

Conserving New Guinea's diversity

Threats and opportunities

The forest resources of Indonesia and Papua New Guinea are vanishing rapidly. Millions of hectares of pristine forest have been - and are planned to be - cleared for large-scale operations. The key industries behind forest loss are logging and plantation development for oil palm, paper and pulp and tropical timber, all of them have strong international links to international capital and commodity markets.

In 2007, Indonesia will have the highest deforestation rates in the world, according to the FAO. In 2000-2005 alone, Indonesia has lost 13% of its primary forests which means a rate of 2.8 million hectares per year. Papua New Guinea ranks third with 5% primary forest loss over the same period. The deforestation trend is moving from West to East through the Indonesian archipelago. Between 2000 and 2005, the average deforestation rates in Kalimantan reached 3.9%, implying a forest cover loss of well over 1 million ha per year. In the same period Sumatra has lost more than 10% of its forest cover (more than 2 million ha).

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This map is produced by *Nature and Poverty* (2003-2006), a programme of IUCN National Committee of the Netherlands, Friends of the Earth NL (Milieudefensie) and WWF Netherlands. Web: www.natureandpoverty.org. You can order a copy of this map at: IUCN National Committee of the Netherlands, Plantage Middenlaan 2K, 1018 DD Amsterdam The Netherlands. Web: www.iucn.nl. Tel: +31-20-6261732

natureandpoverty*

Sustainable Community Forest Management in PNG: The Tugir Clan



Clockwise: Forest boundary marking, community workers, ecotimber ready for transport, community Forest Management training

The Tugir clan lives in the Sumkilbar district, a forested hilly region at approx. 95 kilometres from Madang city (see map). Clan leader Robert Mate describes his clan of 65 people as "a clan that has very close ties with the forest". For generations, the Tugir clan has attributed the clan's survival to their dependency on their forest. Up to this day, the Tugir clan collects nuts, fruits, medicine, fuel wood and building materials in the forest. Furthermore, the forest and streams still provide the clan with hunting grounds, fishing grounds, fertile soils for agriculture and fresh water. The Tugir clan joined the Madang Forest Owners Association in 1998.

The Madang Forest Resource Owners Association (MFRQA) aims to support its members to develop and manage their customary owned forest resources according to sustainable forest management practice. Currently, about 170 clans are members of MFRQA. The association is supported by FPCC; a national non-governmental organization that advocates against illegal and destructive logging while promoting local and community based forestry to improve local livelihoods.

After the Tugir clan joined MFRQA, the first activity was to survey the forest area. A forest inventory was made and forest boundaries were marked and mapped. Clan representatives received training on Sound Forest Management Practices, Small Sawmilling, Land Tenure System in PNG and Good Governance. A Forest Management Plan (FMP) was created. Through the inventories and the FMP, the clan became aware of the total area of their land, the total estimated volume of their timber resources, and the estimated monetary value of their forest resources.

"In the past the forest resource owners never knew the monetary value of their resources. That might be the reason why they sold their forest resources to foreign logging companies and developers. But now we know the actual value of our forest resources in monetary terms we cannot sell or give our forest away" says Tugir clan leader, Robert Mate. "We also learn how the forest contributes to the survival of integral bio-diversity after the environmental awareness programs conducted by FPCC. Having a fair understanding of the importance of our forest resources and its diversified role to support life on earth, we have now pledged to stand together as indigenous forest resource owners in the association and protect our heritage for future use by our great grand children".

Now, Robert and his clansmen manage their forest sustainably, and revenues are going directly to the clan. The high-grade timber is sold to overseas markets and low-grade timber is used for construction and local markets. Ecotimber is estimated to provide up to ten times more profit to local communities than large-scale logging operations. This type of forest management provides local people with independence, an income, and employment, while protecting their forest resources for the future.

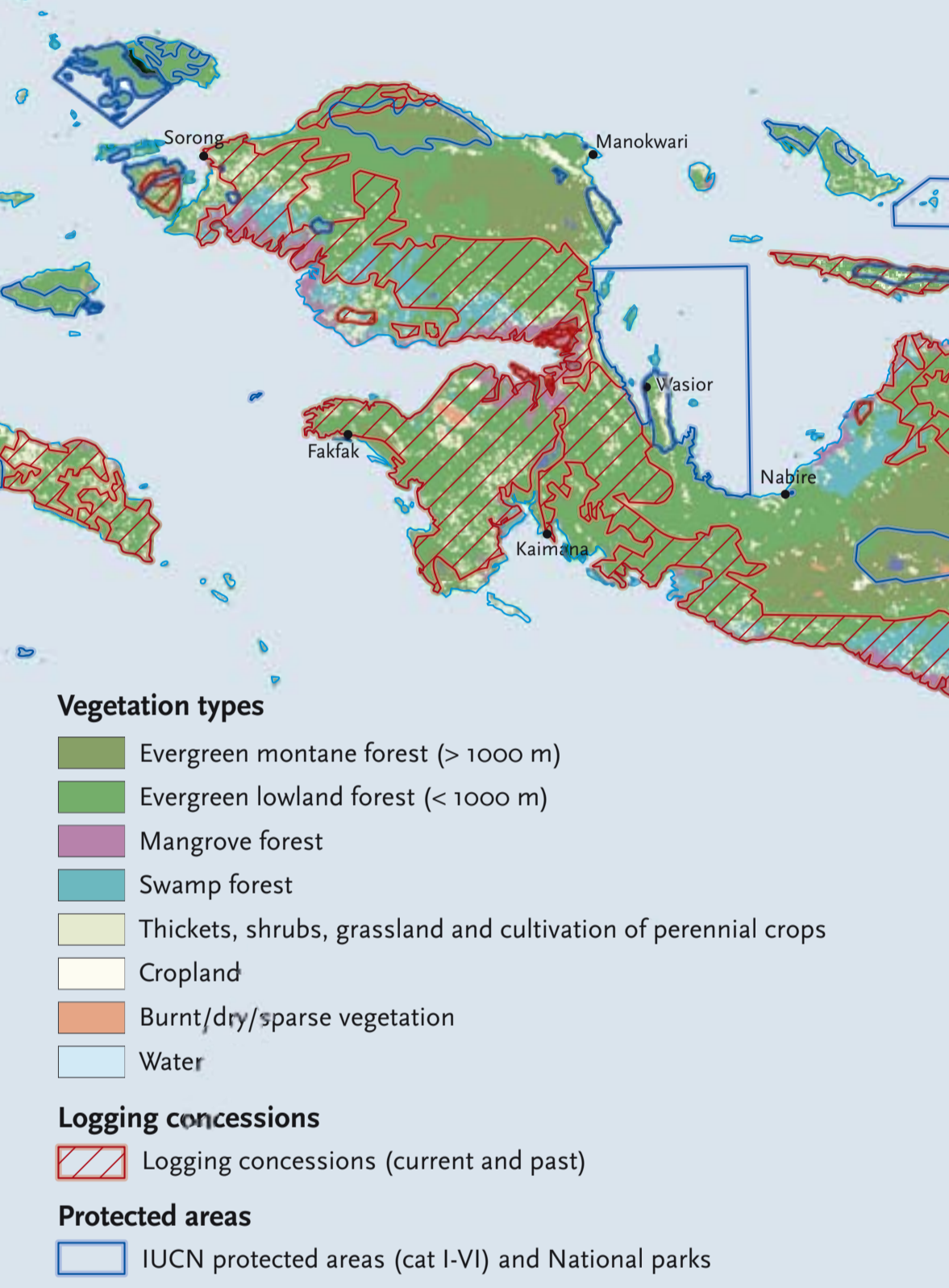
New Guinea in Key Figures

New Guinea is the world's largest tropical island and is divided into Indonesia's West Papua in the west and the independent country of Papua New Guinea (PNG) in the east. The island of New Guinea contains one of the world's last remaining large areas of pristine tropical forest and it is home to at least 5% of the world's biodiversity, while covering less than 1% of the earth's land surface. It is immensely rich, both in terms of biodiversity and in terms of cultural diversity. People have been living in these forests in traditional and sustainable ways for thousands of years.

New Guinea is home to over 8 million people. The population is made up of over 1000 tribal groups, with nearly as many languages. The majority of the population in West Papua and Papua New Guinea lives in rural areas. More than 75% of the island's people follow a largely subsistence lifestyle, highly dependent on natural resources for their food security and to meet basic needs. Approximately 40% of the population lives below the poverty line. Poverty in some parts of the islands matches that of the poorest countries in Africa, with average rural incomes of only US\$25 per year.

	West Papua	Papua New Guinea
Surface Population	42.2 million ha	46.3 million ha
Rural population	2.35 million	5.8 million
Percentage of population below poverty line	72.5%	86.7%
	41.8%	37.5%

Table 1. UNDP statistics for West Papua (2004) and PNG (2006). Source: UNDP



New Guinea Conflicts over forests and customary rights

Central to the conflicts over forest resources in New Guinea, is the fact that the customary law of indigenous communities is often not respected or misinterpreted in large-scale commercial developments. In addition, the revenues of these large-scale developments are not shared with the local communities. On the contrary, in some cases local communities were left deprived of customary owned lands and were forced to move to other areas or to the city. Non-sustainable exploitation of forest resources results in poverty and environmental degradation and reduces future economic opportunities.

In Papua New Guinea, 97% of the land is owned and governed by clan owners under customary law. Despite the formal land tenure system in PNG, most large-scale logging operations are unlawful as they are in breach of several basic legal requirements. Many logging operations do not have the informed consent of the local resource owners, they have not been initiated and allocated according to the requirements of the Forestry Act, or they are being operated in defiance of environmental laws and regulations and are not sustainable, which is a specific requirement of both the PNG Constitution and the Forestry Act.

Many of these land tenure problems also occur in West Papua. In 2001, the Indonesian government passed a law granting Special Autonomy to West Papua. This involved the establishment of a Papuan Peoples Council and the recognition of traditional tribal or customary land tenure systems. The Special Autonomy Law also gives West Papua the right to 70% of the oil and gas royalties and 80% of mining, forestry and fisheries revenues. Yet, the implementation of the autonomy regulations is confusing and is also conflicting with other laws.

Illegal logging and log smuggling in West Papua must be viewed against the background of a long-term political dispute over the sovereignty of this territory. Military involvement in the exploitation of natural resources makes the case of West Papua even more complex.

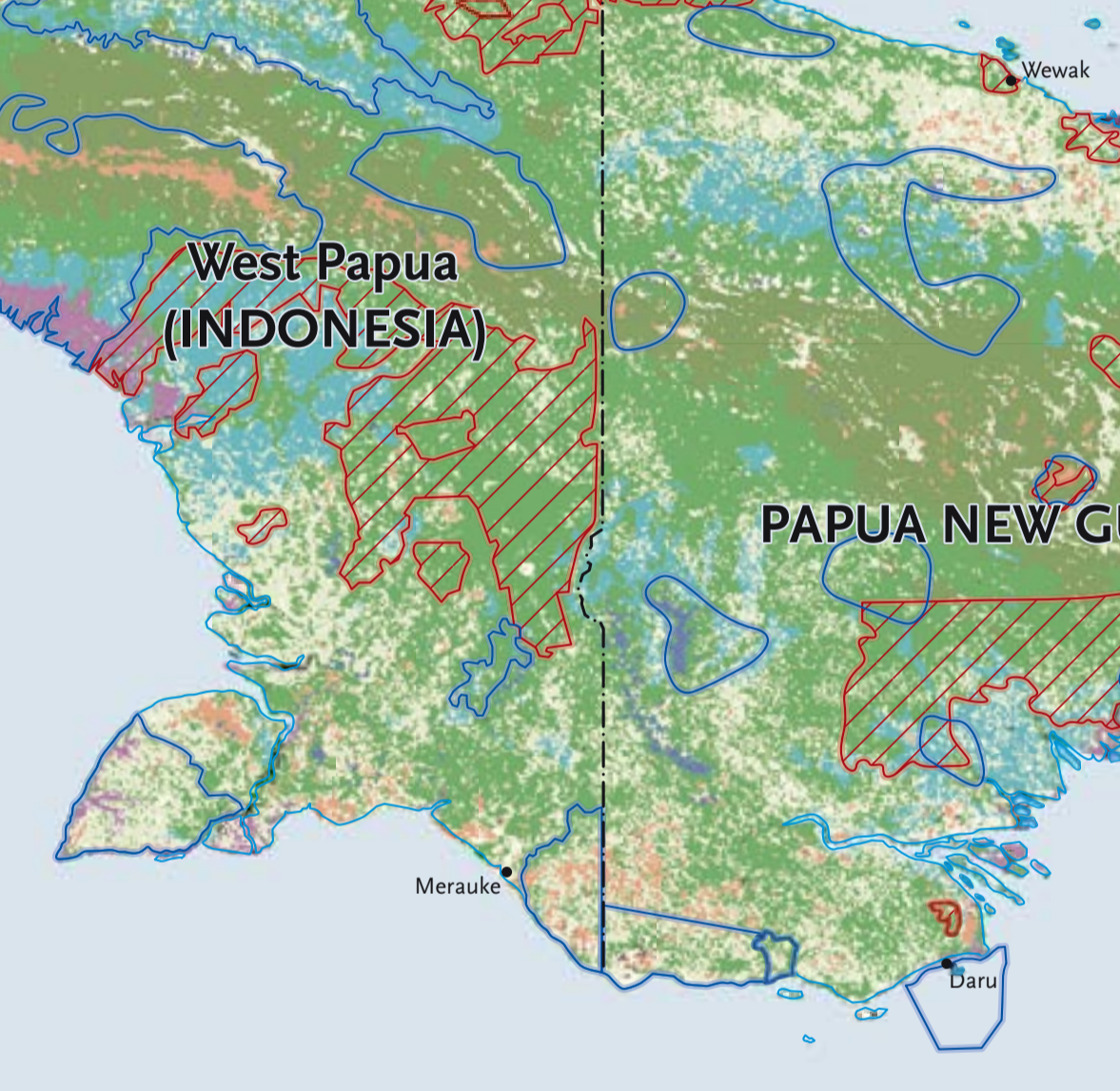
New Guinea and its Biodiversity



Clockwise: Junonia orithya (mole), Puncak Jaya, Kingfisher, meandering river in Mamberamo area

New Guinea clearly stands out as a global hotspot of biodiversity. Habitats in New Guinea vary from tropical heath and grassland to cloud forest, savannah, mangrove and swamp forest. Glacial waters flow from almost 5000-meter-high mountains into the tropical rainforest and mangroves. The waters around New Guinea hold a spectacular variety of fishes, invertebrates and other marine life. The freshwater and estuarine varieties are just as fascinating. There are fresh water sharks and colourful rainbow fishes with many unique species. Approximately 65% of the island is covered with intact and closed rainforest. It is the last remaining tract of rainforest of this size in the Asia Pacific region and the third largest in the world, after the Amazon and the Congo.

New Guinea contains more than 5% of the world's species, of which two thirds are unique to the island, on less than 1% of the world's land surface. The island is home to an array of endemic animal species, such as the endangered tree kangaroo (IUCN Red List), 40 different species of birds of paradise and the world's largest butterfly.



New Guinea and the Dutch connection

The links of New Guinea's natural resource exploitation with the Dutch and EU economy and government policies are multiple, although not always direct. Some examples on how these economies are linked to the natural resource base and the forests on the island of New Guinea:

Mining and the stock market
Pt Freeport Indonesia, a subsidiary of the US based Freeport McMoran, operates one of the world's largest gold and copper mines in the central highlands of West Papua. Several Dutch banking groups and pension funds own or manage a share in the controversial Freeport-McMoran group.

The palm oil trade
The European Union imports 13% of the global palm oil production (and 90% of this palm oil is produced in Malaysia and Indonesia). The Netherlands accounts for almost 5% of the global palm oil demand. The current massive expansion of oil palm plantations - fuelled amongst others by the EU directives for bio-fuels - is considered one of the main threats to the forests of West Papua and PNG.

The timber trade and related policies
A large percentage of the timber in New Guinea is logged illegally and trade flows are difficult to monitor. China and Malaysia are important importers of (illegally sourced) timber from both PNG and Indonesia. From China and Malaysia, the timber finds its way to the Netherlands and the rest of Europe. The Netherlands has recently upgraded its procurement policy for timber. Timber will be one of the focus areas of the EU Communication on Green Public Procurement policies. By means of Voluntary Partnership Agreements (VPAs), the EU intends to put its Forest Law Enforcement Governance and Trade (FLEGT) licensing system into effect.

New Guinea and its Cultural Diversity

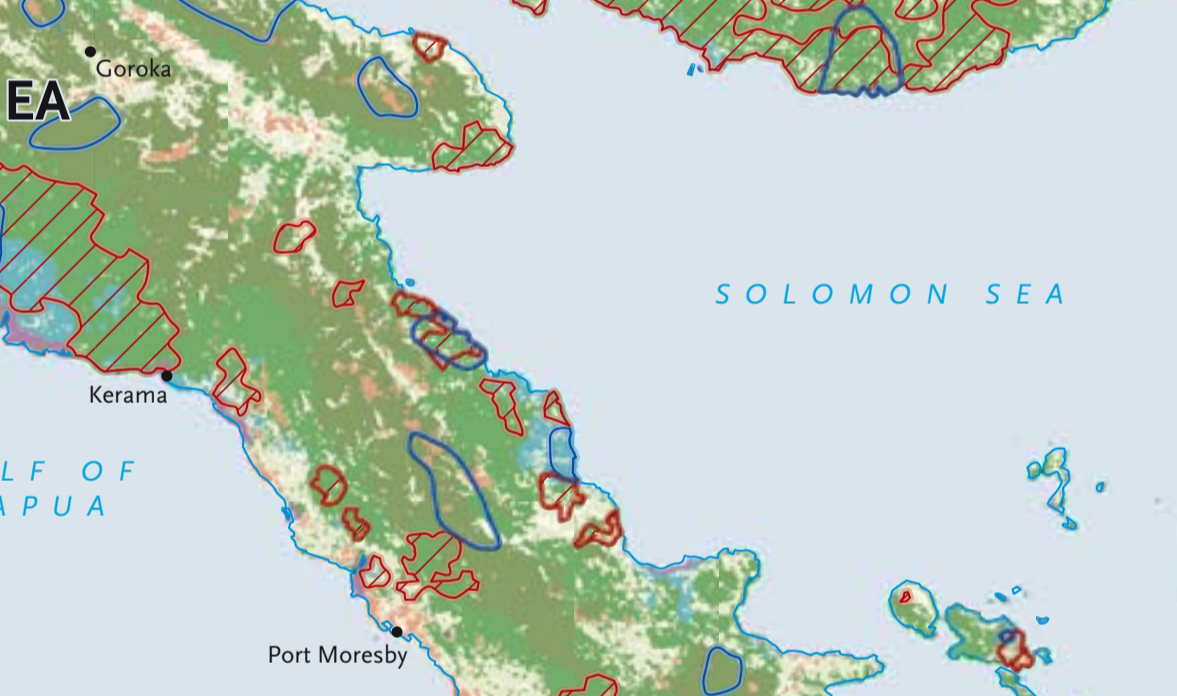


Clockwise: Man collecting firewood, sago processing, hunting with bow and arrow, boy in front of a traditional house

The variety of languages spoken is often used as a measure for cultural diversity. New Guinea is home to almost 1.100 distinct languages (817 in PNG, 250 in West Papua), more than one third of the world's indigenous languages. Cultural, linguistic and biological diversity are not separate aspects of the diversity of life, they are closely related and support each other, which is recognized by the Convention of Biological Diversity.

It is believed that the island of New Guinea was first inhabited by Asian settlers some 50.000 years ago. Migration occurred in waves, and the land they encountered had a remarkable effect on the cultural development. The ruggedness of New Guinea's terrain, with its high mountain ranges, dense rainforest and rivers, caused different population groups to develop in virtual isolation. Each group developed its own language and its own tribal culture. Traditional livelihoods are adapted to New Guinea's many ecosystems. Traditional staples vary with the ecosystem the people are living in: cultivation of taro and sweet potato is the main source of subsistence in the highlands, while gathering of the semi-cultivated sago is important for livelihoods in the moist lowland forest. Marine and freshwater resources make up an important part of the diet of the indigenous communities in the coastal zones.

It is estimated that an average of 40 percent of cash and 30 percent of subsistence needs are met by the forests. Levels of dependency are greater for settlements nearer to forest areas and further from towns. They also vary with a person's age and gender. In particular, forest dependency is high for young, unmarried men not yet entitled to their own agricultural land. Cash is of growing importance, and timber constitutes one of the only reliable sources of cash in remote areas. Women are generally somewhat less dependent on forests (around 30 percent), except in the case of mangrove forests. Generally, women use forests for subsistence through the collection of firewood, fruit, and wild vegetables.



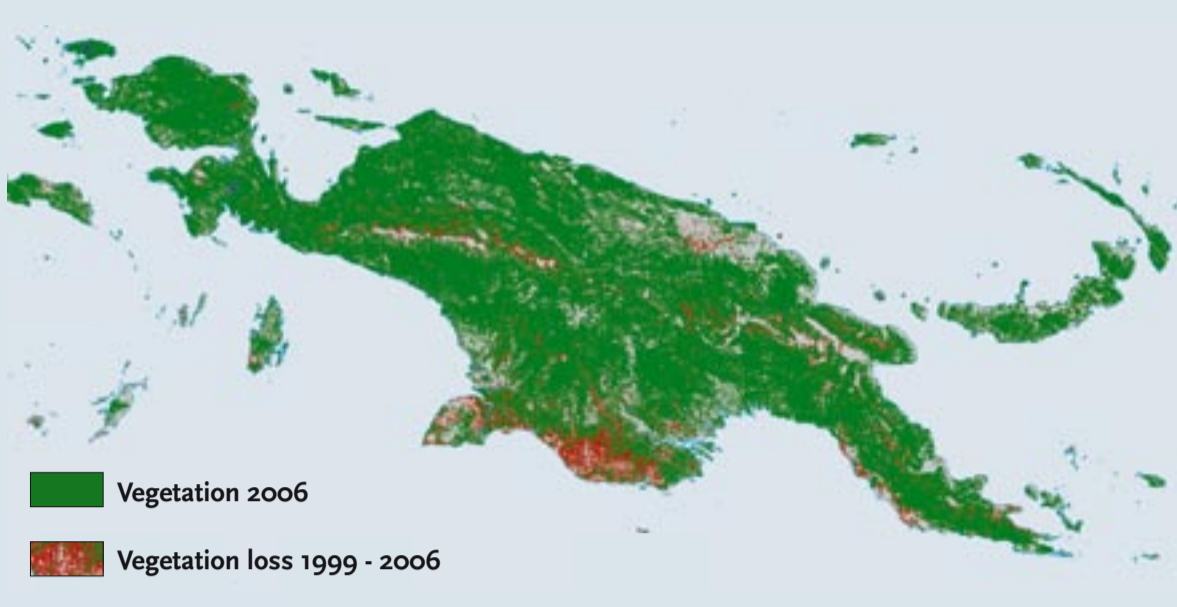
New Guinea Steps forward for the future of its forests and peoples

The threats to New Guinea's natural resources and the local livelihoods dependent on them are multiple. Solutions are to be sought at various levels of intervention: influencing national and international policies and policy dialogue, involvement with the business sector, but also empowerment of local communities. Instead of a top-down macro-economic approach, a policy of bottom-up participatory processes can be implemented through:

- Raising awareness of and commitment to customary land tenure and governance among communities, people's organizations, NGOs, and other stakeholders.
- Supporting local NGOs that provide information, tools and training to local communities.
- Supporting local organizations in setting up indigenous landowner groups to defend their traditional land rights.
- Supporting the provincial government of West Papua in implementing Special Autonomy and improving the rights and welfare of the Papuan people.
- Promoting the right of indigenous peoples to use the natural forest resources sustainably.
- Supporting communities and local NGOs in developing alternative, ecologically sustainable, and socially just sources of income.
- Supporting local and decentralized authorities in regional land use planning.
- Creating a platform for dialogue between the local stakeholders (governments of PNG and West Papua, NGOs and indigenous communities) and international bodies (i.e. IUCN, UNDP, UNEP, ADB, WB....).

New Guinea and the threats to its forests

The largest threats to New Guinea's forests are large-scale industrial operations such as logging (both legal and illegal) and plantation development for oil palm, paper & pulp and tropical timber. In terms of affected area, the contribution of mining and infrastructure development is relatively small. Illegal logging and plantation development are closely intertwined. The current productive oil palm area in Indonesia is approximately 6 million hectares, but about 3 times that area of forest (18 million hectares) has been cleared, supposedly for the expansion of oil palm plantations, but in reality for harvesting the valuable timber, with no intention of plantation development. Plantation development and logging are advancing fast: 11 million hectares of logging concessions have been granted in West Papua alone (UNEP).



SPOT Vegetation image: loss of vegetation in the period 1999-2006 (Courtesy of Sarvison)

	West Papua	Papua New Guinea
Forest coverage	31.8 million ha (77%)	29.4 million ha (63.5%)
Protection forest	10.6 million ha	1.7 million ha
Forest area under concession		
Total	11.6 million ha	5.6 million ha
active	4.9 million ha	4.86 million ha*
stagnant	5.4 million ha	-
non-operational	2.3 million ha	-

*concessions with management plans.

Table 2 Forest statistics. Compiled from sources: CIFOR/FWI, Indonesian Ministry of Forestry, UNEP-WCMC (2004), ITTO (2005), FAO (2005)

Illegal and unsustainable logging
The main threat to New Guinea's forests is illegal and unsustainable logging. According to estimates of the Indonesian Ministry of Forestry, as much as 80 percent of Indonesia's timber production is unlawful, amounting to some 40 million cubic metres each year. The volume of illegal timber smuggled out of West Papua is estimated at 7 million m³ per year (Telapak). In comparison: Indonesia's Forestry Department has set the annual allowable cut for the nations forests at 6.9 million cubic metres in 2003.

In Papua New Guinea, the official reported timber export amounts to 2.3 million m³ per year (ITTO). Virtually all timber harvested from natural forest areas has official sanction in the form of a permit or licence issued by the relevant authority. However, external reviews initiated by the government between 2000 and 2005 show that almost all logging activities in Papua New Guinea are violating the terms of the logging licence and should therefore be regarded as illegal (Forest Trends). The current commercial forest management is ecologically and economically unsustainable. The logging industry in Papua New Guinea is dominated by Malaysian-owned companies and their primary markets for raw logs are in China, Japan and Korea. Part of this wood finds its way to European markets.

Forest conversion
Forest conversion for oil palm plantations is an important moving force behind deforestation in Malaysia, Indonesia and Papua New Guinea. The cheap palm oil is becoming increasingly popular. Moreover, it is currently considered one of the most productive sources of bio-diesel. This market is stimulated by the EU Biofuels Directive of 2003, which aims to reduce greenhouse gas emissions and dependence on fossil fuels by substituting them with biofuels. In West Papua, an area of almost 55,000 ha was cleared for palm oil in 2005. The oil palm area in Papua New Guinea is approximately 111.000 ha, nearly 50% of which is in the hands of smallholders who are obliged to sell the produce to nucleus plantations. Although the oil palm area in New Guinea is still modest compared to the 6 million hectares of oil palm plantations in Indonesia, the expansion of oil palm plantations is expected to increase rapidly within the next decade. In West Papua, about 4 million hectares have been allocated for conversion into plantations. Roughly 3 million is to be turned into bio-fuel (oil palm) plantations; the rest is claimed for industrial timber plantations. Moreover, these large-scale developments are focused mainly in the southern wetlands and tropical lowland rainforest. Forest clearing and peatland draining contributes significantly to CO₂ emissions and has negative impacts on water resources.

	West Papua	Papua New Guinea
Timber plantations (ha)	218.218	92.000
Crop plantation (ha) of which palm oil	85.332	670.000
	55.630	110.000

Table 3 Plantation figures in New Guinea 2006. Compiled from: CIFOR/FWI, Indonesian Ministry of Agriculture, PNG Oil Palm research association, WRI

Map Sources
Vegetation cover: Stibig, H.-J., Achard, F., Fritz, S., 2004. A new forest cover map of continental Southeast Asia derived from SPOT-VEGETATION satellite imagery. Applied Vegetation Science 7: 153-162
Forest concessions Papua: Based on "Logging concessions" GOI/FAO (1996); updated with "Peta persebaran areal HPH provinsi Papua" - Indonesian Ministry of Forestry (2003)
Forest concessions PNG compiled from: CELCOR (2002) and the PNG Eco-Forestry Forum (2002)
IUCN protected areas and National Parks: World Database on Protected Areas - UNEP/WCMC

Sources: WWF, IUCN Red List, UNDP, UNEP, WRI, FAO, CIFOR, ITTO, Forest Watch Indonesia (FWI), Global Forest Watch (GFW), Amnesty International, International Crisis Group, Forest Trends, Joint Research Center, Indonesian Ministry of Forestry

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