ASEAN PEATLAND MANAGEMENT INITIATIVE

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Sustainable Management of Peatlands: Wise Use, Prevention of Fires & Rehabilitation

A Contribution to the Implementation of the
ASEAN Agreement on
Transboundary Haze Pollution and
the ASEAN Regional Haze Action Plan

Adopted by:
20th Meeting of ASOEN-Haze Technical Task Force (HTTF)
27-28 February 2003, Manila

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SUMMARY

Southeast Asia has more than 25 million ha of peatlands, comprising 60% of the global tropical peatland resource. These peatlands have significant importance for socio-economic development and support for the livelihoods of local communities. However, drainage and unsustainable management practices have made the peatlands vulnerable to fire. Peatland fires are now major problems of regional and global significance that require regional action. This has negatively impacted human health, food production and biodiversity as well as contributed to global climate change.

At the 9th ASEAN Ministerial Meeting on Haze (AMMH) on 11 June 2002, the Ministers took a serious view on the issue of fire prevention and control in peatlands. The AMMH requested the ASEAN Senior Officials on the Environment-Haze Technical Task Force*(ASOEN-HTTF) and the Sub-Regional Fire-fighting Arrangements (SRFAs) to further explore collaboration with the Global Environment Centre (GEC). The ASEAN Peatland Management Initiative (APMI) is the result of this collaborative work.

The APMI is a mechanism whereby ASEAN Member Countries through the principles of ASEAN cooperation will collectively collaborate amongst themselves or with other international institutions for mutual benefit to address the issues of peatland management on a sustainable basis to reduce transboundary haze pollution as well as climate change impact.

The goals of APMI are to promote sustainable management of peatlands through collective efforts and enhanced cooperation among ASEAN Member Countries towards achieving local support and sustaining livelihood options, regional benefits through reduced risk of fire and associated haze and contributing globally in minimizing impacts of climate change.

The objectives of the APMI are:

- To enhance understanding and build capacity on peatland management issues in the region
- To reduce the incidence of peatland fires and associated haze
- To suport national and local level implementation activities on peatland management and fire prevention
- To develop a regional strategy and cooperation mechanisms to promote sustainable peatland management

The draft APMI was discussed at two SRFA meetings and views received through a circulated questionnaire by the ASEAN Secretariat to HTTF Focal Points and selected agencies experts. The proposal was revised and adopted following deliberations at the 20th HTTF Meeting in Manila in February 2003.

Views received were that there is an urgent need for the: a) development of regional strategies for sustainable use of peatland, b) dissemination of information on fire prevention and control, c) development of action plans, d) exchange of experiences and expertise, e) implementation of awareness and education activities, f) identification of high fire risk areas, and g) conduct of specific studies on wise peatland management. It is expected that through regional cooperation and efforts under the framework of the APMI, peatlands will be better and sustainably managed; haze and associated problems will be reduced; water and biological resources will be protected and improved; local, national and regional action plans will be developed; and strategies for improved and sustainable management of peat resources will be developed. The efforts under APMI will also bring benefits to climate change effects.

The APMI is envisaged as a long-term initiative that will work through the existing ASEAN structure and will be coordinated by the ASEAN Secretariat and the HTTF. The GEC will provide technical and operational support to the APMI and assist in generating resources to support for activities.

* Since 2006, the ASOEN-HTTF has been replaced by the Committee under the Conference of the Parties to the ASEAN Agreement on Transboundary Haze Pollution

INTRODUCTION

Southeast Asia has more than 25 million ha of peatlands, comprising 60% of the global tropical peatland resource. These peatlands have significant importance for socio-economic development and support for the livelihoods of local communities. However, drainage and unsustainable management practices have made the peatlands vulnerable to fire. Peatland fires are now major problems of regional and global significance that require regional action.

The APMI will establish mechanisms whereby ASEAN Member Countries will collaborate to address the issues of peatland management on a sustainable basis to reduce the potential for fire and associated haze through:

- Cross-sector information exchange
- Provision of assistance to reduce haze and effects of transboundary haze pollution
- Adopting best management practices
- Development of specific short-term and long-term action and management plans
- Capacity building
- Policy decisions on peatland management

DEVELOPMENT OF THE APMI

The 19th HTTF and the 9th AMMH on 10 and 11 June 2002 discussed the issues of fire prevention and control in peatlands. The AMMH decided to explore the development of a regional initiative on peatland management and fire prevention, and requested the HTTF and the SRFAs to explore further collaboration with the GEC. The APMI has been discussed and developed further through consultations, questionnaires and regional meetings as described in Annex 1 *(pg.9)*.

RATIONALE

As the region shares similarities in many aspects, there is a considerable advantage in developing an initiative that promotes participation and brings the different actors together in a broader framework to widen the knowledge base and opinion, increase understanding of major issues within and between different groups, facilitate exchange of important and critical information on peatland management in the region, and initiate on-the-ground actions/projects towards sustainable peatland management and fire prevention.

WHO IS IT FOR?

This initiative is for all ASEAN Member Countries, particularly countries that have significant peatland resources or countries affected by transboundary haze pollution.

BACKGROUND

VALUES OF PEATLANDS

Peatlands in Southeast Asia have significant importance for socio-economic development and support for the livelihoods of local communities. Peatlands can support sustainable harvesting of timber and non-timber forest products providing other important goods and services such as water supply, flood control, fishery support; and have potential for tourism and recreation.

Peatlands in Southeast Asia are significant carbon stores and sinks. If disturbed by drainage and burning, the carbon is released to the atmosphere, contributing to the greenhouse effect. If maintained in their natural state, CO_2 is incorporated as organic carbon into dying biomass and stored in the peat, hence moderating greenhouse gas emissions. Forest and peatland fires during 1997 and 1998 covered the Southeast Asian region with dense smoke and caused an estimated $9 billion worth of damage.

Southeast Asian peat swamp forests play important functional roles in regulation of hydrology. Functions such as flood control, flow regulation, water supply and prevention of saline water intrusion are crucial to maintain the integrity of the surrounding ecosystem. For instance, in southern Thailand, Phu To Daeng peat swamps play an important hydrological role in regulating the quantity and quality of water in lower basin. The swamps buffer the high rainfalls of the months of November and December before eventually discharging the water into the sea.

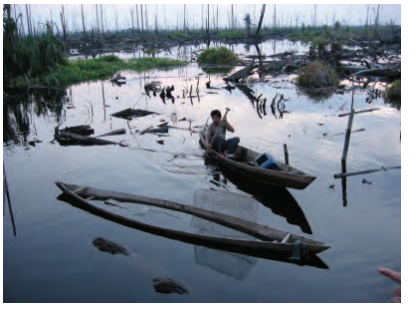
Distribution of peatland resources in Southeast Asia is described in Annex 2 *(pg.10)*.

PEATLAND ISSUES IN THE REGION

Tropical peatlands in this region have faced some damaging effect from policy and initiatives such as agriculture, fisheries, forestry, and water resources. Besides being exploited by developers for their resources, peatlands have also been mismanaged due to the lack of knowledge and understanding on the importance of this unique ecosystem. Peat swamp forests that have been logged for valuable timber, then drained for agriculture or other development, have created problems to the planning and management of crops, the surrounding environment, freshwater regimes, and local livelihoods. Thus, mismanagement of peatlands (especially hydrological management) leads to the drying up of peat soils, which become very vulnerable to fire during the dry season. Over the past 10 years, there have been incidences of peatland fires that resulted in thick smoke and haze blanketing the region.

ASEAN REGIONAL HAZE ACTION PLAN AND THE ASEAN AGREEMENT ON TRANSBOUNDARY HAZE POLLUTION

Following the severe forest and peatland fires of 1997, ASEAN Member Countries approved an ASEAN Regional Haze Action Plan to provide a framework for cooperative action to prevent and control future fires. An ASEAN Agreement on Transboundary Haze Pollution was signed by all ASEAN Member Countries in 2002 and entered into force in November 2003. The Agreement provides a formal mechanism for collaboration for prevention, monitoring and fire control activities, especially in fire prone areas such as peatlands. The APMI has been developed within the framework of these two mechanisms and is intended to help with their implementation.



NEEDS AND CONTRIBUTIONS FROM ASEAN MEMBER COUNTRIES

A "Needs and Contributions Assessment" was conducted through a questionnaire circulated by the ASEAN Secretariat to HTTF Focal Points, other agencies and experts. A total of 20 responses were received by 5 February 2003, including from six Focal Points (see Annex 5, *pg. 14* for details). Focal Points from two ASEAN Member Countries (Singapore and Lao PDR) responded positively but did not complete the questionnaires as they do not have significant peatlands.

Problems faced with regard to peatland management in the region are as follows *(in order of frequency)*

Fire	81%
Loss of Biodiversity	81%
Drainage/ water management	71%
Over logging	48%
Difficulty in reforestation	48%
Lack of inter-agency coordination	48%
Peat subsidence	38%
Conflicting interest with local people	38%
Agriculture management techniques	33%
Others	14%

Strategies or actions proposed or being undertaken by the respondents to address the problems are:

- Developing an action plan for prevention of fire and controlled burning
- Improved law enforcement
- Mapping of fire prone peatland areas
- Early warning for fires on peatland
- Arranging priority actions on controlling peatland fires
- Strengthening community and relevant stakeholders' awareness by giving information and education
- Integration of peatland conservation with environmentally-friendly income generating activities for the local community in peatland areas
- Development of networks to facilitate regional and inter-regional cooperation
- Increase gazettement of forest reserves or other protected areas in peat swamp forests

Respondents of the APMI Needs and Contribution Assessment questionnaire agreed to support its development, although some requested further information.

Contributions suggested by respondents to support APMI

Possible contributions from countries and other respondents to the APMI questionnaire include:

- Publications
- Case studies
- Arranging site visits and study tours
- Hosting training courses
- Sharing of research results
- Sharing of experiences and information
- Arranging demonstration / pilot project sites and activities
- Fire danger rating system
- Familiarise APMI at national level
- Linking the APMI with existing national or regional activities

	Suggested Activities of APMI Prioritised by Respondents	% Level
1	Develop and test strategy (ies) for sustainable use of peatlands	79 H
2	Document and disseminate experiences on peat fire prevention and control	79 H
3	Identify of sites with high fire risk	79 H
4	Develop regional strategy (ies) and action plans for sustainable management of peatlands	75 H
5	Organise awareness and education activities for the local people	73 H
6	Assist in developing proposal to raise funds for specific studies on peatland	73 H
7	Collate information on status and values of peatlands	71 H
8	Establish demonstration sites for fire prevention and control,and sustainable management of peatlands	71 H
9	Organise training courses and provide training materials	68 H
10	Collate and disseminate case studies, experiences and lessons learned in management of peatlands	63 H
11	Establish information exchange network	60 H
12	Organise regular workshops and study tours to enhance information/experience exchange between countries	56 H
13	Provide and facilitate exchange of experts to assist in solving peatland management	48 H

THE ASEAN PEATLAND MANAGEMENT INITIATIVE

GOAL

To promote sustainable management of peatlands in the ASEAN region through collective actions and enhanced cooperation to support and sustain local livelihoods, reduce risk of fire and associated regional haze and contribute to global environmental management.

OBJECTIVES

1. To enhance understanding and build capacity on peatland management issues in the region
2. To reduce the incidence of peatland fires and associated haze in the region
3. To support national and local level implementation activities on peatland management and fire prevention
4. To develop a regional strategy and cooperation mechanisms to promote sustainable peatland management

PROPOSED ACTIVITIES

To enhance understanding and build capacity on peatland management issues in the region

- Build capacity for peatland management through training, workshops and study tours, as well as development of centres of excellence
- Develop awareness materials and activities to enhance understanding of peatland values, threats and associated socio-economic impacts
- Identification and promotion of demonstration sites for best management practices
- Collate and disseminate information on the extent, status and values of peatlands, and associated biodiversity in the region
- Stimulate strategic research and development related to peatland sustainable use and fire control

To reduce the incidence of peatland fires and associated haze in the region

- Document and disseminate experience on peatland fire prevention and control and post-fire rehabilitation of peatlands
- Identify peatlands in the region with high fire fire risk and promote preventive measures
- Monitor of weather conditions and hot spots in high risk areas and issue alerts as appropriate
- Support key interventions to address peatland fire problems

To support national and local level implementation activities

- Establish pilot project(s) in each country (according to local needs) to test new sustainable management and fire prevention approaches for peatlands
- Promote the application of best management practices for peatlands
- Assist in the development of plans and projects at national and local level for the sustainable management and fire prevention in peatlands

To develop a regional strategy and cooperation mechanisms to promote sustainable peatland management

- Develop a strategy for the sustainable management of peatlands in the ASEAN region including the prevention of fires and the protection of biodiversity
- Enhance regional cooperation and exchange of expertise to address peat management issues
- Strengthen exchange of information and experience through mechanisms such as the ASEAN Haze Action Online and the SEA-Peat netowrk and Peat-Portal
- Assist in generating resources to support regional/national activities
- Support the implementation of the ASEAN Regional Haze Action Plan and the ASEAN Agreement on Transboundary Haze Pollution

OUTPUTS

- Operational mechanism for cooperation and exchange among ASEAN Member Countries to address peatland management, fire and associated haze
- An ASEAN strategy and national action plans on sustainable peatland management
- Demonstration sites for peatland rehabilitation, fire prevention, water management, and community participation
- Enhanced understanding and capacity of stakeholders related to peatland management, fire prevention and control
- An ASEAN peat fire hazard risk assessment and fire monitoring mechanism

OUTCOMES

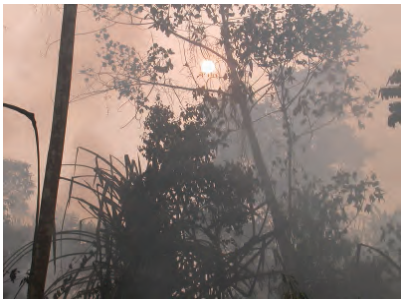
- Reduction in incidence of peatland fires and associated transboundary haze as well as improved health and productivity of affected communities
- Improved protection and sustainable use of water and biological resources in peatlands
- Enhanced socio-economic well being of local communities living in and around peatlands through better livelihood options
- Reduction in green house gas emissions from peatlands and reduced vulnerability to global climate change

MANAGEMENT AND IMPLEMENTATION ARRANGEMENTS

The management and implementation arrangements for the APMI are as follows:

- The APMI is envisaged as a long-term initiative of ASEAN to be implemented using the existing ASEAN mechanisms
- The HTTF will provide oversight and policy guidance to the APMI. The current HTTF focal points will facilitate activities at the national level. The HTTF focal points may designate other appropriate agencies to assist with specific activities at country or local levels

- The ASEAN Secretariat will support the formal coordination amongst Member Countries and facilitate the main regional activities and meetings. The GEC and other interested agencies will provide technical and operational support to the APMI and assist in generating resources to support for activities



INPUTS

The following inputs are envisaged

ASEAN Member Countries

It is envisaged that ASEAN Member Countries will support the implementation of the APMI by:

- Making available information and experiences on peatland management
- Preparation and implementation of action plans for sustainable management and fire prevention in peatlands at national and local levels
- Making available national experts to assist in regional activities
- For countries with significant peatlands, establishing at least one pilot project site to test new approaches to peatland management
- Providing technical or financial support for regional or country activities according to their ability

Partners

It is envisaged that partners will include those organisations or on-going projects that are undertaking activities related to sustainable management of peatlands in the region. They will contribute by:

- Assisting in the implementation of appropriate components of the APMI
- Exchanging experience and lessons learned from their activities
- Inviting participation of countries and institutions in the ASEAN region in their activities as appropriate

Supporters

Supporters may include donors, research and educational institutions or the media. They will assist by:

- Providing funds or technical guidance
- Promoting the initiative and providing other support

WORKPLAN

The APMI will be implemented through a series of rolling short-term work plans. The initial work plan of the APMI for the period 2003-2005 was endorsed by the 20th Meeting of the HTTF held on 27-28 February 2003 in Manila and is provided as Annex 6 *(pg.15)*. This work plan incorporates activities for which countries and partners have already approved support or indicated an interest to develop further. It is envisaged that once the APMI is promoted, other countries, partners or supporters will wish to have ongoing activities included in the framework of the APMI. The ASEAN Secretariat will update the work plan from time to time to include these additional activities in the same way as is done for the ASEAN Regional Haze Action Plan. During the initial work plan period a longer term programme of work and associated funding will be developed in conjunction with the participating countries and partners.

REPORTING

Reports on the implementation of the APMI will be prepared for HTTF every six months.

ANNEX 1
CHRONOLOGY OF THE DEVELOPMENT OF THE APMI

1997-98	Major forest and land fires in Southeast Asia associated with an El Niño induced drought. These forest fires burnt or partially degraded more than 1.5 million ha of peatlands, primarily in Indonesia, but also to a lesser extent in Malaysia, Brunei Darussalam and Thailand. In studies undertaken by the Asian Development Bank and the Indonesian National Planning Agency, fires in the area of peat soils were identified as the major contributors (about 60% of particulates) to the smoke and haze which enveloped a major part of the region.
5 - 6 July 1999	An information paper on peatland fires was presented at the 13th HTTF Meeting and the 7th AMMH by GEC.
August 2001	Funding was provided by the ASEAN Regional Centre for Biodiversity Conservation to the GEC in Malaysia for promotion of conservation of peatland and development of a Southeast Asia Peat network to link agencies working on the issue in the region.
10 June 2002	At the time of the Ministerial Forum during the World Conference and Exhibition on Land and Forest Fires Hazards in Kuala Lumpur, the Malaysian Minister of Science Technology and the Environment called for cooperation amongst ASEAN Member Countries to address the issue of fire prevention and control in peatlands.
10 - 11 June 2002	19th HTTF and the 9th AMMH discussed the need for action for fire prevention and control in peatlands. An update was given to the HTTF by the GEC on peatland management and fires in the region and development of the SE Asian Peatland Network. The AMMH requested the HTTF and the SRFAs to further explore collaboration with the GEC.
July 2002	Initial draft of proposal for the APMI was prepared by the AEAN Secretariat, HTTF Chair and GEC. It was circulated to ASEAN Member Countries for comment.
12-13 August 2002	The 11th Joint SRFAs Meeting in Singapore reviewed the concept proposal and supported further development and the assessment of country needs through a questionnaire survey.
December 2002	Circulation of the ASEAN Peatland Management Initiative – Needs and Contribution Assessment questionnaire by ASEAN Secretariat to HTTF Focal Points. Sending out of questionnaires to all other interested individual and institutions through the SEA-Peat Network on the internet.
15-16 January 2003	The 12th Joint SRFAs Meeting in Brunei Darussalam reviewed the progress report on the development of the APMI and recommended further consultations with the countries and preparation of a revised proposal for discussion at the HTTF meeting.
February 2003	Preparation of a revised version of the APMI based on the feedback and questionnaires received from the majority of ASEAN Member Countries as well as other consultations with Member Countries.

ANNEX 2
DISTRIBUTION OF PEATLAND RESOURCES IN SOUTHEAST ASIA

In 1992, the extent of peatland resources of Southeast Asia was estimated by Immirzi and Maltby (1992) to be around 35-40 million ha. However, increased development, land conversion and degradation caused by forest fires have reduced peatland resources significantly over the past few years. Remaining natural peatlands in Southeast Asia is estimated to be around 25-30 million ha. Most peatlands occupy low altitude, sub-coastal areas extending inland for distances up to 300 km. The depth of peat varies from 0.5 to more than 15 meters.

Indonesia	In 1987, it was estimated that the remaining total peatland areas in Indonesia amount to about 17 million ha, down from the original peatland areas of about 20 million ha (Silvius *et al*, 1987). It is estimated that up to 3 million ha of peatlands have been converted or destroyed between 1987 to 2000 An increasing area of peatland is being used for the cultivation of perennial/ estate crops such as oil palm. The major peatland areas in Indonesia are: a) *Sumatra:* Approximately 4.6 million ha of remaining peatlands occur mainly along the east coast of North Sumatra down to South Sumatra *b)* *Kalimantan:* Peatlands occupy 3.5 million ha mainly on the west coast of West Kalimantan, in the central part of Central Kalimantan and some parts of East Kalimantan *c)* *Irian Jaya:* Peatlands occur mostly on the southern coast and some fringes of the south-western coast with a total area estimated at 8.7 million ha
Malaysia	Total peatland areas in Malaysia are estimated to be between 2- 2.5 million ha (Mohd-Ali, 1989; Dent, 1986). However, substantial peat swamp forests have been cleared for agriculture and are under plantation crops such as oil palm and rubber. Estimates put total peatland area in Peninsula Malaysia at 0.9 million ha (Mohd-Ali, 1989) but pristine peatlands amount to less than 50,000ha. In Sabah and Sarawak, peat swamps are estimated to cover an area of about 1.5 million ha with major areas in state of Sarawak.
Thailand	Total peat swamp areas of Thailand is estimated to be about 64,000 ha. Most of the peat swamp forest is situated in Narathiwat Province of southeast Thailand, which has an area of 45,000 ha. The most important site is Pru Toh Daeng.
Brunei Darussalam	The main peat deposits are in the Belait peat swamp in the South and in the Tasek Merimbun Park in Central Brunei.
Philippines	The main areas of peat are in the Southern Island of Mindanao, primarily in Agusan Marsh and Liguasan Marsh.
Vietnam	The main areas of peat are located in the Mekong Delta.
Lao PDR	Some small topogenous peatlands are found in the southern lowlands of Lao PDR.

ANNEX 3
DESCRIPTION OF SELECTED SPECIALIST ORGANISATIONS INVOLVED IN WORK ON PEAT/ BIODIVERSITY/ CLIMATE CHANGE ISSUES AND ONGOING REGIONAL STUDIES/ ACTIVITIES

ORGANISATIONS	DESCRIPTION
ASEAN Secretariat	Regional, based in Indonesia The ASEAN Secretariat coordinates and provides support for regional activities on environmental issues of common concern and interest including the coordination of the implementation of the ASEAN Regional Haze Action Plan
Wetlands International – Asia Pacific	International NGO with offices and activities on peatlands in Indonesia, Malaysia and Thailand
ASEAN Specialised Meteorological Centre	Regional centre, based in Singapore Involved in monitoring and providing information on hotspots, forest fires and haze in the region
ASEAN Regional Centre for Biodiversity Conservation	Regional centre, based in the Philippines Serves as main focal point for networking and institutional linkage among ASEAN member countries and between ASEAN and EU to enhance the capacity of ASEAN in promoting biodiversity conservation
SEA-PEAT (Southeast Asia Peatland Network)	Regional network An information exchange network comprising of over 50 individuals and organisations involved in peat research and conservation in Southeast Asia coordinated by the GEC
University of Palangkaraya (Indonesia)	Academic/scientific research institution Involved in Kalimantan Tropical Peat Swamp Forest Research Project (KALTROP), in collaboration with various universities including the University of Nottingham and University of Hokkaido. KALTROP is currently the biggest integrated multi-stakeholder, collaborative research on peatlands in Indonesia. Research activities include biodiversity, management and linkage to climate change issues
Indonesian Institute of Science (Indonesia)	Scientific research institution
Universiti Sains Malaysia (Malaysia)	Academic, scientific research institution Conducts studies/research activities on biodiversity/ecological aspects of peat swamp forest mainly in the Tanjung Pondok peat swamp forest in Perak. Collaborates with other universities such as the University of Nottingham and Universiti Palangkaraya on peat related research

ORGANISATIONS	DESCRIPTION
Forest Research Institute of Malaysia	Scientific research institution Semi-government research institution on forest management, forest resources conservation and sustainable use. Undertake various studies on peat swamp forest biodiversity, sustainable use and conservation
Princess Sirindhorn Peat Swamp Forest Research Centre (Thailand)	Scientific research institution The centre is part of the Royal initiative/studies on peat swamp forest and is overseen by the Royal Forest Department. Conducts research/studies in the peat swamp forest of Pru Toh Daeng in Southern Thailand in the Narathiwat province
University Brunei Darussalam (Brunei Darussalam)	Academic, scientific research institution Conducts various studies in the Belait, Tasek Merimbun Park peat swamp forest areas in Brunei Darussalam
Centre for Remote Imaging, Sensing and Processing (CRISP), National University of Singapore	Academic, scientific research institution Involved in research activities, with the ASEAN Specialised Meteorological Centre on remote imaging and sensing of changes in land use patterns and monitoring of peatlands that are prone to outbreak of fires during dry season

ANNEX 4
LIST OF POTENTIAL PILOT PROJECT SITES IN SOUTHEAST ASIA

A preliminary list of important peatlands in Southeast Asia has been identified through informal consultation with various peatland experts in the region. These sites could be considered further as possible study or demonstration sites.

Indonesia	• Berbak National Park, Sumatra (Ramsar site) • Peatlands of the Sebangau and Ex-Mega-rice project area • Central Kalimantan • West Kalimantan peatlands
Malaysia	• Raja Musa/Sg Karang Forest Reserves, Selangor • Loagan Bunut National Park, Sarawak • Maludam Peninsula, Sarawak • Southeast Pahang peatswamp forests
Thailand	• Pru Toh Daeng National Park, Narathiwat province • Thale Noi peatlands
Brunei Darussalam	• Belait Peatlands
Singapore	• Nee Soon swamp forest
Philippines	• Agusan Marsh, Mindanao
Viet Nam	• Minh Ha peatlands

ANNEX 5
SUMMARY OF RESPONSE OF THE APMI QUESTIONNAIRE

COUNTRY	FOCAL POINT	AGENCY/EXPERT	TOTAL
Brunei Darussalam	1	1	2
Cambodia	-	-	-
Indonesia	1	5	6
Lao PDR	1	-	1
Malaysia	1	5	6
Myanmar	1	-	1
Philippines	-	-	-
Singapore	1	-	1
Thailand	-	2	2
Viet Nam	-	1	1
International	-	4	4
TOTAL	6	18	24

Abbreviations

Partners
ASOEN-HTTF – ASEAN Senior Officials on the Environment-Haze Technical Task Force
BPPT – Agency for the Assessment and Application of Technology, Indonesia
DoNP – Department of National Parks, Thailand
FD – Forest Department, Peninsular Malaysia
FRIM – Forest Research Institute of Malaysia
GEC – Global Environment Centre
GFMC – Global Fire Monitoring Centre
MoF – Ministry of Forestry, Indonesia
NREB – Natural Resources and Environment Board, Sarawak
OENP – Office of Environment and Natural Resource Policy and Planning, Thailand
RFD – Royal Forest Department, Thailand
WI – Wetlands International

Funding sources
ARCBC - ASEAN Regional Centre for Biodiversity Conservation (Existing Grant to GEC)
CARE – CARE-Vietnam (existing project)
CIDA-CCCDF - CIDA – Canadian Climate Change development Fund (Existing grant to GEC/WI)
CIDA- SEAFDRS - CIDA – South East Asia Fire Danger Rating System project (ongoing)
GPI – Global Peat Initiative (New grant to GEC)
IPTRID – International Programme for Training on Irrigation and Drainage (grant to DID, Malaysia)
ITTO – International Timber Trade Organization (proposal)
IWMI – International Water Management Institute (proposal)
UNEP-GEF- UNEP-Global Environment Facility – (Approved grant to GEC/WI)

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