



ASEAN PEATLAND MANAGEMENT STRATEGY

Founding Collaborative Partner





STRATEGY AND ACTION PLAN FOR SUSTAINABLE MANAGEMENT OF PEATLANDS IN ASEAN MEMBER COUNTRIES

UNDER THE FRAMEWORK OF THE ASEAN PEATLAND MANAGEMENT INITIATIVE (APMI)

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PREFACE

The development of the Strategy and Action Plan for Sustainable Management of Peatlands in ASEAN Member Countries (or ASEAN Peatland Management Strategy (APMS) in short) has been developed by ASEAN Member Countries (AMCs) to guide actions to support management of peatlands in the region in the period of 2006-2020. The APMS has been prepared due to the pressing need recognised by both local and international communities for wise use and sustainable management of peatlands as well as the emerging threat of peatland fire and its associated haze to the economy and health of the region, and its possibility of contributing to global climate change. The APMS is being developed within the framework of the ASEAN Peatland Management Initiative (APMI) and the ASEAN Agreement on Transboundary Haze Pollution.

The APMI was first proposed at the 9th ASEAN Ministerial Meeting on Haze (AMMH) on 11 June 2002 in Kuala Lumpur, Malaysia. The APMI was adopted at the 20th Meeting of the ASEAN Senior Officials on the Environment-Haze Technical Task Force (ASOEN-HTTF) in Manila in February 2003 together with an initial work plan (2003-2005). The APMI was highlighted at the 10th AMMH in Siem Reap, Cambodia in March 2003.

The development of a regional strategy was one of the items in the initial work plan (2003-2005) of the APMI. Subsequently, each AMC was requested to provide background information and country papers and presented them to the First Regional Workshop on the APMI in October 2003 in Bogor, Indonesia. The workshop agreed on the outline of the strategy as well as the process required for the development of the strategy. ASEAN Secretariat with the assistance of the Global Environment Centre (GEC) then developed the outline into a full regional strategy, taking into account the discussions in the regional workshop, country papers, statements and recommendations from relevant workshops and conferences on peatland, and inputs and comments gathered from AMCs, APMI partners and supporters.

The first draft of the regional strategy was circulated by the ASEAN Secretariat in July 2004. AMCs were requested to conduct their respective national consultations to provide inputs to the draft strategy.

National consultations on the first draft of regional strategy were conducted during the period of July 2004 to May 2005. Some AMCs, i.e. Indonesia, Malaysia, Thailand and Viet Nam, conducted national consultative meetings, while some others provided their comments gathered through consultations with relevant agencies. The Second Regional Workshop on the APMI was held at the end of May 2005 in Kuala Lumpur, Malaysia to consolidate results of the national consultations and finalise the draft regional strategy. This current draft of the regional strategy has incorporated updates provided by AMCs, and taken into account the discussions during the second regional workshop.

The strategy primarily focuses on the following four objectives:

- Enhance Awareness and Knowledge on Peatlands
- Address Transboundary Haze Pollution and Environmental Degradation
- Promote Sustainable Management of Peatlands
- Enhance and Promote Collective Regional Cooperation on Peatland Issues

The strategy sets out operational objectives that would contribute to the delivery of one or more of the areas above, which would serve as guidance to AMCs and other implementing bodies and collaborating partners through specific action plans and timeframe for these actions. Considering the increasing need for networking, regional and international cooperation to address the issue of peatland fire and haze, conservation and sustainable management, and capacity building in peatland related research and management - this strategy can play a greater role to provide the formal cooperation among AMCs to solve peat-related problems in the region.



The AMCs will be responsible to facilitate the implementation of the strategy at national level and to help ensure that the general and the operational objectives are met. This would be done through the development of National Action Plans (NAPs) to be developed through additional national consultative meetings in AMCs.



I. INTRODUCTION OF PEATLANDS IN THE ASEAN REGION

The information given below provides background information of peatlands in the ASEAN region. They were primarily taken and compiled from papers by AMCs during the First Regional Workshop on the APMI held in Bogor, Indonesia on 16-17 October 2003, and updated papers presented during the Second Regional Workshop held in Kuala Lumpur, Malaysia on 24-26 May 2005. In addition, information was taken from the official documents of the APMI as well as other key documents.

1.1 Peatland Distribution in the ASEAN Region

The total area of peatlands in Southeast Asia is estimated to be about 25 million ha, which is 60% of the world's tropical peatlands and roughly one tenth of the entire extent of global peatland resource. The majority of the peatlands of Southeast Asia occurs in Indonesia, which has over 70% of total peatland area in Southeast Asia. Other major peatland areas are found in Malaysia, Thailand, Viet Nam, Brunei Darussalam and the Philippines. However, increased development, land conversion and degradation caused by land and forest fires have reduced peatland resources significantly over the past few years. Peatlands are usually found in low altitude, sub-coastal areas extending inland for distances up to 300 km. The depth of peat varies from 0.5 m to more than 10 m.

1.2 Extent of Peatlands

In most countries, peatlands are designated as conservation areas, production forests or agricultural lands. The proportion varies significantly between countries. The area of undisturbed/pristine peatlands in the region is very small.

Currently, most AMCs have recognised the need to use resources available from peatlands with a sustainable approach. In this respect, more emphasis is needed on conservation values for the sustainable use of peatlands. This will aid

in better management of the resources for current and future generations.

1.3 Uses and Values of Peatland in the ASEAN Region

Peatlands provide a number of uses in most of the AMCs. The common use and value of peatlands in the region is land conversion for agricultural, forestry or housing development purposes. Other uses and values include logging, extraction of non-timber forest products, water supply and storage, flood control, carbon sequestration and storage, ecotourism and biodiversity conservation.

1.4 Policies and Institutional Frameworks Relating to Peatlands

In AMCs, there are no specific laws or policies directly related to peatlands. Different aspects of peatland management are governed by a variety of different policies, laws and regulations. There may be a value of developing a synthesis of relevant legislation and policy or developing specific policy or regulations related to peatlands. In most AMCs, there are a very broad range of different Ministries and agencies with some role or responsibilities related to peatland management. In order to ensure effective management there may be a need for enhanced coordination or streamlining.

1.5 Common Issues and Concerns

The following common issues and concerns have been identified based on the country papers and discussions at the APMI workshops as well as other regional meetings.

a) *Peatland fire and transboundary haze pollution*

The most important management issue of regional importance is the transboundary haze pollution arising from peatland fires. Peat fires in the region almost always occur as a result of human intervention. Undrained peat rarely burns - so drainage of peatland for agriculture, forestry and



other purposes is the main root cause of peatland fires. The worst occurrence of fires in peat swamp in the last decade was the vast fires of 1997-98 that ravaged large areas of peatland landscape for several months during the dry season. The inferno during the 1997-98 blaze choked Southeast Asia with smoke and haze, destroying or degrading 2 million ha of peatland, threatening the natural resources and ecological functions of peatlands as well as the socio-economic structure of settlements in the region, besides endangering the health of the population.

b) Community livelihood

Local community groups use peatland and its resources to earn a livelihood e.g. collecting medicinal plants, harvesting non-hardwood products, farming, etc. These activities can cause small-scale negative impacts on peatlands such as degradation.

c) Over-exploitation of peatland and its resources

Land conversion of peatlands for the development of plantation, agriculture and urban is a large-scale issue. Consequently, some problems have occurred such as over-drainage, loss of biodiversity, fire and haze pollution which contribute in significant destruction on the environment. Illegal logging is a major problem which is seriously affecting peatlands. Peatland has also been exploited for its timber and non-timber resources.

d) Drainage

All kinds of development on peatland involve drainage on the peatland itself and/or its surrounding area altering its hydrodynamic equilibrium. It also carries the risk of over-drainage and excessive drying leading to irreversible damage and deleterious impact on the natural communities. Excessive drying will also increase the frequency of peatland fires.

e) Loss of biodiversity

Due to degradation of peatlands due to land clearance, drainage and increased frequencies of fire, there is a loss of biodiversity of the region's peatlands. Losses also take place as a result of over-harvesting of peatland species such as timber tree species of medicinal plants.

f) Carbon losses

The high level of organic carbon in peatlands makes them significant carbon stores. Peatlands of the region are thought to store up to 5% of all carbon stored on the world's land surface. The clearance, drainage and burning of peatland in the region is now leading to significant carbon emissions which are considered of global significance

g) Introduction of pests and diseases

Altered peatland ecosystems are more susceptible to invasion of non-native species and introduction of diseases

h) Lack of knowledge regarding peatland management

One principal constraint in peatland management in the region is the lack of knowledge of peatland functions and sustainable management options. Apart from a few examples, most peatland components and functions are still poorly understood and/or poorly quantified compared with other ecosystems. Available information is inadequate to assess the ecological consequence of developing tropical peatland. There is lack of understanding of the ecological complexity of this system and failure to comprehend the importance of its natural functions.

i) Current legislation and policies

Peatlands in the region are affected by inappropriate or conflicting policies. For example in several countries in the region incentives are provided to drain peatlands for agricultural purposes – even when such peatlands are of marginal agricultural value or provide more valuable ecological services in their natural state. In addition even when peatlands are protected by the law there are problems of poor law enforcement.

j) Issues of definition

One of the problems in managing the region's peatland resources arises from the lack of common definition and classification of peatlands in the region which in turn leads to problems in clearly delineating the peatlands and developing common management guidelines.



1.6 Common Needs Regarding Peatland Management

There are similarities within the ASEAN region in many aspects of peatland management such as common problems of fire, drainage, inappropriate management practices, livelihood options, sustainability, etc. The AMCs also share similarities in many aspects such as an urgency to address issues of awareness/ education/ information exchange, capacity building/ training, peatland fire prevention and control, sustainable use, peatland rehabilitation, peatland inventory, research, pilot or demonstration projects.

In order to overcome the common issues regarding peatland management, the following needs to be accomplished:

- Improve knowledge of peatland ecosystem [resolving issues of definitions, development of management and restoration options, research, ongoing monitoring, and sharing information]
 - Resolve conflicting interests between local people, industries, government (inter and intra) [involves community awareness activities]
 - Better policies and institutional frameworks
- a) *Improve scientific knowledge*
- i) Resolve the issues of definitions
 - ii) Ongoing research and monitoring
 - Demonstration sites;
 - Pilot projects
- b) *Enhance awareness and capacity building*
- i) Education
 - ii) Improve information exchange and availability
 - iii) Training, workshops
 - iv) Improve management of peatlands by local community groups – i.e. sustainable community livelihood
- c) *Improve partnerships between stakeholders*
- i) Resolve conflicts of interests between government and non-government bodies
- d) *Improve legislations and policies*

- i) Resolve exploitation of peatland and its resources
- ii) Improve law enforcements

1.7 Regional Cooperation

a) *ASEAN Vision 2020*

ASEAN cooperation on the environment has been guided by the ASEAN Vision 2020, the medium-term plans of action, and meetings of the ASEAN Ministers on Environment. ASEAN Vision 2020 specifically calls for "...a clean and green ASEAN with fully established mechanisms for sustainable development to ensure the protection of the region's environment, the sustainability of its natural resources, and the high quality of life of its peoples..."

b) *Bali Concord II*

During the 9th ASEAN Summit in October 2003, the ASEAN Leaders pledged to achieve an ASEAN Community by the year 2020 that will rest on the three pillars of "ASEAN Security Community", "ASEAN Economic Community" and "ASEAN Socio-Cultural Community" as embodied in the Declaration of ASEAN Concord II (Bali Concord II). The ASEAN Socio-Cultural Community (ASCC) was envisaged in consonance with the goal set by ASEAN Vision 2020, in which ASEAN will be bonded together in partnership as a community of caring societies. Through the ASCC, cooperation in social and rural population will be strengthened, and active involvement of all sectors of society, including women, youth and community groups, will be sought. The ASCC will also intensify cooperation in addressing problems associated with population growth, education, unemployment, prevention of infectious diseases such as HIV/AIDS and SARS, environmental degradation and transboundary pollution.

c) *ASOEN-HTTF & Sub regional Fire fighting Arrangements for Sumatra and Borneo*

ASOEN-HTTF is a subsidiary body of the ASEAN Senior Officials on the Environment (ASOEN). It was established in 1995. The ASOEN-HTTF is chaired by Indonesia and comprises senior officials from the ten AMCs.

Realising the need to focus on fire management efforts in specific areas, in



April 1998 the ASOEN-HTTF established two working groups for the sub-regions of Sumatra and Borneo, namely the Working Group on Sub regional Fire fighting Arrangement for Sumatra (SRFA-Sumatra) and the Working Group on Sub regional Fire fighting Arrangement for Borneo (SRFA-Borneo). Subsequently, the ASOEN-HTTF established two additional working groups focusing on legal and law enforcement (the SRFA Legal Group on Law and Enforcement), and climate and meteorological conditions (the Sub regional Climate Review Meeting). An ad hoc group, namely Simulation Organising Committee (SOC) for SRFA Fire and Haze Disaster Simulation Exercise was established in August 2002 to develop standard operating procedures for the SRFA and prepare details for SRFA simulation exercises.

d) ASEAN Regional Haze Action Plan
The Regional Haze Action Plan (RHAP) was endorsed by the ASEAN Environment Ministers in December 1997 during a period of intense fire and transboundary haze pollution. Under the overall framework of the RHAP, the strategic measures and activities are targeted at strengthening the region's capacity and capability to address transboundary haze pollution problem. There are three primary objectives of the RHAP, namely (i) prevent land and forest fires through better management policies and enforcement, (ii) establish operational mechanism to monitor land and forest fires, and (iii) strengthen regional land and forest fire fighting capability with other mitigation measures.

The RHAP therefore has three major components: prevention, mitigation and monitoring. Different countries have been designated to spearhead activities that fall under each of the three components. Malaysia takes the lead in prevention, Indonesia in mitigation, and Singapore in monitoring of fires and haze. AMCs also undertake the national-level actions that relate to the three RHAP components. Implementation of RHAP at the sub-regional and regional level catalyses and complements the measures carried out at the national level.

e) ASEAN Agreement on Transboundary Haze Pollution ASEAN

Agreement on Transboundary Haze Pollution

The ASEAN Agreement on Transboundary Haze Pollution was signed by the ten AMCs on 10 June 2002 in Kuala Lumpur, Malaysia. The Agreement contains provisions on monitoring, assessment and prevention, technical cooperation and scientific research, mechanisms for coordination, lines of communication, and simplified customs and immigration procedures for disaster relief. The Agreement also provides for the establishment of an ASEAN Coordinating Centre for Transboundary Haze Pollution Control.

The Agreement entered into force on 25 November 2003. To date, Brunei Darussalam, Lao PDR, Malaysia, Myanmar, Singapore, Thailand and Viet Nam have ratified the Agreement and deposited their instrument of ratification/approval with the ASEAN Secretariat.

f) ASEAN Peatland Management Initiative (APMI)

The concept for this initiative was developed through discussion with a broad range of agencies in 1999-2001. Information on peatland fires and the need for cooperation was discussed at the 13th ASOEN-HTTF Meeting and the 7th AMMH in July 1999. The 19th ASOEN-HTTF Meeting and the 9th AMMH on 10-11 June 2002 discussed the issue of fire prevention and control in peatlands.

The 9th AMMH also discussed the need for proper development and utilisation of peatlands in the region, and requested the HTTF and its working groups to explore development of this initiative. The APMI was discussed and developed further through consultations, questionnaires and regional meetings, and was adopted in February 2003 at the 20th ASOEN-HTTF Meeting in Manila, Philippines, together with a work plan for 2003-2005. The APMI was highlighted at the 10th AMMH in March 2003 in Siem Reap, Cambodia.



Goal and objectives of APMI

The goals of the APMI is 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.

The objectives 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 support 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



II. REGIONAL STRATEGY FOR PEATLAND MANAGEMENT

2.1 Background to the Strategy

The First Regional Workshop on the APMI, held in Bogor, Indonesia on 16-17 October 2003, collectively agreed on the process for the preparation of the APMS. The first draft strategy was based on information gathered from AMCs provided at the First Regional Workshop on the APMI as well as other relevant materials. The draft was substantially revised following a series of national consultation meetings in AMCs as well as the Second Regional Workshop on the APMI in May 2005 in Kuala Lumpur. The process of development of the regional strategy will also include preparation of National Action Plans.

2.2 Challenges for Peatland Conservation and Sustainable Management

Southeast Asia has more than 25 million ha of peatland, comprising 60% of the global tropical peatland resource. These peatlands in Southeast Asia have significant importance for socio-economic development and support for the livelihoods of local communities.

Peatlands play an important role in the hydrological cycle, habitat for unique biological diversity, food supply (especially freshwater fish and other natural products), timber, non-timber forest products (e.g. rattan and honey), carbon store and sinks functions but often their roles are ignored and neglected. This is due largely to the non integrated and conflicting policies related to agriculture, fisheries, forestry and water resources.

There is also an increasing pressure on tropical peat swamp forest in the region of Southeast Asia particularly for the landless and food production for socio-economic needs. Hence, this fragile ecosystem is often threatened by human activities that directly or indirectly lead to its degradation, and in some instances, badly affected by peat fires. Major activities that disturb or alter the natural condition of peatlands and degrade the ecosystems are uncontrolled drainage

due to unsustainable logging, and large scale land clearing.

2.3 Rationale for a Regional Strategy

Many efforts and actions toward conservation and management of peatlands in the region have been country-based and stand-alone activities. There have been several collaborative efforts under the ASEAN cooperation arrangements but these efforts or activities were limited. Initial efforts under the SFRA, HTTF, AMMH, etc. were focused on immediate steps to address the fire and haze problems and did not include a long-term strategy to specifically address the issues of peatlands in the region.

Within this region there are similarities in many aspects of peatland management such as common problems of fire, drainage, inappropriate management practices, livelihood options, sustainability, etc. The APMI was therefore established to provide a framework to promote participation and bring the different actors together in order 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 increase coverage in action programmes.

In this way, limited resources could be focused on common issues and duplication of effort be avoided. The existence of this broader framework will also ensure that gaps and priority areas of actions for conservation and management of peatlands within the region be identified. Practical and meaningful strategies can then be set collectively, and acceptable to all participating stakeholders for the wise use and sustainable management of this region's peatlands.

It is expected that the strategy would guide countries into taking actions that would ensure prevention and control of future peatland fires in the region and its



associated haze through improved management of peatlands.

2.4 Goal

The goal of the strategy is 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 haze and contribute to global environmental management.

It is in line with the ASEAN Vision 2020 to have "...a clean and green ASEAN with fully established mechanisms for sustainable development to ensure the protection of the region's environment, the sustainability of its natural resources, and the high quality of life of its peoples...".

The regional strategy will provide a common framework for all those with responsibilities for, or commitments to, the sustainable management of peatlands, on its wise use, prevention and fires and rehabilitation. It builds on the principles for regional cooperation embodied in the Declaration of ASEAN Concord II (Bali Concord II). It will also contribute to the development of the ASEAN Socio-Cultural Community (ASCC), which is intended to intensify cooperation in addressing regional problems including those associated with environmental degradation and transboundary pollution. The strategy will also be a contribution to the implementation of the ASEAN Agreement on Transboundary Haze Pollution and the ASEAN Regional Haze Action Plan.

2.5 General Objectives

There are four General Objectives to the proposed strategy. The General Objectives are as follows:

General Objective 1 **Enhance Awareness and Capacity on Peatlands:**

To stimulate awareness and understanding on peatland issues and build capacity on wise use and sustainable management of peatlands in the region

General Objective 2 **Address Transboundary Haze Pollution and Environmental Degradation**

To reduce the incidence of peatland fires and associated haze in the region, and to enhance prevention, control and monitoring through collective efforts among the AMCs

General Objective 3 **Promote Sustainable Management of Peatlands**

To promote integrated management of peatlands for forestry, water, agriculture, local community livelihood, and rehabilitation of degraded peat swamps forest or peatlands

General Objective 4 **Promote Regional Cooperation**

To promote and enhance regional cooperation through information exchange and sharing, research and partnership in implementation of activities as well as in generating resources

2.6 Action Plan

Each General Objective above is to be delivered by the Operational Objectives and Actions that are grouped in thirteen different focal areas. **Table 1** shows Focal Areas and the respective Operational Objectives.

An action plan for the strategy (see **Table 2**) is needed to operationalise the implementation of the strategy. Specific action points are assigned for each Operational Objective to be implemented at different levels and timescales. There are two proposed levels of actions, namely (i) actions to be taken at the regional level (R), and (ii) those that relevant AMCs should consider implementing and including in their respective National Action Plans (C). Regional actions could be those that enhance or complement national actions through sharing of experiences, information and knowledge, establishment of regional networks and joint regional approaches/mechanisms/standards, etc.



FOCUS AREAS		OPERATIONAL OBJECTIVES
1. Inventory and Assessment	1.1 1.2 1.3	Determine the extent and status of peatlands in the ASEAN region (including issues of definition) Assess problems and constraints faced in peatland management Monitor and evaluate peatland status and management
2. Research	2.1	Undertake priority research activities
3. Awareness and Capacity Building	3.1 3.2	Enhance public awareness on importance of peatlands, its vulnerability to fire and the threat of haze through implementation of a comprehensive plan Build institutional capacity on management of peatlands
4. Information Sharing	4.1	Enhance information management and promote sharing
5. Policies and Legislation	5.1	Develop or strengthen policies and legislation to protect peatlands and reduce peat fire
6. Fire Prevention, Control and Monitoring	6.1	Reduce and minimise occurrence of fire and associated haze
7. Conservation of Peatland Biodiversity	7.1	Promote conservation of peatland biodiversity
8. Integrated Management of Peatlands	8.1 8.2 8.3 8.4 8.5	Promote multi-agency involvement in peatland management Promote integrated water resources and peatland management using a basin-wide approach and avoiding fragmentation Promote integrated forest and peatland management Manage agriculture in peatland areas in integrated manner Promote integrated community livelihood and peatland management
9. Promotion of Demonstration Site for Peatland	9.1	Promote best management practices
10. Restoration and Rehabilitation	10.1 10.2	Develop appropriate techniques for the restoration or rehabilitation of degraded peatlands Rehabilitate burnt, drained and degraded peatlands
11. Peatland and Climate Change	11.1 11.2	Protect and improve function of peatlands as carbon sequestration and storage Support peatland adaptation process to global climate change
12. Regional Cooperation	12.1 12.2 12.3 12.4	Promote exchange of expertise in addressing peatland management issues Establishment of 'centres of excellence' in the region for peatland assessment and management Contribute to the implementation of other related agreements and regional cooperation mechanisms Enhance multi-stakeholder partnerships to support peatland management
13. Financing of the Implementation of Strategy	13.1	Generate financial resources required for the programmes and activities to achieve target of the strategy

Table 1: Table Showing Focal Areas and the Respective Operational Objectives

The action points are envisaged to be implemented in different timescales. There are three proposed categories, i.e. S for short term (2005-2010) for actions that should be completed within five years; (ii) M for medium term (2005–2015) for actions that should be completed within 10 years, (iii) L for long term (2005-2020) for actions that should be completed in 2020 and therefore do not need to start immediately, and (iv) C for continuous for actions that should be undertaken on a continuing basis.

A level of priority is also assigned for each action. There are three different levels of priority, i.e. L for low, M for medium and H for high. The assignment of priority for each action point would help in situations where there are only limited resources available to facilitate implementation of the strategy. A narrower focus would also facilitate sourcing of funds and kick-start the implementation of the regional strategy. Assignment of priority for country-level actions in **Table 2** will guide AMCs in prioritising actions under their respective NAPs.

The last column of the Action Plan suggests the indicative support requirements for each action point. The column suggests the financing and implementation strategy for each action point, i.e. whether the action requires financial resources (F), and whether the action can be delivered by experts or resources within ASEAN (AT) or external (ET).

A Detailed Action Plan (DAP) should be developed following the adoption of the regional strategy. The DAP will present a detailed matrix of the budget, source of funding, target date, implementing unit and a monitoring variable. The DAP should be considered as a rolling plan and therefore will be modified and updated from time to time. Depending on an evaluation of actions conducted/completed, existing action points can be modified, new actions added, and redundant ones deleted. Any changes or updates in the DAP will be reported to the relevant ASEAN body. The development and updating of DAP for the APMS will follow the mechanism and format used for the development of Detailed Implementation Plan (DIP) for the Regional Haze Action Plan. The DAP

should reflect not only AMC- or ASEAN-initiated action, but also donor- or partner-initiated action that supports the implementation of a particular action point.

2.7 National Action Plans (NAPs)

For nationally-driven actions, AMCs should prepare individual National Action Plans (NAPs) for the period of 2006-2020, taking into account the thrust and objectives of the regional strategy. The NAPs should be naturally linked to and complement the regional strategy and vice versa. The actions to be implemented under the NAPs are a matter for each AMC to decide through its national consultative meetings. AMCs should also take into account implementation capacity, including availability of budgetary resources, in developing NAPs. Monitoring and evaluation of these individual NAPs should also be done by the relevant ASEAN body to ensure their relevance to the regional strategy.



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
1. Inventory and Assessment	1.1: Determine the extent and status of peatlands in the ASEAN region (including issues of definition)				
	1.1.1	Harmonise definition and classification of peatlands (e.g. type, depth, vegetation, water regime, extent)	S	H	AT
	1.1.2	Determine and update the extent and status of peatlands in the region through comprehensive national inventories (including status of protection, degradation and land use)	C	H	AT, F
	1.1.3	Ascertain the direct and indirect uses and values of peatlands and associated biodiversity	C	H	AT, F
	1.2: Assess problems and constraints faced in peatland management				
	1.2.1	Identify problems, constraints and opportunities faced in peatland management	S	H	AT
2. Research	1.2.2	Undertake assessment of issues related to peatland management to identify potential management options	M	H	AT, F
	1.3: Monitor and evaluate peatland status and management				
	1.3.1	Develop a guideline for monitoring of peatland areas for ecological change and management purposes	S	M	AT, ET, F
	1.3.2	Undertake regular monitoring of peatland areas, including peatland water quality and physico-chemical conditions	C	H	AT, F
	2.1: Undertake priority research activities				
	2.1.1	Undertake research on appropriate techniques and practices for peatland management	M	H	AT, ET, F
	2.1.2	Undertake basic research on peatland ecosystems and species and hydrological processes to better understand peatland functions	L	M	AT, ET, F
	2.1.3	Undertake R&D to enhance existing or develop new uses for peatland products and resources	C	H	AT, ET, F
	2.1.4	Undertake research to assess and support community development and livelihood activities building on indigenous knowledge and practices	M	H	AT, ET, F
	2.1.5	Undertake economic valuation of peatland resources	M	M	AT, ET, F

*(ASEAN/External Technical, Financial)AT, ET, F



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
3.1: Enhance public awareness on importance of peatlands, its vulnerability to fire and the threat of haze through implementation of a comprehensive plan	3.1.1	Develop and implement a communication strategy for peatland management, including use of video, TV, media, schools, extension services, workshops, information exchange programmes and networks such as SEA-Peat Network	S	M	AT, ET, F
	3.1.2	Develop appropriate local language awareness materials and activities to enhance understanding of peatland values, threats, impacts and sustainable management options	S	H	AT, F
	3.1.3	Provide the general public and government agencies with information on the roles of peatlands, both ecological and economical importance	C, R	C	AT, F
	3.2.1	Support and enhance human resources and strengthen institutional capacity	C, R	C	AT, ET, F
	3.2.2	Source expertise to train and develop a core group of local experts	C, R	M	AT, ET, F
	3.2.3	Establish mechanisms and organise training programmes, workshops, attachments and study tours	C, R	C	AT, F
3.2: Build institutional capacity on management of peatlands	3.2.4	Support transfer of technology for peatland management including practical training	M	H	AT, ET, F
	3.2.5	Provide necessary equipment and training to appropriate authorities in areas with high fire risk	S	H	AT, ET, F
	3.2.6	Enhance coordination among stakeholders related to peatland management through networks or working groups	C	M	F
	4.1: Enhance information management and promote sharing	4.1.1	Establish or strengthen existing information systems or clearing houses to manage and make available information related to peatlands	C, R	C
4. Information Sharing	4.1.2	Strengthen regional sharing of experience and networking through use of mechanisms such as the ASEAN Haze Action Online, the SEA-Peat, Peat-Portal, workshops, documentation, as well as strengthening national capacity for information sharing	R	C	AT, F

*(ASEAN/External Technical, Financial)/AT, ET, F

Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives		Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
4.1: Enhance information management and promote sharing	4.1.3	Enhance regional information sharing on the extent, status and management of peatlands and develop handbooks for best management practices	C, R	C	H	AT, F
	5.1: Develop or strengthen policies and legislation to protect peatlands and reduce peat fire	5.1.1 5.1.2 5.1.3	Designate specific institutions for peatland management Formulate or update national policies and strategies relating to peatland conservation and wise use, including facilitation of integrated land use planning and management for peatlands Strengthen law enforcement	C C C	S S M	AT, F AT AT, F
6.1: Reduce and minimise occurrence of fire and associated haze	6.1.1	Identify peatlands in the region with high fire risk and develop and promote preventive measures	C, R	C	H	AT, ET, F
	6.1.2	Monitor weather conditions and hot spots in high-risk areas and issue alerts as appropriate	C, R	C	H	AT, ET, F
	6.1.3	Manage water tables in peatlands appropriately according to land use to prevent fire	C, R	C	H	AT, ET, F
	6.1.4	Develop and promote appropriate techniques for fire control in peatlands	C, R	C	H	AT, ET, F
	6.1.5	Strengthen coordination among and capacity of agencies involved in peatland fire prevention and control, including establishment of peat fire prevention units in agencies responsible for forestry and agriculture	C, R	C	H	AT, ET, F
	6.1.6	Actively involve villagers and other local stakeholders in fire prevention and control	C, R	C	H	AT, F
	6.1.7	Implement zero-burning strategies for all commercial agriculture and zero or controlled burning for local communities	C	C	H	AT, F

* (ASEAN/External Technical, Financial) AT, ET, F



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
7. Conservation of Peatland Biodiversity	7.1: Promote conservation of peatland biodiversity	7.1.1 Identify peatlands in the region which are of regional or global importance for conservation of biodiversity	C	H	AT, ET, F
		7.1.2 Assess the status, gaps and threats within the network of protected areas for peatlands and peatland biodiversity, and identify priority areas for conservation	C	H	AT, ET, F
		7.1.3 Legally designate national, regional or globally significant peatland sites as conservation or protected areas	C	H	AT, F
		7.1.4 Strengthen all aspects including 'institutional frameworks' of the management of peatland conservation areas	C	H	AT, ET, F
		7.1.5 Develop sustainable utilisation of peatland resources for local communities within peatland conservation areas	C	H	AT
8. Integrated Management of Peatlands	8.1: Promote multi-agency involvement in peatland management	8.1.1 Establish national inter-agency working groups to develop strategies for peatland protection and sustainable use	S	H	not applicable
		8.1.2 Encourage sustainable management practices for all peatland users, including those from forestry, agriculture and plantations	C	H	AT, F
	8.2: Promote integrated water resources and peatland management using a basin-wide approach and avoiding fragmentation	8.2.1 Establish the fundamental importance of the natural water regime as the basis for best peatland management practice	S	H	AT, ET, F
		8.2.2 Control or restrict further drainage and conversion (for agriculture, plantation, forestry, settlement, mining, infrastructure and other uses) of deep peat, peat domes, undisturbed peatlands as well as other ungazetted areas of conservation importance	C	H	not applicable
		8.2.3 Develop guidelines to assist the process to restrict the opening up and drainage of deep peat, peat domes and undisturbed peatlands	S	H	AT, ET, F
		8.2.4 Develop an appropriate water management regime for peat domes and surrounding peat areas, including the blocking of disused or illegal canals.	C	H	AT, ET, F

* (ASEAN/External Technical, Financial) AT, ET, F



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
8.3: Promote integrated forest and peatland management	8.3.1	Ensure the long-term designation and protection of peat swamp forest in reserves and take urgent measures to protect the remaining undisturbed peatlands	C	H	not applicable
	8.3.2	Develop forest management plans and guidelines for production forest reserves	C	H	AT, F
	8.3.3	Develop and promote sustainable forest management practices, including low-impact harvesting, zero-drainage harvesting, etc.	C	H	AT, F
	8.3.4	Develop and implement measures for post harvesting rehabilitation	C	H	AT, F
	8.3.5	Establish and manage protected peatland forest areas through integrated management practices	C	H	AT, F
	8.3.6	Control illegal harvesting practices and associated trading activities	C, R	H	AT, ET, F
	8.3.7	Utilise peatlands judiciously for other land uses to prevent fragmentation	C	H	not applicable
	8.3.8	Document peatland biodiversity and socio-economic, cultural, and ecological uses	C, R	H	AT, F
8.4: Integrated Management of Peatlands	8.4.1	Restrict future agricultural development to degraded shallow peat	C	H	AT, F
	8.4.2	Document and promote indigenous knowledge and methodologies, such as techniques for prevention of subsidence and over-drainage; and low impact land-clearing and agricultural practices in existing peatland agricultural areas	C, R	H	AT, ET, F
	8.4.3	Develop best practice land clearing techniques affordable and appropriate for communities living in peatland areas	C	H	AT, ET, F
	8.4.4	Promote haze-free agriculture through incentive and disincentive measures	C, R	H	AT, ET, F

*(ASEAN/External Technical, Financial)AT, ET, F



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
8. Integrated Management of Peatlands	8.5.1 Promote integrated community livelihood and peatland management	Enhance local community knowledge of peatlands through awareness and education	C	H	AT, F
	8.5.2	Support the protection and sustainable use of peatlands through application of customary laws and traditional practices	C	H	AT, F
	8.5.3	Promote and enhance market access for traditional products developed by local communities from peatlands	C	H	AT, ET, F
	8.5.4	Support and empower local communities to protect and sustainably use peatland resources to contribute to their livelihood and environmental security	C	H	AT, F
	8.5.5	Introduce and strengthen alternative livelihoods to minimise impacts or dependence on peatlands	C	H	AT, ET, F
	8.5.6	Engage grassroots stakeholders in participatory management of peatlands	C	H	AT, F
9. Establishment and Promotion of Demonstration Sites for Peatland Management	9.1.1 Promote best management practices	Identify and promote demonstration sites for best management practices, for example: site for eco tourism, livelihood options, restoration, etc.	C	H	AT, ET, F
	9.1.2	Establish pilot project(s) in each country (according to local needs) to test new sustainable management and fire prevention approaches for peatlands	C	H	AT, ET, F
	9.1.3	Promote the application of best management practices for peatlands through research and development	C	H	AT, ET, F
	9.1.4	Establish multi-country technical working groups to work on issues of common concern, such as peatland water management, peatland silviculture or rehabilitation options	C	H	AT, ET, F

*(ASEAN/External Technical, Financial)AT, ET, F

Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
10.1: Develop appropriate techniques for the restoration or rehabilitation of degraded peatlands	10.1.1	Develop and promote widely proper guidelines and manuals on peatland restoration and rehabilitation based on local knowledge, regional experience and R&D findings	C	H	N/A
	10.1.2	Establish pilot projects to test techniques	C	H	AT, ET, F
	10.1.3	Organise specific training programmes related to peatland restoration and rehabilitation	C	H	AT, ET, F
	10.1.4	Revise and update guidelines based on experience from local knowledge and findings from R & D	C	H	AT, ET, F
10.2: Rehabilitate burnt, drained and degraded peatlands	10.2.1	Identify and classify degraded peatlands according to the rehabilitation options based on local knowledge, regional experience, R&D findings and appropriate technology	C	H	AT, ET, F
	10.2.2	Develop national programmes to initiate peatland restoration and rehabilitation activities	C	H	AT, ET, F
	10.2.3	Implement programmes for peatland rehabilitation	C	H	AT, ET, F
	10.2.4	Quantify the above and below ground carbon content in peatlands in ASEAN countries and its role in mitigating climate change	C	H	AT, ET, F
11.1: Protect and improve function of peatlands as carbon sequestration and storage	11.1.1	Identify degraded peatlands and explore the possibility for restoration through the Clean Development Mechanism (CDM) under the Kyoto Protocol	C	H	AT, ET, F
	11.1.2	Facilitate support for peatland management and restoration from other climate change-related funding mechanisms	C	H	AT, ET, F
	11.1.3	Assess potential negative impacts of the use of peat as an energy source	C	H	AT, ET, F
	11.1.4		C	H	AT, ET, F

*(ASEAN/External Technical, Financial)AT, ET, F



Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
11. Peatlands and Climate Change	11.2. Support peatland adaptation process to global climate change				
	11.2.1	Assess the impact of climate change scenarios on peatland ecosystem in ASEAN countries	C	H	AT, ET, F
	11.2.2	Identify management strategies applicable to minimising peatland vulnerability on global climate change	C	H	AT, ET, F
	11.2.3	Integrate peatland issues into national or regional climate change adaptation plans	C	H	AT, ET, F
	11.2.4	Source support for peatland management from adaptation funds linked to the UNFCCC	L	H	AT, ET, F
12. Regional Cooperation	12.1: Promote exchange of expertise in addressing peatland management issues				
	12.1.1	Develop regional collaborative research projects and other activities involving experts from ASEAN countries	C	H	AT, ET, F
	12.1.2	Strengthen the SEA Peat Network to include all experts on peatland in the ASEAN region	C	H	AT, F
	12.1.3	Organise regional workshops to strengthen cooperation and exchange of experience	C	M	AT, F
12.2: Establishment of 'centres of excellence' in the region for peatland assessment and management	12.2.1	Designate appropriate 'centres of excellence' in the region on specific aspects related to peatland management	S	H	AT, ET, F
	12.2.2	Support the strengthening and selected activities of selected centres	L	M	AT, ET, F
	12.2.3	Enhance linkage and cooperation between centres	C	M	AT, ET, F
	12.3.1	Incorporate peatland issues into ASEAN frameworks related to Nature Conservation and Biodiversity, Multilateral Environment Agreements, Water Resource Management, Forestry and Agriculture, and Education	M	M	AT, F

*(ASEAN/External Technical, Financial)AT, ET, F

Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
12. Regional Cooperation	12.3: Contribute to the implementation of other related agreements and regional cooperation mechanisms	12.3.2 12.3.3	C C	H H	not applicable AT, ET, F
	12.4: Enhance multi-stakeholder partnerships to support peatland management	12.4.1 12.4.2	C C	H H	AT, ET, F AT, F
13. Financing of the Initiative	13.1: Generate financial resources required for the programmes and activities to achieve target of the strategy	13.1.1	C, R	H	AT, ET, F
		13.1.2	C, R	H	AT, ET, F
		13.1.3	C, R	H	AT, F
		13.1.4	C, R	H	AT, ET, F
		13.1.5	C, R	H	AT, ET, F

* (ASEAN/External Technical, Financial)/AT, ET, F

Table 2. ASEAN Peatland Management Strategy Action Plan

Operational Objectives	Action	Proposed Level of Activities (C/ R)	Timescale (S/M/L/C)	Priority	Indicative support requirements*
13. Financing of the Initiative	13.1: Generate financial resources required for the programmes and activities to achieve target of the strategy	13.1.6 13.1.7	S S	H H	AT, ET, F AT, ET, F

*(ASEAN/External Technical, Financial)AT, ET, F



IMPLEMENTATION MECHANISMS

3.1 Regional Level Implementation Mechanisms

The implementation mechanism for the strategy will build on the current arrangement under the APMI. The main mechanism for the management will be through the ASEAN's mechanisms related to land and forest fire and transboundary haze pollution, notably the ASOEN-HTTF. The AMMH and ASOEN-HTTF may evolve into other bodies in view of the ongoing development of the mechanisms under the ASEAN Agreement on Transboundary Haze Pollution. The outline of the mechanism is shown in illustration below:

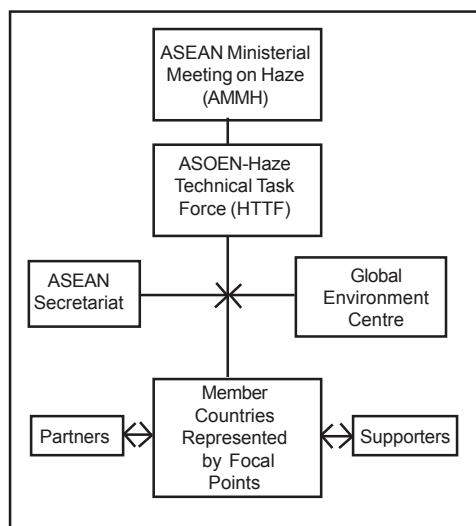


Figure 1. Flowchart showing the structure of the APMI which is envisaged to guide and undertake as appropriate the implementation of the strategy at regional level

ASEAN Senior Officials on the Environment-Haze Technical Task Force (ASOEN- HTTF)

The ASOEN-HTTF will provide oversight and policy guidance for the implementation of the strategy as well as facilitating linkage to activities at the national level. It is envisaged that a subsidiary expert group on peatlands will be established under the ASOEN-HTTF to specifically look into peatland issues and

give input to the implementation of the strategy and undertake other technical tasks. Linkage should also be made to other appropriate ASEAN structures especially the ASEAN Working Group on Nature Conservation and Biodiversity.

ASEAN Secretariat

The ASEAN Secretariat will undertake the formal coordination amongst AMCs and facilitate the main regional activities and meetings as well as linkage with other activities coordinated through the ASEAN Secretariat.

Global Environment Centre (GEC)

The GEC is a well-established organisation based in the ASEAN region with special expertise on peatlands and the coordinator of the SE Asian Peatland Network with over 400 members. It is a Founding Partner of the APMI and has provided technical and operational support to the APMI since its inception. It is envisaged that GEC will continue to provide this technical and operation support for the implementation of the strategy as well as assist in generating resources to support its implementation.

Technical Expert Group (or Technical Advisory Group)

For purposes of guidance and directions a Technical Expert Group or Technical Advisory Group (TEG/TAG) consisting of respected world experts on tropical peatlands will be established. Its primary role would be to guide, review and advise on up-to-date of methodologies on sustainable peatland management.

ASEAN Member Countries (AMCs)

The AMCs will play a critical role in directly implementing the strategy within each country as well as contributing to regional activities. Implementation by the AMCs will be guided by their respective NAPs.

Partners

Partners of this initiative include those organisations or on-going projects which are undertaking activities related to sustainable management of peatlands in the region. They contribute by:

- Inviting participation of countries and institutions in the ASEAN region in their activities as appropriate
- Providing other contributions as necessary

Supporters

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

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

Active participation of partners and supporters in the implementation of the strategy will be encouraged to draw from their wealth of expertise and experience and to promote a strong sense of commitment and ownership of projects and activities.

3.2 Country Level Implementation Mechanisms

At country level, the coordination of activities is envisaged to be through appropriate mechanisms established for the implementation of the strategy and associated NAPs. The exact nature of the mechanism will vary between countries and be guided by the respective NAPs. The mechanisms are expected to draw on the following conceptual model:

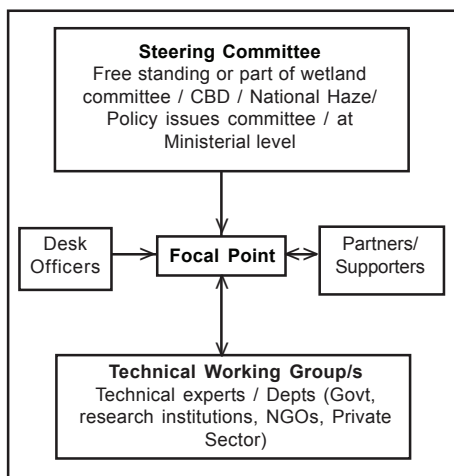


Figure 2. Flowchart showing the proposed mechanism for strategy implementation at national level

Focal Point

The Focal Point will be currently the HTTP Focal Point. The Focal Point will serve as the official contact point for the strategy implementation at the national level. The Focal Point is expected to:

- Give directions to the working group
- Oversee the development of NAPs
- Allocate roles and responsibilities to different relevant agencies

Desk Officer

The Desk Officer may be appointed within the focal point agency or another agency to help the Focal Point. The role would be to:

- Handle coordination of activities for planning and implementation
- Make sure information is provided to relevant agencies
- Ensure background given to appropriate stakeholders
- Facilitate meetings and coordination with ASEAN Secretariat and other partners

National Working Group/ Task Force (ad-hoc or permanent)

Members would be key technical stakeholders (including government agencies, research institutions, NGOs, private sector) as appropriate. The role would be to provide:

- Provide technical advice to the Focal Point
- Develop technical guidelines
- Provide recommendations and suggestions for actions

Steering Committee

The Steering Committee would comprise policy making agencies and selected key stakeholders). The role would be to:

- Give directions to the Focal Point or technical working group
- Oversee the development of NAPs
- Allocate roles and responsibilities to different relevant agencies
- Consider and adopt NAPs



Partners and Supporters
Partners and supporters would assist in the development and implementation activities.

3.3 Resource Mobilisation

The resource mobilisation strategy for the implementation of the strategy will be further developed in first year of the implementation (see action 13.1.1 in Table 2). However, there are basically three broad sources of funding for the implementation of the strategy. These are direct contributions from all or some AMCs towards specific actions; ASEAN pooled resources; and external funding. ASEAN will adopt a mix of these approaches towards resource mobilisation so that internal ASEAN resources and external funding will complement one another.

AMCs will be expected to allocate sufficient resources to support and implement the strategy at regional and national level. Therefore, respective AMCs should mainstream the APMS and NAPs in particular into national development programmes. In this way, the allocation of national funds to implement the APMS and NAPs will be easily secured.

Funding mechanisms will also be developed or enhanced to serve as predictable and reliable resources to facilitate the implementation of the strategy (see action point 13.1.3 in Table 2). These funding mechanisms could be in the form of a common pool of financial resources, to be made up from contributions of AMCs, based on a mutually-acceptable scheme.

Contributions from Dialogue Partners of ASEAN and other donor institutions remain an important funding source for the strategy. Another possible source of complementary funding is the private sector.

Regular forums among donors and supporters will be organised to generate external funding and facilitate coordinated funding of activities (see action point 13.1.5). Specific budgets and proposals for funding of activities by national governments, external supporters and other sources will also be developed to generate resources to support the

implementation of the strategy (see action point 13.1.4).

In addition, under the strategy, mechanisms and options to generate sustaining resources for peatland conservation and management will also be explored and developed (see action points 13.1.2, 13.1.6 and 13.1.7).

3.4 Monitoring and Evaluation Mechanism

A monitoring and evaluation mechanism will be developed in the first year of the strategy implementation. The main objective of monitoring and evaluation is to continuously refine the implementation of the strategy. The monitoring and evaluation mechanism is also needed to ensure that targets are achieved, timely corrective measures are undertaken if needed, and that initiatives and activities remain consistent with the overall Goal and four (4) General Objectives and are responsive to emerging issues and priorities.

While monitoring shows achievements and failures, evaluation goes into the contributing factors or causes and how the problems can be solved. The monitoring and evaluation mechanism will also be developed in such a way that it fulfils the principles of transparency and accountability.

The monitoring and evaluation process will be undertaken at two levels:

- At the micro level, with a monitoring and evaluation plan built into each action; and
- At the macro level, with a consolidated assessment mechanism to ensure that the overall strategy implementation is on track in achieving its Overall Goal and General Objectives.

At the micro level, different actions will have their own set of success indicators and targets, depending on their stated objectives. At the macro level, to permit aggregation, a generic set of criteria will be used. This may include appropriateness/relevance (conformity with ASEAN Vision 2020 and its medium-



term plans and the ASEAN Agreement on Transboundary Haze Pollution; sectoral need); effectiveness (achievement of planned processes and results; outputs delivered; outcomes achieved); efficiency (level of resources needed to achieve outputs and targets); impact (contribution to the ASEAN Vision 2020 and its medium-term plans and the ASEAN Agreement on Transboundary Haze Pollution; avoidance of negative consequences); and sustainability (retention of knowledge gained, ongoing resources available, political will to sustain momentum, continuity of flow of benefits).

A baseline situation at the beginning of the strategy implementation should be established as a reference point for the formal review at the macro level. To obtain a balanced view, the widest range of stakeholders' views will be obtained both for micro-level evaluation and macro-level evaluation.

Formal review at the macro level should be undertaken by the ASEAN Secretariat every 5 years. Any recommendations for revisions or updating the strategy will be submitted to the relevant ASEAN body. A final review will be conducted in 2020 and reported to the ministerial body of ASEAN.





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ASEAN Ten Nations One Community