



environmental investigation agency

The Politics Of Extinction

**The Orangutan Crisis
The Destruction Of Indonesia's Forests**

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Executive Summary

- The wild orangutan population has declined by up to 50% in the last decade. It is estimated that only 15-25 000 orangutans survive in the wild. Over 80% are confined to Indonesian territory on Borneo and Sumatra.
- The primary threat to orangutan survival is habitat destruction. Up to 80% of orangutans' forest habitat has been lost over the past 20 years. Other threats include the pet trade, poaching for food and human-animal conflict.
- Political and economic corruption and nepotism have resulted in the massive over-exploitation of Indonesia's forests.
- Strong economic incentives exist in Indonesia to encourage unsustainable forest management.
- The major causes of forest loss are commercial logging operations, land conversion for plantations—in particular palm oil—mega-development projects, agriculture and forest fires.
- Land conversion for plantations and by logging interests are the major cause of the fires between 1997-98.
- Over 70% of Indonesia's "frontier forests" (containing original ecological features) have been lost. The country is losing around one million hectares of forests each year.
- Enforcement of legislation to protect forests in Indonesia is totally inadequate.
- There is a compelling argument for the new regime in Indonesia to adopt new policies which fully incorporate environmental, social and economic sustainability into forest policy.
- Governments, international banks and agencies, including the International Monetary Fund, World Bank and Asian Development Bank and private investors must ensure strict environmental, social and economic conditions are attached to their lending to avoid further deforestation and unsustainable forest management.



The Politics of Extinction

Introduction

The world's last remaining orangutans, now confined to the forests of just two islands—Sumatra and Borneo—are facing critical decline and possible extinction within the next twenty years. Corrupt politicians and corporate leaders have created a regime in Indonesia that has driven the rapid, unsustainable exploitation of the orangutans' forest habitat and has led the country to economic collapse. These forces have conspired with El Niño and the demands of the international marketplace to accelerate the destruction of Indonesia's forests and its abundant biodiversity.

In 1995 experts expressed profound concern that "suitable orangutan habitat in Indonesia and Malaysia has declined by more than 80% in the last 20 years" and that "orangutan numbers have declined by 30–50% over the last 10 years". The situation now is even more critical.

This report identifies the major threats to the survival of wild orangutans from habitat loss, forest degradation and fragmentation. Direct threats include logging operations, conversion of forests to commercial plantations, agricultural practices, industrial development projects, hunting for food or the pet trade and human-animal conflicts.

Widespread corruption and the failure to employ transparent and accountable practices within Indonesia's political, financial and business regime are shown to be the driving force behind the destruction of natural forests and the on-going decline of the orangutan.

The impact of poorly regulated bilateral or multilateral investment programmes—including private, governmental and intergovernmental loans—are shown to have the potential to create further habitat loss and degradation. The compelling need for future financial and economic support to be accompanied by strict environmental and social conditions is highlighted. It is evident that the on-going economic crisis in Indonesia and in particular the devaluation of the rupiah and rapid inflation is likely to change the configuration of forest land use and may lead to further unsustainable forest loss and degradation.

In the light of the evidence presented in this report it is clear that Indonesia must commit itself to an urgent action plan for the conservation of orangutans and the forests upon which they depend.

The new regime has an historic opportunity to redress the balance of the last three and a half decades in favour of the environment, wildlife and civil society. EIA urgently calls upon the Indonesian National and Provincial Governments to immediately implement EIA's International Orangutan Conservation Action Plan.

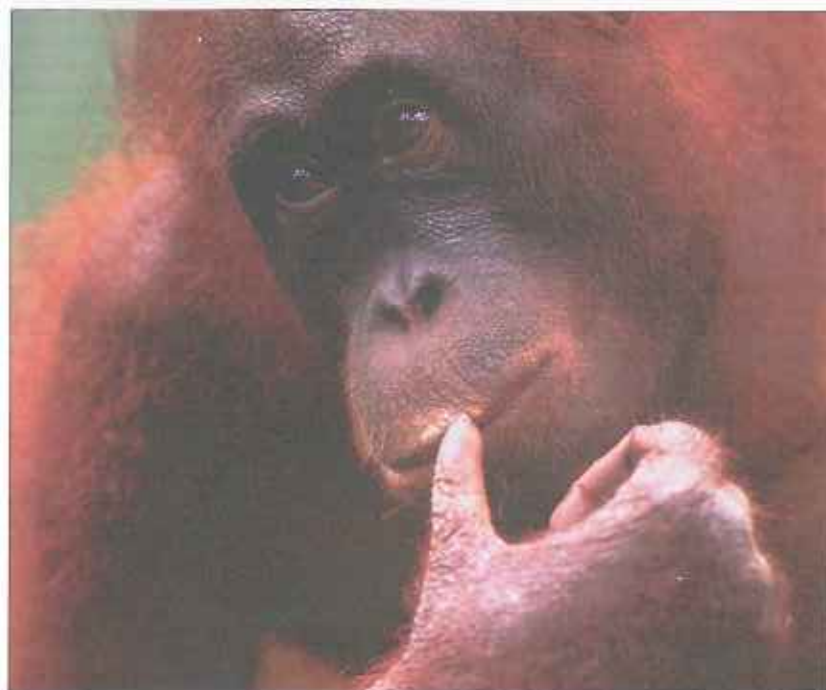
The international community, particularly those nations which create the demand for timber and palm oil products, has a responsibility to ensure that Indonesia takes such action.

The developed nations together with the International Monetary Fund, the World Bank, Asian Development Bank and private financial institutions must provide appropriate financial and technical support to implement the Action Plan. Contingent to this is the application and enforcement of wide-ranging environmental and social conditions to lending and aid.

Failure to take this action will inevitably result in the on-going, uncontrolled decline of the orangutan and its eventual extinction in Indonesia. Inextricably linked with the fate of Indonesia's natural forests, the demise of the orangutan will signal the critical failure to achieve sustainable forest management. The first years of the 21st century may be witness to the irreversible loss of countless species, considerable negative impacts for regional and global climate regulation and massive social upheaval.

The choices and implications are clear.

Steve Trent,
EIA Campaigns Director,
July 1998.



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The new regime has an historic opportunity to redress the balance of the last three and a half decades in favour of the environment, wildlife and civil society

Today, fewer than 25 000 orangutans are thought to exist in the wild. Habitat destruction is the most critical factor in the decline of the orangutan, and this threat has intensified over the past two decades.

The Orangutan Crisis

- The wild orangutan population has declined by up to 50% in the last decade. Today it is estimated that between 15–25 000 orangutans survive in the wild. Over 80% are confined to Indonesian territory on Borneo and in Sumatra.
- The primary threat to the species' survival is habitat destruction. Up to 80% of the orangutans' forest habitat has been lost over the past 20 years.
- The major causes of loss, fragmentation and degradation of the forests result from commercial logging operations and the conversion of forests to oil palm and timber plantations and for agriculture.
- Government-backed conversion of forests for commercial logging and plantations caused the devastating fires of 1997–98.
- Orangutans are also threatened by capture for the pet trade, persecution as agricultural pests and poaching for food.

A Shrinking World

Today, fewer than 25 000 orangutans are thought to exist in the wild.¹ Habitat destruction is the most critical factor in the decline of the orangutan, and this threat has intensified over the past two decades. Orangutan habitat in Indonesia and Malaysia is estimated to have declined by 80% over the last 20 years whilst the orangutan population is estimated to have fallen by between 30% and 50% over the past ten years.²

A continued loss of habitat, captures and kills could result in the virtual extinction of the species within the next 20 years. Some small, isolated pockets may remain but, with a depleted gene pool and fragmented and degraded habitat, such populations will be unsustainable.³

The critical situation facing this species is recognised at national and international levels. In both Malaysia and Indonesia, legislation prohibits the owning, killing, capture or harming of orangutans.⁴ Indeed, the orangutan became the first formally protected mammal in South East Asia in 1925. Yet enforcement has proved difficult in some areas and differs between localities and over time.⁵ The orangutan is listed as vulnerable by the World Conservation Union (IUCN).⁶ International trade in the species was banned in 1975 when it was listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora



(CITES).⁷ Legislation to protect the orangutan is doomed to failure unless greater efforts are taken to conserve the forest habitats upon which they depend.

Orangutans differ from African Great Apes in their almost exclusive dependency upon trees.⁸ They move arborally—females will rarely leave the forest canopy whilst males will occasionally come to the ground to move between stands of trees.⁹ Orangutans build their nests in the canopy and feed predominantly on fruit, including wild figs and durians. Leaves, shoots, bark, wood, other vegetation and insects make up the balance of their diet.¹⁰ It has been said that orangutans “are so highly specialised to the life in their natural habitat that their uniqueness is only fully expressed in their natural surroundings”.¹¹

A “keystone” species (a species that affects the survival and abundance of many other species in the ecosystem¹²), the orangutan is an indicator of the biological richness of Bornean and Sumatran forests. A comparison of different rainforest areas in Sumatra and Borneo highlighted that where orangutans are present, the biodiversity of plant and animal species is also the highest.¹³ As great frugivores and seed eaters, orangutans play an important role in maintaining the diversity of the woody plants of the rainforest¹⁴ and the regeneration of forests.¹⁵ Conservation of the orangutans is central to the maintenance of the ecosystems in which they live and vice versa. Furthermore, the Bornean orangutan reserves score very highly for biodiversity and are considered to be conservation areas of global significance. They protect all the major habitat types of the island, as well as most other flora and fauna, including numerous endemic species.¹⁶ Conserving the orangutan and its forest habitats will confer a greater benefit to countless other species and the environment.

Classification and Range of the Orangutan

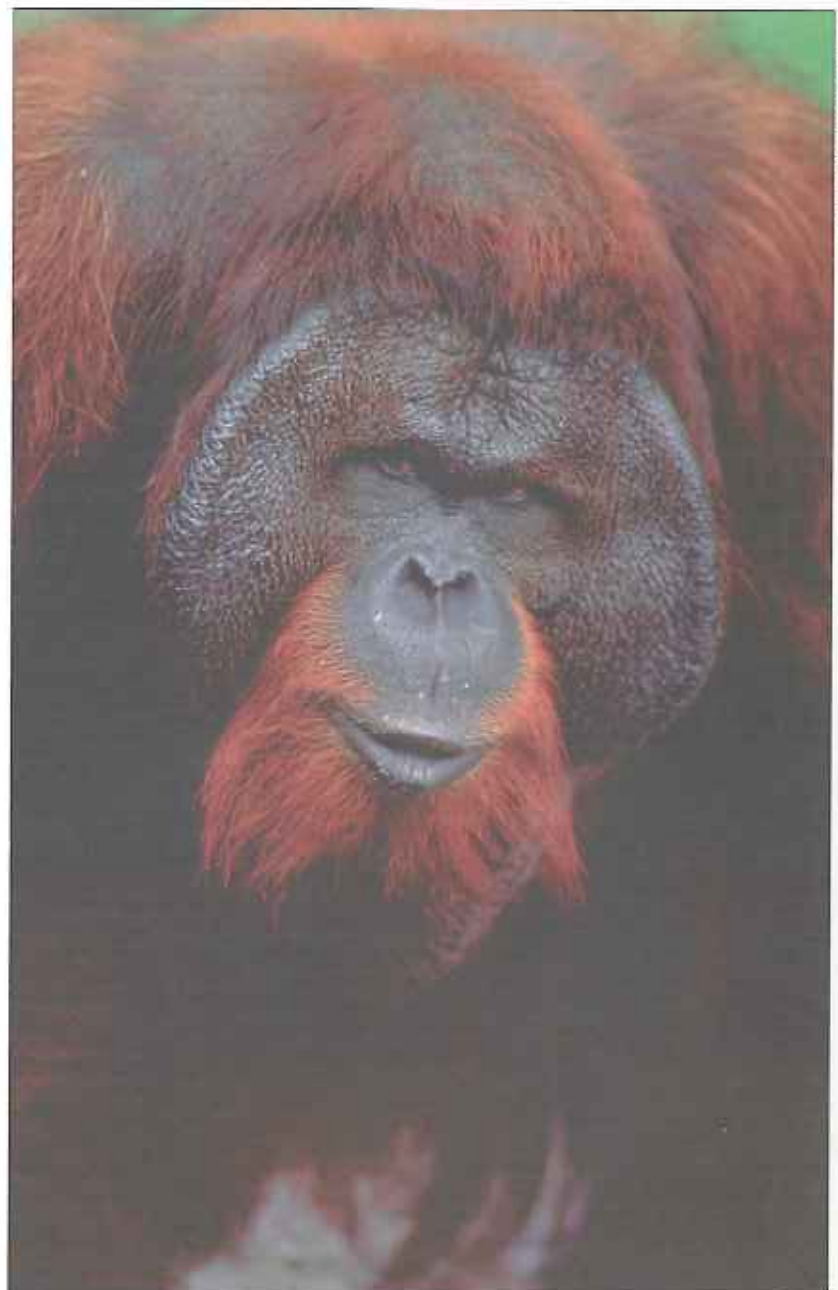
Today, orangutans are confined to the forests of the two islands of Sumatra and Borneo (shared by Indonesia, Malaysia and Brunei). During the Pleistocene era (between 10 000 and 1 000 000 years ago), the orangutan’s range covered much or all of South East Asia, extending as far north as tropical China and south to Java.¹⁷ Humans reduced orangutan distribution through hunting, habitat destruction and degradation.¹⁸

The orangutan (*Pongo pygmaeus*), or “man of the forest” in Malay, is the largest living arboreal animal, the only Asian Great Ape and one of

mankind’s closest relatives. Although it is generally accepted that man and chimpanzee are most closely related in terms of genetic and biochemical makeup, some special traits such as the ability to grow long hair, secondary sexual characteristics and behaviour indicate that man and the orangutan are equally closely related.¹⁹

Recent genetic research showing the differences between the Sumatran orangutan (*Pongo pygmaeus abelii*) and the Bornean orangutan (*P. p. pygmaeus*) suggests that they are distinct species.²⁰ In effect, loss of one species is not merely extirpation (local extinction), rather the complete disappearance of an entire species. Given this, both species and their respective habitats must be conferred adequate protection.

Below:
The wild orangutan population has declined by up to 50% in the last decade alone.



© Science of HISSAH Perera

In Northern Sumatra, *P.p. abelii* exists in scattered populations inhabiting an area between 2° and 5° north and by 95° and 99° east. The dispersion of *P.p. pygmaeus* in Borneo is less well-known but orangutans are thought to occupy forests in all parts of the island apart from some scattered pockets.²¹

Given their arboreal and solitary lifestyle, estimates of orangutan populations have varied greatly. However, in 1993, the Indonesian Directorate General of Forest Protection and Nature Conservation and the Species Survival Commission of the World Conservation Union (IUCN) reached a consensus on population figures.²²

For Sumatra, the population—which is divided into several distinct populations—was estimated at approximately 9200 individuals.²³ For Borneo (Kalimantan, Sabah and Sarawak),

the entire population—which consists of isolated populations—was estimated at between 10 282 and 15 546 individuals. These figures suggest a maximum of 25 000 individuals in total, and reflect a much more serious decline than had been previously recognised.²⁴ Earlier population estimates had suggested a total population of 41 000 orangutans for Sumatra and Borneo.²⁵

Precise figures on the status, range and threats to current orangutan populations are unavailable, although it is apparent that threats have intensified over the past five years. The extent of the current population remains uncertain with numbers as low as 15 000 being suggested.²⁶

Far right:

Orangutan killed by transmigrants in the Central Kalimantan mega-project (PLG) in May 1998.

Below:

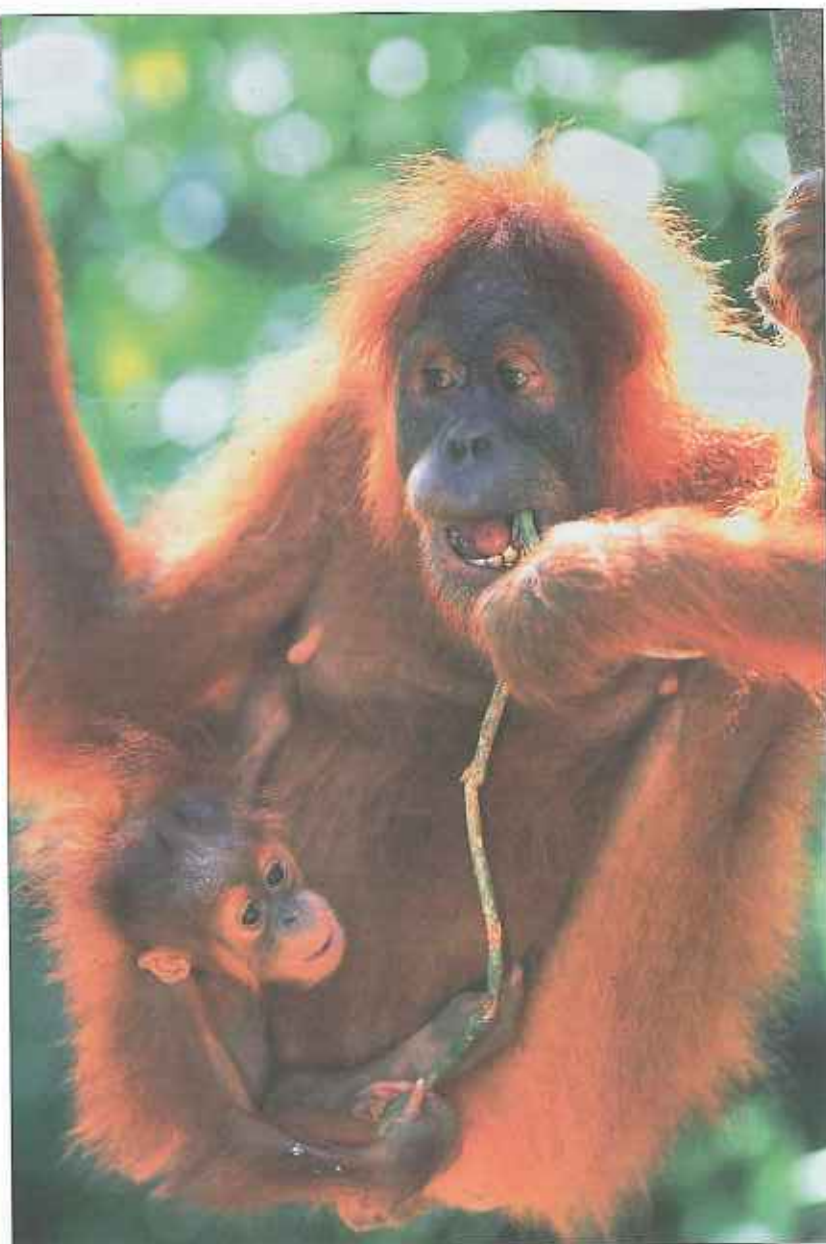
The low reproductive rates of orangutans make them especially vulnerable to environmental threats.

Habitat and Population Densities

Suitable orangutan forest includes the lowland dipterocarps (trees named after their distinctive winged fruits), peat swamp, heath forest and tropical montane forest.²⁷ Detailed information on the variations in orangutan densities between different forest types is very scarce. It is thought that there are up to five individuals per km² in the best of habitats in Sumatra (the alluvial lowlands). But this figure steadily decreases with altitude to around two individuals per km² in hill forests and 0.5 individuals per km² at altitudes between 1000 and 1500 metres. In Borneo, it is thought that the preferred swamp forest and good lowland forest with alluvial soils typically support between 1.5 and three individuals per km².²⁸

In natural undisturbed forests, the most important determinant in densities appears to be the availability of soft-pulp fruit, which decreases with altitude and seems to depend upon soil fertility and plant nutrient content.²⁹

Orangutans are not solely dependent upon primary forest. They will return to logged-over forest, but at lower densities, from a maximum of three per km² in primary forest to one per km² in logged-over or secondary forest.³⁰ In the peat swamp forests of Central Kalimantan, density was highest in the undisturbed tall interior forest (2.2 individuals km²) and was much lower in areas of high disturbance (0.6 individuals km²).³¹



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A Biologically Vulnerable Species

The low reproductive rates of orangutans make them especially vulnerable to environmental threats. The first pregnancy in wild populations has been observed at approximately 12 years of age. The mean inter-birth interval of eight years³² makes the orangutans the slowest breeding primate species³³ and a high parental investment is made by the female in her offspring. It has been found that "adult females are the most valuable members of an orangutan population and that the death of an adult female has the greatest influence on increasing extinction rates".³⁴

Although both long life-spans and birth-intervals have restricted scientific observations of mating and reproduction patterns in wild orangutans, research has suggested that if the chance of orangutans being killed is above one in twenty in any given year, the population is inexorably driven to extinction. A very slight increase (i.e. less than 1%) above its natural mortality rate can cause rapid extinction within three decades.³⁵ Given the unusual life history of the orangutan, the species is exceptionally sensitive to exploitation and any unnatural event such as an increase in human-induced mortality or removal from a local stock can result in severe depletion of the population and, ultimately, extinction.

Threats to Orangutans

- Habitat loss, degradation and fragmentation by logging and conversion of land to other uses, including plantations and development projects.
- Forest fires which destroy orangutan habitat, kill orangutans and drive them into closer contact with humans.
- The domestic and international pet trade which leads to the killing of adult females in order to acquire their young. The souvenir trade in orangutan skulls for tourists.
- Demand for "bushmeat", deliberate kills for "spot" or as pest control.

As the great majority of orangutan habitat is lowland rainforest, its loss and degradation due



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to timber exploitation, forest conversion, transmigration and road building is the principal threat to orangutan conservation. Protection of these habitats should be given the highest priority. Unfortunately, the orangutans' favoured habitat—fertile, low-lying forests close to rivers—are precisely the areas targeted by human populations for conversion to other uses.³⁶

The threat of commercial logging and agricultural activity within the orangutan range in Northern Sumatra was documented in the 1970s.³⁷ Experts noted that only 2.1% of "original orangutan habitat" was protected in the early 1980s.³⁸ Since then, there has been an escalation in encroachment, with forest lands targeted for timber extraction, plantations and agriculture.

The effects of habitat disturbance are compounded by hunting and capture which frequently accompany the opening up of the forest.

If the chance of orangutans being killed is above one in twenty in any given year, the population is inexorably driven to extinction.

Large areas of orangutan habitat have been destroyed in the fires set by companies.

Loss of Habitat Quality: The Impact of Logging

Although orangutans are not uniquely dependent upon primary forests for their survival, they are severely impacted by logging.³⁹ Studies of the effects of logging on apes demonstrate a 50% reduction of the original population, which appears to be permanent in the case of orangutans.⁴⁰ This loss is attributed to forced migration, social upheaval, fatal accidents and starvation. Orangutans will usually migrate to areas of undisturbed forest even if this results in crowding which in turn may cause a local decline in the birth rate.⁴¹ Once the forest disturbance has finished, orangutans may return, but at a lower density than in primary forest. A study of orangutan density in Sumatra's Gunung Leuser National Park, recorded a reduction from three individuals per km² in primary forest, to one per km² in logged or secondary forest.⁴²

Although most of the timber species extracted do not directly provide food for the orangutan, they are the most popular stands for their primary food supply. Large, emergent dipterocarps—the dominant tree species in Indonesian lowland rainforests—are the primary hosts to climbing and strangling figs and removal

of these favoured timber species ultimately destroys these food sources. Over 50% of the tree stands studied in one orangutan habitat were found to be timber trees.⁴³

Habitat Fragmentation

Small populations of apes are highly sensitive to demographic, environmental and genetic chance events, and so are more susceptible to extinction.⁴⁴ Populations of 2000 or more are expected to have the best chance of long-term survival and protected forest areas must be large enough to sustain such populations.⁴⁵ Road construction linked to logging and other development projects fragment populations. In Gunung Leuser National Park, a road has separated the orangutan populations reducing their ability to exchange genetic material and isolating almost 600 orangutans.⁴⁶

The fires which have spread across Borneo and parts of Sumatra over the past year can be attributed to unsustainable forestry practices and the drive to convert forest lands into commercial plantations. The result has been the destruction of two million hectares of forests, including dam-





age to 19 protected forest areas and an unknown long-term impact upon orangutan populations, particularly in Borneo.⁴⁷

In 1983, forest fires affected orangutans in Kutai National Park in East Kalimantan. It was reported that although orangutans were still breeding and quite common after the fire, feeding behaviour had changed and they were eating large quantities of tree bark, young leaves and stems.⁴⁸ Normally these are less favoured foods, but there was a dearth of fruiting trees in the area. The changes in the forest structure following the fire were important, with reports that the normally arboreal orangutans were often seen walking on the ground between patches of forest.⁴⁹

The longer term implications of the fires on fruiting are less well documented. Orangutans have an omnivorous diet and a degree of dietary flexibility.⁵⁰ However, the trees upon which they depend may take many years to mature and set fruit. This problem may be exacerbated by the impact of smoke upon pollinating insects and birds.⁵¹

As large arboreal mammals, orangutans are frequently able to escape fires by moving swiftly

through the forest canopy, though undoubtedly many individuals have been killed. A potentially greater pressure comes when the orangutans flee into areas inhabited by people. The recent fires in Indonesia have caused an upsurge in illegal poaching and capture for the pet trade.

Hunting and Capture for Trade

The destruction of forest habitat is pushing orangutans into closer proximity to humans, inevitably increasing hunting, poaching and capture. Given the current population levels and slow breeding rates, orangutans are unable to sustain increases in kills or captures. Of critical importance is the capture or killing of adult females which are vital to maintaining populations.

Logging opens forests to human access thereby facilitating poaching. The more accessible the area, the more rapidly wildlife populations disappear.

The highest densities of orangutans are found in the lowland forests which are favoured by

The recent fires in Indonesia have caused an upsurge in illegal poaching and capture for the pet trade.

timber companies. These are the most accessible after logging, and so suffer the most from hunting.⁵² Reports have noted that "timber camps in the interior appear to have up to three freshly caught apes on site"⁵³, whilst others report that timber-camp employees occasionally shoot orangutans for "sport".⁵⁴

Numerous sources have linked the 1986 decision by the Indonesian Government to open up Kalimantan to timber concessions and other economic ventures to an increase in the vulnerability of orangutans to capture.⁵⁵ In 1988 it was reported that forest conversion in East Kalimantan had resulted in a "massive outbreak" of illegal hunting and capture.⁵⁶ Infant orangutans were reported being bought as "prestigious pets" by wealthy Indonesians, while the skulls of adults were sold to foreign tourists⁵⁷, a trade which has continued despite confiscations and arrests. Recent reports cite the confiscation of three fresh skulls from a shop in Samarinda, East Kalimantan.⁵⁸

Below
Orangutan skull, often sold as tourist souvenirs

Bottom of page:
Orangutan killed by transmigrants in the Central Kalimantan mega-project (PIG) in May 1998.

The demand for baby orangutans for the commercial pet trade both within Indonesia and overseas, though illegal, has continued despite efforts to enforce legislation and confiscate captives. Every year orangutans are smuggled across the border to Malaysia.⁵⁹ During the 1980s the demand for pets resulted in over 1000 animals being smuggled into Taiwan⁶⁰, and sold for the equivalent of between US\$6000 and US\$15 000.⁶¹ Following Taiwan's endorsement of CITES, 283 illegally-held orangutans were registered by the authorities⁶² and enforcement of Taiwan's 1989 Wildlife Conservation Law is thought to have virtually halted the trade which had caused an estimated 10% decline in the wild population.⁶³

Yet demand for infant orangutans both from domestic and overseas sources has not ceased. A ready supply has been ensured by the recent fires and massive land clearances. In early 1997, it was reported that forest clearance for the establishment of oil palm plantations was feeding a local market for young orangutans for the live animal trade. A researcher in Tanjung Puting National Park learnt that a young orangutan had been seized on board a Chinese ship, believed destined for Java, and brought to the Tanjung Harapan reserve in the Park. Tanjung Puting's head ranger cited this incident as being the seventh case in recent weeks.⁶⁴

Not only does the trade remove the young orangutans, in effect depleting the next generation, but capture usually involves killing the mother in order to secure the infant. The mother will neither surrender nor abandon her offspring under normal circumstances. Commercial trade is exacerbating the decline of the wild orangutan population. Even before the fires of 1997-98, investigations into the trade suggested that at least 150 infants were captured each year. It is also estimated that for every one infant exported, between three and five animals die during capture and transit.⁶⁵ Given these factors, up to a thousand orangutans could be deliberately killed each year. Killing the mother to obtain the infant probably remains the main motive for direct hunting.⁶⁶

In October 1997, forestry police and staff from the Wanariset Orangutan Reintroduction Project confiscated dozens of orangutans across Kalimantan. These included babies of just a few weeks as well as severely hurt adults. According to Wanariset, the extreme drought had resulted in newly-set fruit falling from trees before ripening, whilst reduced leaf growth and consequent lack of moisture caused many orangutans to leave the forest in search of food and water.⁶⁷



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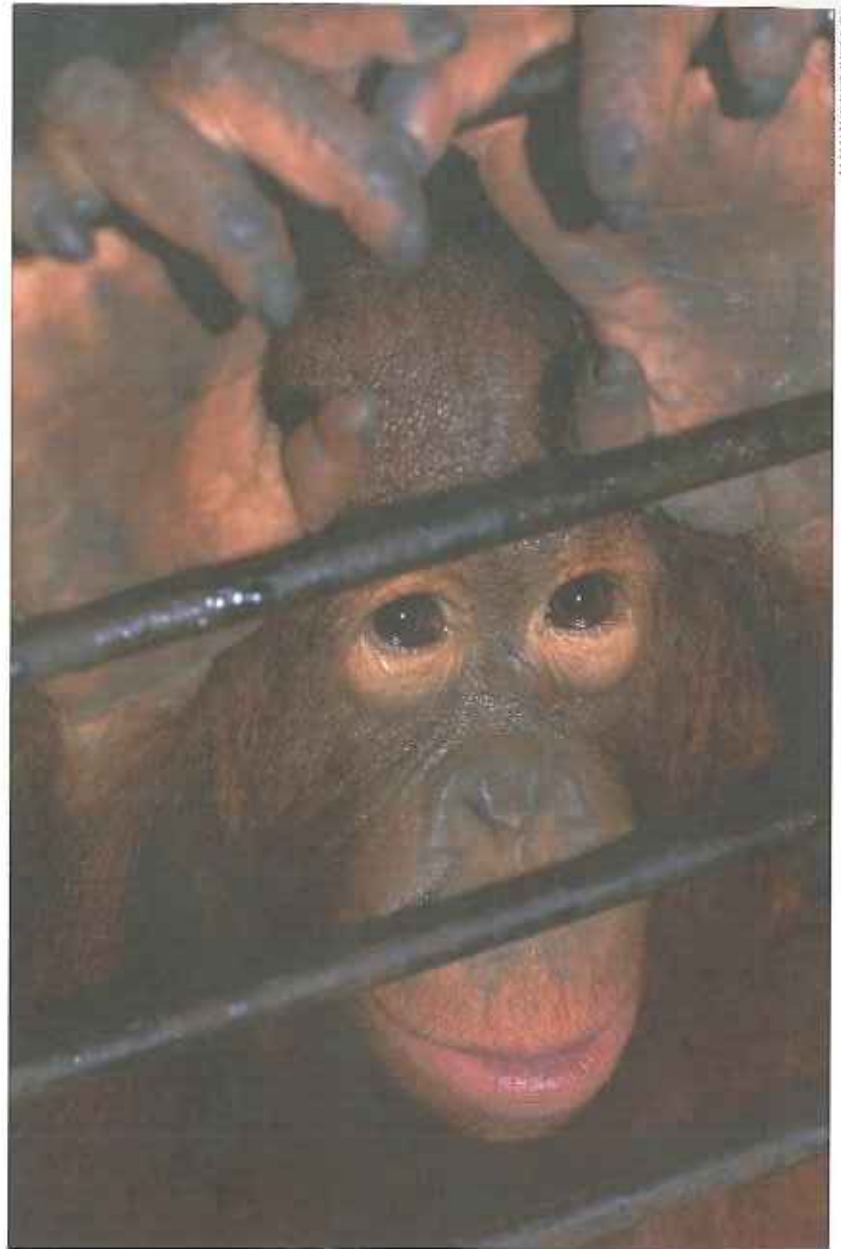
© S. Amun, 224

It is impossible to determine precise figures for captured orangutans but they are certain to have increased as a result of the recent fires. Experts have estimated that one thousand orphan orangutan babies have been captured by villagers in Kalimantan following the fires, which could mean that at least a thousand females were killed.⁶⁸ Following the recent fires, auctions of orangutans have been held in southern ports. It is rumoured that the animals are being shipped to Hong Kong, and then into China, where they may be eaten for their "potency".⁶⁹

The Demand for Meat

The "hunting of orangutan is widespread throughout Kalimantan and thrives because there is a ready market for food and pets".⁷⁰ This is despite sizeable orangutan populations coinciding with coastal swampy regions in which the local Moslem communities do not have a tradition of eating orangutans.⁷¹ In 1994, it was reported that fires in West Kalimantan had caused a severe food shortage amongst local people resulting in orangutans being hunted for meat.⁷² The fires had also forced the animals into the riverain forests enabling simple capture. The slow-moving orangutan is easy prey for hunters with rifles and in areas with few apes, hunting is sufficient to eradicate the local population.⁷³ In early 1998, EIA investigators heard numerous reports of orangutans being eaten, not only for sustenance, but also for their "potency".⁷⁴ Undoubtedly, as orangutans are driven closer into contact with humans, they will increasingly suffer in this way.

Finally, orangutans are often regarded as agricultural pests eating both the fruit and seedlings being cultivated and they may be shot in plantations or other agricultural areas. Instances of bounties being offered for every orangutan caught in plantations have been reported.⁷⁵ Researchers cite "many accounts of clashes between local farmers and orangutans that come to the gardens to raid fruit trees and other crops".⁷⁶



© Mark Rowley/WWF

In October 1997, dozens of orangutans across Kalimantan were confiscated. These included babies of just a few weeks as well as severely hurt adults.

Indonesia loses around one million hectares of forest each year—around 1% of its remaining forests.

A Future Without Forests?

- Indonesia's 100 million hectares of forests represent 10% of the world's remaining tropical forest cover.
- Today over 70% of Indonesia's original "frontier" forest (displaying original ecological features) has been lost.
- Indonesia currently loses around one million hectares of forest each year—around 1% of its remaining forests.
- Indonesia is home to 10% of plant, 12% of mammal, 16% of reptile and 17% of bird species.
- Indonesia has the world's longest list of species threatened with extinction, including the Sumatran tiger, Asian elephant, Sumatran and Javan rhino, clouded leopard, sunbear and orangutan.
- Destruction of forest habitat resulting from unsustainable logging, illegal logging, land conversion for industrial plantations, fires, mining activity, poaching and wildlife trade are driving species' declines.
- Enforcement of legislation to protect national parks and other protected forest areas is woefully inadequate.

Below:
Indonesia is home to 17% of the world's bird species.



Indonesia's Forest Cover

Indonesia's tropical forests are second only in size to those of Brazil, covering around 109 million hectares in 1995.¹ They represent 80% of South-East Asia's forests² and 10% of the world's tropical forest cover.³ They are among the world's most biodiverse ecosystems.

Officially, Indonesia continues to claim 143 million hectares of forests.⁴ However, even Indonesian Government figures for forest cover vary greatly, with estimates as low as 92.4 million hectares, covering just 48.1% of the total land area.⁵ In 1994 the Minister of Forestry reported that "...we used to claim that we had 141 million hectares of forests. It turned out that only 80% of the estimated area holds forests."⁶ According to the available figures, the deforestation rate from 1982 to 1993 was 2.4 million hectares per year, far greater than the Food and Agriculture Organisation (FAO) estimate of 1.3 million hectares during the period 1982–1991.⁷ Recent satellite images suggest current forest cover is closer to 53%.⁸

A report quoting "non-official estimates" put the loss of natural forests in excess of 40 million m² per year, a rate which will see the exhaustion of large-sized old-growth forests between 2005 and 2010.⁹ The World Resources Institute found that 72% of Indonesia's original "frontier" forest (relatively undisturbed and displaying the original ecological features) has been lost and of the remainder, 54% is under immediate threat.¹⁰ Clearly, the removal of natural forests has not been matched by the much-vaunted timber plantation programmes.

The Indonesian Government divides forested land into the following classifications, the majority of which are "production" forests in which the government may grant commercial concessions:

Production	64 million hectares (45%)
Conversion (for agriculture or commercial plantations)	30 million hectares (21%)
Protection forests (for soil and watershed protection)	30 million hectares (21%)
Conservation (for conservation of biodiversity)	19 million hectares (13%) ¹¹

The Real Value of the Forests

Indonesian forest policies have been subservient to the demands of rapacious timber and plantation industries. Policies have sought to extend the economic exploitation of forests whilst ignoring their true value as providers of a wide range of invaluable environmental, social and economic services, of which timber is only one element.

Natural forests are essential in maintaining ecosystems at local, regional and global level. They provide habitat to half of the world's species, regulate climate, protect soils and water systems and provide a sustainable environment for countless millions of people. In Indonesia alone, it is estimated that around 60 million people are dependent upon forests.¹²

A recent study found that a hectare of intact tropical forest in Indonesia provides economic services worth up to US\$6000 per annum. This figure includes the value of useful plants, insects and animals (used, for example, in medicine). Research has found that over 1200 species of medicinal plants originate from Indonesian tropical forests.¹³ The figure also tallies the forests' value as a global resource to counter atmospheric warming. In total, the cost of Indonesia's current plans to clear forest is around US\$12 billion.¹⁴

A comparison of alternative management strategies in Bintuni Bay, Irian Jaya, found that when account was taken of the value of fish, locally used products and erosion control, the most profitable strategy was to retain the forest—this yielded US\$4800 per hectare. Cutting the forest for timber yielded just US\$3600 per hectare. Retaining the forests would allow continued use of the area worth US\$10 million a year, providing 70% of local income and protecting fisheries worth US\$25 million a year.¹⁵

Non-wood forest products (NWFP) are a significant source of revenue world-wide. The FAO estimates that over 150 NWFP are traded internationally each year.¹⁶ Hundreds of thousands of people in Indonesia have a sustainable livelihood collecting, processing and trading NWFP. Indonesia is a major supplier of products as diverse as gum rosin, rattan, bamboo and essential oils.¹⁷ Rattan, for example, is a sustainably produced crop growing naturally in forests and it is widely used in furniture-making. Around 90% of the world's rattan comes from Indonesia and 75% from Kalimantan.¹⁸ However, even these non-timber products have not escaped the interest of powerful businesses

Carbon Sequestration and Climate Regulation

Forests—and in particular old growth forests—play a vital role in climate regulation through the sequestration of carbon dioxide (CO₂). Where forests are lost so too is this vital function. Moreover, logging aggravates this situation as it releases CO₂ through associated burning and decay. The Inter-governmental Panel on Climate Change estimated that the tropical forest destruction accounts for around 22.5% of anthropogenic global carbon emissions (some 1.6 gigatonnes (10⁹) of carbon.¹⁹

Forests also play a key role in local climate regulation, moderating temperature, precipitation, horizontal and vertical air movements and albedo.

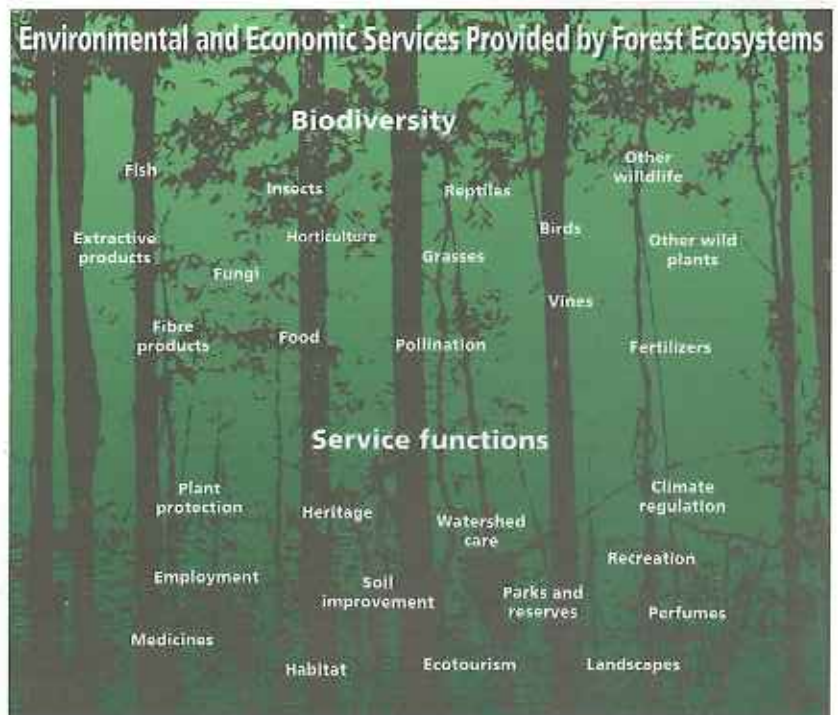
Impacts upon Water Systems, Watersheds and Soil Protection

Forests play a vital role in purifying and regulating water supply, moderating the impact of storms and floods and creating and maintaining soils. Logging or land conversion leading to the exposure of soil to rainfall creates increased run-off, loss of soil and soil nutrients, landslides, flooding, siltation of rivers, streams or reservoirs and the loss of crops or grazing land.

Biodiversity and Non Wood Forest Products

Forests contain between 50–90% of terrestrial species. Tropical forests alone are thought to contain between 10–50 million species—over 50% of species on the planet.²⁰ Forests provide a staggering range of non wood forest products. Some 15 000 species of wild plants and animals are known to be used for foods, medicines and other functions. International trade in non-wood forest products is valued at over US\$1 billion annually.²¹

Forests provide educational, recreational, aesthetic and cultural benefits.



Indonesia has the world's longest list of species threatened with extinction. 128 mammal species (29%) and 104 bird species (7%) are threatened.

Far right:
Fewer than 400
Sumatran tigers now
survive.

Below:
Dayak collecting rattan.

with connections to the former regime of President Suharto. Thousands of rattan collectors and rattan mat (tatami) producers have suffered, because all rattan produced in Kalimantan had to be sold—for an artificially cheap price—to ASMINDO (the Indonesian Furniture Association). Headed by former President Suharto's close friend Bob Hasan, ASMINDO imposed an export ban for semi-processed rattan products forcing the rattan to be sold exclusively to Bob Hasan and ASMINDO's rattan furniture factories in Java.²²

Indonesia's Biodiversity—A Fortune Squandered

Between 50% and 90% of all terrestrial species inhabit the world's forests and many of them are threatened with extinction primarily because of habitat loss.²³ Spanning the Asian and Melanesian-Australian realms, Indonesia has a strategic biogeographic position containing more mammal species than any other country and over 20 000 plant species.²⁴ It is home to 10% of plant, 12% of mammal, 16% of reptile and 17% of bird species found on Earth, many

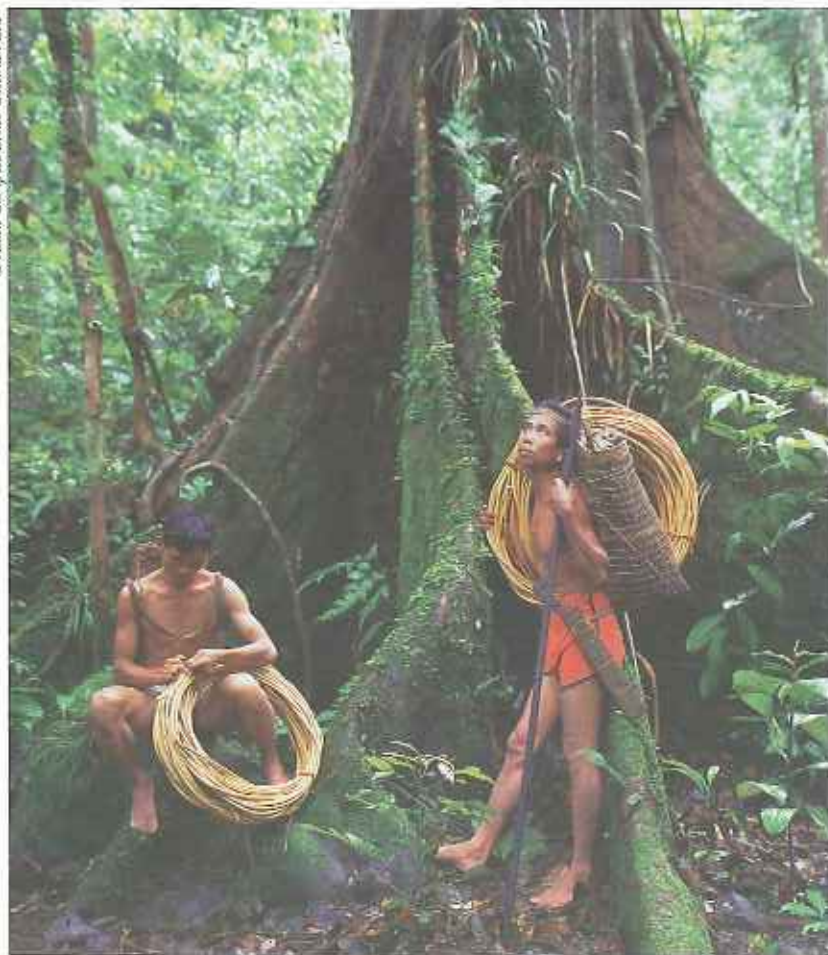
of which are endemic.²⁵ 18 381 bird species, or 4% of the world's total, are found nowhere else on Earth.²⁶ The island of Borneo has a high level of floral endemism, with about 34% of all plant species found nowhere else.²⁷ Borneo also has 37 endemic bird species and 44 endemic land mammals.²⁸ This astonishing diversity is largely due to the extensive and rich variety of the forest ecosystems—some 19 distinct forest types have been identified.²⁹

Forest loss has taken its toll on this biodiversity and today Indonesia has the world's longest list of species threatened with extinction. According to the IUCN Red List (1996), 128 mammal species (29%) and 104 bird species (7%) are threatened, many by the loss of their forest habitats.³⁰ Poaching—either for domestic consumption or for international trade—also poses a threat. In a number of cases the two go hand-in-hand, as logging or other forest developments serve to bring human populations into closer contact with hitherto untouched wildlife populations.

In Borneo alone, a number of plants are threatened by forest clearance, including ironwood (*Fusideroxylon zwageri*), an important commercial timber species and five (possibly six), species of Rafflesia. Threatened mammal species include Borneo's largest cat, the clouded leopard (*Neofelis nebulosa*), the very rare bay cat (*Fbadia*), the marbled cat (*F. marmorata*) and the flat-headed cat (*F. planiceps*). Rare and threatened primates include the orangutan (*Pongo pygmaeus*), the endemic proboscis monkey (*nasalis larvatus*) and the western tarsier (*Tarsius bancanus*). The Asian elephant (*Elephas maximus*) and banteng (*Bos javanicus*) are also facing declines due to forest clearance and human-animal conflict.³¹

Several bird species are also threatened by habitat loss and yet more by a combination of habitat loss and directed captures and kills for trade. Decline is most marked among the terrestrial and flycatching species and those feeding on understorey foliage. Logging is also thought to affect species such as fork-tails and kingfishers which feed along fast-flowing streams, which may become silt-laden or dammed by logging activities.³²

Figs (*Ficus spp.*) are a key species for many frugivores, providing food when other fruits are scarce. However, many fruiting figs are destroyed when the timber trees which are host to them are removed. This can result in a drop in numbers of highly frugivorous species such as hornbills and gibbons.³³ The implications of this are even more profound where species—such as



Ecological Abundance

Just ten hectares of Borneo's rainforest was found to contain 700 tree species, equal to the total number of species found in the whole of North America. Borneo is home to at least 3000 species of trees, including 267 species of dipterocarp (the most important commercial timber trees in South-East Asia). Of these, 58% are endemic to the island.⁴¹

For Sumatra, the clearance of 1000 km² (100 000 hectares) of forest would lead to the loss of 50 000 monkeys, 9000 siamang, 6000 gibbons, 30 000 squirrels, 15 000 hornbills, 200 tigers and 100 elephants.⁴² Just 3% of Borneo's forests are formally protected and illegal logging and settlement, mineral extraction and other developments continue to threaten this area.⁴³

hornbills—act as seed dispersers which regurgitate seeds unharmed, thereby facilitating forest regeneration.³⁴

A number of mammals and birds play a crucial role in both pollination and seed distribution, of tree species including commercially important species. For example, the fruit, durian, depends upon nectar-feeding bats for pollination, but localised habitat losses have resulted in declines in bat numbers and subsequent failures of the durian crop.³⁵

Many of Indonesia's most endangered animals are increasingly threatened by habitat loss and human encroachment.

Sumatran Rhinoceros (*Dicerorhinus sumatrensis*)

The Sumatran rhinoceros (*Dicerorhinus sumatrensis*) is probably the most endangered of all rhinoceros species.³⁶ As a result of poaching for the lucrative trade in rhino horn, numbers have declined by 50% over the past decade.³⁷ Fewer than 400 Sumatran rhino survive in very small and highly fragmented populations in South-East Asia with Indonesia and Malaysia being the only significant range states. In the last few decades, the species has disappeared from national parks in Borneo and there may no longer be any surviving populations in Kalimantan.³⁸ They are now extinct in Kutai National Park which was created to protect the species.³⁹ Experts estimated that the total population in Sumatra stands at between 185 and 250 animals.⁴⁰ Their typical habitats are the

tropical rainforest and montane moss forest which are being lost across their range.

Anti-poaching efforts appear to have largely halted the hunting of these animals. However, poaching to supply the demand for rhino horn used in traditional medicine has undoubtedly had a devastating effect.⁴¹

Sumatran Tiger (*Panthera tigris sumatrae*)

Until this century, three subspecies of the tiger (*Panthera tigris*) roamed Indonesia's forests. Intensive hunting and the loss of native habitat has led to the extinction of both the Bali tiger (*P.t. balica*) and the Javan tiger (*P.t. sondaica*) which were endemic to the islands of Bali and Java respectively. Today only the Sumatran tiger (*P.t. sumatrae*) survives in Indonesia. It is close to extinction with potentially viable sub-populations totalling fewer than 400 animals, largely restricted to five national parks.⁴² A further hundred tigers live in unprotected areas which will soon be lost to agriculture.⁴³

Indonesia is home to 10% of plant, 12% of mammal, 16% of reptile and 17% of bird species found on Earth. 18 381 bird species, or 4% of the world's total, are found nowhere else on Earth.



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“All but nine of 29 species (of primate) have lost half or more of their original habitat and four endemics have lost over 85% of their original habitat...”

Clouded Leopard (*Neofelis nebulosa*)

Classified by the World Conservation Union as vulnerable across its range, the clouded leopard (*Neofelis nebulosa*), Borneo’s largest cat species, is suffering from habitat destruction and human persecution. This cat is considered to be semi-arboreal and uses trees for resting. Its diet includes a number of arboreal species such as monkeys, gibbons and orangutans as well as other forest-dwelling animals.⁴⁷ Clouded leopards are found in declining swamp forests such as those of the Sebangau river catchment area in Central Kalimantan which is currently threatened by the PLG rice project.⁴⁸ In Sumatra, “the most serious threat [to the clouded leopard] and other large mammals ... is clear felling of forests for conversion to agriculture or human settlements”.⁴⁹

Primates

Indonesia is home to 29 species of primate of which 16 (19 if all the Sulawesi macaques are included) are island endemic. The threats to these primates have long been recognised. Over ten years ago, the IUCN reported that “all but

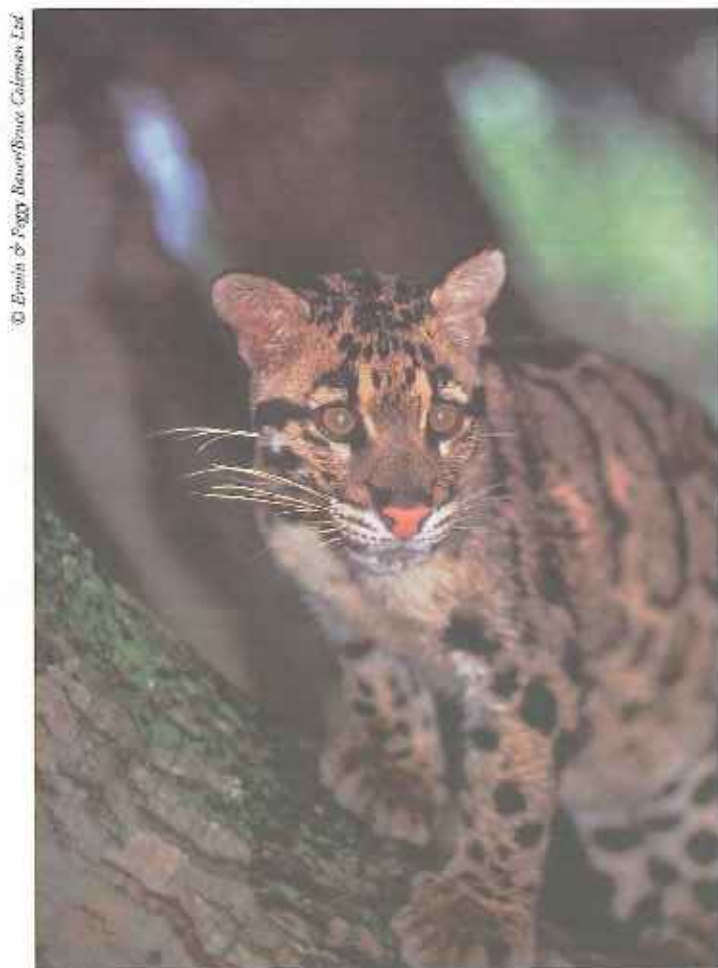
nine of 29 species have lost half or more of their original habitat and four endemics have lost over 85% of their original habitat... For the Javan gibbon and Javan leaf monkey, species with very limited distributions in lowland rainforest, habitat loss is a drastic 96%”.⁵⁰ More recent research into the status of the 12 primate species in Kalimantan reiterates the concern that forest degradation is the main threat to the survival of these primates.⁵¹

Proboscis Monkey (*Nasalis larvatus*)

Endemic to the island of Borneo, the proboscis monkey (*Nasalis larvatus*) is estimated at fewer than 5000 individuals⁵² and according to experts continues to be regularly hunted for food.⁵³ The largest protected population is found in Tanjung Puting National Park in Kalimantan. The Park has been severely degraded by fire, logging and illegal gold mining over a period marked also by changes in the primates’ group stability, size and composition. It is feared that a continuation in these trends will result in the local extinction of this population.⁵⁴ Elsewhere the species is thought to be declining rapidly and will become restricted to small totally isolated populations.⁵⁵

Below left:
Western tarsier.

Below right:
Clouded leopard.



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Sun Bear (*Helarctos malayanus*)

Few Indonesian surveys of sun bear (*Helarctos malayanus*) population status and threats have been undertaken and accurate information is lacking. Experts assume that sun bears occur wherever there is sufficient forest cover in both Sumatra and Kalimantan.⁵⁶ Sun bears are omnivores eating fruit, grubs, birds' eggs, fledglings and honey. They are expert climbers and will climb to great heights to reach the nests of bees and termites.⁵⁷ Given both declines in forest habitat and direct captures and kills, the species is considered to be threatened.

The trade in bear claws, canine teeth and gall bladders continues and EIA investigations in 1995 found that they are regularly hunted or fall prey to snares. Their canine teeth and claws were found for sale in many gold shops in Medan, Sumatra. Other shops sold gall bladders for use in medicine.⁵⁸ Although the international trade in sun bear parts is banned (the species is listed on Appendix I of CITES), it is thought that some threat remains from the demand for gall bladders from other Asian countries.

The sun bear is thought to be particularly sensitive to logging operations.⁵⁹ EIA researchers in Central Kalimantan learnt of a cub which had been captured by villagers after its mother had been killed by logging workers.⁶⁰

Protected Forest Areas

According to the Indonesian Government, by 1990, 303 terrestrial protected areas totalling 160 000 km² had been established, with a further 175 sites proposed. Indonesia currently has 37 (terrestrial) national parks chosen "to ensure the inclusion of viable and representative samples of most of the nation's ecosystems and populations of most native species". However conflicts have frequently arisen and powerful interest groups have resisted or ignored rulings in favour of conservation.⁶¹

Thus whilst Indonesian laws are designed to protect these parks (and indeed other nominally protected areas such as reserves), adequate enforcement is lacking and many of the national parks have undergone illegal logging or other encroachment. Furthermore, "protected status" has frequently proved to be temporary, with park boundaries shifted to allow logging or other development. Under Indonesian law, mineral exploration is allowed under a permit system.

Kerinci Seblat, Sumatra, is Indonesia's largest national park and one of the most species rich. In 1993, 43 of Sumatra's 47 key mammal

species and eight of the key birds were recorded there. However, as elsewhere in Indonesia, the surviving forests, many of which have been illegally logged in the past, are under pressure from farmers, timber operators, agro-conglomerates and other interests. This "protected forest" is currently reported to be in the process of conversion to an oil-palm plantation.⁶²

Kutai National Park

Kutai N.P. in Kalimantan represents another highly biodiverse reserve and was established in order to protect the Sumatran rhinoceros, which is now extinct in the Park. Kutai is home to 11 species of primate—including the Bornean gibbon (*Hylobates muelleri*), proboscis monkey (*Nasalis larvatus*), red langur (*Presbytis rubicunda*), grey langur (*P. hosei*) and white-fronted langur (*P. frontata*)—6 species of ungulates, 12 species of carnivores, 5 of reptiles and 300 species of birds, representing 80% of the total Bornean avian species.⁶³ More than 500 tree species have been found in Kutai, including many timber trees and wild relatives of important fruit trees. In addition, Kutai is rich in palms, rattans, orchids and pitcher plants.⁶⁴

Below:
Sun bear.



© T. Kishin & V. Murovskaya

“Kutai National Park will disintegrate further and the last significant sample of one of the world’s richest habitats will finally disappear from the map.”

In the National Conservation Plan for Indonesia drafted in 1981, Kutai is described as an “irreplaceable example of lowland rain forest from mangrove shore to dry lowlands including small areas of swamps. The area is floristically rich... [and] has a wealth of wildlife particularly orangutan and banteng. Unfortunately the reserve has been seriously destroyed by logging and oil well development and less than half of the area remains under original forest.”⁶⁵

The tropical rainforests have the highest biodiversity index of all Indonesian forests, yet currently less than 3% are protected, with the lowlands of Kutai accounting for some 20% of the original area of lowland forest. Yet despite its biological richness and conservation value, Kutai has been encroached upon on many occasions and boundaries have been shifted to allow development. In just one example, a strip of 100 000 hectares along the coast was excised for oil and logging exploration and the logged-over section reinstated two years later. However a further 106 000 hectares were excluded in 1973.⁶⁶ In 1982 the area was declared a park, though it is now thought that the actual area has shrunk by 25% to 150 000 hectares because of illegal logging and forest fires⁶⁷, which have destroyed around 2000 hectares of forest over the past year alone.⁶⁸

Because of the system of permits which can be granted for mineral exploration, the state-owned oil company Pertamina is allowed to operate within the Park and has announced its intention to expand its operations into the “sanctuary zone” of the Park. Other companies

have sought licences to exploit the considerable deposits of coal located under the Park. “Intensive seismic explorations have been carried throughout the Park, also in zone 3, where such activities are not permitted”.⁶⁹

In 1992, a concession was granted to a local timber company to remove the harvestable trees in a 20 metre strip alongside the road. “In reality all trees within reach were cut and those stretches of forest along the road that had escaped previous devastation ... were seriously damaged.”⁷⁰

Kutai has no buffer-zone and is hemmed in by companies exploiting the area’s natural resources, including companies which in 1995 established “The Friends of Kutai” to oversee some of the management of the Park. In the eastern section which was excised in 1971, there is a huge liquid natural gas processing plant and fertiliser plant. To the north lies the Kaltim Prima Coal concession, a joint venture involving British Petroleum and RTZ-CRA. Producing ten million tonnes per year, it is one of the largest coal exporters in the world.⁷¹ To the West and South-West lie timber and plantation concessions, including Bob Hasan’s Kiani Lestari timber concession.⁷²

It remains to be seen whether these companies are willing to make the financial sacrifice to uphold and reinforce the conservation efforts within the Park, otherwise, as UNESCO predicts, “Kutai National Park will disintegrate further and the last significant sample of one of the world’s richest habitats will finally disappear from the map”.⁷³

If the forests are left undisturbed or are harvested in an ecologically sustainable manner, then the options for future land uses are left open. Once the forests are damaged and cleared, their biodiversity declines, species are lost and irreversible ecological and environmental changes occur. Most of Indonesia’s rich biodiversity is harboured within her rapidly disappearing forests.



B. J. Wilkinson/ESA

The Timber Barons

- Indonesia's forests directly support an estimated 60 million Indonesians.
- Extremely poor implementation and enforcement of legislation has resulted in the massive over-exploitation of natural forests. Extensive loss of orangutan habitat and forest biodiversity has occurred.
- Wealth derived from timber, wood, paper and pulp industries has been concentrated in the hands of very few individuals and companies. Local communities and indigenous people have received little benefit and have frequently suffered due to Government forest policies.

Indonesia's forests constitute the world's second largest area of tropical forest, supporting an estimated 60 million people and a vast array of plant, animal and insect life.¹ However, the past three decades have witnessed the unsustainable exploitation of this precious resource by Indonesia's "timber mafia". There now exists overwhelming evidence that the timber, wood, pulp and paper industries are having a massive negative impact on the country's environmental, social and economic health and security.

The History—Corruption, Nepotism and Destruction

The rise and accession to power of Indonesia's military government in the second half of the 1960s led directly to the misappropriation of Indonesia's forests by the new regime and the beginning of an unsustainable onslaught on the country's most precious natural assets.

In 1967, the government declared that it had sole jurisdiction over the nation's forests (around 74% of the land area).² Traditional *adat* customary rights to forest areas, which had evolved over generations and had maintained a complex, sustainable balance of forest resources were legally revoked. Local communities living in, or dependent on, the forests no longer had the power to stop outsiders—either Indonesian or foreign—from exploiting the forests. Moreover, the government which claimed stewardship of the forests was both unable to police these enormous areas of land and was, in any case, complicit in their unsustainable exploitation. In effect the traditional rights of tens of millions of

people were handed over to a small number of companies and state enterprises which colluded to maximise profits for the economic and military ruling elites. As one analyst noted, the government created a real life "tragedy of the commons".³

Within this context, the government set about a massive expansion of the timber and, more recently, paper and pulp industries. To help they used subsidies and economic or political incentives at every level within the industry. To foreign investors the Indonesian economy was fertile ground. Tax incentives along with lengthy operating licenses were granted.

In 1985, the Indonesian Government introduced a high export tax which resulted in the cessation of raw log exports. This combined with low royalty fees to depress domestic log prices to around half the world level (which meant that forests were greatly undervalued economically) and limited the interest in replanting.⁴ Critically, the move also encouraged over-investment in processing capacity. With no controls over the total annual cut, increased demand for timber resulted in over-cutting. For example, the number of plywood mills expanded from just 29 mills in 1980 to 110 in 1990 with a capacity of over 11 million metres³ per annum⁵, although actual production figures are lower, standing at a reported 8.6 million m³ in 1996.⁶

In 1998, Indonesia's wood processing industry comprises about 100 wood-based companies with a total processing capacity of around 45 million m³ per year⁷, far in excess of the official timber harvest which stands at around 25 million m³ (which is itself above the "sustainable" harvest of 22 million m³).^{8,9}

Indonesia's forests constitute the world's second largest area of tropical forest ... the past three decades have witnessed the unsustainable exploitation of this precious resource by Indonesia's "timber mafia".



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The Winners—the Concessionaires, the Losers—Wildlife and Local Communities

Indonesia's forestry policy is centred upon a concession system in which a company—private or state-owned—gains the right to log an area of forest. It currently allows around 490 timber companies to operate in the 64 million hectares of forestlands designated as "production forests". State-owned companies control about 11% of the forests.¹⁸ Production forests comprise 45% of the total in stark comparison to the 13% classified as "conservation" for biodiversity.¹⁹

Concession areas are designated in Jakarta and often cover the majority of a province's land area. The mapping of areas for timber leases has rarely considered the boundaries of community lands, or tracts used for hunting, gathering or long rotation agriculture. During the 1970s, in East Kalimantan alone, over 100 logging leases totalling 9.8 million hectares of coastal and riverain forests were granted by Jakarta, representing over 50% of the province's total area.²⁰

Across the whole of Kalimantan, an estimated 2.5 million indigenous Dayak peoples were displaced or resettled due to logging activities.²¹ The loss of these traditional lands, their biodiversity and other environmental, social or economic benefits was facilitated by a few "timber kings" with close personal links to former President Suharto and in many cases the new regime under Habibie. During the initial boom period of the timber industry, "large numbers of these concessions fell into the hands of the military and their Chinese clients".²² The World Bank (1993) noted that of all leasehold areas "more than 30% is under the effective control of 20 companies; and in fact it appears that five or six corporate groups dominate the sector".²³ The ownership of concessions, log-trading and wood-processing is highly concentrated in the hands of a few timber magnates, the largest company, Barito Pacific Timber, is holder of five million hectares of forestry concessions (an area larger than Switzerland).²⁴



© Healy-UNEP/Seal Picmer

In late 1995, the Forestry Minister announced that logs may have to be imported from Burma, Vietnam and the Solomon Islands to make up the shortfall. Malaysian log exports would be avoided as they were believed to include smuggled Indonesian logs.¹⁰ However, these plans were quashed in January 1996 with the announcement that the supply of logs would be boosted by the harvest of timber from within the Central Kalimantan mega-project (PLG) which was expected to amount to 6 million m³ of timber over the next few years.¹¹

The forestry sector remains a main-stay of the Indonesian economy—wood manufacture contributes around 7% of GDP and is the second-largest source of foreign earnings (after oil and gas).¹² However, this development has only been achieved by unsustainable levels of exploitation facilitated by illegal activities throughout the industry and at the expense of biodiversity, local communities and indigenous peoples and long-term social and economic security.

Habitat Destruction

The World Bank reports that Indonesia's forests are being logged at a rate of roughly 40 million m³ per year, yet the sustainable rate recommended by the Ministry of Forestry is 22 million m³ per year.¹³ Timber companies are cutting 50% more logs than can be replaced through replanting¹⁴ and at current rates of exploitation commercially sized logs will be in short supply by the year 2010 or earlier.¹⁵

The highest rates of forest loss are in Sumatra and Kalimantan—these regions also have the highest concentrations of timber concessions and timber processing industries.¹⁶ About one-third of Kalimantan and a quarter of Sumatra is managed by timber companies.¹⁷

The lowland forests are particularly at risk. Sumatra, for example, has lost over 70% of its original lowland forests.²⁵ an annual loss of one million hectares—roughly equivalent to the area being logged. It is clear that little or no progress is being made in replacing forest cover.²⁶

As natural forest resources are destroyed, the timber industry is striving to maintain its profits and has resorted to plantations to supplement supply. However, far from alleviating the pressure on the natural forests, plantations of fast-growing, exotic timber species are poor imitators of the rainforest, lacking the ecological richness required to support a diverse array of wildlife and the sustainable economics of local communities.

Plywood Pirates

In 1988, the government imposed a limit on the total number of plywood mills (120) and it is estimated that the number of mills in operation has declined since that time.²⁷ It was reported in 1995 that 90% of the 23 mills operating in East Kalimantan will probably cease operation.²⁸ "Given the fibre constraints on the natural forests, additional closures are forecast over the balance of the decade."²⁹

Forest Management—The Inefficiencies

Indonesia's forestry practices are rife with inefficiencies in both logging and wood processing, resulting in a wastage of one-third of the total harvest (8 million m³ and 3 million m³ respectively).³⁰ The 500 kilometres of logging roads in one large East Kalimantan concession involved the clearance of 40 000 hectares.³¹

Indonesia's forestry practices are governed by the "Selective Cutting and Replanting System" (Tebang Pilih Tanam Indonesia—TPTI), the objective of which was to allow a steady flow of timber to be extracted over a 35-year rotation period with a stipulation that only trees with a diameter over 50 cm at breast height were available for felling.³² Despite the requirements stipulated under this system, neither "pre-logging inventories" nor "post-logging residual stand inventories" are conducted properly or reported truthfully. A 1994 World Bank report stated that only 2.2% of forest logged in the country had ever been subject to the legally required residual stand inventory.³³ Furthermore, over-cutting within annual cutting plans and re-cutting at more frequent intervals than the 35-year cycle is not uncommon; companies are given 20-year leases and there is no incentive to adhere to a lengthier cutting cycle.³⁴ In 1996, it was reported that 111 concessions had been revoked since the early 1970s due to poor forest management.³⁵

The TPTI system based extraction fees on removals rather than on the number of commercial trees in the stand, encouraging leaseholders to fell only the most valuable trees. However, since the royalty system was "a flat ad valorem (proportional) rate, with no distinction for species, grade or size, loggers have little incentive to protect immature, inferior or less marketable varieties with little after-tax stumpage value", especially if they could reduce extraction costs.³⁶ As a result, heavy damage to the remaining trees often occurs—an average of 50%³⁷ but perhaps as much as 70%³⁸ of the remaining trees may be

damaged by logging. Furthermore, compaction of the soils caused by logging activity undermines the potential for natural regeneration upon which the TPTI depends. This greatly reduces the forests' value undermining incentives for protection from encroachment and fires.

Forest Management—The Illegalities

"It's not a secret that timber companies tend to be deceitful"

Former Indonesian Forestry Minister

Illegal and corrupt practices are rife within the Indonesian timber sector. The Ministry of Forestry's own figures showed that 84% of timber concession holders failed to meet logging rules between 1992 and 1993.³⁹ An assistant to the Environment Minister claimed that timber mills actually process 50 million m³ annually—at that time, this figure represented 15 million m³ more than the official government quota of that time. If these figures are correct then it can be extrapolated that roughly 500 000 hectares of forest are illegally cut per year.⁴⁰ Even those within the timber industry have admitted that losses to government revenue amount to around US\$3.5 billion per year and that the low prices of finished products such as furniture in the wood markets of Singapore, the USA, Japan and Europe clearly indicated timber smuggling and an evasion of export duties in Indonesia.⁴¹

Illegally harvested timber is used both domestically and for export. The Forestry Minister said in February 1996 that 70% of the

Indonesia's forestry practices are rife with inefficiencies in both logging and wood processing, resulting in a wastage of one-third of the total harvest.



G. J. WISSEMAN/ESA

Even those within the timber industry have admitted that losses to government revenue amount to around US\$ 3.5 billion per year.

timber coming into Jakarta was illegal. A crack-down resulted in the detaining of 83 timber ships.⁴² In 1994, it was reported that despite the withdrawal of all logging concessions on the island of Siberut, illegal logging continued. It was alleged that Carya Pharmin Pulau Siberut (PT CPPS) shipped illegally cut timber to Padang in Sumatra where, along with timber from Irian Jaya and Kalimantan, it was processed into plywood for export to the UK, France, the Netherlands, Germany and Hong Kong.⁴³ Japanese companies have allegedly purchased illegally-cut logs from Kalimantan, moving them across the border into Malaysian Borneo.⁴⁴

Under pressure from the World Bank, the government announced a 10% increase in the forestry fee but timber businessmen in South Sumatra said that the collection system was so weak that they would continue with "the accepted bribing system".⁴⁵ Illegal logging has taken place in a number of protected areas. For example, it was recently reported that 400 illegal loggers and a plywood mill were discovered in Tanjung Puting National Park on Kalimantan and driven out by the military.⁴⁶

The cost to the government comes from the avoidance of export duties, forestry fees and reforestation fees. This serves to further undermine the relevant authorities whose responsibility it is to control timber operations and prevent timber smuggling. Funding and capacity to deal with the current situation are lacking. The former Forestry Minister said that co-operation between forestry officials and the military has been poor in some areas due to

Methods of Illegal Logging in Indonesia:

- Logging outside of concession boundaries and in protected areas.
- Logging without authorisation and obtaining concessions by corrupt and illegal means (bribery and coercion).
- Over-cutting and removing under or over-sized trees.
- High-grading (targeting the most commercially attractive species).
- Re-harvesting before end of rotation cycle.
- Under-declaration of timber harvested, tax avoidance and fraud.
- Under-grading, under-measuring, under-valuing and mis-classification of species.
- Transfer pricing (a mechanism by which companies purposefully buy or sell goods at prices far above or below the market price to disguise the transfer of profits offshore, thereby avoiding tax in the country of operation). According to one corporation, 19 out of 20 timber companies in southern Sumatra manipulate their export documents to evade taxes.⁴⁷



"deviations by officials".⁴⁸ The Ministry of Forestry (MoF) has been given little capacity to ensure that regulations governing cutting or royalty payments are adhered to, and penalties levied for infractions. Nationwide, it is reported that there is only one MoF staff for every 127 100 hectares of forest, while in East Kalimantan, where logging activities are heaviest, the ratio falls to one per 314 000 hectares.⁴⁹ Vast concessions—which average 100 000 hectares but can be six times as large⁵⁰—located in isolated regions with poor road communication hamper adequate monitoring of timber practices.

The problem is exacerbated by the role of the military in logging. For example, convoys of military trucks have been reported carrying illegally-cut logs to Sabah.⁵¹ "Local officials who do site inspections are either vulnerable to collusion with the loggers or feel powerless to deal with the politically well-connected concessionaires. On top of that, illegal logging, with the support of local security officials, is rampant."⁵²

Despite the formation in 1995 of special Integrated Forestry Security Teams (TPIIT) these have been chronically underfunded and under-equipped. Even where seizures or detention of logging barges are made, it is often of no consequence. In 1996, 15 log barges impounded by the authorities "disappeared" in two separate incidents and local officials in Kalimantan said (anonymously) that the industry had strong connections with Jakarta.⁵³ A previous Head of Tanjung Puting was allegedly involved in illegal logging—earlier seizures of logs have disappeared without trace.⁵⁴

Early in 1998, the Director General of Forest Protection and Nature Preservation was reported as saying, "It's a pity that several wood processing firms are also involved by buying illegal timber because its price is cheaper than legally cut timber".⁵⁵ In South Sumatra 62 000 unclaimed logs and 45 illegal sawmills were reportedly discovered in a week.⁵⁶ Between 1994 and 1997, the authorities have confiscated 364 000 m³ of illegally felled wood and uncovered 1526 cases of illegal logging.⁵⁷ However, despite evidence, it is difficult for the authorities to prove that some big forest companies are involved in illegal cutting. Even where such suspicions can be proven, the penalties do not serve as a deterrent and pale in comparison to the lucrative gains to be made from illegal activities. In 1991, Indonesia's biggest timber company, Barito Pacific was fined around US\$4 million for logging outside a concession area in East Kalimantan. However, the company simply

refused to pay the fine and the matter was dropped.⁵⁸

A forestry official in Jakarta reported that timber theft from the forests is on the increase and that the forest police are unable to cope.⁵⁹

The Paper Problem

As Indonesia's natural forests have disappeared timber companies looking to diversify have turned to softwood plantations to fuel a burgeoning pulp and paper industry. Production has accelerated over the past decade with new pulp and paper mills opening and more planned in both Sumatra and Kalimantan. Ministers have spoken of making the country one of the top ten paper producers by 2004, with as much as 10% of its productive forest land under plantations.⁶⁰

This new development dates back to the late 1980s, when the government launched a programme to establish industrial timber plantations (Hutan Tanaman Industri or "HTI") to support pulp and paper manufacturing facilities—25 such concessions have been established. A government proclamation now requires any pulp and paper firm exploiting an industrial timber estate to develop a site to bring in Javanese labourers under the government's transmigration programme. Only the largest companies have the capital to be able to do this, thus serving to further concentrate wealth, production and ownership.⁶¹ In South Sumatra alone, out of ten million hectares, farmers hold only 1.5–1.7 million hectares while 19 companies own 1.9–2.0 million.⁶² All of the largest new pulp installations are associated with some of Indonesia's most influential business families.⁶³

Most of the pulp plantations will only be producing after the year 2000.⁶⁴ About 1.4 million hectares of forest has been felled and planted, with the government aiming for 6.1 million hectares of plantations.⁶⁵ Plantations are not alleviating the pressure on natural forests. As the Vice-President of Indah Kiat said in 1988: "Our target is to get access to 150 000 hectares of forest which will allow our mill to expand to one million tons/year... Basically we are looking for forest which can be clearcut and replaced with eucalyptus and acacia." Where plantations have been developed, the major species grown are exotics, grown for their speed of growth. These include pine (*P. merkusii*), acacia (*A. mangium*), albizzia (*A. falcataria*) and eucalyptus (*E. deglupta*).⁶⁶

The low prices of finished products such as furniture in the wood markets of Singapore, the USA, Japan and Europe clearly indicated timber smuggling and an evasion of export duties in Indonesia.

Japanese companies have allegedly purchased illegally-cut logs from Kalimantan, moving them across the border into Malaysian Borneo.

Indonesia's annual pulp production is expected to rise from about two million tonnes in 1995 to 11 million tonnes by 2010 with at least 16 new pulp mills due to start operating in the next decade or so.⁶⁷ All of the 66 mills now operating in Indonesia use wood from natural forests with the first plantation timber only now starting to become available.⁶⁸ The pulp and paper industry is faced with huge overcapacity—industrial plantations cannot yet meet demand.

Foreign private investments are commonplace in the pulp and paper industry. Most of the millions of dollars spent to plan and build new mills goes to Nordic, Japanese and North American suppliers and consultants and their consortia.⁶⁹ The Finnish company Enso has teamed up with PT. Inhutani III and Gudang Garam to develop a 139 000 hectare plantation in West Kalimantan, 80 000 hectares of which are claimed by local Dayak people.⁷⁰

Example: PT TEL

In 1991, President Suharto personally intervened to facilitate the paperwork and financing for Barito Pacific's planned pulp mill and plantation in South Sumatra.⁷¹ The PT Tanjung Enim Lestari (PT TEL) mill is being financed by Barito Pacific, President Suharto's daughter "Tutut" (who controls the Citra Group which has a 16% stake in the mill) along with a consortium of Marubeni, the Japanese Overseas Economic Cooperation Fund, Nippon Paper and 25 foreign banks. PT TEL will cost around US\$1.3 billion⁷² and will be the largest paper pulp mill in South Sumatra with an initial output of 450 000 tonnes of pulp, rising to one million tonnes per year, all of which will be exported through Japan's Marubeni and Sweden's Cellmark.⁷³

The mill will require 4.5 million m³ of pulpwood each year, of which around half (two million m³) will be supplied by a 300 000 hectare plantation established by its sister company PT Musi Hutan Persada (PT MHP) in which the state-forestry company—Inhutani II—has a stake.⁷⁴ Some natural forest has been cleared for plantations and around two-thirds has already been planted with acacia and eucalyptus. The concession area also includes settlements, local community plantations and a forest traditionally protected by local people. It is reported that PT MHP has destroyed local peoples' fruit trees, rubber trees and other crops by bulldozing and burning the land.⁷⁵ Protesting farmers have been arrested and their claims were dismissed by the provincial governor who said that they were merely seeking financial gain.⁷⁶

PT TEL has cleared over 800 hectares of the 1250 hectares which the mill will occupy and brought armed guards in to protect the area which is claimed by local people. Little or no compensation has been paid to individual landowners. Some of the villagers have refused to give up their land rights and have been subjected to spot checks and brutality from the military.⁷⁷

Logging within the watershed has caused the reduction of water supplies alternating with severe flooding⁷⁸ which has submerged farmers' rubber trees to a depth of 1.5 m and caused trees to die.⁷⁹ Furthermore, mill effluent is to be discharged into the river Lamatang which is the main source of both water and fish for many villages.⁸⁰

*Below:
Indonesia's timber industry is dominated by some of the country's richest businessmen—Eka Cipia Widjaya (Sinar Mas), Liem Sioe Liong (Salim Group) and Prayogo Pangestu (Barito Pacific Group).*



© Jakarta Post

Example: Barito Pacific

According to the Indonesian Legal Aid Institute, Barito Pacific's activities violate the regulations of 1990 which state that plantations should only be sited on critically degraded lands and forest areas with an annual productive capacity below 20 m³ of timber per hectare. Most of Barito's sites are said to be in "productive forests or productive croplands held by local communities ... the proof of this is evident to see, since there are log ponds at almost every location."⁸¹

Transmigrants will be used as labour on the plantation, but Barito Pacific has previously abandoned 2000 transmigrant people with neither a source of income nor any means of growing food despite promising them secure employment and the rights to tap rubber from a small area of plantation trees. Jobs comprised weed clearance at rates of less than a dollar per day and others were forced to find casual work outside the transmigration sites.⁸²

Example: Sinar Mas

Indonesia's second-largest conglomerate, Sinar Mas, has interests in finance, hotels and is the world's largest holder of oil palm plantations. Through its subsidiary Asia Pulp and Paper (APP), it is also one of the world's largest pulp and paper companies. World-wide, APP has a combined pulp and paper-making capacity of around five million tonnes per year⁸³ and plans to increase total capacity to almost nine million tonnes by 1999, making it one of the world's top ten producers.⁸⁴ APP's subsidiary PT Indah Kiat (with three plants in Indonesia) alone produces around two million tonnes per year. However, Indah Kiat is acknowledged by the government as having insufficient access to forested land to legally meet its pulpwood requirement. In 1993, the company was fined US\$ 1.4 million for employing transmigrants to carry out illegal logging.⁸⁵

Example: APRIL

Foreign investment has become increasingly important in the development of the pulp and paper industry with numerous companies involved in share floatations on foreign and domestic stock exchanges. One of the largest companies, the APRIL Group (Asia Pacific Resources International Holdings Ltd) has corporate offices in Singapore and is listed on the New York Stock Exchange. In 1997, APRIL and Europe's largest forestry company, UPM-

Summary of Foreign Involvement in the PT TEL

Austria	Austrian subsidiaries of Klockner
Germany	German export credits Klockner Industrie Anlagen GmbH (turnkey contractors) Deutsche Morgan Grenfell (advisers)
Sweden	Celmark (export to Europe) Swedish export credits Sunds Defibrator Skandinaviske Enskilda Banken
Finland	Finnish Guarantee Board Finnish Export Credit Kvaerner Group (Tampella Power) Ahlstrom Merita Pankki (Union Bank of Finland)
Canada	Canadian export credits Canadian subsidiaries of Klockner
USA	AT & T Corporation
UK	Bank of Scotland
Netherlands	John Holland (contractor) Ballast (contractor) Figro (contractor)
Australia	Theiss (contractor) Dames and Moore
Japan	Marubeni Corporation OECF Nippon Paper Fuji Bank (syndicate investor) Sukura Bank (syndicate investor) Bank of Tokyo-Mitsubishi
Korea	Korea First Bank

Over two-thirds of the financing for PT TEL comes from an international syndicate. A \$991 million loan, brokered through financiers Deutsche Morgan Grenfell, was agreed in March 1997. \$650 million is from export credit agencies in Germany, Canada, Finland and Sweden. \$341 million is reported to come from commercial lenders in the USA, South Korea, Japan and Europe.⁸⁶



© Dave Greenfield

Kymmene (of Finland) announced a strategic alliance to develop their fine paper operations in Europe and Asia.⁸⁷

Controversy surrounds both of APRIL's Sumatra-based mills—PT Inri Indorayon Utama (IUU) and PT Riau Andalan Pulp and Paper (RAPP). PT IUU, a 240 000 tonne per year pulp and rayon mill in Northern Sumatra, has resulted in the cutting of mixed hardwood forests. Eucalyptus has been planted in parts of the concession without appropriate permits and 40 000 hectares of the Harionboho Protection Forest have also been cut.⁸⁸ Roads and plantations associated with the mill have displaced thousands of Barak people in the Lake Toba area.⁸⁹ It is alleged that the cutting of the concessions has resulted in a drastic drop in Lake Toba's water level⁹⁰ whilst logging-related droughts have depressed rice harvests.⁹¹ Logging roads are reported to have destroyed rice fields

Below:

The 500 km of logging roads in one East Kalimantan concession involved the clearance of 40 000 hectares.



© E. W. Meek/AID Environment

and resulted in landslides, which resulted in fatalities.⁹²

Conflict with local people arose from the start of IUU's operations. In 1987, IUU obtained a three-year lease on 52 hectares of land that served as a village commons, the result being that villagers were forced to sell their buffalo herds at great financial cost, whilst elsewhere, villagers were forbidden from collecting wood in community forests and eucalyptus trees were planted on an ancestral graveyard.⁹³

Attempts to force the company to accept responsibility have resulted in arrests and intimidation by the military. In 1989 when Indorayon employees were released without charge for sexual offences, local women marched on the plantation and uprooted thousands of eucalyptus seedlings which had been planted on their *adat* lands. The women were charged with destroying property and "obstructing national development".⁹⁴ In 1992, local farmers whose land had been appropriated asked Indorayon's workers to stop clearing their fields. Military officers armed with M-16s then threatened the farmers and several shots were fired.⁹⁵

Indorayon, a subsidiary of the Raja Garuda Mas Group, has been exporting around 60% of its pulp production mainly to Japan, Southeast Asia, Europe and Taiwan.⁹⁶

In March 1998, it was announced that UPM-Kymmene would invest US\$235 million in APRIL's Riau Andalan Pulp and Paper (RAPP) mills increasing annual pulp capacity to around one million tonnes and doubling paper capacity to 700 000 tonnes per year.⁹⁷ Currently the US\$750 million mill converts four million m³ of wood into 750 000 tonnes of pulp. A planned expansion programme will eventually increase capacity to two million tonnes.⁹⁸

It is estimated that the equivalent of one log truck passes through its gates every three minutes from both the 160 000 hectares of logged-over timber estates south west of the mill and from other sources.⁹⁹ Riau Andalan is harvesting fifty species of native tropical hardwood while waiting for its acacia and eucalyptus plantations to mature.¹⁰⁰

In October 1997, the dispute between local villagers—who have struggled for years for recognition of their land rights and for compensation—and RAPP escalated. The company had announced that it would no longer honour an earlier compensation deal, arguing that compensation was no longer called for as the appropriate permits for erecting company buildings had now been obtained. RAPP also plans to build a 25 km road through ancestral land

owned by the villagers. Ensuing protests resulted in police violence and the hospitalization of several villagers and the arrest of the village's legal representative.¹⁰¹

Over the past three years, hundreds of thousands of villagers in the Riau district have experienced declining fish catches—their main livelihood. Rough estimates suggest that some four to seven tonnes of fish are lost from the usual catch every month, resulting in a fall in the daily income from around US\$2 per day to just 30 cents. The fish catch began falling in the middle of 1994 and over the past two years have reached a nadir—a period which coincides with the start of Riau Andalan's operations. The processing operations depend upon the 100 000 m³ of water which is sucked from the Kampar river every day.¹⁰² The Vice President for business development and environmental affairs for UPM-Kymmene admitted that, "If you take a huge amount of water away, you're also taking living creatures in it away. Fish embryos are sucked by such activity. That's why fish population in the Kampar river is reduced."¹⁰³ Despite this, UPM-Kymmene are involved in a venture to increase RAPP's production capacity with unknown consequences for the river ecosystem.

In April 1997, Bappedal (the Environmental Impact Management Agency) blacklisted RAPP and 13 other companies for water and air pollution and problems with the local people. The locals say that the company has acquired some of their land without proper compensation.¹⁰⁴

In October 1997, Riau Andalan was one of the companies to have their IPK (right to clear-fell) revoked for their HTI development in Riau.¹⁰⁵ The company was charged with failure to submit the required audits certifying their full adherence to non-burning laws, however, the allegations were strongly denied and a company (rather than an independent) audit was reported as having found no evidence of burning on either the IPK or the plantation.¹⁰⁶

An Uncertain Future

There is overwhelming evidence that the burgeoning timber industry and the expansion of pulp and paper-making facilities are having a massive impact upon not only the ecological and social structure of Indonesia but the economy as a whole. If this natural resource is to be conserved to allow truly sustainable development, then the stranglehold that the handful of well-connected business interests have over the industry and the forests must be relinquished.

Exports of all wood-related products reached US\$ 8.3 billion in 1996, but are estimated to have declined by as much as 25% in 1997 to US\$ 6.24 billion.¹⁰⁷ Despite the fall in plywood exports in recent years, (from US\$4.2 billion in 1993 to 3.7 billion in 1994) around 7.8 million m³ or over 40% of the world's plywood comes from Indonesian forests.^{108,109} The proportion of plywood exports going to other Asian countries (primarily Japan, China and South Korea) has also fallen over recent years as exports to the USA and EU increased.¹¹⁰ Furthermore, as the Indonesian and Asian economic crisis continues, exports to Europe and North America could be set to explode. As long as the Rupiah remains weak and the IMF insists on the removal of restrictions on export and investment, the Indonesian timber and wood economy is perhaps too good an opportunity to miss.

It is estimated that the equivalent of one log truck passes through its gates every three minutes.



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Palm Oil

- Clearing land for plantations is a major cause of forest fires: of the 176 concession holders accused by the government of starting fires in October 1997, 133 were plantations.
- The oil palm plantation sector is one of the few profiting from the fires. Stocks in plantation firms such as London Sumatra and Bakrie Plantations are rising.
- Since 1990 the area of Indonesian land under oil palm cultivation has more than doubled to 2.4 million hectares. Under the government's current five-year plan the area will be doubled again to 5.5 million hectares by the year 2000. To achieve this figure, between 750 000 and one million hectares will have to be converted every year. Indonesian production has increased by 57% since 1993.
- Global demand for palm oil is growing by an average of 7% every year. Production is forecast to reach 17.5 million tonnes in 1998.
- Europe, India, Pakistan and China are the major markets, although imports into the USA are rising rapidly.
- Both the IMF and the World Bank are encouraging foreign investment and further privatisation of the sector. Western financial institutions and private banks are investors.
- Closely related to transmigration projects, vast areas of Kalimantan and Irian Jaya are scheduled for conversion to oil palm estates.
- The spread of plantations has negative effects on both local people and natural forests.
- The industry is dominated by a coterie of business conglomerates with close links to the ruling elite—including Astra International, Sinar Mas, Salim Group and Bakrie Brothers. Three generations of ex-President Suharto's family are involved in the sector through plantations, palm oil processing and marketing.

*Below:
Indonesia now accounts
for 31% of the world's
production of palm oil.*



© Tazaryo Bangso/Selik Pictura

Uncontrolled expansion has led the Centre for International Forestry Research (CIFOR) to state that palm oil is now the commodity with the most important impact on forest cover in Indonesia.¹

The global palm oil sector has undergone staggering growth over the last decade. From small beginnings it is now used in a host of products and applications, from drilling in the oil industry to coffee whitener and hand creams. Such demand has resulted in the creation of vast areas of monoculture oil palm plantations where formerly natural forests existed. The conversion of forest land to plantations has been a major cause of the recent fires, destroying natural forests, small-scale sustainable farms and eliminating wildlife.

The expansion of this burgeoning commodity has been largely confined to just two neighbouring countries—Malaysia and Indonesia—which now account for over 80% of the world's production.² In the struggle to dominate the industry Indonesia is committed to toppling Malaysia as the biggest producer. It has vowed to double the area of its lands under oil palm cultivation—to 5.5 million hectares—by the turn of the century, prompting a massive land clearance, fuelling further indiscriminate burning across huge tracts of Sumatra and Kalimantan.³ It comes as no surprise that of the 176 concession holders publicly named for starting fires on their lands, 75% were plantation companies.⁴

Global Market

Until the 1960s the cultivation of oil palm trees (*Elaeis guineensis* Jacq.) was largely limited to the native area of West Africa.

By the early 1990s palm oil had been transformed from a commodity barely traded on the international market to a lucrative agribusiness sector, grown on industrial plantations in the Tropics, supplying an insatiable global demand.

It has been phenomenally successful, particularly in penetrating the food manufacturing industry. At one time Europe only used palm oil to lubricate machinery, but now uses around two million tonnes of oil every year, mostly for food applications.⁵

The surge in demand lies behind the unfettered expansion of oil palm plantations in both Malaysia and Indonesia. Over the last five years global consumption of palm oil products has increased by 32%, at an average of 7% every year.⁶ During the same period, production only grew by 21%—from 13.8 million tonnes in

1993 to a predicted level of 17.5 million tonnes in 1998⁷, an average of over one million tonnes every year.

Together, Malaysia and Indonesia are responsible for over 80% of global output, with a 50% and 31% share respectively.⁸

With indications that Malaysian production is at a peak and is running out of land for new plantations, Indonesia is fast catching up with its neighbour. Between 1993 and 1998 Indonesia's output rocketed by 57%—from 3.4 million tonnes to 5.4 million tonnes.⁹

Worldwide demand seems certain to accelerate production in Indonesia as the country goes in search of precious foreign currency. The Asian markets of China and India in particular are expected to expand rapidly over the next few years. China will import two million tonnes this year alone. India's domestic production of vegetable oil stands at 6.5 million tonnes, a 38% shortfall when compared with its needs.¹⁰

World Production of Palm Oil (1000 tonnes)

	January / December					
	1998 ^a	1997	1996	1995	1994	1993
Indonesia	5400	5150	4540	4220	3860	3421
Malaysia	8660	9057	8386	7811	7222	7403
N&S America	1098	1105	1027	966	898	810
Others	2314	2317	2281	2206	2186	2160
Total	17472	17629	16234	15203	14166	13794

^aforecast

Source: *Oil World* No.16, vol 41

Compared with soya, rape and sunflower vegetable oils, palm oil has increased its share of exports among the four oils from 38% in 1964 to 52% in 1996.¹¹

The discrepancy between increased demand and production is serving to drive up palm oil prices, increasing pressure for further expansion of plantations. The price for crude palm oil shipped to Europe stood at \$705 per tonne on 29 April 1998, compared with \$562 one year earlier.¹²

The major consuming nations are found in Europe and Asia, although the North American market is gradually recovering after concerns about cholesterol levels in palm oil during the 1980s.

In the European Union the overwhelming majority of palm oil imports are destined for the food industry.¹³

Europe's preference for crude rather than processed palm oil, favours Indonesia. Last year the EU imported 878 000 tonnes of palm oil from Indonesia alone, worth 386 million ecu

Uncontrolled expansion has led CIFOR to state that palm oil is now the commodity with the most important impact on forest cover in Indonesia.

The indigenous Dayak people of Kalimantan are witnessing their way of life being destroyed by the spread of plantations.

(around US\$408 million). The major markets for Indonesian palm oil were Germany (288 000 tonnes), the United Kingdom (170 000 tonnes) the Netherlands (99 700 tonnes), Spain (99 500 tonnes) and Italy (98 800 tonnes).¹⁴

In India, Pakistan and the Middle East, palm oil is widely used in cooking, and the combined imports of these regions is around three million tonnes every year.¹⁵

Imports into the USA stood at 132 845 tonnes for refined palm oil, worth US\$58 million in 1997. Indonesia's share stood at 21 495 tonnes, worth US\$8 million.¹⁶ Yet imports have been growing rapidly, and rose by 75% during the first six months of 1997, compared with the same period the previous year.¹⁷

Indonesian Expansion

Conversion of former rubber estates into oil palm plantations has been taking place for the last thirty years. It is only over the last decade that expansion has led to frenzied land clearing, driven by the desire of the government and corporate business to cash in on the palm oil boom.

In the early 1990s international institutions like the World Bank urged Indonesia to increase its foreign exchange earning and diversify its export portfolio to reduce reliance on timber and oil. Oil palm was seen as the perfect solution, and soft loans were under-written by

development banks to encourage investment.¹⁸

Dramatic growth followed, so that since 1990 the area under oil palm cultivation has more than doubled—from 1.13 million hectares to 2.4 million hectares last year.¹⁹ Most of the plantations are located in Sumatra or Kalimantan. The province of North Sumatra has the largest area given over to oil palms, 565 989 hectares, followed by Riau in Central Sumatra, 521 806 hectares, and West Kalimantan with 251 905 hectares.²⁰

The character as well as the scale of the sector has also changed. In 1990, the state owned 33% of the oil palm land, while private plantations occupied 41%. By 1997 the state's share had dropped to 19%, while private companies owned 47%, equivalent to 1.2 million hectares. Smallholders have also increased their share, from 26% to 34%, partly through the role played by plantations in transmigration projects.²¹

Despite concerns over the unsustainable rate of expansion over the last seven years, this will be dwarfed as the Indonesian government strives to realise its ambition to become the world's biggest producer of palm oil. The country plans an annual production of 7.2 million tonnes of crude palm oil by the year 2000, to be provided by more than doubling the present plantation area to 5.5 million hectares.²²

In the two decades up to 1996 Indonesia increased its output from 400 000 tonnes to

Right: Imports into the USA stood at 132 845 tonnes of refined palm oil in 1997.

© Erik Wambert/ALD Environment



Social and Environmental Impacts

Conversion of forest land into oil palm plantations has frequently had a devastating impact on natural ecosystems and the local population.

For the indigenous people it often means losing their ancestral lands and traditional way of life. According to Plasma, an Indonesian environmental and human rights group: "The fire is only a symptom of the take-over of people's land by big business." In September 1997 a group of villagers from the remote island of Siberut, off West Sumatra, travelled to protest against the burning of their land by plantation companies. Despite a 1994 order from the president to halt logging on the island, 70 000 hectares have been granted to two new oil palm plantations. In July 1997 the first ten hectares were burned.²⁴

The indigenous Dayak people of Kalimantan are witnessing their way of life being destroyed by the spread of plantations. Replacement of their traditional patterns of cultivation by plantations is transforming society and causing the cessation of vital practices and rituals. Land grabbing by palm oil projects is driving people from the land, either by force or by coercion of the village chiefs. Promises of new schools and other facilities are made if land transfer papers are signed.²⁵

Dayaks in the village of Lempunah near Samarinda reported being offered lump sums to exchange their lands for shares in an oil palm plantation. When they refused, mysterious fires hit the village, which foreign experts visiting the area said were set by men who openly admitted to be acting on behalf of palm oil companies. Once the Dayaks' crops are destroyed, they have little choice but to cede their land, which is worth less after burning. They also provide a cheap work force. One Dayak man who had lost his fruit trees said that although the plantation firm only pays US\$0.21 per day, he has no other choice.²⁶

Local people in some areas have started resisting. In March 1998, hundreds of people in the village of Kudo-Kudo in West Sumatra attacked the camp and offices of two palm oil firms. They set fire to the camp of PT Cipta Rasa Indonesia after the firm's machinery and lorries damaged local roads, and attacked the offices of PT Incasi Raya, fearing that a new processing plant would pollute the area's river system.²⁷

Dissent has often been met with brutal force. The 1996 US State Department Report on Human Rights Practices in Indonesia related how village leaders in East Kalimantan attempt-

ing to halt a plantation scheme were stripped, beaten and burned with cigarettes by the security forces.²⁸

A coalition of human rights groups in Sumatra reported in April 1998 that police shot six people during a conflict between local villagers and an oil palm plantation company in the Aceh region. Forty people were arrested and over one hundred fled the area.²⁹

A description of life on the Adolina plantation in North Sumatra illustrates the harsh conditions which many workers encounter. Often forced to work a ten-hour day for a monthly salary of Rp 88 000 (US\$8 approx.) and a 40 kg bag of rice, the labourers have to buy their own tools and bicycles to carry palm nuts out of the plantation. The workers are caught in a poverty trap. Their children are usually only able to complete secondary school before starting work on the plantation.³⁰

Oil palm cultivation has negative impacts on the natural environment. Replacement of the rainforest with a plantation system alters species composition and erodes biodiversity. Replacement of a forest ecosystem with a monoculture such as oil palm which is not indigenous to the region reduces the available habitat and food for a range of animal species.

Extraction and processing of palm oil also has an environmental cost. It is estimated that crude palm oil production of six million tonnes will generate 15 million tonnes of palm oil mill effluent, equivalent to the domestic sewage produced by 22 million people. If left untreated, such a vast quantity of organic material will adversely affect the environment.³¹

Oil palm plantations routinely put down poison to protect the trees from rats. In March 1996 a plantation company was accused of killing 12 wild elephants in the province of Riau, through indiscriminate use of poison.³²



© Dave Gumpel/ETA

"The fire is only a symptom of the take-over of people's land by big business."

Small farmers are responsible for a maximum of 10–20% of the fires, with the remaining 80% caused by burning to clear land for oil palm and pulpwood plantations.

over four million.²⁷ Its importance to the country's economy is illustrated by the fact that palm oil was one of the main components of a US\$500 million barter deal which involved Indonesia getting 12 Sukhoi jet fighters and 8 helicopters from Russia.²⁸

The rate of expansion has meant that the additional land needed to reach the 5.5 million hectare target has already been awarded to concessionaires, who cannot possibly convert the land in time. To double the plantation area by 2000 would mean establishing one million hectares of new plantations every year.

Former forestry minister Djamiludin Suryohadikusumo confirmed the scale of the government's plan before being ousted in the cabinet reshuffle of March 1998. "So far 3.4 million hectares have been officially released, of which more than two million hectares have been turned into oil palm plantations. The policy of allowing foreign investors to be active again in the oil palm plantation business will hopefully soon reduce the area of idle land." He expressed the hope that plantations would soon start in the released areas of Sumatra and Kalimantan to prevent land speculators jumping in.²⁹

Oil palm plantation companies are often closely linked to the timber sector. Once an area has been logged out, the remaining forest is granted to plantation operators for further exploitation. Remaining trees are cut down and sold, then the scrub and vegetation left is burned to clear the way for oil palm monoculture.³⁰

The present bout of forest clearance is being driven by the efforts of concession holders to keep up with the authorities. Both national and

regional governments have been granting concessions faster than firms can clear the land in the head-long rush for higher production.

The picture is complicated by the fact that there is a time lag between the award of concessions and the granting of licences to clear the land. In the face of such uncertainty firms have been going ahead and clearing the land with fire, as they know they have already got the concession.³⁶

While the government granted permission for the conversion of 300 000 hectares of forest to oil palm plantations in 1997, the World Bank estimates that Indonesia is losing one million hectares of forest each year. As land under oil palm is classified as forested under national law, it is apparent that replanting is falling behind clearance.³⁷

Satellite images taken in 1997 clearly showed the link between plantation companies and the conflagration which engulfed the entire region. The Minister of Forestry used these images to publicly name 176 firms which held land titles where fires were identified. Of these, 133 were plantations.³⁸

While government and industry have tried to lay the blame on shifting slash and burn agricultural methods employed by indigenous people, and on the El Niño weather system, the central role of the palm oil sector is beyond doubt. According to Gumrit Singh of the Malaysian Centre for Environment, Technology and Development, small farmers are responsible for a maximum of 10–20% of the fires, with the remaining 80% caused by burning to clear land for oil palm and pulpwood plantations.³⁹

An American businessman in the region told a US senator on a fact-finding mission that the fires "will happen next year and every other year until they go after the big licenses".⁴⁰

Even the current economic crisis in the region and the ecological impact of the fires have failed to dampen enthusiasm for palm oil. The sector is one of the few profiting from the present chaos.

Despite past edicts limiting foreign involvement in palm oil, in February 1998 former President Suharto issued a directive removing barriers to foreign investment in oil palm plantations and to speed up the processing of applications⁴¹, in line with International Monetary Fund (IMF) demands. With the collapse of many industries across the country, agribusiness is being hailed as a potential saviour and a vital foreign exchange earner. In the same month as Suharto opened the sector to foreign firms, plantation shares posted a gain of 29.5%



© Mark Edwards/Staff Pictures

on the Jakarta Stock Exchange.⁴²

The spread of plantations is also closely allied to the government's transmigration policies, with 35 companies involved in setting up new plantations under the scheme.⁴³ Transmigration schemes have been at the very heart of the Suharto government's policy of decanting population from the crowded island of Java to the more sparsely inhabited regions. With large areas of Sumatra and West Kalimantan already converted to estates, attention is turning to opening up new fronts in eastern Indonesia— notably East Kalimantan, Central Kalimantan, and Irian Jaya.

In his first speech as Forests and Plantations Minister Sumahadi announced he was closing the provinces of North Sumatra and Riau to further plantation development. Instead new investment will be directed east. "Forests areas in Riau and North Sumatra have been fully utilised. It is better and commercially more viable for new investors to open plantations in Eastern Indonesia."⁴⁴

Policies suggested or imposed by the IMF will also drive further expansion. While calling for a reduction in land conversion targets, the IMF is also pursuing the contradictory policies of removing restrictions on foreign investment and lifting the temporary ban on palm oil exports imposed in January 1998.⁴⁵

Corporates—Fanning the Flames of Extinction

Like many areas of the Indonesian economy, the palm oil sector is dominated by cronyism and nepotism. The profits and lucrative foreign exchange earnings derived from the palm oil sector have attracted a host of conglomerates with close links to the ruling class of Indonesia. Many of these firms also have timber interests and receive government subsidies for establishing plantations. It is no surprise that several members of ex-President Suharto's family have been able to secure concessions and contracts.

Of the plantation firms accused of setting fires in October 1997, many are owned by some of Indonesia's wealthiest individuals and their corporate groups. Those with a stake in palm oil include the Salim Group of Soedono Salim (alias Liem Sioe Liong), Eka Tjipta Wijaya's Sinar Mas group, and Mohammad "Bob" Hasan's Astra International. Companies owned by an army foundation were also named.⁴⁶

According to the Indonesian Government, Soedono Salim was the largest individual tax-

payer in 1996, followed by Eka Tjipta Wijaya at number two, Salim's son Anthony at five and Bob Hasan at 21.⁴⁷

The Bakrie Brothers, the top pribumi (non-Chinese) business family in Indonesia, run a business empire stretching from telecommunications to palm oil and timber. Aburizal Bakrie was the 50th highest taxpayer in 1996.⁴⁸

The Bakries own around 90 000 hectares of oil palm estates in Sumatra and are developing a similar-sized operation in Kalimantan. In 1997 the firm announced its intention to build a US\$30 million crude palm oil plant in West Java to compete in the cooking oil market against Salim and Sinar Mas, and to export palm oil products overseas.⁴⁹

Hasan, temporarily Trade Minister between March and May 1998, controls Astra International, a conglomerate spanning a vast range of business areas, including cars and plantations. The company is banking on its oil palm interests to keep it afloat during the economic crisis which has badly affected other core businesses. It predicts increasing its output of crude palm oil by 38% in 1998, from 254 000 tonnes to 350 000.⁵⁰

Both the Salim Group and Sinar Mas are involved in all stages of the palm oil production cycle, from owning plantations to producing and marketing the resulting commodities. Sinar Mas subsidiary PT Smart is in the process of establishing a 40 000 hectare estate in East Kalimantan to augment its existing 64 000 hectares of plantations across Sumatra and Kalimantan and feed into its own cooking oil and margarine production plants.⁵¹

If a local official tries to intervene "you just bribe him. At most you promise to give him some shares. Then he'll just wash his hands of the matter. Who will know? It is such a big area."



© Eka Tjipta Wijaya/PT.Sinar Mas

An American businessman in the region told a US senator on a fact-finding mission that the fires "will happen next year and every other year until they go after the big licensees".

Another big player accused of starting fires is PT London Sumatra (LonSum), a former subsidiary of British-based firm Harrisons & Crosfield which has extensive plantation holdings in Malaysia. The company has been involved in the Indonesian plantation sector since 1906 and launched on the Jakarta Stock Exchange in 1996. The firm is expanding rapidly with a 100 000 hectare project in South Sumatra and 15 000 hectares in East Kalimantan. In 1997 it posted a 17% rise in profits based on sales of 78 514 tonnes of palm oil.³²

LonSum claims to have the highest crude oil palm yield in the world, at 5.2 tonnes per hectare, and works closely with Unifield, a British-based joint venture with Unilever, carrying out work to improve palm tree quality and growth rates.³³

The activities of the Uniseraya Group illustrate how timber firms have switched into the plantation business. After 25 years experience in the timber industry, the firm moved into palm oil in 1993 with its first plantation of 4000 hectares, and has plans to expand to 32 000 hectares with the creation of three more plantations.³⁴

Three generations of Indonesia's former ruling family have interests in plantations, palm oil processing and marketing. In the mid-1980s joint ventures were formed between Salim Group, Sinar Mas and two of Suharto's sons—Sigit Harjojudanto and Tommy. Sinar Mas went on to create its edible oils division in conjunction with the ex-President's third son Bambang, who also has a stake in the Bakrie Brothers plantation business.³⁵

Yet another sibling, daughter Siti Hadiati Harijadi, got involved, forming a joint venture with a Malaysian business to create a 44 000 hectare plantation in South Sumatra in 1994.³⁶

The younger generation's stake is held by Sigit's son Ari Harjo Wibowo. He picked up a quota to market 70 000 tonnes of crude palm oil per month from the state logistics board (Bulog), and was also awarded the government contract to develop an 80 000 hectare plantation in East Kalimantan as part of a transmigration project.³⁷

Malaysian Investment

In the face of rising competition from Indonesia, where labour is cheaper and conversion land more plentiful, Malaysian palm oil firms have invested in new plantations on its neighbour's territory.

Afraid of losing their competitive edge, firms have rushed to invest in the Indonesian sector, where the average cost of producing one tonne of crude palm oil is just US\$150, compared with US\$250 in Malaysia.³⁸

Malaysia is also approaching saturation point in terms of land available for plantation expansion. Industry estimates that by the turn of the century plantations could occupy a maximum area of around three million hectares, leaving little room for growth for the present 2.5 million hectares dedicated to plantations.³⁹ The situation is radically different in Indonesia, where companies cannot keep up with the concessions being awarded by the government.

By March 1997, when the Indonesian Government called a temporary halt to foreign investment in palm oil, 27 Malaysian firms had entered into joint ventures with Indonesian counterparts to clear land and embark on cultivating new plantations covering 1.5 million hectares.⁴⁰

One Malaysian firm which has followed this path is Austral Enterprises Berhad. By acquiring land in Kalimantan, the firm is developing a 30 000 hectare oil palm plantation through its Indonesian venture P1 Mitra Austral, representing over one third of the firm's total plantation area. Using this extra capacity Austral predicts a production level of almost 900 000 tonnes by 2001, compared with just over 500 000 tonnes forecast for 1998.⁴¹

The complicity of Malaysian firms in setting some of the fires partly explains the muted criticism by a Malaysian Government whose people had to endure chronic pollution at the height of the blaze.

The Indonesian authorities have been investigating reports that 18 Malaysian and five Singaporean firms were responsible for fires on their concessions.⁴²

Future Prospects

It is a dark irony that the palm oil sector, one of the main culprits behind the fires, is set to benefit from the environmental catastrophe engulfing Indonesia.

A combination of the El Niño-induced drought, plus the haze, is affecting oil palm yields, prompting a rise in prices in the face of growing demand. As over 80% of the world's palm oil comes from the area affected by these conditions, concern over supply is pushing prices up by at least 10%.⁶⁵

Rising prices and the need for foreign exchange caused by the collapse of the Rupiah has prompted investment analysts to back the plantation sector. On the day of the export ban being lifted analysts at PT Indovest Securities and PT Trimegah Securindolestari were both advising clients to buy plantation shares, particularly London Sumatra.⁶⁶ The same day share prices on the Jakarta exchange opened higher, boosted by trading in plantation shares.

In October 1997 one analyst was quoted in the financial press as saying: "The big plantation companies are saying 'Thank you very much for the fires'. It is good news for them because the

land is cleared, the selling price goes up and they are not that affected."⁶⁶ Both Bakrie Plantations and London Sumatra stocks have been rising since, and a similar effect has been seen on the Kuala Lumpur exchange, where the plantation sector has risen by over 20%.⁶⁶

Foreign investment is also set to climb as a result of IMF-imposed policies and structural adjustment loans to fund further privatisation of the agribusiness sector.⁶⁷

While the fruits of this continued expansion accrue largely in the hands of a small elite, it is the indigenous people and remaining forest environment of Indonesia which bears the cost.

"The big plantation companies are saying 'Thank you very much for the fires'. It is good news for them because the land is cleared, the selling price goes up and they are not that affected."



© Mark Edmonds/World Resources

Consumers

Corporations and development institutions in the major palm oil markets of Europe and the USA have helped drive the dramatic expansion of plantations in Indonesia in two ways: by creating demand for the oil across a range of industries and by funding the expansion through investment funds and bank loans.

In the Netherlands, where Indonesia is the largest supplier of palm oil products, the main importers are the conglomerate Unilever and food manufacturer Cargill.⁶⁸ Cargill also imports palm oil into the UK.

Cargill also directly invests in oil palm plantations through its Indonesian subsidiary Hindoli. In one project started in 1997 the company is developing a US\$45 million plantation and processing plant in South Sumatra, involving the planting of one million oil palm trees, as part of a transmigration project.⁶⁹

In Australia the leading food producer Goodman Fielder has two joint ventures with Indonesian firm Sinar Mas using palm oil for cooking oil and snack foods, and involving the popular brand names Meadow Lea and Mother's Choice.⁷⁰

Due to the time taken for oil palm trees to mature, these corporations can deny culpability for the present fires, although they bear some of the responsibility for past clearances. Yet the frenzied expansion now taking place is in part financed by Western financial institutions.

The Belgian holding companies SOCFIN and Sipet have funded oil palm plantations in Indonesia⁷¹, as has Rabobank Duta Indonesia, a joint venture involving the Dutch Rabobank group which finances plantations.⁷²

Various international investment funds have also put money into the Indonesian plantation sector. The Scottish-based Edinburgh Java Trust has a holding in PT London Sumatra, while the Indonesia Fund Inc, part of New York firm BEA Associates, has a stake in Astra International, a conglomerate with a plantations arm.⁷³

Palm Oil is commonly found in products as diverse as margarine, biscuits, cooking oil, cosmetics, after sun lotion, soaps and even in the manufacture of plastic products. Palm oil can even be used to fuel modified vehicles.

By far the biggest user of palm oil is the food industry, accounting for 90% of production.⁷⁴

Palm oil is increasingly employed in the chemical industry for the production of oleochemicals which are of a similar nature to petrochemicals and have a variety of industrial applications.

UK Firms Involved in Indonesian Plantations

Several publicly-quoted companies in the UK have direct investments in palm oil estates in both Sumatra and Kalimantan. London-based R.E.A Holdings has a 41% equity stake in PT REA Kaltim Plantations, which is developing a 50 000 hectare oil palm project in East Kalimantan.

The concession area lies 140 km north west of the provincial capital Samarinda, and spans the Beleyan River. The company obtained title to the first 13 000 hectares in 1995, and by last year had obtained in principle the release of a further 35 000 hectare concession from the forestry ministry. Labour for the plantation scheme is being provided by transmigration settlements in the area.

Rowe Evans Investments of Tunbridge Wells, Kent, possesses a stake in over 30 000 hectares of oil palm plantations in Sumatra. Through either subsidiaries or associated companies the firm has an interest in PT Kerasaan Indonesia, PT Simpang Kiri Plantations Indonesia, PT Pangkatan Indonesia, and PT Bilah Plantindo. These four concessions range from 2-3000 hectares and are located around Medan and Central Sumatra. A fifth venture, PT Agro Muko, is developing a 20 000 hectare plantation near Bengkulu in South Sumatra.

Anglo-Eastern Plantations is still quoted on the London Stock Exchange despite the controlling stake being bought by a Malaysian consortium in 1993. The company has over 10 000 hectares of oil palm in six estates around Sumatra. The firm is planning to acquire a further 17 000 hectares in South Sumatra to extend its Puding Mas and Alno estate.

As well as commercial financial organisations, development banks have also provided capital to fuel the plantation craze. In 1996 The International Finance Corporation, part of the World Bank Group, put together a funding package of US\$41 million for the company PT Kalimantan Sanggar Pusaka to expand both its oil palm estates to 35 000 hectares and its production facilities in West Kalimantan. Those contributing to the loan package included Bank Brussels Lambert and DEG, the German Development Bank.⁷⁵

With Indonesian banks in free-fall and development assistance increasingly attaching strings to loans in the plantation sector, it is likely that commercial banks in the West will have a key role in financing the Indonesian Government's plans to convert a million hectares a year to plantations.

The Pengembangan Lahan Gambut Project (PLG)

One Million Hectare Development Project in Central Kalimantan

In 1995, former President Suharto issued a decree announcing a project to boost Indonesia's rice production.¹ The project known as the PLG was intended to convert over one million hectares of Central Kalimantan's virgin and logged-over forests and existing agricultural sites into 638 000 hectares of rice-fields, with the remaining 362 000 hectares to be used for horticulture, plantations, conservation areas, housing and reservoirs.² The project proceeded despite the protests of local communities, indigenous peoples, both national and international non-government organisations and without an Environmental Impact Assessment.

Around 90% of the land has been converted with the loss of natural forests and their wildlife and with massive environmental and social disruption.³

The project was planned to take four or five years to establish, at an estimated cost of US\$ 2-3 billion.⁴ Initial funding of US\$227 million was drawn from Indonesia's Reforestation Fund⁵ (a fund made up of levies made on commercial logging and trade to be used for reforestation projects). In this instance the fund was to be used for a project resulting in massive deforestation. The plan required the drainage of the peat swamps and involved the construction of 27 000 km of canals and irrigation channels.⁶ Converting the swamp into productive agricultural land is estimated to cost between US\$500 and US\$3000 a hectare.⁷

Despite the Environment Minister's admission that "our knowledge of the environmental risks...is still minimal..."⁸, and contrary to Indonesian law, the Environmental Impact Assessment was undertaken only as the project proceeded rather than prior to its approval. The Environmental Impact Assessment was finally released in January 1997⁹, one year after work had begun. The Environmental Impact Assessment found that at most only 40% of the total project area is suitable for agriculture and transmigration sites, recommending that the remainder (870 400 hectares) should be conserved.¹⁰

Work began on the project in January 1996.¹¹ During the 1997 dry season, Borneo's worst fires took place in this region as the companies involved used fires to clear land.¹²

The Ecology and Economics

Much of the PLG area consists of highly acidic deep peat which is difficult and uneconomic to cultivate (around 150 000 hectares).¹³ Areas of shallow peat (less than three metres deep) found along rivers and coastal areas have been converted to agriculture with some success, but only by adding large quantities of fertilisers and pesticides.¹⁴ Estimates suggest that as much as 2.4 million litres of pesticides may be required each month.¹⁵

In extensive parts of this area just two or three rice harvests will be possible before acidification, toxification and micronutrient deficiency of the peat soils make further cultivation impossible.¹⁶ The forest fires of 1997 used to clear the land are also thought to have contributed to the acidification of the soils by adding lignin and tannin. Lime has been added to the soils in an attempt to maintain the alkaline levels necessary for rice cultivation and in late 1997, the water in the River Martapura was green-brown in colour, a problem which was linked to the addition upstream of several tonnes of chalk in order to reduce acidity levels.¹⁷

The peat swamp forests act as a natural buffer against downstream flooding and their removal will inevitably have damaged the hydrological system. This, in turn, is likely to result in drought and flash floods downstream.¹⁸ The Environmental Impact Assessment further warned that rice fields and transmigration sites could be flooded by sea water within a few years.¹⁹

During the 1997 dry season, Borneo's worst fires took place in this region as the companies involved used fires to clear land.

Below: The PLG project required the draining of the peat swamps. To do this, 27 000 km of canals were built, along with locks.



© Dave Campbell

The Corporate Conspirators

The real rationale behind the scheme has been repeatedly challenged. In 1995, the Government announced that Indonesia may have to begin importing logs in order to make up the shortfall between log production and processing capacity. However, President Suharto later announced that the log supply would be boosted by the timber harvest within the PLCI, a harvest expected to produce around six million m³ of timber over the next few years.²⁰

Environmental and conservation organisations, both within and outside of Indonesia claim that the project's infrastructure and development was an end in itself.²¹ As the scale of the project demanded vast commissions for the companies involved in the construction and in the supply of equipment, fertiliser and other materials, the incentive to the corrupt and nepotistic regime was likely to have been irresistible.

Environmental Impact Assessment Recommendations²²

irrigated rice fields:	491 000 ha
non irrigated rice, secondary crops, sugar cane, vegetables, plantations and fruit:	95 700 ha
Total:	586 700 ha
	(40% of total)
river banks	115 400 ha
Conservation:	
brackish swamp forests	23 500 ha
deep peat	145 200 ha
hydrology	212 700 ha
quartz sand	71 700 ha
black water	39 000 ha
other	262 900 ha
Total:	755 000 ha
Total project area	1 457 100 ha

The PLG's main project contractor (PT Sambu) was appointed without any bidding process.²³ Indeed the project was reported to have moved to the top of the political agenda after businessman Tay Juhana made a direct pitch to Suharto for the development of large parts of Kalimantan's forest areas. Juhana is reported to be the President-director of Sambu which owns more than 100 000 hectares of coconut and oil palm plantations in Riau, Sumatra.²⁴ It is rumoured that they achieved this contract as "compensation" after a Sambu logging concession was reduced.²⁵ Sambu was commissioned to oversee the canal and lock construction, after obtaining a two-year contract (worth a reported rp 500 billion) to open the primary irrigation network.²⁶ They are also thought to have supplied the heavy equipment and were commissioned to construct transmigrant camps.²⁷

Three other companies are reported to be involved in the project. PT Sumatra Timur Indonesia (part of the Sambu Group and thought to have the involvement of Tommy Suharto)²⁸; PT Pembangunan Perumahan and PT Wika.²⁹

Numerous timber subsidiaries and sawmills have appeared throughout the PLG area over the past two years. Local reports confirm that although some of the timber harvested has been used in the construction of transmigrant housing, processed timber is being shipped both to Java and overseas.³⁰

Around a dozen timber companies holding the "IPK" licences (which allow them to clearfell an area) have been joined by numerous illegal loggers. Logging has been detected in areas which the Environmental Impact Assessment

Sustainable Resources?

Investigators from the Environmental Investigation Agency (EIA) visited PT Sumber Alam Lestari (The Sustainable Natural Resources Company) on its third day of production on the banks of the Barito River, opposite the village of Jenamas, on the border of the project. The wood is brought from the local sawmill and processed into dowels and other products. Whilst at the factory EIA's investigators filmed the production of broom handles for export to American, Taiwanese, German and Singaporean markets.

The investigators were informed that the factory possessed all the necessary paperwork for export. Cargo ships were expected to come directly to the factory, where they would load the products, pay the export duties and sail south to Banjarmasin and the open sea.³¹



© Dave Carvey/EIA

identified for conservation.³¹ Recent reports state that "the problem of illegal logging is getting worse ... every week tons of whole logs are shipped from [the] Mengkarip river".³²

Other companies are supplying the fertilisers and agricultural equipment. Pharmaceutical giant Zeneca are one of a number of companies involved in the supply of chemicals to the project through their subsidiary named PT Zeneca Agri Products Indonesia.³³ They are reported to have provided free herbicides such as ParaCol and Gramoxone and pesticides for the trial project area.³⁴ Ari Sigit (former President Suharto's grandson) is reported to own the company supplying the labels for the pesticides' packaging.³⁵ The provincial Governor's son is said to have a monopoly over the supply of chalk to the project.³⁶

An Environmental and Social Disaster

The Biodiversity of the Peat Swamp Forests

Around 6.8 million hectares of peat swamp forest are found in the coastal lowlands of Kalimantan. These ecosystems provide vital habitats for many endangered wildlife species.³⁷

Research conducted in the Sebangau River catchment area (covering around 5000 km² within the PLG project area)³⁸ identified 35 mammal species, the majority of which are arboreal and 150 avian species. Crucially, this list includes several species which are classified as endangered, threatened or vulnerable by the Convention on International Trade in Endangered Species (CITES) and the World Conservation Union (IUCN). They include orangutan (*Pongo pygmaeus*), sun bear (*Helarctos malayanus*), clouded leopard (*Neofelis nebulosa*) and marbled cat (*Felis marmorata*) and a number of species were found outside of their previously assumed range. Bird species include the rare wrinkled hornbill (*Aceros corrugatus*), helmeted hornbill (*Buceros vigil*) and Storm's stork (*Ciconia stormi*).³⁹

Little is known of the fish species inhabiting the peat swamp forest and the associated black-water habitats, but these, and other aquatic populations are renewable resources of economic importance to local communities. These ecosystems have taken thousands of years to develop and are habitat to 82 fish and shrimp species, 23 reptiles, 5 amphibians, 7 fresh-water turtles amongst others.⁴⁰ The unique black river ecosystems of Central Kalimantan have also been damaged with rivers reported to be flowing with green water.⁴¹

An Orangutan Graveyard

For the orangutan in particular, the Sebangau region is of critical importance. Studies found an overall density in the upper catchment area of 1.7 individuals per km². Given the assumption that up to half of the Sebangau catchment contains suitable orangutan habitat, the total population could approach 4000 individuals—between 20–40% of the total estimated populations surviving in Indonesia. The peat swamp forest is an important habitat for orangutan in Borneo. "Any increase in the intensity and frequency of timber extraction in peat swamp forest could have a critical effect on the abundance of this endangered primate."⁴²

EIA investigators learnt that the fires during 1997 had caused many of the animals to flee to the river edges. Orangutans in particular had become much more common alongside the rivers and many are thought to have been killed or captured after fleeing the fires.⁴³ The remains of adult orangutans were seen in both the transmigration camp in Dadahup and in the Pilang area. Many orangutans have been eaten by villagers who have lost their income as a result of the project.⁴⁴

"Any increase in the intensity and frequency of timber extraction in peat swamp forest could have a critical effect on the abundance of this endangered primate."

*Below:
Orangutan killed when it
entered a transmigrant
camp in search of food,
May 1998.*



© S. Anwar/EIA

There are several thousand Dayak people living in the Kapuas area who are dependent upon their fish ponds (beje), rattan gardens and the forests for their survival.

Impact of the Project on Local People

Under heavy pressure from government and corporations, the Dayak people agreed to the project and were promised drinking water supplies, land, housing and fair compensation.⁴⁶ The imposition of the project and damage it has caused to the region has led to extensive protest, resulting in arrests and intimidation.⁴⁷ A spokesperson for P1 Sumatra Timur Indonesia, a subsidiary of the main contractor, P1 Sambu Group, stated that, amongst the local people whose traditional *adat* lands have been appropriated, "there is already a high level of understanding of the importance of the project so that they release their land without compensation".⁴⁸ The Governor said in 1996 that the backwardness of "isolated peoples" meant that as a human resource they could not yet be used efficiently in development.⁴⁹

There are several thousand Dayak people living in the Kapuas area who are dependent upon their fish ponds (beje), rattan gardens and the forests for their survival. The land tenure system which pre-dates the Suharto regime, granted up to five kilometre stretches alongside the rivers to the local people and the former Dutch colonial system of "verklaring" recognised the inheritance of rattan gardens from one generation to the next.⁵⁰ The canals and heavy equipment have damaged these traditionally owned areas and fires used to clear the forests have spread to local people's gardens and fishponds. In early 1998, EIA investigators visiting the PLG found that many rattan and purun gardens, have been destroyed by fire and drainage. Rattan and purun⁵¹ have provided a sustainable livelihood for the villagers for many generations. Villagers reported that, prior to the project, they were able to earn between 20–30 000 rupiah (US\$3) per day carrying rattan to local collection areas. Now it is difficult to earn more than 2000 rupiah (US\$0.20) per day.⁵²

Many community fishponds have been destroyed as a result of drainage.⁵³ One pond can produce two tonnes of fish earning around a million rupiah per year.⁵⁴ The use of herbicides now threaten the river fish and traditional crops upon which the villagers depend. The main river has become so muddy and polluted that it cannot be used for bathing or drinking water and piped water must be paid for.⁵⁵

In the East of the project area, locals ranch water buffalo which are used for ceremonial purposes. Prior to the project there were over 3000 buffalo in the area, today there are around 900. Numerous buffalo—valued at 1.8 million rupiah

(approx US\$200)—are reported to have drowned in the steep-sided canals or become trapped in the drying mud.⁵⁶

In several areas, people are resorting to illegally cutting timber and catching river fish in order to survive. Little or no compensation has been paid for the loss of land and livelihoods.⁵⁷

Transmigration

Between 1969 and 1994, Indonesia's transmigration programme moved eight million people from the densely populated areas to the outer islands such as Borneo. Over that period 1.7 million hectares of forest were stripped⁵⁸ bringing increased pressures upon the indigenous populations and environment. In Central Kalimantan, 316 000 transmigrant families were intended to be brought in to work on the PLG project⁵⁹, though it is reported that the area can only accommodate around half that number or 168 000 families.⁶⁰ Payments of up to US\$2000 were offered to families joining the project.⁶¹ 60% of the initial 3000 families to be settled by March 1997 were to be drawn from the local population.⁶²

EIA visited the site of the first transmigration camp in Dahalup and met with transmigrants who were cultivating rice. One worker claimed to be producing three tonnes of rice per hectare (about half the yield in Java) but was only able to produce any crop because his plot was not on peat soils but the more fertile riverain areas. The "Green Revolution" rice strain requires high levels of fertiliser and pesticides which are currently subsidised by the government, but this subsidy will end in 1999. Other workers explained that they had been forced to move to the transmigrant camp because they had lost their traditional lands as a result of the project.⁶³

Postscript

Despite the warnings of scientists and Non-Governmental Organisations that the project could not achieve the desired aims of rice production, the development proceeded. In early June 1998, the new Cabinet of Reformation and Development announced that the project area will be halted due to its inefficiency, economic and environmental costs. The Minister of Agriculture stated that rice production will instead be focused upon optimizing existing "sawah" rice paddies and will seek new and more suitable areas for transmigration.⁶⁴

Corporate Arsonists— Forest Fires and Corporate Responsibility in Indonesia

- The fires in Indonesia over 1997–1998 have burnt in excess of two million hectares of forest land.
- Corporate enterprises controlling logging areas and plantations, with close links to the Government and military, have been implicated as the major cause of these fires.
- The impact on the environment, wildlife and people has been devastating. Estimates for the cost of the fires in 1997–98 range from US\$2–20 billion
- It is estimated that if the fires in Indonesia's peat bogs burn for six months they will release 1 billion tonnes of carbon in to the atmosphere. Western Europe's carbon dioxide emissions are below 900 million tonnes a year
- As many as one thousand orangutans are thought to have been killed as a result of the fires.

The fires which raged across Indonesia during 1997–98 are one of the great environmental disasters of this century. It is estimated that in six months during 1997 the fires burnt at least two million hectares of land¹ and produced greenhouse gases equivalent to the annual emission from all the automobiles in Europe.² They spread poisonous smoke over six countries, affecting more than 70 million people and costing billions of dollars in health, transport, trade and environmental damage.³

The fires are the result of short-sighted government policies, corruption and corporate greed. Those responsible for this environmental catastrophe are the same individuals who govern the country and control the businesses making massive profits from clearing the land with fire to make way for plantations. Unless fundamental reform of Indonesia's political and business regime is carried out, the fires and environmental destruction will continue unabated.

An area the size of England and Wales has now been consumed by the fires which were first reported in the mid-summer of 1997. Although

they were quelled to some extent by the onset of monsoon rains in November 1997, the fires resumed in 1998, and in some areas have been more intense and widespread than in 1997. It is feared that the dead wood, much of it from trees killed during the initial fires, are set to make the situation much worse.

In April 1998, Indonesia's former Environment Minister, Juwono Sudarsono, explicitly blamed timber companies for the burning during 1997 and the new round of uncontrolled fires in Kalimantan. He stated that 65% of the land (around 160 000 hectares) burned in East Kalimantan since January 1998 belongs to timber companies and that the fires were deliberately lit for land-clearance. "The land-clearing activities are intentional," he told journalists in Jakarta, "but the problem is that the fires have become uncontrollable ...



© Tony Roper/Smith Stevens

A Burning Issue

Fire has routinely been used to clear scrub, grassland and logged-over forests to make way for small-scale agricultural developments.²¹ A report prepared by CIFOR in 1997 pointed out that "fire eliminates field debris, slows re-growth of weeds, reduces pest and disease problems, adds fertiliser in the form of ash and loosens the soil to make planting easier".²²

It is not simply the deliberate targeting of an area for clearance, but the inability to contain the fires which has resulted in the recent situation. The rapid spread of fires may also be linked to activities in the natural forest ecosystem which has rendered them susceptible to burning. The felling of a single large tree destroys more than a dozen smaller trees and this resultant woody debris provides ideal conditions for fire to spread. The removal of the forest canopy exposes the remaining foliage to the drying effects of the sun and over the past twelve months, the problems have been exacerbated by the onset of El Niño which brought a prolonged drought.

Studies in Tanjung Puting found that 20% of the trees will survive one fire, but the drying this causes will ensure that any further exposure to fire will cause the forest to be destroyed.²³ During 1982–83, the most severe fires took place in the second year due to the earlier destruction and the already smouldering underground peat and coal seams.²⁴

personally I think it will require at least US\$2–3 billion [to extinguish] the fires".⁴

Numerous stations across Indonesia are monitoring and co-ordinating efforts to extinguish the fires. However, efforts to combat the fires are expensive⁵ and have been largely unsuccessful.⁶

The Corporate Arsonists

In September 1997, the Indonesian Government named 176 companies as being responsible for deliberately starting fires to clear land and forests.⁷ This list included some of the most powerful and well-connected corporate interests in the country. Indonesia's largest timber-based company, the Barito Pacific Group which controls around five million hectares of forest land⁸, was named because of the fires on its controversial pulp plantation (PT Musi Hutan Persada) in South Sumatra.⁹ Ex-President Suharto's close friend Mohammad "Bob" Hasan and the President's daughter Tutut also had plantations (timber and oil palm respectively) on the list.¹⁰ Timber plantations belonging to Sinar Mas (Indonesia's second-largest conglomerate¹¹) and oil palm and timber plantation companies controlled by Indonesia's biggest conglomerate—the Salim Group (owned by Liem Sioe Liong, Indonesia's richest man¹²)—were also amongst the accused.¹³ According to many, the fires "will happen next year and every other year until they go after the big licences".¹⁴

A telling insight into the *modus operandi* of the plantation sector is offered by AFS Budiman, Executive Director of the Rubber Association of Indonesia. He admitted: "If you do land clearing in pioneer areas where no roads are established the only practical way to get rid of the debris is to burn it." He added that if a local official tries to intervene "you just bribe him. At most you promise to give him some shares. Then he'll just wash his hands of the matter. Who will know? It is such a big area."¹⁵

The Use of Fire for Land-Clearance

Although banned in 1995, fire is still routinely used over extensive areas to clear forests for commercial planting. Unscrupulous companies seeking to extend their concession areas are using fire to grab land cheaply (compensation is only payable for damaged crops rather than for the land itself)¹⁶ or to drive small farmers out.¹⁷

Since the early 1980s when logging companies accelerated their operations, particularly in Kalimantan, forest fires have become an increas-



© Yanyo Baquni/Self Picture

ingly serious problem. During the 1990s, burning has increasingly been used to clear land for plantations—largely for rubber, pulpwood or oil palm.

Fanning the Flames of Extinction—The Costs

“Tigers and elephants are fleeing the burning jungles. Birds are falling from the murky skies. Schoolchildren are fainting at their desks. Ships are colliding at sea.”¹⁸ The fires which have swept across Sumatra and Kalimantan over the past year are having profound and lasting impacts upon the environment, wildlife and economies, not only of Indonesia, but also of her neighbours across South-East Asia.

Current estimates suggest that at least two million hectares of forest were burnt in the 1997–98 dry season.¹⁹ Of this between 40 000 and 60 000 hectares of protected forests and parkland were destroyed in 1997 alone. Fire affected 17 national parks and reserves.²⁰ In East Kalimantan, fires took hold across the province including protected areas. By mid-March, the head of Bapedal (the Environmental Impact Management Agency) in the province, reported that 80 000 hectares of forest had been destroyed this year.²¹ More recently, a UN fact-finding team said that over 200 000 hectares of forest had been razed.²⁶

A Malaysian forestry official in Sarawak claimed that it could take at least 100 years to reforest the destroyed tracts²⁷ and others have suggested that it will take 25 years before the forest can even begin to sustain wildlife.²⁸ As many of the fires have taken place in areas slated for conversion to oil palm, timber and other plantations, the forests will not be rehabilitated and have been lost for good. Ludwig Schindler, team leader of the Integrated Forest Fire Management (IFFM) Project in East Kalimantan, sums up the situation thus, “99 percent of the fires are man-made and most of them are deliberately set, so it’s pointless to think of putting them out because somebody wants ... the fire [to clear the land]”.²⁹

The Economic Costs

Estimates put the cost of the fires to South-East Asia at US\$4.4 billion for 1997 alone. These costs include US\$494 million in timber losses, US\$470 million in lost agricultural production, US\$1.8 billion in lost benefits from the forests, including food, medicine, water supply, erosion and storm control and US\$272 million in

damage caused by the impact of the fires upon global warming.³⁰

In Northern Sumatra, 3000 hectares of oil palm plantations have been destroyed.³¹ The haze hampered the ripening of fruits and traders and commodity associations reported that coffee and cocoa production were affected. In Malaysia’s Johore state, the agriculture department warned that the reduced sunlight was also affecting crop production.³²

The financial impact upon tourism is difficult to calculate but figures from Singapore already show a decline in tourist arrivals of more than 15% for December and January year-on-year.³³

The Human Cost

The cost in terms of damage to the health of some 20 million people remains incalculable.³⁴ In 1997, at least 40 000 people were reported to have suffered from respiratory ailments. Long-term effects of smoke damage include: throat cancer, harm to the kidneys, liver and nervous system³⁵, brain disorders, skin and eye allergies, and exacerbation of heart and asthma problems.³⁶ Estimates of the costs of short-term health care alone have been put at over US\$900 million.³⁷

The Environmental Cost

For wildlife and the environment, the impacts are even more difficult to quantify. During 1982 and 1983, the huge forest fires which swept across Kalimantan resulted in the extinction of several species in Kutai National Park.³⁸ Later

“The land-clearing activities are intentional... but the problem is that the fires have become uncontrollable ... I think it will require at least US\$2–3 billion [to extinguish] the fires”.



S. J. Wisland/ESA

During the 1997 fires, the former Environment Minister reported that land owners treated his officials with contempt, claiming friends with political connections and immunity from prosecution.

studies revealed the extent of the long-term damage to the forests. Soil quality deteriorated as a result of the death of soil organisms and increased nutrient leaching. Soil erosion was ten to twenty times greater in burned than in unburned areas in Kutai.³⁹ With the onset of the rains in 1983, soil erosion from exposed areas increased the sediment load of the Mahakam River and threatened the important inland fisheries. The almost complete destruction of the peat swamp forests, which had acted as a giant sponge regulating water flow, led to increased flooding in downstream riverside villages.⁴⁰ In 1998, drought and fires combined to destroy critical watersheds, affecting the drinking water supply in the cities of Samarinda and Balikpapan in East Kalimantan.⁴¹

Destruction among the canopy trees that produce fruits and seeds important to vertebrates was 40–60% and crown dieback affected the majority of surviving fruit trees. This had important consequences for frugivorous birds and mammals. Large numbers of animals died during the fires, especially the less mobile creatures such as nestlings and forest floor reptiles and amphibians. Given the high fruit tree mortality (44% of canopy fruit trees), the decrease in available food resources has impacted the surviving animals and some species, notably hornbills, fruit pigeons, barbets and squirrels declined.⁴² During 1997–98, a number of birds were reported to have been found dead from the effects of smoke.⁴³ In the longer term, there are fears for the nectar-feeding insects, birds and bats if soot is deposited on flowers.⁴⁴

Elsewhere in both Sumatra and Kalimantan, the impact upon species—including many which are already endangered—has yet to be fully determined. Fires were known to be alight in late 1997 in the forests inhabited by the elusive and critically endangered Sumatran rhinoceros (*Dicerorhinus sumatrensis*).⁴⁵ Other animals including Sumatran tiger (*Pt. sumatrae*) and Asian elephant (*Elephas maximus*) were reported to be entering villages, fleeing the fires and in search of food.⁴⁶ The fires are known to have critically endangered other species. In the Kersik Luwai Nature Reserves in East Kalimantan the rare endemic Black orchid (*Coelogyne pandurata*) has suffered as much as a 50% decline in the population.⁴⁷

In Central Kalimantan, deer fleeing the fires, in the area of the one million hectare rice project (PLG), were reported to have been shot by local people whose own food resources (river and pond fish) had diminished as a result of the project.⁴⁸ Monkeys, sun bears, cobras, wild pigs

and other animals were reported to be reaching the rivers in search of clean air. The headman of Dadahup village (also within the PLG project) on the Barito river said that “Many [animals] are exhausted and the villagers kill them easily”.⁴⁹ In East Kalimantan, proboscis monkeys (*Nasalis larvatus*) have been observed closer to human habitation as they have been driven out of the forests.⁵⁰

The numbers of birds, reptiles and mammals captured for commercial trade or food as a result of the fires are impossible to quantify. It is clear that the fires have facilitated an escalation in capture and hunting of orangutans (see *The Orangutan Crisis*). Estimates suggest that around 1000 orangutans have been killed in the fires or by local people.⁵¹

Finally, a mixture of ash and exposed, blackened soil has formed an acid layer which may be flushed into the sea when the rains return. It is feared that if these acidified sediments wash into the coastal waters, they will kill the carbonate coral.⁵²

For the planet as a whole, the impact of the fires on global warming remain unclear, but it has been estimated that if the fires in Indonesia's peat bogs continue to burn for six months, they will release one billion tonnes of carbon into the atmosphere. Western Europe's CO₂ emissions are below 900 million tonnes a year. About one million hectares of peat bogs have been affected, each losing up to a metre's depth of peat within six months.⁵³

The Government Response

The deliberate burning of forests was banned in 1995. Current penalties include possible imprisonment for up to 15 years, fines of up to 100 million rupiah, closure of commercial operations and seizure of assets.^{54,55} Despite this, the drive to meet government “conversion” plans and corporate greed have ensured that illegal burning continues.

During the 1997 fires, the former Environment Minister reported that land owners treated his officials with contempt, claiming friends with political connections and immunity from prosecution.⁵⁶

The Accused Companies

In late 1997, the Ministers of Environment and Forestry, working together with NGOs and donor organisations, were able to identify the fire hotspots and co-ordinate attempts to extinguish the fires. Identification—using both local reports

and satellite imagery—led to the naming of 176 companies which were thought responsible for starting fires in eight provinces.⁵⁷

These 176 companies included oil palm plantations, timber estates (including some run by the state-owned company, PT Inhutani) and government transmigration schemes. The principal shareholders and owners of the companies were not identified.

The accused companies were given 15 days to undertake and produce audits as proof that they were complying with the law. Only 110 companies submitted denials and of these, only 65 had the required audit attached.⁵⁸

Following the 2 October deadline, the Government immediately revoked 144 licences held by 29 companies who were unable to disprove the allegations.⁵⁹ Of these 144 revoked permits, 69 were held by four government companies.⁶⁰ Many others were owned by prominent business conglomerates with links to government. For example, Bob Hasan's PT Kiani Lestari plantation company had its licence revoked. Crucially, the licences revoked were for "wood-use" rather than the companies' main concession or operating licences. Furthermore, the withdrawal of such licences was only temporary until companies produced "audits".⁶¹ The permits allow companies to utilise wood from areas that have been converted into plantations,

timber estates or settlement areas.⁶²

The official Antara news agency reported in mid-October that the Environment Ministry was gathering evidence in order to pursue legal action against the companies.⁶³ On 31 October, the police announced that 48 suspects were under investigation. These included one company with foreign involvement, 23 Indonesian companies and 24 individuals.⁶⁴

By December 1997, at least 21 of these companies had their licences reinstated when a forestry ministry official announced that they had proven their innocence. Antara quoted a senior forestry official as saying the permits were returned to the companies after they met requirements for clearing land and forest areas without fire and for possessing adequate equipment, personnel and funds. Thirty-six permits were held by timber estate companies and nine by plantation companies.⁶⁵

Since then no follow-up has been made public and it remains to be seen whether any companies or individuals will be prosecuted.⁶⁶ Confusion surrounds the current status of the companies accused—with one recent report stating that of the "46 [companies which were] fully investigated, only five will be prosecuted".⁶⁷ The IFFM in its interim report on the situation in East Kalimantan states that, "roughly 40 plantation and timber companies are currently

"99 percent of the fires are man-made and most of them are deliberately set, so it's pointless to think of putting them out because somebody wants ... the fire [to clear the land]"

Accused

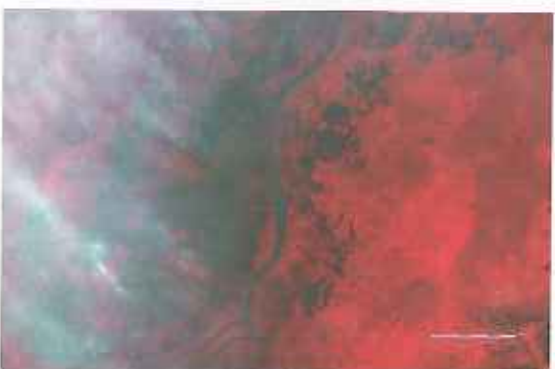
Ex-President Suharto's close friend and confidant, Bob Hasan, has based his considerable financial might upon Indonesia's forests. Ranked the 107th richest person in the world with a net worth of US\$3 billion⁶⁸, Bob Hasan controls around 3.5 million hectares of forest in Indonesia⁶⁹ and is the self-proclaimed "King of the Forests". In October 1997, three of his timber plantation companies were named in the list of those accused of starting the fires—PT ITCI Hutani Manunggal, PT Kiani Lestari and PT Tanjung Rejeb Hutani.⁷⁰

The wood licences for all three companies were initially revoked after the companies failed to prove that they were not responsible for starting fires on their concessions. Hasan responded with a vigorous denial. In his position as head of the Indonesian Forestry Society (MPI) he accused small farmers, illegal loggers and oil palm or rubber plantations of starting the fires.⁷¹



However, EIA investigators working in East Kalimantan received several statements from witnesses (local villagers and activist groups) stating that they had seen fires started on concessions owned by ITCI.⁷² Unsurprisingly, despite the evidence, the three companies' licences were later reinstated.

If the fires in Indonesia's peat bogs continue to burn for six months, they will release one billion tonnes of carbon into the atmosphere.



Right: Satellite images showing the intensification of burning and development of smoke haze in Central Kalimantan, June-September 1997. Irrigation channels show up as a grid of pale green lines to the west of the Barito river.

All photos: ibi, page 8: CNNES

being prosecuted by the Indonesian Police Headquarters for having had fires in their respective areas".⁶⁸ Clearly, greater clarification and transparency is required of the Indonesian Government.

Meanwhile, the government continues to vilify the farmers who have been forbidden to carry out the controlled burning of fields in preparation for planting rice. It is reported that some farmers caught burning have been beaten and kicked by members of the armed forces.⁶⁹

In February 1998, the former Forestry Minister, Djamaloeudin, summoned two companies involved in large-scale plantations which were strongly believed to be burning land in East Kalimantan. In 1998, the fires in East Kalimantan were much worse than in 1997 when 37 092 hectares were destroyed.⁷⁰ *Kompas* reported that "The names will not be announced until a Department of Forestry survey team has mapped the areas burnt".⁷¹ No further details have yet been released. However, prominent members of the provincial and central governments are reported to be very disappointed that prosecutions have been dropped due to a "lack of evidence".⁷²

The president of PT Inhutani (the state-owned timber company) denied allegations that his company was responsible for starting fires. He added that fires within the company's concession were caused by slash-and-burn farmers and that other fires had spread from outside the concession.⁷³

Meanwhile, the environmental group WALHI is suing eleven logging concessionaires operating in South Sumatra for approximately US\$2 billion in reparations for the environmental damage caused by last year's fires and smoke.

The accused include Indonesia's largest timber conglomerate, Barito Pacific.

- PT Pakcrin
- PT Sentosa Jaya
- PT Inhutani V (Persero)
- PT Sukses Sumatera Timbe
- PT Inti Remaja Concern
- PT Nindita Bagaskari
- PT Musi Hutan Persada—Barito Pacific
- PT Sinar Belanti Jaya
- PT Sri Bunian Trading & Co
- PT Daya Penca
- PT Family Jaya Group.⁷⁴

Playing With Fire: The Accused Companies

The list of 176 company concessions was issued by the Forestry Department. It is based upon the monitoring of eight provinces (four each in Sumatra and Kalimantan) from 1 August through 15 September 1997. The companies are listed by province and type of activity. The largest group (75.5% of the total) were the 133 plantation companies (mainly oil palm, rubber and others); 28 timber estate companies (16%); and 15 transmigration companies (8.5%).

Current ownership patterns of the major individuals/conglomerates are indicated as follows:

- [P] Prayogo Pangestu/Barito Pacific
 [B] Bob Hasan
 [T] Tutut Suharto
 [E] Eka Ijjpta Wijaya/Sinar Mas
 [S] Liem Sioe Liong/Salim Group
 [R] Raja Garuda Mas Group
 [G] Government-owned timber company
 * companies whose licenses were suspended
 ** companies who had only submitted applications for land clearance¹⁰

KALIMANTAN

1. Kalimantan Timur (East)

Plantations:

1. PT Tanjung Buaya Perkasa
2. PT Perkebunan Muara Badak
3. PT Sukses Tani Nusa Subur
4. PT Tirta Kemana Kreasi Mas
5. PT Bumi Gajah Utama Perkasa **
6. PT Swakarsa Sinar Sentosa *
7. PT Dwidikar Persada **
8. PT Agrotama Sinar Panamin
9. PT Majapahit Agro Industri
10. PT Perkebunan Kutai Permai
11. PT Perkebunan VI
12. PT Jagatama Ringgit **
13. PT Sigma Luluh Indah **
14. PT Triteknik Kalimantan Abadi

Timber Plantations (HTI):

1. PT ITC Hutani Manunggal * [B]
2. PT Kiani Lestari * [B]
3. PT Surya Hutani Jaya
4. PT Tanjung Rejeh Hutani * [B]

2. Kalimantan Selatan (South)

Plantations:

1. PT Laguna Mandiri
2. PT Paipurna Swakarsa
3. PT Perkebunan Pamukan
4. PT Inti Gerakan Maju
5. PT Bumi Pondok Indah
6. PT Kodecu (Banjarmasin Agrojaya)
7. PT Langgeng Muara Makmur
8. PT Swadaya Andika
9. PT Perkebunan XVIII
10. PT Bersama Sejahtera Sakti
11. PT Perkebunan Pelaihari

Timber Estate Plantations (HTI):

1. PT Menara Hutani Ruano

3. Kalimantan Tengah (Central)

Plantations:

1. PT Aitang Ganda Utama
2. PT Handel Hambar
3. PT Gunung Sejahtera Yoli Makmur
4. PT Teguh Sempurna *
5. PT Suka Indisawit Mekar
6. PT Kalimantan Sawit Kusuma **
7. PT Wana Sawit Subur Lestari **
8. PT Mustika Sembuluh *
9. PT Subur Sawit Lestari **
10. PT Rongga Alam Subur **
11. PT Ciptanegara Lestari **
12. PT Indotribu Timur

13. PT Kridatama Lancar *
14. PT Perkebunan Buntok XIII
15. PT Indotribu Tengah
16. PT Gunung Sejahtera Dua Indah *
17. PT Sapta Karya Damai
18. PT Tunjung Jaya **
19. PT Roda Prima Satya **
20. PT Tiungguba Agro Perkasa **
21. PT Harapan Hibrida Kalbar
22. PT Winda Nebatindo Lestari
23. PT Lestari Unggul Jaya
24. Salim Group ** [S]
25. PT Sungai Rangit **
26. PT Surya Anerta **

Timber Plantations (HTI):

1. PT Ceria Karya Platama
2. PT Perwata Rimba * (HTI/Transmigration)
3. PT Pala Inti Rimba * (HTI/Transmigration)

Transmigration:

1. Kumai Kondang IX/H
4. Katingan XIII/A
2. Teweh Timur III/A
5. Nanjapan H Via/31 *
3. Kumai Kondang DKB/F
6. Teweh Timur III/A/A

4. Kalimantan Barat (West)

Plantations:

1. PT Prakasa Tani Sejahter *
2. PT Aga Kartika Kemana **
3. PT Perkebunan VII **
4. PT Bukit Gemah Ripah
5. PT Duta Sumber Nabati
6. PT Nabura Agrotani **
7. PT Subur Ladang Anfalun
8. PT Supra Palma Mandiri **
9. PT Yankier Multi Perkasa (according to DTE)
10. PT Surya Malindo Jaya **
11. PT Pelumindo Alam Sakti
12. PT Bumi Mahakam **
13. PT Ceria Prima
14. PT Antar Mustika Sogara
15. PT Wahana Transhutani **

Timber Plantations (HTI):

1. PT Basuki Rahmat
2. PT Ikhutani III [G]
3. PT Rimba Equator Terang
4. PT Nilasa Idola
5. PT Lembah (HTI/Transmigration)
6. PT Lahan Cakrawala
7. PT Wahana Aria Tani
8. PT West Kalinda
9. PT Lahan Permai

SUMATRA

5. Sumatera Utara (North)

Plantations:

1. PT Perkebunan VI Ajatnu
2. PT Lisadane Sawit Raya
3. PT Abdi Budi Mulya
4. PT Tapain Nedegegan
5. PT Sumber Sawit Makmur
6. PT Perkebunan VII
7. PT First Muja Plantation
8. PT Perkebunan III Padang Bulok
9. PT Daya Luluhan Indah
10. PT Cipta Jaya Raya
11. PT Wonnerejo
12. PT Tanjung Miliha Harapan Indah
13. PT Samukti Karya Lestari
14. PT Indo Sepadan Jaya
15. PT Perkebunan IV
16. PT Sungai Pinang I

6. Jambi

Plantations:

1. PT Bahari Gembara Ria I
2. PT Kresna Duta Agriindo
3. PT Perkebunan VI

4. PT Kasuari Unggul
5. PT Dangan Desa Utama
6. PT Perkebunan IV
7. PT Era Misa Lestari
8. PT Gatra Kembang

Timber Plantations (HTI):

1. PT Wiro Karya Sakti
2. PT Sylva Gamma
3. PT Wana Waskita *
4. PT Diera Hutani Lestari
5. PT Wana Permisi *

Transmigration:

1. Kuamang Kuning SKP VII A
2. Kuamang Kuning SKP VII C
3. Unggul ulu SKP XII WE
4. Kilangan
5. Kuamang Kuning SKP VII D
6. Simpang Pandan SKP XIV G
7. Kunteh SKP XIV a

7. Sumatera Selatan (South)

Plantations:

1. PT Bina Sakti Corp
2. PT Sumber Harapan Sarana
3. PT Tania Selatan
4. PT Dendymaker Indah Lestari
5. PT Perkebunan Mitra Ogan
6. PT Duta Agro Sakti **
7. PT Daya Sakti Nusa Persada
8. PT Perkebunan X
9. PT Agro Nusa Indah
10. PT Musi Rindang Wahana * [T]
11. PT Sentosa Mulia Bahagia **
12. PT Bangun Desa Sawit Makmur
13. PT Dulamas Pulva Utama **

Timber Plantations (HTI):

1. PT Muli Hutani Persada [P]
2. PT Pakerin *

Transmigration:

1. Pangkalan Kerik XVIII/F
2. Karang Agung Jengah XXII

8. Riau

Plantations:

1. PT Bisanjolom
2. PT Inti Komparindo Sejahtera *
3. PT Subur Anam Makmur *
4. PT Buana Wira Lestari
5. PT Eluban Mahkota
6. PT Inti Indo Sawit Subur *
7. PT Perdana Inti Sawit *
8. PT Riah Muda Agrindo
9. PT Sarpindo Graha *
10. PT Perkebunan V
11. PT Duta Swakarsa Indah
12. PT Gandarrah Hendana
13. PT Pusaka Megah Nusantara
14. PT Multi Gambat Industri
15. PT Gurung Mas Raya *
16. PT Kemana Ainal Tani *
17. PT Adai Crum Rubber
18. DPP Sei Putih
19. PT Ganda Buaminida
20. PT Musim Mas *
21. PT Perkebunan II *
22. PT Surya Bratawena
23. PT Teknik Umum
24. PT Ramajaya Pramukti
25. PT Galipura Mulya **
26. PT Papanro Mestundo
27. PT Gunung Harat Makmur

Timber Plantations (HTI):

1. PT Arena Abadi/PT Indah Kiat * (PT Indah Kiat [S])
2. PT Rimba Lestari (HTI/Transmigration)
3. PT Riau Andalan Pulp and Paper * [R]
4. PT Perawang Sukses Perkasa Ind. * [E]

Sources: Jakarta Post, 4.10.1997 cited in DTE, November 1997; Greenleaf Weekly, 15.10.1997; FEER, 2.10.1997 and pers comm, Plasma, April 1998.

The international community is now presented with an historic opportunity to bring about positive reforms to benefit the environment, wildlife, people and economy of Indonesia.

The Economics of Extinction

- Strong economic incentives exist in Indonesia to encourage unsustainable forest management.
- Loans, aid and economic restructuring in Indonesia may lead to accelerated rates of forest conversion for plantations, timber production or other production uses.
- Governments in the developed world must ensure that explicit environmental and social conditions are attached to their lending. These conditions must be applied to loans and aid given bilaterally, and from the International Monetary Fund, World Bank, Asian Development Bank and private banks or investors.

The Environmental Investigation Agency (EIA) supports the provision of financial loans and other assistance for Indonesia's economic recovery, but only if accompanied by strict environmental and social conditions. Such conditions must be designed to ensure the development of sustainable forest management and the introduction of an open, participatory and transparent system of land-use planning. The goal must be the protection of natural forests, wildlife, local communities and indigenous peoples.

The international community is now presented with an historic opportunity to bring about positive reforms to benefit the environment, wildlife, people and economy of Indonesia. Governments in the developed world must ensure that bilateral lending and funds from the International Monetary Fund (IMF), World Bank (WB) Asian Development Bank (ADB) and private development banks and investment houses have explicit environmental, social and economic conditions attached. Given current economic influences, failure to apply such conditions is likely to result in expansion in the timber and plantation sectors (among others) at the expense of natural forest cover. This in turn will undermine the sustainable management of Indonesia's forest estates.

Background

Of all the Asian economies, Indonesia has been hardest hit. Its currency—the rupiah—has declined in value by 80% from Rp. 2450 in July 1997 to the dollar to Rp. 11 000 to the dollar in May 1998.¹ The price of essential commodities has risen dramatically and unemployment is running at approximately 10% of the workforce (nine million). Indonesia's known foreign debt has grown from US\$2.1 billion in 1966 to over US\$80 billion in corporate and bank debt today.² It is likely that considerable sums of additional debt remain undisclosed. The crisis will keep its momentum as the economic downturn in Indonesia looks set to result in the contraction of the economy by 5% in 1998.³

Many different factors need consideration in the examination of foreign loan support for Indonesia's recovery. However, of principal concern to the protection of natural forests, wildlife and local communities are the impact of agricultural development, timber and wood industries and mega-development projects. It is vital that these are directly addressed.

Expanded production of agricultural products such as palm oil and increased sales of timber and wood products are likely to be used as a way of reducing further economic down-turn and boost export income. The depreciation of the rupiah should make Indonesian timber, pulp, paper, palm oil and other commodities highly attractive to the international market. Within Indonesia there is the added attraction that earnings from these products are usually in US dollars while costs are paid for in cheap local currency. Growing export demand for some of these products—such as plywood for the Chinese market—is already apparent.

At the same time, new conditions attached to aid loans require the removal of trade and investment barriers. While these factors may prove to be good for the economy in the short term, the likely outcome for forests is bleak—driving deforestation and illegal logging to supply timber and wood products, prompting the conversion of more forests to plantations and exacerbating well documented environmental and social problems of forest loss.

It is in this context that the financial rescue package for Indonesia's economy requires the implementation and enforcement of strict environmental and social conditions.

International Loans, Aid and Investment—

1. Palm Oil

Palm oil is arguably the most influential sector likely to affect forest cover. The Centre for International Forestry Research (CIFOR) states, "we believe these fires are a symptom of the deficiencies in forest management systems and in policies and regulations on the clearance of land for agriculture".⁴

There are currently an estimated 2.4 million hectares of palm oil plantations and 1.5 million are to be added in 1998, requiring an investment of Rp. 12 trillion (about US\$1.2 billion at Rp. 11 000 to US\$1). High current prices on the international market (around US\$680/ton) and low production costs in Indonesia create high profit margins.

In 1997 the IMF agreement with Indonesia explicitly called for the removal of "all formal and informal barriers to investment in palm oil plantation". This was implemented in 1998. The agreement required the export ban on oil palm to be removed and replaced with a 40% export tax. This was implemented on 22 April 1998 and will be reviewed regularly for possible reduction to 10% by the end of December 1999.⁵

The Potential Negative Impacts

The removal of the export ban and new tax will "greatly stimulate interest in, and capability for, the establishment of new oil palm plantations".⁶

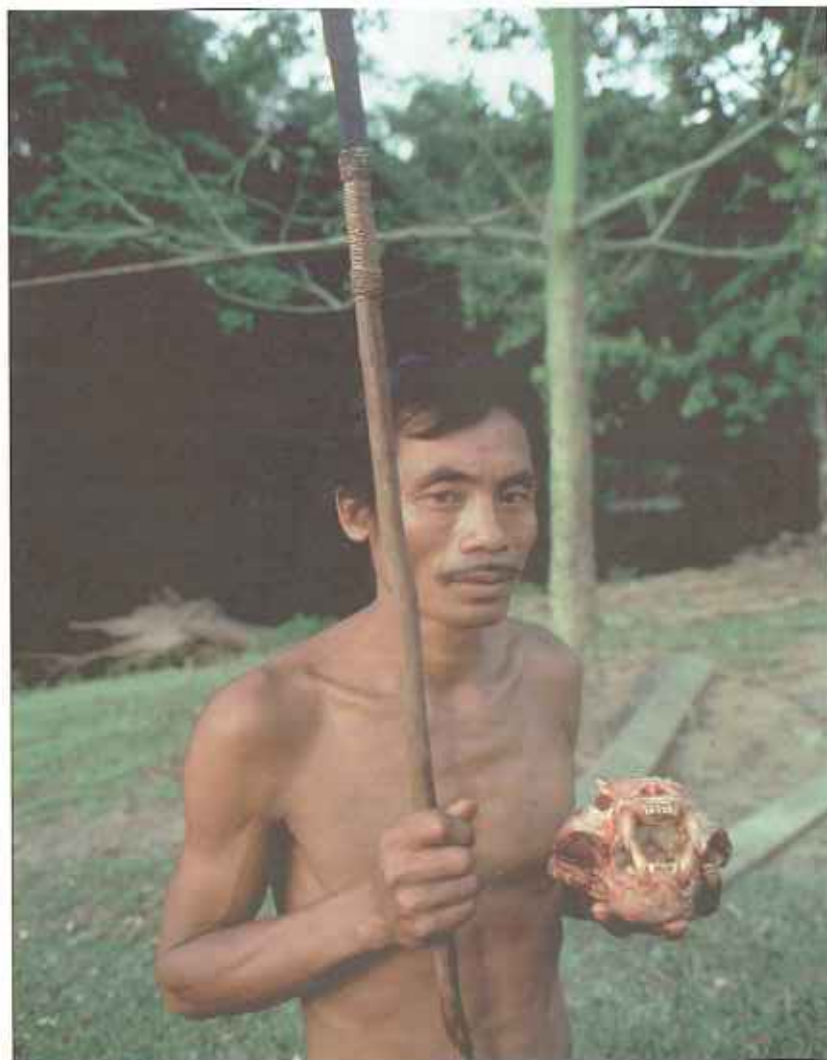
Furthermore, plantation developers have been identified as the principal culprits in starting forest fires to clear land for new plantations.⁷ With the renewed incentives for further burning to force reclassification of "permanent" production forests to conversion forests the risks of new burning remain high. This may affect both natural forests (as witnessed by the fires of 1997–98) as well as land already classified for production. The impact on wildlife and people has been widely documented.⁸

It is also important to note that any new plantations may deplete existing sustainable agriculture—notably rattan production in East Kalimantan and that further expulsions of local communities and indigenous peoples are likely to make way for new plantations.⁹

2. Timber and Wood Production

Prior to the Asian economic crisis and Indonesian forest fires, the plywood sector was facing grave supply difficulties because of over-harvesting and inadequate silviculture. The fires too had an impact on plywood supply. However, during 1997 and early 1998 the decline in neighbouring Asian economies led to a fall in demand.¹⁰ Demand for Indonesian plywood from Japan, South Korea and Taiwan fell dramatically and international market prices plummeted—from US\$500 per m³ in 1997 to US\$300 m³ in April 1998.¹¹ However, since April 1998 export demand for plywood has been growing and a shortfall of 14.5 million m³ (about 30% of consumption) to wood processing industries is predicted for the next five years.¹² It is clear that the same economic incentives which apply to oil palm and make it attractive on the international market, also apply to Indonesian timber, wood, paper and pulp products and that the domestic situation may also encourage illegal operations and further unsustainable exploitation in production forests.

The removal of the export ban and new tax will "greatly stimulate interest in, and capability for, the establishment of new oil palm plantations".



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The IMF has attached a number of useful conditions concerning timber and wood products to its loan agreement for Indonesia. These include the elimination of monopolies and cartels (such as the plywood association APKINDO supposedly implemented in March 1998); the incorporation of the Reforestation Fund into the national budget and instruction that it be used solely for reforestation purposes (implemented early 1998); increasing stumpage fees charged to forest concessions (to be implemented by 30 June 1998).¹³

However, these do not address the central issue of existing and new economic incentives which encourage over-harvesting, illegal logging and unsustainable forest management. Furthermore, there are increasing concerns that some of the conditions applied to these sectors are not being enforced.¹⁴

3. Mega-development Land Conversion Projects

Mega-development projects such as the one million hectare rice production project in Central Kalimantan (PLG) and the one million hectare plantation and industrial development project planned for a 500 km by 20 km portion of forested Irian Jaya—the Mamberamo River mega-project—have already or will have immensely damaging environmental and social impacts.¹⁵ All direct and indirect foreign or Indonesian subsidies for such projects must be immediately halted.

This is in complete accord with the recent statement by the IMF's Managing Director: "We are also seeking to improve the quality of government expenditure by reducing outlays for unproductive purposes, such as costly military

build-ups and large projects that benefit influential groups while stroking the egos of the high and mighty."¹⁶

Immediate Policy Requirements for International Lending and Development Programmes in Indonesia.

The risks to forests presented by the IMF, ADB, WB, bilateral and private lending to Indonesia can be limited by attachment and enforcement of strict loan conditions to ensure specific environmental and social measures are undertaken. These must include:

1. Adequate provision and resources are made available for the enforcement of Indonesian law protecting forest areas, national parks and protected areas and wildlife.
2. The use of an open, transparent and participatory system of land use planning which recognises the *adat* (traditional land tenure) rights of indigenous forest communities.
3. The incorporation of independently reviewed comprehensive Environmental Impact Assessments for any further land conversion and timber extraction programmes.
4. The immediate halting of mega-development projects leading to large scale unsustainable forest land conversion and specifically the PLG in Central Kalimantan and the Mamberamo River mega-project in Irian Jaya.

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Conclusion

It is clear that without urgent and determined action to halt the on-going, unsustainable destruction of Indonesia's natural forests, orangutans will become extinct in the wild within the next 20 years.

The driving force behind this ecological catastrophe has been a corrupt political and economic regime which has given the timber and plantation industries almost unrestrained

access to forest lands to feed their rapacious demands.

In light of this, the new Indonesian Government must implement an urgent Action Plan for the conservation of orangutans and their natural forest habitat. The International Community and in particular wealthy developed nations have a heavy responsibility to provide aid and assistance to ensure such action.

International Orangutan Conservation Action Plan

Summary

1. Ensure the full implementation and enforcement of Indonesia's laws governing the protection of orangutans and forests.
2. Convene a National Board for Wildlife, with executive powers and budget, Chaired by the Environment Minister and combining the expertise of government officials and Non-Government Organisations, orangutan experts, biologists/ecologists and community leaders. This Board must have the public support and backing of the President and must demonstrate a commitment to, and leadership in, wildlife and habitat conservation at the highest political level.
3. International financial institutions, development and aid agencies must ensure that investments and financial assistance are dependent upon strict environmental, social and economic conditions.
4. Secure and extend protected areas to cover a minimum of 15% of Indonesia's ecologically representative forests.
5. Conduct and review research to identify orangutan populations and viable habitat and opportunities for conferring formal protection to these areas.
6. Eliminate illegal logging and unlawful land conversion, and strictly enforce the prohibition of the use of fire by corporations in land clearance or conversion.
7. Conduct an independently monitored review of forest management including logging and cutting cycles, concession allocation and size, and forest charges and fees.
8. Encourage independent certification of timber and other forest products using rigorous environmental criteria.
9. Require all programmes/initiatives for the development of forest areas to be conditional on a comprehensive Environmental Impact Assessment incorporating environmental, social and economic costs and subject to an independent, transparent and participatory process of review. Full account must be taken of local communities and indigenous peoples' rights and traditional land uses.
10. Conduct an urgent assessment of the socio-economic and environmental values of non-wood forest products (NWFP) to local and national economies and identify and implement means to improve the use, marketing and development of these products.
11. Establish wide-ranging education programmes to inform local peoples, farmers, concession workers, tourists and others of the needs and benefits of orangutan and forest conservation.
12. In light of points 1-11 above, develop a management and conservation regime based on environmentally, socially and economically sustainable practice.

The Action Plan

1. A National Board for Wildlife

To initiate, monitor and ensure effective action for the conservation of Indonesia's orangutans, the Government of Indonesia should convene a National Board for Wildlife, with executive powers and budget. The Board should be chaired by the Environment Minister and combine the expertise of government officials and non-government organisations, orangutan experts, biologists/ecologists and community leaders. This Board must have the public support and backing of the President and active support from key Ministries within government. Through the Board, the President and government must demonstrate a commitment to, and leadership in, wildlife and habitat conservation.

2. Enforcement of Orangutan and Protected Areas Legislation

The Government of Indonesia must:

- Take immediate action to enforce its laws for the protection of orangutans from hunting, marketing, sale and habitat destruction.

- Ensure the rapid development (i.e. no more than one year in duration) of a fully financed programme to eliminate illegal logging and illegal land conversion by corporate business in all Protected Areas and National Parks.
- The practice of land clearance by fire—proven to be used by corporate enterprise—must be eradicated. Companies responsible must be prosecuted and meaningful deterrents applied. The Government must ensure the effective control, over-sight and monitoring of all logging operations—whether undertaken by State owned or privately owned enterprises.
- Ensure adequate resources are allocated to implement necessary enforcement activities including monitoring, arrest, prosecution and conviction of corporate businesses breaking Indonesian law.
- Commit to clarify and expand legislation and its enforcement for Protected Forest Areas. In particular prevent large-scale commercial activities operating legitimately within park boundaries on the basis of a permit system.



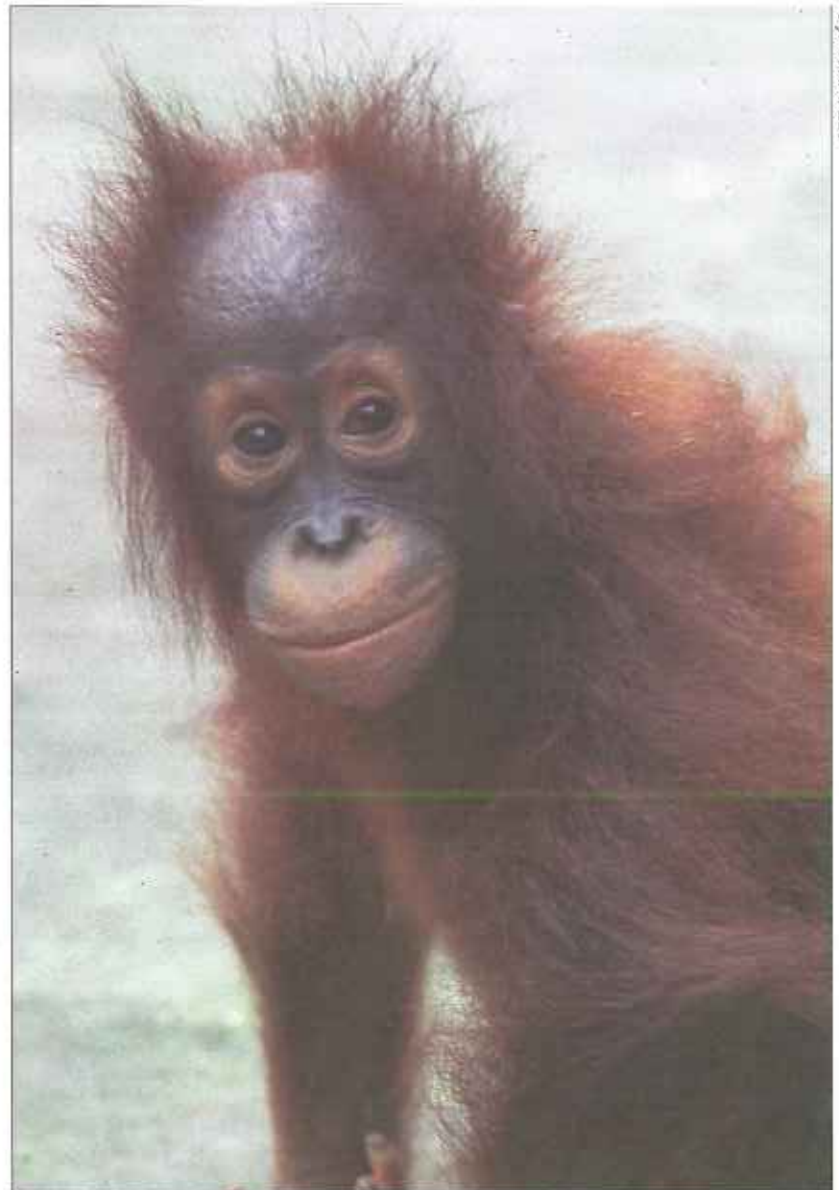
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- Provide staff at the Indonesian Directorate General for Forest Protection and Nature Conservation (PHPA) with the necessary financial, technical and political support to undertake the objectives of forest and wildlife conservation, as stipulated under existing legislation.

3. Environmental and Forest Management Actions

The Government of Indonesia must:

- Develop a strategic plan for the improvement and expansion of ecologically representative, permanently protected forested areas. These must cover all major terrestrial habitats and specifically reflect the diversity of forest types critical to orangutan conservation.
- Ensure that currently under-represented forest ecosystems such as lowland and swamp forest are protected.
- Ensure that wildlife corridors and buffer zones, as integral components to the ecological security of protected areas, are incorporated in new parks and protected landscapes.
- Ensure an area of no less than 15% of representative ecosystems is fully protected by the year 2005.
- Devise a management and conservation plan for each protected area and confer adequate funding to ensure its full implementation.
- Commit to achieve Sustainable Forest Management (SFM) outside of designated protected areas in all forestry activities. This must include a commitment to support the development, marketing and trade of Non Wood Forest Products (NWFP) and the incorporation of environmental and social costs into forest policy-making. In particular, the needs and requirements of local communities and indigenous peoples must be fully assimilated into forest policy.
- Require all programmes and initiatives for the development of forest areas to be conditional on a comprehensive Environmental Impact Assessment incorporating environmental, social and economic costs and subject to a independent, transparent and participatory process of review.
- Encourage independent certification of timber and wood products using rigorous environmental criteria, fully respecting local communities and indigenous peoples.
- Develop a programme, defining time scale and cost, for the restoration of logged-over habitat and other degraded forest land with particular regard to orangutan habitat requirements.
- Provide funding and assistance to orang-utan rehabilitation programmes.
- Establish a wide-ranging education programme to inform local people, farmers, concession workers, tourists and others of the needs and benefits of orangutan and forest conservation.
- Conduct and review research to identify orangutan populations and viable habitats.



S. J. Wichman/WWF

4. Economic Actions

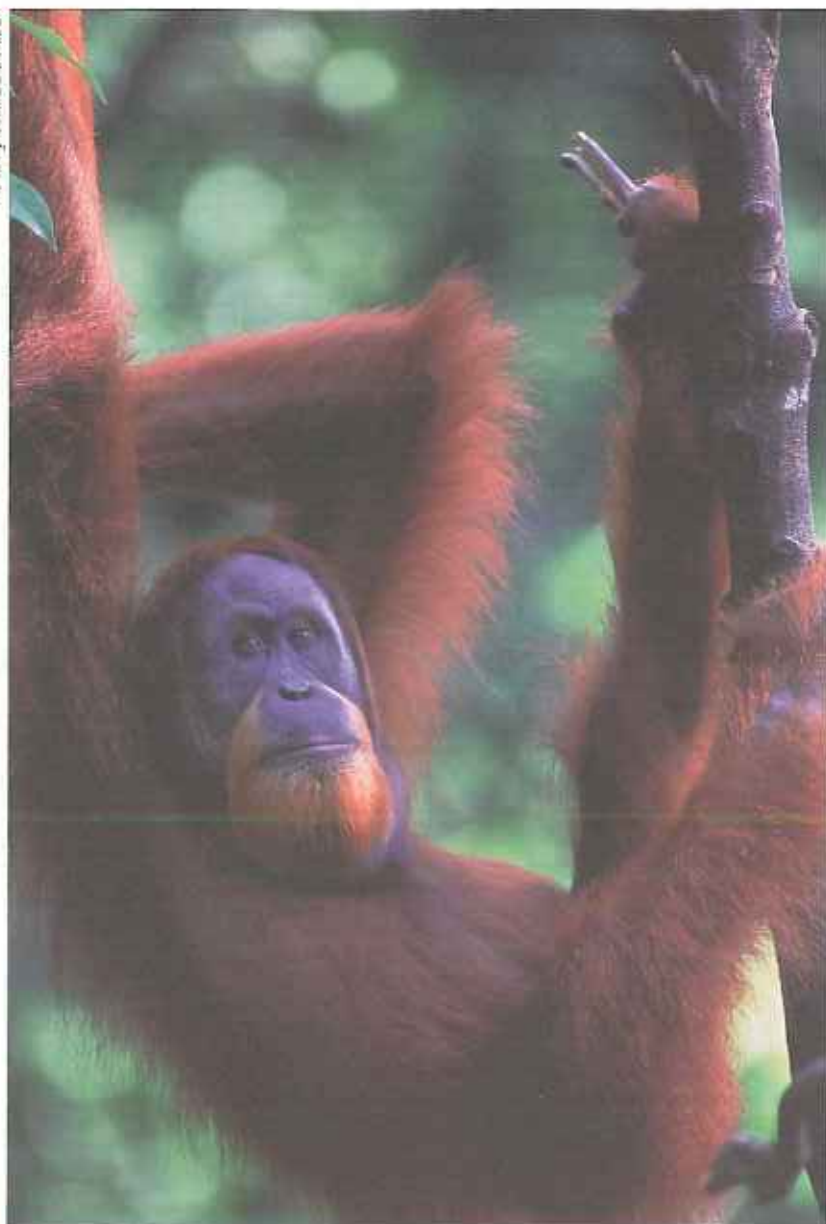
The Government of Indonesia must:

- Undertake an assessment of economic incentives and forest use policies and legislation which have driven the permanent clearance of forests for commercial plantations and agriculture.
- Commit to remove, as a matter of urgency, economic structural incentives which accelerate the rate of deforestation and unsustainable patterns of land conversion.
- Dismantle monopolies and cartels—in particular the Indonesian plywood cartel (APKINDO) and its Indonesian/Japanese counterpart (NIPPINDO) and the rattan association (ASMINDO).

- Ensure the use of transparent and accountable practices in internal and foreign trade procedures and comprehensively overhaul government procurement and contracting to prevent the sale of timber, wood and non-wood forest products (in particular plywood and rattan) below market prices.

5. International Actions

- Developed nations must provide substantial financial assistance and political encouragement to assist the Government of Indonesia to implement and enforce the above listed actions. The international community has a responsibility to ensure the survival of the orangutan and the protection of Indonesia's natural forest habitat.
- Developed nations, the International Monetary Fund (IMF), World Bank (WB), Asian Development Bank (ADB) and other aid and development agencies must apply comprehensive environmental, social and economic conditions to financial investment, aid and development assistance. These conditions should fully incorporate the requirement of the above recommendations for action by the Government of Indonesia (1, 2 and 3 above). There is a clear and pressing need to ensure consistent, credible and thorough implementation and monitoring of IMF/World Bank economic reforms concerning the break-up of government monopolies and cartels. In particular the IMF must ensure that:
 - I. Loan agreements removing trade and investment barriers are not to the detriment of the environment, wildlife or local communities. In particular, the IMF must actively discourage investment and aid in the Indonesia oil palm industry where this may lead to a resurgence of fires (through the deliberate setting by companies) or the invasion or clearance of protected areas or orangutan habitat.
 - II. Programmes of economic liberalisation must include the cessation of all direct and indirect subsidies to damaging mega-development projects and in particular the Central Kalimantan million-hectare project.



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<i>UK</i>	<i>US</i>
<i>69 Old Street</i>	<i>PO box 53343</i>
<i>London EC1V 9HX</i>	<i>Washington DC 20009</i>
<i>tel 0171 490 7040</i>	<i>tel 202 483 6621</i>
<i>fax 0171 490 0436</i>	<i>fax 202 483 6625</i>
<i>email eiauk@gn.apc.org</i>	<i>email eiaus@igc.apc.org</i>

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Written and Researched by Juliette Williams, Steve Trent, Julian Newman and Vinciane de Bohan.

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