

Promoting Environmental Security and Poverty Alleviation in the Peat Swamps of Central Kalimantan

IES EnviroSecurity Assessments

A major proportion of the world's ecosystems and the services they perform for society and nature is being degraded or used unsustainably. This process affects human wellbeing in several ways. The growing scarcity of natural resources creates a growing risk for human and political conflicts and hinders sustainable development and the poverty alleviation that depends on it. Situations involving resource abundance can also be related to serious environmental degradation, increased community health risks, crime and corruption, threats to human rights and violent conflicts – in short, to a decrease of security.

The overall objective of IES EnviroSecurity Assessments is to secure the natural resource livelihood basis on the local, regional and international level. IES pursues this objective along the following mutually related lines: (1) the conservation of ecosystems and their related services, (2) the implementation of the international legal order, (3) the provision of economic incentives for maintenance of ecosystem services, and (4) empowerment of relevant actors and dissemination of results.



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The Institute for Environmental Security (IES) is an international non-profit non-governmental organisation established in 2002 in The Hague, The Netherlands with liaison offices in Brussels, London and Washington, D.C.

The Institute's mission is: "To advance global environmental security by promoting the maintenance of the regenerative capacity of life-supporting eco-systems."

Our multidisciplinary work programme - Horizon 21 - integrates the fields of science, diplomacy, law, finance and education and is designed to provide policy-makers with a methodology to tackle environmental security risks in time, in order to safeguard essential conditions for sustainable development.

Key objectives of the Horizon 21 programme are:

- **SCIENCE:** Create enhanced decision tools for foreign policy makers, donors and their target groups on regional, national and local levels;
- **DIPLOMACY:** Promote effective linkages between environment, security and sustainable development policies;
- **LAW:** Contribute to the development of a more effective system of international law and governance;
- **FINANCE:** Introduce new and innovative financial mechanisms for the maintenance of the globe's life supporting ecosystems;
- **EDUCATION:** Build the environmental knowledge capital of people and organisations.

Our mission and programme should be seen in the context of promoting international sustainable development goals and as a contribution toward long-term poverty alleviation.



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Recommendations from the Kalimantan, Indonesia Case Study

A. ON MONITORING AND MAPPING

1. As a component of ensuring environmental security, monitoring is essential. Both the monitoring of biophysical and man made aspects of the region as well as monitoring of the administration and effectiveness of projects is important. Regarding the former, we recommend the implementation of a permanent monitoring system aimed at detecting land use and land cover changes. The existing radar-based monitoring system for the Mawas area should be extended to the Sebangau area and to the other peat swamp and peat forest areas of Kalimantan in order to be used to detect illegal logging, illegal canals and roads; illegal deforestation for plantations; fires; and, to help enforce existing legislation and regulation. Results can be used to prevent further peat swamp forest destruction or to monitor parameters that need to be regulated as part of contractual agreements. These contractual agreements can be, for instance, between local forest owners and outside buyers of forest conservation or restoration based carbon credits; or, between local forest owners and outside parties interested in the maintenance of forest-based biodiversity. A crucial part of monitoring is being able to compare new findings with the past or with other types of data, thus a compilation of baseline data is important. Other data types can include cadastral boundaries, land use zoning plans, and maps of land suitability assessment.
2. The local communities, authorities and executing agencies should be fully involved in operating the system and the judicial follow-up of the data received and interpreted. Adequate training courses should be developed and conducted.

8. The ASEAN Agreement on Transboundary Haze Pollution of 2002 has not yet been ratified by Indonesia. It is urgent to do so.
9. A thorough analysis should be made of the de facto situation with respect to the local rights of access to natural resources in the case-study area in the face of outside threats.
10. Environmental Impact Assessments should be used not only as technical reports, but also as a process to promote participation and good governance.

C. ON ECONOMICS AND FINANCE

11. Payments for ecosystem services should provide alternatives for ecologically detrimental activities such as illegal logging and the conversion of High Conservation Value forests into plantations. The proposed contract between Mawas and an outside energy industry to pay for a long-term carbon credit scheme, can be a model for those areas with still existing forests.
12. Since under the Kyoto Protocol's Clean Development Mechanism (CDM) in the field of forest management it is only possible to sell credits by re- or afforestation, those situations where this is possible should be inventoried and submitted to the (difficult) CDM procedure, with the help of outside technical assistance.
13. Now that "avoided deforestation" has been accepted as eligible for compensation under the Climate Change Convention, Indonesia should promote the operationalisation of a compensation mechanism, as soon as possible.
14. Commercial alternatives in the field of agriculture, certified timber and palm oil production and eco-tourism should be encouraged with the assistance of international NGOs working in these fields. (A promising initiative is the Roundtable on Sustainable Palm Oil).
15. Long-term financial security is essential for the management of ecosystems.

3. Since the system is of great importance also for other parts of Indonesia (Sumatra), it should be embraced by the relevant ministries and national authorities and used for the obligatory reporting by Indonesia as Party to the Convention on Biological Diversity (CBD) to the Conference of the Parties.

4. The system should also be used in the preparation of meetings of the Parties to the ASEAN Haze Agreement, both to assess the performance of the Parties in preventing haze pollution in the region and to prepare effective programmes for the future.

5. Maps updated by the monitoring system and applying GIS - should be made showing the ecological state of affairs, the threats and the (potential) conflicts. A very important purpose of these maps would be to demonstrate where certain activities can take place and where not. This is especially relevant for the concession policy in the field of logging and plantations.

B. ON THE LEGAL ASPECTS

6. As Party to the Convention on Biological Diversity, Indonesia - one of the "mega-biodiversity" countries in the world - is required to adopt and apply the ecosystem approach. Its National Biodiversity and Strategy and Action Plan should be made legally binding and should be implemented in practice.
7. Indonesia is Party to the Climate Convention and the Kyoto Protocol. Although it has no reduction obligations under the Protocol, it is bound by the objectives of the Convention and should refrain from activities aggravating the global climate problematique. From this legal perspective it should be encouraged to adopt effective policies to combat illegal logging and fires - during the burning season the fires make Indonesia one of the major emitters of greenhouse gases in the world.

It is recommended to use a multi-donor trust fund construction as now proposed for the protected areas in Colombia by the GEF/World Bank also for the peat swamp forests on Kalimantan and use this as a model for the other parts of Indonesia. A key component of this construction is an endowment, the proceeds of which are to be used for recurrent costs. The filling of such an endowment could typically come from a debt-for-nature swap. The existing options within the Indonesian context in this respect should be considered.

D. ON EMPOWERMENT AND TRAINING

16. As mentioned above, training in using modern monitoring techniques is important to protect the local communities and the ecology against the threats of logging and fires. This training should especially assist the local police and judiciary in enforcing the law. Also, training in preventing and combating fires and in economic alternatives is essential.
17. The Indonesian military and diplomacy have to be made aware that the logging and fires on Kalimantan and increasingly now also on Sumatra pose a serious environmental security threat to their neighbours and to the rest of the world and constitute a violation of binding international agreements. They should be encouraged to make a paradigm shift here and become a country that is leading on the international environmental scene and earn a large part of their foreign exchange by selling carbon credits, making their unique biodiversity available to tourists and the pharmaceutical industry, and by exporting certified commodities such as timber and palm oil.



Central Kalimantan - INDONESIA

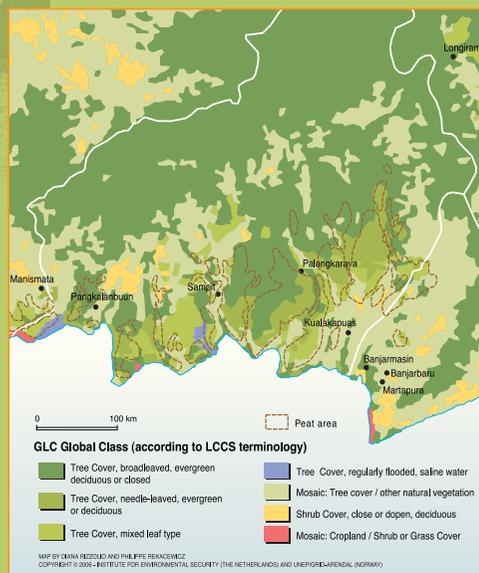
The Kalimantan peat swamp forest ecoregion, in the Indonesian part of Borneo, offers a wide variety of environmental services and goods, for instance, fresh water storage, flood prevention, livelihoods for communities and is also considered to be one of the most species rich in the world. With rampant natural resource overexploitation, such as, inappropriate land use policies; unequal rights for different groups of the population; illegal logging; peat drainage; runaway fires initiated to make way for big oil palm, plywood and pulp plantations. However, there has been an increase in environmental destruction, poverty, conflicts and violence.

Past peatland events in Kalimantan help to show that an unchanged approach is disastrous for the environment, biodiversity and humans, not only at a local or regional scale but also at a global scale. Indonesia is a Party to all major environmental agreements and can use them to its advantage. For instance, while reforestation can generate carbon credits under the Clean Development Mechanism of the Kyoto Protocol, private investors have already shown interest in the carbon sequestration potential of the existing forests. In addition, communities' participation in conserving the ecosystems will not only ensure the existence of natural resources in the future but they can also be compensated for their work in the present. The challenge now for Indonesia is to channel the available funds appropriately and transparently without duplications, to alleviate peat swamp ecosystem destruction, high levels of Green House Gas emission and local poverty. To accomplish this, Central Kalimantan needs to focus its efforts on enforcing the law, and on planning effectively while incorporating sound information and monitoring.

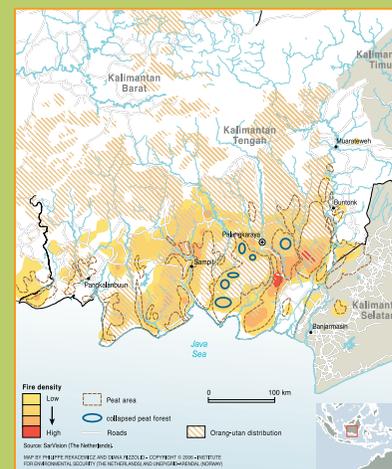
Kalimantan



BORNEO PROTECTED AREAS



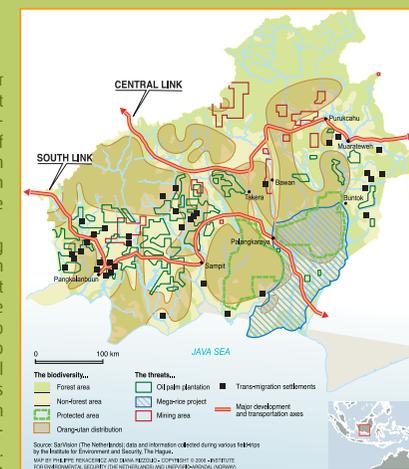
KALIMANTAN LAND COVER AND LAND USE



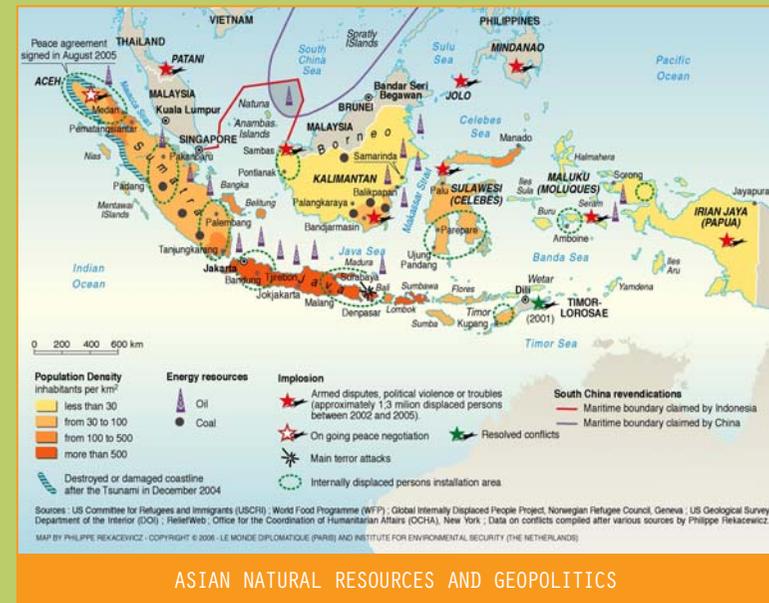
FIRES IN PEAT AREAS

Destruction of Peatlands

Destruction of peatlands with their unique biodiversity and peat depths up to 10's of meters is difficult to undo as the formation of peat is a very slow process and can take up to 10 years for only 1cm to form (Environment and Heritage Service, 2004). Fires in East Kalimantan during 1982 and 1983 burned 2.7 million ha of tropical forest, including peat swamp forest. A comprehensive study carried out from 1983 to 1989 showed that, not the El Niño droughts, but rather the wasteful and destructive logging practices utilized in the area were the main reason for the widespread destruction. (Barber & Schweithelm, 2000). Fires of 1997 and 1998 burned 1.12 million ha of peat swamp forest areas (Page et al., 2000 cited in Muhamad, 2001).



THREATS TO BIODIVERSITY



ASIAN NATURAL RESOURCES AND GEOPOLITICS

The full report, legal analysis, and related documents for this case study are available on-line. Also the 'Vision' interactive GIS interface can be used to select and view maps with various analytical indicators for different time periods in the study area. Go to: