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Environmental And Natural Resources Planning And Management

Paper No.24
ENVIRONMENTAL AND NATURAL RESOURCES PLANNING AND MANAGEMENT

The Challenge

ONE of the major challenges facing mankind is how to meet basic human needs while sustaining the resource base upon which these needs depend.

In the Asia-Pacific region, the demand for natural resources is expected to increase dramatically over the next 15 years because of accelerating population and economic growth and more capital and technology-intensive production. The region’s population will increase by about 40 per cent — in the cities by some 90 per cent — and economic activity will double the demand on natural resources. Consequently, without careful planning and management, the following environmental conditions may materialize:

- the loss of about 11 per cent or 80 million hectares of current forest cover, thereby endangering critical watersheds and habitats and increasing soil erosion and the frequency of flooding and drought;
- the salinization, alkalinization and waterlogging of existing and newly-irrigated land, as well as widespread incidence of malaria, schistosomiasis and other diseases;
- the possible desertification of many marginal areas due to increased number of livestock;
- the depletion or destruction of many near-shore fisheries due to certain fishing practices near coral reefs, clearance of mangroves and water pollution;
- a five to ten-fold increase in air and water pollution due to a 300 per cent increase in motor vehicles and a 150-200 per cent intensification of industrial and mining activity; and
- increasing environmental and health problems due to a possible doubling in the use of pesticides, as well as their misuse.

Underlying such problems are strong political, economic and social factors which often limit opportunities to find or implement more beneficial methods of natural resources usage. Economic pressures force many developing nations to exploit rapidly their natural wealth at the expense of future needs, rates of exploitation exceed the regulatory capacities of governmental and traditional institutions, and cultural values and popular attitudes discourage resource management.

In addition, planned interventions generally lack an appreciation of the complexities and dynamics of interactions within and between natural and man-made systems, define objectives in narrow, sectoral terms, use production technologies inherently unsuited to particular conditions, overvalue immediate production gains and fail to internalize the costs of their impacts on other economic development activities.

Despite the enormity of these problems, there are signs of change for the better. This is partly due to the realization that constraints on effective natural resources management also hold back economic and social progress. In some areas, forests are being replanted after falling. A few nations are taking steps to reduce soil loss and desertification. The need for family planning is becoming better understood. Water supplies are being protected and pest management practices involving the use of pesticides are being reappraised.

Encouraging though these developments are, they are far from adequate and vigorous, determined initiatives are needed if greater human suffering and environmental degradation are to be avoided. There are, however, no quick and easy answers. The problems of population, natural resources and environment are complex and long-term and are exacerbated by their linkage with poverty, inequality and social conflict.

The Bank’s Response

Most governments in the Asia-Pacific region are aware that environmental problems jeopardize development potential and many have passed environmental legislation and established environmental agencies. For its part, the Bank has shown increasing concern for the environment, recognizing that it is rarely a question of environment versus development but
generally one of blending the environmental dimension with the overall objectives of socio-economic development.

Traditionally, the Bank has supported projects with important environmental benefits like reforestation, water supply and sanitation, urban development and housing and the preparation of regional development plans. However, developing member country (DMC) governments are giving greater attention to projects involving environmental and natural resources planning with the result that the Bank’s assistance has been extended to new areas such as coastal zone management, watershed protection, urban and industrial pollution control and occupational health and safety.

In its environmental policies, the Bank, through its Environment Unit, is committed to promoting environmentally-sound economic development by pursuing the following: (i) instituting procedures for systematic environmental examination of all the Bank’s development activities — including policies, programs and projects — to ensure the incorporation of environmental and natural resources planning and management concerns; (ii) cooperating with DMCs and other organizations to ensure that appropriate environmental protection measures are incorporated in the design and implementation of economic development projects (in this connection, the Bank may provide technical assistance to develop the relevant indigenous capacity of its DMCs; (iii) supporting environmental and natural resources programs and projects; (iv) training and informing Bank staff in the environmental aspects of economic development; and (v) conducting studies leading to the improvement of project processing and implementation methodologies and preparing and disseminating documentation and other materials to provide guidance on the environmental aspects of economic development.

A number of environmental activities have been undertaken in pursuit of these policies:

**Country Programming and Country Strategy Studies**

At the beginning of each year, to assist Country Programming Missions in their discussions with DMC environmental and natural resources agencies and to assess opportunities for technical assistance and investment projects in environmental natural resources development, the Environment Unit prepares Environmental and Natural Resources Briefing Profiles for each member country. These Profiles identify major environmental and natural resources concerns in the DMCs, list environmental agencies in the DMCs to be consulted and provide examples of environmental resources development projects for possible funding by the Bank.

Following the approval of country programs, the Bank’s Environment Unit communicates with environmental agencies and official contact points in the Bank’s DMCs notifying them about projects which may generate significant environmental impacts and which require necessary remedial measures. Follow-up discussions allow an exchange of information and advice to be given on the handling of difficult problems. Whenever possible, non-governmental organizations (NGOs) dealing with environmental and natural resources activities are also contacted and encouraged to cooperate with governments on these projects as stipulated in the Bank’s policy on NGOs.

This is primarily with the view to soliciting their opinions and promoting the use of their expertise, where appropriate, as input into the formulation and processing of development projects.

The Bank’s Country Strategy Studies, which determine the Bank’s future operational strategy over the medium term, include coverage of environmental considerations in each country and a chapter on the environmental dimensions of economic development. However, to encourage the longer-term view of development, the Environment Unit has prepared formal studies of the environmental and natural resources of a number of DMCs. Each analysis attempts to identify major environmental and natural resources constraints and opportunities likely to affect economic development and to delineate planning and management needs, development programs and potential projects with which to correct critical cases of loss or degradation of environmental and natural resources.

**Project Review**

The Environment Unit assists the Projects Departments/Divisions in reviewing the environmental aspects of projects to be financed by the Bank and engages the project cycle in the following ways:

**Project Identification**

To initiate its project review activities, the Environment Unit liaises with project managers and their staff to classify projects stipulated in the Country Program Papers in accordance with their likely environmental impacts. This leads to a report, “Preliminary Environmental Screening of Loan and Technical Assistance Projects”, prepared by the Environment Unit. Proposed Bank projects are divided into four broad impact categories, reflecting the nature of their likely environmental impacts and thus their need for environmental analysis: Category A: projects rarely having significant adverse environmental impacts; Category B: those with significant adverse environmental impacts but for which mitigative/remedial measures may be prescribed readily; Category C: those with significant adverse environmental impacts requiring detailed environmental assessment/analysis; and Category D: environmentally-oriented projects.

A second report, “Secondary Environmental Screening of Loan and Technical Assistance Projects”, is then prepared by the Environment Unit. With more information available, major environmental concerns are specified and the scope of work and work program are established for the processing and implementation of pipeline projects for the year.

**Fact-Finding**

Contributing formal and informal environmental reviews at the project fact-finding stage is crucial because this is the most effective way of avoiding conception and design errors which could prove difficult and costly to rectify later. The Environment Unit comments on project planning and design expressed in the Project Briefs. It also establishes terms of reference for missions and examines the Back-to-Office
Views of Songkhla Lake in southern Thailand. A Bank-funded Songkhla Lake Basin Planning Study is designed to formulate an integrated plan for socio-economic development with sustained environmental and natural resources management.

Reports of Fact-Finding Missions. The Environment Specialists sometimes attend Management Review Meetings on the Bank’s projects, especially for those falling under Categories C and D, to review the proposed treatment of environmental and natural resources issues.

For some projects, an Environment Specialist or a staff consultant may visit the proposed project site as part of the Fact-Finding Mission or independently to undertake an initial environmental examination. If a potential problem is confirmed, more detailed studies may be required to establish mitigation measures and to incorporate them in project planning and design.

To support the environmental review function, the Environment Unit deploys especially developed “Environmental Guidelines” to help staff during project processing to determine whether or not a proposed project is likely to generate significant environmental impacts and, where such impacts are considered adverse, to specify the need for more detailed study.

Pre-Appraisal/Appraisal

This is the comprehensive review stage of the project cycle at which environmental issues are merged with technical, institutional, economic, socio-cultural and financial parameters and the foundations laid for implementing the project and evaluating it upon completion. To ensure an appropriate representation of the environmental dimension, a statement on the significant environmental impacts of the project and the detailing of measures to be adopted to reduce adverse impacts is undertaken by projects staff for projects with significant environmental impacts and included in the Appraisal Report. The statement generally includes the identification and prediction of impacts on environmental and natural resource conditions and the quantification, wherever possible, of both direct and indirect impacts and their mitigation in monetary terms.

During appraisal, environmental protection planning and management requirements of projects with significant environmental impacts are discussed between the Appraisal Mission and the Government. Agreements reached on appropriate environmental protection measures are incorporated as proposed loan covenants in the Memorandum of Understanding and incorporated as covenants in the Loan Agreement. This is in addition to the standard provision on environmental practices which has been included in the Bank’s loan documents. To assure proper and timely implementation of the environmental covenants, the additional costs of implementing and monitoring significant environmental protection measures are included in the project costs and may either be financed under the loan or by the borrower. If financed by the borrower, the Appraisal Mission ensures that the financing of the additional costs of significant environmental protection measures has an adequate budget.
Negotiations

For projects with significant adverse environmental impacts and which require detailed environmental assessment, an Environment Specialist may form part of the Bank's negotiating team.

Implementation and Supervision

Having incorporated environmental control measures in project formulation, Review Missions ensure that environmental safeguards are implemented efficiently and satisfactorily by the Borrower/Executing Agency during the construction and operation of the project. For most industrial projects, problems occur during operations due to insufficient maintenance and operation of the project. For most industrial projects, problems occur during operations due to insufficient maintenance or non-use of pollution-control devices and facilities.

More specifically, Review Missions examine and evaluate operation and maintenance arrangements and institutional commitments and loan covenants covering environmental planning and management requirements. To help accomplish this, projects staff consult the Environment Unit and receive their assistance as appropriate. Further Back-to-Office Reports of Review Missions provide explicit details on any major environmental problems or issues revealed during field visits and on proposed remedial measures with an indication of the need for follow-up, especially for environmentally-hazardous projects which require continuous review even during their operations.

Towards the end of the year, the Environment Unit prepares a report, Loan Projects Approved During 19---: Projects Requiring Environmental Review During Implementation. This document provides a list of projects requiring specific environmental treatment during the implementation phase.

Completion and Post-Evaluation

After physical completion of the project, a Project Completion Report is prepared as a factual, historical record. It includes a general assessment of the significant environmental impacts, including socio-cultural impacts, generated during project implementation, particularly with reference to those issues considered at the time of project appraisal. If the project involved environmental control measures, their implementation and effectiveness is evaluated. Post-Evaluation Reports or Project Performance Audit Reports include a final analysis as to whether the project met proposed environmental requirements and whether any unanticipated effects were induced as a result of project activities.

Project Monitoring Information System

A project monitoring information system operated by the Environment Unit keeps track of major environmental concerns associated with loan and technical assistance projects during project processing and implementation. Project officers and the Bank's Management are regularly informed of the status of projects with respect to their environmental impacts and necessary control measures. This procedure is being further developed so that projects can be monitored more closely during implementation and after completion. In the case of potentially hazardous and pollutive projects, such as chemical industries, pulp and paper mills and cement plants, environmental monitoring may be required for an extended period — in some cases, throughout the economic life of the project.

Resource Center Activities

As efforts to strengthen the environmental dimension in development projects must be in concert with the needs of DMCs, the Environment Unit is pursuing the following supportive strategies: (i) briefing of DMCs through Bank Missions on how the Bank might assist government bodies establish and/or reinforce environmental planning; (ii) presenting formal and informal seminars/training to government staff in the Bank's DMCs and giving advice on environmental matters; (iii) helping promote and implement environmental or natural resources projects or components of projects; and (iv) strengthening liaison and cooperation with a growing number of national and international institutions and organizations in the environmental field.

In pursuit of these strategies, major resource papers have been completed including Economic Analysis of the Environmental Impacts of Development Projects and a Handbook on the Use of Pesticides in the Asia/Pacific Region. An Environment Paper Series has also been initiated.

Education and Training of Staff

Apart from the project-by-project contact and informal discussions on environmental matters between the Environment Specialists and Bank staff, in-house seminars/workshops have been held on environmental planning and management/economic evaluation. These presentations review the importance of environmental and natural resources planning and management in the Bank's development activities and how they may be integrated with the project cycle. Training programs have also been undertaken on a regular basis in the Bank's DMCs for staff of environmental and related agencies.

Future Directions

Whatever the goal of development activities — satisfaction of basic needs or a composite measure of social welfare — it is clear that there are ecological limits to growth and to modifying natural systems. The limits vary from country to country in the Asia-Pacific region but involve soil stability, nutrient sources and uses, preservation of genetic diversity, sustainability of yields, water use, energy efficiency and pollution. There are also socio-economic constraints to radical interventions, particularly regarding the values, organization and institutions of the intended beneficiaries and opportunities for local participation.

In view of the increasing awareness of the importance of environmental and natural resources to economic development, attention is being focused on longer-term needs: the
establishment of natural resources usage policies, implementa-
tion and enforcement of environmental legislation, coordina-
tion of intersectoral goals and information management
systems. Particular attention is being directed towards in-
tegrated, multi-disciplinary approaches to development. Sec-
toral compartmentalizing of the use of natural resources often
produces conflicts and inefficient usage. Measures designed
to solve one problem often create or exacerbate problems in
another functional area. To date, the solution to these over-
sights has been to implement policies and procedures designed
to ensure systematic environmental review of development
programs and projects. However, this approach needs to be
supplemented by the integration of environmental and natural
resources planning and management with the traditional
aspects of macroeconomic planning and thereby engage the
resources planning and management with the traditional
aspects of macroeconomic planning and thereby engage the
broader country economic and sector context.

The Bank has launched a number of activities in an effort
to encourage sounder use of natural resources for what has
come to be called "sustainable development". For example,
the project cycle is being engaged to help ensure that economic
accounting reflects the values of natural goods and services.
Currently, the costs of such activities as forest clearing, soil
loss and use of water resources are significantly understated
and the benefits of watersheds, forests, wetlands and other
natural habitats are excluded from economic calculations.
Thus, guidelines have been developed or are being developed
to include accounting and estimation of environmental and
natural resources costs and benefits at project, sector and pro-
gram levels.

Another activity to be pursued by the Bank includes pay-
ging greater attention to the socio-cultural aspects of develop-
ment project processing, for example, settlement/resettle-
ment, needs and interests of local communities, rights of
tribal/ethnic minorities, cultural integrity and traditional land
use control. This will help integrate decision-making and
manpower-absorbing conditions with the social structures sur-
rounding the use of natural resources. It is in this context that
NGOs with the ability to identify local prescriptions may play
a useful role in the formulation, processing and implementa-
tion of the Bank’s development programs and projects.

The Bank is preparing a manual on environmental quality
standards for the design and operation of development proj-
ects. The manual aims to assist DMC officials establish realistic
standards for the treatment of domestic and industrial wastes
and atmospheric emissions. A second aim is to assess the costs
involved in meeting these standards and their affordability.
In regard to the latter, a procedure is being developed relating
the selected environmental quality standards to an index of
economic affluence—ensuring that the choice and adoption
of standards can be phased to reflect the socio-economic con-
ditions of a given DMC. The Bank is considering the introduc-
tion of a safe minimum standard for use in project processing
and implementation equivalent to engineering codes of prac-
tice. Items would include the need to avoid the destruction
of environmentally-sensitive areas such as mangroves and
tropical forests, to protect rare and endangered species and
to accommodate cultural sensitivities, particularly those of
tribal/ethnic minorities.

Information from remote sensing and other systems is ex-
pected to influence the planning and design of programs and
projects, especially in relation to ecologically-sensitive areas.
As an emerging technology, new methods of application such
as geographic information systems are rapidly becoming
available. Other techniques such as simulation modelling will
be used to move the focus of development beyond site-specific
concerns to understand better the environmental dynamics
of food supplies and other goods and services.

Other activities likely to be promoted by the Bank include
integrated pest management, biological methods of fertility
management, the design of agro-ecosystem programs to deal
with the development of upland or marginal lands and the
conservation of natural resources and ecologically-sensitive areas. The treatment of hazardous wastes, occupational health
and safety and risk assessment of large industrial plants are
other areas demanding the Bank’s attention.

All this supposed a partnership between the Bank and its
DMCs. Through discussions, institutional strengthening pro-
grams or other means, the Bank hopes to assist in the more
systematic application of environmental planning and manage-
ment, to protect natural resources while protecting the
environment.

There is a growing consensus that an intellectual leap has
been taken in the development community — that of
establishing sustainable development as the norm of economic
development. Increasingly common is the situation where
natural resources are mobilized under carefully-designed pro-
grams to address the problems of burgeoning populations,
unemployment and rural impoverishment.

Many of the tools to address these problems are in place —
environmental quality management, conservation
strategies, land use and natural resources planning, remote
sensing, the traditional wisdom of cultures. But they need to
be integrated into a coherent pattern if economic develop-
ment is to be assured.