies using or buying paper products sourced from Riau's pulp mills, and companies buying or using palm oil sourced from Riau.

Paper buying companies can contribute to the conservation of Riau's forests. They can review their supply chains to ensure they do not include producers who source any of their fibre illegally or by clearing forests likely to contain high conservation values. Where there is a risk of dealing with a producer some of whose products may contain timber from such "unwanted sources", buyers can request their supplier to verify that all of their fibre is from environmentally and socially responsible sources. If suppliers do not provide such assurances, buyers can direct their business elsewhere. However, if individual suppliers are responsive (e.g. by running HCVF-free corporate wide operations), buyers can reward their efforts by offering "preferred supplier" status.

Monitoring by WWF Indonesia and Eyes on the Forest

WWF Indonesia and *Eyes on the Forest* will continue to monitor APP and APRIL's forestry operations and wood sourcing, and publish the data on: <http://www.eyesontheforest.or.id/>. The site has a subscription service for those who wish to receive alerts on new postings of news or investigative reports.

WWF Indonesia will issue periodic "Monitoring Briefs" on the activities of the two companies, including their contribution to the protection, or further loss, of forest conservation values in Riau. These briefs will be posted at [WWF Indonesia's website²²](#).

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- ¹⁰ Eyes on the Forest Investigative Reports, available at <http://www.eyesontheforest.or.id/>
- ¹¹ Forest to pulp conversion based on AMEC data: 4.2 m tons of total pulp production x 4.5 (wood to pulp ratio) x 1.13 (wood ton to m³ ratio) x 70% (share of MTH among the total wood supply) x 1.235 (adding 23.5% harvest & transport yield losses) / 110 (average timber standing volume per hectares of natural forest) = 167,847 hectares per year.
- ¹² Eyes on the Forest Interactive Map: <http://maps.eyesontheforest.or.id/Home/index.html>
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