

CHAPTER 6

The Way Ahead

[This chapter looks into the important actions required to consolidate the initiatives so far undertaken and to promote appropriate forest fire management in the ASEAN region, to support rational land use and development.]

Introduction

Having formulated the ORHAP for ASEAN, covering the period 1999-2005, one might assume that the way ahead is clear and effortless; and what is required is to carry out the activities listed under prevention, mitigation, and monitoring programs, as far as possible.

The situation is not that simple or straightforward. The concept of the RHAP was formally approved by AMMH in December 1997; and the ASEAN/ADB efforts to put the RHAP into operation through the ADB-funded RETA Project continued from April 1998 to December 1999.

The RETA Project registered significant achievements, in the short term, most of which are of a startup nature. It calls for a considerable

amount of work to consolidate the gains and to institutionalize a system in order to sustain development.

The Way to be Negotiated

The path to be negotiated toward achieving the objectives of the RHAP, i.e., an effective and efficient system of fire and haze management in the region, is not easy or clear of hurdles. Most of the assumptions relating to infrastructure, institutions, and institutional instruments would require enormous effort and investment to materialize.

The ORHAP, for now, having been defined for a period of only six years, represents the first (or the first few) steps of a long journey. To start implementing the ORHAP and carry it forward as long as is required through all the imaginable constraints would require constant, consistent, and cooperative efforts by the involved parties and partners—national, regional, and international.

The Transition

The DIPs have given details about the activities to be carried out under expected core funding from ASEAN and AMCs, donor assistance catalyzed by ADB's RETA Project, and other sources, as well as areas where there are funding gaps. Timely mobilization of resources from all sources is vital if the ORHAP is to show positive results.

Firm action will be needed to prevent a recurrence of the fires and haze-producing smoke from the 1997 conflagration in Indonesia.

Photo: Integrated Forest Fire Management Project, Indonesia (Courtesy: Ludwig Schindler)



The RETA Project has been formally terminated and the onus for carrying forward the implementation of the ORHAP now rests with CSU. However, it was agreed the RETA Project would fund some actions to promote a smooth transition. These include (i) \$50,000 for implementation of the IAP Field Training Exercise for Prevention and Control of Land and Forest Fire and Haze in Sumatra, Phase 2 (Phase 1 at an estimated cost of \$50,000 was funded by UNEP); (ii) Support to the ASEAN Regional Haze Fund Study, estimated to cost about \$20,000; and (iii) a feasibility study for an ASEAN Agreement on Transboundary Haze Pollution, to be cofinanced with UNEP and other donors.

To obtain a better vision of what is to be carried out, it is useful to go over some of the relevant lessons from past experience.

Lessons and Experience

The land and forest fires that ravaged large areas of Sumatra and Kalimantan in 1997-1998 added a new urgency to the issue of forest fire prevention and management, because this was the fifth time in 15 years for such an occurrence. The emergency caused by the forest fires and the associated transboundary haze problem is for the time being over. The damage and negative impacts caused were considerable and their scars remain. Investigations carried out so far on the underlying causes, consequences, and constraints provide reasonable insight into the serious lapses of the past and the potential fire threat looming over the future. Actions are urgently required to avoid not only further recurrence of the devastation from forest fires, but also the complacency and lack of compliance with regulations in the past.

Multidisciplinary investigations on the different aspects of forest fires and haze worldwide have confirmed that concerns about

the global impact of forest fires, in the form of transboundary pollution, climate change, and loss of biodiversity, are very real.

Being prepared for future forest fires and haze should consist of a balanced package of measures to prevent unwanted fires, to control and suppress fires when they occur, to monitor all developments relating to fires (including predisposing, feeding, impact-generating, and post-event factors), and to establish an effective institutional mechanism to manage the package.

An all-embracing lesson from the last 20 years of experience with forest fires and haze is that the combined effects of causes, constraints, and contributory factors tend to come together and conquer, unless an adequate defense force (a combination of policies, strategies, systems, technology, and human resources) is maintained in prime condition to provide readiness.

General Lessons

The weaknesses and failures identified each time fires and haze occur in the region resurface again and again—followed by resumption of abandoned remedial attempts that will be later discarded yet again. Can we expect that there will be a change in the “touch-and-go” trend? Will there be drastic action to address the weaknesses and failures, and an institutional system (instruments, organizations, coordination mechanisms) to carry it through in a sustainable manner? As long as there is inadequate understanding and appreciation of decision makers about (i) the impacts of fires and haze on society, economy, and the environment; and (ii) the positive relationship of the benefit of the disaster averted to the cost involved in fire and haze management, it will be difficult to maintain a sustained assault.

The urge to make private gains by flouting the policies and regulations relating to land clearance has been found to be an important

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factor in the spread of fires. If there is no effective, efficient, and impartial enforcement mechanism, policies and regulations will not be of much use in addressing fires and haze.

An assumption that past failures will not be repeated in the future needs to be based on firm and timely action to remove the institutional, social, cultural, and other factors that have led to failure.

Globally, there is a trend of shrinking government budgets for forest protection, while many nations are not able to support a well-functioning fire management organization. The standards required by the initial agreements of IDNDR are not met in most signatory countries. Can they be in the future? International sharing of fire management expertise and resources may provide a solution, at the same time demonstrating solidarity among nations to protect forest and other vegetation resources. There is considerable international interest to address the situation that needs to be channeled in a coordinated manner. More than seeking financial grants and material support from donors, mechanisms for appropriate and sustained international collaboration and with a long-range perspective need to be established and maintained.

Specific Lessons

Regional collaboration and sharing of resources across national boundaries (e.g., in SRFAs) to address forest fires and haze have been accepted, in principle, as a feasible and efficient approach. In the outbreaks of 1997-1998, and in the pilot trial runs later in Sumatra, it has become evident that there are several practical problems covering legal, procedural, logistic, and diplomatic aspects, involving institutions representing different sectors. Legal agreements are essential to ensure smooth functioning of joint activities, including:

- harmonization of air pollution indexes;
- standardization and enhancement of fire management training curricula;
- immigration and customs preclearance procedures for cross-border sharing of fire suppression personnel and equipment;
- supranational administrative arrangements and joint firefighting teams;
- data sharing among weather monitoring agencies; and
- access to the airspace of neighboring countries for aerial surveillance of fires to determine optimal fire suppression strategies.

These should be addressed thoroughly, systematically, and expeditiously.

It is to be underlined that, formal agreements apart, the pervading spirit of cooperation is an attitudinal development that comes through continuous attunement.

Even within countries, policy and institutional changes are slow to emerge and slower still to be put into practice, unless there is adequate political will to see them through. Earlier, the need for several policy changes was highlighted, such as introducing market-based instruments for promoting mechanical land clearing. These are of vital importance. Inaction due to a lack of political will can lead to serious consequences.

Transboundary haze pollution in the ASEAN region is primarily caused by large land-clearing fires deliberately set by commercial scale companies and others. Experience from ADB's RETA Project suggests that this causes smallholders, individuals, and community groups to often develop a sense of acceptance of periodic haze caused by large-scale land clearing, since they feel powerless to alter such occurrences. Integrating public awareness programs into the FSMP exercise can help to empower these persons and groups, rather than

simply providing them with additional information, as long as they are complemented by relevant policies and systems favoring rational land tenure and land use. Without willing participation of the people, public policies and programs cannot succeed in achieving the objectives.

Policy conflicts within countries are often reflected at the regional level through their impacts. For example, land use in many countries, historically, has been rife with conflicts—putting individuals, families, communities, and resource users constantly at loggerheads with each other and creating an atmosphere of hostility, social tension, and unsocial acts. Conflict resolution based on equity and fairness should be a necessary component of any program associated with resource use and management.

The RETA Project has pointed out two aspects that need to be assigned priority if the region is to have sufficient capacity to alter the level of transboundary haze pollution during subsequent ENSOs.

First, the process of implementing FSMPs for the most haze-prone areas of the region must be brought soon to fruition. This involves far more than formulation of FSMP documents. It encompasses building fire management capacity at the community through district levels to which ASEAN- and donor-provided fire suppression resources can link. The impact of other activities such as ground surveillance and monitoring would also be magnified by their being directly integrated into the FSMP exercise.

Second, the need to adequately meet the challenge of formulation and implementation of the FSMPs for the SRFAs is urgent. The experience so far in cooperative fire suppression initiatives in the region is that most of the concrete details on how to carry them out (e.g.,

the extent of assistance, how regional assistance is to be financed, and the responsibilities of the providing and the receiving countries) have yet to be hammered out. This is the purpose of the SRFA-level FSMPs. So far, little emphasis has been placed on initiating the FSMP formulation and implementation exercise for the SRFAs. This process must be accelerated if the SRFAs—which were established as fire suppression organizations—are to function as intended during subsequent ENSOs.

The magnitude of the task involved is enormous, calling for focused attention in the period ahead.

Monitoring (also some other elements of fire management) has two broad components complementing each other: (i) remote level, high technology-based and (ii) local level, manual or low-technology-based. Extreme care is necessary to establish a proper balance between these two aspects, and not to be enamoured solely by one. The 1997-1998 fires and haze showed that overreliance on satellite monitoring and neglect of local surveillance and communication systems can produce seriously adverse results. Further, the experience of the RETA Project with regard to implementing the ORHAP's monitoring component is that it can be relatively easy and quick to formulate, design, and implement.

The monitoring component of the ORHAP has seen relatively rapid progress. A related issue is that in the future, emphasis should shift from the regional level to upgrading the capacity of the national-level weather institutions. In the medium term, particular attention should be paid to reducing the differences in monitoring capacity among the various AMCs. Basic-level communication facilities (e.g., access to ASMC's intranet) should be assured for all member-country weather institutions. Here again commitment is a prime condition.

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Participation should continue in implementation of the plan, particularly at local levels

Forest Fire and Haze Outlook in the ASEAN Region

Future Forest Fires and Haze

Experience tells us that forest fires are likely as long as there are forests. However, the number and intensity of fires can be reduced through rational and balanced management interventions.

Fire risk modeling in expected future climate change scenarios and other influencing factors indicate that within the next three to four decades, the destructiveness of human-caused and natural wildfires will increase. Due to the multidirectional and multidimensional effects of fire on the different vegetation zones and ecosystems, and the manifold cultural, social, and economic factors involved, suitable fire management strategies will have to be evolved to counter the predicted situations.

Influence of Demographic Changes

Human population growth can make a bad situation worse by putting ever more pressure on available land and other resources. According to the UN's middle estimate among seven fertility scenarios, the human population will rise (from the present six billion) to 9.4 billion by the year 2050, then to 10.8 billion by 2150 before leveling off at the end of the 22nd century. The collective impact of this growth will be overwhelming. The impact, however, cannot be measured simply by population figures. It will be a product of three variables: population size, consumption level, and technology. High consumption increases the impact of a given population; whereas technological developments may either exacerbate (by excessive exploitation) or mitigate it (by improving efficiency). In any case, more people will need more total land. And, possibly, more open fires to clear the land.

The most popular view holds that for several years in the future, population growth and pressure on natural resources will keep the fires and associated haze a live issue.

Influence of Climate Change Convention

The UN Framework Convention on Climate Change (UNFCCC) on land use and land-use changes may indirectly influence forest protection, positively or negatively. If deforestation is effectively controlled, reduced impact logging is seriously practiced, and forest fire management measures are intensified, forest fires and haze will, in all likelihood, be reduced in number and intensity. In this regard, it is necessary that forest and forest fire managers follow the evolution of climate change policy to assess its implications on fires and haze.

People's Participation

In strategic planning, a participatory process envisages that consultations should take place at all stages, so that the plan will be owned by all those involved, which in turn will help in the effective achievement of objectives. Participation should continue in implementation of the plan, particularly at local levels. This will bring dynamism into the planning process, and will ensure that planning will be made more effective and responsive to real needs.

Participation is a process of social action and social change. Millions of people living in rural areas, in and around forests, depend on forests for their livelihood. Often, their aspirations for a more decent, secure, and equitable way of life are tied up with forestry development. Organized and informed participation of these people can help all parties involved to find solutions to their problems.

Local membership organizations such as cooperatives, tenant leagues, and women's groups constitute a third sector, balanced

between the public and private sector, to ensure that the group's problem is appropriately considered in the development planning process (Esman and Uphoff 1982). Grassroots groups will have to interlock with governments, private companies, and NGOs as a strategic alliance.

Participation and intensive consultation strengthen the planning process by encouraging transparency, improving access to information and ideas, helping in conflict resolution and feasible choices, and enabling general acceptance of decisions.

People's participation in formulating and implementing FSMPs will be a feasible and useful approach. If smallholders, community groups, and local NGOs are also parties to the interagency agreements that define the roles and responsibilities of those undertaking the FSMPs, it will provide a forum to sort out conflicts. But, in most cases, in forestry, participation is peripheral and symbolic, more to legitimize the process than to produce results.

Nonmaterial motivation, through allowing participation in discussions, though laudable, is not a practical system; improvement in social conditions and living standards is the basic urge that drives people to participate. Under these circumstances, participation should involve productive engagement.

The Larger Context

ASEAN is a rich region in terms of natural flora and fauna, timber, and NWFPs. In its larger context, fire and haze management in AMCs is also an issue of environmental security covering resource development, biodiversity conservation, sustainable management of forests, food security, employment, related institutions, and infrastructure. The need for a holistic approach to address forest fires and haze is, therefore, evident.

Strengthening Regional Collaboration

The way ahead to achieve the ORHAP's objectives should be by unflagging efforts to continuously strengthen regional collaboration and cooperation. This can be achieved through joint activities, fine-tuning of policies, adopting common standards and approaches, establishing legal instruments on important aspects of regional collaboration, effectively institutionalizing management of forest fires and haze, formulating a long-term framework and perspective plan for fire management, and ensuring proper balance of the program structure. It is also necessary to provide increasing clarity to the functions of the different ASEAN bodies concerned with fire and haze management.

Joint Activities

Joint activities suitable for the different contexts and circumstances are an important means of strengthening the regional approach. Policy studies, research and development, specialized training, remote sensing and satellite-based monitoring, and SRFAs are some of the activities on which cooperation has been initiated. This cooperation needs to be further strengthened. As and when conditions become more conducive, and if economy and efficiency warrant it, more and more activities relating to fire management can be brought under the regional preview.

Continuation and Completion of Ongoing Activities

Several activities have been initiated by the ORHAP under the auspices of ADB's RETA Project. Some activities have been started and are ongoing, some are in a nascent stage, and others are still in the form of a plan awaiting approval for funding. Some activities are of

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considerable magnitude, some are complex in nature; some are of short-term, and others are of medium-term implication.

An important task ahead is to carry these forward, enhance their functioning or complete them as necessary in order to realize the goals. There are various activities to be seen through. These include completing the network of FSMPs, linking village units all the way up to the subregional (SRFA) level; increasing and improving the monitoring capacity of AMSC and establishing an effective monitoring system network; pursuing and completing the work on policy changes involving introduction of market-based instruments, a system of responsible land clearance bonds, mechanical land clearing, and model codes of practice; starting training programs on firefighting, fire management and monitoring; and establishing the Regional Research and Training Center for Land and Forest Fire Management.

Some of the areas where focused attention is required in the short term would include working toward common standards and approaches (e.g., haze pollution indexes, fire monitoring standards, and capability); and establishment of an ASEAN Haze Fund.

There is a clear need for proper documentation of fires across the ASEAN region. While general occurrence of fire and fire-generated smoke at regional level is known, there is still a lack of information on seasonal and spatial distribution of fires in the various land-use systems and wildlands. Fire monitoring on a regional scale is not necessarily aimed at firefighting operations. They must be arranged within the individual countries. Regional fire activity monitoring should include the evaluation of archives with historic satellite data in order to identify possible changes of fire regimes.

Another issue, relating to implementation of the monitoring program, is that in the future,

the emphasis should shift from the regional level to upgrading the capacity of national-level meteorological institutions. In the medium term, particular attention should be paid to reducing the differences in monitoring capacity among the various AMCs. Basic-level communication facilities (e.g., access to ASMC's intranet) should be assured for all AMC meteorological institutions.

Consultation and New Activities

A means of strengthening regional collaboration is through regular consultation among the AMCs to review the implementation of the ORHAP and to assess the need for program modification, including new activities. Some ideas have already come up.

- A proposal is being considered regarding publication and distribution of an ASEAN *Forest Fire Bulletin* on a regular basis to disseminate information on occurrence and extent of fires, estimated impacts, research results, technological breakthroughs, experience with application of specific technologies, information on weather patterns, policy developments, etc., from within and outside ASEAN.
- Considering the commonality of forest fire-related issues and problems, apart from cost-effectiveness, AMCs can gain considerable advantages by establishing pan-ASEAN fire centers or strengthening existing ones, while sharing facilities, knowledge and experience in aspects such as fire science and technology, and fire management planning. These can be linked to the Regional Research and Training Center for Land and Forest Fire Management.
- The ORHAP at present does not include activities relating to the effects of forest

fires and haze on public health, and measures to mitigate such impacts. The NHAP (draft) of Malaysia has incorporated public health warning and mitigation measures in its activities. It would be appropriate to acknowledge the relevance of it, through incorporating a corresponding activity in the ORHAP, even if on a token scale.

- There are no separate entities dealing with fire weather, nor are there dedicated satellites for fire monitoring. A recommendation has been made at the WMO Workshop (2-5 June 1998) held in Singapore to develop dedicated satellites for fire monitoring that will have better spatial and temporal resolution than existing satellites. It was also suggested that the next generation fire satellites should provide for better characterization of fire temperature and resulting gaseous and particulate emission measurements. The latter information can be used to initialize ATMs that can forecast the development and dispersal of pollutants in the region. This idea needs to be pursued.

Fine-Tuning of Policies

There are no separate forest fire policies in the AMCs. Fire-related policies are included as clauses or provisions in other related policies; e.g., in a forest policy, environmental policy, or land development policy. Separate regulations corresponding to these policy clauses are often issued. These lead to inconsistencies and even conflicts as far as forest fire- and haze-related policies are concerned. There is need to fine-tune fire-related policy provisions by removing inconsistencies and providing for appropriate focus. Better still, a separate policy statement on forest fires and haze can be formulated—

following accepted procedures involving policy articulation and formulation.

Promoting policy changes relating to the use of fires that cause atmospheric pollution is difficult. This is a medium-term task that is being undertaken by some countries with bilateral support from international donors.

ASEAN Regional Framework Policy

An ASEAN regional framework policy on forest fires and associated haze can serve as a model for the AMCs to formulate their own policies (or modify the existing policy provisions) to suit their needs.

No single policy formula can cover the wide range of ecological, socioeconomic, and cultural conditions found in AMCs. But there are certain broad principles common to all situations, including:

- the need for formulation of policies specifically addressing forest fires and haze autonomously or as an integral component of land-use policies;
- flexibility in policy implementation, and the capability to review and revise fire-related policies;
- clear and measurable policy objectives and implementation strategies; and
- involvement of all stakeholders in policy development, especially through devolved or community participatory approaches.

Formulating and promulgating a policy does not necessarily guarantee that it will be followed. Policy implementation needs to be ensured through strict enforcement.

Common Standards and Approaches

For joint efforts, as envisaged in the ORHAP, to succeed, common standards and common approaches are required. The need for harmonization of haze pollution indexes, standardization of the FDRS and hot spot

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algorithms, a common curriculum for fire management training, standard terms and definitions, and a common/harmonized system of weights and measures exemplify the importance of common standards.

Similarly, there are several aspects (e.g., policy and regulations) where common approaches will help to strengthen regional cooperation. Methods of land clearance and preparation, reduced-impact forest harvesting, use of market-based instruments, and land clearance bonds, and institutional arrangements are cases where common approaches and guidelines can be applied.

Before common adoption by all AMCs, the merits and demerits of the standards and approaches should be discussed in specially organized workshops to clarify issues and implications and to make necessary modifications. Training for staff, including demonstration of the use of common standards and approaches, should be provided.

Legal System for Regional Cooperation

A legal system for the ORHAP will involve various levels and types. ASEAN's legal system may be sufficient to cover some of the ORHAP's general aspects (e.g., personnel, financial control). In the case of fire and haze management involving more than one country, specific agreements are needed, enabled by a superior instrument such as a protocol or a mother agreement.

The different levels in the legal system of the ORHAP will roughly be as follows: regional-level convention or a mother agreement; specific protocol(s) (e.g., on transboundary haze pollution control); agreements relating to a specific situation (e.g., an agreement for sharing weather information); and SOPs for actions falling within the purview of specific agreements

(such as cross-border transfers of firefighting equipment).

Instrument for Transboundary Haze Pollution Control

For international agreements to be drawn up covering various aspects of the ORHAP, it is necessary to have an enabling legal instrument. Sustained implementation of the ORHAP would significantly be helped by a mother agreement or a comparable legal instrument that embodies the various agreements at the bilateral, subregional, and regional levels. The ASEAN Regional Agreement on Transboundary Haze Pollution Control initiative needs to be pursued as a priority.

Other Legal Aspects

Some of the other important activities that have a legal dimension include the following:

- ASEAN Haze Fund to support the ORHAP, and its legal status;
- partnership agreements with donors for specified support; and
- the ORHAP's claim to be qualified for coverage under the Clean Development Mechanism (CDM).

CDM and Forest Fire Management

The eligibility of land-use activities for the CDM is a gray area. Forest fire management, rehabilitation of fire-affected areas, and haze pollution control are, at present, not qualified for CDM support. The interpretation is that only fossil-based emission reduction activities are allowed.

Institutionalizing Forest Fire and Haze Management

The sustainability of human-made systems (such as forest fire and haze management) depends on how effectively it has been institutionalized

with appropriate mission, structure, and controls for continued and efficient functioning. The institutional framework has to be sound and capable of systematic enhancement.

ADB is finalizing an advisory and operational technical assistance for institutionalization of forest fire and haze management in Indonesia.

The objectives of the technical assistance are to assist Indonesian institutions to develop and design appropriate policies, legislation, guidelines, structures, and procedures to institutionalize prevention, mitigation, control, and monitoring of land and forest fires and associated haze pollution. It will also determine the need for capacity building at various levels of government and related NGOs; and develop a nationwide extension and education program. This would require identification of a single lead institution that would have the authority and be accountable for all operations dealing with land and forest fire management. The lead institution would establish legally binding coordination and collaboration mechanisms and relationships with other institutions in the country for effective management. The process can, as appropriate, be extended to other AMCs.

A Perspective Framework for the ORHAP

The emphasis of the ORHAP is on implementation and action. As a rolling six-year plan, its horizon is short. While this has merits from the short-term operational point of view, its lack of a long-term perspective has serious disadvantages, particularly affecting the consistency of approach and direction. This will cause the planners' bias to be reflected in the add-on plans—potentially leading to unsteady or lack of progress.

On the other hand a long-term perspective plan (of which the ORHAP will be a part) has the advantage that it can better rationalize the

program structure and balance, to achieve the goals in the shortest possible time. As the perspective plan, by definition, will be closely linked with other related sectors, it also helps to obtain a holistic understanding of the ecological and human aspects of forest fires and haze. This is an aspect to be considered in the future and acted upon.

Program Status for Institutional Strengthening

In spite of the ORHAP principle that ASEAN's fire and haze problem cannot be fixed but should be managed, there is the danger that it may still concentrate on technical aspects. However, the most important impediment in fire and haze management has been institutional weaknesses. The three programs of the ORHAP (prevention, mitigation and monitoring) are technical programs; it may be worthwhile to add institutions (or institutional strengthening) as another.

Upgrading of CSU

The ORHAP's success in the years to come will depend on CSU's dynamism. It must be provided with adequate resources and skills/expertise, in view of its singularly vital role.

Conclusion

The ORHAP has been designed as a people-oriented, public-interest-propelled system that aims to defend the human environment, and particularly to prevent transboundary haze pollution. Through its mission to manage forest fires and associated haze, the ORHAP can and should serve as a stabilizing force to support land- and forest-based development in the region. The laudable commitment of ASEAN in this regard needs to be kept undiminished. Complacency should be avoided if this commitment is not to be blunted.

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