The Program

"A first rate theory predicts; a second rate theory forbids; and a third rate theory explains after the event"—Aleksander Isaakovich Kitaigordskii

"Present day science and technology offer an opportunity to beautify, in the full sense of the word, life on earth, to create conditions for the all-round development of every individual. But it is this very creation of the human mind and human hands that threatens the very existence of the human race! What a crying contradiction! We want science to cease to be the servant of two masters—life and death. We want it to serve life only"—Mikhail Gorbachev

CHAPTER 4

The Asian Development Bank's Technical Assistance

[This chapter gives a brief account of ADB's two-pronged approach to address transboundary atmospheric pollution in the region through an advisory technical assistance grant to Indonesia and a regional technical assistance grant to ASEAN. It explains the catalytic role, objectives, and activities of the regional technical assistance, as well as the results achieved and the lessons learned.]

Role and Concerns of ADB

ADB has played a prominent role in promoting the development of the Asian and Pacific region. ADB's concerns, and therefore its operations, cover a wide spectrum of development activities. Its overarching objective is poverty reduction, while its medium-term strategic objectives are to foster economic growth, improve the status of women and disadvantaged groups, support human resource development, help to sustainably manage natural resources, and protect the environment.

Apart from loans and equity investments, ADB provides technical assistance grants for the preparation and execution of development projects and programs, and also for advisory purposes. It gives priority to regional, subregional, and national projects and programs that contribute to the harmonious development of the region as a whole and that promote regional cooperation.

Training of Indonesian firefighters in the use of spray chemicals, 1997.

Photo: Anonymous

Environmental Concerns

In 1996, ADB in collaboration with Harvard University completed a research study on environmental indicators. Three sets of indexes for monitoring environmental changes were developed: cost of remediation, environmental elasticity, and environmental diamond.

The cost of remediation reflects the cost of moving the environment from its present state to a more desirable level in the future. This index has strong policy implications for national governments and multilateral financing institutions (MFIs) since it reveals the amount of wealth that a society has to forego to restore the environment to a more livable level. The index relates environment to the cost of repairing damage done to it in dollar terms.

Environmental elasticity is a dynamic ratio that measures the percentage change of an aggregate measure of environmental quality for every 1 percent increase of a country's per capita

gross domestic product (GDP). The environmental changes are generally defined by several selected environmental indicators and are aggregated through a weighting scheme.

The environmental diamond measures and presents the state of the environment graphically, in terms of overall quality of air, water, land, and ecosystem. This indicator reveals a general picture without concealing the multiple dimensions of the environment.

The three indexes can be used by MFIs and governments in determining the state of the environment, the rate of environmental degradation compared to economic growth, and the costs of improving the environment. In terms of environmental investments, MFIs may give added emphasis to countries with negative environmental trends. The green side of environmental degradation (land and ecosystem) should receive greater attention and investments. Systematic and standardized data gathering, however, should be a priority for ADB's developing member countries.

Environmental Challenges

Environment was also one of the major themes of ADB's study on *Emerging Asia: Challenges and Changes*.[25] The study shows that Asia's environment has become so polluted and degraded that it poses a threat not just to the quality of life of its people but also to economic growth. The costs of this environmental neglect are massive.

Many argue that Asia cannot spare the resources needed to clean up its environment. But the solution to Asia's environmental problems does not lie in a mammoth environmental bureaucracy charged with the responsibility of investing billions of dollars in environmental infrastructure. Rather, what is needed is a redeployment of existing resources within the public sector to ensure that environmental issues are fully reflected in macroeconomic and sectoral policies. The environment should be regarded as a dimension that cuts across sectors, policies, and institutions. The energies of the private sector and civil society must also be better harnessed for environmental management.

Unfortunately, Asia's environment is likely to get much worse before it gets better. Most economies are still a long way from the point where rising incomes will create the demands for better environmental standards and induce a shift in economic structure toward less polluting economic activities. However, it would be wrong to conclude that economic growth per se is the cause of Asia's environmental woes. The culprits are failed policies and institutions, and reckless neglect. How to improve policies and establish efficient and effective institutions are expected to be among the major challenges of the 21st century (ADB 1998b).

It is in this context that atmospheric transboundary pollution caused by forest fires assumes significance.

Policy Emphasis on Forestry

ADB plays a leading role in the region supporting and catalyzing action to prevent and mitigate the impact of forest fires and associated transboundary atmospheric pollution.

ADB's policy emphasis on forestry (and land use) is to promote sustained management of resources, focusing particularly on (i) conservation of ecosystems, species, and biodiversity; (ii) rehabilitation of degraded areas; and (iii) institutional strengthening (ADB 1995). The issue of forest fires and haze in the ASEAN region is a challenging one. ADB's contributions can support the capacity of regional and national institutions to effectively face future fires on a sustainable basis without

ADB plays a leading role in the region supporting and catalyzing action to prevent and mitigate the impact of forest fires and associated transboundary atmospheric pollution

allowing them to become environmental catastrophes.

Technical Assistance to Address Forest Fires and Haze

Several ADB missions visited Indonesia in late 1997 to take stock of the fires and haze and consider possible responses. Following consultations with national, regional, and international agencies and bilateral donors, as well as with the ASEAN Secretariat, a balanced approach was formulated to address the causes of the economic and environmental damage resulting from these fires, and to prevent their recurrence. ASOEN's HTTF in its November 1997 meeting reviewed a position paper for regional technical assistance. HTTF, while conveying its agreement in principle, suggested that ADB assistance be directed toward putting the RHAP into operation and supporting various economic and scientific studies to enhance understanding of the causes and consequences of forest fires and associated haze formation and dispersion.

Accordingly, a mission to Indonesia, Malaysia, and Singapore in December 1997 met with senior officials of the ministries and departments of environment in the respective countries, the Malaysian Institute of Forest Management in Kuala Lumpur, and ASMC in Singapore, and also participated in the HTTF meeting in Singapore. The mission discussed various initiatives by the region to address the problem of fires and transboundary atmospheric pollution, as well as the key aspects of putting them into operation.

The RHAP prepared by HTTF/ASOEN was endorsed by the AMMH held in Singapore from 22 to 23 December 1997 (See Appendix 2).

The RHAP was signed during a period of intense fire, smoke, and transboundary pollution. The document itself is, therefore, a reflection of ASEAN's determination to actively do something about the problem rather than simply describing a broad-brush approach to it. However, the RHAP was formulated and endorsed within such a short space of time that it was not possible for the AMMH or HTTF to work out implementation details prior to its endorsement by the nine AMCs.[26] What the ministers had in mind when they endorsed the RHAP was to initiate a *process*. The document had also made it clear that ADB's assistance would be sought to implement the plan.

Two-Pronged Approach

ADB adopted a two-pronged approach to address the causes and economic and environmental damage from the fires and to prevent their recurrence, supporting regional initiatives as well as national ones. The result was a set of twin projects: a RETA Project[27] for strengthening the capacity of ASEAN to prevent and mitigate transboundary atmospheric pollution, and an ADTA[28] for planning for fire prevention and drought management in Indonesia, approved in early 1998. Both projects have been completed.

Advisory Technical Assistance

ADB approved on 20 March 1998 an ADTA grant for $1 million to the Indonesian Government. The objectives were to assess the damage and economic cost to Indonesia from the 1997-1998 fires and haze, and to formulate an investment plan that would prepare the country for future occurrences and recurrent droughts.

More specifically they are:

(i) to determine the causes of the fires, and the social, environmental, and economic impacts of fire and drought;

A balanced approach was formulated to address the causes of the economic and environmental damage resulting from these fires, and to prevent their recurrence

(ii) to assess the possible causes of the uncontrolled fires in 1997 and the haze problem, and how these could have been prevented;
(iii) to assess and evaluate policies and regulations relating to the use of fire for site preparation, and the efficacy of methods used in preventing and controlling fire outbreaks;
(iv) to assess the need for new approaches to fire prevention and control; and
(v) to make recommendations on the costs and benefits of investments in prevention, early warning systems, firefighting capability, and institutional strengthening.

The ADTA was completed in April 1999. Details of implementation, outcome, achievements, and proposals for follow-up are provided in a three-volume final report (BAPPENAS 1999).

Regional Technical Assistance Project

ADB approved $1 million for the RETA Project on 24 February 1998 from the Japan Special Fund. The ASEAN Secretariat and associated institutions including ASMC were to provide the counterpart support, including staff, office space, and meteorological equipment (including the supercomputer at ASMC), and other facilities, estimated at an equivalent $200,000.

Objective and Scope

The main objectives of the RETA Project were to strengthen and formalize cooperation among AMCs affected by the fires and haze via support for:

- short-term measures aimed at putting the RHAP into operation;
- medium-term measures that strengthen the capacity of relevant institutions to implement the RHAP, and improve scientific understanding of large-scale fires and transboundary atmospheric pollution; and
- strengthening the capacity of concerned institutions to implement and institutionalize the RHAP.

These aims called for several actions with a view to achieving the following:

- helping to identify actions to be taken by AMCs to put into place an institutional framework for addressing the region's transboundary haze pollution problem on a long-term, sustainable basis;
- identifying the investments (if any) required to support the institutional framework;
- catalyzing donor collaborative partnerships and activities that would directly complement the actions the AMCs planned to undertake in confronting the region's transboundary haze pollution problem;
- sharing knowledge and experience as well as efficient and economic use of regional firefighting equipment;
- developing formalized cooperation arrangements among countries of the region and beyond to enhance the level of scientific understanding of the causes and consequences of transboundary atmospheric pollution; and
- establishing a regional level framework for joint response mechanisms through enhancement in the capacity of ASEAN and associated institutions to effectively implement and monitor the RHAP.

In this regard, the RETA Project's scope of work included:

(i) operationalizing the RHAP (including formulation of a mobilization and response strategy for activating firefighting resources);

The main objectives of the RETA Project were to strengthen and formalize cooperation among AMCs affected by the fires and haze

The most important task of the RETA Project was to develop a strong and comprehensive time-bound plan for prevention, mitigation, and monitoring at the national and regional levels

(ii) improving the ASEAN Secretariat's information management and dissemination relating to fires and haze;
(iii) strengthening the capacity of ASMC (in Singapore) to allow it to serve as a regional hydrometeorological information center, in collaboration with national counterpart agencies;
(iv) developing appropriate mechanisms for international cooperation for fire prevention and mitigation;
(v) establishing fire detection and monitoring systems at the regional level;
(vi) undertaking socioeconomic and scientific studies with a regional focus that may include:
    (a) use and marketing of biomass and logging residues,
    (b) use of market-based incentives to promote adoption of new products and technologies, and
    (c) transboundary atmospheric pollution; and
(vii) disseminating the results of the studies referred to in v above, as well as information concerning implementation of the RHAP via regional workshops.

The most important task of the RETA Project was to "develop a strong and comprehensive time-bound plan for prevention, mitigation, and monitoring" (as well as institutional strengthening and identifying required investments) at the national and regional levels.

Relationship between the RETA Project and the RHAP

The RETA Project was intended to be part of a process that would lay a strong foundation to address the fire and haze problem in the ASEAN region by putting into operation the RHAP. The ASEAN Secretariat was the implementation agency for the RETA Project; and its Project Management Unit (PMU) was housed within the ASEAN Secretariat Building in Jakarta.

Compared to other areas in which a regional framework has been used to strengthen intra-ASEAN ties (e.g., trade, transport and intraregional tourism—all of which have legally binding instruments concluded), regional cooperation to combat transboundary haze pollution is at a relatively early stage. While a soft-law legal framework for regional cooperation in this has existed since the mid-1980s, few concrete measures have been identified and fewer still have been implemented.

Transboundary haze pollution is a complex issue that requires coordinated concrete measures by a relatively large number of parties if its negative impacts are to be diminished. More important, the action has to be taken before a haze problem develops, so that crises can be avoided or their intensity reduced.

Crisis management by definition involves short-term measures not focused on preventing or reducing the intensity of future disasters.

It is a costly and inefficient means of addressing ASEAN's transboundary haze pollution problem over time. Short-term crisis management initiatives were, therefore, deliberately excluded from the scope of the RETA Project.

Its focus was instead on assisting ASEAN to develop an institutionalized approach to averting or reducing the negative impacts of future transboundary haze.

Implementing the Project

Meetings of the ASEAN Environment Ministers, ASOEN, HTTF, and subregional working groups monitored the progress of the RETA Project and ensured timely action and coordination on bringing the RHAP to fruition.

Within ADB, a Steering Committee, chaired by the Manager of the Environment Division, with representatives from the Office of Environment and Social Development, Forestry and Natural Resources Division West, Forestry and Natural Resources Division East, Programs Department East 2, and Consulting Services Division was set up to oversee implementation, to monitor progress, and to liaise with ASEAN.

The ASEAN Secretariat itself liaised with national governments and agencies, arranged and conducted regional workshops and seminars, and provided necessary administrative support. PMU, meanwhile, took care of the day-to-day administration and management of the RETA Project.

A multidisciplinary team of international and regional consultants assisted the ASEAN Secretariat.

An input of about 60 person-months, comprising 12 person-months of international and 48 person-months of domestic consultants, was involved.

As envisaged in the original project document, the RETA Project was to be implemented over 12 months, with the first three-month phase culminating by the end of May 1998 and resulting in the development of an operational plan.

The second phase was to focus on building a clear understanding of the smoke and haze pollution and to strengthen institutions to address the issues involved.

The Process

The cornerstone on which the RETA Project was built and completed was the RHAP. The specific terms of reference within which the Project functioned were to:

(i) assist ASEAN in formulating a time-bound operational plan that AMCs could use to implement and monitor the RHAP. This aim was achieved by formulating the ORHAP and Detailed Implementation Plans (DIPs);

(ii) create a better understanding of haze formation, movement, and dispersion. This was achieved by initiating ASMC studies on haze formation and movements, in association with partner international institutions;

(iii) strengthen the capacity of ASEAN and national institutions to avoid or face fires and haze. A key instrument in this regard is the proposed ASEAN Agreement on Transboundary Haze, which is supported by legal agreements that will specify various aspects of joint fire management response systems; and harmonize fire detection and monitoring systems, and other outcomes of the program for strengthening ASEAN and national institutions; and

(iv) convene regional workshops, seminars, and training programs to disseminate the results of scientific studies relating to transboundary haze pollution, and discuss their relationship to the overall RHAP implementation process.

The RETA Project was to be implemented over 12 months, with the first three-month phase culminating by the end of May 1998 and resulting in the development of an operational plan

The Activities

The following activities were undertaken to fulfil the major goals:

(i) development of a framework for putting the RHAP into action;

(ii) strengthening of national and subregional plans to address fire and haze issues;

(iii) review of regional policies, and development of strategies and guidelines to promote (a) land-use practices that curb deployment of fire, and (b) market-based instruments that

discourage practices that result in fires and emissions;

(iv) review of experiences within and beyond the region concerning fire prevention, control, and mitigation strategies;

(v) an inventory of existing fire management capacity in the affected AMCs to be made available for regional fire suppression efforts;

(vi) formulation of an operating procedure for mobilization of fire suppression resources in each affected country, as well as with cooperating agencies outside the region; development of Fire Suppression Mobilization Plans (FSMPs) and SRFAs.

(vii) development of an improved information management and dissemination system in the ASEAN Secretariat relating to fires and haze;

(viii) strengthening of the capacity of ASMC to serve as a regional hydro-meteorological information center, in collaboration with national meteorological agencies;

(ix) development of regional training and research programs via exchange visits, secondments, and joint training exercises in fire management, remote sensing of fires and haze, application of GIS, and other priority subjects;

(x) undertaking of socioeconomic and scientific studies that enhance understanding of forest fires and haze;

(xi) convening of regional meetings, seminars, and workshops; and

(xiii) establishment of a Coordination and Support Unit (CSU).

Studies Carried out by the Project

When the ASEAN Environment Ministers endorsed the RHAP, two themes stood out as deserving in-depth analysis. First, ASEAN's collective fire management capacity needed to be strengthened. Second, in order to prevent recurrence of similar fires with the return of each ENSO, policies that encouraged adoption of mechanical land-clearing techniques would need to be put in place.

The prime output of the RETA Project was an operationalized version of the RHAP (ORHAP) which was approved for implementation by the ASOEN/ HTTF in July 1999

Mobilization of Donor Support

In tandem with the Inception Workshop of the Project, early in 1998, an open forum for funding agencies' participation in assistance for the fire and haze problem was held. This led to a number of commitments complementing the Project activities, with the donors taking over some of the activities within the RETA Project's scope. The resources so released were used to finance other important activities that had been underfunded.

The RETA Project thus promoted collaborative programs with various donors, including the Australian Agency for International Development (AusAID), CIDA, the Governments of New Zealand, Norway, and the United States (under its SEA-EI), and UNEP. Several donors are also working with CSU on forest fires and haze pollution management.

Main Outcome of the RETA Project

The prime output of the RETA Project was an operationalized version of the RHAP (ORHAP) which was approved for implementation by the ASOEN/HTTF in July 1999. The ORHAP includes priority actions for prevention, mitigation, and monitoring of fires and haze, and is composed of one regional, two subregional, and nine national DIPs. The ORHAP requires execution of a relatively large number of interdependent initiatives that complement one another and fit together into an overall framework.

The RETA Project report contains definitions of program components; generic guidelines for implementing the ORHAP; a detailed ORHAP providing descriptive summary of actions; NHAPs and two SRFAs; an annual operational plan and a six-year rolling plan for implementing the ORHAP; procedure for formulating rolling six-year programs; procedures for implementing specific portions of ORHAP and criteria for choosing from the alternatives; Fire Suppression Mobilization Plans (FSMPs) and procedures for formulating and implementing them; details of existing and required regional legal frameworks at the ASEAN level; particulars about a fire-and-haze information clearinghouse; and monitoring framework and establishment of a CSU at the ASEAN Secretariat for undertaking the continued refining and implementation of the ORHAP.

The ORHAP has had a beneficial impact on ASEAN in two respects. First, it has helped ASEAN to address the fire-and-haze issue directly, with actions that increasing the region's capacity to manage future incidents. It has also sparked the beginning of ASEAN's reorientation from a passive agency that responds to challenges in an ex post manner, to a more forward-looking institution that anticipates challenges and responds to them ex ante.

The regional level coordination, support, and monitoring of the ORHAP has been institutionalized through establishment of CSU, which fully took over the coordination and support functions with effect from 1 October 1999. A web site (http://www.haze.online.or.id) was also set up for online information exchange and updates. CSU acts as a clearinghouse for potential collaborative programs for bilateral and multilateral assistance aimed at prevention and mitigation of forest fires and associated transboundary haze pollution.

The ORHAP requires execution of a relatively large number of interdependent initiatives that complement one another and fit together into an overall framework

BOX 11 Achievements of ADB's Regional Technical Assistance Project

A. Through direct intervention

- Compiled baseline information through surveys, studies, and assessments.
- Conducted inventory of the region's firefighting resources and fire suppression capabilities.
- Established and strengthened subregional firefighting arrangements.
- Carried out studies on ASEAN's existing fire and haze monitoring system with a view to upgrading them.
- Undertook policy studies on the use of market-based instruments for promoting adoption of mechanical zero-burn land-clearing methods and marketing of products that use biomass residues as productive inputs.
- Reviewed national and international laws, policies, and institutional arrangements relating to fire and haze issues and developed a legal framework and facility for crossborder cooperation.
- Catalyzed development of regional and national facilities for fire and haze monitoring.
- Developed and strengthened the system of information management at the ASEAN level and supported establishment of a regional information center and clearinghouse including setting up of a haze web site.
- Helped put in place an Operationalized Regional Haze Action Plan, including a system of Detailed Implementation Plans at the regional, subregional, and national levels.
- Assisted in organizing institutional mechanisms, particularly for regional coordination, through establishment of CSU.
- Promoted dialogue among ASEAN members and partners as a long-term system for effective regional cooperation.

B. Through collaboration with other donors

- Formulated an operating procedure for activating forest firefighting resources in the ASEAN region, with particular reference to Indonesia.
- Designed a model FSMP and initiated preparation of FSMPs for specific areas.
- Conducted studies on haze transport and climate models and harmonization of pollution indexes.
- Catalyzed and collaborated in studies on health impacts of haze pollution.
- Promoted development of facilities for training and research relating to forest fire and haze management.
- Mobilized donor support for fire and haze projects (e.g., PARTS), forged collaborative partnerships with other international institutions, and facilitated donor coordination.

Throughout the RETA Project, PMU has provided support in the formulation of the AMCs' NHAPs. The numbers of studies and analyses carried out by the team have been substantial and will be useful during the implementation of the ORHAP and also as reference materials.

Notes

[25] *Emerging Asia: Challenges and Changes*, Asian Development Bank, 1997.

[26] Cambodia joined ASEAN on 30 April 1999, bringing total membership of the grouping to 10 countries. The RHAP was thus originally endorsed by only nine AMCs.

[27] RETA 5778: *Strengthening the Capacity of the ASEAN to Prevent and Mitigate Transboundary Atmospheric Pollution*.

[28] ADTA INO 2999: *Planning for Fire Prevention and Drought Management*.