

**AGENCY FOR INTERNATIONAL DEVELOPMENT**

WASHINGTON, D.C. 20523

June 1989 List of Upcoming MDB Projects with Possible  
Environmental Concerns: Background and Purpose

Section 537(h) of P.L. 100-202 and Section 1303(c) of P.L. 95-118 direct the Agency for International Development (A.I.D.) in consultation with the Secretaries of Treasury and State to compile a list of proposed Multilateral Development Bank (MDB) loans likely to have adverse impacts on the environment, natural resources, public health, or indigenous peoples. The list was to be prepared and up-dated semi-annually "in consultation with interested members of the public". The development of the list is considered part of a larger effort to ensure that U.S. funded development assistance be used to promote sustainable use of natural resources, to protect the environment and the status of indigenous peoples.

The principal mechanism for early project identification is A.I.D.'s Early Project Notification System. In this system, A.I.D. notifies its field missions and selected embassies of upcoming projects as they are made public in the monthly or periodic operational summaries of each MDB. This is generally one to two years prior to consideration by the MDB Boards of Directors.

Mission comment is solicited on upcoming projects concerning a number of issues including the environment. A.I.D. missions respond if there is reason to anticipate environmental concerns. These responses are reviewed in Washington. Projects are then placed on the list based on information at hand and the judgement of the U.S. Government. Because not all project information is made available, particularly information tied to the early stages of loan development, the list should not be considered all inclusive. Inclusion on the list indicates that the project might have impacts which should be anticipated and reduced during project planning and design. Environmental assessment of the project may lead to project redesign and to the introduction of specific mitigation measures.

Through early identification, we seek to develop a collaborative dialogue with the Banks to highlight environmental concerns during the project development process.

JUNE 1989

PROJECTS WITH POTENTIAL ENVIRONMENTAL IMPACTS UNDER  
CONSIDERATION FOR FUNDING BY THE FOLLOWING MULTILATERAL  
DEVELOPMENT BANKS:

- IBRD - International Bank for Reconstruction and Development  
(The World Bank)
- IDA - International Development Association
- ADB - Asian Development Bank
- AfDB - African Development Bank
- IDB - Inter-American Development Bank

PROJECTS LOCATED IN AFRICA

1. The Gambia AfDB River Basin Development
2. Lesotho IDA Highland Water Construction I
3. Madagascar IDA Ilmenite Mining
4. Mauretania AfDB Village Water Supply (bore holes)
5. Mozambique AfDB Massingir Dam Rehabilitation Project
6. Rwanda IBRD Nyabarongo Development Project
7. Somalia IDA Baardhere Dam
8. Somalia IDA Baardhere Resettlement
9. Somalia IDA Farahaane

PROJECTS LOCATED IN ASIA AND THE NEAR EAST

10. Bangladesh IDA Jamuna Bridge
11. China IBRD Three Gorges Dam
12. Egypt IBRD Northern Sinai Agricultural Development
13. India ADB Second North Madras Thermal Power
14. India IBRD/IDA Narmada (Madhya Pradesh) Dam and Power
15. India IBRD/IDA Narmada (Madhya Pradesh) Resettlement and  
Rehabilitation
16. Indonesia ADB Power XX Project
17. Indonesia IBRD Irian Jaya Area Development

18. Indonesia IBRD Nucleus Estate Phase II Project
19. Indonesia IBRD Swamps III
20. Indonesia IBRD Transmigration Second Stage Development
21. Indonesia IBRD Smallholder Estate Tree Crops Development
22. Jordan IBRD Transport III
23. Malaysia IBRD Sabah Forestry II Project
24. Morocco IBRD Industrial Finance Loan
25. Nepal ADB Secondary Crops Development
26. Nepal IDA Arun Hydro-power
27. Nepal IDA Arun III Access Road
28. Pakistan IBRD Kalabagh Dam
29. Sri Lanka ADB Power Systems Expansion Project
30. Sri Lanka IDA Forestry Sector Development

PROJECTS LOCATED IN LATIN AMERICA AND THE CARRIBEAN

31. Bolivia IDA First Regional Development of the Eastern Lowlands Project
32. Brazil IBRD Electric Sector Transmission and Distribution
33. Brazil IBRD Electric Sector II Project
34. Brazil IDB Segredo Hydropower Project
35. Costa Rica IDB Electric Development II
36. Ecuador IDB Daule Peripa Hydroelectric Project
37. Ecuador IBRD Oil Production Development
38. Jamaica IBRD Agricultural Sector Adjustment Project
39. Jamaica IDB Second Stage Development Program
40. Mexico IBRD Hydroelectric Development Project
41. Mexico IDB Forestry Development

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PROJECTS WITH POTENTIAL ENVIRONMENTAL IMPACTS UNDER  
CONSIDERATION FOR FUNDING BY MULTILATERAL DEVELOPMENT BANKS

PROJECTS LOCATED IN AFRICA

1. The Gambia AfDB River Basin Development  
Projected AfDB funding: unknown  
Projected Project Cost: \$400 Million

Description: The proposed project involves two dams on the Gambia river, a hydropower station and irrigation blocks. The Balingho Dam to be located in in the Gambia would prevent saltwater intrusion in the downstream portion of the river. The upstream dam would be located in Kekreti, Senegal and would generate power and control water for irrigation in the Gambia.

Issues: Issues have been raised concerning the impact of the project on river ecology, fisheries, estuaries, mangroves and on the livelihoods of peoples engaged in swamp cultivation in the Gambia River Basin.

Status: In the mid-1980's, A.I.D. financed an extensive environmental and socio-economic impact study of both dams. On the basis of that study and other information, the AfDB has decided not to support the project as initially conceived, noting environmental problems and doubtful economic viability. However, the Bank has indicated a willingness to fund additional studies of smaller scale project alternatives as well as an analysis of alternative sites for the upper dam. The project is currently on hold. We will continue to monitor developments.

2. Lesotho IDA Highlands Water Construction I  
Projected IDA funding: \$50 million  
Total project costs: \$1.5 billion

Description: The project entails the construction of Katse Dam, a 170 meter high dam with a storage capacity of 1,245 m<sup>3</sup>, ii) a 48 km transfer tunnel to a 70 MW hydropower facility and iii) a 34 km delivery tunnel to discharge water into the Ash River in the Republic of South Africa, whence it will flow into the a reservoir serving major South African residential centers. South Africa has agreed to finance most project costs and will pay royalties to Lesotho for water use. The executing agency is the Lesotho Highlands Water Development Authority.

Issues: Issues include resettlement, loss of fauna and flora resources from impoundment area and impacts on riverine ecosystem from construction of dam.

Status: The pre-feasibility study conducted in 1983 included a baseline analysis of the physical environment of the area to be affected by the project. Further studies of potential social and environmental impacts were conducted in 1985. The Lesotho Highlands Development Authority, and the University of Lesotho continue to examine the projects potential impacts and mitigation alternatives with technical assistance funded in part by the EEC. The results of this work will be made available prior to project appraisal. The government is also developing a program to compensate the population which may be adversely affected. The Bank has stated that the detailed project design, including all planned environmental and resettlement measures, will be reviewed by a panel of environmentalists with extensive international experience. The treaty between South Africa and Lesotho which establishes the financial arrangements for project implementation has stipulated that social and environmental impacts will be adequately addressed. The project is under preparation.

3. Madagascar IDA Ilmenite Mining  
Projected IDA funding: \$ 38.7  
Total project cost: unknown

Description: Project includes mining and export of titanium dioxide mineral sands on the Malagasy East Coast for production of titanium dioxide. The executing agency is the Office Militaire National des Industries Strategiques (OMNIS).

Issues: The major impact will be the effects of mining operations on local flora and fauna, particularly as certain species of dune vegetation are rare and unique to the project area.

Status: The project is under preparation and co-financing is being explored. The Bank has developed terms of reference for an environmental study to address potential impacts associated with the project. The study will be conducted as a condition for the receipt of the engineering credit to be issued to the government and the private mining company involved in the project. The Bank has stated that the project will be considered within the context of the on-going Environmental Action Plan. The Action Plan is a multidonor effort in which A.I.D. is a principal participant.

4. Mauritania AfDB Village Water Supply (bore holes)  
Projected AfDB funding: FUA 6.0 Million  
Total project cost: Unknown

Description: The project objectives are to provide water for (i) the indigenous population and those expected to move into the project area, (ii) migrant and indigenous livestock, and (iii) irrigation agriculture.

Issues: While bore holes have been effective in providing water in arid zones, past experience has shown that without adequate pre-planning, many of these projects have resulted in over-grazing and over-utilization of the land resource. This is a particularly critical issue in Mauritania where the natural resource base and the carrying capacity of the land are in progressive decline.

Status: These concerns have been conveyed to Bank staff to underscore the need for adequate pre-planning to avoid the potential impacts noted above. We are still seeking further information from the Bank.

5. Mozambique AfDB Massingir Dam Rehabilitation Project  
Projected Bank Funding: \$45 Million  
Total Project Cost: unavailable

Description: The project will rehabilitate Massingir Dam, develop 125,000 hectares for irrigation and construct a hydropower station which will produce 125 GWH of electricity per year.

Issues: While this project is billed as a rehabilitation project, the irrigation component is new. Mozambique has extremely low institutional capacity for project implementation. It is doubtful that it can deal successfully with a project of this size, particularly if salinization, waterlogging and public health problems arise as they are likely to.

Status: The preparation of this project is just beginning. The U.S. executive director's office has shared U.S. Government's concerns with bank staff. When the feasibility studies are completed, we will review and discuss with bank staff the possibilities of reducing project size, incorporating drainage, public health measures and other features which would mitigate the problems frequently associated with irrigation projects.



6. Rwanda IBRD Nyabarongo Development Project  
Projected IDA Credit: Unknown  
Total Project Cost: Unknown

Description: The project will develop the Nyabarongo valley, considered by the government as one of the few remaining areas which can absorb the country's population increase. A series of scenarios or options for development are currently under consideration.

Issues: The Valley contains large marais or swamps which serve as hydrologic buffers, critical to the regulation of water flows - reducing the effects of flooding during the rainy season and maintaining low flows during dry periods. The marais are shallow, covered with aquatic vegetation, primarily papyrus, rooted in underlying peat soils. If the marais are drained below critical levels, their organic soils dry out, with resulting subsidence and soil sterility, causing irreparable harm to the marais and greatly reducing their function as hydrologic buffers. In their natural state, the Marais provide several benefits in addition to their hydrologic role. These would include fishery development and utilization of aquatic vegetation for fuel and fodder. Marais are important in maintaining biodiversity by providing wildlife habitat for regionally endemic birds and the sitatunga, a rare marsh antelope.

Status: The project is in the early stages of preparation and is currently in the Bank's reserve program. Scenarios for developing the valley including dikes, dams and channelization, are being drawn up by a French engineering firm and will be ready by August, 1989 with the final master plan scheduled for release in June 1990. In response to international concern about the environmental implications of the project, the IBRD has decided to conduct an environmental assessment of each of the scenarios. Completion of the assessment is scheduled to coincide with the release of the master plan. In addition, the Bank is working in collaboration with A.I.D. in developing an Environmental Action Plan for Rwanda. The Plan will assess, among other things, the environmental implications of developing the marais.

7. Somalia IDA Baardhere Dam  
Projected IDA Funding: \$62 million  
Projected Project Cost: Unavailable

8. Somalia IDA Baardhere Resettlement  
Projected IDA Funding: \$10 million

Description: (1) The project will finance a multi-purpose dam on the Juba River that will provide hydropower for Mogadishu and Kismayo, as well as irrigated agricultural development and flood protection. Executing agency is the National Planning and Juba Valley Development. The project will include financing from several donors including: the Kuwait Fund, Arab Fund, EEC and Italy. (2) The resettlement project will finance the resettlement of 3,000 families and the relocation of approximately 9,000 refugee families from the reservoir area. It will also establish two forest reserves, salvage cultural property, implement the wildlife management program, and provide consulting services, surveys and mapping. The implementing agency is the Ministry of National Planning and Juba Valley Development.

Issues: The most significant environmental issues are: (i) potential for major increases in water borne diseases, notably Bilharzia and Malaria if reservoir operations are not controlled to reduce vector proliferation; (ii) resettlement of 55,000 refugees, (iii) potential soil salinization in irrigated downstream areas; (iv) interruption of nomadic pastoral movements; and (v) boom town conditions during construction.

Status: A.I.D. has financed an extensive, three year study of environmental and socio-economic issues associated with the project. The study was scheduled for release in April/May 1989 and includes measures and recommendations for mitigating anticipated impacts. A.I.D. is sharing this study with other donors. The studies have indicated that control of disease vectors will not be feasible by reservoir operations but can be controlled by medical means. Irrigation will be based on small pump schemes, greatly reducing the risk of salinization. Boom town conditions during construction remain a concern to be addressed by health screening and other measures to be taken by the contractor and civil authorities. The appraisal mission has been tentatively scheduled for FY90.

9. Somalia IDA Farahaane  
Projected IDA funding: \$ 27.8  
Total projects cost: unknown

Description: The project entails (i) rehabilitation of an irrigation sub-project encompassing 5,100 ha., (ii) construction of two barrages, and (iii) provision of buildings and equipment. The executing agency will be the Ministry of Agriculture.

Issues: Issues posed by the project include: salinization, malaria and schistosomiasis.

Status: Project concerns were conveyed to Bank staff. The Bank responded that the proposed project will include a deep drainage system to be built at a cost of US\$5.6 million (17% of project costs) which would reduce excess surface water and salinity build up and minimize water logging. Malaria would be reduced by the improved drainage system. In addition, a malaria and schistosomiasis control program is envisaged at a cost of US \$800,000. Negotiations have been completed and the Board presentation is scheduled for July.

PROJECTS LOCATED IN ASIA AND THE NEAR EAST

10. Bangladesh IDA Jamuna Bridge Construction  
Projected Bank Funding: \$100 Million  
Total Project Cost: \$560 Million

Description: Construction of a major multi-purpose (road-rail-energy-telecommunications) bridge across the Jamuna (Brahmaputra) River to reduce transport costs and support the Northwest's economic integration with the rest of the country. Total project cost is estimated at \$560 million of which \$471 million represents foreign exchange costs. The executing agency is the Jamuna Multi-purpose Bridge Authority.

Issues: Questions have been raised concerning the possibility of the Jamuna River changing course and the potential that the bridge might cause more flooding. Questions have also been raised about possibility that the eventual cost of the bridge might be considerably higher, and that construction delays may delay project benefits, thus reducing the economic viability of the project.

Status: We are forwarding our concerns to Bank staff.

11. People's Republic of China IBRD Three Gorges Dam  
Projected IBRD Funding: Unavailable  
Total Project Cost: Estimated at \$10 Billion

Description: The project would finance a dam in the Three Gorges region of the Yangtze River basin which would provide flood control, electrical power and inland navigation. The executing agency would be China's Ministry for Water Resources and Electric Power.

Issues: Significant concerns have been raised regarding the required resettlement of roughly one million people to make room for the impoundment. Other issues would include effects on fisheries, rare and endangered species (the Chinese Alligator and a species of Sturgeon), and inland navigation. Concerns have also been raised regarding the hydrological and economic effects of altering sedimentation regimes as well as potential effects on Dongting and Poyang lakes located at a considerable distance downstream from the project.

Status: Press reports indicate that this project has been delayed based on a decision made April 3 by Deputy Prime Minister Yao Yilin in order to allow further discussion of the environmental consequences. This announcement came about a month after the Three Gorges Feasibility Report was submitted to the Chinese authorities for review. That report was primarily favorable according to press reports. It listed environmental effects, both positive and negative. The positive effects include reduction of floods to the ecology, environment and population of the plains of Huqu and the contribution made to the prevention and treatment of schistosomiasis in the middle and lower reaches. Also as compared with thermal power, hydropower can reduce environmental pollution.

The negative effects of the project were classified as follows:  
Irreversible effects: Loss of cultural relics and historic sites; the natural view of the three gorges and some cultivable areas. Serious effects which can be reduced by mitigation measures: the relocation and rebuilding of towns and resettlement; effects on rare species; problems such as landslides and earthquakes. Relatively small impacts which can be reduced by mitigation measures: effects on regional climate; effects on terrestrial animals and plants. In addition it may be difficult to predict effects on: aquatic organisms in the upper reaches; regional ecology; and ecology and environment at the mouth of the river.

12. Egypt IBRD Northern Sinai Agricultural Development  
Projected IBRD funding: \$ 50 Million  
Total project cost: unknown

Description: The project constitutes the first phase of the agricultural development program for northern Sinai. It would include: (i) construction of irrigation and drainage works, and (ii) financial support to farmers for farm machinery and other agricultural inputs. The implementing agency is the Ministry of Agriculture and Land Reclamation.

Issues: Environmental concerns include effects of the project on Lake Bardawil, which Egypt has listed as its first wetland of international significance as a waterfowl habitat. Additional issues include creation of new settlements, use of fertilizers and pesticides, and use of drainage water for irrigation.

Status: The mission is in close cooperation with the Bank and will be providing assistance to the Bank and the Ministry of Agriculture in developing the scope of work for an environmental assessment. A.I.D. environmental concerns have been forwarded to the bank. The Bank reply assured us that environmental issues will be fully reviewed as part of the preparation report and subsequent processing of the project. We will continue to monitor this project.

13. India ADB Second North Madras Thermal Power  
Projected ADB funding: \$ 150  
Total project cost: unknown

Description: The project consists of three components: (i) provision of the third 210 MW generating unit for North Madras Thermal Power Station ; (ii) the first half of a ten year development program for electrical transmission/distribution systems in Metropolitan Madras. The executing agency is the Tamil Nadu Electricity Board (TNEB).

Issues: Issues include air quality impacts (sulfur dioxide, nitrogen oxides and particulates) in Madras city and surrounding areas, coal ash disposal, cooling water intake and thermal pollution impacts from cooling water discharge on receiving waters.

Status: Concerns were forwarded to Bank staff. The Bank reply indicates that environmental concerns are being analyzed according to standard ADB environmental procedures and that initial analysis has been included in "Project Cycle Review Report Number 2: Secondary Environmental Review of 1988 Loan and Technical Assistance Projects."

14. India IBRD/IDA Narmada (Madhya Pradesh) Dam and Power.

15. India IBRD/IDA Narmada (Madhya Pradesh) Resettlement and Rehabilitation

Projected IBRD Funding (Dam): \$350 million  
Total Project Cost (Dam) \$1,150 million

Projected IDA Funding (Resettlement): \$70 million  
Total Project Cost (Resettlement): \$300 million

Description: The Dam and Power project involves the construction of the Narmada Sagar dam and hydropower station to generate 1,000 MW of power and to evaluate future irrigation of about 300,000 ha. of land. The Narmada Resettlement and Rehabilitation project will finance the resettlement of about 120,000 people dislocated by flooding the reservoir. The project will also develop reservoir fisheries, reforest up to 90,000 ha of land, and install conservation measures in the upper watershed. Both projects are to be implemented by the Narmada Planning Agency.

Issues: Potential environmental impacts include: 1) relocation of the people within the area to be flooded by the reservoir, 2) deforestation (clearing and submerging) of 40,000 hectares of forest, 3) destruction of wildlife habitat, 4) risk of earthquake damage to the dam structure, 5) siltation from deforestation of the watershed area above the dam, 6) waterlogging of irrigated soils, and 7) increased risk of water borne diseases including malaria and cholera. There are major concerns over the adequacy of resettlement programs based on the experience from the resettlement efforts associated with the Gujarat project. The Narmada Tribunal recommended a policy of "land for land" and relocation of villages in their entirety. However, questions remain concerning (1) effectiveness of the loan in making dam construction/funding contingent on resettlement planning and implementation (2) adequacy of environmental reviews and mitigation planning (3) inclusion of environmental and resettlement costs in overall cost/benefit analysis.

Status: The project has been delayed and is now scheduled for Board consideration in FY92. A.I.D. conducted a site visit to India in January to investigate the status of environmental planning for this project. The investigation emphasized that environmental studies were initiated comparatively late in the planning process, precluding consideration of alternatives with less severe social and environmental impacts.



The Government of India Department of Environment held up clearance on the Narmada Sagar Dam Project until 1987, because of inadequate data and mitigation plans. The Department of Environment was also concerned because no overall environmental analysis of the development of the basin as a whole had been conducted.

In 1987, the issue was taken up by the Prime Minister's office and a decision made to grant provisional environmental clearance. The environmental studies and the physical works would proceed simultaneously. The Narmada Control Authority (NCA) in New Delhi was made responsible for ensuring that environmental and resettlement studies and action plans were developed and implemented and was expanded to include the Ministry of Environment and Forests and the Ministry of Welfare. The NCA was given the authority to stop construction if there was not enough progress on environmental issues, and the Department of Environment was given veto power.

A.I.D. forwarded a memorandum to the Bank stating concerns in four areas: (1) the capability of the Narmada Valley Authority to implement its progressive policies on resettlement, (2) lack of safeguards to ensure that the environmental studies and mitigation plans are carried out, (3) the need to study the impacts of development of the river basin as a whole, (4) adequacy of the economic analysis to incorporate environmental costs and benefits. AID also expressed concern about bank environmental procedures, particularly the scheduling of environmental studies too late in the project cycle to allow for consideration of less damaging alternatives.

The bank responded by assuring AID that negotiations would not take place until mechanisms for land acquisition and resettlement were tested on a pilot basis, and that the Bank was investigating the possibility of a basin-wide environmental planning program. The US and Executive Directors from other donor countries will continue to monitor this project.

16. Indonesia ADB Power XX Project  
Projected Bank Funding: \$120 Million  
Total Project Cost: unknown

Description: The project will finance construction of the 200 MW Singkarak hydropower scheme in West Sumatra and construction of 10 mini hydropower schemes in North Sumatra, Sulawesi and Nusa Tenggara. The implementing agency is the National Electricity Corporation.

Issues: Concerns have been raised about mitigation of environmental impacts associated with hydropower projects, including possible acceleration of deforestation in Sumatra. With respect to projects Nusa Tenggara questions have been raised about the effect of the project on downstream flows. The area is very dry and it may be necessary to compensate by planning multipurpose water use.

Status: Bank documentation indicates that various aspects of the project are under review. An initial environmental analysis was performed under Project Cycle review for 1988 projects.

17. Indonesia IBRD Irian Jaya Area Development  
Projected IBRD funding: \$30 Million  
Total project costs: unknown

Description: The project seeks to improve the overall socio-economic conditions of Irian Jaya through an integrated area development project comprising health, education, agriculture and infrastructure development activities in four pilot areas. The executing agency is the Ministry of Home Affairs.

Issues: The project is located near transmigration settlements. Irian Jaya has been a major resettlement site and the project plans to include in its coverage an area near Merauke where most of the resettlement has occurred. The project will include other areas where environmental degradation could occur such as the Cenderwasih Bay area, the site of a wildlife reserve which is under increasing pressure from local inhabitants. Another issue concerns how the project will treat the Paniai Lakes which have already been the focus of several proposals aimed at improving root crop agriculture in part by controlling outflow and draw down of the natural water bodies by using dams and other means.

Status: Concerns have been forwarded to Bank staff. A management plan for the wildlife reserve has recently been produced by the World Wildlife fund, but has yet to be implemented. Recently initiated Indonesian legal requirements for environmental impact assessments will be an important feature of project planning. Special studies and training activities focusing on planning approaches which give special consideration to environmental concerns have already begun.

18. Indonesia IBRD Nucleus Estate Phase II Project  
Projected IBRD Funding: \$100 million  
Total Project Cost: Unknown

Description: The project will finance inputs to maintain the quality of trees planted in previous NES projects through the mature phase and expand existing smallholder areas in the vicinity of existing nucleus estates. Technical assistance may also be included. The executing agency is the Ministry of Agriculture.

Issues: It is still unclear whether the project will expand existing smallholder areas in secondary jungles and estuaries. If so, an environmental assessment should be carried out. Another concern involves the secondary effect of intensification of the nucleus estates: if insufficient land is provided for smallholder food and fuelwood production, then the project may adversely affect natural forests.

Status: Project preparation is under way. Concerns were discussed with Bank staff and an agreement was reached that expansion of project into secondary jungles and estuaries would justify an environmental assessment.

19. Indonesia IBRD Swamps III  
Projected IBRD funding: \$ 120  
Total project cost: unknown

Description: The project will strengthen institutions responsible for swamp reclamation, prepare an investment program for second stage development of existing swamps sites, rehabilitate infrastructure and support environmental protection.

Issues: Concerns have been raised about the loss of waterfowl and other wildlife habitat and potential adverse impacts on fisheries which may result from swamp reclamation. It would seem critical that the project allocate sufficient funds for strengthening the natural resources planning capability within the Ministry of Agriculture.

Status: Concerns were forwarded to bank staff along with a request for further information on the project's rationale and scope.

20. Indonesia IBRD Transmigration Second Stage Development  
Projected IBRD Funding: \$154 million  
Total Project Cost: Unavailable

Description: The project will increase income and agricultural production in 9 existing transmigration settlements; strengthen Ministry of Transmigration's (MOT) coordination and implementation capacities for second stage development; and improve overall economic, social and environmental soundness of the transmigration program. The executing agency will be the Ministry of Transmigration. The World Bank has already assisted this program via a number of loans, the most recent being \$160 million for the Fifth Transmigration Project, approved in June 1985. This project was reformulated in 1986; as a result \$63 million was cancelled.

Issues: Concerns have been raised about the environmental effects of the overall transmigration program of which this project is a part. Overall concerns include destruction of tropical forests, insufficient support for resettled peoples to ensure self sufficiency, displacement of indigenous peoples, effects of spontaneous transmigrants to new sites, impacts on rare and endangered wildlife and effects on water quality. There is a concern that the project not proceed before completion of a site specific socio-economic/environmental impact study.

Status: The Bank has stated that this project involves the intensification of secondary plots in transmigration areas which were previously allocated for cultivation, but have not yet been developed. The objectives are to raise settlers' incomes and diversify income sources, in order to improve economic and environmental viability and self-sufficiency of resettlement areas. Environmental impact assessments have been prepared for all nine sites. A project component to strengthen management of a nature reserve adjacent to the project area and improve elephant protection and management is being proposed. The Bank November 1988 appraisal mission included an environmental specialist/consultant whose task was to re-assess potential environmental impacts identified in earlier studies and to establish an environmental management plan for implementation at each of the project sites. Under consideration is a technical assistance facility to help strengthen the Director of Environmental Development (PGL). The Mission wants to ensure that the project includes an extensive monitoring and improvement of the quality and sustainability of the transmigration program. The U.S. Government agencies would like to review Bank documentation as soon as possible given the importance of the concerns. Bank documentation indicates that the appraisal is completed.

21. Indonesia IBRD Smallholder Estate Tree Crops Development  
Projected IBRD funding: \$45 million  
Total Project Cost: Unknown

Description: The project supports the Government's efforts to improve smallholder coconut and rubber production. The executing agency is the Directorate General of Estate. Japan has been approached for grant funds for technical assistance. Financing from the Commonwealth Development Corporation is likely to be available.

Issues: While this project targets existing settlements, there could be a small area of new land development. A.I.D. would strongly discourage the use of secondary forest unless there are no alternative sustainable economic uses. The project needs more land capability analysis. The project may also result in attracting new settlers to project sites creating secondary impacts. An environmental assessment should be carried out.

Status: The Bank states that the project involves intensification of secondary plots in former transmigration areas, which have come under provincial government jurisdiction. It targets both settlers in transmigration areas and local population with existing land rights. It does not involve any new settlement. The environmental assessment and monitoring capacity within DGE are being coordinated with parallel USAID supported work with the Planning Bureau of Ministry of Agriculture (Agricultural Rural Sector Support Program) . The appraisal has been completed.

22. Jordan IBRD Transport III  
Projected IRBD funding: \$ 35 Million  
Total project cost: \$70 Million

Description: The project includes a wide range of activities which have yet to be defined, but which may include: (i) new road construction and rehabilitation/strengthening of existing roads in Southern Jordan; (ii) design of a 39 km railway spur to connect the new phosphate mine at Es Shidiya to the existing railway near Batn El Ghul. It may also include technical assistance for (iii) the establishment of a post-graduate diploma course in infrastructure maintenance at the University of Amman; (iv) the provision of experts -- one transport planner for the Ministry of Planning; one transport economist/traffic engineer and one environmental adviser for the Ministry of Public Works and Housing; and one operations specialist and one financial analyst for the Aqaba Railway Corporation; (v) a study of the Port Corporation at Aqaba to examine possibilities of increased foreign exchange earnings; and (vi) a road safety programme.

Issues: The primary issue concerns the impacts on antiquities posed by the construction of the rail line and roads. Other issues would typically be the impacts associated with land clearing for construction of transportation corridors.

Status: The AID mission has recommended that the antiquities issues should be analyzed and that environmental reviews should be conducted on a sub-project basis. These reviews would include corridor archeological studies. These comments have been conveyed to Bank staff. The Bank indicated that conservation of the environment and protection of antiquities would be assisted through the environmental adviser to be appointed in the MPWH. The project is scheduled for appraisal in May 1989.



23. Malaysia: IBRD Sabah Forestry II Project  
Projected IBRD funding: \$40 Million  
Total Project Cost: unavailable

Description: The proposed project is a follow-on to the Sabah Forestry Technical Assistance project. It will establish a large pulpwood plantation (40,000 hectares) on degraded forest land. Smallholder growers will be involved. Pulpwood would be supplied to the existing mill and/or exported. The project also includes technical assistance and institutional support.

Issues: The plantation may be planted with a single species, an approach which has sometimes proven to be a problem in similar projects. Cutting of adjacent natural forest to supply the mill is another concern; this may be occurring already. The pulpmill may also be discharging untreated effluents.

Status: We have raised the issues with bank staff and made suggestions on the project which is just at the beginning of its preparation stage. We will monitor this project as its development proceeds.

24. Morocco IBRD Industrial Finance Loan  
Projected IBRD financing: \$120 Million  
Total project cost: unknown

Description: The project will provide financing for industrial investments and improvement in exporter facilities. A line of credit will be advanced to individual investors through financial intermediaries who will have project management responsibility.

Issues: The major issue concerns potential for industrial pollution from industrial subprojects financed through the line of credit. The Government of Morocco lacks the regulatory and institutional capacity for controlling industrial pollution and for ensuring that investors abide by environmental commitments made to obtain their credit authorization.

Status: The Bank has determined that the financial intermediaries administering the line of credit will be held responsible for pollution control during appraisal of subprojects. For subprojects above a certain size, investors shall be required to commission environmental impact studies, copies of which will be included in their request for financing. Criteria and standards incorporated in these studies shall be acceptable to the Bank. Compliance will be assured during appraisal; however, once the subproject is operational, the Bank will no longer have the authority to monitor the pollution control measures and ensure continuing compliance. Responsibility will be left with local governments which have neither the regulatory nor institutional capacity for such an undertaking. The Bank is discussing ways of assisting the Government of Morocco to develop an adequate pollution control program over the next few years.

25. Nepal ADB Secondary Crops Development  
Projected ADB funding: \$ 10  
Total project cost: unknown

Description: The project will identify current constraints to subsidiary crop development and formulate approaches to realize the full potential of the subsector. The project will include improved cropping practices, support services, marketing and institutional arrangements for selected subsidiary crops such as oil seeds, tobacco, jute, sugarcane and tea. The executing agency is the Ministry of Agriculture.

Issues: The major potential issue is the possible increased use of pesticides.

Status: Project issues have been forwarded to Bank staff for their consideration. An initial environmental analysis will be performed as part of the ADB's 1989 project review cycle.

26. Nepal IDA Arun Hydro-power

Projected IDA funding: \$ 90

Total project cost: \$ 600

27. Nepal IDA Arun III Access Road

Projected IDA funding: \$ 32.8 Million

Total project cost: \$ 40

Description: Nepal is endowed with vast hydro potential, theoretically some 83,000 Mw, of which less than 200 Mw have been tapped. The current projects are designed to take advantage of that potential and include: (i) construction of a 170 km road to provide access to a potential power plant site and to provide a north-south transportation corridor in the Eastern Hills of Nepal, and (ii) construction of a 402 MW run-of-river hydro-power plant with associated transmission facilities. The hydro plant is planned to be commissioned during 1995 - 2003. However, this time-table could be accelerated to accommodate bulk export sales of electricity to India. The two projects, while being processed separately in the Bank for loan purposes, are closely linked. The road is to serve the hydropower project and would not otherwise be built. The executing agency for the access road is the Ministry of Works and Transport, Department of Roads.

Issues: The project site can be differentiated into two distinct zones on the basis of slope characteristics, climatic conditions and population densities.

Upper Arun Valley: The section of the watershed within Nepal and above the dam is beyond access by road and sparsely inhabited. Current plans are for this section to be managed primarily for conservation purposes. Because of its diverse and fragile biology and its function as a dam catchment area, the upper watershed is to be treated separately from the valley below the dam. Approximately one third of the upper catchment area within Nepal has been identified for a proposed extension to the Sagarmatha (Mt. Everest) National Park park.

Lower Arun Valley: Because of the road, the lower Arun Valley will come under pressure from tourism and economic development. Growth in this area has maintained a balance between farmed and forested areas, retaining the unique architectural and cultural character of unroaded towns and the distinctive handicrafts of the region. These characteristics highlight an important tourism potential, making their protection economically important. The area also has the capacity for increased fruit, cardamom and potato production. Natural plant resources include economically important supplies of medicinal herbs, edible fruits, tubers and rhizomes, fiber for handmade paper and textiles and bamboo for construction. These are widely collected by local people and, if managed on a sustainable basis, can continue to be exploited for commercial purposes.

The following major environmental impacts should be addressed.

1. Impacts associated with road construction: Past experience with roads running through undeveloped forested areas has resulted in unregulated and illegal removal of marketable timber and other forest products during and after construction. In addition, unless carefully planned and maintained, severe gully erosion can occur. Two routes have been proposed, one running along the valley bottom and the other following closer to the ridge lines.

2. Impacts from dam construction: The dam will interrupt fish passage since no fish ladder is envisaged in the project. However, the lake formed behind the dam will provide habitat for migratory water birds.

3. Impacts from increased tourism: A typical climbing expedition may include from 5-15 members with an equal number of Sherpa guides. These expeditions can be supported by as many as 60-120 porters. In the evening, the porters disperse to collect firewood, rhododendron leaves for bedding and edible wild roots, rhizomes and bamboo shoots. This puts tremendous pressure on the local ecosystem. A basket of firewood may entail clearing 100 m<sup>2</sup> of shrub-land. Unless packed in, food collection for the expedition can eradicate edible plants and firewood within the encampment area. The uncontrolled disposal of litter, bottles, cans, plastics is another tourism related problem.

4. Impacts from increased agricultural/commercial activity: If slash and burn agricultural practices are allowed to continue, this will add to the problems of erosion, landslides and deforestation. If not properly managed, increased livestock production will result in over-grazing which transforms good grasslands into unpalatable bushlands. Pressures on forested areas for fodder creates "mast-like" trees, devoid of lateral branches and leaves, allowing light to penetrate to the forest floor. This induces heavy growth of the forest weed "Banmara" which inhibits regeneration of natural seedlings. Population increases will eradicate much of the natural stock of plant material which currently produce medicine, food, and fiber and serve as a source of income for local people.

Status: An environmental analysis of the likely impacts of the two projects considered together has been undertaken by IDA staff, government officials, and consultants. The Bank has assured us that the following environmental measures are being taken.

1. Under the Access Road Project. (a) The road alignment has been carefully designed and extended an additional 40km from the original length to minimize cut and fill and avoid rice terraces. The best engineering and bio-engineering techniques have been used. Only 27 houses will be directly impacted by the road. (b) To avoid deforestation the road will include several continuously-manned control gates to prevent access by logging trucks. Only kerosene can be used for cooking and heating in the construction camps and teashops. The workforce will be restricted to an area close to the road right of way. The Forest Department has prepared a special forest supervision plan for the area and will increase its supervision staff. (c) A land acquisition, compensation and resettlement plan has been prepared and is now under implementation. It will provide adequate and timely compensation for affected residents, including farmers and, tenants. Where families are seriously affected they will have the option of resettlement in the vicinity. (d) Assistance to the local panchayats will be provided under the project, to help them manage the growth of their settlements. (e) As part of the agreement on the road project the Government will prepare a conservation management plan for the dam watershed covering the Upper Arun Valley and involving the local people. The plan will include the proposed extension of the Mt. Everest National Park into the Barun Valley. A tourism/trekking management plan for the Arun Valley will also be prepared with the objectives of harmonizing tourism and conservation. Terms of reference for the work have been agreed with IDA. (f) An environment and resettlement unit will be created within the Department of Roads.

Under the Hydropower Project. (a) A study of aquatic life will be undertaken and the results used to implement measures to mitigate the dam's impact. (b) Implementation measures emerging from the conservation and tourism management plans will be agreed with the Government as part of the negotiations on the hydropower project. (c) Studies to minimize the impact of construction on the landscape, the river regime and the forest submerged by the lake will be undertaken, and the results, together with a study on the risk and possible impact of glacial lake outbursts, will be used to influence dam design and construction and aforestation requirements. (d) An environment and resettlement unit will be created within the Nepal Electricity Authority.

28. Pakistan IBRD Kalabagh Dam  
Projected IBRD Funding: \$150 Million  
Total Project Cost: \$3,463 Million

Description: This project, if designed at its contemplated scale, would finance dam construction and the installation of a 2,400 megawatt hydroelectric capacity. It is a multipurpose project for power generation, irrigation and flood control. The estimated total cost of the project, based on 1987 price levels, includes physical and price contingencies. The executing agency is Pakistan's Water and Power Development Authority.

Issues: Concerns have been raised regarding the anticipated resettlement of up to 83,000 persons as a result of flooding in the Northwest Frontier Province and the possible exacerbation of waterlogging and salinity problems. Concerns have also been raised regarding economic and financial issues. The Bank has urged the Government of Pakistan to address these issues. A.I.D. estimates the cost of an environmental assessment at \$1 million.

Status: The Government of Pakistan has not yet made a decision with respect to Kalabagh. Additional hydropower projects are being investigated by the Government and prefeasibility studies are being conducted for a hydropower facility at Basha. Another proposed project under consideration involves a diversionary canal from Tarbela and construction of a 1,000 MW power facility at Gaza Gariela. This project may involve fewer resettlement and environmental problems. The total cost for this project is about \$1 billion.

29. Sri Lanka ADB Power Systems Expansion Project  
Projected ADB Funding: \$71.3 Million  
Total Project Cost: \$94.5 Million

Description: The project consists of three components: (i) Rural Electrification Phase II; (ii) 40 MW diesel power generation capacity extension at Sapugaskanda; and (iii) engineering and environmental services. The executing agency is the Ceylon Electricity Board, (CEB).

Issues: The major issue is whether or not this project is intended to be the vehicle for construction of the first stage of the Trincomalee Thermal Power Generation Plant proposed by the Ceylon Electricity Board to be located at China Bay. Issues associated with the Trincomalee plant include impact of air pollution emissions on tea growing areas, thermal pollution effects on marine life, and impairment of scenic value in surrounding tourist area.

Status: Concerns related to this project have been forwarded to Bank staff. A determination needs to be made concerning the connection between this project and the Trincomalee project. We are still awaiting clarification of this issue from the U.S. Executive Director's office.



30. Sri Lanka IDA Forestry Sector Development  
Projected IDA funding: \$ 25  
Total project cost: unknown

Description: The project will implement a five year time slice of the country's Forestry Master Plan. Project elements include: (i) establishment of forestry plantations, (ii) management and protection of forest resources; (iii) rehabilitation and expansion of wood industries; and (iv) institution building, education and training. The executing agency is the Ministry of Lands and Land Development.

Issues: The primary issue is the impact that the project may have on the sustainability of Sri Lanka's forest resources. The project may result in accelerated exploitation of the country's forests with potential impacts on critical areas (particularly the high altitude montane forests which serve as the source of the country's major rivers), watershed management and biological diversity. Effects of the project on the country's endangered elephant population is also of serious concern.

Status: In response to environmental concerns, the Bank asked the International Union for the Conservation of Nature (IUCN) to prepare a series of studies to formulate the environmental management program, including monitoring and research. We understand the IUCN study is now complete and includes components on biodiversity, watershed management, and long term forest management. The Bank is currently working to integrate the findings of the IUCN study into the Forestry Project. The appraisal report is under preparation.

PROJECTS LOCATED IN LATIN AMERICA AND THE CARIBBEAN

31. Bolivia IDA First Regional Development of the Eastern Lowlands Project

Projected Bank Funding: \$35 million

Total Project Cost: Unknown

Description: The project will provide support for long term regional development of the eastern lowlands focusing on the rational development of the region's resources and on the production of agricultural export commodities: support for soil studies and mapping, agricultural research and extension, feeder road system and credit. The implementing agencies are the Ministry of Agriculture and CORDECRUZ.

Issues: Concerns were raised over the potential adverse environmental impacts associated with altering land use in the lowlands. Introduction of roads may lead to in-migration and deforestation. Lowland soils are acidic and prone to compaction with agricultural machinery. They lack nutrients and are characterized by poor drainage. As such they are easily degraded, and require appropriate agricultural and agroforestry techniques. As originally envisaged the project would involve the clearing of several thousands of acres of tropical lowland rainforest for the planting of soybeans for export. Questions have been raised about the need to undertake soil studies to determine if the soil could sustain a monoculture cropping system. Questions have also been raised about the need to clear more land instead of working with farmers to make more productive use of already cleared land. Questions have been raised about possible effects on indigenous people. A.I.D. mission strongly encourages use of local environmental capability in the Center for Land Use Planning (CUMAT) and the League for the Defense of the Environment (LIDEMA). The project should be subject to an environmental impact assessment.

Status: In an earlier communication the Bank assured A.I.D. that the focus has shifted from a narrowly conceived agricultural production project to a regional development project promoting sustainable development. However, there remains some question about how significantly the project has been redesigned. According to Bank officials, the project

is intended to promote the long-term rational development of the department of Santa Cruz's natural resources and the sustainable production of agricultural export and import-substitution commodities (primarily soya in rotation with wheat, sorghum and sunflower seed.) Project preparation funds are being provided by the IDA in the form of a Project Preparation Facility (PPF) to "establish the current status of land clearing and the long term sustainability of agricultural production by assessing in detail the land use capability of the areas identified as having agricultural production potential through the use of aerial and satellite imagery combined with soil sampling. The assessment would be used to direct credit flows under the proposed IDA credit to those areas exclusively."

32. Brazil IBRD Electric Sector Transmission and Distribution

Projected IBRD Funding: \$300 Million  
Total Project Cost: Unavailable

Description: The loan would continue assistance for financial rehabilitation of selected utilities. The executing agency is Brazil's ELECTROBRAS.

Issues: Concerns have been raised regarding the effective design and implementation of the sector's environmental review process.

Status: Concerns have been discussed with Bank staff. Bank documentation indicates that project preparation is underway. We will continue to pursue our concerns with Bank staff.

33. Brazil IBRD Electric Sector II Project  
Projected IBRD Funding: \$500 Million  
Total Project Funding: Unavailable

Description: The loan would continue support for the Government's efforts to rehabilitate the Electric Power Sector, which were initiated in 1986, under the First Power Sector Loan. It is a quick disbursing adjustment loan that will provide balance of payments relief and disburse against general country imports. Based on the 1988-91 Power Sector Rehabilitation Plan, it will help the Federal Government and the state Governments to undertake financial policy measures (including tariff increases) required by the Sector to achieve the investment and financial targets of the 1988-91 PSRP. The proposed loan will also strengthen the Sector's ability to address environmental and sociological aspects of its investment program. It will support federal and state agencies responsible for environmental licensing of power projects, and for supervising/implementing the Power Sector's Environmental Master Plan. The executing agency for the loan is Brazil's ELECTROBRAS (Centrais Electricas Brasileiras).

Issues: Although the Sector Loan is not attached to any specific project, it will support numerous power projects contained in Brazil's Plan 2010 each of which may have adverse environmental and socio-cultural impacts. The fact that most of these projects fall outside the loan period (1988-91) and that other projects during the loan period are only in the feasibility stage, prohibits application of project by project environmental safeguards. However, the project can impose sector wide environmental conditions which can effect the majority of dams currently under consideration.

Brazil's Plan 2010, made public in 1987, calls for construction of 125 new dams by the year 2010. A number of the projects in the Amazon will have significant impacts on the tropical forests, wildlife and Amerindian populations. For the period of 1988-91 the Plan now includes the following projects for the Amazon region:

1. Balbina. Construction and filling of the reservoir have been completed, but the generating units and transmission lines have yet to be installed. The project continues to pose a number of environmental and Amerindian problems resulting from the project's poor location and original design (predating Bank involvement).

2. Samuel (Rondonia): Construction of this project has been completed and its reservoir will be filled in the 1988/89 rainy season. This project does not directly interfere with any Indian area. Some 238 families have been resettled by the land agency (MIRAD).

3. Manso (Mato Grosso): This project is not located in tropical rainforest environment. It is judged to have manageable environmental impacts.

4. Three small dams: Avila (Rondonia), Paredao (Roraima), Caiabis (Mato Grosso).

5. Studies for the Kararao Project on the Xingu River. The project may flood 1,225 square kilometers.

6. Studies of alternative sites for hydropower development on the Xingu river, following abandonment of original plans for the Babaquara project. The Babaquara site was found to have major environmental problems and high financial costs. American NGOs report that a dam similar to the Babaquara will be necessary to regulate the volume of the Kararao.

7. Studies of the Cachoeira Porteira Project (Trombetas River)

8. Studies of the Ji-Parana project (Ji-Parana/Machado River). The project reportedly would flood part of a forest reserve and two villages in the Lourdes Indian Reserve.

5. Continued environmental studies on the operative Tucuruí Project on the Tocantins River.

Although all of the projects require Environmental Impact Statements under Brazilian law, and all must be subject to the guidelines of the Environmental Master Plan, there is concern about the effectiveness of these mechanisms. The government appears to have ignored the Master Plan and did not clear the Balbina area of forests and wildlife prior to flooding. Furthermore, the Master Plan relies on the institutions such as the federal Indian Agency FUNAI to defend the rights and welfare of Indians impacted by the projects. There is general lack of confidence in the institutional capacity of FUNAI to accomplish its mandate. The fact that the loan is quick disbursing means that implementation of environmental safeguards depends on the strength of the institutions responsible for carrying out the Master Plan.

New concerns were raised in September, when the Government of Brazil transferred responsibility for nuclear power production and development under ELECTROBRAS. This will include operation and maintenance of an already existing nuclear plant and plans for at least two additional plants. The Bank does not provide loans for nuclear power plants. However, there is currently no policy guidance on loans to sectors which include nuclear power facilities.

An environmental concern more directly related to the sector as a whole is the question of energy conservation and efficiency in Brazil. Concerns have been raised about continued loans to finance more electricity, when the sector is not addressing needs to conserve energy.

Status: We are awaiting official notification concerning the status of this project. Concerns have been raised repeatedly both by the U.S. government and other donor governments. The Bank reportedly delayed appraisal due to the need to look at technical and safety considerations raised by the nuclear power issue. It is unclear that these issues can be resolved, or that the project will come forward in its proposed form. A.I.D. is monitoring further developments.

34. Brazil IDB Segredo Hydropower project  
Projected IDB funding: \$ 128 Million  
Total project cost: \$ 756.5 Million

Description: Project involves construction of 1,260 MW hydropower plant to meet projected increase in electric energy demand in the state of Parana and in the South and South-East regions. Segredo is the fourth hydroelectric dam to be built on the Iguacu river with two additional dams in the planning stages.

Issues: Issues include the land clearing of roughly 84 km<sup>2</sup> to be inundated by the impoundment (24 km<sup>2</sup> is forested all of which will be cleared to avoid eutrofication impacts, the rest is farmland), potential pollution from a planned pulp and paper mill which will use the wood from the forest clearing, relocation of some 550 families, and limited siltation of the impoundment lake from land use practices in the upper watershed.

Status: A meeting was held between Treasury, State, AID and IDB staff to raise environmental issues and discuss mitigation. The IDB indicated that \$ 1 million had already been spent on analysis of social and environmental issues and that an estimated \$18 million has been planned for environmental impact mitigation and resettlement. Annual reporting requirements have been imposed to ensure monitoring and oversight. Negotiations on the project are completed.



35. Costa Rica IDB Electric Development II  
Projected IDB Funding: \$182.8 Million  
Total Project Cost: \$ 264.1 Million

Description: The Electrical Development II project includes hydroelectric power generation, geothermal distribution, transmission and rehabilitation of thermoelectric units. The executing agency is the Costa Rican Institute of Electricity.

Issues: The project includes funding for dams which will affect four scenic waterfalls that are now tourist attractions.

Status: The concerns were discussed with Bank staff. Bank environmental staff have stated that the tourist value of the falls can be preserved through appropriate water manipulation and proper design. The Tropical Science Center has prepared an assessment of this project and recommended that the hydroproject can be built without unduly sacrificing the natural scenic values of the waterfalls.

36. Ecuador IDB Daule Peripa Hydroelectric Project  
Projected IDB Funding: \$110 Million  
Total Project Cost: \$160 Million

Description: This project will finance the hydroelectric activities associated with the Daule Peripa dam including one transmission line and a power substation. The executing agency is the Ministry for the Study of Development of the Guayas River Basin, CEDEGE.

Issues: A number of general concerns have been raised concerning the environmental impacts of the Daule Peripa dam itself which was financed by previous loans. Continuing concerns include the need for watershed management and aquatic weed control. Also the presence of the dam will alter the seasonal flow of the Guayas River. Evaporation from the reservoir will concentrate pesticides and minerals, changing the water balance in the rest of the estuary. This may have an adverse effect on salt water shrimp ponds located along the coast and into the estuary. Specific concerns were raised with respect to the hydroelectric project because it was believed that it included funding for selective forest clearing and animal relocation.

Status: Discussions have been held with IDB staff, emphasizing the need for more rapid completion of environmental studies being done in the context of the previous loans for the Daule Peripa Dam. IDB staff indicated that the three studies on water quality, water management and conservation, and use of agrochemicals would be completed in 1988. They stated that no funds in the present project would be used for animal relocation or forest clearing. We will continue to monitor the project.

37. Ecuador IBRD Oil Production Development  
Projected IBRD funding: \$ 100 Million  
Total project cost: \$ Unknown

Description: The project will provide financing for oil field development, secondary recovery, pipeline expansion, technical assistance and environmental studies. The project is currently under identification. The project is to be located in the Ecuadorian Amazon or Oriente region. The implementing agency will be the Corporation Estatal Petrolera Ecuatoriana (CEPE).

Issue: The project entails significant environmental impacts associated with oil exploration and pipeline construction in the Yasuni National Park. To construct a pipeline through the Yasuni, it will be necessary to construct a road to bring in heavy equipment, sections of the pipe and for maintenance one the line is completed. Construction of the road will increase colonization in the park, endangering local flora and fauna and further threatening the Huaorani Indians living in the area. The impact of oil exploration goes beyond the Yasuni National Park and is likely to affect other reserves such as the Cuyabena which has already been significantly colonized due to oil exploration and associated road construction. The oriente comprises almost half the surface area of Ecuador yet it is still relatively unsettled with rich biodiversity and includes other Indian tribes in addition to the Huaorani. The CEPE is at the center of oil exploration in the Oriente and bears ultimate responsibility for seeing that environmental and social impacts are assessed prior to oil exploration and production. CEPE reimburses foreign oil companies, in this case Conoco, for exploration and pipeline construction costs in return for a portion of the profits from the oil that is finally produced.

Status: Alternatives for constructing the pipeline in the Yasuni Park have been suggested including a proposal by the Department of National Parks. Many of the proposals call for a portion of the pipeline to be constructed by air in order to avoid road construction and resulting uncontrolled colonization.

38. Jamaica IBRD Agricultural Sector Adjustment Project  
Projected IBRD Funding: \$25 Million  
Total Project Costs: Unavailable

Description: The project is a quick disbursing policy based operation with objectives designed to assist in policy reform and institutional strengthening in the agricultural sector. The executing agency is the Bank of Jamaica.

Issues: A possible concern has been raised regarding use of pesticides.

Status: The U.S. Executive Director's office has raised concerns with Bank staff. Current Bank documentation indicates that the project preparation is under way. The government of Jamaica has set up a team to prepare an operational working paper on environment and deforestation as part of the agriculture adjustment project preparation efforts. The loan would include as one of its conditions the preparation, by an independent agency satisfactory to the Bank, of a study on the policy and regulatory framework for the use of chemical pesticides. The A.I.D. mission has met with Bank staff and discussed loan conditions relating to pesticides and watershed management. We will continue to monitor, but do not foresee major problems with this loan.

39. Jamaica IDB Second Stage Small Farmer Development Program  
Projected IDB funding: \$19.4 Million  
Total project cost: \$30 Million

Description: The project will provide an on-lending credit program for small farmers to increase quantity and quality of agricultural production of these farmers and improve their incomes and living standards. The executing agency will be the Agricultural Credit Bank.

Issues: This follow-on project to an earlier small farmer credit loan to small farmers at subsidized rates for purchase of agricultural inputs such as seeds and fertilizer. The loan also includes up to 75% subsidy for the cost of installing conservation measures on land owned by participating farmers. The remaining 25% of the cost of the conservation measures will also be eligible for inclusion in the credit package.

While the inputs funded through the credit package may permit farmers to achieve better yields in the short term, the preceding credit program did not offer farmers tested, site-specific techniques for improving yields over the long term. Offering agricultural credit in the absence of reliable techniques for improving yields and income on a sustainable basis may result in farmers being unable to repay the loans.

A second issue concerns the direct subsidy of soil conservation measures as opposed to more cost effective motivation and extension techniques where farmers install measures on their own accord. If farmers are paid, the measures are often viewed as being superimposed on their fields and not integrated into their farming practices. As a result, farmers may: i) install measures which are inappropriate to their site as determined by soil type, rainfall etc. ii) put in structures inappropriately, leading to increased gully erosion, iii) not maintain the structures as they are not understood as contributing directly to his long term interests and iv) let them deteriorate in order to qualify for new subsidies.

Status: We understand that the IDB shares our concern and is undertaking further analyses on the project.

40. Mexico IBRD Hydroelectric Development Project  
Projected IBRD Funding: \$ 460  
Total Project Cost: Unknown

Description: The project would finance the Aguamilpa (960 MW) and Zimapan (280 MW) Hydroelectric Projects, plus execution of energy-related studies and an environmental and resettlement program. The executing agency is the Commission Federal de Electricidad (CFE).

Issues: Questions were raised about how the environmental analysis and review were to be carried out for the proposed Electric Power sector I.

Status: Bank documentation indicates that negotiations are under way. We are still seeking further information.

41. Mexico IDB Forestry Development  
Projected IDB Funding: \$44 Million  
Projected Total Cost: Unknown

Description: The loan will support forestry development in Mexico.

Issues: Local NGOs have expressed concern about potential misuse of forest resources and effects on indigenous peoples.

Status: The Project has not yet appeared in the bank's monthly operational summary so that very little information is available to the public.

PROJECTS WHICH WERE DROPPED FROM THE PREVIOUS LIST

Burkina Faso AFDB Bagre Dam  
Project approved by the Bank

Cameroon IBRD Third Livestock Project  
Project approved by Bank

Kenya IDA Forestry IV Project  
No continuing significant issues

India ADB Second North Madras Power Plant  
Project approved by Bank

India IBRD/IDA Upper Krishna Irrigation Project  
Project approved by the Bank

Indonesia IBRD Industrial Restructuring Project  
Project approved by the Bank

Indonesia IBRD Jabotabek Urban Development II Project  
Mission concerns were satisfactorily addressed

Malaysia ADB Secondary Compensatory Forestry  
Project approved by the Bank

Pakistan ADB Swabi Salinity Control  
Project approved by the Bank

Ecuador IDB Paute C Watershed Management Project  
Project approved. A.I.D. supported this project.