At the IDA9 meeting in London on May 16 and 17, a number of IDA Deputies requested more information on IDA's environmental activities and plans because of its central importance to IDA9. This note provides a comprehensive accounting of ongoing and planned operations, studies, policy development, research and training in the area of the environment.

Attention to the environment by the Bank/IDA was intensified two years ago when a new internal structure for dealing with environmental issues was established, additional environmental specialists were hired, the environmental horizons of projects were considerably broadened in time and scope, and collaboration with outside organizations was increased. The organizational arrangements and operational instruments put in place at that time to bring environmental concerns into the mainstream of operational and policy work were published in July 1988 in the paper Environment and Development: Implementing the World Bank's New Policies. The momentum established will continue because of the growing recognition that managing the environment is an essential component of sustainable growth. The work which has been started is now being translated into improved policy dialogue, lending operations and a revised operating policy framework. A further increase in environmental work is expected in the next few years as research is translated into policy guidance, as Environmental Issues Papers and Environmental Action Plans begin to support project identification and preparation, and as the database and institutional capacity of countries expand. During the period of the ninth replenishment (FY91-93), the environmental work and focus of IDA operations will build on the foundation that is presently being laid, and environmental components will be an integral part of a growing number of IDA operations.

Environmental Operations

1. In FY89 environmental components were important elements of about one-third of IDAs development projects and one-fifth of IDAs adjustment programs. Thirty of the 97 project operations and five of the 27 adjustment
lending operations contained significant environmental components. The numbers of environmental components and the environmental coverage of IDA operations will expand as environmental issues papers are completed for all IDA countries by no later than the end of FY90. Freestanding environmental projects will also be developed; several such projects are now under preparation. In addition, it is important to note that environmental monitoring of ongoing projects is also a key component of IBRD/IDA environmental work. The recently established Technical Assistance Grant Fund for the Environment will assist countries in the preparation of these environmental projects and components. The following section reviews the planned and on-going environmental work of IDA in the areas of project lending, adjustment lending and environmental studies. The FY89 World Bank Annual Report, to be issued in August 1989, and a subsequent Technical Report on the Environment, will elaborate on these activities.

Project Lending and the Environment

2. Agriculture. Eighteen agricultural projects of the 28 undertaken in FY89 contain environmental components. These components support land and soil management and conservation, pest control and management, the introduction of integrated pest management techniques, forest protection and management, drainage and irrigation rehabilitation, institutional development and research. Forestry is one of the key areas for environmental project work. An example of one such IDA project follows:

- The Ghana Forest Resource Management Project will support policy reforms designed to improve the management of industrial forestry operations. The conservation of natural forests and promotion of agroforestry, as well as the strengthening of the structural base of the sector and its institutions, are among the main objectives of the project. The project also provides resources to strengthen the management of national parks and game reserves. These goals will be supported by technical assistance in institution building; improving the management of the commercial forests especially reducing logging waste; a study of secondary forest products, and the development and implementation of a rural forestry program; and the reactivation of forestry education and research activities.

3. Energy. Four of the seven energy and power projects financed by IDA in FY89 contain environmental components. These components range from provisions for environmental impact studies to environmental sub-projects. Important environmental issues addressed in the projects include pollution control, resettlement, and institutional strengthening of those entities overseeing projects that impact the environment. Improvements in energy pricing policies have also been addressed in most energy projects, with a view to removing subsidies and enhancing efficiency in energy consumption. The treatment of environmental issues in the energy sector is described more specifically in the example below.

- The Malawi Energy Project will assist the Government of Malawi in formulating an integrated program for a more economic use of Malawi's energy resources. Specifically, the project will encourage fuelwood conservation through the production of more efficient charcoal kilns and cooking stoves and through dissemination of research findings on fuel-efficient techniques in tobacco curing. Improvements in wood pricing and in the system for revenue collection, the protection and management of indigenous forests, and the strengthening of forestry institutions will be other actions taken in the project.

4. Water Supply and Sewerage. Three of five IDA supported projects approved or planned in this sector in FY89 contain environmental components. Typical components of water and sewerage projects are
the rehabilitation and upgrading of water supply or sewer systems, the expansion of distribution networks, drainage, institutional reforms, training, and technical assistance. A water supply and sewerage sector project in Pakistan exemplifies IDA's lending in this sector.

- The Karachi Water Supply and Sanitation Project aims to increase the drinking water supply and improve sanitation in Karachi through expansion and rehabilitation of the system. It includes a technical assistance component designed to improve the organization and management of the Karachi Water and Sewerage Board. The project will alleviate the contamination of Karachi's water distribution network which results from wastewater infiltration. At the same time pollution of coastal areas in Karachi will be reduced through the provision of three new sewerage treatment plants, and the implementation of institutional strengthening measures.

5. Other Sectors. IDA projects undertaken in FY89 in the Population, Health and Nutrition sectors also contained significant environmental components. Although lending in these sectors may not appear to be strictly environmental, population is in fact a fundamental factor in any consideration of environmental problems and solutions. IDA has continued to place high priority on its population work, and in FY89 six projects were approved in this sector. Education projects have not traditionally had important environmental components. Nevertheless, in FY89, two IDA education projects with environmental components, one in environmental engineering and the other in environmental education and training, were approved. Finally, one urban, one industry and one transportation sector project with significant environmental components have been undertaken in FY89. A complete list of all projects with environmental components prepared in FY89, together with a brief summary of their environmental components, is provided in the Annex to this note.

Environmenta1 Issues in Adjustment Lending

6. The impact of structural and sectoral adjustment lending on the environment is potentially considerable. By their very nature, adjustment credits go beyond the limits of single projects, to affect wide-ranging pricing and other policies which in turn may directly or indirectly affect the environment.

7. In FY89, five of 27 adjustment credits incorporated significant environmental features. These credits were to Ghana, Gambia, Guinea-Bissau, the Lao People's Democratic Republic and Pakistan. The environmental components of these credits are described briefly.

- One of the stated objectives of the second structural adjustment credit to Ghana is the improvement of the management of the country's natural resources. Under this credit, a comprehensive environmental action plan will be prepared which will address the need for the strengthening of institutions responsible for the management of natural resources. The action plan will also identify specific policy work in such priority areas as land management to deal with the problems of soil degradation and erosion; water resource development issues; coastal zone management; control of mining and industrial pollution; and planning for human settlements. Environmental education will also be supported under the plan.

- The Gambia structural adjustment program includes a number of measures to promote the diversification of agricultural production, and takes into account environmental degradation as a significant constraint on sustainable development. Major threats to natural resources include increasing population pressures in rural areas; overgrazing of pasture; excessive exploitation of trees for fuelwood; salinity intrusion along the Gambia River; and inadequate groundwater management. Based on the
recommendations from the Environmental Protection and Resource Management Workshop hosted by the Government in July 1988, the current SAL provides for a comprehensive review of environmental issues to be undertaken, together with the preparation of an action plan to improve natural resource management to be completed by March 1990. The SAL also includes the development of the fisheries sector as a means to diversify agricultural production. In this case the adjustment lending program requires that a resource management plan be formulated by August 1989 to ensure that the development of the fisheries sector does not lead to the depletion of this resource. A strategy for improving groundwater management will also be prepared by March 1990. Action programs for tourism development, and the full utilization of the Kanifing Industrial Estate will include an assessment of the environmental impact of population encroachment and of industrialization.

- Both the adjustment lending programs to Guinea-Bissau and to the Lao People’s Democratic Republic place special emphasis on forest resource conservation. In Guinea-Bissau, a review of the forestry sector is being undertaken and an action plan will be prepared for the optimal exploitation and replenishment of foreign resources. In Lao P.D.R., forest resource conservation will be promoted through the revision of policies that encourage slash and burn cultivation practices, and through the imposition of a royalty on logging. Specifically, an ad valorem tax will be introduced with rates varying from 10 to 70 percent depending on the grade of wood. Further, issues concerning the management of forests, industrial exploitation of natural resources, and the potential environmental impacts are to be reviewed under a FAO Tropical Forestry Action Plan with active Bank/IDA participation to be completed by FY90.

- The agricultural sector adjustment credit to Pakistan specifies waterlogging and salinity as the country’s major environmental problems in irrigated agriculture. Since 1959, the government has been combating these problems through its Salinity Control and Reclamation Projects. However, due to the neglect of proper operation and poor maintenance, as well as severe management problems, the severity of waterlogging and salinity has accelerated. Policy measures embodied in the credit are thus tailored to deal with these issues: rehabilitation of irrigation and drainage systems; privatization of public tubewells to improve the management of groundwater resources; and the periodic assessment of water charges and improved collection aimed at increasing cost recovery from users and more efficient utilization of irrigation water.

Environmental Studies

8. In order to expand environmental components in future projects and programs, and in the policy dialogue, Environmental Issues Papers (EIPs) are being prepared for each IDA-recipient country. EIPs for all African and Asian IDA-recipient countries will be completed by August 1989. To complement these environmental issues papers, in-depth country or regional studies for some of the countries are also being prepared. Country-wide environmental strategies are being developed in the form of Environmental Action Plans (EAPs), which address recommended actions with emphasis on policy, legislative and institutional changes. Among IDA-recipient countries, EAPs have been completed for Madagascar and Lesotho; others have been started for Burkina Faso, Ghana, Guinea, and Rwanda. Other country studies focusing on particular environmental issues are also under preparation. An example is the first phase of a study on Nepal prepared jointly by IDA and the UK’s Overseas Development Agency that reviews the causes of natural resource
degradation, and feasible policy and institutional changes. Further studies on Nepal are planned that will focus on suggested policy interventions.

9. A number of regional environmental studies have been completed, or are under various stages of preparation:

• The Capital Cities Clean-up project, supported by the UNDP, and expected to get underway in FY90 aims to arrest and begin reversing environmental degradation in major cities in Asia, including Delhi, Madras and Beijing.

• A regional initiative in the Asia-Pacific region, supported by UNDP, and executed by the Bank/IDA, which will affect a number of IDA recipient countries, aims at strengthening environmental training institutions.

• A Watershed Sector Review is planned for FY90 which evaluates economic models used in watershed projects in the Asia Region, the technical feasibility of soil-moisture conservation practices newly proposed, and the role of land tenure in the adoption of sustained land use practices.

• A study which reviews the role of remote sensing and geographic information in renewable resource management in Africa has recently been completed.

Policy, Research and Training

10. With the objective of completing an environmental policy framework for operations, environmental concerns are an increasing element of the Bank/IDA's policy and research work. Also, a large part of the policy and research on the environment is ongoing in the context of other policy and research work addressing sectoral issues. A number of guidelines, technical manuals and operational directives have been prepared, and others are planned for completion in 1989. As the basis for completing the environmental policy framework other policy and research work is planned, most of which revolves around three main categories: natural resource management, environmental quality and health, and environmental economics. In addition to books, guidelines, and state of the art reviews, several general policy statements or reviews have been completed and others are planned. With regard to training, the Economic Development Institute covers the environment in its regular seminars, and also holds environmental education and training sessions for Bank/IDA staff. Finally, a database is being developed on the environment.

Policy and Research

11. Early results of Bank/IDA research and policy work include guidelines, technical manuals and operational directives in six areas, completed or planned for completion in 1989. In addition, work has been initiated on a technical manual on the preparation of environmental satellite accounts in the federal system of national accounts, and an operational directive on tribal peoples.

• Guidelines on economic analysis of off-farm aspects of watershed management (October, 1989).

• Guidelines on environmental considerations in port and harbor development (January, 1989).

• Guidelines on environmental and ecological considerations in land transportation (March, 1989).

• Guidelines on the use and application of pesticides (November, 1989).

• Operational Directive on environmental policy for dam and reservoir projects (April, 1989).

• Technical Manual on safe disposal of hazardous wastes, with special reference to needs of developing countries (July, 1989).

• Operational Directive on Environmental Assessments (September, 1989).

12. Research and policy studies are being undertaken in each of the three categories mentioned in para. 10. In the area of natural resource management nine studies will be completed by the end of 1989. These studies cover topics such as dryland management,
biodiversity, forestry, and watershed management.

- Review of dryland management projects and policies. Assessment of the lessons of various interventions by the Bank/IDA, other agencies and NGOs (December, 1989).
- "Conserving the World's Biodiversity" (with IUCN, WWF, WRI) - Contribution to inter-agency report (September, 1989).
- Review of watershed development practices. A survey of lessons from preparation and implementation of a number of watershed programs in Asia and a proposed regional strategy (December, 1989).

13. Environmental quality and health policy and research studies cover topics such as natural hazards, industrial risk, industrial pollution, air quality management, climate change, and public policy and health. Two studies are being undertaken in 1989 in this area.

- "Economic Incentives and Industrial Pollution in Developing Countries" (July, 1989).
- Synthesis of three metropolitan area case studies, identifying policy measures needed for improved air quality management (with WHO) (December, 1989).

14. Environmental economics and institutions covers national income accounting, power system planning, the environment in project economics, the economics of sustainable development, environmental institutions, and land tenure and conservation. Seven studies have been completed or are planned for 1989.

- "Environmental Accounting for Sustainable Development" (with UNEP) (June, 1989).
- Methodology for use of the Geographic Information System in the optimization of power system planning (February, 1989).
15. The Bank/IDA is actively refining its long-term strategy for incorporating environmental issues into operational decisions. In this regard, three general policy statements were completed or are planned for 1989.

- Report to Development Committee on integration of environment into Bank operations (September, 1989).
- Annex III to President's Report to Development Committee (September 1988 meeting) "The Bank's Environmental Programs: A Progress Report" (January, 1989).

16. Among the sectoral research and policy work, studies are being undertaken in the energy and industry, urban, agriculture and rural development, and population and human resources sectors.

- In FY89, a study of the policy implications of the greenhouse effect for the energy and industry sectors was completed, as well as a handbook on windpumping, a methodology for assessing the true cost of biomass resources, a review of environmental aspects of past Bank/IDA power projects, and guidelines for energy end-use efficiency programs and projects. In addition, conservation and efficiency issues are central to the Energy Sector Management Assistance Program, supported by the Bank/IDA, the UNDP, and other UN and bilateral agencies.
- In the urban sector, research is being conducted on municipal solid waste management, sewage and waste recycling, and low-cost sanitation alternatives.
- In agriculture and rural development the Bank/IDA has completed a book on innovations in resource management and the sustainability of agricultural systems, an analysis of the impact of import bans on tropical forest products, and a study of the environmental impact and sustainability of irrigation investments.
- In population and human resources, research on public policy and environmental health, and on population growth and water resource supply and demand is ongoing. Other research in this sector, while not explicitly addressing the environment, has a direct bearing on it. The control of population growth is fundamental to the achievement of successful environmental management, while women's issues and primary health care in turn have a direct bearing on population. Thus research in these areas is also of central importance to environmental work.

Training

17. As part of its work, the Economic Development Institute (EDI) brings together environmental specialists, development practitioners, and policy makers to help in broadening the understanding of natural resource management issues. At EDI environmental seminars, participants share experiences, problems and solutions concerning environmental policies and programs. In FY89:

- A regional seminar on environmental issues was organized in Latin America;
- A seminar on energy planning and policy analysis was held in October 1988, and one is planned in Senegal for June 1989;
- A seminar on social forestry, which was based on the forthcoming EDI book "People and Trees" was held;
- A seminar was held on ways to harmonize conflicts that sometimes arise between the objectives of resource management and those of meeting basic human needs.

18. Training sessions designed to make Bank/IDA staff more aware of environmental issues is another important part of environmental training. In FY89, seventeen
major training sessions were undertaken, which included subjects such as the implications of climate change, environmental economics, environmental and safety aspects of large dams, remote sensing and natural resource management, dryland management, pesticides, municipal and industrial waste management, and natural and industrial hazards.

The Environmental Information System

19. Since FY87, the Bank/IDA has been developing a database on the environment to help integrate environmental considerations into operational activities. This database, the Environmental Information System (ENVIS), draws on internal and external sources. It is designed to monitor and track Bank/IDA environmental projects, provide country-by-country sources of environmental information, and provide electronic access to economic and sector studies through an environmental/economic bibliography. System development will continue over the next several years.

Collaboration with Official and Non-Governmental Institutions

20. To facilitate the formulation and implementation of IDA's environmental lending decisions, and its policy and research, IDA collaborates with other international organizations, non-governmental organizations, donors and borrowing governments. Working relationships are maintained with UN agencies such as UNEP, FAO, WHO, UNDP and UNESCO, as well as with the Asian and Inter-American Development Banks and OECD. NGOs that IDA works with include the International Union for the Conservation of Nature and Natural Resources (IUCN), the Worldwide Fund for Nature (WWF), and the World Resources Institute (WRI). Staff from these organizations participate in Bank/IDA seminars and workshops, and some have been seconded to work directly with the Bank/IDA. An environmental newsletter is being prepared bi-monthly to help inform these organizations as well as Bank/IDA staff on environmental activities, with the objective of making the Bank/IDA's environmental activities increasingly transparent and thus ensuring increasingly effective collaboration in this critical area.
### Annex: Environmental Components in IDA's Project Lending - FY89

<table>
<thead>
<tr>
<th>Project</th>
<th>Environmental Component</th>
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<tbody>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
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<tr>
<td>Guinea National Research and Extension</td>
<td>Priority on adaptive research on pest and disease resistant varieties, on cultivation methods to decrease dependence on chemicals, and on environmentally sound tillage; soil conservation research; training in pesticide handling and disposal.</td>
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<tr>
<td>Ethiopia First Peasant Agricultural Development</td>
<td>Conservation-based watershed development and management activities.</td>
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<tr>
<td>Kenya Rural Services Design Project</td>
<td>Wildlife conservation and management; arid and semi-arid land management; environmental rehabilitation.</td>
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<tr>
<td>Somalia Central Rangelands Research and Development</td>
<td>Development of forestry programs conservation of flora and fauna; decreasing degradation.</td>
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<tr>
<td>Sudan Southern Kassala Agriculture</td>
<td>Rehabilitation of water infrastructure; support of refugee economic development; environmental protection against degradation through research, plant protection and environmental management.</td>
</tr>
<tr>
<td>Burundi Agricultural Services</td>
<td>Forestry; irrigation and drainage; support for research on applied soil erosion control, agro-forestry, and soil fertility management.</td>
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<tr>
<td>Project</td>
<td>Environmental Component</td>
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<tr>
<td>Ghana: Forest Resource Management</td>
<td>Development of rural forestry program; policy and institutional reform; strengthening education and research.</td>
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<tr>
<td>Senegal: Small Rural</td>
<td>Extension training for pesticide handling and use; proposed planting of group woodlots and windbreaks to be used as firewood; soil conservation.</td>
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<tr>
<td>Malawi: Agricultural Marketing and Estate Development</td>
<td>Environmental impact studies for subprojects; training in storage and handling of agricultural commodities including pesticides.</td>
</tr>
<tr>
<td>Tanzania: National Agricultural and Livestock Research</td>
<td>Integrated Pest Management techniques to be developed; farming system research for optimum soil conservation; proposed agroforestry programs.</td>
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<tr>
<td>Burkina Faso: Agricultural Services</td>
<td>Extension services to stress herd management, water harvesting, soil conservation; studies of communally managed/owned assets.</td>
</tr>
<tr>
<td>Sri Lanka: Forestry</td>
<td>Forest/forest plantation management (mapping/inventory management plan/silvicultural treatment); forest plantation establishment/maintenance; forestry education/training; establishment of environmental unit within forest department; environmental research/monitoring.</td>
</tr>
<tr>
<td>Country</td>
<td>Project</td>
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<tr>
<td>----------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>China</td>
<td>Shaanxi province agriculture</td>
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<tr>
<td>China</td>
<td>Shandong Agricultural Development</td>
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<tr>
<td>India</td>
<td>National Sericulture</td>
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<tr>
<td>Pakistan</td>
<td>Private Tubewell Development</td>
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<tr>
<td>Pakistan</td>
<td>1988 Flood Damage Restoration</td>
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<tr>
<td>Yemen Arab Rep.</td>
<td>Eastern Region Agricultural Development</td>
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<tr>
<td>Energy</td>
<td></td>
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<tr>
<td>Project</td>
<td>Environmental Component</td>
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<td>---------------------------------------------</td>
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<tr>
<td>Mali Power</td>
<td>Noise and pollution minimizing measures to be incorporated in design of diesel units;</td>
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<td></td>
<td>household energy component to reduce firewood consumption and improve forest cover</td>
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<tr>
<td>Malawi Energy</td>
<td>Least-cost power development plan; strategy for management of wood energy; tree-planting</td>
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<td></td>
<td>by private sector; fuelwood sector; fuelwood conservation; energy pricing study;</td>
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<td></td>
<td>institutional strengthening.</td>
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<tr>
<td>Mozambique Household Energy</td>
<td>Assistance to urban households for energy conservation and cost savings.</td>
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<tr>
<td>Water Supply and Sewerage</td>
<td>Rehabilitation and reinforcement of water supply systems in regional centers; institutional development.</td>
</tr>
<tr>
<td>Ghana Water Sector Rehabilitation</td>
<td>Rehabilitation of water supply system; expansion of Conakry water supply; institutional reform.</td>
</tr>
<tr>
<td>Guinea Second Water Supply</td>
<td>Upgrading of water transmission and treatment systems; increased sewerage coverage.</td>
</tr>
<tr>
<td>Pakistan Karachi Water and Sanitation</td>
<td>Health education programs; support for NGOs in sanitation /water supply/improved stoves/</td>
</tr>
<tr>
<td>Urban Development</td>
<td>innovative building materials development; grants for sanitation and improved stoves;</td>
</tr>
<tr>
<td>Nepal Municipal Development and Earthquake Emergency</td>
<td>house reconstruction; study of timber alternatives in building.</td>
</tr>
</tbody>
</table>
Transportation

Bangladesh
Flood Rehabilitation
Secondary environmental benefits - from improved drainage and flood control.

Education

Nepal
Engineering Education
Secondary socio-environmental benefits - training course of environmental engineering/water supply/sanitation/waste disposal; component to increase enrolment of women in technician/engineering program

Maldives
Education and Training
Siting to avoid agricultural land loss; substitution of building materials to avoid use of coral reef; waste disposal to avoid contamination of sea water; environmental studies in curriculum; expanded access to education (especially women).

Industry

Sri Lanka
Industrial Development Project
Technical assistance for central environmental authority to prepare environmental guidelines for sectors financed under the project, and to instruct onlending Bank staff on guideline application.