

Strategic Implementation Plans for Action

The recommendations for priority environmental program and policy initiatives are summarized for Cambodia, Lao PDR, Thailand, and Viet Nam as Strategic Implementation Plans (SIPs). Each of the action plans constitutes the development framework for the major environmental subsectors. The SIPs summarize four priority programs: What needs to be done; What are the proposed activities; Who should do them; and What has been done so far (status of donor assistance).

- **Key Issues:** These identify what needs to be done in order to achieve the environmental program objectives.
- **Proposed Program/Action:** Project and technical assistance interventions are proposed.
- **Responsible Agencies:** are listed without determining specific institutional roles and responsibilities.
- **Status:** identifies which donor agencies have completed or are involved in assistance projects related to the program component.

Cambodia

Strategic Implementation Plan

Cambodia's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Forestry			
Forestry and development: Risk of deforestation posed by liberalizing economy	Support to community forestry: Involves the development of the framework for community forestry, integration of tree growing into rural development initiatives, and identification of mechanisms to allow rural communities to share equitably in benefits of forest utilization.	Ministry of Environment (MOE); Ministry of Agriculture, Forestry and Fisheries (MAFF)	World Bank: Forestry Sector Reform Project; 1996-1998 UNDP/FAO: Establishment of a Forestry Resources Inventory Process; 1995-1998; \$0.822
	Support to special forms of forest management, such as buffer zones, as part of protected area management.		IDRC: Participatory Management of Mangrove Forest Resource
Biodiversity			
Biodiversity conservation: Lack of financial and technical capability to manage and preserve protected areas	Improvement of regional or cluster-based planning capacity through training.	MOE	WWF: Nature Conservation and Protected Areas Management in Cambodia; 1998; \$0.020
	Formulation and implementation of a human resource development plan for MOE.		
	Provision of guidelines on planning procedures, protected area management and delineation of area boundaries.		
Natural resource management: Inadequate system of fisheries management, threat to environmental integrity of fishery resources	Improvement of resource management in the Tonle Sap area: Involves improvement of planning, management, and coordination functions; development of income-earning opportunities in the hinterlands to prevent the people from crowding around the lake; and creation of a multi-disciplinary management authority for Tonle Sap.	MAFF	DANIDA/MRC: Inventory and Management of Cambodian Wetlands; 1997; \$1.8 million
			FAO/Belgium: Participatory Natural Resource Management in the Tonle Sap Region (Phases I, II, III); 1994
			UNESCO, EU: Support for the Technical Coordination Unit for the Tonle Sap; 1996-1998; \$1.0 million
		MRC/Denmark: Fresh Water Capture Fisheries; 1994-1997; \$2.3 million	

Cambodia's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Agricultural chemicals: Indiscriminate use of agricultural chemicals and pesticides, posing threat on agricultural resources and people's health	<p>Management of the use of agro-chemicals and pesticides: Involves creation of regulatory framework and operating practices for safe use of agro-chemicals and training target groups on effects and risks of pesticide and agricultural chemicals use.</p> <p>Creation of framework and guidelines for hazardous waste management.</p>	MAFF, MOH	
Water Resources			
Water resource policy: Comprehensive policy for integrated water resource management lacking	Formulation of the policy through ADB's Institutional Support for Water Resource Management.	ADB, other donors, NGOs	
Water resource management: Need for enhanced capabilities, financial resources, and better coordination among agencies in the sector	<p>Capacity building at MOWREM for planning, facilitation and overseeing, and monitoring and evaluation of water resource projects.</p> <p>Amendment of Water Law and drafting of relevant subdecrees and operating guidelines for MOWREM and municipal authorities.</p> <p>Introduction of financially sustainable means of operating irrigation and water-related facilities.</p>	MOWREM MAFF MOE	
Water supply, sanitation, and irrigation	<p>Improved management of municipal water supply and sewerage services.</p> <p>Rehabilitation and development of irrigation facilities.</p>	Municipal governments	PPTA 2280: Urban Water Supply and Sanitation, later renamed Urban Environmental Improvement; 1995; \$600,000 - JSF
Coastal Areas			
Coastal zone management: Social problems facing coastal communities, requiring intervention for coastal development and for seeking productive investments in these areas	<p>Poverty reduction and environmental protection programs in the coastal zone.</p> <p>Ecotourism development involving the private sector.</p>	MOE	DANIDA: Capacity Building in Environmental Management of the Cambodian Coastal Zone; 1997; \$0.814 million

Cambodia's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	Infrastructure development to create attractive conditions for investment.		IDRC: Participatory Management of Mangrove Forest Resources: 1995-1999; \$0.350 million
	Improvement of regulations governing coastal aquaculture, salt-mining, and other coastal commercial activities.	SIDA/ICLARM:	Management of Fisheries, Coastal Resources and the Coastal Environment in Cambodia ADB RETA Nos. 5552 and 5712: Coastal and Marine Environmental Management in the South China Sea
Non-core Themes			
Industrial pollution control	Development of a framework for the environmental management of the mining industry.	MIME	
Urban development	Improvement of urban sanitation and management in provincial cities. Urban reforms, including the delineation of urban environmental tasks among involved agencies, strengthening of urban land market functions, and enactment of land use and tenure regulations that consider health and environmental safeguards.	Provincial and city governments	
Energy development	Support for rural energy use, e.g., addressing the demand for work-based energy.	MIME	

ADB = Asian Development Bank; DANIDA = Danish International Development Agency; FAO = Food and Agriculture Organization; ICLARM = International Center for Living Aquatic Resources Management; IDRC = International Development Research Center; JSF = Japan Special Fund; MAFF = Ministry of Agriculture, Forestry and Fisheries; MIME = Ministry of Industry, Mines and Energy; MOE = Ministry of Environment; MOWREM = Ministry of Water Resources and Meteorology; MRC = Mekong River Commission; NGO = nongovernment organization; PPTA = project/program preparatory technical assistance; RETA = regional technical assistance; SIDA = Swedish International Development Authority; EU = European Union; UNDP = United Nations Development Programme; UNESCO = United Nations Educational, Scientific, and Cultural Organization; WWF = World Wide Fund for Nature.

Lao PDR

Strategic Implementation Plan

Lao PDR's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Forestry			
Deforestation: Expanding commercial exploitation of forests; plans for additional hydroelectric facilities; foreign demand for wild animals; domestic demand for nontimber forest products for food and traditional medicine; and growing population	<p>Development of land use and management plans in consultation with villagers to guide forest concessionaires in logging operations.</p> <p>Development of village forestry systems and national guidelines for sustainable forest management.</p> <p>Improvement of villagers' and forestry staff's ability to manage the forests through extensive training.</p> <p>Allocation of forestland to villagers and promotion of sustainable village-based-forest management.</p> <p>Improvement of villagers' living standards in pilot areas through village forestry and village development projects.</p> <p>Development of policy and legal framework for sustainable forest management.</p>	Department of Forestry	<p>Donor: Finnida</p> <p>Status: Ongoing (09/00)</p> <p>Component: Forest Management</p> <p>Value: WB/IDA-Loan-US\$6.3 million</p> <p>Finnida Grant: US\$1.13 million</p>
Logging: No systematic planning, inventories; no regeneration; overexploitation by legal and illegal operators; forests located inside protected areas; setting of quotas not transparent and criteria not disclosed; logging sites selected with little or no consideration for sustainability	<p>Extension of the ongoing expansion of reforestation efforts (Lao-ADB Forest Plantation Project).</p> <p>Examination of innovative approaches to conservation linked to multilateral environmental agreements and international conventions and protocols, particularly the development of carbon sinks or carbon sequestering.</p>	Department of Forestry	<p>Donor: ADB</p> <p>Status: Ongoing - Industrial Tree Plantations Loan Project (Loan No. 1295[SF])</p> <p>Component: pilot plantations, project management support</p> <p>Value: US\$10.9 million</p>
Forest management: Policy on village forestry management with farmers as a key economy unit, conducive to enhanced community role; plans developed but not successful; implementing regulations for forestry law not yet in effect	<p>Implementation of "Forestry Vision 2020" strategies and measures for sustainable forest management.</p> <p>Facilitation and expedition of the drafting of implementing forestry regulations; phased implementation of sustainable forest management regulations to improve forest resource management.</p>	<p>Department of Forestry</p> <p>Department of Forestry</p>	

Lao PDR's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Biodiversity			
Resource management: Government policy and regulations difficult to enforce; decentralization to provincial governments and the semi-autonomous operations of regional military development companies make communication of policy and enforcement of regulations by central authorities difficult	Development and implementation of sustainable forest management and biodiversity conservation systems in pilot areas in cooperation with forest conservation authorities, villagers and other stakeholders.	Department of Forestry	Donor: WB, GEF
	Improvement of villagers' and forestry staff's ability to manage the forest through extensive training.		Status: Ongoing (09/00)
	Allocation of forestland to villagers and promotion of sustainable village-based forest management.		Component: Integrated conservation and development process (ICDP or ICAD process)
	Improvement of villagers' living standards in pilot areas through village forestry and village development projects.		Value: US\$5 million - GEF Grant
	Development of policy and legal framework for sustainable forest management.		
Biodiversity and ecotourism: Tourist arrivals increasing; opportunity for wildlife watching and nature activities limited	Ecotourism Promotion Program—nature-based tourism program in villages near conservation forests.	Department of Forestry	Donor: ADB
	Youth Wildlife Awareness Program—mobilization of students and young people through education and enforcement of wildlife regulations to, among others, stem international trade.	Lao Tourism Authority Ministry of Education	Status: Tourism project planned
	Economics Biodiversity Development Program—propagation of indigenous trees, plants, wildlife and fish among villagers, near conservation areas.	Customs Dept. Police Dept.	
		Department of Agriculture	

Lao PDR's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Land Resource Management			
Shifting Cultivation: Government restriction on clearing of forestland for shifting agriculture; attempt to resettle upland farming villages in lowland locations where paddy rice cultivation is possible	Sustainable Natural Resources Management Program: Addressing shifting cultivation through the development and promotion of viable alternatives for agricultural income generation.	Department of Forestry Department of Agriculture	Donor: ADB Status: Ongoing (02/04) Component: Shifting Cultivation Stabilization Value: US\$5.6 million
Upland Development		Department of Forestry Department of Agriculture	Donor: WB/IDA Status: Ongoing Component: District Upland Development and Conservation Project Value: US\$2.0 million
Watershed Management		Department of Forestry	Donor: Germany Status: Planned Component: Nam Ngum Watershed Management Value: US\$1.9 million Donor: ADB Status: Completed (03/99) Component: Nam Ngum Watershed Management Value: US\$800,000
	Urban water supply development	Nam Papa Lao	Donor: ADB Status: Ongoing (03/99) Component: Northern Provincial Towns Water Supply and Sanitation Value: US\$12.649 million (Loan)
Water Resources			
	Irrigation intensification	Vientiane Municipality Department of Irrigation	Donor: ADB Status: Ongoing (06/00) Component: Vientiane Integrated Urban Development Value: US\$17.235 million (Loan)
	Urban river erosion control Urban flood control	Luang Prabang, Pakse, Savannakhet, Thakhek Municipalities	Donor: ADB Status: Ongoing (12/02) Component: Secondary Towns Urban Development Value: US\$26.056 million (Loan)

Lao PDR's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	Irrigation management	Department of Irrigation	Donor: ADB Status: Ongoing (1999) Component: Irrigation Management Transfer (PPTA) Value: US\$0.650 million
	Irrigated agriculture training	Department of Irrigation Department of Agriculture	Donor: UNDP Status: Ongoing (12/99) Component: Farmer Irrigated Agriculture Training Value: US\$1.751 million
	Integrated irrigation and ecosystem development	Department of Irrigation Department of Agriculture	Donor: UNDP Status: Ongoing (12/00) Component: Eco-Development and Irrigation Project Value: US\$3.575 million (Grant)
	National water supply development plan	Nam Papa Lao Rural Water Supply Department	Donor: Belgium Status: Ongoing Component: National master plan for water supply development Value: US\$2.679 million (Grant)
	River basin development	Department of Forestry Department of Irrigation	Donor: Germany Status: Ongoing (12/02) Component: Forest Cover Monitoring Value: US\$10.75 million
	Water and environment sanitation	Rural Water Supply Department Nam Papa Lao	Donor: UNICEF Status: Ongoing (12/02) Component: Support to institutional strengthening and capacity building Value: US\$5.355 million

Urban Environmental Management

Solid waste management: increased urbanization, rural to urban migration, and expanding industrial and tourism sectors, that will lead to exponential increase in solid waste related environmental problems.	Visitor Services Tax: Development of innovative methods to generate income from tourism for the purpose of allocating funds to provincial and/or municipal level administrative bodies. Income would be earmarked to offset the costs of operating urban environmental management facilities and maintaining public services.	Municipal governments	Donor: ADB Status: Planned Component: Tourism Development Project
---	---	-----------------------	---

Lao PDR's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Deteriorating urban conditions: Urban areas experiencing population growth rates higher than the national average.	Urban Master Plans: Development of a program to prepare urban master plans for secondary towns.	Municipal governments	Donor: ADB Status: Ongoing (12/02) Component: Secondary Towns Urban Development Value: US\$26.056 million (Loan)
	Vientiane Urban Transport Modernization: Examination of potential for upgrading urban transport systems in Vientiane and secondary towns; examination of potential of leveraging grant funds (Global Environment Facility) for introducing sustainable public transport system utilizing hydropower generated electric power, assessment of feasibility of using renewable energy to reduce rural poverty by providing alternative livelihood schemes and thereby offset pressure on biodiversity.	Department of Communications Hydropower Office Ministry of Industry Municipal governments	
Institutional Capacity and Human Resource Development			
Institutional capacity requirements: STEA's enhanced coordinating and facilitating role, broader environmental mandate and potential to be more involved in implementation of policy, require significant strengthening of institutional capacity. Due to limited public sector fiscal resources to sustain personnel levels, Government will be more dependent on private sector to assist with technical tasks at field level.	Institutional Capacity Strengthening Program: Upgrading of the facilities and strengthening of the research and environmental monitoring and training capacities of the Environmental Management Unit at the National University of Lao PDR (NUOL).	STEA NUOL	
	Natural Resources Management Unit: Upgrading of the facilities and strengthening of the research and natural resource management of the Forestry School at NUOL.	STEA NUOL Department of Forestry	
Decentralization: Local officials have been given greater authority for natural resource management and environmental protection; the Government has devolved responsibility for national policy implementation to provincial governments, where important economic development decisions are made and implemented; gaps remaining in understanding of important	Decentralized Environmental Management Program: Provision of technical and physical assistance to provincial environment offices to enhance their role in environmental planning and policy implementation; strengthening of institutional capacity of local authorities to enable them to implement policies and enforce regulations in support of recently promulgated natural resource environmental management laws.	STEA	Donor: Germany/GTZ Status: Proposed (Grant) Component: Provincial environment office in Luang Prabang Donor: Sweden Component: Provincial environment offices in 3 provinces

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
<p>environmental protection issues; lack of coordination among agencies responsible for different aspects of environmental management; need for strengthened environment office at the provincial level and for extensive environmental training in provincial branches of central agencies.</p>	<p>Ecosystem Management Pilot Projects: Ecosystem management approach at provincial level; green areas near or adjacent to urban areas (Vientiane, Savannakhet, Pakse, Luang Prabang) as pilot sites; planning, operation and management in an integrated manner.</p> <p>Sustainable Land Stewardship Program: Fostering environmental awareness among farmers and land occupants; and supporting village food security through agroforestry development.</p>	<p>STEA</p> <p>Department of Forestry</p> <p>Lao Tourism Authority</p>	

ADB = Asian Development Bank; GEF = Global Environment Facility; GTZ = German Agency for Technical Cooperation; ICAD = integrated conservation and development; IDA = International Development Association; NUOL = National University of the Lao PDR; PPTA = project/program preparatory technical assistance; SFR = Special Funds resources; STEA = Science, Technology, and Environment Agency (formerly STENO); UNDP = United Nations Development Programme; UNICEF = United Nations Children's Fund (formerly United Nations International Children's Emergency Fund); WB = World Bank.

Thailand

Strategic Implementation Plan

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Forests			
Logging	Near term: 2000-2002 Continued illegal logging, and illegal imports of logs from neighboring countries, are issues of administrative will and capacity within RFD. ADB's planned FY2000 TA for Restructuring of MOAC, together with ongoing work under the 1999 Agriculture Sector Loan, should contribute substantially to creating the framework and climate within MOAC for such changes. Logging is also likely to be an issue under the planned Watershed activities.	RFD	
Encroachment	Near term: 2000-2002 JICA, EU, and Sweden have substantial activities currently underway, almost exclusively focused on Northeast Thailand. Currently known pipeline activities will be finished in year 2000. This is, however, likely to remain an area of bilateral donor interest. Again the ADB is developing programs to address this issue through planned Watershed activities.	RFD	EU: Deutsche Welthungerhilfe Community Agroforestry Project in Ubon EO.77million; 1996-1998
		RFD,MOAC	JICA: Research & Training in Reafforestation Project (follow-up) 1997-1999
		MOAC	JICA: MOAC Reforestation & Extension Project in NE Thailand
		Kasetsart University	JICA: Research Project for Higher Utilization of Forestry and Agricultural Plant Materials in Thailand, 1996-2001

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Fires	No known donor activities Fire is a natural event factor in much of Thailand's forest. The issue is closely partly related to RFD's capacity, but even more to encroachment and human use (including burning for agricultural clearing). Again, ADB planned programs for Watershed should address this issue.	RFD	Sweden: Forestry Organization Development SK2.4 million 1997-2000
Biodiversity			
Deforestation	See measures suggested under FORESTRY; additional actions:	MOAC,RFD,ALRO, NGOs	DANCED: 1. Management of the Western Forest Complex; DK 14.8 million; 1995-1998
Wetland Conversion	Near and Medium Term: 2000-2002, 2003-2005 Global Environment Fund (GEF) is a potential source of support for protected area management if Thailand ratifies Biodiversity Convention. If and when that occurs, ADB should move quickly to support one or more GEF investments.		2. Buffer Zone Mgt. In the Western Forest Complex; DK19.0 million 1999-onwards
Destructive Fishing	Funding of protected areas is woefully inadequate. Staff and facilities at parks and sanctuaries are insufficient to cope with new agricultural encroachment, let alone poaching. Revenues from park tourism currently flow to the Government's central revenues. ADB should, in the context of work under the Agriculture Loan, coordinate with other donors and with MOAC concerning financing mechanisms.	RFD TEI	EU: Sustainable Management of Phu Khieo Wildlife Sanctuary through Community Participation EC E6.0 million; RTG E6.2 million, 1999-2005 Netherlands: Buffer Zone Management of Phu Khieo Wildlife Sanctuary DG3.1 million, 1994-2000
Poaching	Also, protected area management, involving the relevant parks and reserves, should be explicitly incorporated into the planned PPTA for River Basin Development in North, Northeast, and South Regions.	TEI, ITTO Wetlands International and Prince of Songkla University	Netherlands: Buffer Zone Management of Keng Krachan Wildlife Sanctuary EU: Community Participation in Forest Management and Rehabilitation in Southern Thailand E0.90 million 1996-1999

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Tenure Issues	Secure landownership and demarcation of lands is the starting point of stewardship and sound agricultural practices. World Bank and Australia have led comprehensive land tenure program since 1994. There does not appear to be any need for ADB to intervene, beyond aspects of reorganization and implementation that are sure to arise during the Agriculture Sector Loan, and the planned Watershed activities.	DOL	Australia & World Bank: Land Titling Project Phase III Australia: A\$24.3 million 1984-1997 Australia: A\$7.9 million World Bank: US\$118 million 1998-1999
Land Conversion			
Erosion-poor farming practices	Near term: 2000-2002 DANCED, JICA, and OECF currently have relevant programs underway. ADB's Agricultural Sector Loan will complement these efforts. Soil erosion issues are also integral to the planned Watershed activities.	MOAC	DANCED: Sustainable Agricultural Development Project DK25.4 million Phase 1: 1990-2000 Phase 2: 2001-2001
Loss of nutrients	Medium term: 2003-2005 Intensified and expanded activities for restoration of degraded land and soils should be given high priority consideration in the medium term—particularly in Northeast Thailand, which has large areas that are becoming desert. This is a regional problem, for all the central Mekong region. A concentrated attack on land restoration in the Northeast will be a logical outgrowth of near and medium Watershed activities.	MOAC, ALRO DLD, MOAC	OECF: Project for Revitalization of the Deteriorated Environment in the Land Reform Areas through Integrated Agricultural Development; JY3.6 billion; 1998 JICA: Land and Water Conservation Center Project in the East of Thailand 1993-1999

Watersheds

Land tenure issues, particular for hill tribes	See discussion under SOILS.		
Poor land management and planning and protected area management	See discussion under BIODIVERSITY.	MOAC	JICA: TA to MOAC agencies including aid coordination and policy, irrigation, land reform and forestry. Ongoing long-term TA.

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Loss of vegetation and soil erosion from encroachment on uplands	<p>Although donor-assisted Watershed projects have been underway in Thailand for nearly three decades, the associated problems have worsened in every river basin. Nevertheless a comprehensive approach to land tenure, agricultural systems, agro-forestry and community forestry for livelihoods and poverty reduction, and to effective protection of parks and reserved forests, all integrated through planning and management of water and soil resources on a rivershed basis, is the best hope for sustaining Thailand's development. While these are still formidable problems, the new Constitution's emphasis on decentralization and participation, the gradual progress on land tenure issues, and the gradual strengthening of MOAC agencies, other concerned departments, and community organizations and NGOs, not to mention the ability to build on all previous and current projects in this area, give reason for some degree of optimism. On the other hand, the alternative to undertaking and succeeding in these programs is further deforestation, soil degradation and sedimentation, and further disruptions and declines in the hydrological cycle.</p> <p>Near term: 2000-2002 A planned PPTA in year 2000 will build upon the Agriculture Sector Program Loan (ASPL) of 1999 to support comprehensive development planning for selected river basins in the north, northwest and southern regions, leading to a program loan in 2002. The Government and ADB have agreed to include the Ping, Mun and Klong Thatapao River basins in this PPTA.</p> <p>In addition, an ADTA planned for Year 2000 is to identify opportunities for physical infrastructure and economic development opportunities in the North and Northeast. This in turn is intended to provide the basis for a cluster of "action plan" joint investments between the Government</p>	RFD	DANCED Nan Watershed Management Project; DK 19.1 million; 1995-1999
		RFD	
		HADF	EU: Community Based Management in Watershed areas E0.22 million; 1996-1998
		PDA	EU: Community Development for Conservation of Pa Taem EC E0.36 million PDA E0.36 million Completed 1998

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	<p>and ADB. It will be important to maintain good communication and linkage between these two TA activities so that they—and the loans that they are expected to lead to—reinforce one another.</p> <p>Medium term: 2003-2005 The planned Year 2002 River Basin Development loan program should be used to lay the basis for collaborating with the Government and other donors for a concerted attack on land restoration and water resource conservation use in the Northeast. Unless there are clear synergies or outstanding benefits likely from continued work in the South and North, it may be necessary to concentrate available resources for a serious campaign to reclaim the Northeast alone.</p>		
Water			
Irrigation	See discussion and suggestions under Watersheds.	RID	EU: MOAC/RID Northeast Water Management & System Improvement Project ECE 29.0 million; RTG E18.5 million 1990-1998
Domestic use			
Industrial use		MOAC, RID	JICA: Study on the Kok In-Nan Water Diversion Project; Study costs 1997-1999
Groundwater mining		MOAC, RID	JICA Study on Integrated Plan for Flood Mitigation in the Chao Phraya River Basin; Study costs; 1996-1999
Coasts and Fisheries			
Water pollution	Degradation and depletion of coastal resources are the other major challenges of natural resource use, with profound implications for livelihoods, foreign exchange earnings from shrimp and fish, and for tourism. Again, if Thailand ratifies the Biodiversity Convention, ADB should quickly assist in tapping GEF resources to strengthen protection of	DOF	DANCED: Coastal Resources Management Project; Under identification
Destructive fishing practices			
Agricultural effluents/runoff		DOF/MOAC	EU: Study for Definition of a Decision Support System for Coastal Area Management in Thailand
Mangrove loss			

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	Thailand's marine parks. But for now, ADB's limited resources are, properly, being concentrated on river basin management. Of the three basins targeted by the Government and ADB for this work, only Klong Thatapao flows into the sea. But it does so at a point on the Upper South's coast that encompasses a full range of coastal resources management and fisheries issue. So it will be possible to use this entry to explore the topic, possibly laying the foundation for an expanded and more intensive loan effort in the medium or longer term.	DOF/MOAC DOF	E0.38 million; 1998 EU: Eco-system Protection in Adang Archipelago; E1.09 million; 1997-1999 EU: Coastal Management Project Under identification
Energy Resources			
Depletion of limited fossil fuel resources	Although economically important, ADB has neither the resources nor the particular comparative advantage to undertake a serious effort in this area within the near or medium term. ADB does have an important role to play, however, in seeing that trade in power and energy resources by Thailand and its neighbors is done at realistic pricing, and with appropriate safeguards for protection of the environment. This can best be done through regional TA.	DTEC	Canada: Project for sustainable energy development Canada: C\$0.5 million RTG: C\$0.27 million 1995-1999
Limit of hydro sites		Bangchak Petroleum	WB: Clean fuels and Environmental Improvement Project US\$90 million Effective 1996
Air Quality			
Motor vehicles	There are three fundamental air quality issues. First and foremost, is the regular unhealthy exposure to air pollution of more than 15 percent of Thailand's population in the Bangkok Metropolitan Region. This is being addressed, at least within the Bangkok municipal area, through a proposed project of the World Bank to the city administration.	PCD	Sweden Air Quality Management SK4.96 million 1996-2000
Industry & power generation		PTT	JICA: Automotive Fuel Research for Environmental Improvement 1996-2000
Construction		EGAT	OECD: Flue Gas Desulfurization Plant for Mae Moh Power Plants 8-11: JY15.9 billion 1993-2001
Garbage burning		BMA PCD	World Bank ADB: Samut Prakarn Wastewater Management (loan) US\$150 million 1996-2001

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Domestic sewage	ADB, like many other donors, has a long history of support to water supply and sanitation projects in Thailand. In Samut Prakarn, ADB has a very substantial investment underway to establish a modern sewerage and treatment system for the single most difficult and highest priority district outside of Bangkok itself. Together with this investment in infrastructure, ADB's TA to the Government, complemented by somewhat parallel TA from DANCED, is providing the policy basis for effective cost recovery for wastewater treatment projects. Policy reform on cost recovery, linked to planned efforts to strengthen the ability of municipalities to mobilize financial and managerial resources for local environmental management, will be a further major contribution in this area.	PCD	ADB Strengthening National Financing and Cost Recovery Policies for the Wastewater Management Sector; ADB US\$565,000 RTG: US\$385,000 1997-1998
		PCD	Denmark: Samut Prakarn Wastewater Management Project: Strengthening of Regulatory and Cost Recovery Mechanisms DKr10.7 million 1997-1999
Agricultural runoff	Capital for municipal waste water infrastructure is currently available from Thailand's own Environment Fund. While this mechanism is still cumbersome, it should be feasible now to assist in construction. See INSTITUTIONAL STRENGTHENING.	PWD	JICA: Master Plan Study on Utilization of Sludge and Reclaimed Water in Bangkok Study Costs; 1998-1999
		PWD	JICA: Training Center for Sewage Works 1995-2000 Sweden: Chiang Mai Sewage Plant (loan) SK22.0 million
Industry	See INDUSTRIAL MANAGEMENT.	DW	JICA: The Industrial Water Technology Institute 1998-2000
Reduced water flows	See WATERSHEDS.		
Solid and Hazardous Wastes			
Households	Over the past several years, ADB has provided TA assist the Pollution Control Department (PCD) to prepare regional and national strategies for improved management of solid and hazardous wastes. A principal reason for this TA has been to provide the foundation and build government capacity to undertake	PCD	ADB Capacity Building for Waste Management Program Administration (ADTA) \$0.30 million From 1997

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	<p>a concerted program in solid waste management outside of Bangkok, with support from a planned 2001 project loan. This effort parallels ADB's accomplishments with the Samut Prakarn Wastewater Management Project—it aims to move the Government ahead in a critical environmental area through a combination of policy changes aimed at cost recovery, and a project effort substantial enough to test the policy innovations while developing managerial and technical capacity, in addition to making a significant contribution to address the problem. As with the wastewater subsector, however, it would be reasonable to review the planned loan with a view to minimizing foreign exchange costs, and to the maximum extent possible covering local costs from the Thai Environment Fund. Insofar as the Fund itself may need reform and replenishment to meet such needs on an ongoing basis to municipal governments, there is time to work out a balanced mechanism for doing so.</p>		
Industry	<p>The industrial side of the solid and hazardous wastes issues is being addressed directly in the Samut Prakarn Cleaner Production component, and is discussed further under INDUSTRIAL MANAGEMENT.</p>	Phitsanulok Municipal Office	Germany/GTZ: Solid Waste Management Programme for Phitsanulok DM3.5 million 1999-2000
Energy Efficiency			
Economic growth	<p>This is an area where the Government itself has adopted an aggressive program, and continues to apply it with considerable success.</p>	PEA	Germany/GTZ: Energy Efficiency Promotion Project (Phase I & II) DM7.8 million 1993-1999
Poor management			
Industrial Management			
Efficiency	<p>Considerable donor interest has evolved around concepts of cleaner production (CP) and waste minimization (WM) since the early 1990s. It is an area that allows for interaction directly with the private business sector, and provides good</p>	PCD	ADB Samut Prakarn Wastewater Management Cleaner Production Component (of SP Wastewater Project Loan) US\$7 million; 1999-2002

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Accidents & fires and occupational safety	opportunities to showcase business opportunities for bilateral donors. ADB has, however, already established an important niche in this area, through current regional TA and through the Samut Prakarn Wastewater Management loan, which contains a CP component that, at US\$7 million, is larger than any other waste minimization effort in Thailand to date. Although delayed by more than a year, this Samut Prakarn program is expected to be underway by the end of CY 1999. If successful in Samut Prakarn, a similar sized effort should be all that is needed to gear the program up to the national level.	TEI	EU: Participatory Approach to Environmental Management and Clean-up in Samut Prakarn EO.99 million Completed 1998
		IFCT	OECF: Environment Protection Promotion Program (2 loans) JY8.0 billion 1993-2003
		DW	GTZ: Environmental Advisory Assistance for industry DM14.14 million 1991-2001
		NICE	JICA: Project on Strengthening of the National Institute for the Improvement of Working Conditions and Environment; 1997-2002
Construction		NESDB	GTZ Disaster Management for the Transportation of Hazardous Substances DM3.2 million 1997-2000
		NIDA	Belgium: RUCA International Business Administration and studies for relocation of industries from Bangkok to NE Thailand BF22.7 million 1993-1998
		IEAT	OECF: Human Resource Development Centers for Industries Project JY2.6 billion; 1998 (approved)
		FTI	US AEP: Clean Technology for Environmental Management Program 1996-2001
Pesticides	Control of pesticide can be achieved through better enforcement and cleaner production initiatives. The FAO's	MOAC	GTZ : Biological Control of Rodent Pests DM3.9 million 1993-2001

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	regional headquarters for liaison with the pesticides industry is in Bangkok. At the farm level, the GTZ programs are already making a substantial contribution.	MOAC	GTZ: Appropriate Regulatory Measures and Policy Reform for Pesticide Risk Reduction DM4 million; 1997-1999
Poor upland use	The Klong Thatapao River basin was at the heart of Thailand's worst ever natural disaster, triggered by Typhoon Gay in 1988. The planned work with that watershed, including the coastal area at the mouth of the river, will necessarily review the experience of recovery from that episode, and address at least the principal underlying factors that make for a severe natural disaster in Thailand.	CRI	JICA Study on Environmental Planning Management Survey for Arsenic Contaminated Area of Nakhon Si Thammarat Province Study Costs; 1998-2000
Development of flood plains			
Regional and Urban Planning			
Lack of capacity	See WATERSHEDS.	NESDB	Belgium: EIA of the Southern Seaboard Development Programme; BF30 million Completed 1997
Lack of public involvement		MOI	CIDA: Natural Resources and Environmental Management Project C\$10.0 million 1992-1999
		MOI	GTZ: Decentralization of Physical and Urban Development Plan DM5.38 million 1994-1999
		MOI	GTZ: Urban Environmental Management Project DM1.0 million; 1997-2000
		MOI	JICA: The Development of the Method of Urban Development in Thailand 1999-2003
Strengthening Institutional Capacity			
Training and manpower development	Near term: 2000-2002 Two complementary TA projects are planned for Year 2000; one	DEQP	JICA: The Project on Environmental Research and Training Center

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Basic environmental data and information	<p>is to build capacity in all areas of urban governance, the second TA is to have two main components: (1) to develop community awareness and participation in the selection of environmentally sensitive developments and implementing cost recovery mechanisms; and (2) to build capacity in provincial and regional environmental offices. Building on these two initiatives, a PPTA is planned in 2001 for the Provincial Urban Environmental Management project. This would provide ADB with opportunity to work with the Government on long-term policy reform, including decentralization and participation.</p> <p>Medium term: 2003-2005 As ADB assists the Government to create environmental planning and operational capacity at local levels, possibilities exist for strengthening at either or both the Ministry of Interior's Institute for Government Administration and Local Development (IGALD) and MOSTE's Environmental Research and Training Center (ERTC). It may be appropriate to privatize or convert these training institutes into state enterprises. Doing so might ensure higher quality programs and lower long-term costs for these valuable institutions.</p>		
	<p>Near term: 2000-2002 Despite considerable efforts by various MOSTE agencies, there is no comprehensive compendium of current details of environmental situation and programs for Thailand. The Thailand Environmental Profile, which once satisfied that need, is now nearly 15 years old. Funds should be made available for an appropriate Thai institution to undertake a thorough update of the Profile. Doing so would benefit everyone interested in Thailand's environmental situation, and the evolution of environmental management efforts. It would also</p>		

Thailand's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
	<p>be a useful exercise in capacity building. The effort could be used as the basis for improved environmental data gathering and reporting for the government agencies on a continuing basis.</p>		
Environment Fund	<p>Near term: 2000-2002 The Thai Environment Fund, begun in 1992 with an additional B10 million allocation from the Government, plus revenue from the Oil Tax and a supplement of \$150 million from OECF, was set up as a multipurpose mechanism to support efforts of NGOs, private sector, and public sector environmental infrastructure. Most of the fund, to date, has gone to this last category. Although OECF appears certain to replenish the fund with an additional \$150million-\$300 million by September 2000, a concerted effort by donors working with the Government could enable the fund to be overhauled and revitalized. This can be explored through dialogue with the Government and fellow donors. Other co-financing mechanisms, such as a small and medium enterprise environmental window through Industrial Finance Corporation of Thailand should also be considered.</p>		

Other major activities, underway or planned

World Bank: GSB
 Social Investment Program (SIP), incorporating the Social Investment Fund
 \$300 million
 Effective 1998

World Bank
 Natural Resources Management Project
 Under identification
 5 to 8 years from 2000

Asian Development Bank: MOAC
 Agriculture Sector Program Loan
 \$300 million
 From 1999

Viet Nam

Strategic Implementation Plan

Viet Nam's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Forestry			
Water resource development: Need to safeguard the watershed and develop sustainable livelihoods for minorities living in the area	Sustainable forest management and conservation associated with biodiversity hydropower development on the Se San River in the Central Region	Provincial DOSTEs, DARD and DPIs	ADB: Se San Hydro Development Project
Rural development and poverty reduction: Need to provide sustainable livelihoods to poor communities and at the same time sensitize and involve them in the wise use and management of natural resources	Sustainable buffer zone and protected areas management associated with rural development in poor regions, specifically Dac Lac, Kon Tum, Quang Nam and Quang Bink	Provincial DOSTEs, and DARDs	WWF, Netherlands, GTZ and DANIDA NEA proposing to prepare biodiversity plan for central highlands
Water Resource			
Water services department	Near Term: 2000-2002 Sustainable natural resource management and biodiversity conservation associated with the development of water services at the Se San River	Provincial DPIs, DOSTEs and DFPs in Kon Tum and Gai Lai	ADB: Central regional water resources development project
Biodiversity			
Education and training for sustainable development: Need to make the Government's policy of "sustainable development with equity" internalized (See also issues and programs under forest, water, coastal and urban and industry themes)	Sustainable development principles and practices as a theme in the training of upper secondary school teachers and in the development of the secondary school curriculum.	MOET	DANIDA's NRMEPP
Coastal/Marine Resources			
Coastal resource development and poverty reduction: Need to rehabilitate mangrove systems, promote aquaculture development, and provide sustainable livelihoods in poor coastal communities	Mangrove conservation associated with aquaculture development in poor coastal communities in Ha Tinh and other central coastal provinces	Provincial DOSTEs, DARDs, and fisheries departments	OXFAM, Save the Children, Red Cross ADB: Poverty reduction and forest projects

Viet Nam's Strategic Implementation Plan

Key Issue	Proposed Program/Action	Responsible Agency	Status of Donor Actions
Marine protection	Establishment of a national system of identifying and managing marine protected areas in the country	MOFI, selected provincial fisheries department	
	Planning and management of marine protected areas in highest priority biodiversity regions	DOSTEs and selected fisheries departments	World Bank/IUCN: Hon Mun GEF project IUCN/UNDP/GEF: North Tonkin Archipelago proposed project
Urban/Industrial Development			
Transport Development	Environmental assessment and integrated resource planning associated with the development of transport networks in rural areas	DOSTEs, DPIs, intersectoral structures	ADB: Central Region roads improvement project
Energy: Need to demonstrate economic benefits of energy conservation	Energy conservation strategy associated with industrial zones	Dong Dai District people's committee	MPI/UNDP: Environment and Investment project MOSTE: Energy Conservation Project ADB: Power Transmission Project
Waste management: Need to address increasing toxic intensity of industrial wastes	Hazardous waste management associated with industrial and urban development	HCMC and Hanoi DOSTEs	HCMC: Environmental Management Project