

THE RAMIN PAPER TRAIL:

FROM INDISCRIMINATE CLEARANCE OF SUMATRA'S PEAT SWAMP FORESTS TO ASIA PULP & PAPER'S EXPANDING GLOBAL EMPIRE

WHY THE UNITED NATIONS CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES (CITES) MUST ACT TO PREVENT THE PULP SECTOR IN INDONESIA DRIVING RAMIN AND SUMATRAN TIGERS CLOSER TO EXTINCTION

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SUMMARY: THE RAMIN PAPER TRAIL

This investigation documents illegal ramin – an internationally protected tree species – at Asia Pulp & Paper’s largest pulp mill and unravels its supply chains to global markets and corporate brands.

Video footage and forensic evidence obtained during this investigation are being made available to the appropriate domestic and international authorities – the Indonesian Ministry of Forestry and the CITES Secretariat in Geneva.

Ramin trees are legally protected under Indonesia’s laws and its national CITES regulations. Sumatra’s peat swamp forests are a key ramin habitat. Since Indonesia banned the logging of and trade in ramin in 2001, more than one quarter of this ramin habitat has been cleared – much of this from areas currently supplying APP.

Extensive evidence gathered during a year-long undercover investigation at APP’s main pulp mill in Indonesia, Indah Kiat Perawang, exposes how illegal ramin logs are regularly mixed in with other rainforest species in its pulpwood supply.

The investigation identifies the APP paper mills in Indonesia and China with which the Indah Kiat Perawang pulp mill trades. Fibre testing of products from these mills reveals their use of fibre from rainforest clearance. Products from these mills are traded internationally.

The investigation identifies the global market for paper products from APP paper mills in Indonesia and China. These products are traded to the vast majority of countries that are signatories to the CITES treaty. These APP mills supply copy paper, packaging, books and other paper products containing rainforest fibre to companies including Xerox, National Geographic and Danone.

Although Indonesia’s ramin is an internationally protected species, its habitat continues to be cleared – driving it and other threatened species such as the Sumatran tiger closer to extinction. Ramin logs from this clearance are being mixed in with numerous other rainforest logs to feed the pulp and paper sector. To tackle this problem, action is needed by government and industry to protect peat swamp forests and to stamp out the illegal logging and trade of ramin.

APP AND THE RAMIN BAN

Ramin trees are legally protected under Indonesia's laws and its national CITES regulations. Sumatra's peat swamp forests are a key ramin habitat.

Government maps show that nearly half the area of this key ramin habitat that remained when logging and trade of ramin were banned in 2001 now lies within concessions allocated to pulpwood or palm oil companies for clearance. Over the intervening period, Sumatra has lost more than one quarter of this ramin habitat. Asia Pulp & Paper, part of the Sinar Mas group, claims its policies ensure that no illegal wood from the clearance of ramin habitat enters its supply chain. Video footage shows recent clearance of ramin habitat from an area supplying APP.

- Logging and trade of ramin were banned in 2001 under Indonesian regulations.
- In 2003, 80% of Sumatra's peat swamp forests, a key ramin habitat, were also identified as critical habitat for the survival of Sumatran tigers.
- Despite the importance of this habitat for CITES-protected species, government maps show that 800,000ha (28%) of Sumatra's peat swamp forests were cleared between 2003 and 2009.
- Some 22% of this loss occurred in areas currently allocated to APP's log suppliers.
- APP claims to protect CITES-protected species including ramin and to have 'zero tolerance for illegal wood'.

APP policy on illegal wood

APP claims there is no illegal wood in its pulpwood supply chain. Its 'exclusive' supplier, Sinarmas Forestry, claims it ensures the legality of all pulpwood fibre supplied to APP's pulp mills. APP claims it inspects all inbound deliveries of logs from its suppliers and imposes sanctions for policy violations.

The Sinar Mas group describes itself as 'one of the world's largest natural resource groups'.¹ The conglomerate operates across multiple sectors including pulp and paper, agribusiness, mining and forestry.²

Asia Pulp & Paper (APP) is the pulp and paper division of the Sinar Mas group³ and claims to be the third largest pulp and paper manufacturer in the world.⁴ It aspires to be number one,⁵ and is expanding rapidly.⁶ Sinarmas Forestry (SMF) is the logging and plantation division of the Sinar Mas group.

Sinarmas Forestry is the 'exclusive' pulpwood supplier to APP

Sinarmas Forestry, whose operations are primarily located in Sumatra,⁷ states that it is 'the exclusive pulpwood fibre supplier to APP's two pulp mills'.⁸ APP Indonesia's flagship pulp mill, Indah Kiat Perawang, is the largest pulp mill in Indonesia. It is situated in Perawang, Riau Province on the island of Sumatra.

APP describes Sinarmas Forestry as the 'exclusive'⁹ supplier of pulpwood to Indah Kiat Perawang. According to Indah Kiat's 2010 financial statements to investors, it

agreed a 30-year contract in 2001 with PT Arara Abadi, a Sinarmas Forestry company,¹⁰ 'to exclusively purchase the pulpwood' from Arara Abadi, and Arara Abadi has 'agreed to supply the pulpwood to [Indah Kiat Perawang] at a certain agreed price'.¹¹ Although Arara Abadi holds concessions in its own right, it also manages other APP-affiliated pulpwood operations and coordinates trade to Indah Kiat Perawang.¹²

Sinarmas Forestry's environmental commitment and fibre supply policy claim to ensure legality of pulpwood fibre supplied to APP's pulp mills

According to the Sinarmas Forestry environmental commitment: 'With a large percentage of its forest concessions located on the island of Sumatera, SMF is fully aware that its forestry operations, from the nurseries to harvesting and the transportation of fiber, have an effect on this unique and invaluable environment. For this reason, SMF is committed to implementing sustainable forest management throughout its operations. [...] SMF pursues continual improvement in its environmental performance by complying with all applicable environmental legislation and regulations [and] continuously monitoring its environmental performance.'¹³

Sinarmas Forestry's fibre supply policy claims to ensure the legality and integrity of the fibre supplied to the mills through strict chain of custody and other legal verification protocols: 'One of the most crucial issues is ensuring that the fiber from the harvesting site is the same fiber – and the only fiber – that is delivered to the customers' pulp mills. With our strict chain of custody and legal verification system and protocols, the legality of the fiber supplied is guaranteed [when it is] delivered to the customers' pulp mills.'¹⁴

APP claims Sinarmas Forestry complies with its Declaration of Sustainability

APP promotes itself as committed to protection of threatened wildlife species through 'conservation beyond compliance'¹⁵ and has made a number of policy commitments to ensure that its 'exclusive' pulpwood supplier – Sinarmas Forestry – complies. Its Fiber Procurement Policy and Declaration of Sustainability were first articulated in 2004 and subsequently updated in 2008 and 2009.¹⁶

APP 'Declaration of Sustainability'

The group's 2009-updated Declaration of Sustainability¹⁷ states that APP commits to the following [emphases added]:

- *Unequivocal compliance with national and local laws and relevant international regulations;*
- *Zero tolerance for illegal wood in our supply chain* means maintaining robust standards for fiber suppliers through APP's Fiber Procurement Policy covering environmental standards, conservation principles and social impact'.

APP 'Fiber Procurement Policy'

APP's 2008-updated Fiber Procurement Policy¹⁸ commits the group [emphasis added] 'to *purchasing only legal wood fiber* for pulp-making operations from sustainably-managed forestry sources'.

To implement this, APP commits to the following [emphases added]:

- *Ensure that wood suppliers maintain compliance* with all relevant regional, national and international regulations for sustainable forestry and land use

management; [...]

- Ensure that wood is properly checked and verified as to legal origin and chain of custody *before it enters the mill*;
- Maintain systems and procedures to reasonably ensure that wood coming from illegal sources shall be rejected *before it enters the mill*; [...]
- Expect that wood suppliers undertake conservation programs and *preserve protected species as listed in IUCN and CITES*'.

APP issued a press release in 2011 committing Sinarmas Forestry to supplying its mills with 100% plantation fibre by 2015.¹⁹

APP's procedures to exclude illegal wood

APP claims that the Indah Kiat Perawang mill has introduced procedures 'to confirm that no illegal or controversial wood enters the mill's pulpwood supply chain'.²⁰ The Sinar Mas group's website states explicitly that its procedures ensure that any illegal logs are identified and excluded from the supply chain before pulpwood enters the Indah Kiat Perawang pulp mill gate [emphasis added]:²¹

'Wood from sustainable sources is transported by trucks and check points have been created *before the logs enter the scale meter and weighing bridge at the mill gate*. A document tracking trail, including Faktur legalization, delivery form and weigh bridge report, ensures the legality of the raw materials for the pulp and paper manufacturing.'

In terms of procedures to ensure that its wood suppliers do not trade any 'protected species as listed in IUCN and CITES',²² APP claims to inspect all inbound deliveries of logs from its suppliers to ensure that no ramin or other protected species enter the mill gate. According to a December 2011 company statement: 'All of the mills are equipped with wood checking stations that require the registration of each inbound load of logs and the supplier delivering the shipment. At the wood checking station a manual inspection is conducted of the load to verify that there are no protected species that have been illegally harvested.'²³

APP sanctions against suppliers for policy violations

APP's Fiber Procurement Policy makes it clear that [emphasis added]: 'wood suppliers who are *found in breach of relevant legal requirements* and the provisions of the policy shall be immediately warned and, for repeated violations, have their contracts terminated'.²⁴

The law: ramin is legally protected

Indonesia's ramin is legally protected from logging and domestic and international trade. Used to make products such as furniture, toys and decorative mouldings, ramin is facing a 'high risk of extinction in the wild in the medium-term future'. In Indonesia, extensive areas of peat swamp forest – a key ramin habitat – have been cleared since 2001, driving ramin and other CITES-listed wildlife such as Sumatran tigers closer to extinction. Virtually all trade in products derived from Indonesian ramin is illegal.

What is ramin?

Ramin is the common trade name given to a number of light-coloured tropical hardwood tree species native to areas of South East Asia, principally Indonesia and

Malaysia.²⁵ Ramin wood has significant commercial value and is used to make products such as furniture, toys, broom handles, blinds, dowels and decorative mouldings.²⁶

The name ramin applies to ~30 tree species that all belong to the same genus (group of related species) *Gonystylus*.²⁷ Fifteen species in this genus are classified as 'vulnerable' on the International Union for the Conservation of Nature (IUCN) 'Red list of threatened species'.²⁸ This means that due to observed, inferred or projected habitat loss and overexploitation²⁹ ramin 'is facing a high risk of extinction in the wild in the medium-term future'.³⁰

Within Indonesia, ramin is largely confined to rainforests below 1,500 metres.³¹ The predominant habitat for one of the main species of ramin in Indonesia (*Gonystylus bancanus*) is peat swamp forest in the Sumatran provinces of Riau, Jambi and South Sumatra, and in the provinces of West and Central Kalimantan.³² Other species of ramin are found in these provinces in lowland and even hill forest areas.³³

Why loss of ramin habitat threatens other CITES-protected species with extinction

Historically, peat swamp forests in Sumatra and Kalimantan have been targeted for commercial exploitation of one key commercial species of ramin, with a detrimental impact on the species.³⁴ These same areas remain heavily targeted for clearance and conversion to pulpwood plantations.

In Indonesia, these factors have led to ramin's overexploitation and to significant loss of its habitat through forest degradation resulting from logging, forest fires and conversion to agriculture.³⁵

The same peat swamp forests where ramin grows are also crucial to the survival of other endangered and critically endangered species, including the Bornean orang-utan³⁶ and the Sumatran tiger,³⁷ of which only 400 remain in the wild.³⁸ While international trade in these species is heavily regulated under CITES,³⁹ they continue to face extinction in the wild, in part due to loss of forest habitat.⁴⁰

CITES international conservation agreement – famous for controlling ivory trade

Many prominent species – including rhinos, tigers, elephants, whales and gorillas – are protected through CITES, the international treaty that regulates global trade in products related to endangered species, such as rhino horn and elephant ivory.⁴¹

The United Nations Convention on the International Trade in Endangered Species (CITES) was drawn up in 1973 to protect wildlife against overexploitation, through regulating international trade of species threatened through trade.⁴²

Through it, all international commercial trade in products including rhino horn, ivory, whale meat, tiger skins and tiger bone 'medicines' is either heavily regulated or banned.⁴³

CITES now lists over 5,000 species of animals and 29,000 species of plants,⁴⁴ including 350 tree species,⁴⁵ in three categories stipulating different degrees of legal protection from overexploitation through international trade. According to the CITES website, illegal trade in wildlife – now estimated to be worth in excess of \$10 billion per year – is pushing many species towards extinction.⁴⁶

Ramin is legally protected under Indonesia's laws and its national CITES regulations

In 2001, the Indonesian Ministry of Forestry banned the logging of any species of ramin, and any associated domestic or international trade.⁴⁷ In the same year, Indonesia unilaterally placed its populations of ramin on Appendix III of CITES,⁴⁸ giving importing countries a mandate to halt the import of any ramin exported illegally.

In 2004, given ongoing loss of ramin habitat and illegal logging of ramin, the Ministry of Forestry requested CITES party countries to grant all ramin species the higher Appendix II listing, requiring far greater trade controls, in a bid to achieve improved enforcement of the export ban through increased international scrutiny of potential trade violations under CITES.⁴⁹

Virtually all trade in products derived from Indonesian ramin is illegal

The Appendix II CITES listing covers any specimen that may contain Indonesian ramin, its parts or derivatives, with a few, very limited exceptions like seeds, seedlings and tissue cultures.⁵⁰ Pulp or paper products are not specifically exempted from (and thus are covered by) the provisions of the listing.⁵¹

In practice, there is only one legal source of ramin – the FSC-certified PT Diamond Raya selective logging operation⁵² and its associated processing companies. Since 2001, the CITES trade database shows that Indonesia's official exports of ramin are limited to sawn wood and timber products.⁵³

Any other internationally traded products containing Indonesian ramin – be they items made from ramin timber or processed products containing ramin – represent a violation of ramin's CITES Appendix II listing.

Similarly, within Indonesia, any logging of and trade in ramin other than the Diamond Raya harvest is illegal and represents a violation of Indonesia's CITES regulations.⁵⁴ Penalties for smuggling/misdeclaration or trade of protected species not in accordance with the provisions of the regulation include imprisonment, confiscation of goods, fines and revocation of operating permits.⁵⁵

APP and habitat loss

Ramin habitat continues to be destroyed despite the ban. The Ministry of Forestry – responsible for forest protection and the forestry sector – recommends 'no more conversion of peat swamp forest to other utilisation'. Greenpeace mapping analysis of the Ministry's data indicates that APP's pulpwood suppliers have been a significant driver of the clearance of Sumatra's peat swamp forests, a key habitat for ramin and Sumatran tigers.

The Ministry of Forestry is responsible for both forest protection and forestry sector exploitation.

The Ministry of Forestry plays two roles in relation to the companies involved in the forestry sector and their compliance with laws governing the protection of ramin.

The Ministry of Forestry is Indonesia's CITES Management Authority, through the Directorate General for Forest Protection and Nature Conservation (PHKA).⁵⁶ It issues quotas and licenses to specific operations for the legal harvest of CITES species and confirms, through the issuance of a CITES Export Permit, that any exports of CITES Appendix II listed specimens or their derivatives originate from a

legal source and that their harvest is not ‘detrimental to the survival of the species in the wild’.⁵⁷

Since 2001, the CITES Management Authority in Indonesia has notified the CITES Secretariat – the coordination and advisory body to CITES party nations – on several occasions that the only legal source of Indonesian ramin is the PT Diamond Raya selective logging operation.⁵⁸ This is the only operation approved by the PHKA as meeting the non-detrimental finding that is a necessary prerequisite for any Appendix II listed species to be traded internationally. Therefore, any other Indonesian ramin entering international trade is illegal.

The Ministry of Forestry is also the licensing body to forest concessionaires through the Directorate General for Forest Production. As well as awarding selective logging concessions, it grants extensive areas of Production Forest – land zoned for exploitation by the forestry sector – for clearance and conversion to pulpwood or other timber plantations.⁵⁹ Some of these areas include important ramin habitat in peat swamp forests.⁶⁰

The Ministry of Forestry ‘Let’s save ramin, let’s save peat swamp forests’ initiative to stop ramin habitat loss

Since the 2001 ramin trade ban, the Indonesian Ministry of Forestry has published a number of reports hosted on its dedicated website, ‘Let’s save ramin and peat swamp forest for our future’.⁶¹

The aim of the reports was ‘to enhance institutional capacity for successful CITES implementation’,⁶² in order to prevent the further loss of ramin and to ensure the sustainable management of its habitat in Indonesia.

One of the first reports found that much important ramin habitat is found in production forest concession areas ‘mainly managed by forest concessionaires’.⁶³ Further reports recognise that legal forest clearance is a leading threat to remaining ramin habitat.⁶⁴ Reports acknowledge institutional weaknesses, conceding: ‘No substantial [enforcement of the logging ban] is taking place’.⁶⁵

In terms of recommendations, one report states: ‘No more conversion of peat swamp forest to other utilisation.’⁶⁶

The pulp sector is a key driver of loss of habitat for CITES-protected species

Greenpeace mapping analysis of Ministry of Forestry data shows that between 2003 and 2009, Sumatra lost 800,000ha (28%) of its peat swamp forests. While some of this loss may have occurred before APP suppliers took control of the concessions, over one-fifth of it (180,000 ha – an area more than twice the size of New York City⁶⁷) occurred within areas that are now allocated to APP-affiliated pulpwood suppliers. This represents a loss of 40% of the peat swamp forest in these areas.

The wider threat from clearance and development of peat swamp forest, a key ramin and tiger habitat, is illustrated by further mapping analysis of the Ministry of Forestry data.⁶⁸

- In 2003, Sumatra and Kalimantan held ~6 million ha of peat swamp forest.

- Half this 2003 peat swamp forest area (2.9 million ha) was in Sumatra. Nearly half of this (1.3 million ha) was situated on deep peat (>4m), a particularly crucial ramin habitat.⁶⁹
- 80% of Sumatra's 2003 peat swamp forest was also identified as tiger habitat. The Sumatran tiger is a CITES Appendix I listed species.⁷⁰
- 2 million ha (69%) of the area that was Sumatra's peat swamp forest in 2003 is in areas zoned for clearance or development into timber plantations (HP, HPK, APL).
- 1.2 million ha (43%) of the area that was Sumatra's peat swamp forest in 2003 is now allocated for industrial timber plantation or palm oil concessions (ie clearance).
- 0.9 million ha (30%) of this 2003 Sumatran peat swamp forest area is now in concessions allocated to timber plantations – half to APP suppliers.

Overlaying Ministry of Forestry forest cover maps for 2006 and 2009 with maps of concession areas illustrates that, between 2006 and 2009, APP's pulpwood suppliers have been a significant driver of the clearance of Sumatra's peat swamp forest.

Given that pulp is a commodity used extensively within products traded globally, and that APP is one of the two major players in Indonesia's pulp sector, this extensive overlap between key ramin habitat and areas licensed for clearance to supply the pulp sector (including APP) with mixed tropical hardwood (MTH) species highlights the scale of the potential threat to the long-term viability of Indonesia's ramin populations.

The heavy dependence of the pulp sector on rainforest logs from the clearance of ramin habitat creates the risk that ramin trees are being illegally logged along with other rainforest species, getting mixed up in the pulpwood supply chain and subsequently entering into international trade.

APP and the law: what APP's policies mean in practice

Sinarmas Forestry and APP policies commit them to ensuring there is no ramin in APP's pulpwood supply. Greenpeace investigations reveal that illegal ramin logs are regularly mixed in with other rainforest species stockpiled at APP's main pulp mill waiting to be pulped. Sinarmas Forestry is APP's 'exclusive' supplier, and this evidence indicates that Sinarmas Forestry is failing to rigorously police pulpwood supply to the mill. Sinarmas Forestry and APP are in breach of Indonesia's laws.

Successful implementation by APP of its Declaration of Sustainability and Fiber Procurement Policy relies upon Sinarmas Forestry policing its pulpwood supplies effectively.

The following is what Sinarmas Forestry and APP's policies should mean with regard to ramin, given its banned status:

- I. Sinarmas Forestry is committed to ensuring compliance with Indonesia's ramin ban and CITES regulations. This includes ensuring that its operations do not include the harvest of or trade of ramin to APP pulp mills.

2. APP maintains zero tolerance for ramin in its supply chains. This includes ensuring that its 'exclusive' pulpwood supplier, Sinarmas Forestry, does not harvest or trade any ramin to APP pulp mills.
3. In its mill operations, APP is committed unequivocally to compliance with Indonesia's ramin ban and its national CITES regulations, and regulations governing international trade. This includes ensuring that no ramin passes through the Indah Kiat Perawang mill gate.
4. APP will terminate its contract with any pulpwood suppliers that are breaking Indonesia's ramin laws and its national CITES regulations through clearance, trade or use of ramin.⁷¹

Illegal ramin at APP's main mill

This investigation reveals that illegal ramin gets through the Indah Kiat Perawang mill gate or its port facility with other logs from natural forest clearance – so-called mixed tropical hardwood – and is stockpiled in the main MTH logyards within Indah Kiat Perawang (APP's main pulp mill in Indonesia).

Given that both Sinarmas Forestry and APP claim that Sinarmas Forestry is the 'exclusive' pulpwood supplier to Indah Kiat Perawang, it must be assumed that Sinarmas Forestry supplies the MTH pulpwood found in the logyards within the mill compound. As such, this illustrates a failure by Sinarmas Forestry to police rigorously its pulpwood supply to the mill, in breach of its policy and of Indonesia's ramin laws and its national CITES regulations.

It also illustrates APP's failure to ensure compliance with its policies and with Indonesia's ramin ban and its national CITES regulations.

RAMIN AT APP'S FLAGSHIP PULP MILL

A year-long investigation at Asia Pulp & Paper's largest pulp mill in Indonesia, Indah Kiat Perawang, exposes how illegal ramin logs are regularly mixed into its supply of logs from natural forest clearance (so-called mixed tropical hardwood or MTH). This trade in ramin is banned under Indonesia's laws and its national CITES regulations.

Video footage and forensic evidence obtained during this investigation are being made available to the appropriate domestic and international authorities – the Indonesian Ministry of Forestry and the CITES Secretariat in Geneva.

- Between February 2011 and January 2012, the investigation collected video evidence in nine separate months documenting illegal ramin logs within the MTH logyards surrounding the Indah Kiat Perawang pulp mill.
- Video documentation illustrates the prevalence of APP's trade in illegal ramin – the number of ramin logs observed within accessible short sections of logpiles ranged from 10 to 17. Some of these ramin logs had diameters of up to 1 metre.
- Independent species verification was obtained by collecting wood samples from individual logs within the Indah Kiat Perawang mill. These were sent to an independent wood testing laboratory, where a recognised expert specialising in the identification of CITES-listed woods confirmed that 46 samples were ramin.
- APP is already expanding its use of logs from natural forest clearance and its pulp production, increasing the threat to Indonesia's rainforests and ramin habitat:
 - Indonesian government documents show that Indah Kiat Perawang planned to double its use of MTH logs from 20% of the pulpwood supply (2.4 million m³) in 2009 to 44% (5 million m³) in 2011.
 - An Indonesian government document reveals that the MTH log supply areas for Indah Kiat Perawang include areas mapped as peat swamp forest.
 - A 2011 APP report states that Indah Kiat Perawang is in the process of increasing its licensed pulp capacity by 50%, from 2 to 3 million tonnes a year.

The investigation: illegal ramin documented in APP's pulpwood supply

This investigation exposes how illegal ramin is entering APP's pulpwood supply at its flagship mill, Indah Kiat Perawang – a violation of Indonesia's ramin ban and its national CITES regulations. The pulp mill is supplied with rainforest logs from the clearance of areas including peat swamp forest; its pulpwood logyards contain illegal ramin logs. The mill trades to at least 12 APP paper mills in Indonesia and China.

Previous field investigations of APP's supply chain have documented the group's dependence on mixed tropical hardwood (MTH) from the clearance of peat swamp forests, a key ramin and tiger habitat, in areas including Kerumutan (Riau, Sumatra) and Bukit Tigapuluh (Jambi, Sumatra).

This investigation exposes how ramin – a legally protected tree species both within Indonesia and in international trade – is regularly and illegally entering APP’s MTH pulpwood supply at APP Indonesia’s flagship pulp mill, Indah Kiat Perawang in Sumatra. The presence of ramin in Indah Kiat Perawang’s MTH pulpwood logyards is a violation of Indonesia’s ramin ban and its national CITES regulations.

The investigation documents three supply chain issues relating to Indah Kiat Perawang’s violation of Indonesia’s ramin ban and its national CITES regulations:

- Indah Kiat Perawang’s dependence on fibre from natural forest clearance is significant and increasing. Indah Kiat Perawang supply areas include large areas of peat swamp forest, a key ramin habitat (showing the extent of MTH use and the overlap of the supply area with ramin habitat).
- Indah Kiat Perawang’s logyards contain ramin logs mixed in with other species of logs from natural forest (demonstrating the presence of illegal ramin in the MTH supply).
- Indah Kiat Perawang trades to at least 12 APP paper mills⁷² in Indonesia and China that then trade paper products to the global market (showing multiple global trafficking routes for Indah Kiat Perawang). Fibre tests have confirmed the presence of MTH in the supply chains of most of these mills.

Within any published documents or web pages associated with this investigation, ‘The Ramin Paper Trail’, ‘Greenpeace’ refers to Greenpeace International, registered in Amsterdam, which is solely responsible for the content and findings.

APP pulpwood supplies depend on clearance of a key ramin habitat

APP’s pulpwood supplies areas – primarily located on Sumatra – include extensive peat swamp forest. Between 2003 and 2009, an area of peat swamp forest twice the size of New York City was cleared in these areas. Nearly half of the pulpwood supplied to APP’s Indah Kiat Perawang mill comes from natural forest clearance. Contrary to its commitments to use only renewable plantation fibre, APP has been increasing the proportion of rainforest logs – so-called mixed tropical hardwood or MTH – in its supply.

Ramin risk: APP’s Indonesian pulpwood supplies are located predominantly in provinces that include ramin habitat

APP has two main pulp mills in Indonesia, both located on the island of Sumatra. According to APP’s latest (published November 2011) 2008/2009 corporate sustainability report:⁷³

- Indah Kiat Perawang, in Riau, produced ~2 million tonnes of pulp in 2009⁷⁴ and accounted for 73% of APP Indonesia’s pulp production.
- Lontar Papyrus, in Jambi, produced ~700,000 tonnes of pulp in 2009⁷⁵ and accounted for 27% of APP Indonesia’s pulp production.

APP pulpwood supply areas are primarily also located on Sumatra, chiefly in the provinces of Riau, Jambi and South Sumatra.⁷⁶ These include large areas of peatland, a key habitat for ramin identified by the Ministry of Forestry.⁷⁷

Greenpeace mapping analysis shows that in areas currently controlled by APP suppliers, there were 440,000ha of Sumatran peat swamp forest in 2003 and just

260,000ha of peat swamp forest in 2009.⁷⁸ The 180,000ha of peat swamp forest lost equates to the clearance of an area more than twice the size of New York City.⁷⁹

Further, a 2009 Ministry of Forestry document⁸⁰ naming the supply areas for Indah Kiat Perawang reveals that an important volume of the MTH supplied to the mill comes from concessions located on peatland.

Extensive historic MTH use: APP Indah Kiat Perawang has historically depended on natural forest clearance

Since the 2001 ramin logging ban, APP pulp mills have continued to be heavily dependent upon MTH fibre from clearance of natural rainforests to meet pulp production needs. A Sinarmas Forestry document obtained by Greenpeace details the share of raw material supplies between 2002 and 2006 to APP's Indah Kiat Perawang mill that were met by MTH pulpwood (ie natural forest clearance):⁸¹

- In 2002, 77% of pulpwood supplied to the mill was MTH.
- In 2006, 45% of pulpwood supplied to the mill was MTH.

Extensive current MTH use: nearly half of pulpwood supplied to APP Indah Kiat Perawang comes from natural forest clearance

According to APP's 2008/2009 corporate sustainability report, published in 2011, about 20% of the declared pulpwood supply to Indah Kiat Perawang in 2009 was mixed tropical hardwood.⁸²

However, the same report indicates that Indah Kiat Perawang was seeking approval to increase its licensed pulp production capacity by an additional 1 million tonnes per year,⁸³ a 50% increase from its 2009 licensed capacity.

According to Ministry of Forestry data for 2011, pulpwood supplies to Indah Kiat Perawang were predicted to be sufficient to produce over 2.3 million tonnes of pulp,⁸⁴ thus indicating that the mill is already expanding pulp production.

Ministry of Forestry data suggest that the mill is increasing its dependence on MTH in order to accommodate this expanding production. According to Ministry data, the mill used 2.4 million m³ of MTH in 2009⁸⁵ – roughly equating to the proportion of pulpwood supply APP declared as coming from MTH.⁸⁶ Ministry of Forestry data show that this volume rose to over 4.5 million m³ in 2010⁸⁷ and was planned to increase to nearly 5 million m³ in 2011⁸⁸ – equating to 44% of the pulpwood supply to the mill.

Using harvest rates assumed by internal Sinarmas Forestry planning documents, 5 million m³ of MTH logs amounts to ~64,000 ha of rainforest clearance in 2011 alone⁸⁹ – that is the area of Jakarta.⁹⁰

This means that APP is currently increasing use of MTH as a proportion of its supply at the same time as expanding production of pulp. This is in spite of APP's repeated promises over the past decade to become fully reliant on renewable plantation fibre – initially by 2007, subsequently revised to 2009⁹¹ – and to end its dependence on logs from rainforest clearance in Indonesia. In 2011, APP's head of sustainability, Aida Greenbury, again revised the commitment to use only plantation fibre, postponing it to the end of 2015⁹² – eight years after the initially promised date. However, the above figures suggest ongoing increases in production levels that far outstrip

availability of plantation-grown supplies, meaning expansion is continuing to fuel forest destruction.

Ramin identification

Ramin is a readily recognisable wood with distinctive characteristic features. Testing laboratories can confirm the identity of ramin wood. During this investigation, samples of wood from the Indah Kiat Perawang mill were analysed by an internationally respected authority on protected wood species, and 46 samples were confirmed as ramin.

Ramin is readily recognisable as a log

Ramin, particularly *Gonystylus bancanus*, is a readily recognisable white wood species, identifiable by a number of key characteristics beyond the timber colour and grain.

According to various Ministry of Forestry documents, felled ramin logs are easily identifiable from a number of characteristic features. These include:

- Wood: the heartwood is whitish to pale yellow.⁹³
- Outer bark: the outer bark surfaces are smooth to cracked, shallowly fissured or scaly, dull gray to red-brown or dark brown in colour, occasionally with white patches.⁹⁴
- Inner bark: the inner bark contains numerous fine, brittle fibres that break off and irritate the skin,⁹⁵ yellow, brown, pink or orange in colour.⁹⁶
- Mould: wood is susceptible to fungal attack, producing a blue stain discolouration.⁹⁷

From a small sample of ramin wood, a trained eye can identify the characteristic wood structure and anatomy of *Gonystylus* species using a handheld magnifying glass.⁹⁸

Testing laboratories can confirm the identity of ramin wood

Testing laboratories can readily confirm the identity of ramin wood from small samples collected in the field:

- Grain/vessel structure: through macroscopic and microscopic analysis of small sectioning blocks prepared from individual wood samples the identity of ramin can be confirmed based on its characteristic grain/vessel structure.⁹⁹

Investigating the pulpwood supply for Indah Kiat Perawang

Over the course of a year, small samples of wood were taken from a selection of the logs identified as ramin in the MTH logyards for Indah Kiat Perawang. The sample wood specimens were placed in tamper-proof bags, which were then locked with a security seal bearing the manufacturer's unique identification code.

The samples were sent to the Institute of Wood Technology and Wood Biology at vTI, in Germany. At the laboratory, the seals were removed and an expert specialising in the identification of CITES-listed woods analysed the wood samples from the bags in order to confirm their identity as ramin.

vTI, the German Federal Government Research Institute for Rural Areas, Forestry and Fisheries, is an internationally respected authority on identification of wood

samples. One of its roles is to aid the German government with enforcement of CITES trade regulations through the identification of timber species.

Of the samples collected within the mill's logyards, the wood specialist at the institute confirmed that 46 were ramin.

Illegal ramin is part of the mix at APP mill Indah Kiat Perawang

Independent laboratory testing and video documentation in the logyards at the Indah Kiat Perawang pulp mill expose the regular presence of ramin in APP's pulp supply – a violation of Indonesia's ramin ban and its national CITES regulations. As the agency responsible for enforcing Indonesia's ramin ban and national CITES regulations, the Indonesian Ministry of Forestry should impose sanctions against APP.

A year-long investigation into the supply chain for APP exposes that illegal ramin logs are regularly mixed in with other rainforest species waiting to be pulped at APP's Indah Kiat Perawang pulp mill.

Video footage documenting these ramin logs was collected between February 2011 and January 2012 from within accessible areas of the various extensive logyards within the compound surrounding Indah Kiat Perawang's pulp mill.

Wood samples collected from a number of those logs during the course of the investigation were sent to an internationally recognised expert for independent identification.

In total, 46 of these wood samples collected within the mill's logyards between February and December 2011 were confirmed to be ramin by this expert.¹⁰⁰

In December 2011, a further 13 wood samples were collected from logs suspected to belong to other species listed on the IUCN Red List of Threatened Species.¹⁰¹ Results of expert analysis show that 10 of these belong to genera with species classified as threatened on the IUCN's Red List,¹⁰² including *Shorea spp*, *Durio spp*, *Palaquium spp*, and *Alstonia spp*.

Summary of overall findings

A total of 59 wood samples were collected within the mill's logyards and sent for independent identification: 46 were ramin, 10 were IUCN Red List genera and 3 were other species.¹⁰³

Exposing the regular presence of ramin in the pulp supply

APP's Perawang complex covers 2,400ha¹⁰⁴ and hosts its Indah Kiat Perawang pulp mill, plus key paper and tissue mills. These mills are surrounded by vast logyards organised into separate, distinct avenues of MTH and plantation logs.

In early 2011, a preliminary assessment within the Indah Kiat Perawang complex as part of this investigation into the mill's pulpwood supply documented ramin within one of the MTH logyards.

To confirm that this was not an exceptional instance, the investigation included subsequent visits over the period of a year to accessible areas of the various logyards. These included points where MTH logs are initially unloaded, stockpiled or transported to the chipping facility attached to the pulp mill. In each of the nine different months when evidence was gathered within the compound, ramin logs

were observed, confirming the regular presence of ramin within the MTH supply chain.

Video documentation gathered during the investigation shows:

- Ramin logs were readily recognisable and distinguishable from other species in the MTH logyards.
- Multiple ramin logs could be found within a given avenue of MTH logs, often within just a few short paces of one another, indicating that the mill pulpwood supply includes logs from the indiscriminate clearance of ramin habitat. The number of ramin logs within accessible short sections of logpiles often ranged from 10 to 17.
- Ramin logs ranged in size, including mature logs with diameters of up to 1 metre.
- Representative samples from logs identified as ramin were sent for independent verification. These were collected from different logs from accessible areas within the logyards in the mill compound and sealed in tamper-proof evidence bags.

An internationally respected expert at the Institute of Wood Technology and Wood Biology at vTI, University of Hamburg in Germany confirmed that 46 samples were ramin. This shows that the readily recognisable ramin logs were correctly identified in the investigation.

Our evidence proves the presence of ramin in the MTH pulpwood supply for Indah Kiat Perawang. This is a violation of Indonesia's ramin ban and its national CITES regulations.

APP has failed to enforce its fibre policy, despite ample opportunity

This component of the investigation focused on the final transit stage in the pulpwood supply chain for Indah Kiat Perawang, prior to entry to the pulp mill chipping facility. Despite the fact that ramin is readily recognisable, our evidence indicates the failure of APP's Fiber Procurement Policy to ensure compliance with CITES regulations and eliminate illegal ramin at any stage along the supply chain prior to arrival in the mill's MTH stockyard. Opportunities for visual inspection to control the pulpwood supply chain before it enters the mill gate – ie, from the forest to the mill logyard – would include:

- Before it is logged: within the forest area prior to any planned clearance.
- Before it leaves the logging concession: within the logging operation's logpiles and logyards.
- At any point along the inbound shipment to the mill: as cargo loaded on trucks or barges en route to the mill.
- Before it enters the mill's MTH logyards: at the wood checking station before the mill gates or at an equivalent checkpoint at Indah Kiat Perawang's port where log barges are offloaded.

While publicly APP claims to have a verification process to exclude illegal wood prior to it entering the pulp mill, our investigation exposes how this document-

checking exercise obscures the reality that illegal ramin logs are entering the supply chain of APP's largest pulp mill, Indah Kiat Perawang.

The case for Ministry of Forestry sanctions against APP

At the time the Indonesian government proposed the CITES Appendix II listing for ramin, although it identified the clearance and conversion of ramin habitat as a problem, it did not identify any national or international trade in pulp or paper products associated with utilisation of ramin from that clearance. It reported that ramin was logged only to supply the timber sector.¹⁰⁵

However, as this investigation demonstrates, one of the key ramin habitats – peat swamp forest in Sumatra – is being cleared to supply APP with MTH pulpwood and ramin logs are ending up in the pulpwood supply for APP.

A key role of Indonesia's CITES Management Authority, the Ministry of Forestry, is to enforce Indonesia's ramin logging and trade ban and to ensure that no ramin enters international trade in violation of CITES regulations.

Under the requirements of Indonesian CITES regulations implementing the Convention, one of the roles of the Indonesian CITES Management Authority is to prevent any company from utilising illegal ramin, including the export of products derived from ramin. In the case of APP, this would mean preventing any illegal ramin logs from the indiscriminate clearance of ramin habitat entering the APP pulp supply chain.

The MTH pulpwood supply for Indah Kiat Perawang is undermining the law

APP's pulp and paper operations in Indonesia service an export-oriented market, for which Indah Kiat Perawang, Indonesia's largest pulp mill, is the primary source of pulp raw materials. MTH pulp from this mill is utilised by export-oriented APP paper mills in Indonesia and China, which ultimately trade with up to 136 CITES party countries.¹⁰⁶

The mill sources its MTH logs via Sinarmas Forestry from rainforest clearance, including significant clearance of peat swamp forest. Hence, the presence of MTH fibres in an end product is a useful risk indicator that the product includes fibre from the indiscriminate clearance of ramin habitat: this pulpwood supply to Indah Kiat Perawang has been documented to include illegal ramin.

While MTH fibres are readily identifiable in paper products, the isolation and identification of individual protected species such as ramin within the mix can be difficult and somewhat up to chance – testing laboratories look at 1 cm² samples.

The next section documents how MTH fibre from Indah Kiat Perawang's pulp production enters into international trade and may be associated with APP products manufactured and traded in key CITES countries.

FROM APP'S PULP MILL TO THE ENDS OF THE EARTH

The key aim of CITES is to ensure that any international trade in ramin specimens or derivatives is not causing a detrimental impact on the species, and comes from legal supplies.

The investigation shows that Indah Kiat Perawang trades pulp to APP paper mills in Indonesia and China. Fibre testing of products linked to these APP mills reveals their use of fibre from natural forest clearance. Products from APP mills are traded globally.

- The investigation identified 12 individual APP paper mills¹⁰⁷ run by 9 APP companies in Indonesia and China with trade links to Indah Kiat Perawang. It established the use of MTH pulp or fibre in the supply chains of 8 of these companies. No products with specific links to the 9th company have yet been identified.¹⁰⁸
- These 12 APP paper mills trade with as many as 136 countries that are CITES parties.¹⁰⁹
- Identified exports of paper, tissue and packaging products from these APP paper mills amount to ~3.1 million tonnes – more than 80% of a total 3.7 million tonnes identified direct trade of such products from APP Indonesia and China.

Overview of APP pulp trade: from APP crime to global commodities

APP is a global paper giant, trading products containing MTH around the world. The investigation identified trade links from the Indah Kiat Perawang pulp mill to most of APP's main paper mills in Indonesia and China. Products from these mills are then traded by APP and third parties to multiple global industries – from fashion houses to food giants, and including the electronics, cosmetics, footwear, cigarette and toy sectors.

'Headquartered in Indonesia and Shanghai', APP claims to be 'the number three pulp and paper maker in the world'.¹¹⁰ It aspires to be number one: 'At Asia Pulp & Paper (APP) we have a single, focused mission: To be the world's number one pulp and paper manufacturer and a responsible global leader in all aspects of our business.'¹¹¹

APP is a leading global producer of paper, packaging and tissue products, producing most categories of paper products. APP classifies its production into nine categories:¹¹² coated paper, printing paper, industrial packaging, office products, tissues, stationery, publishing, and fancy and speciality products.

APP's main pulp production base is Indonesia, with Indah Kiat Perawang accounting for 73% of APP's Indonesian pulp production in 2009.¹¹³

China is now the main production base for APP paper, packaging and tissue products.¹¹⁴

APP Indonesia – the main source of MTH pulp production

APP Indonesia states that it 'now has a wood pulp production capacity approaching 3m tonnes/annum and a paper production capacity of some 7.3m tonnes/annum'.¹¹⁵ In 2009 APP produced around 7 million tonnes of pulp and paper (2.7 million tonnes

of virgin pulp fibre and 4.4 million tonnes of paper), generating revenue of over \$4 billion.¹¹⁶

APP Indonesia encompasses pulp, paper and packaging production manufactured through several operating companies: PT Lontar Papyrus Pulp & Paper (Jambi); PT Indah Kiat Pulp & Paper Tbk (with operations in Perawang, Riau and Serang and Tangerang, Java); PT Pindo Deli Pulp & Paper Mills (with operations in Perawang, Riau and Karawang, Java); PT Pabrik Kertas Tjiwi Kimia Tbk (Mojokerto, Java); PT Ekamas Fortuna (Malang, Java); and The Univenus (with operations in Perawang, Riau and on Java).¹¹⁷

APP China – a key market for MTH pulp from Indah Kiat Perawang

In 2009 APP China was undergoing rapid expansion in pulp and paper production capacity, with this capacity expected to reach 8 million tonnes (6 million tonnes of paper products and 2 million tonnes of pulp).¹¹⁸ In 2009, sales revenues of pulp and paper amounted to \$5 billion.¹¹⁹

At the end of 2009, APP China owned more than 20 pulp and paper mills as wholly owned subsidiaries and holding companies.¹²⁰ The major pulp and paper mills are Gold East Paper Co, Ltd (Jiangsu); Gold Hongye Paper Co, Ltd (Suzhou Industrial Park); Gold Huasheng Paper Co, Ltd (Suzhou Industrial Park); Hainan Jinhai Pulp & Paper Co, Ltd (Jinhai); Ningbo Asia Pulp & Paper Co, Ltd (Ningbo); and Ningbo Zhonghua Paper Co, Ltd (Ningbo).¹²¹ APP China imports almost one-third of its pulp needs, including substantial volumes of MTH pulp from its mills in Indonesia.¹²²

While APP paper mills in Indonesia use some MTH pulp, roughly half of this MTH pulp is exported to China.¹²³

APP companies with trade links to Indah Kiat Perawang account for 80% of APP's total export trade

Pulp from Indah Kiat Perawang is traded to APP's own paper mills in Indonesia and China. These mills make various commodities, including copy and printing papers, tissue products, packaging and printed materials such as books. Such products are traded directly by APP, as well as by third-party packaging converters, printers and traders. These are then used by multiple global industries across sectors – from fashion houses to food giants and including the electronics, cosmetics, footwear, cigarette and toy sectors – and traded by global retailers.¹²⁴

Using 2010 trade data, the investigation identified ~3.1 million tonnes of direct trade in paper, tissue and packaging products from these sister APP paper mills in Indonesia and China to 136 countries that are parties to CITES. This represents more than 80% of a total 3.7 million tonnes identified direct trade of such products from APP Indonesia and China.¹²⁵

The investigation has identified four trafficking routes by which pulp from Indah Kiat Perawang enters international trade. Through these channels, APP paper mills in Indonesia and China distribute Indah Kiat pulp through three main commodities: paper (copy and printing paper), tissue products and packaging board.

Supplementary data used to map the flows of pulp from Indah Kiat Perawang to APP mills in Indonesia and China and profiles of the four trafficking routes identified are provided in Appendix 'Supplementary Data on Pulp Flows to Mills and Trafficking Routes'.

Investigating the international trafficking routes from Indah Kiat

Using recent APP public documents together with trade data, the investigation identified trade links from the Indah Kiat Perawang pulp mill to some of APP's main paper mills in Indonesia and China.

Fibre testing of products or brands associated with individual APP mills confirms the presence of MTH in the virgin fibre content in a number of samples.¹²⁶ This indicates that the mill is using MTH pulp as part of its supply chain.

These trafficking routes illustrate the potential routes by which APP's violation of Indonesia's ramin ban and its national CITES regulations penetrates international trade.

International trafficking route one: direct exports from the Indah Kiat Perawang complex to the international market

Within the Indah Kiat Perawang complex, in Riau, Sumatra, there are three APP group operating companies manufacturing paper and tissue products: Indah Kiat, Pindo Deli and The Univenus. According to APP:

- 40% of pulp produced at Indah Kiat Perawang was consumed by 'Indah Kiat paper machines' in 2009.¹²⁷ APP Indonesia pulp consumption data indicate this includes the Indah Kiat Perawang paper machines.
- 'A portion of the pulp produced at the Indah Kiat Perawang Mill is used onsite to make paper products.'¹²⁸ APP Indonesia pulp consumption data indicate that this includes the pulp used by the Pindo Deli and The Univenus tissue machines located within the Indah Kiat Perawang complex.¹²⁹

The investigation has identified that these three paper and tissue mills within the Indah Kiat Perawang complex trade to 84 CITES party countries around the world.

Indah Kiat Perawang and Pindo Deli Perawang: MTH link confirmed

Testing confirms Indah Kiat Perawang and Pindo Deli Perawang's use of MTH pulp as part of the supply chain:

- Fibre testing of copy paper manufactured by Indah Kiat Perawang confirms the presence of MTH, together with acacia, in the virgin fibre content of a number of samples (eg Xerox).¹³⁰ This indicates the mill is using MTH pulp as part of its supply chain.
- Fibre testing of CottonSofts Marine Splash, an APP-brand tissue product traded through the APP company Cottonsoft New Zealand, confirms the presence of MTH, together with acacia.¹³¹ In 2010, Cottonsoft New Zealand imported a significant share of its APP Indonesia supplies from the Pindo Deli paper mills within the Perawang complex.¹³² This indicates a high probability that the Pindo Deli paper mills within the Perawang complex use MTH pulp.
- For further details or other examples, see table 'Chain of custody links between global brands and APP paper mills with trade links to Indah Kiat Perawang'.

The Univenus Perawang: MTH link unconfirmed

- In the USA, APP companies Solaris Paper and Mercury Paper import semi-finished tissue products and tissue mother reels from various APP mills in Indonesia and China for conversion and repackaging into final retail products. One of the suppliers is The Univenus Perawang, which exports the majority of its production to the USA. Products distributed by Solaris and Mercury Paper are marketed under a variety of brands including Paseo and Livi, or retailer own-brands. The mill of origin is not labelled on the final retail products. Consequently, the investigation has been unable to identify any specific retail items for testing that can be strongly linked to The Univenus.

International trafficking route two: direct export of MTH pulp from Indah Kiat Perawang to APP China mills

Gold East Paper, Gold Huasheng Paper, Ningbo mills and Gold Hongye Paper: MTH link confirmed

The investigation has identified direct export of an estimated 440,000 tonnes of MTH pulp from Indah Kiat Perawang to China, a CITES party country, in 2010 – approximately 50% of the mill's total estimated MTH pulp production.¹³³ Virtually all the MTH pulp exported to China by APP was produced by Indah Kiat Perawang, with a very limited share coming from APP Indonesia's smaller pulp mill, Lontar Papyrus.¹³⁴

MTH pulp produced at Indah Kiat Perawang is exported to APP China mills. The major APP importers of Indonesian hardwood pulp are Gold East Paper (Jiangsu), Gold Huasheng Paper (Jiangsu), the Ningbo mills (Ningbo Zhonghua Paper Industry and Ningbo Asia Pulp & Paper Industry) (Zhejiang) and Gold Hongye Paper (Jiangsu).¹³⁵

- In 2010, China imported an estimated 440,000 tonnes of MTH pulp from Indah Kiat Perawang.¹³⁶
- APP China's largest importers of Indonesian hardwood pulp are Gold East Paper (47%), Gold Huasheng Paper (21%), the Ningbo mills (28%) and Gold Hongye Paper (3%), importing a total of 560,000 tonnes in 2010.¹³⁷

International trafficking route three: exports to the international market from APP China mills that source MTH pulp from Indah Kiat Perawang

Gold East Paper, Gold Huasheng Paper, Ningbo mills and Yalong: MTH link confirmed

The investigation has focused on three APP sister paper mills in China that import or use MTH pulp from Indah Kiat Perawang to manufacture paper, tissue or packaging products and one APP paper converter confirmed to process paper products containing MTH fibre. These four APP China companies are responsible for the vast majority of APP China direct exports, trading to 125 CITES party countries around the world.

- Three of the APP China paper mills directly linked to the import of MTH pulp from Indonesia account for 1.4 million tonnes, or 92%, of APP China's total registered paper exports: Gold East Paper (57%), Gold Huasheng Paper (14%) and Ningbo Zhonghua (21%).¹³⁸ Further fibre testing of products reinforces the evidence that these paper mills are using MTH pulp as part of

their supply chains.¹³⁹ For example, fibre testing confirmed the presence of MTH in Nevia paper manufactured by Gold East.¹⁴⁰

- Trafficking route two data indicate that virtually all MTH pulp imported by APP China originates from Indah Kiat Perawang. Therefore, it is highly probable that any APP paper mill in China that manufactures products containing MTH, together with acacia, in the virgin fibre component is linked to Indah Kiat Perawang.
- One of APP's paper converters using paper produced by APP China paper mills is Yalong Paper Products. Yalong Paper accounts for an additional 19,000 tonnes (1%) of APP China's paper exports.¹⁴¹ Fibre testing of copy paper manufactured by Yalong Paper confirms the presence of MTH in the virgin fibre content in a number of samples (eg Topgun, sold at Walmart).¹⁴² This indicates that Yalong Paper is using paper materials produced from MTH pulp as part of its supply chain; it is highly probable that Yalong Paper's production is linked to MTH pulp from Indah Kiat Perawang.
- For further details or other examples, see table 'Chain of custody links between global brands and APP paper mills with trade links to Indah Kiat Perawang'.

International trafficking route four: exports to the international market from APP Indonesia mills with trade links to Indah Kiat Perawang

Indah Kiat Perawang can be documented to trade pulp to three APP sister paper mills in Indonesia that then export paper, tissue and packaging products to 115 CITES party countries around the world: Indah Kiat Serang, Indah Kiat Tangerang and Tjiwi Kimia.¹⁴³

- According to APP, in 2009 40% of pulp production at Indah Kiat Perawang was consumed by 'Indah Kiat paper machines'.¹⁴⁴ APP Indonesia pulp consumption data indicate that these 'Indah Kiat paper machines' include the Indah Kiat paper mills on Java at Serang and Tangerang.
- Internal sales data indicate that Indah Kiat is a major supplier of raw materials to Tjiwi Kimia.¹⁴⁵ APP Indonesia pulp consumption data indicate that these raw materials are highly likely to be pulp from the Indah Kiat Perawang mill.
- APP's printing paper mill PT Pindo Deli is also likely to process pulp supplied by Indah Kiat Perawang, but company data are incomplete.¹⁴⁶

Indah Kiat Serang, Indah Kiat Tangerang and Tjiwi Kimia: MTH link confirmed

- Fibre testing of products manufactured at Indah Kiat Serang, Indah Kiat Tangerang and Tjiwi Kimia confirms the presence of MTH, together with acacia, in the virgin fibre content in a number of samples.¹⁴⁷ This indicates that Indah Kiat Serang, Indah Kiat Tangerang and Tjiwi Kimia use MTH pulp as part of their supply chains. Examples of products found to contain MTH fibre include Danone Nutricia Nutrilon Royal 3 packaging linked to Indah Kiat Serang, and Barnes & Noble 'Nursery rhyme treasury' books printed by Tjiwi Kimia.¹⁴⁸

- For further details or other examples, see table ‘Chain of custody links between global brands and APP paper mills with trade links to Indah Kiat Perawang’.

The Univenus: MTH link unconfirmed

- The Univenus on Java exports semi-finished tissue products from mother tissue reels manufactured by The Univenus Perawang.¹⁴⁹ It therefore shares a supply chain with its sister Perawang mill, for which the MTH component is unconfirmed (see ‘International trafficking route one’, above).

THE SCALE OF APP'S GLOBAL TRADE

Asia Pulp & Paper already claims to be the third largest paper company in the world, and aims to be number one.

This investigation has identified how APP is breaking Indonesian law, driving Sumatran tigers and ramin trees closer to extinction and undermining CITES – the international conservation agreement governing trade in protected species.

The investigation shows that the global market for paper products from APP paper mills in Indonesia and China includes the vast majority of countries that are signatories to the CITES treaty. Companies sourcing from APP whose products contain rainforest fibre include Xerox, National Geographic and Walmart.

- More than 80% of all direct exports from APP Indonesia and China (some 3.1 million tonnes of paper, tissue or packaging products) are through 12 paper mills belonging to 9 individual APP companies with identified trade links to Indah Kiat Perawang.
- These APP paper mills export to 136 CITES party countries, 78% of all countries bound by the objectives of the Convention. The USA, the UK, New Zealand, Greece, Israel and Australia are major importers of products from APP paper mills in Indonesia and China shown to trade with Indah Kiat Perawang.
- The investigation identified an initial list of specific products linked to these APP mills. Laboratory testing of these products confirms they contain natural forest fibre (MTH). These products, ranging from copy paper to tissue, books and packaging, were bought in 8 countries and relate to 12 separate corporate consumers and traders.

Overview: Indah Kiat Perawang's trade risks to key CITES party countries

The investigation has sought to identify CITES party countries importing products associated with Indah Kiat Perawang's pulpwood supply. The investigation traced several stages in the trafficking routes through which products manufactured from Indah Kiat Perawang pulp enter international trade:

1. Identifying links between MTH pulp produced at Indah Kiat Perawang and sister APP paper mills in Indonesia and China.
2. Identifying countries importing products from these APP mills in Indonesia and China with trade links to Indah Kiat Perawang.
3. Identifying specific consumer products available in CITES party countries that use paper produced by one of the APP paper mills in Indonesia and China with trade links to Indah Kiat Perawang and where fibre tests confirm the presence of MTH fibre together with acacia.

APP international trade to key markets and brands

Any company or country importing from APP should see APP's global paper production and trade as high-risk. This investigation traced several stages in the trafficking routes through which products manufactured from Indah Kiat Perawang pulp enter international trade: from the Indah Kiat Perawang mill to APP mills in China and Indonesia; from APP mills in

China and Indonesia to the countries importing those products; and to specific consumer products within those countries.

Indah Kiat Perawang to the CITES world

APP company documents together with import data and shipping information¹⁵⁰ have allowed the investigation to identify trade links between Indah Kiat Perawang and 12 individual APP paper mills run by 9 APP companies in Indonesia and China. These 12 APP paper mills ultimately trade to up to 136 countries that are parties to the CITES Convention.¹⁵¹

Indah Kiat Perawang to global brands

Trade information including APP company documents and import data have allowed the investigation to link global companies across multiple market sectors back to individual paper mills run by these 9 APP companies. In some cases, the data establish links between final brand items and a specific paper product manufactured by a particular APP paper mill with trade links to Indah Kiat Perawang.

MTH fibre indicates ramin risk

Fibre testing by independent laboratories is an important component of this trade-risks investigation.

Indonesia is the only large-scale producer of either MTH pulp¹⁵² or acacia pulp.¹⁵³ Therefore, the presence of MTH together with acacia in the virgin fibre content of paper products is a strong indicator that the pulp fibre comes from Indonesia.

Where a company is buying paper products that originate with one of the APP paper mills with trade links to Indah Kiat Perawang, there is a risk that the product contains MTH fibres from the indiscriminate clearance of ramin habitat – this pulpwood supply to Indah Kiat Perawang has been documented to include illegal ramin. The presence of MTH fibre in a paper product produced by one of these APP mills is a strong indicator of this risk.

In 2010, according to official Chinese import data,¹⁵⁴ APP China mills imported around 560,000 tonnes of hardwood pulp from Indonesia, with three-quarters (416,000 tonnes) of this imported by APP's Gold East Paper, located in Dagang, and two of the APP Ningbo mills, located in Ningbo.

Other APP trade information¹⁵⁵ indicates an estimated 70% of the pulp imported by China from APP Indonesia is MTH pulp, virtually all of which originates from Indah Kiat Perawang.¹⁵⁶ Of the pulp shipped to Dagang, where APP's Gold East Paper is located, over three-quarters is MTH pulp from Indah Kiat Perawang. Of the pulp shipped to Ningbo, where the APP Ningbo mills are located, nearly 60% is MTH pulp from Indah Kiat Perawang.¹⁵⁷

Together with these data, the combined presence of MTH and acacia fibre in materials produced by any of these APP China paper mills (or associated printers and converters) strongly indicates a link between that mill and the MTH pulpwood supply for Indah Kiat Perawang.

The investigation has identified and had tested various products from APP China mills Gold East Paper and Gold Huasheng, the Ningbo mills and Yalong Paper; a number of these tests have confirmed the presence of MTH together with acacia.¹⁵⁸

Where the chain of custody evidence provides a clear link to a specific retail item on sale in an identifiable market, the virgin fibre content of sample items was tested to identify whether or not MTH, together with acacia, was present.

The investigation has identified:

- The volume of imports by key APP markets from APP paper mills with trade links to Indah Kiat Perawang
- A preliminary list of brands where the investigation has established a chain of custody link to one of these APP paper mills and where the results of one or more tests of those companies' retail goods have confirmed the presence of MTH, together with acacia

The risks of trade with APP

Any company or country importing from APP, such as those listed below and elsewhere in this evidence, should see APP's global paper production and trade as high-risk, for the following reasons:

- Ramin is an internationally protected species under CITES trade regulations. All international trade in ramin specimens or derivatives from Indonesia is banned, with the exception of that sourced from one small selective logging operation that does not contribute to the pulp sector's raw material supply chain.¹⁵⁹
- The investigation has identified some 136 countries that are signatories to the CITES Convention that import from APP mills with trade links to Indah Kiat Perawang. This shows the extent of the international trade associated with the presence of illegal ramin logs in the MTH pulpwood supplies for Indah Kiat Perawang.
- The presence of MTH fibre in a paper product produced by one of the APP mills with trade links to Indah Kiat Perawang illustrates the supply chain risks associated with trading with or importing from APP:
 - APP has been shown to be operating in violation of Indonesia's ramin ban and its national CITES regulations. Any final end product containing MTH fibre may include fibres resulting from the indiscriminate clearance of ramin habitat – this pulpwood supply to Indah Kiat Perawang has been documented to include illegal ramin.

Forensic fibre testing: testing of paper products helps link multiple APP mills, markets and target sectors to the MTH pulpwood supply for Indah Kiat Perawang

Forensic testing of paper products helps link multiple APP mills, markets and corporate sectors to the rainforest log supply for Indah Kiat Perawang. The presence of mixed tropical hardwood (or MTH) fibre within paper samples originating from APP Indonesia or China mills with trade links to Indah Kiat Perawang indicates that the product may include fibres resulting from the indiscriminate clearance of ramin habitat; this pulpwood supply to Indah Kiat Perawang has been documented to include illegal ramin.

In preliminary analysis, the investigation has identified specific products, including tissue, paper and packaging materials, purchased in 8 different countries that contain mixed tropical hardwood linked to APP mills with trade links to Indah Kiat Perawang.

Specific products confirmed to contain MTH fibre through independent testing were identified as linked to these APP paper mills

The investigation has identified a preliminary list of 12 companies where specific products can be linked to APP paper mills in Indonesia or China with identified trade links to Indah Kiat Perawang and where fibre testing confirms that these products contain MTH.¹⁶⁰ Further analysis and testing are ongoing.

The use of fibre testing laboratories – MTH fibre as a proxy for clearance of ramin habitat

Where products have been identified as linked to APP paper mills in Indonesia or China with trade links to Indah Kiat Perawang, samples of the products have been sent to fibre testing laboratories to help map out the global nature of the problem.¹⁶¹

MTH fibres are readily identifiable in samples sent to such laboratories. MTH is a classification covering the diverse range of tropical hardwood species used by the paper industry. The presence of MTH fibres in APP paper products serves as a readily recognisable indicator that an end product may be linked to Indah Kiat's MTH pulpwood supply, which includes illegal ramin from the clearance of ramin habitat.

Limited laboratory testing in the USA of paper products imported from Indonesia has identified specimens of ramin as part of the MTH fibre. For example, in 2010, ramin vessels were identified in paper samples taken from two books printed in and exported from Indonesia.¹⁶² This demonstrates that ramin is identifiable in samples from paper products. However, in order to confirm that a product is not contaminated with ramin, every square centimetre of paper within a given product identified as containing MTH would need testing by a laboratory.

Indonesia is the only large-scale producer of MTH pulp

Indonesia is the only large-scale producer of pulp containing MTH.¹⁶³ Within Indonesia, there are currently only two large-scale producers of pulp using MTH – APP and Asia Pacific Resources International Holdings Limited (APRIL).¹⁶⁴

Overlaying Ministry of Forestry forest cover maps with maps of concession areas shows significant clearance of peat swamp forest in timber plantation concessions supplying both APP and APRIL since the institution of the 2001 ramin logging ban, and Landsat analysis shows more recent clearance.¹⁶⁵ The MTH cleared from these areas is likely to be used to supply pulp mills.

The process of testing

The key steps in the lab testing process were as follows:

- 1) The investigation identified a selection of paper, tissue and packaging materials and brands linked to APP paper mills with trade links to Indah Kiat Perawang and traded to a number of countries around the world. Further products where other compelling evidence of a link with Indah Kiat Perawang exists were also identified.
- 2) Samples of the materials were sent to testing laboratories IPS (USA) and TU Darmstadt (Germany), both global authorities for testing of paper products, widely used by the paper industry.¹⁶⁶

- 3) The lab expert prepared and examined the samples under a microscope to identify the wood species used.
 - a) For paper and tissue products, testing was conducted on products sold as 100% virgin fibre products, to avoid potential MTH contamination via a product's recycled fibre content.
 - b) For multi-ply packaging boards with some layers made from recycled fibre, only those layers were tested that appeared to be made of virgin fibre (usually the topmost white layer).

Test results highlight potential links to Indah Kiat Perawang MTH pulp

Test results have confirmed the presence of MTH and acacia in a range of products using APP paper from Indonesia or China.¹⁶⁷

The presence of either MTH or acacia within paper samples strongly indicates that the pulp fibre originates from Indonesia.¹⁶⁸

Taken in isolation, the presence of MTH within paper samples strongly indicates a) links to rainforest clearance in Indonesia and b) links to APP or Asia Pacific Resources International Holdings Limited (APRIL), with APP the dominant player.

The presence of MTH fibre within paper samples originating from APP Indonesia or China mills with trade links to Indah Kiat Perawang indicates that the product may include fibres resulting from the indiscriminate clearance of ramin habitat – this pulpwood supply to Indah Kiat Perawang has been documented to include illegal ramin.

Xerox and Danone products produced by Indah Kiat contain high levels of Indonesian rainforest fibre¹⁶⁹

Fibre analysis report from the Institute for Paper Science and Technology (Germany) shows the breakdown of fibre content within a paper sample from Astro copy paper produced for Xerox.

Xerox copy paper linked to Indah Kiat consists predominantly of Indonesian rainforest fibre

(1) Trade data showing that Xerox Astro brand copy paper is manufactured by APP's Indah Kiat Perawang facility together with (2) independent fibre analysis of the product reveal that it contains high levels of Indonesian rainforest fibre:

1. Confidential 2010 and 2011 trade data obtained by Greenpeace show that the Xerox Astro brand copy paper sold in Greece is manufactured by Indah Kiat Perawang.
2. Greenpeace sent samples of this copy paper to the Institute for Paper Science and Technology in Germany for fibre analysis. Its full report for one sample taken from this copy paper indicates that 60% of the hardwood vessels counted are what the laboratory categorises as 'unknown hardwood' species. The evaluation was 'a strong indication for mixed tropical hardwoods as 130 unknown vessels have been found, together with acacia'.¹⁷⁰

Fibre analysis report from IPS (USA) shows the breakdown of fibre content within a paper sample from Danone Nutricia packaging. Microscopic image shows fibres classified as MTH vessels within the Danone Nutricia sample.

Danone packaging linked to Indah Kiat consists predominantly of Indonesian rainforest fibre

(1) APP promotional material showing that packaging for Danone Nutricia baby milk is manufactured at APP's Indah Kiat Serang facility together with (2) independent fibre analysis of the product reveal that it contains high levels of Indonesian rainforest fibre:

1. Packaging for Danone Nutricia baby milk is produced by Indah Kiat Serang, according to APP promotional material. Indah Kiat Perawang supplies virgin pulp to this sister paper mill.¹⁷¹
2. Greenpeace sent samples of this packaging to IPS in the USA for fibre analysis. Its full report for one sample taken from the glossy printed top sheet of this packaging board (ie paper made from virgin fibre) indicates that 59% of the sample is hardwood, and virtually all (97%) of this is mixed tropical hardwoods from at least 15 different tree types.¹⁷²

Markets and brands

Using trade data and company documents, the investigation identified key markets importing significant volumes of paper products from APP paper mills in Indonesia and China linked to Indah Kiat Perawang. Further investigation and forensic testing identified specific products linked to these APP paper mills that contained MTH fibre. These products, ranging from copy paper to tissue, books and packaging, come from corporate consumers and traders of APP products including Xerox, National Geographic, Danone and Walmart.

Table: chain of custody links between global brands where MTH has been found in at least one product and APP mills with trade links to Indah Kiat Perawang

APP market sector	Group	Brand/ subsidiary/ associate company	Country of sale	Brand link to trafficking route (1–4) for Indah Kiat Perawang pulp and identified APP mill	Summary of evidence	Identified APP brands	Retailed final product	Retailer, location and date of purchase	Testing results showing presence of MTH and/or acacia ¹⁷³
Copy paper and office supplies	Xerox (USA) ¹⁷⁴	Xerox Hellas SA	Greece	Trafficking route one Indah Kiat Perawang, Indonesia	APP documents obtained by Greenpeace show 2010–2011 shipping details for Indah Kiat copy paper to Xerox Hellas. Other shipping documentation reveals that Xerox Emirates LLC (UAE) imported copy paper from Pindo Deli (Java) in 2010.	n.a.	Xerox Astra A4 75gsm (purple) paper and 80gsm (yellow) paper	Astro A4 75gsm: Docusys, Athens (Greece), December 2011 Astro A4 80gsm: Chryssopoulos Theodoros, Athens (Greece)	MTH & acacia
	Walmart (USA)		China	Trafficking route three Yalong, China	Greenpeace bought APP own-brand copy paper in various Walmart outlets across China.	Topgun	Topgun 70gsm A4 copy paper	Walmart, Beijing (China), October 2011	MTH & acacia
	Mondi Group (UK/South Africa)	Paperlink (part of Mondi Group) ¹⁷⁵	South Africa	Trafficking route four Tjiwi Kimia, Indonesia	Shipping documentation obtained by Greenpeace reveals that Paperlink (part of Mondi Group) imported significant volumes of paper from Tjiwi Kimia in 2010. A still active Paperlink website ¹⁷⁶ indicates that the company has been trading Sinarboard, which is manufactured by Indah Kiat Serang.	Various unidentified art and printing papers	Various unidentified art and printing papers	n.a.	
		Hadera Paper Printing (formerly Mondi Hadera)	Israel	Trafficking route three Gold East/Ningbo mills, China Potentially trafficking	Mondi Hadera products are sold in Israel under the Mondi brand name. ¹⁷⁸ In 2006, the company ¹⁷⁹ signed a rolling contract with APP China to supply coated paper, with 'an	n.a.	Silk APP 157gsm (coated paper) Nevia 90gsm	Sourced from Mondi Hadera (Israel), December 2011	MTH & acacia MTH &

		Paper) ¹⁷⁷		route four Tjiwi Kimia, Indonesia	<p>obligation on Mondi's part to purchase from suppliers in the APP Group [...] no less than about 15 thousand tons per year' of coated paper.¹⁸⁰ As of 2011, the contract remained in force and the company continued to be supplied by APP.¹⁸¹</p> <p>In 2010, the company imported 40,000 tonnes of paper in total.¹⁸²</p> <p>Chinese export data indicate that the majority of exports to Israel are from Gold East, although Ningbo Zhonghua also exports coated paper/paperboard.¹⁸³ Additional information also indicates that Israel imports coated paper from Tjiwi Kimia.¹⁸⁴</p>				acacia
	Nippcraft	Collins Debden Ltd	UK	Trafficking route four Tjiwi Kimia, Indonesia	<p>According to its 2010 Annual Report, total sales for the Nippcraft Group were \$80 million.¹⁸⁵ Key markets were Australia (42%), North America (28%) and Europe (24%).¹⁸⁶</p> <p>Diaries and other stationery products represented nearly 70% of group sales,¹⁸⁷ largely through Nippcraft subsidiaries Collins Debden Pty Ltd (Australia) and Collins Debden Ltd (UK), whose primary business is the distribution of office stationery products such as notepads and account books.¹⁸⁸</p> <p>Nippcraft's various disclosures to shareholders and other financial documents reveal:</p> <ul style="list-style-type: none"> • Nippcraft and its subsidiary Collins Debden are part of the APP Group and Nippcraft buys 'finished products including stationery 	Collins Debden	Collins Debden Mickey Mouse A5 mid-year diary (Made in Singapore)	www.collinsdebden.co.uk (UK), October 2010	MTH & acacia

					<p>products' from APP group mills.¹⁸⁹</p> <ul style="list-style-type: none"> Between 2009 and June 2011, over 70% of Nippcraft purchases from within the APP group¹⁹⁰ were from PT Pabrik Kertas Tjiwi Kimia, including TK Import & Export Ltd.¹⁹¹ In 2010, the value of this direct trade with Tjiwi Kimia represented \$18 million.¹⁹² <p>Unlike Pindo Deli and Indah Kiat, Tjiwi Kimia includes a printing house, TK Printing, and thus is able to supply finished products including stationery products.</p>				
		Collins Debden Pty Ltd	Australia	Trafficking route four Tjiwi Kimia, Indonesia	See above	Collins Debden	Collins 'Kingsgrove' 'Week to an opening' A4 2011 diary (blue) (Made in Singapore)	Broadway Shopping Centre, Sydney (Australia), December 2010	MTH & acacia
							Debden Designer 'Week to an opening' pocket 2011 diary (brown) (Made in Singapore)		MTH ¹⁹³ & acacia
Tissue	Progressive Enterprises (New Zealand)	Countdown	New Zealand	Trafficking route one Pindo Deli Perawang, Indonesia	Cottonsofts is an APP company manufacturing and distributing tissue products for New Zealand retailers. ¹⁹⁴ One of its brands is CottonSofts, which is sold by Progressive Enterprises group retailers including Foodtown and Woolworths, as well as Countdown.	CottonSofts	CottonSofts Marine Splash, white unscented two-ply toilet tissue, four-pack	Countdown, Wellington (New Zealand), June 2011	MTH & acacia

					A large part of Cottonsoft's 2010 imports to New Zealand from Indonesia were from the Pindo Deli Perawang mill. ¹⁹⁵				
Packaging	Acer		UK	Trafficking route three Yalong, China	A 2010 online Yalong Paper company brochure ¹⁹⁶ shows packaging for various Acer laptop models (one netbook and one notebook).	n.a.	Acer Aspire ONE 532h-2Db (Made in China, 2010)	eBay.co.uk (UK), October 2011	MTH & acacia
	Danone (France)		Indonesia	Trafficking route four Indah Kiat Serang, Indonesia	According to an industry source, Danone is an important customer of APP Indonesia. Indah Kiat Serang's website displays a Danone Nutricia product as a reference. ¹⁹⁷ In Indonesia, Indah Kiat Serang is the only APP mill specialising in the production of coated packaging board, including food-grade materials. It holds FDA (US Food and Drug Administration) certificates for several of its brands. ¹⁹⁸	Unidentified coated packaging board	Nutricia 'Nutrilon Royal 3' baby milk powder	Carrefour (Indonesia), December 2011	MTH & acacia
Books and printed materials	Parragon Publishing (UK)		USA	Trafficking route four Tjiwi Kimia, Indonesia	US customs data for 2011 identify Parragon as an importer of titles from Tjiwi Kimia. Imports include books within the Everyday range, as well as the <i>Mini childrens reference slipcase</i> (Parragon Publishing, 2011, ISBN-10 1445442647) US customs data dating back to 2008 also identify Parragon as an importer of various book ranges from Tjiwi Kimia, indicating a long-term relationship with APP.	n.a.	<i>Everyday baking</i> (Copyright 2010, Printed in Indonesia) ISBN 978-1-1-4075-9447-7	Amazon.com (USA), October 2011	MTH & acacia
	Parragon Publishing (UK)		UK	Trafficking route four Tjiwi Kimia, Indonesia	US customs data for 2011 identify Parragon as an importer of titles from Tjiwi Kimia including books within the Everyday range. Parragon also sells the Everyday range in the UK.	n.a.	<i>Energy food</i> ISBN 978-1-4075-7868-2	Bookshop, London (UK), October 2011	MTH & acacia

					Books within the Everyday range bought on Amazon.co.uk that are printed in Indonesia include: <i>Everyday Thai</i> (2010), ISBN 978-1-4075-9452-1; <i>Everyday Mediterranean</i> (2010), ISBN 978-1-4075-9450-7; <i>Everyday chocolate</i> (2010), ISBN 978-1-4075-9448-4; and <i>Everyday desserts</i> (2010), ISBN 978-1-4075-9449-1). Similar books in the same range can be bought on Amazon.com.				
	Barnes & Noble (USA)		USA	Trafficking route four Tjiwi Kimia, Indonesia	<p>US customs data from 2009 identify Barnes & Noble as an importer of various titles from Tjiwi Kimia, including <i>Nursery rhyme treasury</i> (published by Parragon).</p> <p>US customs data from 2009–2011 identify Barnes & Noble as the importer of additional titles from Tjiwi Kimia, including:</p> <p><i>Horses: their temperament and elegance</i>, ISBN 978-1-4351-1678-8 (2009)</p> <p><i>A cat's life</i>, ISBN 978-1-4351-1762-4 (2009)</p> <p><i>A dog's life</i>, ISBN 978-1-4351-1763-1 (2009)</p> <p><i>Legends of rock</i>, ISBN 978-1-4351-1698-6 (2009)</p> <p><i>Greatest ever Indian: easy and delicious step-by-step recipes</i>, ISBN 978-0-7607-9046-5 (2009)</p> <p><i>Illustrated history of weaponry</i>, ISBN 978-0-7607-8444-0 (2011)</p> <p>US customs data from 2008–2009 identify Barnes & Noble as importing several book titles from Tjiwi Kimia, indicating a long-term relationship.</p>	n.a.	<i>Nursery rhyme treasury</i> ISBN-10: 1407528572	Amazon.com (USA), October 2011	MTH & acacia

					Titles included <i>Illustrated history of weaponry</i> , ISBN 978-0-7607-8444-0.				
	Barnes & Noble (USA)		USA	Trafficking route four Tjiwi Kimia, Indonesia	See above	n.a.	<i>The illustrated history of weaponry</i> ISBN 978-0-7607-8444-0	Barnesandnoble.com (USA), October 2011	MTH & acacia
	National Geographic (USA)		USA	Trafficking route three Gold East Paper/Gold Huasheng, China	The Sinar Mas Print Awards, sponsored by 'the Sinar Mas group', is open to printers internationally. At least 70% of the paper used in entries must be from Gold East Paper, Gold Huasheng Paper or Hainan Jinhai Pulp & Paper. ¹⁹⁹ The 2010 Sinar Mas Print Awards name the National Geographic book <i>Global birding</i> for an award. ²⁰⁰	n.a.	<i>Global birding</i> ISBN-10: 1426206380	Amazon.com (USA), October 2011	MTH & acacia
	National Geographic (USA)		USA	Trafficking route three Gold East Paper/Gold Huasheng, China	See above. The 2010 Sinar Mas Print Awards name the National Geographic book <i>Through the eyes of the Vikings</i> for an award. ²⁰¹	n.a.	<i>Through the eyes of the Vikings</i> ISBN-10: 1426206402	Amazon.com (USA), December 2011	Pending
	Constable & Robinson (UK)		UK	Trafficking route four Indah Kiat Serang, Indonesia	The 2011 PrintWeek India Quality Awards name <i>The sacred India book</i> , printed on 'Sinar Mas Royal matt art paper'. ²⁰² This is assumed to be Sinar Royal, which is produced by Indah Kiat Serang. A sample of the cover was sent for testing, which confirmed the presence of MTH.	Sinar Royal (assumed)	<i>The sacred India book</i> ISBN-10: 178033124X	Amazon.co.uk (UK), October 2011	MTH & acacia

Table: chain of custody links between global brands and APP mills

APP market sector	Group	Brand/ subsidiary/ associate company	Country of sale	Brand link to trafficking route (1–4) for Indah Kiat Perawang pulp and identified APP mill	Summary of evidence	Identified APP brands	Retailed final product	Retailer, location and date of purchase	Testing results showing presence of MTH and/or acacia ²⁰³
Tissue and copy paper	Auchan (France)	Auchan	China	Trafficking route three Yalong, China Gold Hongye, China	Auchan China stocks several APP-brand products, including copy paper and tissue products.	Flagship (copy paper) Breeze (tissue)	n.a.	Auchan (Beijing, Kexing, China), June 2011	MTH & acacia Acacia
Tissue	Tesco (UK)	Tesco	China	Trafficking route three Gold Hongye, China	Tesco retail outlets in China stock APP tissue brands including Breeze and Virjoy. ²⁰⁴	Breeze Virjoy	n.a. n.a.	Tesco (Beijing, Dacheng, China), June 2011	Acacia Acacia
Copy paper	PaperlinX (Australia)	Spicers (USA)	USA	Trafficking route one Indah Kiat Perawang, Indonesia	In 2011, Spicers US imported 377t of the APP copy paper brand Paperline. ²⁰⁵	Paperline	n.a.	G8 Central (USA), November 2011	Traces of MTH, principally acacia ²⁰⁶
	Sima Europe BV (Netherlands)	Sima Europe BV	n.a.	Trafficking route four Indah Kiat Tangerang, Indonesia	Sima Europe claims to be the sole distributor of Spectra Color (an Indah Kiat colour copy paper brand) ²⁰⁷ to the Benelux states. ²⁰⁸	Spectra Color	n.a.	n.a.	Not tested
	White Paper Co (Canada)	White Paper Co	n.a.	APP	White Paper Co's own copy paper brand Polar Plus is being produced by APP. ²⁰⁹	n.a.	Polar Plus	n.a.	Not tested
Printing paper	PaperlinX (Australia)	PaperlinX Canada	n.a.	Trafficking route three Gold East Paper, China	In 2011, PaperlinX Canada imported over 3,300t of Gold East coated printing papers. ²¹⁰	n.i.	n.a.	n.a.	Not tested
	PaperlinX (Australia)	Dalton Paper	Australia	Trafficking routes three and four	Dalton Paper, an Australian PaperlinX subsidiary, states that its own printing paper brand Alpine is sourced from three different	n.a.	Alpine Cast Coated ²¹¹	n.a.	Not tested

				Pindo Deli Perawang, Indonesia Gold East Paper/Gold Huasheng, China	APP paper mills.	n.a.	Alpine Coated Gloss/Satin ²¹²	Dalton (Australia), July 2011	Small volume of MTH, mainly acacia
Stationery	Vera Bradley Inc (USA)	Vera Bradley Inc	n.a.	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	The 2011 Sinar Mas Print Awards include a stationery ensemble made for the design company Vera Bradley Inc. ²¹³	东帆	Vera Bradley office stationery ensemble ²¹⁴	n.a.	Not tested
Packaging	3M Company (USA)	3M Company	n.a.	Trafficking route three Gold East Paper, China Yalong Paper, China	The 2011 Sinar Mas Print Awards include labels printed for the 3M product Thinsulate, Hong Kong Version, on Space Shuttle (157gsm) manufactured by Gold East. ²¹⁵ In 2011, the 3M Company imported 78t of notebooks from Yalong Paper, China, to the USA. ²¹⁶	Space Shuttle n.i.	3M Thinsulate label ²¹⁷ n.i.	n.a. n.a.	Not tested Not tested
	Scatolificio del Garda (Italy)	Scatolificio del Garda (SDG)	n.a.	Trafficking route three Yalong, China	SDG was a major European consumer of polyethylene (PE) coated board from Yalong Paper in 2011. ²¹⁸ This type of board is used largely by the food and catering sector. SDG lists its clients as including illycaffè S.p.A (Italy) and Mövenpick Hotel & Resorts (Switzerland). ²¹⁹	n.i.	n.i.	n.a.	Not tested
Books and printed materials	Advance Publications Inc (USA)	Condé Nast	n.a.	Trafficking route three Gold East Paper, China	The Sinar Mas Print Awards, sponsored by the Sinar Mas group, are open to printers internationally. At least 70% of the paper used in entries must be from Gold East Paper, Gold Huasheng Paper or Hainan Jinhai Pulp & Paper. ²²⁰ The 2011 Sinar Mas Print Awards include the <i>Vogue China</i> anniversary book <i>The best of five</i> , published by Condé Nast and printed on Space Shuttle paper manufactured by Gold East. ²²¹	Space Shuttle	<i>Vogue - The best of five</i>	n.a.	Not tested
	British Museum Company Ltd	British Museum	n.a.	Trafficking route three Gold East Paper,	The 2011 Sinar Mas Print Awards include the British Museum exhibition catalogue <i>Afghanistan: crossroads of the ancient world</i> ,	Space Shuttle	<i>Afghanistan: crossroads of the ancient world</i> ²²²	n.a.	Not tested

	(UK)	Press		China	printed on Space Shuttle paper, manufactured by Gold East.		ISBN 978-0-7141-1172-8		
	Bulova (USA)	Bulova	n.a.	Trafficking route three Gold East Paper/Gold Huasheng	The 2010 Sinar Mas Print Awards include a promotional product for Bulova. ²²³	n.i.	n.a.	n.a.	Not tested
	C & C Joint Printing Ltd (China)	C & C Joint Printing Ltd	n.a.	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	This company received numerous Sinar Mas Print Awards in 2010 and 2011. ²²⁴ Sinar Mas-awarded print products – hence manufactured using APP paper – include those produced for the publishers Chinese National Geography (China), La Martinière Group/Abrams Books (France), Bulova (USA) and The British Museum (UK). C & C claims its other clients include Hachette Filipacchi Medias/Lagardère Media (France). ²²⁵	Space Shuttle ²²⁶	<i>Chinese national geography</i> magazine ²²⁷ <i>Krazy Kat & the art of George Herriman: A celebration</i> ²²⁸ ISBN 978-0-8109-9594-9 <i>Afghanistan: crossroads of the ancient world</i> ²²⁹ ISBN 978-0-7141-1172-8	n.a. n.a. n.a.	Not tested Not tested Not tested
	Carlton Publishing (UK)	Goodman Books	n.a.	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	The 2011 Sinar Mas Print Awards include the Goodman Books publication <i>The contemporary art book</i> . ²³⁰	n.i.	<i>The contemporary art book</i> ²³¹ ISBN 978-1-8479-6005-4	n.a.	Not tested
	Chinese National Geography Press (CNG) (China)	Chinese National Geographic	China	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	The 2010 Sinar Mas Print Awards include the Chinese National Geography Press publication the <i>Chinese national geography</i> magazine. ²³²	n.i.	<i>Chinese national geography</i> magazine	n.a.	Not tested
	Everbest Printing Co Ltd (China)	Everbest Printing Co Ltd	n.a.	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	This company received numerous Sinar Mas Print Awards in 2010 and 2011. ²³³ Sinar Mas-awarded print products – hence manufactured using APP paper – include those produced for the publishers Thames & Hudson (UK), David Bull Publishing (USA), FLM Publishing Co Ltd (China) and others.	n.i. n.i.	<i>New Asian interiors</i> ²³⁴ ISBN 978-0-5005-1546-4 <i>Can-Am cars in detail</i> ²³⁵ ISBN 978-1-9350-	n.a. n.a.	Not tested Not tested

					Everbest claims its other print clients include Ballistic Media Pty Ltd (Australia), AA Publishing (UK), Readers Digest (USA), The Five Mile Press (Australia), Hinkler Books Pty Ltd (Australia) and many others.	n.i.	0711-1 <i>iW - International Watch</i> magazine ²³⁶	n.a.	Not tested
	General Motors (USA)	General Motors	n.a.	Trafficking route three Gold East Paper, China	The 2011 Sinar Mas Print Awards include a General Motors Buick Lacross catalogue, printed on Gold East Paper's Xplore (200gsm). ²³⁷	Xplore	Buick Lacross catalogue	n.a.	Not tested
	La Martinière Groupe (France)	Abrams Books	n.a.	Trafficking route three Gold East Paper, China	The 2010 and 2011 Sinar Mas Print Awards include several Abrams Books publications.	n.i.	<i>Earth from above</i> ²³⁸ ISBN 978-0-8109-9693-9 <i>Golf magazine private lessons</i> ²³⁹ ISBN-10: 0810984822 <i>Krazy Kat & the art of George Herriman: A celebration</i> ²⁴⁰ ISBN 978-0-8109-9594-9	n.a. n.a. n.a.	Not tested Not tested Not tested
	R.R. Donnelley & Sons Co (USA)	R.R. Donnelley	USA	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	RR Donnelley received numerous Sinar Mas print awards in 2010 and 2011. Sinar Mas-awarded print products – hence manufactured using APP paper – include those produced for National Geographic (USA) and Nike (USA).	n.i. Space Shuttle	<i>Global birding</i> ²⁴¹ ISBN-10: 1426206380 Nike+ SportWatch GPS ²⁴²	Amazon.com (USA), October 2011 Amazon.com (USA), December 2011	MTH & acacia Small amount of MTH, some acacia
	TATA (India)	TATA	n.a.	Trafficking route three Gold East Paper/Gold Huasheng/Hainan Pulp & Paper, China	The 2011 Sinar Mas Print Awards include a catalogue printed for TATA (India). ²⁴³	n.i.	2011 TATA summer catalogue ²⁴⁴	n.a.	Not tested
	Thames & Hudson Ltd	Thames &	USA	Trafficking route three	The 2011 Sinar Mas Print Awards include the Thames & Hudson publications <i>I wonder</i> and	Space Shuttle	<i>I wonder</i> ²⁴⁵ ISBN 978-0-5005-	Amazon.com (USA), December	MTH &

	(UK)	Hudson Ltd		Gold East Paper, China	<i>New Asian interiors.</i>	n.i.	1529-7 <i>New Asian interiors</i> ²⁴⁶ ISBN 978-0-5005-1546-4	2011 n.a.	acacia Not tested
	Toppan Leefung Co Ltd (Japan)	Toppan Leefung (Hong Kong) Ltd	n.a.	Trafficking route three Gold East Paper, China	This company received numerous Sinar Mas Print Awards in 2010 and 2011. ²⁴⁷ Sinar Mas awarded print products – hence manufactured using APP paper – include those produced for publishers Thames & Hudson (UK), Condé Nast (France), Hachette Filipacchi Medias/Lagardère Media (France) and others. Toppan Leefung claims its other clients include National Geographic (USA). ²⁴⁸	Space Shuttle Space Shuttle Space Shuttle Space Shuttle	<i>I wonder</i> ²⁴⁹ ISBN 978-0-5005-1529-7 <i>Vogue - The best of five</i> ²⁵⁰ <i>GQ China</i> ²⁵¹ <i>ELLE China</i> ²⁵²	n.a. n.a. n.a. n.a.	Not tested Not tested Not tested Not tested

CALL FOR ACTION

Although Indonesia's ramin is an internationally protected species, its habitat continues to be cleared. Ramin logs from this clearance are being mixed in with numerous other rainforest logs to feed the pulp and paper sector. The place to tackle the problem is at source, before this mixed tropical hardwood has been pulped and enters international trade.

- APP Indonesia's flagship pulp mill Indah Kiat Perawang is heavily dependent on MTH pulpwood supplies from areas including peat swamp forest, a key ramin habitat. This investigation indicates that its MTH pulpwood supply from such areas, which contains illegal ramin logs, violates Indonesia's ramin ban and its national CITES regulations.
- A Ministry of Forestry report on ramin recommends a ban on all clearance of peat swamp forest. The Government of Indonesia should make the findings of this report permanent policy.
- Companies should cease trade with APP and implement policies to ensure zero deforestation in the supply chain.
- Golden Agri-Resources, part of the Sinar Mas group, is already implementing a policy ending all peat swamp forest clearance. The Sinar Mas group as a whole, including APP, should implement a policy ending all deforestation, including a ban on the clearance of any peat swamp forest.

Governance: 'Let's save ramin, let's save peat swamp forests'

'We should also push for strong punishment on those who are found guilty of environment [and forest] damage. We can no longer be soft.'²⁵³

President Susilo Bambang Yudhoyono, 7 June 2011

Indonesia's Ministry of Forestry should enforce national CITES regulations and immediately seize any illegal ramin at APP mills. It should also launch a comprehensive review of all existing pulp, palm oil and other concessions that overlap with natural forest to ascertain whether their operations fully comply with Indonesia's ramin laws and CITES regulations. The government should follow the recommendation made in a Ministry of Forestry report on ramin and end all clearance of peat swamp forest.

Ministry of Forestry report recommends ban on peat swamp forest clearance and improved enforcement

In its proposal to CITES for Appendix II listing of ramin, the Indonesian government recognised that clearance and conversion of peat swamp forest, as a key ramin habitat, was a threat to ramin populations.²⁵⁴

Since this CITES listing, a number of reports published by the Ministry of Forestry have recognised that clearance of peat swamp forest continues to be a driver of ramin loss, as well as poor enforcement of Indonesia's ramin ban and its national CITES regulations. One report, published 2005, sets out key recommendations for different government departments to execute in order to implement CITES regulations effectively. Key recommendations include:

- End conversion of peat swamp forests. ‘The practice of peat forest conversion into forest plantation should be prohibited.’²⁵⁵ Banning clearance of this key ramin habitat reduces the risk of ramin entering trade, where governance is more challenging. The report identifies ‘government’ as responsible for the implementation of this recommendation.
- Improve enforcement to prevent illegal trading. The report identifies departments within the Ministry of Forestry as Indonesia’s CITES Management Authority as responsible for the implementation of this recommendation.²⁵⁶

CITES Secretariat should call for ‘remedial action’ and CITES Management Authority should enforce Indonesia’s CITES regulations

This investigation demonstrates that APP’s international trade is adversely affecting ramin species and its habitat in contravention of Indonesia’s CITES regulations and its ramin ban.

Under Article XIII, upon receipt of satisfactory evidence that the provisions of the Convention are not being effectively implemented by Indonesia, such as that presented by this investigation, the CITES Secretariat can request that Indonesia’s CITES Management Authority – the Ministry of Forestry – propose ‘remedial action’ to address the problem.²⁵⁷

Articles 111 and 112 of Indonesia’s regulations governing CITES-listed species²⁵⁸ specify that any illegal ramin is ‘liable for confiscation’ (seizure) and that those trading illegal ramin are ‘liable for sanctions’. Remedial action would include enforcement of Indonesia’s CITES regulations. This would see the seizure of illegal ramin in APP’s pulpwood supply and APP and its ‘exclusive’ supplier, Sinarmas Forestry, charged, prosecuted and punished in accordance with the law.

Key remedial actions for Indonesia:

- Immediate seizure of any ramin within the market, including at pulp mills processing wood from natural forest clearance, and imposition of sanctions upon those found to be trading illegal ramin.
- Ban on all peat swamp forest clearance, given its status as a key ramin habitat as well as its critical importance for carbon storage and other ecological and biodiversity values.
- Launch of a comprehensive review of all existing pulp, palm, selective logging, coal and other mining concessions that overlap with natural forest to ascertain whether their operations fully comply with Indonesia’s ramin and CITES regulations, and other environmental regulations.

Indonesia’s call for international trade to defend ramin

‘Foreign countries accuse Indonesia of selling illegal timber. Indeed, we are working to fight it but there are also foreign countries that still receive [illegal woods]. If we want to improve it, the foreign countries should also stop receiving illegal timber.’²⁵⁹
President Susilo Bambang Yudhoyono, 7 June 2011

Any countries importing products from APP mills with trade links to Indah Kiat Perawang should seek assurance from the Indonesian Ministry of Forestry that it will implement and

enforce CITES regulations relating to ramin. Any company trading with APP is providing financial support to a company that is breaking Indonesian law, undermining CITES and driving Sumatran tigers and ramin trees closer to extinction. Corporate consumers should cease trade with APP, and implement policies to ensure zero deforestation in their supply chains.

Despite international agreements designed to tackle the illegal trade in protected species such as ramin, international trade is driving the loss of Indonesia's ramin forests.

As this investigation shows, APP's violations of Indonesia's ramin ban and its national CITES regulations are relevant to any country or company importing or trading products from the APP paper mills in Indonesia or China that trade with Indah Kiat Perawang.

Some 136 countries that are signatories to the CITES Convention trade with these APP mills, indicating the global trade risk associated with the MTH pulpwood supply to Indah Kiat Perawang.

Countries importing products from APP paper mills in Indonesia and China with trade links to Indah Kiat Perawang should seek assurance from the Indonesian Ministry of Forestry, as Indonesia's CITES Management Authority, that it will implement and enforce CITES regulations relating to ramin.

Any company trading with APP is providing financial support to a company that is breaking Indonesian law, driving Sumatran tigers and ramin trees closer to extinction and undermining CITES – the international conservation agreement governing trade in protected species.

Corporate consumers should cease trade with companies such as APP that are linked to the destruction of ramin habitat. To support good forest management, companies should implement policies to ensure zero deforestation in their supply chains.

Sinar Mas: legal compliance and ending deforestation

'For the heroes on environment, we should give awards [such as the Kalpataru and Adipura] but we should also push for strong punishment on those who are found guilty of environment [and forest] damage. We can no longer be soft.'²⁶⁰

President Susilo Bambang Yudhoyono, 7 June 2011

Greenpeace evidence indicates that APP and its 'exclusive' supplier Sinarmas Forestry are repeatedly violating Indonesia's ramin ban, as well as its national CITES regulations. Banning the clearance of peat swamp forest, one key ramin habitat, would significantly reduce the risk of any ramin entering APP's supply chain. Such a policy is already being implemented by the palm oil division of the Sinar Mas group, Golden Agri-Resources. The Sinar Mas group as a whole should stop deforestation.

APP's 'exclusive' wood supplier is Sinarmas Forestry, which coordinates all pulpwood trade from operations it owns and manages to APP pulp mills.²⁶¹ This trade includes both plantation and MTH pulpwood.

APP's Fiber Procurement Policy makes clear the sanctions it will impose on operations found to be breaching its legal or sustainability commitments: 'Wood suppliers who are found in breach of relevant legal requirements and the provisions

of the policy shall be immediately warned and, for repeated violations, have their contracts terminated.¹²⁶²

The evidence indicates that the MTH pulpwood supply for Indah Kiat Perawang includes illegal ramin. This demonstrates that neither APP nor Sinarmas Forestry is enforcing its showcase policies and procedures on avoiding any illegal timber entering any part of the supply chain. As a consequence, both parts of the Sinar Mas group are repeatedly violating Indonesia's ramin logging and trade ban, as well as Indonesia's CITES regulations.

The evidence documented during the investigation at Indah Kiat Perawang indicates that APP's pulpwood suppliers – Sinarmas Forestry and its affiliated operations and suppliers – are indiscriminately clearing ramin habitat in breach of Indonesia's ramin logging ban and its national CITES regulations.

Banning the clearance of peat swamp forest is a key recommendation in an Indonesian Ministry of Forestry report on ramin conservation: 'The practice of peat forest conversion into forest plantation should be prohibited.'²⁶³ Such a policy would significantly reduce the risk of any ramin entering any part of APP's supply chain. APP's sister company within the Sinar Mas group, palm oil producer Golden Agri-Resources, is already implementing a policy ending all peat swamp forest clearance.²⁶⁴

- The Sinar Mas group as a whole, including APP and its 'exclusive' supplier Sinarmas Forestry, should implement a policy ending all deforestation, including a ban on the clearance of any peat swamp forest.

APPENDIX: SUPPLEMENTARY DATA ON PULP FLOWS TO MILLS AND TRAFFICKING ROUTES

Indicative volumes of Indah Kiat Perawang pulp entering the different international trafficking routes

Using various recent APP documents (published 2008 to 2011) and other sources of company trade data, the investigation mapped out the supply chain distribution of the ~2 million tonnes of virgin hardwood pulp (Leaf Bleach Kraft Pulp, LBKP) produced at Indah Kiat Perawang to sister APP paper mills in Indonesia and China.

APP states in its 2008/2009 corporate sustainability report²⁶⁵ that 'Indah Kiat paper machines' consume about 40% (800,000 tonnes) of Indah Kiat Perawang pulp production. Given that the same report indicates that Indah Kiat paper machines located in Perawang, Serang and Tangerang consume ~550,000 tonnes, it is assumed that the Pindo Deli and The Univenus tissue machines located within the Indah Kiat Perawang complex consume the ~250,000 tonne balance unaccounted for in the report:

- Pindo Deli alone produces about 280,000 tonnes of tissue per year at the Perawang complex,²⁶⁶ requiring roughly the same volume of pulp.
- PT Univenus, with an installed capacity at Perawang of 20,000 tonnes,²⁶⁷ would also require roughly an equivalent volume of pulp.
- The balance of 50,000 tonnes of pulp requirement is likely accounted for by APP's fibre imports of Needle Bleached Kraft Pulp (NBKP)²⁶⁸ and imported eucalyptus Leaf Bleached Kraft Pulp (LBKP).

Of the remaining 60% (~1.2 million tonnes) of Indah Kiat's pulp production, around half is exported to APP paper mills in China, with Gold East Paper, Gold Huasheng and the Ningbo paper mills being the largest importers of Indonesian pulp.²⁶⁹ The vast majority of this is classified as MTH pulp.²⁷⁰

The majority of the balance of pulp production from Indah Kiat Perawang remaining in Indonesia is likely consumed by Pabrik Kertas Tjiwi Kimia, which purchased goods from Indah Kiat worth \$164 million and \$208 million in 2009 and 2010, respectively.²⁷¹ Assuming an average open market price of \$600 in 2009 and \$800 in 2010,²⁷² the average volume of pulp traded from Indah Kiat Perawang to Pabrik Kertas Tjiwi Kimia might have amounted to up to 260,000 tonnes in each of these two years.²⁷³

Supporting evidence: approximate APP Indonesia pulp accounts

Within Indonesia, APP has two pulp mills: the PT Indah Kiat Perawang pulp mill in Riau, which produced ~2 million tonnes of pulp in 2009²⁷⁴ and ~2.3 million tonnes of pulp in 2010,²⁷⁵ and PT Lontar Papyrus Pulp & Paper Industries, which produced 0.74 million tonnes of pulp in 2009.²⁷⁶

2009 total hardwood pulp (Leaf Bleached Kraft Pulp, LBKP) production

APP Indonesia:²⁷⁷ 2.72 million tonnes

Indah Kiat Perawang:²⁷⁸ 1.984 million tonnes

Lontar Papyrus:²⁷⁹ 0.736 million tonnes

Indah Kiat Perawang pulp trade to its own mills

Used by 'Indah Kiat paper machines' (40%):²⁸⁰ 0.79 million tonnes

Used at Indah Kiat Perawang paper mill:²⁸¹ 0.40 million tonnes

Used at Indah Kiat Serang paper/packaging mill:²⁸² 0.077 million tonnes

Used at Indah Kiat Tangerang paper mill:²⁸³ 0.059 million tonnes

Subtotal for Indah Kiat mills: 0.54 million tonnes

Unattributed balance for 'Indah Kiat paper machines', likely used within Indah Kiat Perawang complex by Pindo Deli and The Univenus tissue machines: 0.25 million tonnes

Lontar Papyrus pulp trade to its own mills

Used on site to produce tissue:²⁸⁴ minimal (36,499 tonnes)

Indah Kiat Perawang pulp exports to China (2010)

Total APP pulp exports to China (est. 2010):²⁸⁵ 0.57 million tonnes

Indah Kiat MTH pulp exports to China (est. 2010):²⁸⁶ 0.44 million tonnes

APP Indonesia pulp available to other APP Indonesia mills in 2009 (MTH pulp exports 2009 assumed same as 2010)

60% of Indah Kiat pulp production not consumed by 'Indah Kiat paper machines':
~1.2 million tonnes

Available Lontar Papyrus pulp: ~0.7 million tonnes

Balance of APP Indonesia pulp available to APP mills: 1.9 million tonnes

Indonesian pulp imported by APP China: 0.56 million tonnes

Balance of APP Indonesia pulp available to other APP Indonesia mills: 1.34 million tonnes

Use of 'local' LBKP pulp by APP Indonesia mills in 2009

Tjiwi Kimia consumption of local LBKP pulp:²⁸⁷ 0.72 million tonnes

Pindo Deli consumption of local LBKP pulp:²⁸⁸ 0.54 million tonnes

Subtotal: 1.26 million tonnes (more or less equivalent to available balance – other APP mills in Indonesia use negligible volumes of local LBKP pulp)

Profiles of international trafficking route one paper mills

Within the Perawang complex, there are three APP group paper mills: Indah Kiat Perawang, Pindo Deli Perawang and The Univenus Perawang.

Operating company: Indah Kiat

The investigation has identified around 380,000 tonnes of direct trade in 2010 from Indah Kiat Perawang to 78 countries that are parties to CITES.²⁸⁹

Location: Perawang, Riau, Sumatra

Production: Paper and packaging production in 2010: 800,000 tonnes,²⁹⁰ with ~400,000 tonnes of copy paper, ~220,000 tonnes of printing and writing paper (eg fine paper, stationery, printing materials) and the balance going into speciality packaging markets²⁹¹

Expansion: In June 2011, *Reuters* reported that Indah Kiat Perawang would be expanding its paper capacity by 500,000 tonnes by the end of 2012, through \$100–150 million investment in 16 paper machines.²⁹²

Identified APP brands:

Copy paper:²⁹³ Hybrite, Paperon, e-Paper, IK Copy, IK Plus, IK Gold, Paperline Global

Identified key export destinations: Malaysia, USA, China, Europe (Italy, Spain, United Kingdom)

Operating company: Pindo Deli

The investigation has identified around 36,000 tonnes of direct trade in 2010²⁹⁴ from the Pindo Deli machines within Indah Kiat Perawang to 21 countries that are parties to CITES.

Location: Perawang, Riau, Sumatra

Production: 352,000 tonnes/yr²⁹⁵ unbranded tissue mother reels

Identified export destinations: United Arab Emirates (UAE), New Zealand, Malaysia, Philippines, Vietnam, Australia, others

Operating company: The Univenus

The investigation has identified 62,000 tonnes of direct trade in tissue in 2010²⁹⁶ through The Univenus Perawang to over 20 countries that are parties to CITES. This significantly exceeds known installed production capacity; the investigation was unable to identify whether The Univenus has expanded its capacity or whether a large volume of this is produced by the other tissue facility in Perawang, Pindo Deli, which has a far greater production capacity and low direct exports.

Location: Perawang, Riau, Sumatra

Production: 20,000 tonnes/yr²⁹⁷ of unbranded tissue mother reels.²⁹⁸ Some of these are exported directly, some are traded to its sister mill on Java.

Identified export destinations: USA, Canada, UAE, China, others

Exports of MTH pulp from Indah Kiat Perawang to China (trafficking route two)

Operating company: Indah Kiat

The investigation has identified 440,000 tonnes of direct trade in MTH pulp in 2010²⁹⁹ from Indah Kiat Perawang to China, which is a party to CITES.

Location: Perawang, Riau, Sumatra

Production: ~2 million tonnes in 2009³⁰⁰ and 2.3 million tonnes in 2010³⁰¹

Expansion: In 2011, APP Indonesia's 2008/2009 corporate sustainability report indicated the intent to expand licensed pulp capacity by 1 million tonnes/yr.³⁰²

Identified key APP China mills importing Indonesian pulp: Gold East Paper (47%), Gold Huasheng Paper (21%), Ningbo mills (28%)³⁰³

Key ports importing MTH pulp from Indah Kiat Perawang: Dagang (60%), Ningbo (23%) and Shanghai (15%),³⁰⁴ together accounting for 98% of all exports

Gold East Paper is located in Dagang, and APP has several paper mills in Ningbo. The port of Shanghai is close to Gold Huasheng and other APP mills importing Indonesian pulp.

Profiles of international trafficking route three paper mills

Operating company: Gold East Paper

The investigation has identified over 750,000 tonnes of direct trade in 2010 from Gold East Paper to almost 100 countries that are parties to CITES.

Location: No. 8, Xinggang East Road, Dagang, Zhenjiang City, Jiangsu Province, China (Post number: 212132)

Production: 2.2 million t/yr³⁰⁵ fine paper

Gold East Paper is APP's largest paper mill in China.³⁰⁶ It is also the largest importer of pulp from Indonesia within China-based APP group companies.³⁰⁷ APP claims Gold East Paper is the world's largest manufacturer of art paper.³⁰⁸ These coated fine papers are used for glossy magazines, company brochures, calendars and coffee table books. In 2010, APP's mill Hainan Jin Hai Pulp & Paper Industry Co, Ltd started operating a 1 million tonnes/yr paper machine for coated fine paper, further enhancing APP's market dominance.³⁰⁹

Identified APP brands:

Paper: Nevia (art board),³¹⁰ Space Shuttle,³¹¹ Sunbrite,³¹² Xplore,³¹³ Art-Tech (printing and label paper),³¹⁴ Ovation³¹⁵

Identified key export destinations: Japan, Europe (UK alone represents >8% of market, plus Italy, France, Greece, Germany, Spain, Belgium), Israel, India, USA, Canada, Australia, New Zealand

Operating company: Gold Huasheng

The investigation has identified 190,000 tonnes of direct trade in 2010 from Gold Huasheng to about 90 countries that are parties to CITES. Gold Huasheng is the biggest carbonless copy paper producer globally.³¹⁶ Sales revenue was 2.9 billion RMB in 2009.³¹⁷

Location: No. 2 Jinsheng Road, Shengpu, Suzhou Industrial Park, Suzhou, Jiangsu 215126, China

Production: 0.53 million t/yr³¹⁸ paper and art board

Identified APP brands:

Paper: Impression (uncoated digital paper),³¹⁹ Impression Lux (uncoated woodfree),³²⁰ Impression Plus (carbonless copy paper),³²¹ Laser (uncoated woodfree),³²² Nevia (coated woodfree – art board),³²³ Nireus (art board),³²⁴ Record (form & thermal paper),³²⁵ Gold Ball (uncoated woodfree),³²⁶ Gold Butterfly (continuous form & copy paper)³²⁷

Identified key export destinations: USA/Canada, Europe (UK, Germany, Spain, Italy, France), UAE, Thailand, Iran, Australia/New Zealand

Operating companies: Ningbo mills – paper, speciality papers and card, packaging

The investigation has identified over 260,000 tonnes of direct trade in 2010 from Ningbo mills to around 80 CITES party countries, almost all by Ningbo Zhonghua.³²⁸

Location: Ningbo. APP has five paper mills and converting facilities in the city of Ningbo (Zhejiang Province), with all but one located within close proximity of each other: Ningbo Zhonghua Paper, Ningbo Asia Pulp and Paper, Ningbo Asia Paper Converting, Ningbo Asia Paper Tube & Carton Box and Ningbo Asia Unpolluted Paper Products.

Production:

Mills importing IKPP pulp:

Ningbo Zhonghua Paper: 500,000 t/yr (paperboard)³²⁹

Ningbo Asia Pulp and Paper: 750,000 t/yr (paperboard)³³⁰

Paper converters likely to be using supplies from these mills that include IKPP pulp:

Ningbo Asia Paper Converting: 36,000 t/yr (packaging)³³¹

Ningbo Asia Paper Tube & Carton Box: 135,000 t/yr (packaging)³³²

Ningbo Asia Unpolluted Paper Products: 6,000 t/yr (paper)³³³

Identified APP brands:

Packaging from Ningbo Zhonghua Paper:³³⁴ Chieftain (art board), Ningbo Fold (packaging board), Ningbo Poker (playing cards), Ningbo Spark (packaging board), Ningbo Star (packaging/art board), Omnistar (art board), Zenith (packaging board), Nevia (art board)³³⁵

Sales revenue of Ningbo Zhonghua Paper and Ningbo Asia Pulp & Paper was 2.7 billion RMB in 2009.³³⁶

Identified key export destinations: USA/Canada, Europe (Italy, UK, Netherlands, Spain, Belgium, Germany, Greece, France), India

Operating company: Yalong Paper Products Co, Ltd

The investigation has identified 19,000 tonnes of direct trade in 2010 from Yalong to almost 50 countries that are parties to CITES.

Location: Xinnanpian, Yushan Economic and Technological Development Zone, Kunshan, Jiangsu Province, China

Production: 200,000t/yr³³⁷ stationery, packaging and shopping bags

Yalong Paper is one of APP's mills close to Shanghai, specialising in stationery, office papers, continuous form, luxury shopping bags and packaging.

Identified APP brands:³³⁸

Copy paper: Flagship, Top Gun, Red Gun, Benefit, Astronaut, Shully, Crocodile

Stationery: Apport, Huli, Guangli

Identified key export destinations: Japan, UK, Spain, Saudi Arabia, USA

Profiles of international trafficking route four paper mills

Operating company: Indah Kiat

The investigation has identified over 300,000 tonnes of direct trade in 2010³³⁹ from Indah Kiat Serang to over 60 countries that are parties to CITES.

Location: Serang, Java

Production: 1.255 million tonnes/yr packaging papers and converted carton and boxes;³⁴⁰ installed capacity reported as 1.6 million tonnes/yr as a result of 'progressive expansion'³⁴¹

Identified key export destinations: China, Malaysia, Japan, Europe (Italy, Belgium, Spain, UK), USA

Identified APP brands:

Packaging materials: Foopak (heat-sealable paper for food packaging),³⁴² SavviBrite (board for packaging and graphic applications),³⁴³ Sinarboard (board for packaging),³⁴⁴ Sinarfold (packaging),³⁴⁵ Savvicoat (board for packaging and graphic applications),³⁴⁶ Sinarplex (packaging),³⁴⁷ Sinarvanda (high-quality packaging),³⁴⁸ Hi-Pack LB (face paper of carton board),³⁴⁹ Pro-Pack LH (face paper of carton board),³⁵⁰ Pro-Pack LE (face paper for carton board),³⁵¹ High Pack MA/Kraft Liner (corrugated fluting for carton box),³⁵² Pro-Pack WA (face paper for corrugated board),³⁵³ Pro-Pack WK (face paper for corrugated board)³⁵⁴

Coated art board: Sinar Royal³⁵⁵

Operating company: Indah Kiat

The investigation has identified 27,000 tonnes of direct trade in the first half of 2010 from Indah Kiat Tangerang to almost 70 countries that are parties to CITES.

Location: Tangerang, Java

Production: 100,000 tonnes/yr printing and writing paper³⁵⁶

Identified APP brands:

Stationery:³⁵⁷ Sinar Tech (high-opacity colour paper), Sinar Colour (colour photocopy paper), Paperline (colour photocopy)

Identified key export destinations: Japan, Malaysia, Taiwan, China, Europe (Germany, France, Spain, UK), USA

Operating company: Pabrik Kertas Tjiwi Kimia (PKTK)

The investigation has identified 660,000 tonnes of direct trade in 2010³⁵⁸ from Tjiwi Kimia to 110 countries that are parties to CITES.

Location: Surabaya, Java

Paper production: 1 million tonnes/yr printing and writing paper, envelope paper, packaging paper and boards, carton board, etc³⁵⁹

Printing production: 6 bindery production lines and 30 printing machines.³⁶⁰ TK Printing is part of PT Pabrik Kertas Tjiwi Kimia and claims to be 'the largest printing and book manufacturing [sic] in Indonesia', sourcing paper from its parent company, located at the same site on Java.³⁶¹ The company manufactures a 'wide range of

printing products including books, calendars, brochures, posters, leaflets, commercial printing, etc'.³⁶²

Expansion: In June 2011, *Reuters* reported that PT Pabrik Kertas Tjiwi Kimia would be increasing annual capacity by 100,000 tonnes through a \$100 million investment in 13 paper machines.³⁶³

Identified APP brands:

Coated paper: Enova,³⁶⁴ Enova Wet Pro (labels)³⁶⁵

Uncoated/copy paper: Sinar Royal White,³⁶⁶ Exceedo,³⁶⁷ ExcelPro,³⁶⁸ Exkarro,³⁶⁹ Paper Plus,³⁷⁰ Extraprint,³⁷¹ Integrite,³⁷² Paperline Gold,³⁷³ Sinar Copy,³⁷⁴ Sinar Dunia,³⁷⁵ Sinar Line,³⁷⁶ Sinar Royal,³⁷⁷ Copy Mate,³⁷⁸ ProPrint³⁷⁹

Packaging/art paper: Egis (packaging and graphical art paper)³⁸⁰

Identified key export destinations: Japan, UAE, USA/Canada, Australia, Europe (Spain, Greece, Netherlands, Italy, France, UK, Germany)

Operating company: The Univenus

The investigation has identified 26,000 tonnes of direct trade in 2010³⁸¹ from The Univenus, Java to around 25 countries that are parties to CITES.

Location: Java

Production: Converting tissue mother reels to facial tissue paper, handkerchief tissue paper, toilet paper, paper towels and paper napkins³⁸²

Identified APP brands: Topyl, Four Roses, Livi and Nice³⁸³

Identified export trade to APP-related companies: Solaris Paper (USA/Canada)

Identified key export destinations: USA/Canada (>70% of exports), UAE, UK

¹ Eg Petromindo (2010)

² Sinar Mas website 'Business units' www.sinarmas.com/en/business-units, Sinar Mas mining website www.sinarmasmining.com

³ Sinar Mas website 'Pulp and paper products' www.sinarmas.com/en/business-units, accessed 4/1/2012

⁴ Lifshitz (2010): 4

⁵ APP (2011c): 6

⁶ See eg APP (2010) and APP (2011c)

⁷ Sinarmas Forestry website 'Profile' us.sinarmasforestry.com/about_profile.asp?menu=1, accessed 4/1/2012

⁸ Sinarmas Forestry website 'Profile' us.sinarmasforestry.com/about_profile.asp?menu=1, accessed 4/1/2012

⁹ APP (2011c): 2

¹⁰ APP (2009): 103

¹¹ 'The significant portion of the Company's wood requirements for pulp production was purchased from PT Arara Abadi (Arara Abadi) in the nine months period ended September 30, 2010 and 2009, which were approximately USD315 million and USD172 million, respectively. [...] On January 10, 2001, the Company entered into an Amended and Restated Pulpwood Purchase Agreement with Arara Abadi, which is valid for thirty (30) years. The Company agreed to exclusively purchase the pulpwood from Arara Abadi and Arara Abadi agreed to supply the pulpwood to the Company at a certain agreed price. Under this agreement, the Company has agreed from time to time at the request of Arara Abadi, to provide financing to Arara Abadi without any charges for the purpose of financing the cost associated with maintaining and developing the concession and the plantation, including without limitation, costs incurred in connection with the growing, harvesting and delivery of pulpwood. Both parties also agreed that the financing provided by the Company shall not be off-set against the Company's payment obligation for the purchase of pulpwood from Arara Abadi.' Source: IKPP (2011a): 68.

¹² APP (2011c): 28

¹³ Sinarmas Forestry 'Environment: Commitment' us.sinarmasforestry.com/environment_commitment.asp?menu=3 accessed 4/1/2012

¹⁴ Sinarmas Forestry 'Production: Commitment' us.sinarmasforestry.com/production_commitment.asp?menu=5 accessed 4/1/2012

¹⁵ Eg www.youtube.com/watch?v=rEyduROW8Sk

¹⁶ APP (2004, updated January 2009) and APP (2004, updated January 2008)

¹⁷ APP (2004, updated January 2009)

¹⁸ APP (2004, updated January 2008)

¹⁹ APP (2011a)

²⁰ IKPP (2010a): 6

²¹ Sinar Mas website 'Pulp and paper products' www.sinarmas.com/en/business-units, accessed 4/1/2012

²² APP (2004, updated January 2008)

²³ Butler (2011)

²⁴ APP (2004, updated January 2008)

²⁵ 'The vast majority of species is found on Borneo (27 species), especially in Sarawak. Peninsular Malaysia and Sumatra come second with 7 species each.' Source: Government of Indonesia (2004): 1

²⁶ Government of Indonesia (2004): 6

²⁷ MoFor/ITTO (2005b): iii. Eighteen *Gonystylus* species have been identified within Indonesia, of which seven are found on the island of Sumatra. ITTO-CITES Project/MoFor (2010): 4.

²⁸ IUCN (International Union for Conservation of Nature) 'Red list of threatened species' www.iucnredlist.org

²⁹ Not *G. bancanus*. ITTO-CITES Project/MoFor (2010): ii.

³⁰ IUCN (1994)

³¹ MoFor/ITTO (2005b): 9

³² South Kalimantan is also said to have some ramin forests. See MoFor/ITTO (2005b): 12, MoFor/ITTO (2008a).

³³ ITTO-CITES Project/MoFor (2010): 1

³⁴ Government of Indonesia (2004): 5

³⁵ Government of Indonesia (2004): 4–6

³⁶ IUCN Red List 'Pongo pygmaeus' www.iucnredlist.org/apps/redlist/details/17975/0 accessed 22/12/2011

³⁷ IUCN Red List 'Panthera tigris ssp sumatrae' www.iucnredlist.org/apps/redlist/details/15966/0 accessed 22/12/2011

³⁸ WWF (2011)

³⁹ CITES (2011a): 6, 12

⁴⁰ IUCN Red List 'Panthera tigris ssp sumatrae' www.iucnredlist.org/apps/redlist/details/15966/0 accessed 22/12/2011

⁴¹ CITES website 'The CITES species' www.cites.org/eng/disc/species.php updated 22/12/2011

⁴² CITES website 'What is CITES?' www.cites.org/eng/disc/what.php

⁴³ Eg CITES (2011c)

⁴⁴ CITES website 'The CITES species' www.cites.org/eng/disc/species.php updated 22/12/2011

⁴⁵ Scanlon (2011)

⁴⁶ CITES (2011b)

⁴⁷ MoFor (2001a)

According to MoFor/ITTO (2008b): 'Ministry of Forestry Decree No 127/Kpts-V/2001 regarding the moratorium on the logging and trade in ramin: No logging activity of ramin is allowed in production forest, conversion forest and community forest and no trading activity is allowed both domestic and international.'

The decree was updated in July 2001 with decree 168/2001, which provided limited exemption from the ban for selective logging operations that had been independently certified legal and sustainable. Only one operation has ever been subject to this exemption.

The decree was further updated in October 2001 with decree 1613/2001. This decree is not readily available in the public domain or via requests to the Ministry of Forestry. No subsequent advice was forwarded to the CITES Secretariat. However, it is reported that the decree limits exports of ramin to timber from the Diamond Raya concession that has been worked into dowels, mouldings and other semi-finished wood products.

⁴⁸ In May 2001, a month after imposing a ban on logging and trade in ramin, Indonesia notified CITES that Indonesia's ramin populations should be listed in Appendix III. Source: CITES (2001a).

⁴⁹ MoFor (2008) Appendix II listing required Indonesia to issue export permits confirming the legal origin of the ramin for all products containing ramin. Source: MoFor/ITTO (2005b): 28.

⁵⁰ Annotation #4 CITES (2011a): 45

⁵¹ '[CITES] AGREES that the term 'readily recognizable part or derivative', as used in the Convention, shall be interpreted to include any specimen which appears from an accompanying document, the packaging or a mark or label, or from any other circumstances, to be a part or derivative of an animal or plant of a species included in the Appendices, unless such part or derivative is specifically exempted from the provisions of the Convention' [emphasis added]. Source: Conf. 9.6 (rev) 'Trade in readily recognizable parts and derivatives' www.cites.org/eng/res/09/09-06R11C15.php

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- ⁵² CITES (2009)
- ⁵³ Information from 'CITES trade database' www.unep-wcmc-apps.org/citestrade/ (2001–2010 period, exports from Indonesia, genus *gonystylus*, all terms)
- ⁵⁴ Government of Indonesia (1999) Government Decree 8/1999
- ⁵⁵ Government of Indonesia (1999) Government Decree 8/1999
- ⁵⁶ CITES website 'Indonesia' www.cites.org/cms/index.php/lang-en/component/cp/?country=ID accessed 17/1/2012
- ⁵⁷ CITES (1979)
- ⁵⁸ CITES (2001a,b,c), (2005), (2009)
- ⁵⁹ Eg MoFor (2009b)
- ⁶⁰ Greenpeace mapping analysis 2011
- ⁶¹ The ramin website 'Let's save ramin and peat swamp forest for our future' was www.forda-mof.org/ramin. The website has subsequently become inactive. Available at liveweb.archive.org/http://www.forda-mof.org/ramin/.
- ⁶² Ramin website 'Let's save ramin and peat swamp forest for our future'
- ⁶³ MoFor/ITTO (2005a): 1
- ⁶⁴ Eg MoFor/ITTO (2005b): 37 and MoFor/ITTO (2010): 1
- ⁶⁵ MoFor/ITTO (2006)
- ⁶⁶ MoFor/ITTO (2005b): 40
- ⁶⁷ NYC = 302 miles² = 78,217ha
Source: US Census Bureau. State & country quick facts quickfacts.census.gov/qfd/states/36/3651000.htm accessed 5/2/2012
- ⁶⁸ Greenpeace mapping analysis 2011
- ⁶⁹ MoFor/ITTO (2005b): 10
- ⁷⁰ CITES (2011a)
- ⁷¹ See APP (2004, updated January 2008)
- ⁷² The 12 mills are Indah Kiat Perawang, Indah Kiat Tangerang, Indah Kiat Serang, Tjiwi Kimia (counting the paper mill and printing facility as one), Pindo Deli Perawang, Univenus Perawang, Univenus Java, Gold East, Gold Huasheng, Yalong, Ningbo Zhonghua and Ningbo Asia Pulp and Paper.
- ⁷³ APP (2011c)
- ⁷⁴ 1.98 million tonnes. Source: APP (2011c): 28.
- ⁷⁵ APP (2011c): 17
- ⁷⁶ See eg MoFor (2010f)
- ⁷⁷ Concessions: MoFor (2010c); peatlands: Wahyunto et al (2003)
- ⁷⁸ Greenpeace mapping analysis 2011

⁷⁹ NYC = 302 miles² = 78,217ha

Source: US Census Bureau. State & country quick facts
quickfacts.census.gov/qfd/states/36/3651000.htm accessed 5/2/2012

⁸⁰ MoFor (2010h)

⁸¹ Sinarmas Forestry (2007b)

⁸² APP (2011c): 28

⁸³ APP (2011c): 27

⁸⁴ 2.31 million tonnes. Source: MoFor (2011c).

⁸⁵ MoFor (2010h)

⁸⁶ APP (2011c): 28

⁸⁷ MoFor (2010g)

⁸⁸ MoFor (2011c)

⁸⁹ 50 tonnes of MTH pulpwood/ha of cleared area. Source: Sinarmas Forestry (2007a): 8. Based on IKPP declared consumption of MTH in 2009, supplied by the company to the Ministry of Forestry in m³ and declared in tonnes in its 2008/2009 corporate sustainability report – 1 green tonne of MTH is equivalent to 1.56m³ (or 0.64t/m³). Sources: MoFor (2010h) and, in tonnes, APP (2011c): 28.

⁹⁰ Jakarta = 650km²

Source: www.jakarta.go.id/english/news/2011/03/jakartas-geography accessed 10/2/2012

⁹¹ APP (2004): ii, APP (2007): 58

⁹² Greenbury (2011). 'By the end of 2015, we will source 100 percent of our pulpwood supply from sustainable plantation stock and require our suppliers to meet Indonesia's mandatory sustainable forest management standards.'

⁹³ MoFor/ITTO (2005b): 5

⁹⁴ MoFor/ITTO (2005b): 4

⁹⁵ MoFor/ITTO (2005c): 3

⁹⁶ MoFor/ITTO (2005b): 4

⁹⁷ MoFor/ITTO (2005b): 5

⁹⁸ Garrett et al (2010)

⁹⁹ Eg personal communication with vTI staff, 2011

¹⁰⁰ Koch (2012)

¹⁰¹ www.IUCNredlist.org

¹⁰² Koch (2012) and www.iucnredlist.org/apps/redlist/search

¹⁰³ 59 samples were collected within the mill complex between February and December 2011. All 33 samples collected from February up until December were confirmed to be ramin. In December, an additional 13 samples were confirmed to be ramin. A further 13 samples were collected from other logs. Out of the 13, 10 were IUCN-listed genera.

¹⁰⁴ APP (2011c): 27

¹⁰⁵ Government of Indonesia (2004): 6

¹⁰⁶ Afghanistan, Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Barbados, Belarus, Belgium, Benin, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo-Brazzaville, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of Congo, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guadeloupe, Guatemala, Guinea, Guyana, Honduras, Hungary, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyz Republic, Latvia, Liberia, Lithuania, Lybia, Macedonia, Madagascar, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Mongolia, Morocco, Mozambique, Myanmar, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Saint Lucia, Sao Tome & Principe, Saudi Arabia, Senegal, Serbia, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Syrian Arab Republic, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Uzbekistan, Venezuela, Vietnam, Yemen, Zambia and Zimbabwe

¹⁰⁷ The 12 mills are Indah Kiat Perawang, Indah Kiat Tangerang, Indah Kiat Serang, Tjiwi Kimia (counting the paper mill and printing facility as one), Pindo Deli Perawang, The Univenus Perawang, The Univenus Java, Gold East, Gold Huasheng, Yalong, Ningbo Zhonghua and Ningbo Asia Pulp and Paper.

¹⁰⁸ The 8 companies for which MTH has been identified via fibre testing are Indah Kiat, Tjiwi Kimia, Pindo Deli, Gold East, Gold Huasheng, Yalong, Ningbo Zhonghua and Ningbo Asia Pulp and Paper. The ninth company for which specific products have not yet been definitively identified is The Univenus.

¹⁰⁹ Based on trade data and CITES 'List of contracting parties' www.cites.org/eng/disc/parties/alphabet.php accessed 22/12/2011

¹¹⁰ Lifshitz (2010): 4

¹¹¹ APP (2011c): 6

¹¹² APP (2011c): 16

¹¹³ APP (2011c): 17

¹¹⁴ Various company sources, eg APP China www.app.com.cn/english/aboutus/xsdw/index.html

¹¹⁵ APP (2011c): 4

¹¹⁶ This figure includes packaging and chemical products. Source: APP (2011c): 17.

¹¹⁷ APP (2011c), APP website 'Facilities & subsidiaries overview' www.asiapulppaper.com accessed 4/1/2012

¹¹⁸ APP (2010): 2

¹¹⁹ 34.5 billion RMB. 2010 year-average conversion to dollars at 0.146 \$:RMB. Source: APP (2010): 2.

¹²⁰ APP (2010): 5

¹²¹ APP (2010): 5

¹²² APP (2010): 36. Official Chinese customs data show that APP China's paperboard mills import Indonesian pulp. Source: CTI (2010). Confidential information obtained by Greenpeace shows that APP's pulp mill in Perawang, Riau is a large exporter of pulp to China.

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- ¹²³ Confidential information held by Greenpeace reveals that in 2010, Indah Kiat exported about 440,000 tonnes of MTH pulp to China.
- ¹²⁴ Greenpeace investigations 2010–2011
- ¹²⁵ Chinese import data (source: CTI (2010)) together with confidential information held by Greenpeace
- ¹²⁶ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹²⁷ APP (2011c): 27
- ¹²⁸ APP (2009)
- ¹²⁹ See calculations in Appendix ‘Supplementary data on pulp flows to mills and trafficking routes’.
- ¹³⁰ Confidential information held by Greenpeace and IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹³¹ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹³² Confidential information held by Greenpeace
- ¹³³ Confidential information held by Greenpeace
- ¹³⁴ Confidential export data held by Greenpeace
- ¹³⁵ Chinese customs data list 7 APP mills as importers of Indonesian pulp: Gold East Paper (Jiangsu) Co Ltd, Jinhusheng Paper Industry Co Ltd, Ningbo Zhonghua Paper Co Ltd, Ningbo Asia Pulp Paper Industry Co Ltd, Jinhongye Paper Suzhou Industrial Area Co Ltd, Jin Feng Yuan Paper Industry (Shanghai) Co Ltd and Hainan Jinhai Pulp & Paper Co, Ltd. Source: CTI (2010).
- ¹³⁶ Confidential information held by Greenpeace
- ¹³⁷ Chinese customs data list 7 APP mills as importers of Indonesian pulp: Gold East Paper (Jiangsu) Co Ltd, Jinhusheng Paper Industry Co Ltd, Ningbo Zhonghua Paper Co Ltd, Ningbo Asia Pulp Paper Industry Co Ltd, Jinhongye Paper Suzhou Industrial Area Co Ltd, Jin Feng Yuan Paper Industry (Shanghai) Co Ltd and Hainan Jinhai Pulp & Paper Co, Ltd. Source: CTI (2010).
- ¹³⁸ CTI (2010)
- ¹³⁹ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁴⁰ APP Brazil (2011) Reminder Nevia 2011, copy held by Greenpeace
- ¹⁴¹ CTI (2010)
- ¹⁴² IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁴³ APP (2010)
- ¹⁴⁴ APP (2011c): 27
- ¹⁴⁵ Indah Kiat net sales to Tjiwi Kimia were around \$170 million in both the January–September 2010 and January–September 2011 periods. Source: IKPP (2011b): 59.
- ¹⁴⁶ ‘The total amount of pulp purchased by Pindo Deli mills [on Java] declined by 6 percent between 2008 and 2009, from 741,070 to 696,880 AD tonnes. The majority of pulp used is produced at APP mills in Indonesia, from certified/verified pulpwood.’ Source: APP (2011c): 47 [emphasis added].
- ¹⁴⁷ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁴⁸ US customs data

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- ¹⁴⁹ Solaris website 'Our mills', www.solarispaper.com/mills.php accessed 15/9/2008
- ¹⁵⁰ Eg IKPP (2010a), US customs data, CTI (2010) and other confidential information held by Greenpeace
- ¹⁵¹ Based on trade data and CITES 'List of contracting parties' www.cites.org/eng/disc/parties/alphabet.php accessed 22/12/2011
- ¹⁵² Eg Pihlajamäki and Hytonen (2004). The authors are working for pulp and paper industry specialist consultancy Jaakko Pöyry.
- ¹⁵³ Pulp & Paper International and plantation fibre expert D C Hillman both described Indonesian acacia plantation pulp as a new pulp type around 2002/2003. Other limited sources of acacia fibre in pulp and paper products are Sabah Forest Industries (Malaysia) and woodchips supplied from Vietnam's acacia plantations to China. Sources: Hillman (2002), Roberts (2002), BILT (2011): 16, Flynn (2005).
- ¹⁵⁴ CTI (2010)
- ¹⁵⁵ Confidential information held by Greenpeace
- ¹⁵⁶ Chinese import data (source: CTI (2010)) together with confidential information held by Greenpeace
- ¹⁵⁷ Chinese import data (source: CTI (2010)) together with confidential information held by Greenpeace
- ¹⁵⁸ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁵⁹ CITES (2009)
- ¹⁶⁰ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁶¹ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁶² Nogúeron and Hanson (2010)
- ¹⁶³ Eg Pihlajamäki and Hytonen (2004). The authors are working for pulp and paper industry specialist consultancy Jaakko Pöyry.
- ¹⁶⁴ The other two companies producing larger amounts of pulp, Kertas Nusantara (ex Kiani Kertas) and PT Tanjung Enim Lestari, use acacia fibre only. Source: Pirard and Cossalter (2006).
- ¹⁶⁵ Greenpeace mapping analysis 2011
- ¹⁶⁶ Following industry standard TAPPI T401. Integrated Paper Services (IPS) www.ipstesting.com; Institute for Paper Science and Technology, Fachgebiet für Papierfabrikation und Mechanische Verfahrenstechnik an der TU Darmstadt www.pmv.tu-darmstadt.de/fachgebietpmv_1/informativ_pmv/index.de.jsp; ITS Testing Services (UK) Ltd www.intertek.com.
- ¹⁶⁷ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁶⁸ If a product contains mixed tropical hardwood (MTH), it is almost guaranteed to come from Indonesia. Other countries with tropical forest do not clearcut their natural forests for pulpwood on a commercial trade scale. Acacia pulp is also largely confined to Indonesia. In other tropical regions, eucalyptus is the principal species used in pulpwood plantations.
- ¹⁶⁹ Both laboratories give percentages for the content of different hardwood species found; however, these are not fully comparable due to differences in methodology.
- ¹⁷⁰ IfP-GmbH test results 2010–2012. Copies held by Greenpeace.

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- ¹⁷¹ APP (2010)
- ¹⁷² IPS test results 2010–2012. Copies held by Greenpeace.
- ¹⁷³ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ¹⁷⁴ Note: Xerox Emirates LLC, also owned by Xerox Corp, imports copy paper from Pindo Deli (Java).
- ¹⁷⁵ Throughout the period, the Paperlink paper merchant business has been part of the Mondi Group. In the first half of 2010 Paperlink was part of Mondi Plc (UK) through Mondi Packaging South Africa Ltd. After the Group's restructuring, Paperlink was part of Mondi Ltd (South Africa). Source: Mpack (2011).
- ¹⁷⁶ Paperlink website 196.37.199.7/Sinarboard.htm accessed 9/1/2011
- ¹⁷⁷ Mondi (2011): 20 shows that Mondi Group held a 50.1% interest in Mondi Hadera Paper Ltd up to 31 December 2010. After this, it held a 25% interest.
- ¹⁷⁸ Hadera Paper (2011)
- ¹⁷⁹ Under the previous trading name of American Israeli Paper Mills Ltd
- ¹⁸⁰ Hadera Paper (2008): 123
- ¹⁸¹ Hadera Paper (2011): 69 and Hadera Paper website 'Printing and writing papers' www.hadera-paper.co.il/en/mondi-hadera-paper accessed 17/1/2012
- ¹⁸² Hadera Paper (2011): 69
- ¹⁸³ CTI (2010)
- ¹⁸⁴ Confidential information held by Greenpeace
- ¹⁸⁵ Nippecraft (2011a) 2010: 56
- ¹⁸⁶ Nippecraft (2011a) 2010: 56
- ¹⁸⁷ Nippecraft (2011a) 2010: 56
- ¹⁸⁸ Nippecraft (2011b): 5
- ¹⁸⁹ Nippecraft (2011c): 5
- ¹⁹⁰ Nippecraft transactions with APP related companies ('interested persons') between 2009 and June 2011 detail regular and significant trade by Nippecraft with three APP Group mills – PT Indah Kiat, PT Pindo Deli and PT Pabrik Kertas Tjiwi Kimia. Sources: Nippecraft (2011a): 71, Nippecraft (2011b): 8, Nippecraft (2011c): 3.
- ¹⁹¹ Nippecraft (2011a): 71, Nippecraft (2011b): 8
- ¹⁹² Nippecraft (2011a): 71
- ¹⁹³ Fibre testing results show the presence of MTH together with 23% mangrove species.
- ¹⁹⁴ Cottonsoft website 'Who we are' www.cottonsoft.co.nz/who.html accessed 17/1/12
- ¹⁹⁵ Confidential information held by Greenpeace
- ¹⁹⁶ Yalong Paper (2010): 6
- ¹⁹⁷ Indah Kiat Serang website 'Printing products' www.ikserang.com/products_printing.asp accessed 10/1/2012

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- ¹⁹⁸ Indah Kiat Serang website 'Certificates' www.ikserang.com/products_certificates.asp accessed 10/1/2012
- ¹⁹⁹ Sinar Mas Print Awards website 'Application requirement' www.sinarmasprintawards.com/english/sub_bmxz.asp accessed 17/1/12
- ²⁰⁰ Sinar Mas Print Awards website 'Global birding' [www.sinarmasprintawards.com/10/sub_main_2.asp?id=577&zplx=%CA%E9%BC%AE%BB%AD%B2%E1\(%BE%AB%D7%B0\)&nf=%B5%DA%CB%C4%BD%EC](http://www.sinarmasprintawards.com/10/sub_main_2.asp?id=577&zplx=%CA%E9%BC%AE%BB%AD%B2%E1(%BE%AB%D7%B0)&nf=%B5%DA%CB%C4%BD%EC)
- ²⁰¹ Sinar Mas Print Awards website [www.sinarmasprintawards.com/10/sub_main_2.asp?id=575&zplx=%CA%E9%BC%AE%BB%AD%B2%E1\(%BE%AB%D7%B0\)&nf=%B5%DA%CB%C4%BD%EC&mc=&print=&jx=](http://www.sinarmasprintawards.com/10/sub_main_2.asp?id=575&zplx=%CA%E9%BC%AE%BB%AD%B2%E1(%BE%AB%D7%B0)&nf=%B5%DA%CB%C4%BD%EC&mc=&print=&jx=)
- ²⁰² *PrintWeek* (2011)
- ²⁰³ IPS and IfP-GmbH test results 2010–2012. Copies held by Greenpeace.
- ²⁰⁴ Greenpeace East Asia, supermarket survey, February 2012
- ²⁰⁵ US customs data, full year 2011, downloaded via Trademining.com in February 2012
- ²⁰⁶ Fibre testing of Paperline Gold copy paper bought at Carrefour in Indonesia in March 2011 showed 12% MTH content. Paperline copy paper bought in Taiwan in June 2010 showed 17% MTH.
- ²⁰⁷ APP (2009)
- ²⁰⁸ Sima Europe website www.simaurope.com/nl/wat_sima.htm accessed 21/2/2012
- ²⁰⁹ White Paper Co website www.whitepaper.com/products/virginsheets.php accessed 22/2/2012
- ²¹⁰ US customs data, full year 2011, downloaded via Trademining.com in February 2012
- ²¹¹ Dalton website www.dalton.com.au/product_details_alpine_cast_coated_7.aspx accessed February 2012
- ²¹² Dalton website www.dalton.com.au/product_details_alpine_coated_86.aspx accessed February 2012
- ²¹³ Sinar Mas Print Awards 2011 website www.sinarmasprintawards.com/sub_main_2.asp?id=891
- ²¹⁴ Sinar Mas Print Awards 2011 website www.sinarmasprintawards.com/sub_main_2.asp?id=891
- ²¹⁵ Sinar Mas Print Awards 2011 website www.sinarmasprintawards.com/11/sub_main_2.asp?id=893&zplx=%B1%EA%C7%A9&nf=%B5%DA%CE%E5%BD%
- ²¹⁶ US Customs data, accessed via Trademining.com, February 2012
- ²¹⁷ Sinar Mas Print Awards 2011 website www.sinarmasprintawards.com/11/sub_main_2.asp?id=893&zplx=%B1%EA%C7%A9&nf=%B5%DA%CE%E5%BD%
- ²¹⁸ Confidential information, copy held by Greenpeace
- ²¹⁹ SDG website www.sdgspa.it accessed 25/2/2012
- ²²⁰ Sinar Mas Print Awards website 'Application requirement' www.sinarmasprintawards.com/english/sub_bmxz.asp accessed 17/1/2012

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- ²²¹ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_main_2.asp?id=914&zplx=%D3%A1%D2%D5%B4%B4%D0%C2&nf=%B5%DA%CE%E5%BD%EC&mc=&print=&jx=
- ²²² Sinar Mas Print Awards 2011 website
[www.sinarmasprintawards.com/11/sub_main_2.asp?id=836&zplx=%C6%BD%D7%B0%CA%E9%BC%AE%BB%AD%B2%E1\(%A1%DD4%C9%AB\)&nf=%B5%DA%CE%E5%BD%EC](http://www.sinarmasprintawards.com/11/sub_main_2.asp?id=836&zplx=%C6%BD%D7%B0%CA%E9%BC%AE%BB%AD%B2%E1(%A1%DD4%C9%AB)&nf=%B5%DA%CE%E5%BD%EC)
- ²²³ Sinar Mas Print Awards 2010 website
www.sinarmasprintawards.com/10/sub_qtzip.asp?zplx=%D0%FB%B4%AB%C6%B7&nf=&Submit.x=6&Submit.y=9&offset=30
- ²²⁴ See Sinar Mas Print Awards website www.sinarmasprintawards.com
- ²²⁵ C & C Joint Printing website www.ccoffset.com/eng/product/pcp_pro_magperi.aspx accessed February 2012
- ²²⁶ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_main_2.asp?id=880&zplx=%CA%E9%BC%AE%D7%B0%D6%A1%C9%E8%BC%C6&nf=%B5%DA%CE%E5%BD%EC&mc=&print=&jx=
- ²²⁷ Sinar Mas Print Awards 2010 website
[www.sinarmasprintawards.com/10/sub_main_2.asp?id=596&zplx=%C6%DA%BF%AF%D4%D3%D6%BE\(%C2%D6%25](http://www.sinarmasprintawards.com/10/sub_main_2.asp?id=596&zplx=%C6%DA%BF%AF%D4%D3%D6%BE(%C2%D6%25)
- ²²⁸ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_main_2.asp?id=898&zplx=%CA%E9%BC%AE%BB%AD%B2%E1%28%CB%AB%BD%BA%29&nf=%B5%DA%CE%E5%BD%EC
- ²²⁹ Sinar Mas Print Awards 2011 website
[www.sinarmasprintawards.com/11/sub_main_2.asp?id=836&zplx=%C6%BD%D7%B0%CA%E9%BC%AE%BB%AD%B2%E1\(%A1%DD4%C9%AB\)&nf=%B5%DA%CE%E5%BD%EC](http://www.sinarmasprintawards.com/11/sub_main_2.asp?id=836&zplx=%C6%BD%D7%B0%CA%E9%BC%AE%BB%AD%B2%E1(%A1%DD4%C9%AB)&nf=%B5%DA%CE%E5%BD%EC)
- ²³⁰ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_qtzip.asp?zplx=%CA%E9%BC%AE%D7%B0%D6%A1%C9%E8%BC%C6&nf=%B5%DA%CE%E5%BD%EC
- ²³¹ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_qtzip.asp?zplx=%CA%E9%BC%AE%D7%B0%D6%A1%C9%E8%BC%C6&nf=%B5%DA%CE%E5%BD%EC
- ²³² Sinar Mas Print Awards 2010 website
[www.sinarmasprintawards.com/10/sub_main_2.asp?id=596&zplx=%C6%DA%BF%AF%D4%D3%D6%BE\(%C2%D6%25](http://www.sinarmasprintawards.com/10/sub_main_2.asp?id=596&zplx=%C6%DA%BF%AF%D4%D3%D6%BE(%C2%D6%25)
- ²³³ See Sinar Mas Print Awards website www.sinarmasprintawards.com
- ²³⁴ Sinar Mas Print Awards 2011 website www.sinarmasprintawards.com/sub_main_2.asp?id=951
- ²³⁵ Sinar Mas Print Awards 2010 website
www.sinarmasprintawards.com/sub_main_2.asp?id=635&zplx=&jx=&nf=&mc=&print=
- ²³⁶ Sinar Mas Print Awards 2010 website
www.sinarmasprintawards.com/09/sub_main_2.asp?id=395&zplx=%C6%DA%BF%AF%D4%D3%D6%BE%A3%A8%C6%BD%D5%C5%D3%A1%CB%A2%A3%A9&nf=%B5%DA%C8%FD%BD%EC
- ²³⁷ Sinar Mas Print Awards 2011 website
www.sinarmasprintawards.com/11/sub_main_2.asp?id=865&zplx=%D0%FB%B4%AB%C6%B7%D3%EB%D0%CD%C2%BC%28%A3%BC32%D2%B3%29&nf=%B5%DA%CE%E5%BD%EC

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- ²³⁸ Sinar Mas Print Awards 2011 website
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- ²³⁹ Sinar Mas Print Awards 2010 website
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- ²⁷¹ IKPP (2011a): 53
- ²⁷² Eg Asia Paper Markets (2011)
- ²⁷³ Group internal prices set below market price would mean higher volumes shipped. If shipments also included paper products (both mills produce uncoated wood-free papers), pulp volumes would decrease accordingly.
- ²⁷⁴ APP (2011c): 17
- ²⁷⁵ Estimate based on fibre consumption Jan–Nov 2010; source: MoFor (2010h). See also Tempo Interaktiv (2010).
- ²⁷⁶ APP (2011c): 17
- ²⁷⁷ APP (2011c): 17
- ²⁷⁸ APP (2011c): 17
- ²⁷⁹ APP (2011c): 17
- ²⁸⁰ APP (2011c): 27
- ²⁸¹ APP (2011c): 29
- ²⁸² APP (2011c): 39. Figures presented in this report on p39 for IK Serang are contradictory. The amount of local LBKP pulp purchased (see table 26) has been used here as a conservative assumption.
- ²⁸³ APP (2011c): 43. Figure accounting for local LBKP purchases.
- ²⁸⁴ APP (2011c): 32. The authors assume table 19 of this report to be incorrect, with figures given for 'NBKP - Import Verified (NCONT / CW)' actually representing locally sourced LBKP pulp. See text on same page for comparison.
- ²⁸⁵ Chinese import data (source: CTI (2010)) together with confidential information held by Greenpeace
- ²⁸⁶ Chinese import data (source: CTI (2010)) together with confidential information held by Greenpeace
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ACRONYMS ETC

All ministries and other government bodies referred to are Indonesian unless specified otherwise.

All \$ are US unless otherwise specified.

APL – Areal Penggunaan Lain/Other usage area – Land outside the legal forest estate which may contain areas of forest – available for conversion to other uses.

APP – Asia Pulp and Paper

APRIL – Asia Pacific Resources International Limited

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora

FDA – US Food and Drug Administration

GAR – Golden Agri-Resources, Sinar Mas Group's palm oil wing

ha – Hectare(s)

HP – Hutan Produksi/Production forest – forest land zoned for selective logging

HPK – Hutan Produksi Konversi/Convertible production forest – forest zoned for conversion, usually to plantations or agriculture

HTI – Hutan Tanaman Industri/Industrial forest – plantation forest concession

ITTO – International Tropical Timber Organisation

LBKP – Leaf Bleached Kraft Pulp

m – metres

MoF/MoFor – Ministry of Forestry

MTH – mixed tropical hardwood

NGO – Non-governmental organisation

PHKA – Perlindungan Hutan dan Konservasi Alam/Directorate General for Forest Protection and Nature Conservation, part of the Ministry of Forestry

PKTK – Pabrik Kertas Tjiwi Kimia

SMF – Sinarmas Forestry

SMG – Sinar Mas Group

t – Tonnes

t/ha – Tonnes/hectare

t/yr – Tonnes/year

IUCN – International union for the conservation of nature

UAE – United Arab Emirates

UK – United Kingdom

UN – United Nations

USA – United States of America

WRI – World Resources Institute

WWF – Worldwide Fund for Nature

MAPPING

Greenpeace assessment of landscape values is based on a number of sources including Ministry of Forestry landcover maps for 2003, 2006 and 2009, Wich *et al* orang-utan habitat maps for Sumatra and Kalimantan, WWF/WCS/Smithsonian and NFWF-STF priority tiger conservation landscapes, and Wetlands International peatland maps.

Concession data is compiled from various government sources. Data on industrial timber plantations (HTI) are available from the Ministry of Forestry. These do not identify companies controlling the concessions.



Full presentation of this briefing is available at www.greenpeace.org/raminrail

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