

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

PROJECT PAPER

THAILAND: Management of Natural
Resources and Environment
(493-0345)

July 18, 1988

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A - Act
 C - Charge
 D - Debit

Assignment Number

DOCUMENT CODE

3

COUNTRY/TERRESTRIAL Thailand

3. PROJECT NUMBER

493-0345

4. BUREAU/OFFICE

ANE

2. PROJECT TITLE (maximum 40 characters)

Management of Natural Resources and Environment

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

019 | 30 | 915

7. ESTIMATED DATE OF OBLIGATION (Under 25's view, enter L, 2, 1, or 4)

a. Fiscal FY 1818 | b. Quarter 4 | c. Fiscal FY 9111

8. COSTS (1000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	C. INST. FY			E. LIFE OF PROJECT		
	B. FY	C. LIC	D. Total	E. FY	F. LIC	G. Total
AD Approved Total	9,600		9,600	21,081	22,919	44,000
(Grant)	9,600		9,600	21,081	22,919	44,000
(Loan)						
Other						
LIC				611		611
For Capacity					16,168	16,168
Other (Donor)						
TOTALS			9,600	21,692	39,087	60,779

9. SCHEDULE OF AID FUNDING (1000)

A. APPRO. RELATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE	D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
			1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
11 ARDN	180	0901			9,600		44,000	
(2)								
(3)								
(4)								
TOTALS					9,600		44,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 position each)

020 | 050 | 160

11. SECONDARY PURPOSE CODES

12. SPECIAL CHARGES CODES (maximum 7 codes of 4 position each)

A. Code BR | BU |
B. Amount 41,000 | 3,000

13. PROJECT PURPOSE (maximum 400 characters)

To develop the capacities of Thai governmental and non-governmental institutions to define, analyze and respond effectively to current and emerging natural resource and environmental problems, and thereby to build consensus and capacity for advancing policy options that will lead to sustainable development.

14. SCHEDULED EVALUATIONS

Begin 1 | 2 | 91 | End 1 | 6 | 915

15. SOURCE/ORGANIZ. OF GOODS AND SERVICES

000 | 41 | Local | Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

Clearance: USAID/T: Controller Jan Date 4/25/89

17. APPROVED BY

John R. Eriksson
Mission Director

Date Signed 07 | 18 | 88

18. DATE DOCUMENT RECEIVED BY ADM. OR FOR ADM. DOCUMENTS DATE OF DISTRIBUTION

|| | | | |

PROJECT AUTHORIZATION

KINGDOM OF THAILAND

Management of Natural Resources
and Environment
Project No. 493-0345

1. Pursuant to Section 103 of the Foreign Assistance Act (FAA) of 1961, as amended, I hereby authorize the Management of Natural Resources and Environment Project (the "Project") for the Kingdom of Thailand (the "Cooperating Country") involving planned obligations of not to exceed \$44 million in grant funds over the life of the project from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing certain foreign exchange and local currency costs for the Project. The planned life of the Project is seven (7) years from the date of initial obligation.
2. The goal of the Project is to promote the economic and social development of Thailand through improved management of natural resources and the environment. The purpose of the project is to develop the capacities of Thai governmental and non-governmental institutions to define, analyze and respond effectively to current and emerging natural resource and environmental problems, and thereby to build consensus and capacity for advancing policy options that will lead to sustainable development. The priority areas for attention under the project include: coastal resources management; industrial environmental management; rural resources management; biological resources management; human resources development; environmental awareness and education; and policy analysis and development.
3. The Project Agreement which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

- (a) Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on vessels under flag registry of the United States.

Signature: 
John R. Eriksson
Director

Date: July 18, 1988

THAILAND-MANAGEMENT OF NATURAL RESOURCES
AND ENVIRONMENT PROJECT

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MOA	Memorandum of Agreement
MOAC	Ministry of Agriculture and Cooperatives
MOE	Ministry of Education
MOF	Ministry of Finance
MOI	Ministry of Industry
MOInt	Ministry of Interior
MOU	Memorandum of Understanding
MSTE	Ministry of Science, Technology and Energy
MU	Mahidol University (MUA)
MUA	Ministry of University Affairs
NAFEO	National Association for Equal Opportunity in Higher Education
NCSWT	National Council of Social Welfare of Thailand
NEROA	Northeastern Regional Office of Agriculture (MOAC)
NESDB	National Economic and Social Development Board (OPM)
NFPC	National Forest Policy Committee
NGO	Non-Governmental Organization
NIDA	National Institute of Development Administration (MUA)
NPD	National Parks Division (RFD)
NRDP	National Rural Development Program
OIT	Office of International Training (AID/W)
ONEB	Office of National Environment Board (OPM)
OPM	Office of the Prime Minister
PACD	Project Assistance Completion Date
PDA	Population and Community Development Association of Thailand
PIET	Partners for international Education and Training
PID	Project Identification Document
PIL	Project Implementation Letter
PIO/C	Project Implementation Order/Commodities
PIO/P	Project Implementation Order/Participant
PIO/T	Project Implementation Order/Technical Services
PP	Project Paper
PSC	Personal Services Contract
PSU	Prince of Songkla University (MUA)
PVO	Private Voluntary Organization
RCO	AID Regional Contracting Officer
RDME	Rural Development Monitoring and Evaluation Project
RFD	Royal Forest Department (MOAC)
RID	Royal Irrigation Department (MOAC)
RTG	Royal Thai Government
S&T	Bureau for Science and Technology (AID/W)
ST/FENR	S&T Office of Forestry, Environment and Natural Resources
TA	Technical Assistance
TAT	Tourism Authority of Thailand (OPM)
TECDA	Thai Environment and Community Development Association
TISTR	Thailand Institute of Scientific and Technological Research (MSTE)
TDRI	Thailand Development Research Institute
TVA	Tennessee Valley Authority
URI	University of Rhode Island
USAID	United States Agency for International Development (Thailand)
USDH	U.S. Direct Hire Employee

15. Project Committee:

USAID/Bangkok:

Lee Twentyman	Deputy Director (Chairman)
Douglas Clark	Director, Office of Technical Resources
Willy Baum	Director, Office of Project Development and Support
Timothy Hammann	Office of Project Development and Support
Det Trisahd	Office of Project Development and Support
Sompongse Somsookh	Office of Project Development and Support
Craig Steffensen	Office of Project Development and Support
Mit Pramuanvorchat	Office of Project Development and Support
Mintara Silawatshananai	Office of Project Development and Support
Gary Suwannarat	Office of Project Development and Support
David Delgado	Office of Technical Resources
Michael Philley	Natural Resources Officer, Office of Technical Resources
Will Knowland	Natural Resources and Environment Advisor, Office of Technical Resources
Kamol Chantanumate	Office of Technical Resources
Apichai Sunchindah	Office of Technical Resources
Kasem Srinian	Office of Technical Resources
Thongkorn Hiranraks	Office of Technical Resources
Thomas Faillon	Office of Finance
Ronald Hammersley	Office of Finance
Nopakorn Vivatpanachart	Office of Finance

16. Principal Thai Counterparts:

OFFICE OF THE PRIME MINISTER

Department of Technical and Economic Cooperation

Wanchai Sirirattna	Director-General
Mr. Phichet Soontornpipit	Deputy Director-General
Mr. Thawal Polpuech	Director, External Cooperation Division I
Mr. Achari Yuktanandana	Chief, USAID Sub-Division
Mr. Prasit Piruncharoen	Project Officer, USAID Sub-Division

National Economic and Social Development Board

Dr. Snoh Unakul	Secretary-General
Mr. Kosit Panpiemras	Deputy Secretary-General
Mr. Kirasak Chancharaswat	Economic Planning Specialist
Ms. Vantani Kiravanich	Chief of Natural Resources Planning Sector

Mahidol University

Dr. Thanakorn Uan-on Dean, Faculty of Environmental and
Resource Studies
Dr. Mathuros Ruchirawat Faculty of Science

Chulalongkorn University

Dr. Surin Setamanit Deputy Rector for Academic Affairs
Dr. Kamchad Mongkolkul Deputy Rector
Dr. Thavorn Vajrabhaya Dean, Graduate School
Dr. Chaianan Samudavanija Faculty of Political Science

MINISTRY OF INDUSTRY

Dr. Anat Arbhabhirama Governor, Petroleum Authority of
Thailand
Mr. Boonyong Lohwongwatana Industrial Works Department

NON-GOVERNMENTAL ORGANIZATIONS

Wildlife Fund Thailand

Mr. Pisit na Pattalung Secretary-General

National Council for Social Welfare

Khunying Ambhorn Meesook Vice-President for Asia and Pacific,
International Council on Social
Welfare

Federation of Thai Industries

Mr. Paron Israsena President
Mr. Pakorn Tanapakorn Director of Foreign Affairs Department
Mr. Ah-ram Kotikula Executive Secretary
Dr. Vipandh Roenpitha

Thailand Development Research Institute

Dr. Paichitr Uathavikul President
Dr. Dhira Phanthumvanich Director, Natural Resources and
Environment Division

Thai Environmental and Community Development Association

Ms. Chodchoy Soponpanich Chairperson

17. Other Contributors:

AID/W

David Esch, OIT/FS/ANE
Steven Lintner, ANE/PD/ENV

USAID/New Delhi

Steven Freundlich: Office of Project Development

USAID/Cairo

Peter Gajewski: Chief Economist, PPP/E

USAID/Manila

Brian Miller: Regional Legal Advisor

Consultants

James Baker, WASH
Malcom Baldwin, Baldwin Associate
W. Thomas Brown, U.S. National Park Service
Surachet Chettamart, Kasetsart University
Gordon Conway, IIED
Robert Dobias, Private Consultant
John Dixon, East-West Center
Somsak Dumrichob, NIDA
Patrick Durst, USDA/AID Forestry Support Program
James Fitzpatrick, WASH
Terry Granstaff, East-West Center
Somluckrat Grandstaff, East-West Center
Gary Hartshorn, Tropical Science Center, Costa Ric
Richard Hopkins, University of Maryland
Choob Khemmark, Kasetsart University
Lane Krahl, The Conservation Foundation
Antony Marcil, WEC
Edward McCrea, U.S. Fish and Wildlife Service
Joanne Michalovic, U.S. National Park Service
David Morell, The Conservation Foundation
Nigel Nicholson, WASH
Theodore Panayotou, Harvard Institute for International Development
Suchitra Punyaratabandhu-Bhakdi, NIDA
David Richards, IIED
Jeff Romm, University of California at Berkeley
Seymour Sohmer, Bishop Museum, Honolulu, Hawaii
Chua Thia-Eng, ICLARM
Jerome Wilkenfeld, WEC
Paul Zinke, University of California at Berkeley

I. PROJECT RATIONALE

A. THAILAND'S ECONOMIC SUCCESS

For nearly four decades Thailand has been writing an impressive economic success story. Since 1950 Thailand's Gross National Product (GNP) has increased by eighteen times and since 1985 Thailand's Gross Domestic Product (GDP) has grown faster than that of its neighbors, the Philippines, Indonesia, and Malaysia. Because of the sharp decline in world oil prices and interest rates in 1986, as well as the economic strength of major export markets, the continuing growth of tourism, and -- equally as important -- the remarkable responsiveness of Thai farmers and industrialists to new export opportunities, annual GDP growth reached an estimated seven percent in 1987. With an estimated per capita income of \$870 by 1988, Thailand appears to be on the fast track to achieving middle income status.

Many important reasons can be cited for Thailand's recent outstanding economic performance. A major contributor has been sound public policies which have ensured continued political-economic stability and a growing vigorous free enterprise system, a system which has helped attract a continuing flood of foreign investment. In addition, low labor costs and the relatively stable baht make Thailand ideal for important industry relocation. The government reinforces its natural advantages with tax holidays and duty-free treatment of component imports and other incentives.

Prudent fiscal policy practices have further strengthened Thailand's economic situation. The current government has introduced tight budgets and has set an annual ceiling on external borrowing at 1.0 billion dollars.

A cornerstone in Thailand's economic growth strategy has been its policy of diversification in the areas of agriculture, fisheries, industry and services. In agriculture and fisheries this diversification policy has led to major increases in the production and sale of processed foods, especially seafoods, freshwater shrimp, canned pineapple and frozen chicken. Fishery production in 1985 contributed 19.8 billion baht (\$792 million) to the country's foreign exchange earnings. The share of GDP accounted for by manufacturing now exceeds that generated by agriculture. Cotton textiles now exceed rice as the largest commodity export. Tourism, largely aimed at Thailand's magnificent beaches and islands, is now the country's leading foreign exchange earner, and is expected to grow 20 per cent during this year alone.

B. THE NATURAL RESOURCE BASE

Unlike newly industrializing countries such as Singapore, Taiwan, and South Korea, Thailand's growth appears likely to remain based largely on its natural resources. It is important to note that primary production and processing of agricultural and natural resources still account for one quarter of GNP, over two-thirds of exports, and three quarters of employment. At the same time, Thailand's natural resource base has recently exhibited significant trends toward resource depletion. Indeed, the sustainability of Thailand's remarkable economic growth rate appears to be in serious jeopardy.

A startling 70 percent of the increase in agricultural production over the last thirty years has been attributed to the expansion of land area for crop production alone. However, farmers have now reached, and in some cases have even gone beyond, the limits of quality arable land. As a result, over half a million rural households are landless, and a million others are illegally settled on national forest lands. Demands for crop land and wood products have reduced Thailand's forest from 53 percent of total land area in 1960 to around 25 percent today. Consumption of wood appears to be on the order of five times current regrowth rates, and imports of wood are rapidly growing. Extensive and destructive patterns of natural resource use have resulted in problematic soil erosion (soil erosion exceeding 30 tons/hectare/year), estimated to affect some 30 percent of the country. Streams are carrying heavy silt loads into reservoirs and lowland irrigation canals.

Between 1962-72 Thailand experienced an eightfold increase in marine fish catch due largely to the widespread introduction of off-shore trawling and mechanized push-net technologies. Current production ranges between 1.8 and 2.2 million tons per year. As a result many of Thailand's traditionally abundant fisheries are now seriously over-fished beyond their natural reproductive capacity. Significant reductions in catches are occurring and the Kingdom's fishing fleet - the eighth largest in the world -- now relies heavily on catches taken from the high seas or territorial waters of its neighbors. The long-term sustainability of Thailand's fishery industry is further threatened by water quality degradation from indiscriminate dumping of untreated urban and industrial wastes into marine waters and from the destruction of critical habitats (mangrove forests, coral reefs and seagrass beds).

The beauty of Thailand's 2600-kilometer coastline with its clean white beaches, clear water, and magnificent coral reefs is being damaged by indiscriminate disposal of wastes generated by agriculture, domestic and municipal sources, and the growing tourist industry. If the pollution of Thailand's coastal areas continues unchecked, tourism will likely decline and a lucrative source of national income will be lost.

Air and water pollution in urban areas are also widespread. With less than two percent of Bangkok's households currently linked to sewage treatment systems, many canals are open sewers. The lower Chao Phya River is threatened by an increasing overload of industrial and domestic organic wastes. The number of motor vehicles in both Bangkok and the country at large has more than doubled since 1978, and air and noise pollution is increasing proportionately. Pesticides are widely misused, threatening both rural users and urban consumers. Few industries show serious concern for the health and safety of their workers, let alone that of the public or environment outside their gates. Toxic substances and hazardous wastes are disposed of with little regard for public exposure. Urbanization and industrialization have been mainly unplanned, resulting in haphazard concentrations of demand for public infrastructure, water and wastewater services, and land for secondary development.

Thailand's rural development is being seriously threatened by the damage caused by frequent misuse of its national parks and wildlife sanctuaries. Pressures from illegal logging, poaching and squatters are causing the size of these areas to shrink rapidly, and in the process Thailand appears to be losing a vital storehouse of potential economic resources. Sustainable development of Thailand's agriculture and renewable resources (forest products, fisheries, medicinal plants and wild cultivars), depends upon this reservoir of genetic material still available in relatively undisturbed natural areas.

Adding to the already existing stresses on the nation's fragile natural resource systems are the demands that will come in the not too distant future. Population, expected to grow from 53 million currently to 70 million by the year 2010, coupled with ambitious export-led growth targets, industrialization, and rising per capita consumption levels, will more than double the demands on natural resources within the next quarter century. In addition, the government has already approved plans which, if fully implemented, will demand much more from Thailand's limited resource base. Thailand's Sixth Five-Year Economic and Social Development Plan (1987-1991) aims to achieve a transition to semi-industrial status. Major targets under the plan include: economic growth of 5.1 percent per year; agricultural growth of 2.9 percent per year; industrial production growth of 6.6 percent per year; reduction in the unemployment rate from 3.6 percent to 3.1 percent by 1991 -- requiring the creation of 3.9 million jobs; reduction of the trade deficit from \$2.4 billion in 1985 to \$1.4 billion a year; and a 10.7 percent annual increase in exports.

In sum, Thailand's natural resource base is under increasing stress and the sustainability of this base and the nation's economic future are now being seriously challenged. A reduced resource base will support less people and generate less foreign exchange, at the very same moment that the population is expanding, the country's requirements for imports is growing, and the average citizen is demanding a better standard of living.

C. THE ROOT CAUSES OF NATURAL RESOURCE MISMANAGEMENT

The root cause of Thailand's natural resource mismanagement and environmental degradation can be traced to massive market failures and accumulated policy distortions. In the course of the nation's rapid economic growth, outdated and ill-defined policies have been accumulating and distorting incentives for efficient natural resource use and management. A number of macroeconomic policies have had unintended but pronounced effects on use of natural resources. Government intervention in some resource areas appears clearly to be excessive, while insufficient in others. Effective implementation of appropriate policies frequently has not been achieved. The Mission's preliminary review of these issues indicates that the policy areas described below are among the most critical and will receive high priority attention during the life of the project. (Annex J presents an in-depth analysis of the policy constraints associated with the project).

1. Market Failures

No other sector of Thailand's economy is as vulnerable to market failures as the natural resource sector. Free irrigation water encourages wasteful use that leads to waterlogging and limits the irrigated area to a small fraction of the potential irrigable area, while at the same time, it deprives the RTG of additional funds for operations and maintenance and rehabilitation of degraded watersheds. Public ownership of Thailand's forests combined with lack of alternative employment opportunities has led to encroachment and squatting on public lands and has created a climate of insecurity and lawlessness that results in inefficient use of both forest and soil resources. Logging and shifting cultivation plus unaccounted downstream externalities or spillover effects, such as runoff, soil erosion and sedimentation, result in one activity imposing heavy losses on another activity. The cost of commercial chemical fertilizers and pesticides does not include any consideration for the damages caused to downstream fish production. Free disposal of urban and industrial wastes into the environment lowers property values, damages fisheries and tourism, harms human health and imposes high water treatment costs on other water-users. Free entry into Thailand's coastal and offshore fisheries leads to crowding, overfishing, and waste of scarce capital. Encroachment, irreversible changes in tropical forest habitat, and lack of funds (itself the result of free riding by potential beneficiaries) wreaks havoc on Thailand's valuable biological and genetic resources.

2. Distorted Policy Incentives

As if these market failures were not enough to undermine Thailand's resource base, an accumulation of outdated and misguided government policies compounds the problem by distorting further the incentives for efficient resource use and conservation. Agricultural taxation, as practiced in Thailand, discourages investments in land improvements and soil conservation. The export taxes (premia) on rice (which was recently

reduced to zero, but is technically still in existence) and rubber discourage the production of two crops that can be environmentally beneficial, and instead encourage production of crops such as cassava and maize which deplete or at least fail to protect the soil.

In forestry, the combination of concession fees, taxes, and royalties are too low to compensate society for the loss of a valuable, and perhaps irreplaceable, resource. Uncollected rents (stumpage value) encourage logging in marginal and fragile areas with significant social costs in terms of soil erosion and loss of biological diversity. Moreover, partial extraction of rents from timber harvest is an implicit subsidy of deforestation and a tax on reforestation, because it results in undervaluation of both timber and forest. The basing of the stumpage fee (or tax) on the harvested rather than the marketable timber on the site encourages high grading and damages the remaining stand. All of this, together with the setting of concession duration at 30 years (which is half the growing cycle of tropical timbers), deprives the concessionaire of any incentive to preserve and enhance the long-term productivity of the forest.

In fisheries, over capitalization of the industry and an excessive number of fisherman relative to the amount of fishing effort that can be sustained has led to serious depletion of coastal and off-shore stocks. Any assistance to the fishermen, whether through input subsidies, price supports or export promotion, in the absence of effective limitation on entry, is self-defeating because it attracts new entrants into the industry leading to further depletion of the resource and a decline in fishermen's incomes.

D. PROJECT DESIGN STRATEGY

1. Project Origin

The importance and urgency of addressing natural resource problems has become a priority issue within the RTG. USAID's Country Development Strategy Statement (CDSS), approved in February 1985, is premised on recognition of the mature, collaborative relationship between the U.S. and Thailand, and on recognition of the new development problems -- and opportunities -- that accompany Thailand's entry into middle-income status. The CDSS is also premised on assisting Thailand to address issues and develop new programs that are critical to its continued emergence as an advanced developing country. As USAID and RTG agencies began to work through these programs, it quickly became apparent that improved management of natural resources and environment was becoming the dominant development problem. The more USAID and the RTG worked on these issues, the more obvious was the critical linkage to sustaining Thailand's impressive economic success story.

Over the past two years USAID has engaged in a dialogue with representatives of the Royal Thai Government and the private sector concerning the sustainability of Thai economic growth in the face of mounting problems with natural resources and environmental management. This dialogue led to technical support which culminated in a plan for natural resources and the environment in the RTG Sixth Five-Year Economic and Social Development Plan -- the first time in any Plan. This RTG decision to include a Sub-Plan on Management of Natural Resources and Environment as a chapter of the Sixth Plan represents solid confirmation that Thailand is striving to deal with the problems of managing its natural resource base for the long term. Interest at the highest policy levels subsequently resulted in an agreement to design a new A.I.D. project for FY 1988 addressing natural resources and environmental issues, concerns and problems.

Work on the development of this new project began in early 1987 with initial efforts focussed on identifying the actions needed to address the basic development constraints. An important part of this effort was the preparation of the Thailand Natural Resources Profile, completed in May 1987 by the Thailand Development Research Institute (TDRI) in cooperation with the Office of the National Environment Board (ONEB).

2. A Comprehensive Program

The extensive studies carried out by leading Thai and international experts during the intensive development of the project design has confirmed that the constraints associated with priority natural resource management and conservation issues are many and varied and will require responses that cut across all sectors of development in Thailand. Such efforts will also cut across the programs and mandates of many government agencies. Accordingly, the project committee decided that the USAID project needs to be a comprehensive program which includes activities from many sectors; a program which provides a synergistic capability to draw upon the separate project elements to address specific problem areas through separate institutions and approaches that will reinforce each other, as well as to stimulate fundamental changes in national attitudes and practices for utilization and management of natural resources and the environment. The underlying logic for doing so is sound; there are strong interrelationships among the sectors, therefore successes on a number of different environment and resource problems will bring about far-reaching and positive changes for sustained development in all sectors of the Thai economy.

3. Addressing a Policy Agenda

An essential and integral feature of the design of the overall project is the systematic provision of support for needed policy and programmatic adjustments and changes. The design reflects a basic need to assure that each specific project element does not take on a life of its own and become an end in itself rather than acting as a means for reaching important policy objectives. At the same time, the project

design appropriately reflects the realities of the Thai cultural and political context: policy change is not effected in Thailand (or in any country) unless it is understood, espoused and promoted indigenously; and leveraging, conditionality or pressure from outside is rarely well-received and is often counter-productive. Policy change requires effective resolution of complex systemic problems -- a long-term process that often takes years, even decades, to complete. Solutions to these problems must carefully address the political, social and economic impacts of proposed actions. Mistakes in this area could easily be disastrous. Therefore, the project committee concluded that there is only one pragmatic design alternative: incremental policy changes and adjustments advanced on several fronts by activities that are systematically feeding into the policy while being perceived as indigenous advocations of particular policies.

The specific elements and activities included in the overall project have been selected using the following three criteria: (a) the recognition that, in general, the most acceptable, and in the long run, most effective role for Thai implementing institutions to play in effecting policy change is that of a catalyst and a facilitator that helps create a conducive environment for change and assists the process of change; (b) a judgment of what brings about policy change and adjustment in Thailand, the conditions and prerequisites that will need to be met for the slow and tentative process of change to gather momentum and become sustainable beyond the life of the project; and (c) an assessment of USAID's areas of comparative advantage based on its long experience of involvement in Thailand and elsewhere. Table I lists the various types of instruments included in this project and illustrates their linkage to building consensus and capacity for policy change. Using the Mission's preliminary list of policy change indicators (which will be modified and/or expanded as the project is implemented), the project monitoring and evaluation system (discussed in Annex K) will provide an important means of measuring the performance of the project in effectively making progress towards achieving the broader policy objectives reflected in Annex B.

4. The Administrative Approach

During the early stages of project development, it was recognized that the proposed comprehensive approach could easily become very complicated and incapable of facilitating effective action. Nonetheless, to be successful the project design must retain simplicity and effectiveness of management while working with the necessary range of institutions involved in the several strategic resource sectors. Accordingly, the project described herein includes certain basic design principles which should help prevent our comprehensive approach from becoming simply a complicated approach.

TABLE I

PROJECT INSTRUMENTS TO BUILD CONSENSUS AND CAPACITY FOR POLICY CHANGE
THAT WILL IMPROVE THE MANAGEMENT OF NATURAL RESOURCES AND ENVIRONMENT

PROJECT INSTRUMENTS	Information and Knowledge	Awareness and Acceptance	Analytical Capacity and Experience	Institutional Strength and Commitment	Consensus and Capacity for Policy Change
DEMONSTRATION ACTIVITIES					
Action Research and Micropolicy Tests	xxx	x	xxx	xx	xxx
Targeted Catalytic Technical Assistance	xx		xx	xxx	xxx
Institutional Support/Networking	x	x	xx	xxx	xxx
Leading Resource Indicators	xxx	x	xx	x	xxx
Environmental Accounts	xxx	x	xx	x	xxx
Monitoring Environmental Change	xxx	x	x	x	xxx
RESEARCH SUPPORT					
Research Support-Policy Analysis	xxx		xxx	xx	xxx
Research Support-Applied Research	xxx		xxx	xx	xxx
Competitive Research Grants	xx	x	xxx	x	xxx
Observation/Study Tours	xxx	x	x	x	xxx
Studies and Publications	xxx	x	xx	x	xxx
Natural Resources Journal	xxx	x	xx		xxx
Conferences, Seminar & Workshops	xxx	xxx	x	x	xxx
ENVIRONMENTAL AWARENESS					
Sustainable Development Forum	xx	xxx	x		xxx
Guest Speakers' Series	xx	xxx	x		xxx
Newsletter	xx	xxx	x	x	xxx
NGO Support	x	xxx		xxx	xxx
Environmental Awards	x	xxx	x	x	xxx
Environmental Awareness Activities		xxx		x	xxx
Audiovisual Productions	x	xxx	x		xxx
TRAINING					
Environmental Education/Curricula	xx	xxx	x	x	xxx
Degree Training/Thesis Support	xx	x	xxx	xxx	xxx
Non-degree Training	xx	x	xx	xxx	xxx
In Service Training	xx	x	xx	xxx	xxx

xxx : Primary objective
xx : Secondary objective
x : Incidental

During the intensive review of the project design it was determined that a unique administrative approach would be needed to effectively address the unusually broad spectrum of issues and concerns. No single RTG agency or non-RTG agency is suitable for managing the entire project. Furthermore creating new RTG organizations would only create unnecessary delays. Accordingly, the project has been organized so that each component (subproject and/or subproject element) can stand alone and address conceptually related but operationally independent sectors. While the components are interrelated, they are not interdependent to the extent that less than optimum performance of any single component automatically affects other components. Subproject Advisory Committees will be established if needed and will serve as an informal means of coordination and liaison among different subproject elements. A Resource Group of prominent Thai leaders will be established to disseminate and discuss overall project results and, as appropriate, offer advice. Project representatives from USAID and the involved implementing agencies will interact with this Resource Group to seek maximum opportunity for linkages between subproject activities. Within USAID full-time subproject managers will be assigned to work on a regular basis with lead agency counterparts. Workshops and conferences will be carried out periodically to exchange information and experiences gained from all subprojects.

Conceptually, the USAID project will provide the mechanism to enable Thailand to begin the process of resolving the most critical policy and programmatic constraints. The process is viewed as basically one of developing self-sustaining national capabilities which can adequately address the pressures on environmental resources. This process is also viewed as an unusually dynamic one, requiring varying but carefully coordinated combinations of motivation and consensus building activities, human resource and institutional development activities, and implementation programs.

5. Building on Experience

The project activities will take full advantage of and build on A.I.D. and other experience in Thailand and other countries, especially of the Southeast Asia region. USAID has many decades of solid development experience in virtually all the fundamental conservation areas; particularly those related to renewable resources. Indeed USAID has financed a number of projects which have provided valuable experiences and are directly related to the design of the Project. It is this previous experience -- including technologies and techniques, and familiarity with people and management systems -- that provides the building blocks for our proposed work in improved resources management. Lessons learned from the management, implementation and administration of previous AID activities have been incorporated into the planning for specific sub-projects and activities. Major initiatives into new areas where AID has had no institutional experience would probably not make the most effective use of the limited available USAID staff. Where the project moves beyond the existing body of sectoral natural resources and

environmental management experience, it will be to facilitate and support an emerging consensus of Thai leaders on the needed fundamental and far-reaching changes in development practices.

The project also intends to take full advantage of the considerable body of U.S. experience and knowledge in environmental protection and resource conservation. Accordingly, the project activities will emphasize the use of joint public and private sector problem-solving mechanisms. In addition, the project will support the establishment of channels for the exchange of technical information and training between Thai agencies (both public and private) and American private groups, both non-profit and profit making institutions.

6. Programming Flexibility

The project is designed to be flexible to allow responsiveness to changing implementation conditions. The specific designs and plans for many of the project activities will emerge during project implementation, as organizations gain experience and a better understanding of what approaches will be most appropriate in the Thai setting.

Accordingly, the overall design framework provides programming flexibility to effectively respond to project activity needs as they arise. Following two full years of implementation experience, a series of evaluation workshops will be carried out involving USAID and representatives of all participating institutions. (Section III.E discusses in detail the evaluation procedures). During these workshops the results of all project activities will be reviewed and recommendations for follow-on activities will be made. Based upon a thorough feasibility analysis of the detailed plans, the RTG and USAID will jointly program the project resources for subsequent phases of project activities. During the third year of implementation, a comprehensive, joint review of the project's progress, and of developments in Thailand's natural resources and environmental management situation, will be conducted. This will provide a key opportunity for assessing priorities and strategy for the remainder of the project.

E. OTHER DONOR ACTIVITIES

While most donor agencies in Thailand sponsor projects related to natural resources development and management, no other donor has undertaken a comprehensive program of resource and environmental management improvement. The Japan International Cooperation Agency (JICA), has financed several research and facilities-construction activities related to pollution control, as well as agricultural and forest research and development activities. The European Economic Community (EEC) and most bilateral donors have also been active in the development of agricultural and rural resources, including various upland

agriculture and hilltribes development projects in the North. Fisheries and forestry have received specialized attention from several United Nations agencies, as well as bilateral donors.

The Canadian International Development Agency (CIDA) is increasingly taking a broader view toward resource and environmental development issues in Thailand, and has initiated several institutional development activities involving some of the same key agencies with which USAID expects to work. CIDA has been kept well briefed on the progress of the USAID Project design, and opportunities for collaboration on activities, such as provincial environmental planning, have already been identified.

It has been recognized during the project design that achieving the project's goal of promoting sustained economic development of Thailand, and the purpose of building consensus and capacity, are tasks that extend well beyond the financial and technical, planning horizons of USAID alone. By initiating activities in key areas of concern, the project should attract significant additional attention and support from other donors, and the USAID project management will work to ensure communication and cooperation with other donors accordingly.

II. PROJECT DESCRIPTION

A. GOAL AND PURPOSE

The goal of the Project is to promote the economic and social development of Thailand through improved management of natural resources and the environment. The purpose of the Project is to develop the capacities of Thai governmental and non-governmental institutions to define, analyze and respond effectively to current and emerging natural resource and environmental problems, and thereby to build consensus and capacity for advancing policy options that will lead to sustainable development.

B. PROJECT APPROACH

Management of natural resources and environmental systems for sustainable development depends upon improved and coordinated policy formulation and policy implementation by Thai institutions and individuals strategically linked to decisions affecting natural resource allocation and utilization. Accordingly, the Management of Natural Resources and Environment (MANRES) Project encompasses a broad, cross-sectoral program aimed at strengthening Thai capacity to respond effectively to current and emerging natural resource and environmental issues in the context of national, regional and local policies and development plans.

Each of the MANRES Project's seven subprojects addresses a major area of need in advancing Thai capacity to manage the natural resource base for sustainable development. The seven subprojects are:

- o Coastal Resources Management
- o Industrial Environmental Management
- o Rural Resources Management
- o Biological Resources Management
- o Human Resources Development
- o Environmental Awareness and Education
- o Policy Analysis and Development

The first four subprojects -- Coastal Resources Management, Industrial Environmental Management, Rural Resources Management, and Biological Resources Management -- focus on natural resource and environmental management sectors of critical importance to Thailand's

economy. Each strategic sector addresses major issues and findings contained in the May 1987 Thailand Natural Resources Profile, funded under the Mission's Emerging Problems in Development II Project. The last three subprojects -- Human Resources Development, Environmental Awareness and Education, and Policy Analysis and Development -- focus on national level efforts to support needed changes in public policies and programs and to integrate the experience of the sectoral subprojects with Thailand's continued economic and social development. All seven subprojects reflect the Mission's careful review of detailed studies carried out by project design consultants (see Bibliography in Annex M).

The governmental and non-governmental implementing agencies for each of the seven subprojects will develop Annual Work and Financial Plans delineating specific activities for carrying out the subproject elements described below. Royal Thai Government (RTG) agencies will cooperate with the Department of Technical and Economic Cooperation (DTEC) in the formulation of annual plans, while non-governmental organizations (NGOs) will work directly with USAID subject to letters of non-objection from DTEC. In the process of reviewing and approving these annual plans, the implementing agencies and USAID will also review policy options to be considered in selecting, modifying and implementing Project activities. Table 1 of Annex B presents an illustrative list of policy options and identifies the types of policy implementation indicators that will serve as reference points for measuring the performance of the subprojects in making progress toward achieving the Project goal and purpose.

The following pages describe for each of the seven subprojects the key policy and development constraints and the subproject elements that address these constraints. Each subproject description is organized in the following manner: (1) problem statement; (2) USAID/RTG strategy; (3) objectives; (4) subproject elements; (5) output and input summary; (6) institutional and administrative arrangements; and (7) preliminary implementation schedule. The respective responsibilities of the RTG and USAID for subproject management are presented in greater detail in the Administrative Analysis, Section IV.B. Additional information on subproject implementation and budgets are presented in those sections of the Project Paper dealing with Project Implementation (Section III) and Financial Analysis (Section IV.A).

C. COASTAL RESOURCES MANAGEMENT SUBPROJECT

USAID: \$5,658,000
RTG: \$1,360,000
Other: \$ 350,000

1. Problem

The Thai fishing industry has grown into the seventh largest in the world, but in the process the Kingdom's territorial fisheries have been overexploited, artisanal fisheries have suffered, and critical coastal habitat for reproduction and maintenance of fish stocks has been degraded. Meanwhile, tourism, largely aimed at Thailand's magnificent coastline and growing at 20 percent annually, has become the country's leading foreign exchange earner. Rapid development of tourist facilities, together with port construction, urbanization, and the growth of the shrimp mariculture industry, are leading to serious water pollution in several coastal areas. Managing coastal resources for multiple use is a high priority under the Sixth National Economic and Social Development Plan, but poorly defined institutional jurisdictions perpetuate resource use conflicts and hinder intersectoral planning and coordination. These problems make Thailand's 2,600 kilometer coastline a key testing ground for improved natural resource policies, management strategies, and participatory implementation programs.

2. Strategy

USAID currently supports two coastal resources management demonstration projects in cooperation with the Office of the National Environment Board (ONEB). The Thailand Coastal Resources Management Project (Thailand CRMP), under a cooperative agreement with the University of Rhode Island (URI), is developing local implementation strategies for coastal management in the island province of Phuket and linking this experience to national policy formulation. Similarly, an ASEAN-U.S. regional coastal management project, coordinated by the Manila-based International Center for Living Aquatic Resources Management (ICLARM), is conducting resource assessment and planning activities in Ban Don Bay and Phangnga Bay in Thailand's Upper South Development Region.

Through the MANRES Project, USAID and the RTG will build on the experience of the Thailand CRMP and the ASEAN project, both of which will continue through 1989, by supporting an expanded CRM program over a seven year period beginning in 1989 and extending well into the period of the Seventh National Plan (1992-1996). The follow-on CRM program will advance the formulation of national policy and management strategies for coastal area development, and will strengthen institutional capacities to implement regional and local coastal management plans.

3. Objectives

The objectives of the CRM subproject are as follows:

- o Develop coastal management strategies at the provincial and local levels and incorporate this experience into the task of formulating national CRM policy.
- o Contribute to the development of a comprehensive national CRM policy for inclusion in the Seventh National Economic and Social Development Plan (1992-1996).
- o Increase public awareness of the importance of coastal resources and the need for effective coastal management for long-term, sustainable development.
- o Establish a cadre of well-trained professionals to design and implement CRM programs in Thailand.
- o Strengthen the capacities of selected Thai institutions to undertake CRM assessment, planning, research and training.

4. Description of Elements

4.1 Special Area Management Planning (USAID \$2,743,000; RTG \$670,000; Other \$45,000)

This element will support the formulation and implementation of geographically specific management plans for designated coastal areas or regions. These "Special Area Management Plans" will focus on one or more of the following five priority national coastal management issues: (1) declining water quality from wastewater effluent and destructive land use practices; (2) loss of nearshore fishery resources; (3) degradation of critical coastal habitats; (4) development of a sustainable mariculture industry; and (5) preservation of tourism amenities.

Activities to carry out this element will be designed to foster cooperation among the National Economic and Social Development Board (NESDB); the Office of the National Environment Board (ONEB); the Ministry of Interior (MOInt) through the Department of Local Administration (DOLA); relevant departments of the Ministry of Agriculture and Cooperatives (MOAC); the Tourism Authority of Thailand (TAT); provincial and local government administrations; universities; and, to the maximum extent possible, local community organizations and the private sector.

Four to six Special Area Management Plans are planned over the life of the CRM Subproject. The initial emphasis will be in the southern region where development pressures are increasing and where the opportunity exists to build on the current Thailand Coastal Resources Management Project (Thailand CRMP) in Phuket and the ASEAN CRM project in

the Upper South Development Region. As a general guideline, the planning phase for each site will not exceed two years and will be followed by a longer implementation phase. The implementation phase will emphasize the mobilization of both public and private sector resources to make the plan a reality. Funding priorities for each Special Area Management Plan will be determined by ONEB in consultation with implementing agencies, based on annual evaluations of progress.

4.2 National Policy Development (USAID \$1,025,000; RTG \$170,000; Other \$35,000)

This subproject element will extend the CRM policy development activities of the Thailand CRMP. It will strengthen the role of the existing National CRM Advisory Committee through periodic seminars and policy roundtables, and will support CRM policy research to be undertaken by Thai institutions with U.S. technical assistance. This work will involve ONEB, NESDB and other key agencies with CRM responsibilities through the entire cycle of problem definition, policy options, program design, policy implementation, and evaluation and policy adjustment.

National CRM policy formulation and implementation will be linked to the five critical coastal management issues mentioned in Section 4.1 above. The source for new ideas on policy options will come in large part from the the process of working on Special Area Management Plans. In all cases, the greatest amount of attention will be given to assistance in solving the problems of implementing CRM policies. Included will be support for preparing a coastal resources management policy element for the Seventh National Economic and Social Development plan (1992-1996).

This subproject element will also support the establishment of a CRM monitoring unit at ONEB, drawing on resources developed at ONEB and Prince of Songkla University through the institutional strengthening activities outlined below. This monitoring unit will evaluate past activities, track ongoing coastal area planning and management efforts, and provide information for a biennial State of the Coast Report modeled on the U.S. Council on Environmental Quality (CEQ) "State of the Environment" Reports. Over the seven-year duration of USAID assistance, the Royal Thai Government (RTG) will take appropriate steps to institutionalize the monitoring and evaluation function for continuation after the end of the CRM Subproject.

4.3 Institutional Strengthening (USAID \$960,000; RTG \$310,000; Other \$58,000)

This element will include three areas of concentration: (1) strengthening Thai government institutions with major roles in the development of CRM programs; (2) development of a CRM center of excellence at Prince of Songkla University (PSU) for applied research, extension and training; and (3) strengthening provincial capacity to develop and implement CRM programs.

Core ONEB staff, plus staff of NESDB and the Ministry of Interior, will be provided with training in both management and technical areas. In addition, the base of support for CRM will be broadened through U.S. technical assistance for the creation of a Coastal Resources Center at PSU pursuant to a Memorandum of Understanding among ONEB, PSU and the University of Rhode Island. Institutional strengthening at PSU, in addition to creation of and support for a Coastal Resources Center, will also include faculty exchanges between PSU and U.S. universities, applied research grants, and curriculum and instructional materials development grants. Provincial capacity will be strengthened through in-service training programs and through the involvement of provincial and local government agencies in the development of Special Area Management Plans supported under the CRM Subproject.

4.4 Training Capacity Development (USAID \$590,000; RTG \$105,400; Other \$99,000)

The CRM training element will focus on (1) in-service training to enhance the capability of ONEB, DOLA, and technical line agencies to design and implement CRM programs; and (2) activities to strengthen Thai institutional capabilities to provide the necessary training. Degree training in CRM-related fields will be provided through the Human Resources Development Subproject. Similarly, environmental education training materials dealing with coastal issues will be developed through the Environmental Awareness and Education Subproject. In both cases, training elements of the CRM Subproject will be closely coordinated with these other subprojects.

4.5 Project Integration and Outreach (USAID \$340,000; RTG \$105,000; Other \$113,000)

Successful implementation of the CRM Subproject will require a cohesive project identity, substantive communication among implementing agencies, and the integration of outcomes from each set of activities into the whole. The subproject must also cultivate and maintain the attention and support of important policy makers and the private sector. Activities supported in this element that will contribute to this integration include: (1) the wide dissemination of subproject outcomes, not only as technical reports but in formats (newspapers, television, business journals) accessible to a wide variety of audiences; (2) a CRM newsletter; and (3) a series of seminars, round tables, and conferences which encourage a continued dialogue on Thailand's critical coastal problems and how they can be solved.

5. Output and Input Summary

The following are illustrative outputs for the CRM subproject:

- o A series of CRM policy studies to identify policy options and local implementation approaches.
- o Inclusion of a comprehensive CRM policy in the Seventh National Economic and Social Development Plan.
- o Establishment of a national CRM monitoring and evaluation capacity at ONEB.
- o Development of a CRM center of excellence at Prince of Songkla University.
- o 4-6 Special Area Management Plans and experience in implementing such plans.
- o Publication and dissemination of biennial State of the Coast Reports.
- o Development of CRM training materials for incorporation in RTG in-service training courses, university curriculae, and NGO/Private Sector public awareness programs.
- o 20-25 conferences, seminar/workshops and policy roundtables at national, regional and local levels.

The estimated inputs required to produce the above outputs include: \$2,218,000 in grant resources and \$190,000 of counterpart resources for both long-term and short-term technical assistance; \$550,000 of grant resources and \$180,000 of counterpart resources for studies; \$220,000 of grant resources and \$220,000 of counterpart resources for workshops/seminars/conferences; \$520,000 of grant resources and \$320,000 of counterpart resources for training/observation/study tours; \$550,000 of grant resources and \$330,000 of counterpart resources for commodities; \$450,000 of grant resources and \$200,000 of counterpart resources for applied research grants; and \$1,150,000 of grant resources and \$270,000 of counterpart resources for materials development, various publications, and financing of local costs for CRM program implementation. (See Financial Plan, Section IV.A, for budget details).

6. Institutional and Administrative Arrangements

The CRM Subproject consists of five separate but interrelated elements, each carried out independently by the implementing agencies identified above. The Office of the National Environment Board (ONEB) will play the lead coordinating and administrative role for Thailand's CRM program as a whole.

The National CRM Advisory Committee, with ONEB as its Secretariat and with representatives from concerned RTG agencies (e.g., DTEC, NESDB, DOLA, Royal Forest Department, Department of Fisheries, Department of Land Development, Tourism Authority of Thailand), will be responsible for overall coordination of the CRM Subproject. A CRM Policy Subcommittee to the National CRM Advisory Committee, chaired by NESDB and including a representative from the Bureau of the Budget, will be responsible for linking the process of Special Area Management Planning to national CRM policy formulation, implementation and evaluation. At the provincial and local levels, participating agencies will integrate Special Area Management Plans with existing planning processes, for which mechanisms and procedures are already in place.

USAID Thailand and the University of Rhode Island (URI) will enter into a cooperative agreement to: (1) provide both long-term and short-term technical assistance for CRM policy development and locally-based implementation programs; (2) assist RTG implementing agencies in organizing seminars, workshops and conferences; (3) facilitate and coordinate observation/study tours for Thai personnel in the U.S., in the ASEAN region, and in other appropriate tropical developing countries; and (4) provide materials and technical support for in-country CRM training development and project integration and outreach.

The Mission will assign one FSN professional staff as the full-time USAID manager for the CRM subproject. The FSN professional will report directly to the Mission Natural Resources Officer, who will have lead responsibility for clearances and approvals relating to CRM implementation actions. Periodic meetings between USAID staff and the CRM Advisory Committee and Policy Subcommittee, as well as frequent liaison with URI project managers and technical consultants, will help to ensure efficient monitoring and informed assessment of Subproject progress.

7. Implementation Schedule

The planning, development and implementation of CRM activities will be approached incrementally. The details of specific subproject elements and activities will be defined in Annual Work and Financial Plans prepared by participating RTG agencies in cooperation with DTEC. During the first three to four years, emphasis will be placed on (1) designing and implementing demonstration projects (Special Area Management Plans) through which Thailand's major CRM issues will be addressed; (2) developing guidelines for provincial level CRM planning to be included in the Seventh National Plan; and (3) strengthening the institutional capabilities of the RTG agencies and universities that must play a crucial role in these efforts. During the last three years, the emphasis will be on (1) sustained implementation of the demonstration projects while increasing the level of RTG budget support; (2) technical assistance to RTG agencies working with provinces on CRM programs; and (3) evaluating and adjusting national policy guidance on CRM.

D. INDUSTRIAL ENVIRONMENTAL MANAGEMENT SUBPROJECT

USAID: \$3,000,000
RTG: \$ 363,000
Other: \$1,160,000

1. Problem

Insufficient financial resources is not the fundamental constraint to implementing the actions necessary to resolve Thailand's new generation of industrial environmental management problems. Increasing levels of water and air pollution from factory discharges, lack of concern for improving worker health and safety, and inadequate disposal of industrial wastes -- with an increasing range of toxic and hazardous materials -- are inexorably linked to insufficient knowledge and motivation on the part of Thai leaders, particularly in private industry, to take corrective action. Environmental degradation within urban and industrial areas will probably continue to worsen until the public understands and accepts the value of both government and private investments in the control of industrial wastes and pollution, and of compliance with environmental legislation.

2. Strategy

In 1985-86, USAID funded technical assistance for the Environmental Assessment of the Eastern Seaboard Development Program. USAID also funded in 1985 a study entitled Health Consequences of Industrialization and Urban Development of Thailand. More recently, the United States Trade and Development Program (TDP) has provided funding for the Bangkok Metropolitan Area Hazardous Waste Management Survey.

Over the past six years AID has sponsored a program of private sector expert consultancies, involving senior environmental and occupational health and safety experts from some of the leading U.S. industrial corporations. Under this program, experts participate in international and regional seminars and provide short-term assistance to developing country governments and directly to private factories having environmental problems. Through the MANRES Project, USAID intends to continue and expand such opportunities for technical collaboration between U.S. and Thai private organizations.

3. Objectives

The objectives of the Industrial Environmental Management subproject are as follows:

- o Build consensus and capacity among Thai industrialists to advance policy options for addressing fundamental environmental and worker health and safety issues.
- o Promote private and public sector investments to demonstrate means of improving industrial environmental management.

4. Description of Elements

4.1 Technical and Administrative Group Development (USAID \$665,000; RTG \$5,000; FTI \$114,000)

This element will support the development of a Technical and Administrative Group within the Federation of Thai Industries (FTI) to provide leadership for the implementation of this subproject. The group, composed of Thai contract personnel, will provide day-to-day assistance in the identification, development, implementation, and monitoring of subproject supported activities. The FTI group will consist of approximately three professionals and two support staff.

The professional staff of the group will be provided with an intensive orientation program during the first six months of project implementation. This will include general management training in Thailand followed by a study tour to the United States to review the management of environmental and worker health and safety issues in industry.

4.2 Environmental Awareness in Industry (USAID \$1,255,000; RTG \$310,000; FTI \$263,000)

Once the Technical and Administrative Group is fully operational, FTI will initiate a series of activities to promote consensus among key public and private sector leaders on how best to address the critical environmental issues created by Thailand's rapid industrialization. The FTI group will plan and implement a series of public awareness building activities to include conferences, seminars, and training sessions. The FTI group will prepare the agenda, make all logistical arrangements, locate and arrange for presentations of knowledgeable experts, and, as appropriate, serve as facilitators. These activities will: (1) establish constructive dialogue between various interests on specific policy issues; (2) introduce and disseminate information on experience and technologies available; (3) discuss relevant international experience with the application of incentives/disincentives to bring about required behavioral modifications by industrial resource users; and (4) support the development of action plans for eventual implementation by participating Thai industries.

4.3 Cooperative Technical Assistance (USAID \$1,080,000; RTG \$48,000; FTI \$267,000; Other \$516,000)

This subproject element will support technical assistance to the Thai industrial sector in cooperation with leading U.S. private organizations and industries. The primary focus will be in the areas of industrial pollution control, toxic and hazardous wastes management, and worker health and safety. Included will be the provision of on-the-job training opportunities for Thai professionals with industrial, regulatory, and labor organizations in the United States.

First, the subproject will fund short-term training and technical assistance to support preliminary site-specific actions to address industrial environmental problems of immediate concern. These actions will provide a pragmatic testing ground for some of the policy issues identified during the activities described in Section 4.2 above.

Second, the subproject will support the preparation of special studies concerning the environmental impacts of rapid industrialization. Assistance provided under this element will examine broad policy issues, support the establishment of priorities for public and private sector policy actions, support the identification and establishment of needed incentives/disincentives to effectively reduce industrial pollution, analyze alternatives for disposal of toxic and hazardous wastes, and evaluate new industrial cost recovery techniques. At the completion of each study, workshops will be arranged to exchange information and experiences learned among key Thai managers and leaders.

Examples of activities that will be funded under the Cooperative Technical Assistance element are:

- o On-site evaluation of problems concerning environment, health; and safety in an industry, industrial area, and/or specific industrial facility. This will include the preparation of reports which identify actions which should be taken to correct problems and to improve industrial performance.
- o Training of personnel in the techniques of conducting environment, health, and safety audits of industrial facilities. This will focus on "training of trainers" to support the development of Thai capacity for regulatory auditing by the government and self-auditing by industry.
- o On-the-job training and study tours for personnel using the facilities of cooperating organizations in Thailand, the ASEAN region, and the United States. This would focus on the transfer of techniques for improved management, problem identification, and the implementation of practical solutions.

- o Preparation of studies which evaluate the economic impact of increased worker productivity and the adoption of improved industrial health and safety procedures.
- o Development and implementation of a training program for general administrators and planners of public and private sector industrial and toxic and hazardous wastes management programs. This program would focus on policy issues, financing, site selection, facility development, operations, and environmental and health concerns.
- o Development and implementation of a training program for operational managers, engineers, and technical personnel of public and private sector industrial and toxic and hazardous wastes management programs. This program would stress practical operational and management issues.
- o Support for special training programs and study tours within Thailand and abroad to observe the planning, management, operation, and monitoring of industrial and toxic and hazardous waste facilities.

5. Output and Input Summary

The following are illustrative outputs for this subproject:

- o 20 conferences, seminars, and workshops held on: the impacts of rapid industrialization; the benefits associated with the adoption of cost-effective measures for industrial pollution control and worker health and safety programs; and the causes and prevention of industrial accidents.
- o 12 site-specific actions to address environmental and/or worker health and safety problems in selected Thai industries.
- o Publication and dissemination of 8 studies to support the formation of needed policies related to the environmental impacts of rapid industrialization.
- o 40 special training programs and study tours completed within Thailand and abroad on industrial pollution control, toxic and hazardous wastes management, and worker health and safety.

To produce the above outputs this subproject will provide: \$665,000 in grant resources and \$119,000 in counterpart resources to support the establishment and operations of the FTI administrative unit; \$1,255,000 in grant resources and \$573,000 in counterpart resources to support the local costs for commodities, workshops, seminars, study tours, training sessions, and special studies; and \$1,080,000 in grant resources and \$831,000 in counterpart resources for 15 person-months of short-term technical assistance. (See Financial Plan, Section IV.A, for details.)

6. Institutional and Administrative Arrangements

FTI will be the implementing agency for this subproject. A Memorandum of Agreement, describing planned activities and estimated budgets, will be established among DTEC, FTI, and USAID. FTI will be expected to maintain effective liaison with the Ministry of Industry, the Office of National Environment Board, and other relevant RTG agencies using existing FTI channels and mechanisms with the public sector. Technical assistance financed under this subproject will be provided through existing AID/W cooperative agreements with the World Environment Center (WEC) and The Conservation Foundation (CF).

Within USAID the Private Enterprise and Rural Employment Division of the Office of Project Development will have lead responsibility for subproject management, while maintaining effective liaison with the Mission Natural Resources Officer. One FSN professional of PD/PERE will be designated as the subproject manager responsible for all clearances and approvals relating to subproject implementation actions. PD/PERE will obtain technical support from the Engineering Division of the Office of Project Development and from the Agricultural and Natural Resources Development Division of the Office of Technical Resources.

7. Implementation Schedule

During the first year of the project, activities will focus on executing the Memorandum of Agreement among DTEC, FTI, and USAID and establishing the FTI Technical and Administrative Group. Arranging for an intensive orientation program for the FTI professionals in cooperation with WEC and CF will be a top priority. Following the completion of this initial orientation program, the FTI group will begin implementing the series of public awareness building activities described in Section 4.2 above. Based on the results of these activities, U.S. technical assistance to support interventions at selected industrial sites will begin in year two.

E. RURAL RESOURCES MANAGEMENT SUBPROJECT

USAID: \$5,679,000
RTG: \$5,783,000

1. Problem

Rural areas account for nearly one-quarter of Thailand's GNP, two-thirds of exports, three quarters of population and jobs, and nine-tenths of the Kingdom's land area. Unlike Taiwan and other newly industrializing countries, Thailand appears headed for a dual-track economy, with continuing reliance on the agricultural sector despite the expansion of urban-industrial development. However, Thailand's impressive agricultural growth over the last thirty years has come by converting 50% of the Kingdom's forests to cropland, rather than by substantially increasing crop yields. With most accessible forest lands now cleared and cultivated, future agricultural growth must come from intensification of cultivation of prime and marginal lands. Basic agricultural research, extension, and infrastructure are in place, so the challenge now shifts to diversifying and sustaining production and expanding the opportunities for income-generating employment. For both marginal uplands and prime agricultural regions such as the Central Plains and the Chiang Mai Valley, agricultural intensification faces a complex set of socioeconomic and biological issues involving water resources management and watershed protection, deforestation, integration of hill tribes, landlessness and land tenure, pesticides and other agricultural chemicals, tourism, and rural industrialization.

Diversification and intensification of agricultural production and of other rural resources are high priorities under the Sixth National Economic and Social Development Plan, but multiple institutional mandates and weakness of technical inputs at the local level perpetuate resource use conflicts and hinder intersectoral planning and coordination. The RTG, however, is open to major innovations in policies, management strategies, and participatory implementation for its agricultural and rural development programs.

2. Strategy

Over the past three years there has been a rapid evolution of awareness of senior RTG planners of the need for more efficient management (intensification and diversification) of the rural resource base, and of the need to bring provincial governments and the private sector into the planning and implementation of regional and local development programs. This evolution can be traced within USAID programs from the Decentralized Development Management (DDMP) and Rural Development Monitoring and Evaluation (RDME) Projects, through the Managing Energy Efficient Cities (MERECE) Pilot Program, to the Coastal Resources Management Pilot (CRMP) Program, to the Provincial Natural Resources and Environmental Management Pilot Program.

Several other recent projects -- Lam Nam Oon Integrated Rural Development, Northeast Small-Scale Irrigation Management, Northeast Rainfed Agricultural Development, and Mae Chaem Watershed Development -- provide wide practical experience in supporting improved management of local resources.

Linking of university technical support to these efforts has been an important aspect of the Khon Kaen University Project, and also of the MEREC and the Provincial Natural Resources and Environmental Management Pilot Program. Under the latter program, provincial universities (KKU, CMU, PSU) and the Kasetsart Faculty of Forestry are contracted for technical analysis and monitoring. Similarly, under the NERAD and KKU projects, complementary work has been carried out by the Northeastern Regional Office of Agriculture (NEROA) and the Farming Systems Research Group at KKU, both on training and development of research methodologies and on planning at specific locations for best utilization of the resource base.

Under the Provincial Natural Resources and Environmental Management Pilot, initiated with USAID support in early 1988, the NESDB and ONEB are working with the Ministry of Interior's Bureau of Policy and Planning and DOLA in three provinces to: (1) introduce resource assessments into annual development planning; (2) involve regional university expertise in these assessments and in follow-on analyses; and (3) identify programs and actions to address provincial environmental problems and opportunities and to relate this experience to national policy formulation.

Through the MANRES Project, USAID and the RTG will build and improve on the extensive experience of the Provincial Natural Resources and Environmental Management Pilot Program and other agricultural and rural development projects. Specifically, the Rural Resources Management subproject will: (1) support the adaptation of provincial natural resource management strategies to district level planning and action; (2) establish a major new RTG funding window for improved rural resources management; (3) build the Ministry of Interior's in-house capacity for training local government officials in natural resources and environmental management; and (4) strengthen the technical capacities of selected universities for training and research to support improved local level rural resources management. This program will advance the formulation of national policy and management strategies for rural development, and will strengthen institutional capacities to implement regional and local rural resource management plans.

3. Objectives

The objectives of the Rural Resources Management subproject are as follows:

- o Promote the establishment of natural resources management planning at the provincial level.
- o Promote the establishment of permanent funding sources to implement provincial natural resources management plans.
- o Strengthen the capacities of selected Thai institutions to provide technical and training support for regional and provincial natural resources management planning and implementation.
- o Establish natural resources and environmental management training programs at the Institute for Government Administration and Local Government.

4. Description of Elements

4.1 Provincial Natural Resources Planning and Management (USAID \$2,856,000; RTG \$4,169,000)

This element will support the development of a provincial level natural resources management planning process and the establishment of a regular RTG source of funding to implement provincial natural resources management plans. The Pilot Provincial Natural Resources and Environmental Management activity, financed under the Emerging Problems of Development II Project, is now developing the basic planning process in three provinces. The results of this activity will be the basis for further development and adaptation to extend the planning process to selected provinces in all geographic regions of Thailand.

The provincial natural resource management planning process will focus on analysis and development of program options for improving the utilization of rural-based resources in such areas as agriculture and on-farm tree crops; water management for crop, animal and domestic use; livestock and grazing; rural energy needs; and community-based management of "common lands." Support will be provided under this element for: (1) training to prepare RTG line agency and provincial staff to establish the planning process; (2) development of case studies on provincial and local level experiences to guide the planning process; (3) development of materials for use by RTG field personnel in implementing management plans; and (4) extension of the natural resources management planning process to selected provinces.

Under this element, the project will establish a fund to provide the initial financial support needed for improved provincial natural resources management. DTEC, NESDB, MOInt, and USAID will enter into a Memorandum of Agreement (MOA) describing the operations of the fund. The MOA will require every best effort to progressively increase RTG funding over the life-of-project in order to promote the institutionalization of permanent funding sources for provincial natural resources management and the extension of the natural resources planning process to all provinces.

4.2 Institute for Government Administration and Local Development (IGALD) Training Program (USAID \$965,000; RTG \$368,000)

Under this element, a training program will be established at IGALD to provide an array of short intensive training programs on key topics of natural resources and environmental management. Natural resources and environmental management topics will also be added to the current core IGALD training programs.

This element will provide support to: (1) develop new curricula and instructional materials; (2) develop short-term training courses and workshops; and (3) prepare case studies of natural resource and environmental management programs. Selected Thai universities will provide assistance in developing curricula, teaching modules, case studies, and other written and visual materials for the specialized IGALD training programs.

4.3 Rural Resources Technical Support and Training (USAID \$1,858,000; RTG \$1,246,000)

This element will support the strengthening of capacity at Khon Kaen, Chiang Mai, and Prince of Songkla Universities, within the Forestry Faculty at Kasetsart University, and at the Northeastern Regional Office of Agriculture (NEROA) to provide technical and training support for regional and provincial natural resources management planning and implementation. The element will support: (1) applied research on key regional and provincial level natural resources management issues and problems, related to the areas described in Section 4.1 above; (2) development of technical and methodological training programs, based on the results of the applied research activities and existing capabilities in agroecosystems analysis, area analysis, and rapid rural appraisal, for provincial level and line agency staff; and (3) publication and dissemination, including workshops and seminars, of research results.

This element will also provide limited support for several established networks of Thai researchers from both academia and government, focused on topics such as agroecosystems research, social forestry, irrigation management, and Northern Thailand regional development. This support will help to facilitate professional ties, communication, and sharing of experiences and research results that will be important for improved management of natural resources in rural areas.

5. Output and Input Summary:

The following are illustrative outputs for the RRM subproject:

- o Provincial level natural resources management planning and implementation established throughout Thailand.
- o Regular RTG funding established for provincial natural resources planning and management.
- o Major new training program in natural resources management established at IGALD, with over 4,000 RTG officials having participated in the new training courses.
- o Development of post-training support to local government officials, such as dissemination of new case studies and response to inquiries on natural resource administration.
- o Practical applications of new social and natural science methods refined by leading university groups and transferred to RTG agencies.
- o Key university research groups and research networks achieving self-sufficiency in funding support from RTG and other stable sources.

The estimated inputs required to produce the above outputs include: \$909,000 of grant resources and \$51,000 of counterpart resources for both long-term and short-term technical assistance; \$220,000 of grant resources and \$220,000 of counterpart resources for studies; \$508,000 of grant resources and \$220,000 of counterpart resources for workshops/seminars/conferences; \$1,030,000 of grant resources and \$314,000 of counterpart resources for training/observation/study tours; \$382,000 of grant resources and \$348,000 of counterpart resources for commodities; \$750,000 of grant resources and \$750,000 of counterpart resources for applied research grants; \$1,000,000 of grant resources and at least \$3,000,000 of counterpart resources for the RTG funding allocation for provincial natural resources planning and implementation; and \$880,000 of grant resources and \$880,000 of counterpart resources for various publications and local implementation support. (See Financial Plan, Section IV.A, for budget details).

6. Institutional and Administrative Arrangements

The Rural Resources Management (RRM) Subproject consists of three separate but interrelated elements, each carried out independently by the implementing agencies identified above. Innovative research methods will be developed by university-based researchers and applied to support the Provincial Natural Resources Planning and Management element, which in turn will be a source of case studies for the new IGALD Training Program. At the provincial and local levels, participating government

agencies will integrate these activities with existing planning processes to enhance the likelihood of sustainability of a national RRM program after completion of USAID assistance.

The Provincial Natural Resources Planning and Management element will be jointly administered by the National Economic and Social Development Board (NESDB) and the Ministry of Interior (MOInt). The IGALD Training Program will be funded directly with IGALD. Under the Rural Resources Technical Support and Training element, a grant will be made to NEROA, and to each of the following four universities: Khon Kaen, Prince of Songkla, Kasetsart (Faculty of Forestry), and Chiang Mai. The indicative funding level for the total life of each grant will be established in conjunction with the preparation of the work and financial plan for the initial year of the grant, and will be the basis for the preparation of subsequent year work and financial plans. These university grants will also incorporate support for the research networks cited in Section 4.3 above.

Long-term and short-term technical assistance for the Rural Resources Management Subproject will be provided through an appropriate contracting mechanism with a qualified U.S. organization and/or individuals.

The Mission will assign two FSN professional staff to share responsibilities for managing the RRM subproject. The FSN professionals will report directly to the Mission Natural Resources Officer, who will have lead responsibility for clearances and approvals relating to RRM implementation actions.

7. Implementation Schedule

The planning, development, and implementation of RRM activities will be approached incrementally. The details of specific subproject elements and activities will be defined in annual work and financial plans developed in cooperation with DTEC. During the first two years of implementation, emphasis will be placed on establishing the basic curricula at IGALD and the funding and administrative arrangements for the provincial natural resources management planning process. Subproject activities over the following three years will focus on institutionalizing the new IGALD training program and extending the provincial natural resources management planning program to selected provinces in all regions of the country. In the final two years of the subproject, emphasis will shift to facilitating the expansion of these programs under RTG funds. The Rural Resources Technical Support and Training Element will be phased as follows: during the first year, activities will begin with Khon Kaen University and NEROA; during the second year, with Chiang Mai University; and during the third year, with Kasetsart University and with Prince of Songkla University.

F. BIOLOGICAL RESOURCES MANAGEMENT

USAID: \$5,103,000
RTG: \$1,836,000
Other: \$ 503,000

1. Problem

National policy calls for maintaining 15 percent of the Kingdom as protected forest; more than seventy national parks and wildlife sanctuaries, covering about 12 percent of the country's land area, are already designated. The Sixth National Development Plan initiated a process of management planning, which not only addresses administration and development within the protected areas, but also attempts to integrate the parks and sanctuaries into regional economic development. However, a principal finding of the 1987 National Park and Protected Area Development in Thailand Assessment was that the agencies responsible for management of protected areas are severely understaffed and undertrained for these tasks. There is also need for greatly expanded basic and applied research on Thailand's wild biological resources, as well as for their protection. Some 65 species of Thai vertebrates are currently endangered, and research on their status and management is considered urgent by conservationists. Zoological and botanical collections are inadequate; only 60-70 percent of Thailand's vascular plants have been described, let alone analyzed for medicinal or other properties. These biological resources hold vast economic potential, but are severely threatened.

2. Strategy

In 1986, USAID commissioned an "Assessment of National Parks, Wildlife Sanctuaries, and Other Preserves Development in Thailand." As part of this assessment, an international conference was convened to stimulate technical and policy discussions among national and international experts on the future of Thailand's protected area system. The final assessment report provides a consensus outline of the problems facing Thailand's protected area system and recommendations for RTG and donor action. USAID, under the Thailand Coastal Resources Management Project, is already supporting preparation of park management plans for Tarutao and other marine and coastal parks.

In cooperation with the World Wildlife Fund-U.S., AID biological diversity funds are currently supporting the Wildlife Fund Thailand (WFT) and the RFD in several small grant activities: assessment of sea turtle conservation needs in Thailand, production of television public service conservation spots, a review of the status of endangered Thai plants and wildlife, and participation of key RTG and NGO representatives in selected international parks management and nature conservation conferences. Also, under the PVO Co-Financing II Project, USAID is supporting a conservation-oriented children's magazine and a community

development-for-conservation program around the perimeter of Khao Yai National Park. In order to advance a national program for improved understanding, protection and utilization of Thailand's biological resources, a similar range of activities through a variety of RTG agencies and Thai NGOs will be needed, on a much greater scale.

3. Objectives

The objectives of the Biological Resources Management Subproject are:

- o Identify and promote policies furthering the integration of Thailand's national parks and wildlife sanctuaries into regional and local economic and social development.
- o Increase scientific understanding of Thailand's biological resources, their economic potential and effective management and conservation practices.
- o Improve the ability of the National Parks and Wildlife Conservation Divisions of the Royal Forest Department to manage Thailand's protected areas.
- o Advance the integration of local communities into protected area management programs.
- o Develop a public constituency that supports national parks, conservation and the wise use of Thailand's biological resources.

4. Description of Elements

4.1 Protected Areas Planning and Management (USAID \$3,227,000; RTG \$ 1,283,000; other \$254,000)

This element will strengthen the capacities of the National Parks Division (NPD) and the Wildlife Conservation Division (WCD) of the Royal Forest Department (RFD) to administer, protect, and provide public education services for the Kingdom's national parks, wildlife sanctuaries, and other protected areas. Support will be provided for: (1) in-service training to improve NPD and WCD managerial skills; (2) preparation and implementation of management plans for priority protected areas; and (3) integration of parks planning and management into regional development programs. The lead agency for this element will be the RFD, in collaboration with Kasetsart University's Faculty of Forestry.

Examples of activities that will be funded under the Protected Areas Planning and Management element are:

- o Assessment and training in park operations and maintenance.
- o Training workshops in interpretive techniques and provision of basic communications equipment at selected parks and sanctuaries.
- o Implementation of management plan recommendations at selected terrestrial and marine protected areas.
- o Development of an interpretation materials production center to service model interpretive programs for national parks and non-hunting areas.
- o Development of a training/research center for NPD and WCD staff and scientists.
- o Review of protected area legislation and policy and preparation of regional protected area management strategies.
- o Development of a recreation data base and assessment of recreation carrying capacity for Thailand's national parks.
- o Action-research and demonstration of integrated village development and conservation programs adjacent to key protected areas.
- o Promotion of nature-based tourism to promote conservation and local development thru support of pilots.

4.2 Biological Diversity Research and Conservation (USAID \$1,876,000; RTG \$553,000; Other \$249,000)

This element will support development of a National Biological Survey Program to promote Thai scientific understanding of wildlife species and habitats. It will also support research and development aimed at protection and management of endangered populations, care of captive or preserved species, and analysis and development of their economic potential. RTG implementing agencies under this element will include the Royal Forest Department, ONEB, the Zoological Parks Organization, and key universities and research institutes. This element will also support a biological diversity small grants program under the direction of Wildlife Fund Thailand (WFT) in cooperation with other NGOs.

Examples of activities that will be funded under the Biodiversity Research and Conservation element are:

- o A national symposium on biological diversity research priorities and programs.
- o Development of natural history research and teaching materials.
- o Assessment of critical wetlands conservation priorities and needs.
- o Inventory and assessment of critical tropical forest sites.
- o Development of arboreta and floristic inventories.
- o Development of a Thai conservation information network.
- o Assessment of conservation priorities for Thailand's protected area system.
- o Training workshops in topical areas of wildlife management.
- o Technical and economic assessments of promising plant and animal products from wild genetic stocks.

The above activities will be carried out under four to five direct grants (each ranging from \$80,000 to \$140,000) to selected Thai implementing agencies. The Zoological Parks Organization will concentrate on developing research, training, and display capacities for captive wildlife, particularly endangered species; the Office of National Environment Board will coordinate the National Biological Survey Program; Chulalongkorn University will focus on natural history materials development and training for Thailand's first Natural History Museum; the Royal Forest Department will review the status and management of botanical gardens and arboreta, and coordinate completion of the Basic Flora of Thailand; and the Princess Chulabhorn Research Institute will support pioneering work on natural pharmaceuticals and other economic products of Thai plants and wildlife. In addition, Wildlife Fund Thailand, in affiliation with World Wildlife Fund-U.S. through the AID/S&T Biological Diversity Conservation Project, will coordinate and administer a small grants (up to \$10,000 each) program for priority biological resource conservation activities.

5. Output and Input Summary

The following are illustrative outputs for this subproject:

- o Major reviews conducted of regulations and policies related to Thailand's wildlife and wild habitats.
- o Over 400 employees of NPD and WCD trained in parks planning, administration, and management.
- o Protected Area Management Plans prepared for at least 40 parks and sanctuaries.
- o Implementation pilot programs at 4-5 parks, based on the prepared management plans.
- o 2-3 regional development plans incorporating protected area management and support for development-for-conservation activities in surrounding buffer zones.
- o Establishment of a long-range National Biological Survey Program, which will complete the Basic Flora of Thailand and develop model inventories and data bases on flora, fauna, and wildlife habitats.
- o Action-research programs on sustained management and economic applications of plant and animal products, and on restoration and protection of endangered species and habitats.
- o Strengthened NGO institutions, and improved cooperation between NGOs, the private sector, and RTG agencies for wildlife and wildlands conservation.

The estimated inputs required to produce the above outputs include: \$931,000 of grant resources and \$290,000 of counterpart resources for both long-term and short-term technical assistance; \$2,640,000 of grant resources and \$816,000 of counterpart resources for research grants; \$300,000 of grant resources and \$145,000 of counterpart resources for workshops/seminars/conferences; \$384,000 of grant resources and \$104,000 of counterpart resources for training/observation/study tours; \$248,000 of grant resources and \$184,000 of counterpart resources for commodities; and \$600,000 of grant resources and \$800,000 of counterpart resources for various publications and local costs of implementation support. (See Financial Plan, Section IV.A, for budget details).

6. Institutional and Administrative Arrangements

The Royal Forest Department (RFD) will be the lead coordinating and implementing agency for the Protected Areas Planning and Management element. No single lead agency will be designated for the Biological Diversity Research and Conservation element; activities will be carried

out independently by governmental and non-governmental organizations receiving grants under this element.

Under the Protected Areas Planning and Management element, USAID will enter into a Participating Agency Services Agreement (PASA) with the U.S. National Park Service to provide technical assistance and training support to the NPD and WCD.

Under the Biological Diversity Research and Conservation element, direct grants will be made to the RTG agencies and NGOs identified in Section 4.2 above. Technical assistance will be provided through a buy-in to the new AID centrally-funded Biological Diversity Conservation Project. This new project will provide access to technical services and administrative support through an AID cooperative agreement with the World Wildlife Fund-U.S.

The details of specific subproject elements and activities carried out by RTG agencies will be defined in annual work and financial plans prepared by the RFD, ONEB, and Zoological Parks Organization in cooperation with DTEC. Direct grants to Wildlife Fund Thailand and other NGOs will be based on USAID review of proposals and DTEC letters of non-objection. In addition, the MOInt and NESDB will be responsible for linking the activities of the Protected Areas Planning and Management element with provincial environmental planning activities under the Rural Resources Management and the Coastal Resources Management subprojects.

The Mission will assign half time of one FSN professional staff as the USAID manager for the subproject. The FSN professional will report directly to the Mission Natural Resources Officer, who will have lead responsibility for clearances and approvals relating to subproject implementation actions. Periodic meetings between USAID staff and the Subproject Advisory Committee, as well as frequent liaison with RTG project managers and technical consultants, will help to ensure efficient monitoring and informed assessment of subproject progress.

7. Implementation Schedule

During the first year of implementation, the Biological Resources Management Subproject will build on and consolidate current activities with the NPD and initiate the biological diversity small grants program with Wildlife Fund Thailand. The second and third years will focus on extending activities with the NPD, initiating complementary activities with the WCD, and providing direct grants to selected agencies and private organizations participating in the Biological Diversity Research and Conservation element. A national symposium on biological research priorities and program development will be carried out in year two in preparation for these grants.

G. HUMAN RESOURCES DEVELOPMENT SUBPROJECT

USAID: \$10,490,000
RTG: \$ 3,424,000

1. Problem

Building Thailand's institutional capacity to effectively analyze environmental problems and to formulate policy solutions will require the development of professional level expertise in areas that cut across all sectors of development in Thailand. Preliminary training needs estimates have been identified under each of the other six subprojects for the numerous Thai institutions currently involved in natural resource management. To effectively address these needs in a sustainable manner, a great deal of planning work will need to be done. In addition, given the many and varied training activities contemplated under this project, attention must be given to assuring that all these activities are implemented in a coordinated manner.

2. Strategy

USAID has helped finance foreign education for some 11,000 Thais, many of whom are now in key public and private sector leadership positions and are now making substantial contributions to the economic, social and political development of the country. In general the training has been provided as one of the many inputs financed under USAID projects which are designed to address specific sectoral constraints. Fields of study cover a wide variety subjects from public administration to agriculture, to specialized medical training. This project will continue to draw heavily upon the capacities of major U.S, Thai and regional learning institutions to provide the needed training in various environmental and natural resource management disciplines.

3. Objective

The objective of this subproject is to develop the analytical, administrative, and policy-making capabilities of Thai personnel involved in natural resources and environmental management. This subproject will facilitate the coordination of all project-financed training activities. Accordingly, all project resources to support degree or certificate level training programs will be channeled through the Human Resources Development Subproject.

4. Description of Elements

4.1 Human Resource Assessments: (USAID \$200,000)

To plan for the initial training activities to be carried out under the project, DTEC will organize a workshop during the first three months of project implementation. This planning workshop will include representatives from all the lead implementing agencies (e.g., ONEB, NESDB, MOAC, MOInt, Ministry of Education, and USAID). As a result of this workshop, the most immediate training needs will be identified and individuals will be selected for participation in training programs which will begin during FY 1989.

During the first year of the project, a Human Resource Assessment will be carried out of manpower requirements for the coming decade (1990-2000) within Thai agencies and institutions concerned with natural resources and environmental management, and of current Thai, ASEAN region, and U.S. educational capabilities to satisfy these requirements. This assessment will result in an initial training plan to be carried out during FY 1990 and a preliminary, longer-term training plan for the 1992-1996 (Seventh Plan) period. The assessment will also help to identify opportunities for involving other donor agencies in support of needed training. Subsequent assessment and planning work will be carried out at planning workshops organized by DTEC with the technical assistance described in Section 4.3 below.

4.2 Participant Training (USAID \$9,335,000; RTG \$3314)

Under this subproject element, funding will be made available for training in masters and doctorate level programs and short-term certificate programs at U.S. learning institutions and appropriate training programs in Thailand and the ASEAN region. Where feasible, special combinations of academic training and on-the-job experience will be arranged. In addition, a limited amount of resources will be made available under this subproject to sponsor the participation by key members of Thai agencies at special international conferences and seminars.

4.3 Training Management (USAID \$955,000; RTG \$110,000)

In order to provide for the effective management and planning of the large number of participant training activities contemplated under the project, certain preparatory actions will be taken. First, RTG counterpart funds will be utilized to finance the costs of additional DTEC training officers (approximately three). Second, a consultant will be contracted by DTEC, using project funds, to help coordinate the continuing process of assessing manpower needs and developing the required training plans. The consultant will work with individual implementing organizations to strengthen their annual training plans and their capabilities to assess their own needs.

The annual training plans will describe in-country training development and U.S. participant training activities. Once prepared, these plans will be submitted by DTEC to USAID for funding approval. Each annual training plan will include the following information: (1) an overview of overseas and in-country training by year for the duration of the project; (2) criteria for participant selection; (3) a detailed, time-phased, twelve-month implementation plan including detailed budgets; and (4) annual evaluation and planning/implementation schedules.

The project-financed consultant will provide assistance in the selection, processing, placement, support and monitoring, re-entry, and evaluation of all training participants. Furthermore, the consultant will monitor, evaluate and provide regular advice on the implementation of all project-financed training activities.

5. Output and Input Summary

During the life-of-the-project approximately 430 participants will receive training. This will include approximately 50 Master Degrees, 30 Ph.D's, and 350 short-term participants.

Under the MANRES Project \$200,000 in grant resources will be provided to carry out the training assessment and planning work; \$9,335,000 in grant resources and \$3,314,000 in counterpart resources will be provided for participant training; and \$459,000 in grant resources will be provided for 80 person-months of technical assistance. In addition, \$158,000 of grant resources and \$22,000 of counterpart resources will be provided for observation/study tours and seminars, and \$46,000 of grant funds will be used to procure commodities, and \$450,000 of grant funds and \$110,000 of counterpart funds will be provided for administrative support. (See Financial Plan, Section IV.A, for budget details).

6. Institutional and Administrative Arrangements

DTEC will be the lead implementing agency for this subproject. Coordination with the lead implementing agencies for the other subprojects will be carried out through ad hoc meetings and periodic workshops organized by DTEC.

The initial Human Resource Assessment will be carried out under a host country contract. Requests for proposals will be sent to a list of qualified Thai organizations. The contractor will work under the direct supervision of DTEC.

The DTEC-contracted consultant (discussed in paragraph 4.3 above) will serve as the principal contact with USAID for coordinating, implementing, and monitoring all project participant training activities and for preparing related correspondence and documentation. A full-time secretary and additional administrative staff will also be contracted by DTEC to work with the training advisor.

Within USAID Thailand, a FSN professional will be designated as the principal liaison with DTEC for Human Resources subproject management and implementation.

7. Implementation Schedule

During the initial six months of MANRES Project implementation, subproject activities will focus on (1) the identification of immediate project training needs and the selection of individuals for training in FY 1989; (2) contracting of an assessment of mid-term (1990-2000) manpower requirements for all agencies and organizations participating in the Project; and (3) contracting of the DTEC training consultant. Subsequently, the subproject will focus on effective management and implementation of MANRES participant training activities, guided by the manpower assessment and annual training plans.

H. ENVIRONMENTAL AWARENESS AND EDUCATION SUBPROJECT

USAID: \$3,350,000
RTG: \$ 403,000
Other: \$ 481,000

1. Problem

Only a small percentage of Thai citizens currently demonstrate awareness of and concern about environmental issues or support for improvements in natural resources management. For millions of landless or low-income farmers there is still little practical choice about resource exploitation versus resource management, and there is a worsening cycle of resource abuse and rural poverty. In both rural and urban areas, limited economic options are compounded by lack of knowledge or lack of access to improved resource management techniques. Governmental policies and programs to improve natural resources and environmental management, if they are to be effectively formulated and implemented, require greater public awareness of the issues and informed support for environmentally sound development alternatives. Movement in this direction will depend on the attitudes, knowledge, and involvement of all sections of Thai society -- from small farmers to industrialists, from city clerks to cabinet members, and from both adults and youth.

2. Strategy

Environmental awareness and education efforts are still at an early stage in Thailand, and receive only modest inputs of budgetary and staff resources. The RTG, however, is keenly interested in expanding these efforts. Both the Office of the National Environment Board (ONEB) and the Ministry of Education (MOE) have ongoing activities that require consolidation and strengthening. Moreover, the MOE is prepared to initiate a comprehensive new program in environmental education, combining the resources of several departments, in anticipation of USAID financial support under the MANRES Project.

Thai NGOs, although limited in size and number, have begun to play a significant and positive role in promoting public awareness of environmental problems and involving local people in action programs to improve resource management. Two kinds of Thai NGOs have strong interests in natural resources and environment -- those established to promote public awareness of nature and wildlife, and those concerned with community development, especially in rural areas. There is increasing overlap between these two groups, and both are using environmental education and conservation efforts as a means of helping communities to diversify their sources of income while protecting critical natural resources. The need now is for Thai NGOs to sustain and increase their contributions by becoming mature, financially viable organizations while significantly expanding their service to the Thai public, and to do so in a manner consistent with general societal and RTG priorities.

3. Objectives

The objectives of the Environmental Awareness and Education Subproject are as follows:

- o Strengthen environmental education efforts of the Ministry of Education (MOE) through technical assistance and program development support.
- o Develop environmental education curriculum materials and a trained cadre of teachers skilled in using such materials.
- o Foster a national forum comprised of key representatives from MOE, ONEB, and Thai NGOs that will provide overall direction for environmental awareness and education efforts in Thailand.
- o Improve the capacities of Thai NGOs to develop and manage public service environmental education and to develop and demonstrate new and improved resource and environmental management practices in cooperation with local communities.

4. Description of Elements

4.1 National Environmental Education (USAID \$1,740,000; RTG \$364,000; Other \$128,000)

For almost a decade, the Ministry of Education has been introducing environmental curricula into all levels of the public education system. This subproject element will extend these initial efforts by funding: (1) further development and testing of environmental education instructional methods and curriculum materials; (2) training of public school teachers in the new methods of instruction and use of materials; (3) development of one or more regional resource centers for environmental education training and program support; (4) organization of a National Symposium on Environmental Education; and (5) training of community leaders in non-formal environmental education approaches and implementation of community environmental education campaigns in collaboration with the Thai NGOs discussed in Section 4.2 below.

Examples of activities that will be supported under this element are:

- o Curriculum and materials development linked with teacher training programs.
- o Establishment of Regional Resource Centers for environmental education.
- o Convening of a National Symposium on Environmental Education.

- o Preparation of a National Strategy for Environmental Education under the Seventh National Economic and Social Development Plan.
- o Non-formal training of community leaders and community environmental education campaigns.

4.2 Public Environmental Awareness (USAID \$1,610,000; RTG \$40,000; Other \$352,000)

Thai NGOs can usefully channel the interests and energy of a wide range of private citizens in ways that formal government agencies cannot, but which are clearly complementary to government programs. USAID has supported some environmental awareness programs designed and conducted by several Thai NGOs, and under this element will extend this support to additional activities and additional groups. The activities under this element will be carried out through a limited number of small grants issued directly to qualified NGOs by USAID, with technical and administrative support provided under an appropriate contracting mechanism.

Examples of activities that may be funded under this element are:

- o Materials development, reproduction and dissemination (building on the efforts of NGOs such as Magic Eyes, Care International, and Wildlife Fund Thailand).
- o Translation and publishing of appropriate English language source materials and books into the Thai language.
- o Production of a professional video series on nature conservation and environmental issues in Thailand.
- o Fellowships for Thai students to provide technical support and research to environmental NGOs.
- o Co-financing of NGO proposals for environmental awareness and community development.

5. Output and Input Summary

The following are illustrative outputs for this subproject:

- o Development of high-quality environmental education curricula and materials for use in both formal and non-formal instructional settings.
- o A trained cadre of teachers and community leaders skilled in using the above materials.
- o Establishment of Regional Resource Centers for Environmental Education at selected teacher training colleges.

- o Integration of RTG and NGO experience and perspective in developing a national strategy for environmental education under the Seventh Five-Year Plan.
- o Production of an environmental education video series for Thai television and public awareness campaigns.
- o Strengthened capacity of selected Thai NGOs active in environmental awareness and community development.

The estimated inputs required to produce the above outputs include: \$390,000 of grant funds and \$4,000 of counterpart resources for short-term technical assistance; \$130,000 of grant resources and \$30,000 of counterpart resources for workshops/seminars/conferences; \$440,000 of grant funds and \$140,000 of counterpart funds for training/observation/study tours; \$530,000 of grant funds and \$100,000 of counterpart resources for commodities and video/materials production costs; \$1,000,000 of grant resources and \$250,000 of counterpart resources for PVO/NGO program grants; and \$860,000 of grant resources and \$360,000 of counterpart resources for curriculum and materials development, establishment of regional environmental education resource centers, and implementation of community environmental awareness campaigns. (See Financial Plan, Section IV.A, for subproject budget details).

6. Institutional and Administrative Arrangements

The National Environmental Education element will be administered by the Ministry of Education (MOE). A number of departments within the MOE have shown interest in participating in environmental education activities; therefore, an interdepartmental task force or committee will be established to coordinate and review proposals, as well as monitor implementation. It is expected that this committee will be chaired by the MOE Department of Curriculum and Instructional Development.

The Public Environmental Awareness element will be administered through grants issued directly to selected NGOs by USAID, based on review of proposals and work plans and DTEC letters of non-objection.

An Advisory Committee comprised of representatives of MOE, ONEB, participating NGOs, and USAID will be convened, as needed, to assure regular review and coordination of the various activities under the subproject.

Short-term technical assistance for the subproject will be provided through an appropriate contracting mechanism with a U.S. university or private organization able to provide the required expertise.

Within USAID Thailand, a FSN Program Specialist with the Agricultural and Natural Resources Development Division of the Office of Technical Resources will have full-time responsibility for the management of this subproject, under the supervision of the Mission Natural Resources Officer. The Project Support Division of the Office of Project Development and Support will be consulted regularly regarding linkages between this subproject and other PVO work supported by USAID.

7. Implementation Schedule

The initial year of subproject activity will focus on developing comprehensive work plans and budgets, completing contractual arrangements for technical assistance and formulating procedures for reviewing various MOE and NGO proposals. Years two through five will concentrate on implementing planned activities with short-term technical assistance. Years six and seven will focus on providing assistance to RTG agencies and NGOs to make effective use of their own resources for public environmental awareness after termination of USAID project assistance.

I. POLICY ANALYSIS AND DEVELOPMENT SUBPROJECT

USAID: \$5,315,000
RTG: \$ 410,000
Other: \$ 540,000

1. Problem

As Thailand continues to intensify the utilization of natural resources in achieving economic growth, it becomes increasingly important to formulate and implement policies that promote sustainable development of a finite resource base. Two levels of need are particularly relevant: (1) the policy making capacity of government to guide resource allocation and management over the long term; and (2) the need for policy incentives to induce appropriate and lasting changes in both institutional and individual behavior. Policy initiatives at both levels must address the problem of diffusion of responsibility and authority for resource management across numerous sectors of the economy. On the one hand, continued policy adjustment at the macro-level is needed to promote integrated planning and cooperation across sectors and to stimulate appropriate levels of public and private investment in resource-dependent development. On the other hand, policy adjustments and changes are required to motivate institutions and individuals to comply with legal-regulatory prescriptions and to build incentives for sustainable resource management practices.

2. Strategy

Within the RTG, the NESDB and NEB have lead responsibility for natural resources planning and policy formulation. As environmental and resource management issues gain prominence, these key national agencies require strengthening themselves, and improved support from academic researchers and other analysts outside the government. Greater collaboration between the RTG and the Thai private sector is also needed to ensure that resource management policies are realistic. This will improve the climate for compliance and help mobilize investment resources for resource management beyond those of the government alone.

Each of the subprojects under the Mission's seven-year (1988-1995) Management of Natural Resources and Environment Project will provide significant support to improve analyses of issues and to policy formulation. Specifically:

- o The Coastal Resources Management subproject will help to establish the information base, interagency cooperation, and private sector involvement for significant policy changes and programmatic development in the management of Thailand's valuable coastal resources.
- o The Industrial Environmental Management subproject will improve the industrial sector's awareness of the economic benefits of pollution control, and will promote dialogue and cooperation between industry and government administrators.
- o The Rural Resources Management subproject will support transfer of knowledge and analytical techniques for understanding the institutional and policy constraints associated with agricultural intensification and resource-dependent rural development.
- o The Biological Resources Management subproject will help to establish the information and knowledge base to understand the role of wildlife and protected areas in Thailand's future development.
- o The Human Resources Development subproject will support academic training and short courses for Thai professionals in resource economics, environmental planning and administration, and policy-related aspects of various environmental and natural resource management disciplines.
- o The Environmental Awareness and Education subproject will improve the public's understanding of issues, and of the measures that government and the private sector must take to address them.

The Policy Analysis and Development Subproject will complement the above subprojects by strengthening analytical and administrative capacities at NESDB and ONEB. It also will promote collaboration among NESDB, ONEB and selected Thai and U.S. research institutions to collectively develop and implement a long-term policy research agenda within the framework of the Seventh and Eighth National Economic and Social Development Plans (1992-1996; 1997-2001).

3. Objectives

The objectives of the Policy Analysis and Development subproject are as follows:

- o Strengthen the capacities of NESDB and ONEB to formulate appropriate resource management policies and to coordinate the implementation of environmental and natural resource management programs at national, provincial and local levels.
- o Advance a national agenda of policy analysis and research focusing on the critical constraints to sustainable utilization of natural resources for economic and social development.
- o Promote collaboration among key national policy and planning agencies (NESDB, ONEB), Thai universities, and private organizations with proven capacity to incorporate policy analysis and development into the Seventh (1992-1996) and Eighth (1997-2001) National Economic and Social Development Plans.
- o Establish a national forum for dialogue and cooperation between the public and private sector in evaluating and acting on the findings of analyses and research sponsored by the seven-year MANRES Project.
- o Establish a vehicle for dissemination of information on policy-related issues of environmental resources management to both public sector and private sector constituencies.

4. Description of Elements

4.1 Strengthening National Support Capacity at NESDB and ONEB (USAID \$1,990,000; RTG \$200,000; Other \$270,000)

This element will strengthen analytical and administrative capacities at NESDB and ONEB for the purpose of intersectoral planning and broad policy formulation related to natural resources and environmental management. In particular, it will support capacity to respond to immediate issues, mediate conflicts among RTG agencies, and implement an action program of analysis and research on both current and long-range natural resources and environmental management issues. Professional and degree training fellowships for NESDB and ONEB personnel will be supported and managed under the Human Resources Development Subproject. Funding for technical assistance by both Thai and U.S. collaborators will also be provided. This will support RTG preparation of natural resource and environmental management programs under the Seventh and Eighth National Economic and Social Development Plans.

Examples of activities that would be funded under this element are:

- o Professional study tours and training with USG agencies and U.S. private sector organizations in policy analysis, environmental and natural resource assessment and planning, and environmental administration.
- o Technical assistance and research support on special issues and long-range problem analysis.
- o Enhancement of library and information management systems.
- o Administrative analysis and program planning support.

In concert with the above, a special fund will be administered jointly by NESDB and ONEB to plan and implement policy studies and policy action-research pilots in collaboration with Thai universities, selected NGOs, and environmental consulting firms. Criteria for use of this fund will be established jointly by NESDB, ONEB, DTEC and USAID.

4.2 Prospective Policy Research at TDRI (USAID \$3,005,000; RTG \$160,000; Other \$250,000)

This element will support prospective policy research on priority natural resources and environmental issues by the Thailand Development Research Institute (TDRI), with U.S. technical assistance provided under an institutional contract. USAID will work with TDRI and the U.S. contractor to establish criteria, review proposals, and make recommendations for implementing a long-term policy research agenda which will be administered directly by TDRI.

Examples of policy areas for which TDRI would conduct research in collaboration with NESDB and ONEB include:

- o The role of privatization in managing resources currently under the jurisdiction of public sector agencies (production forests, small-scale irrigation schemes).
- o The socioeconomic implications of insecure property rights and options for community management of "open access" public lands
- o The implications of environmentally adverse agricultural taxation (export tax for rice) and subsidization (cassava, pesticides).
- o The implications of the existing incentive/disincentive structure for investments in irrigation systems operation and maintenance, and promotion of water users associations and water use charges.

- o The economic value of protected areas and biological species conservation.
- o The appropriate role of fiscal incentives in advancing improved methods of industrial pollution control and urban environmental quality management.
- o The identification of appropriate "institutional incentives" to foster improved interagency planning and management of resources now subject to competing sectoral interests.
- o The role of public advocacy and participation in improving the environmental impact assessment process as an environmental planning tool.
- o The feasibility and probable impact of land use controls (zoning and permitting programs) for improved management of coastal area development.

The Prospective Policy Research element will be advanced through a core program support grant to TDRi which will strengthen TDRi's overall capacity to: (1) develop an improved information system for monitoring and analyzing fundamental environmental resource and development trends in Thailand; (2) develop leading indicators for measuring the impact of existing policies and sectoral development programs on natural resources and environmental management; (3) analyze economic incentives, institutional reforms and financial mechanisms for improving the management of natural resources and the environment in the process of implementing national development plans and programs; and (4) secure increased financial support for ongoing and future program activities from other donors and the RTG.

4.3 Policy Information Dissemination (USAID \$320,000; RTG \$50,000; Other \$20,000)

This element will support a series of conferences, seminars and workshops to disseminate the findings of policy studies sponsored by the project. It will also support the publication of policy-related papers dealing with the strategic resource sectors and institutional issues addressed by the project. This element will also support the initiation of a natural resource policy journal -- the Thai professional equivalent of similar periodicals in the U.S. and other developed countries -- through an appropriate university or private organization. Policy information dissemination activities will be implemented by NESDB and ONEB in consultation with participating Thai universities, resource management agencies, and private sector organizations.

5. Output and Input Summary

The following are illustrative outputs for this subproject:

- o Significantly strengthened capacity at NESDB and ONEB to formulate, implement and evaluate policy options leading to improved management of natural resources and the environment.
- o A series of strategic policy studies and research addressing current and long-range natural resource and environmental management issues in Thailand.
- o Development of a comprehensive natural resources and environmental policy agenda for inclusion in the Seventh and Eighth National Economic and Social Development Plans (1992-1996; 1997-2001).
- o Establishment of a long-term natural resources and environmental policy research program at TDRI able to draw financial support from the RTG and other donors.
- o Publication and dissemination of 15-20 priority policy studies; development and publication of a Thai natural resources policy journal.
- o 6-8 policy conferences/roundtables involving key public and private sector representatives.

The estimated inputs required to produce the above outputs include: \$1,365,000 of grant resources and \$160,000 of counterpart resources for both long-term and short-term technical assistance; \$130,000 of grant resources and \$40,000 of counterpart resources for workshops, seminars and conferences; \$300,000 of grant resources and \$110,000 of counterpart resources for training/observation/study tours; \$1,000,000 of grant resources and \$180,000 of counterpart resources for NESDB/ONEB directed policy studies and policy action-research; \$2,000,000 of grant resources and \$330,000 of counterpart resources for core program support to TDRI; \$100,000 of grant resources and \$30,000 of counterpart resources for commodities; and \$420,000 of grant resources and \$100,000 of counterpart resources for various publications and development of a Thai Natural Resources Policy Journal. Subproject budget details are presented in the Financial Plan, Section IV.A.

6. Institutional and Administrative Arrangements

The Strengthening of National Support Capacity at NESDB and ONEB element will be administered by these two respective agencies. Budget allocations to each agency will be determined in annual work and financial plans developed in cooperation with DTEC. Long-term technical assistance will be provided to NESDB through the services of a policy advisor under host-country contract.

The Prospective Policy Research Program at TDRI will be administered by TDRI with the support of long-term and short-term technical assistance provided under USAID direct contract with a qualified U.S. university or private policy research institution.

The Policy Information Dissemination element will be administered jointly by NESDB and ONEB, in consultation with TDRI and selected Thai universities, RTG resource management agencies, and NGOs.

Within USAID Thailand, the Mission Natural Resources Officer will have full-time responsibility for the management of this subproject, with the assistance of other USDH and FSN staff assigned to the MANRES Project. In addition, the Mission plans to provide the services of a long-term consultant, under host-country contract, to advise NESDB and USAID on all aspects of the Policy Analysis and Development Subproject.

7. Implementation Schedule

Allocation of budgets among subproject elements and activities, and phasing of implementation actions will be based on annual work and financial plans developed jointly by DTEC, NESDB, ONEB, and USAID. Because of the pivotal role of the Policy Analysis and Development Subproject for the MANRES Project as a whole, the major subproject elements and activities will be expedited to the extent feasible. Start-up of institution-strengthening and policy analysis activities with NESDB and ONEB will proceed as soon as practicable following negotiation and signing of the Project Agreement. Selection of the long-term policy advisor to NESDB will also be expedited during the first year of the project.

Similarly, the core grant to TDRI is expected to be executed on the basis of criteria and guidelines completed during the first several months of the project. Procurement of the services of a long-term institutional contractor to assist TDRI will also begin at this time.

The dissemination and publication of policy information will be carried out on a timely basis, in concert with the completion of policy analyses and research involving NESDB, ONEB, TDRI, and other participating organizations.

ILLUSTRATIVE SUMMARY FINANCIAL PLAN *
 LOP BUDGET MANRES PROJECT
 (U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
1. COASTAL RESOURCES MANAGEMENT	2888	2770	5658	1360	0	320	30	7368
2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT	1335	1665	3000	363	0	644	516	4523
3. BIOLOGICAL RESOURCES MANAGEMENT	1271	3832	5103	1836	0	478	25	7442
4. RURAL RESOURCES MANAGEMENT	1235	4444	5679	5783	0	0	0	11462
5. HUMAN RESOURCES DEVELOPMENT	9506	984	10490	1491	1933	0	0	13914
6. ENVIRONMENTAL AWARENESS & EDUCATION	630	2720	3350	403	1	470	10	4234
7. POLICY ANALYSIS & DEVELOPMENT	1555	3760	5315	410	0	510	30	6265
8. MONITORING/EVALUATION/AUDIT	300	100	400	0	0	0	0	400
9. PROJECT ADMINISTRATION	1200	900	2100	0	145	0	0	2245
10. CONTINGENCIES	1161	1744	2905	0	21	0	0	2926
GRAND TOTAL	21081	22919	44000	11646	2100	2422	611	60779

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

III. PROJECT IMPLEMENTATION

A. IMPLEMENTATION RESPONSIBILITIES

The basic management unit for implementation purposes will be the subproject. For the Coastal Resources Management subproject, the Industrial Environmental subproject, and the Human Resources Development subproject, one Thai institution will have the lead responsibility for overall subproject management. For the Rural Resources Management subproject, the Biological Resources Management subproject, the Environmental Awareness and Education subproject, and the Policy Analysis and Development subproject, the lead responsibility of the designated Thai implementing institutions will be limited to specific subproject elements.

Each lead implementing institution will be responsible for coordinating the preparation of Annual Work and Financial Plans (in accordance with Mission Order No. 430.06). During the first four months following obligation of the project agreement, DTEC and USAID will arrange for Pre-Project Implementation Workshops. Annual Work and Financial Plans for public sector implementing organizations (including universities) will be submitted through DTEC to USAID. NGOs and private sector entities undertaking activities financed by the project will develop Annual Work and Financial Plans and submit them directly to USAID prior to receipt of advances of funds. Approximately 13 Annual Work and Financial Plans will be developed under the project each year.

Within USAID each subproject will be administered as an independent activity, with USAID subproject managers assigned to work as counterparts to the Thai implementing institutions. In addition, with resources available under the Project Administration budget line item, USAID will directly contract with long-term consultants (Environmental Resource Advisor, Monitoring and Evaluation Specialist) to: (1) assist Thai implementing institutions in the preparation of subproject progress reports; (2) promote the publication and dissemination of the results of project activities; (3) provide a locus for the collection and maintenance of the documents and data associated with the monitoring and evaluation of the subproject; (4) provide technical support for the subprojects; (5) when necessary, prepare responses to requests for information on project activities; and (6) support subproject implementing organizations in their efforts to institutionalize systems and procedures developed under the project. The Project Administration budget will also enable DTEC to contract directly with an Administrative Systems Analyst/Liaison, who will assist RTG and non-governmental implementing institutions in developing appropriate administrative arrangements for subproject implementation. This will include establishing procedures for procurement actions, financial accounting, and systematic monitoring and reporting of progress.

For each subproject, the implementing agencies will take the initiative in determining and setting up appropriate mechanisms (such as Subproject Advisory Committees) for coordination among the different subproject activities. In addition, a Resource Group of prominent Thai leaders and USAID representatives -- that acts as a "think tank" to discuss and synthesize subproject activities and generate ideas on future directions -- will be established under the project. Funds will be provided under the Project Administration budget line item to meet the expenses of the Resource Group following a process similar to that used under the ongoing Science and Technology for Development Project.

B. CONTRACTING

The following provides an overview of the anticipated project financed contracting actions. Detail on the anticipated major contracting actions is presented in Annex L. The methods of implementation and financing are listed in Section IV.A, Table 3.

DTEC will execute project financed contracts for the RTG implementing agencies. This will include the execution of contracts to carry out needed local studies, to conduct workshops and seminars, and to obtain equipment, training and selected technical services. Of primary importance will be the contract for the Initial Human Resource Assessment, selected contracts for long-term advisor support and contracts for the administration of small research grants programs. DTEC will negotiate and execute contracts based upon the terms of reference and specifications prepared by the relevant RTG implementing organizations.

Under the project, it is anticipated that USAID will carry out certain major contracting actions. Specifically, USAID will enter into: a Cooperative Agreement with the University of Rhode Island (URI); a PASA with the U.S. National Park Service; a long-term institutional contract with a U.S. policy research institute; six to eight grant agreements with Thai NGOs; and two to three personal service contracts. USAID will also obtain technical services to directly support the implementation of specific subproject activities through existing AID/W Cooperative Agreements with the World Environment Center, the International Institute for Environment and Development (IIED), and the World Wildlife Fund-U.S. (See Annex L for more detail).

The bulk of project-funded training will be provided through DTEC's ongoing arrangements with AID/W (S&T/OIT) in which OIT contracts Partners for International Education and Training (PIET) to manage the participant training activities. Training may also be provided under Cooperative Agreements with URI, IIED, and WWF-U.S., and under a PASA between USAID and the U.S. Park Service. Under each of these agreements, USAID approval of detailed annual training plans will be required prior to the commitment of contract funds for training or the initiation of training activities each year. The agreements will also require that all

candidates nominated to participate in the project will satisfy all of USAID's Participant Training (Handbook 10) regulations, and receive USAID approval prior to finalization of travel scheduling. Furthermore, all agreements will require that contractors report to USAID, on a quarterly basis, their training expenses in the following six categories: education/training; allowances; travel; insurance; supplemental activities; and administration. In order to provide sufficient administrative support for the project supported training activities, it is recommended that counterpart funds be used to finance the costs of 2-3 additional DTEC training officers.

USAID has analyzed host-country capability to carry out the contracting actions contemplated under the project. Since a significant number of the major contracting actions will be carried out by USAID, the resulting level of contracting actions to be administered by DTEC should be reasonable. In addition, USAID recently completed a review of DTEC's contracting procedures (a copy of the report is available in USAID files). While the Mission continues to encourage improvement, DTEC's contracting system appears to be basically sound. In addition, the project committee recommends that counterpart funds be utilized to finance one additional DTEC Contracting Officer to handle the RTG procurements contemplated under the project.

C. USE OF GRAY AMENDMENT ORGANIZATIONS

Opportunities for Gray Amendment target groups were carefully examined by the Project Committee. USAID will continue to explore possible use of Gray Amendment organizations during the implementation of the project. In particular, the capability of Historically Black Colleges and Universities (HBCU) to provide training will be further examined. Accordingly, during the implementation of the first year planning activities for the Human Resources Development subproject, USAID will invite the National Association for Equal Opportunity Higher Education (NAFEO) to schedule a visit to Thailand of appropriate and interested HBCU representatives in the area of natural resources and environmental management to discuss the project, review training needs and to explore options for joint efforts. (NAFEO will be expected to use its own resources to finance the costs of any such visit to Thailand.)

USAID will also continue to explore possible use of Gray Amendment firms as sources of technical assistance under the project. In particular, the Mission will attempt to contract qualified Gray Amendment firms to carry out needed project evaluations.

D. IMPLEMENTATION SCHEDULE

A summary implementation schedule and a graphic presentation of the planned project activities is presented in Annex L.

E. MONITORING AND EVALUATION

1. General

This is a "program" type project which will involve a wide number of types of communications and information management. Various organizations will be involved in information/data generation, and various institutions will be involved in the use of the information. Furthermore, information will be generated at multiple levels in the project, and what information will be generated and how and by whom it will be used will also vary by level. Given the preliminary phase of detailed project design at this stage of development, the design team considered that it was impractical to identify exact project information needs at this time. The project is therefore planned so that these needs will be progressively addressed, many of them during the first year of the project. Annex K presents a detailed discussion of the techniques and the framework to be applied.

2. Preliminary Monitoring and Evaluation Plan

2.1 Institutional Locus

There will be more than one institutional locus of the information processes described above. Key planning and monitoring agencies will be involved (NESDB, ONEB and DTEC) as will functional government agencies (MOInt, MOAC, MOE), as well as Thai universities, research institutions, and NGOs. During the life-of-project, USAID will serve as the primary locus for the collection and maintenance of project related data and information. At the same time, USAID will work with the appropriate RTG agencies to facilitate a smooth transfer of these functions to the RTG.

2.2 Information Collection and Dissemination

Much of the primary monitoring information will be generated and used at the project component level (subproject and/or element). Component activities will be monitored directly by the responsible implementing agency and in many cases this will be supplemented by the project-financed consultants. Using this information, all the routine problems, together with recommended solutions, can be brought to the attention of the appropriate Thai and USAID officials in the form of periodic progress reports. These progress reports will examine input/output level progress. Review of project component progress at the input/output level will also take place during the submission of the Annual Work and Financial Plans by the responsible Thai implementing agencies. Each subproject will develop an appropriate mechanism (such as a Subproject Advisory Committee) for coordination among the different subproject elements. Each implementing agency will be required to maintain the needed information and submit it to such a Committee, with copies to USAID.

The project also provides for a significant amount of monitoring and evaluation to be carried out by USAID. Throughout the life-of-project, USAID will facilitate the exchange of project implementation information between components. Furthermore, the project will introduce the use of a Resource Group, comprised of prominent Thai leaders and USAID representatives, to monitor the overall project and help synthesize and disseminate subproject data.

2.3 System Installation

During the first two years of implementation, the project will finance the costs of a long-term Evaluation Advisor (and perhaps short-term assistance through an existing AID/W IQC). This assistance will be used to develop, install and carry out the detailed monitoring and evaluation program for all aspects of the project in collaboration with RTG participating agencies and Thai NGOs. This will involve the design of the overall information system to include detailed elaboration of key questions, identification of the indicators, and the data collection methodologies to be used. At the same time, no precise methodological "blue print" is likely to appear during the first year of the project for developing the perfect project information system. Accordingly, the USAID financed Evaluation Advisor will have to design and install many elements of the information system as management needs become clearer based on actual implementation experience. Objective indicators and data acquisition methodologies will be identified and installed for each subproject activity, and baseline data will be established to meet the needs for later evaluation purposes. The likely framework for measuring progress on policy change objectives is described in Annex L. The project monitoring and evaluation system will, as appropriate, include a gender-disaggregated data base to facilitate data collection for monitoring and evaluation.

2.4 Preliminary Schedule

"Special purpose" evaluations will be held for particular subprojects and activities. Many of these will be done "in-house" by the project support personnel; others may be done by short-term contracting procedures. They will generally be of the rapid, low-cost variety, using techniques such as those recommended in the 1987 AID M&E Guidelines. Evaluations of this type will be used to help explain anomalies, to overcome unforeseen obstacles, or to help decide how best to exploit unforeseen opportunities for expansion, greater spread effect, or initiation of new activities.

A mid-term and final evaluation will be held at the project level (exact timing to be determined with the assistance of the USAID evaluation advisor during the early stages of project implementation). These evaluations will include an examination of progress at all levels; particularly at the purpose, output and input levels. Because of the programmatic nature of this project, it is also expected that the evaluation team will make full use of key informants and semi-structured

interviewing to obtain a comprehensive view of the project's role in and contribution to the processes occurring that effect natural resources management in Thailand.

3. Budget

Within each of the subprojects and elements, funding will be used to support monitoring and evaluation needs. In addition, approximately \$400,000 in grant resources will be used to support project monitoring and evaluation.

F. CONDITIONS AND COVENANTS

1. General

The Project Committee decided that it is premature at this point in the development of the project to identify the actual conditions and covenants that will be included in the Project Grant Agreement. Accordingly, the following identifies the substance of the major issues that will need to be addressed during the preparation and negotiation of the Agreement.

2. Conditions

The Project Grant Agreement will need to provide that prior to the disbursement of grant funds for any particular project component (subproject and/or subproject element), USAID will have received satisfactory documentation certifying the authority of those individuals responsible for implementing the particular project component, and an adequate implementation plan for the first full year of the project.

Prior to the disbursement of funds for research grants under the project, the Agreement should require USAID review and approval of the selection criteria and procedures for the award of the grants as well as the procedures for the administration of grant resources.

3. Covenants

The Project Grant Agreement will need to provide an unusual degree of budgeting flexibility in order to effectively respond to project activity needs as they arise. One approach might be to clearly indicate in Annex I (Amplified Project Description) that the budget is illustrative, and after a mid-term evaluation a formal reprogramming of budget funds will be considered. Another approach might be to avoid the full programming of obligated funds under the Agreement beyond the first two full years of project implementation, and instead provide for a formal evaluation and programming of all remaining obligated funds at the end of this initial period.

4. Other Considerations

USAID and RTG will need to reach agreement on the priority policy areas to be addressed during the implementation of the project. This agenda and the means for measuring progress and for changing priorities when necessary will be described in Annex 1 to the Project Grant Agreement.

The Project Grant Agreement will need to provide that USAID can use (with no further RTG approval) a specific level of grant funds allocated under the Project Administration and the Monitoring/Evaluation/Audit budget line items to directly finance related project support services. In addition, the Agreement will need to indicate that certain project financed NGO grants, PASAs, PSCs and Cooperative Agreements, specified in Section III.B, will be negotiated, executed and managed directly by USAID without further RTG approval.

Project cost sharing by the implementing agencies should also be an important point of discussion during the negotiations of the Project Grant Agreement. As implementation progresses, the Mission should seek increasing levels of financial support from all counterpart agencies. The goal would be to have, by the end of the project, all (or at least the bulk) of the costs of the related project activities being financed from non-AID sources.

IV. SUMMARIES OF ANALYSIS

A. FINANCIAL ANALYSIS

1. The Overall Project

The MANRES Project is unique in that it is made up of seven major, relatively independent subprojects. Even though the flow of funding for the project as a whole will follow the standard procedures that USAID and the RTG have utilized in previous bilateral projects, there will be specific instances where adaptations of those standard procedures will be required to fit the implementation requirements for specific subprojects and subproject elements.

The majority of project funds will flow to agencies of the RTG for payment of eligible costs for implementing subproject elements. Reimbursement for such eligible project costs will be made using procedures that have been established with DTEC for financing bilateral projects. In addition to these RTG procedures, USAID will establish direct contractual and/or grant relationships with selected U.S. organizations/institutions through Participating Agency Service Agreements (PASAs), Cooperative Agreements, Grants and/or Personal Service Contracts (PSCs). Where such direct relationships are established, USAID will directly reimburse eligible foreign exchange and local currency costs for contractual personnel or will establish an appropriate financing mechanism, such as a Letter of Credit, to provide the necessary funding. In addition, implementation of some of the subproject elements may, in specific cases, require that USAID directly fund grants or contracts to indigenous Thai institutions and/or organizations (Federation of Thai Industries, Thailand Development Research Institute), other selected non-governmental organizations (NGOs), and specified university research programs. When such grants or contracts are awarded, USAID will provide advances of funds on a case-by-case basis.

Shortly after the Project Agreement is signed, a series of subproject-oriented Pre-Project Implementation Workshops will be conducted by DTEC and USAID with appropriate RTG implementing agencies. Representation at such workshops will include DTEC, the RTG implementing agencies for the particular subproject or element, and the appropriate USAID financial and subproject management staff. The purpose of these workshops will be to assist the RTG implementing agencies in the development of the 1989 Annual Work and Financial Plans and to discuss the roles and responsibilities of all project participants. Methods of assuring adequate resources to fund RTG contributions will also be discussed. Upon completion and approval of these Plans, DTEC will be able to advance funds each trimester to the implementing agencies to cover eligible Thai Fiscal Year 1989 local currency grant costs. Upon approval and completion of this initial planning process, DTEC and the appropriate implementing agencies should begin the process of scheduling

the next round of this planning process (June 1989) for the following year of the project. This will be repeated annually during the life-of-project. [NOTE: Funding required by RTG implementing agencies for the initial cycle of project implementation, Thai Fiscal Year 1989, may have to be put in place through the 'Special Funds' allocation process of the RTG.]

The process for developing Annual Work and Financial Plans for the non-government implementing agencies will be similar to that mentioned above, except that such plans will be submitted directly to USAID for review and approval. Such Plans will be developed by each of the recipient institutions or organizations and USAID will approve them prior to the disbursement of project funds for implementation of any of the elements in a particular subproject. After such approval, USAID will issue a Project Implementation Letter to earmark/commit project funds to a specific element of a subproject.

2. Subproject Financing

As noted above, the MANRES Project will consist of at least seven major subprojects, each of which will utilize a combination of established financial procedures and an adaptation of these procedures for procuring the unique services that may be required to implement specific subprojects and subproject elements. Annex G outlines the flow of funds and provides detailed narratives to illustrate the types of interventions that are planned and the financial management requirements that the project may require. It should be noted that these flows may, in fact, require modification as project implementation proceeds.

3. Sustainability of the Project

The major focus of project funded activities will be the enhancement of the institutional capacity of both RTG and non-governmental institutions and organizations. This will be accomplished through the financing of a variety of: (a) studies and action-research carried out by Thai policy and development planning agencies; (b) selected existing or specially developed long and short-term training programs; (c) seminars, workshops, and observation/study tours; (d) applied research grants to universities and NGOs; and (e) action or demonstration programs at regional, provincial and local levels. As presently designed, the project will not be funding any construction activities or the procurement of any commodity which will result in long-term maintenance or operation costs.

RTG and non-governmental implementing agencies will be expected to provide budget and in-kind contributions to the support of project-funded activities in which they will be engaged. Such in-kind contributions may include budgeting for the salary support costs of additional staff and office space, travel costs, and other costs that may be required to implement the particular project-funded activities. In addition, local currency contributions are programmed for the action programs in the

Rural Resources Management subproject and for selected NGO activities in the Biological Resources Management subproject and the Environmental Awareness and Education subproject.

As implementation progresses, Thai organizations will assume an increasingly greater share of the local costs of project activities. As a result, adequate provisions to sustain project-funded activities beyond the Project Assistance Completion Date (PACD) will be incorporated into the initial design and approval process of each of the subproject elements that are to be financed under the project. The issue of sustainability of the individual subprojects will be addressed during the periodic monitoring and evaluation reviews of each subproject and its component activities. In addition, the Mid-Term Project Evaluation will review the overall project record in addressing the sustainability issue. If such reviews determine that unanticipated problems related to sustainability exist, an adjustment of subproject or overall project design and implementation, subject to RTG approval, can be incorporated into a restructured project.

4. Audit and Financial Review

Funds have been programmed to be used by USAID to carry out Non-Federal audits and financial reviews of organizations involved in the project.

5. Project Administration, Monitoring and Evaluation

Grant funds allocated under the Project Administration and the Monitoring and Evaluation budget line items will be used by DTEC and USAID to procure required project support services. DTEC will contract the services of an Administrative Systems Analyst/Liaison Officer for the duration of the project. DTEC will also procure commodities needed for administrative and logistical support (computer hardware/software, photocopy and facsimile equipment, office furniture and materials, and vehicle). USAID will contract the services of a Natural Resources and Environmental Advisor for the duration of the project and the services of a Monitoring and Evaluation Specialist for at least the first two years of the project. USAID in cooperation with DTEC will also contract short-term technical services to assist in organizing and carrying out Pre-Project Implementation Workshops, and finance the development of printed and audio-visual materials to orient the RTG implementing agencies responsible for preparing Annual Work and Financial Plans.

6. Summary Budget/Financial Tables

The following six tables summarize various financial aspects of the overall project. Table 1 provides a summary financial plan of the cost estimates and the sources and applications of all the project resources. It incorporates estimates of both financial and in-kind contributions. [Table 2 provides a detailed break-out of the various inputs of each subproject by sources of funding; this table is included in Annex G]. Table 3 provides methods of implementation and financing for each subproject. Table 4 provides a summary of the USAID grant-financed cost of project inputs for each subproject. Table 5 provides a life-of-project illustrative financial plan of annual commitments for each subproject. [Table 6 provides illustrative life-of-project budget estimates by subproject element for each of the seven subprojects; this table is included in Annex G].

It should be noted that these tables are ILLUSTRATIVE and may therefore require adjustment at various stages during the life-of-project. Nonetheless, they provide an overall summary of the flow of project funds over the life-of-project. More detailed break-out of the financial data are provided in Annex G.

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
1. COASTAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	1228	0	1228	140	0	0	0	1368
B. Short-Term Technical Assistance	790	200	990	50	0	0	0	1040
C. Studies	200	350	550	130	0	50	0	730
D. Workshops/Seminars/Conferences	50	170	220	200	0	20	0	440
E. Training/Observation/Study Tours	190	330	520	250	0	40	30	840
F. Commodities	250	300	550	330	0	0	0	880
G. Applied Research Grants	0	450	450	150	0	50	0	650
H. Other	180	970	1150	110	0	160	0	1420
SUBTOTAL	2888	2770	5658	1360	0	320	30	7368
2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT								
A. Short-Term Technical Assistance	780	300	1080	48	0	267	516	1911
B. Commodities	0	170	170	75	0	100	0	345
C. Studies	0	125	125	30	0	0	0	155
D. Training/Observation/Study Tours	520	200	720	180	0	63	0	963
E. Workshops/Seminars/Conferences	0	240	240	25	0	100	0	365
F. Other	35	630	665	5	0	114	0	784
SUBTOTAL	1335	1665	3000	363	0	644	516	4523
3. BIOLOGICAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	661	0	661	80	0	15	0	756
B. Short-Term Technical Assistance	180	90	270	170	0	15	10	465
C. Studies	0	2640	2640	660	0	156	0	3456
E. Training/Observation/Study Tours	280	104	384	104	0	0	0	488
F. Workshops/Seminars/Conference	150	150	300	90	0	40	15	445
G. Commodities	0	248	248	132	0	52	0	432
H. Other	0	600	600	600	0	200	0	1400
SUBTOTAL	1271	3832	5103	1836	0	478	25	7442

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A. I. D.			HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
4. RURAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	549	0	549	21	0	0	0	570
B. Short-Term Technical Assistance	360	0	360	30	0	0	0	390
C. Training/Observation/Study Tours	238	792	1030	314	0	0	0	1344
D. Commodities	52	330	382	348	0	0	0	730
E. Workshops/Seminars/Conferences	36	472	508	220	0	0	0	728
F. Studies	0	220	220	220	0	0	0	440
G. Sustainable Rural Resources Development Fund	0	1000	1000	3000	0	0	0	4000
H. Applied Research Grants	0	750	750	750	0	0	0	1500
I. Other	0	880	880	880	0	0	0	1760
SUBTOTAL	1235	4444	5679	5783	0	0	0	11462
5. HUMAN RESOURCES DEVELOPMENT								
A. Long-Term Technical Assistance	424	0	424	0	0	0	0	424
B. Technical Support	0	35	35	0	0	0	0	35
C. Observation/Study Tours/Seminars	83	75	158	22	0	0	0	180
D. Long-Term Training								0
-Technical (770 PMs)	1816	0	1816	428	683	0	0	2927
-Masters Degree (50@ x 24 months)	2472	0	2472	412	547	0	0	3431
-Doctoral Degree (30@ x 48 months)	2956	0	2956	405	515	0	0	3876
E. Short-Term Training (455 PMs)	1555	378	1933	224	78	0	0	2235
F. Commodities	0	46	46	0	0	0	0	46
G. Other	200	450	650	0	110	0	0	760
SUBTOTAL	9506	984	10490	1491	1933	0	0	13914
*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.								

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	TOTAL
6. ENVIRONMENTAL AWARENESS & EDUCATION								
A. Short-Term Technical Assistance	300	90	390	3	1	0	0	394
B. Workshops/Seminars/Conferences	0	130	130	30	0	0	0	160
C. Training/Observation/Study Tours	100	340	440	80	0	50	10	580
D. Commodities/Video Production	230	300	530	20	0	80	0	630
E. PVO Grants	0	1000	1000	0	0	250	0	1250
F. Other	0	860	860	270	0	90	0	1220
SUBTOTAL	630	2720	3350	403	1	470	10	4234
7. POLICY ANALYSIS & DEVELOPMENT								
A. Long-Term Technical Assistance	875	10	885	100	0	0	0	985
B. Short-Term Technical Assistance	480	0	480	60	0	0	0	540
C. Commodities	0	100	100	20	0	10	0	130
D. Studies	0	1000	1000	60	0	70	0	1130
E. Workshops/Seminars/Conferences	0	130	130	20	0	20	0	170
F. Training/Observation/Study Tours	200	100	300	30	0	50	30	410
G. Policy Research Grants	0	2000	2000	50	0	330	0	2380
H. Other	0	420	420	70	0	30	0	520
SUBTOTAL	1555	3760	5315	410	0	510	30	6265
8. MONITORING/EVALUATION/AUDIT	300	100	400	0	0	0	0	400
9. PROJECT ADMINISTRATION	1200	900	2100	0	145	0	0	2245
10. CONTINGENCIES	1161	1744	2905	0	21	0	0	2926
GRAND TOTAL	21081	22919	44000	11646	2100	2422	611	60779

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
1. Coastal Resources Management			
-TA(URI)	AID-Direct CA	Direct Pay	2218
-Studies	HC Contract	HC Reimbursement	550
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	220
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer HC Reimbursement	520
-Commodities	HC Contract	HC Reimbursement	550
-Research Grants	HC Contract	HC Reimbursement	450
-Other	HC Contract	HC Reimbursement	1150
Total			5658
2. Urban Industrial Environ. Mgt.			
-TA(WEC)	AID-Direct CA	Dir.Pay/LOC(FRLC)	600
-TA(CF)	AID-Direct CA	Dir.Pay/LOC(FRLC)	480
-Studies	HC Contract	HC Reimbursement	125
-Commodities	HC Contract	HC Reimbursement	170
-Training/Observation/ Study Tours	HC Contract/ PIO/P	HC Reimbursement/ Credit Transfer	720
-Workshops/Seminars/Conferences	HC Contract	HC Reimbursement	240
-Other	HC Contract	HC Reimbursement	665
Total			3000
3. Biological Resources Mgt.			
-TA(USNPS,USF & WS)	PASA	Direct Pay	661
-TA(WWF)	AID-Direct Grants	Direct Pay	270
-Research Grants	HC Contract	HC Reimbursement	2640
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer HC Reimbursement	384
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	300
-Commodities	HC Contract	HC Reimbursement	248
-Other	HC Contract	HC Reimbursement	600
Total			5103

TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
4. Rural Resources Management			
-Technical Assistance	HC Contract	HC Reimbursement	909
-Training/Observation/ Study Tours	HC Contract & PIO/P	HC Reimbursement/ Credit Transfer	1030
-Workshops/Seminars Conferences	HC Contract	HC Reimbursement	508
-Studies	HC Contract	HC Reimbursement	220
-Applied Research Grants	HC Contract	HC Reimbursement	750
-Sustainable Rural Resources Development Fund	HC Contract	HC Reimbursement	1000
-Commodities	HC Contract	HC Reimbursement	382
-Other	HC Contract	HC Reimbursement	880
Total			5679
5. Human Resources Development			
-TA(Consultant)	AID-Dir Contract	Direct Pay	424
-Tech. Support	AID-Dir Contract	Direct Pay	35
-Training	PIO/Ps	Credit Transfer	9177
-Observation/Seminars Study Tours	HC Contract	HC Reimbursement	158
-Commodities	HC Contract	HC Reimbursement	46
-Other	HC Contract	HC Reimbursement	650
Total			10490
6. Environ.Awareness & Education			
-TA(PSC & NGOs)	AID-Dir Contract	Direct Pay	390
-TA(Universities & NGOs)	AID-Dir.Contract	Direct Pay	1000
-Commodities	HC Contract	HC Reimbursement	530
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	130
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer/ HC Reimbursement	440
-Other	HC Contract	HC Reimbursement	860
Total			3350

TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
7. Policy Analysis & Development			
-TA(Long-Term)	AID-Dir Contract	Direct Pay	885
-TA(Short-Term)	AID-Dir.Contract	Direct Pay	
	& HC Contract	HC Reimbursement	480
-TDR1 Core Program Support Grant	HC Contract	HC Reimbursement	2000
-Commodities	HC Contract	HC Reimbursement	100
-Policy Studies/Applied Research	HC Contract	HC Reimbursement	1000
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	130
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer/ HC Reimbursement	300
-Other	HC Contract	HC Reimbursement	420
Total			5315
8. Monitoring/Evaluation/ Audit	AID-Dir Contract	Direct Pay	400
	HC Contract	HC Reimbursement	1200
9. Project Administration	AID-Dir Contract	Direct Pay	900
10. Contingencies	X	X	2905
Grand Total	X	X	44000

TABLE 4
 COST OF PROJECT INPUTS (USAID GRANT)
 LOP BUDGET MAHRES PROJECT
 (U.S. \$000)

SUBPROJECT	PROJECT INPUTS								GRAND TOTAL
	Technical Assistance Long-Term	Technical Assistance Short-Term	Studies	Workshops/Seminars/Conferences	Training/Observation/Study Tours	Commodities/Video Production	Applied Research Grants	Other	
1. Coastal Resources Management	1228	990	550	220	520	550	450	1150	5658
2. Industrial Environmental Management	0	1080	125	240	720	170	0	665	3000
3. Biological Resources Management	661	270	2640	300	384	248	0	600	5103
4. Rural Resources Management	549	360	220	508	1030	382	750	1880	5679
5. Human Resources Development	459	0	0	0	9335	46	0	650	10490
6. Environmental Awareness & Education	0	390	0	130	440	530	1000	860	3350
7. Policy Analysis & Development	885	480	1000	130	300	100	2000	420	5315
8. Monitoring/Evaluation/Audit	0	0	0	0	0	0	0	400	400
9. Project Administration	0	0	0	0	0	0	0	2100	2100
10. Contingencies	500	500	400	305	300	200	400	300	2905
TOTAL	4282	4070	4935	1833	13029	2226	4600	9025	44600

TABLE 5
 MANRES PROJECT
 LOP ILLUSTRATIVE FINANCIAL PLAN
 OF
 ANNUAL COMMITMENT
 (U.S.000)

Source/Uses	Yr.1 FY89	Yr.2 FY90	Yr.3 FY91	Yr.4 FY92	Yr.5 FY93	Yr.6 FY94	Yr.7 FY95	TOTAL
1.Coastal Resources Management	2318	337	720	990	600	393	300	5658
2.Industrial Environmental Management	238	441	607	523	487	427	277	3000
3.Biological Resources Management	945	1500	1300	658	400	225	75	5103
4.Rural Resources Management	1000	1750	1300	900	350	229	150	5679
5.Human Resources Management	1212	1346	1570	1829	1869	1572	1092	10490
6.Environmental Awareness and Education	270	880	1215	335	335	225	90	3350
7.Policy Analysis and Development	2000	925	750	630	460	350	200	5315
8.Monitoring/Evaluation/Audit	25	25	50	150	25	25	100	400
9.Project Administration	500	450	350	300	250	175	75	2100
10.Contingencies	217	450	750	550	450	350	138	2905
TOTAL	8725	8104	8612	6865	5226	3971	2497	44000

B. ADMINISTRATIVE ANALYSIS

1. Introduction

The administrative analysis of the various project implementing agencies was carried out by Thai consultants from the National Institute for Development Administration (NIDA). The analysis included three elements. First, a specification of criteria or guiding principles for evaluating alternative structural arrangements. Second, a review of the existing Thai institutional and legal framework in order to identify appropriate lead implementing agencies. Third, derivation of conclusions concerning feasible administrative arrangements. The full report is available in the USAID files. A summary presentation is included in Annex H.

The Project Design Committee has carefully reviewed the USAID administrative and management burdens which are anticipated to be generated as a result of the proposed project activities. The review included a thorough analysis of the expected durations of ongoing USAID projects and the related impacts on the Mission's transition strategy to phase over to full implementation of the revised "middle income country" strategy.

2. Major Findings

2.1 Project Implementing Arrangements

Effective management requires that each of the seven subprojects has its own set of administrative arrangements. As it turns out, administrative structures for each of the subprojects can be quite easily put in place on the Thai side, since many either already exist or could be installed following standard procedures.

The rationale for having separate administrative arrangements for each subproject is to decentralize decision making processes, and hence to increase flexibility and reduce complexity in project management. The design is appropriate for this project precisely because each component (subproject and/or subproject element) can stand alone; the success of the project does not depend on all of the components having to succeed simultaneously. While some components are interrelated, they are not interdependent to the extent that less than optimum performance of any single component automatically affects other components. In sum, the project's objective of developing cost effective and sustainable approaches for resolving key natural resource problems and for increasing public and private sector understanding and involvement can best be met by encouraging the participation of relevant RTG and non-RTG agencies through multiple administrative arrangements.

Although the number of implementing agencies appears to be unusually large, in the final analysis the option of choosing from among a field of candidate agencies simply did not arise. In many cases, for a given activity only one key implementing agency could be identified.

A description of proposed administrative arrangements for each subproject is included in Annex H. The proposed arrangements should by no means be viewed as a blueprint. For sustainability in the long run, it is essential that administrative arrangements be acceptable to all concerned implementing agencies as well as those with a coordinating or support role. Such acceptance can best be achieved when participating agencies are allowed to take the initiative in devising workable administrative structures.

Diagram 1 illustrates the Project's overall institutional and administrative linkages. Since each subproject will be managed by different sets of Thai implementing agencies, USAID managers (largely FSN staff) will be assigned to each subproject to work with these agencies to facilitate the coordination and resolution of day-to-day implementation issues. One USDH professional (the Mission Natural Resources Officer) will be designated as the MANRES Project Officer and will be assigned the full-time responsibility for coordinating the work of the USAID subproject managers. In order to provide for the systematic generation and dissemination of project related data, USAID will also contract a long-term evaluation advisor to develop, install and manage a comprehensive project information and evaluation system. Information on implementation experiences will flow through the USAID subproject managers to the MANRES Project Officer, who will transmit regular progress reports to USAID management.

Information will also be transmitted to the involved Thai agencies, and key policy makers through a variety of channels. Subproject advisory committees will be set up, when appropriate, to serve as an informal means of coordination and liaison among different subproject elements. An Advisory Group (or Resource Group) of prominent Thai leaders and USAID representatives will be established to disseminate and discuss overall project results and, as appropriate, offer advice. Project representatives from USAID and the involved implementing agencies will interact with this Group to seek maximum opportunity for linkages and information flows among subproject activities. A joint USAID-RTG Project Committee will be convened by USAID (on an informal basis at first) in order to disseminate and review information on important project experiences with key RTG policy makers. In short, in the initial stages, USAID will have to assume a lead monitoring, evaluation, and coordinating role. Once tangible results are produced, it may be advantageous to set up an RTG committee, chaired by NESDB and with ONEB as its secretariat, to perform this function.

DIAGRAM 1 MANAGEMENT OF NATURAL RESOURCES AND ENVIRONMENT PROJECT
PROGRAMMATIC ELEMENTS & LINKAGES

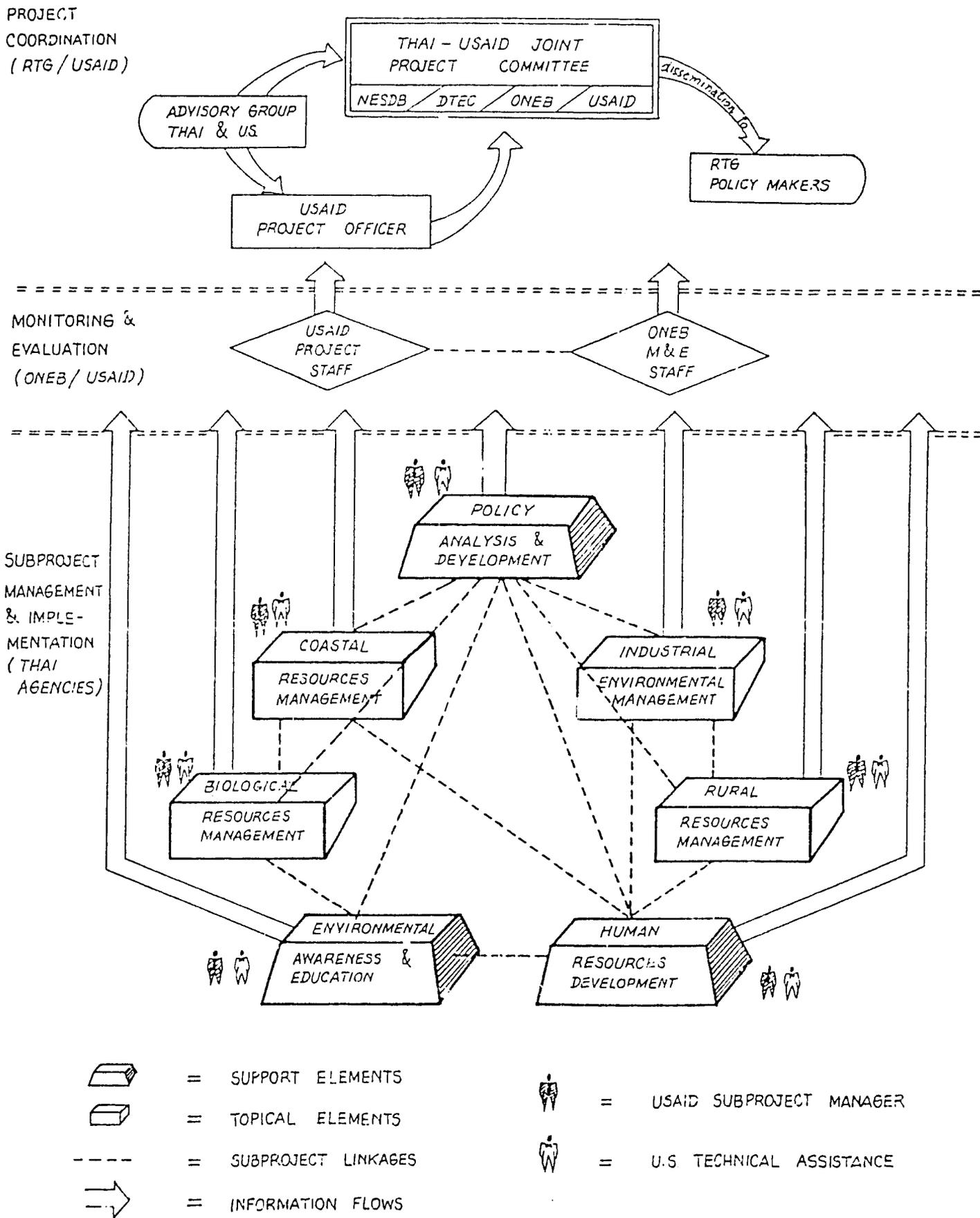
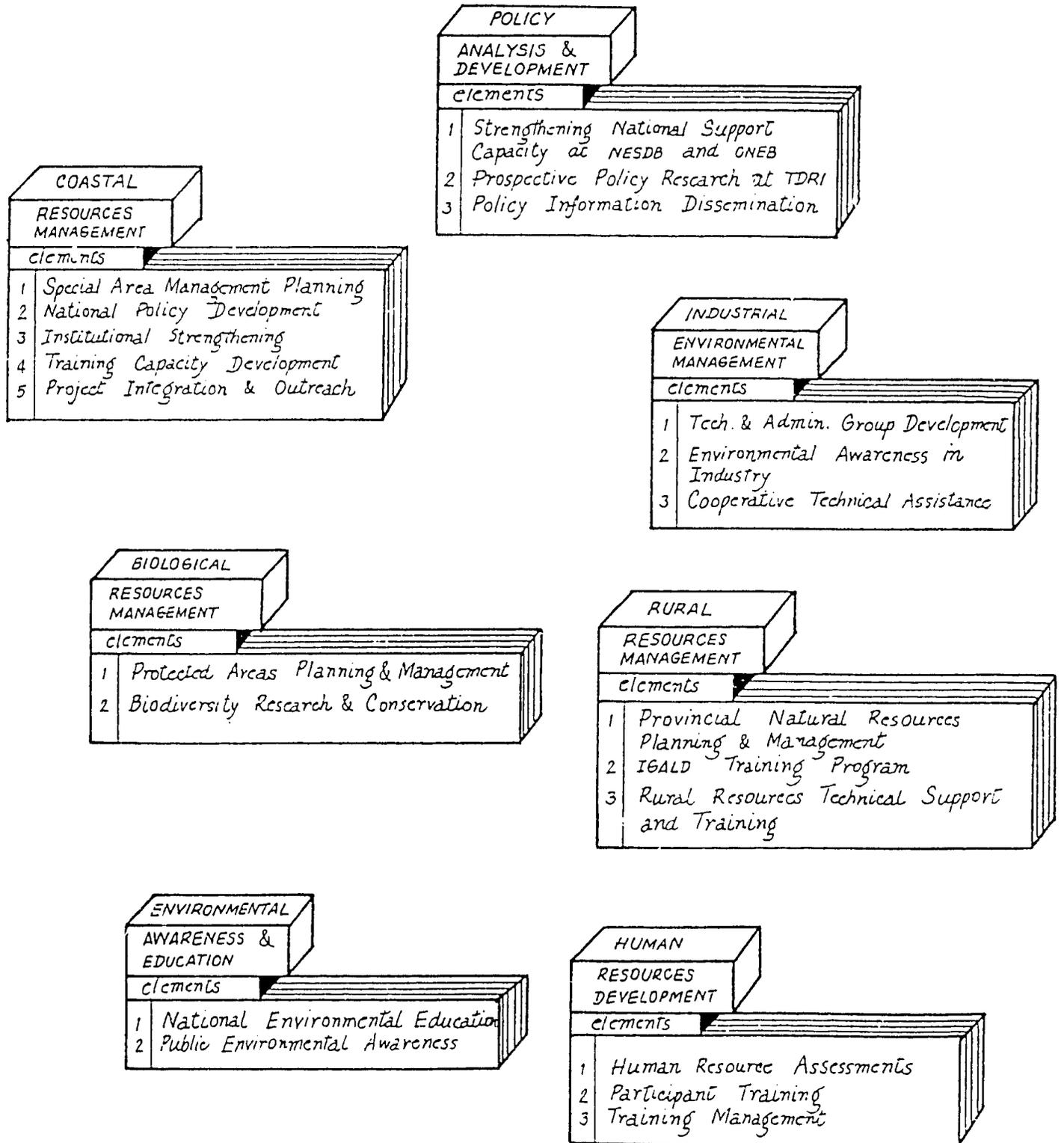


DIAGRAM 2 SUBPROJECT ELEMENTS



Workshops and conferences will be carried out periodically to effectively exchange information and experiences gained from all subprojects. As a result of this information exchange, it is anticipated that those persons most directly involved in the policy process will more fully understand the impacts of important policy issues and the types of policy initiatives which will lead to improved management of natural resources in the environment. This will be done through the dissemination of research results and the provision of solicited expert advice from outside Thailand which is later filtered, modified and recast in terms and time dimensions that will likely be untraceable to their origin. Policy initiatives in this form can then be successfully espoused and promoted indigenously.

2.2 USAID Administrative Considerations

Even though the project will require significant levels of regular and intensive inputs of staff resources, the USAID staff currently available, and those staff members projected to become available, should be sufficient to meet the needs of the project. As a part of these staffing adjustments, the need for additional FSN support for the RCO will need to be addressed. Accordingly, the staffing arrangements described herein will not cause any unreasonable administrative burden on USAID nor any significant disruptions in the overall management of the USAID project portfolio while providing adequate AID monitoring and administrative support for the project. Furthermore, the analysis indicates that the proposed project activities should not generate any unreasonable demand for increased USAID logistic support.

3. Conclusions

No single Thai agency is capable of managing the entire project, and the creation of a centralized control committee to perform this function would be ineffectual. The administrative structure least likely to fail in a project as complex as the MANRES Project is one that can be decomposed into separately administered components, each capable of being implemented independently of the rest. Finally, even though each subproject will require a significant amount of regular USAID project officer backstopping, the administrative burden created by the MANRES project can be accommodated by the Mission.

C. SOCIAL SOUNDNESS ANALYSIS

1. Introduction

A "social programmatic analysis" was conducted by Dr. Terry Grandstaff, East-West Center Environment and Policy Institute, as a part of the intensive review of the project. Grandstaff used a "landscape zone" analytical approach to relate population and sectors of the society with natural resource contexts and practices. The full social soundness report is available in the USAID file. Annex I presents a detailed discussion of: (a) present-day Thai society's ability to undergo the kind of developmental process this project entails ("sociocultural feasibility"); (b) the likely manner in which wide communications and spread effects may be achieved ("spread effects"); (c) the immediate beneficiaries likely to be involved, as well as the probable ultimate beneficiaries likely to be differentially affected within the society, with special reference to differential effects by gender ("beneficiaries"); and (d) how the project will deal with social issues and social analysis during implementation as these become more clear during the life of the project ("implementation issues").

2. Major Findings

The project is considered feasible in the Thai sociocultural context. Perhaps most important, the project is now extremely timely; many indicators show there is a clear need for environmental preservation and enhancement and there is an increasing recognition of the urgency of that need throughout many sectors of the society. For example, debates on deforestation and how to reverse it appear in both the English and Thai press daily.

Relative incentives will be important in determining how Thais will respond to the need for improved environmental and natural resources management. Because project design provides for specification of activities during implementation, it is not now possible to provide a definitive assessment of incentives.

Another aspect of sociocultural feasibility concerns the ability of Thai society to undertake a process in which hard decisions must be made about natural resource usage practices. There are indications that Thai society will be able to respond to and successfully manage natural resource usage issues, given the assistance the project will provide. First, environmental problems are now much more widely recognized. Second, the way in which decisions are made in Thai government is often iterative. That is, "firm" plans are subjected to short waiting periods while various groups and sectors of the society react, allowing a better chance for a more equitable, and thus more potentially successful, solution. Third, formal processes such as the Parliament and electoral system are becoming increasingly important and viable, offering further channels for the expression of needs and forums for helping to reach consensus on what should be done. Fourth, there are many values strongly

embedded in Thai culture that will tend to support finding solutions to environmental and natural resources management issues. These include a strong desire for social and natural order, reinforced by Buddhism and deep respect for the Monarchy. Finally, the nature of information exchange and decision-making in Thai society offers many venues that the project can take advantage of, both to help the society manage the process, and to contribute to spread effects as well.

The probability for society-wide spread effects is potentially very high. Spread effects and communications strategies have been considered in the design of the project and are seen as essential to the project goal. The way in which information is passed and opinions are formed within Thai society means that issues can be more quickly addressed and the "best way" to solve problems can be widely shared (i.e., through informal contacts and "lateral" connections, such as classmate and kinship networks which interconnect separate agencies and economic sectors). The project plans to take advantage of these modes by use of workshops, conferences, and separate committees, some of whose memberships will partially overlap. Also, the role of the mass media, especially television, is proving to be a new and powerful venue for the sharing of opinion and in helping to reach consensus on issues. The project, through its Environmental Awareness and Education Subproject, plans to take advantage of this venue as well.

In general, it is anticipated that the project should have significant direct and indirect impacts on the lives of the vast majority of the country's population. The issue of the role of women in Thai society and their possible participation in the project was also considered. In general, it was found that women should be well represented. In addition, it was decided that this issue will require special attention during project implementation. Accordingly, an important element of the design of the project monitoring and evaluation system will be a gender-disaggregated data base (Annex L).

3. Conclusions

Overall, the analysis carried out by the consultant indicates that the activities included in the project will address natural resources related issues relevant to the majority of people in the nation. Furthermore the design of the proposed project is compatible with the sociocultural environment in which it is to be introduced.

D. TECHNICAL ANALYSIS

1. General

The project design emphasizes four general areas of activity: manpower and institutional development; environmental awareness promotion; policy analysis and development; and action-research to demonstrate improved natural resources planning and implementation at regional, provincial and local levels. The design does not promote the development and application of new technologies; rather it stresses the role of appropriate institutional alliances and information exchange in utilizing existing technologies to greater advantage. Incremental improvements in natural resources planning and management in Thailand will result from increased access to and flow of information, involving key institutions and individuals strategically linked to the critical issues and constraints affecting decisions on natural resource allocation and utilization.

2. Technical Feasibility

A major premise of the project is that improved information, and strengthened institutional capacity to act on such information, will set in motion the private and bureaucratic incentives needed to remedy non-sustainable resource utilization practices. The other project analyses (Economic, Financial, Social and Administrative) support this premise and justify a design that helps to accelerate the development of Thai capacities to identify, define, analyze, and over time reduce the adverse impact of current and emerging natural resource and environmental problems.

Correct technical approaches and the testing of alternative courses of action will be critical to the success of the project's various activities; moreover, the project design has taken this into account by building into the design a carefully phased sequence of implementation actions requiring technical assistance. Each of the subprojects will require a combination of long-term and short-term technical assistance to facilitate planning, training, action-research, and monitoring and evaluation that will be carried out by Thai implementing agencies and support institutions. In large part, technical assistance under the project will build on a number of cooperative relationships between U.S. and Thai institutions that have been nurtured over recent years (e.g., cooperation between the Office of the National Environment Board and the University of Rhode Island in the area of coastal resources management, and collaboration between the Royal Forest Department's National Parks Division and the U.S. National Park Service in the area of protected area planning and management). USAID Thailand has taken the position that current technical cooperation in natural resources and environmental management, when it has produced documented positive results, should be extended and strengthened for the purpose of efficiency in moving forward with the new project.

An aspect of the project that deserves special mention in the context of technical feasibility is the incremental, quasi-experimental nature of the various field activities proposed under the "sectoral" subprojects. The Coastal Resources Management subproject, the Industrial Environmental Management subproject, the Rural Resources Management subproject, and the Biological Resources Management subproject all involve a "learning approach" in addressing the principal issues and management concerns. This approach places a premium on going with what works (to improve natural resource and environmental analyses, planning exercises and management measures) and rejecting what does not work. Thus, an ongoing capacity to effectively monitor and evaluate the experience of pilot actions and demonstration initiatives, in direct collaboration with Thai implementing agencies and support organizations, will be a major target of USAID-financed technical assistance. The Monitoring and Evaluation Plan (Annex L) underscores this feature of project design and links the "learning process" orientation of proposed monitoring and evaluation arrangements to building public understanding of and consensus on needed reforms in implementing national policies.

3. Sustainability Issues

The project and its underlying structure of seven administratively independent subprojects is feasible in terms of both technical approach and ability to make mid-course adjustments in courses of action through technically appropriate monitoring and evaluation. The concentration on institutional strengthening, training and locally relevant action-research and demonstration activities argues for a substantial level of external technical assistance throughout the life-of-project. Of central importance to achieving the project purpose and goal, however, is the orderly and sustained transfer of technical skills and analytical capabilities to the Thai institutions and individuals that must carry on and extend the achievements made under the project into the future. This requires not merely "technology transfer," but rather knowledge and information transfer that must reach all levels of Thai society in order to achieve the synergistic impact envisioned in the project design. In other words, the provision of external technical assistance must be replaced at appropriate intervals by Thai counterpart expertise and by an enhanced capacity of Thai training institutions to generate needed expertise.

The key to sustaining what is accomplished under the project is institutionalizing the approaches, the analytical techniques and the evaluative processes that lead to learning and understanding. Natural resources and environmental management can be "demystified" by demonstrating that it is not so much a technical field as it is an arena for social discourse, economic adjustment and political compromise. The project design recognizes this and accordingly places great emphasis on the process of institutional development at national, regional and local levels. Project success will ultimately be measured in terms of the Thai human resource and knowledge base that is left in place.

4. Conclusion

The technical analysis indicates that the proposed Project is feasible and technically sound.

E. ECONOMIC ANALYSIS

Thailand's economic transformation from an agrarian economy in the 1950s into a rapidly industrializing country in the 1980s is one of the few truly remarkable success stories in economic development in recent years. This accelerated growth performance was fueled by a generous natural resource endowment, facilitated by a favorable sociocultural climate and enterprising private sector, and guided by prudent macroeconomic management.

Due to the large number of people employed in natural resource dependent activities in Thailand, the role of natural resources as inputs to other activities, and the potential for sustainable growth based on future resource use, renewable natural resources play an especially important role in Thai economic development. Although the agricultural sector's share in GDP (17.4%) is slightly smaller than that of the manufacturing sector (21%), the collective direct and indirect (inputs, food processing, wood products) contributions of agriculture (crops, livestock, fisheries, forests) make this the single most important sector in the Thai economy. The natural resource-dependent sectors of the Thai economy are responsible for more than two-thirds of Thailand's exports and employ approximately 70% of the Thai work force. Furthermore, as an economic resource these sectors are significant in that they can continue to provide a constant or growing source of goods in the future if they are properly managed.

It follows that because Thailand is a resource-based economy with a growing but still resource-based industrial sector, improved management and efficient utilization of the country's natural resources and the environment are key to the transformation of current levels of rapid economic growth into sustainable economic development. Given the external diseconomies often associated with exploitation of natural resources and environmental degradation, some kind of intervention by government is usually required to ensure that private producers bear costs closer to the costs to the economy and society as a whole, and consequently to reduce pollution and resource use to levels closer to the social optimum. Far from retarding economic growth, the purpose of such measures is to ensure that economic development may be sustained.

Thailand's environmental problems have already been well documented in this Project Paper. They include excessive deforestation, destruction of critical watersheds, flooding and soil erosion, sedimentation of irrigation reservoirs, cultivation of fragile lands, overfishing, air and water pollution, loss of genetic and biological resources, and underinvestment in rehabilitation, regeneration, and conservation of

valuable natural resources. Continued wasteful use of critical natural resources will eventually undermine the sustainability of the development process. The severity of these problems is increasingly recognized by the public and readily acknowledged by Thai policy makers.

What is much less recognized and certainly less understood, however, is the underlying cause of these problems. After all, Thailand's remarkable growth performance suggests a strong interest in the future as manifested in high savings and investment rates over the long term and considerable capital accumulation to date. That a growth-minded society will dip into its resource base so liberally and wastefully should at least be puzzling. Investment in reproducible capital involves sacrifice of present consumption in exchange for the promise of higher future consumption. And so does conservation of natural resources. The destruction of critical watersheds, the siltation and inadequate maintenance of irrigation systems, the erosion of prime croplands, the inefficient use of scarce water, the inappropriate use of pesticides, the destructive exploitation of coastal fisheries and mangrove forests, and the loss of valuable genetic resources are not consistent with maintenance of the resource base and contribute nothing to sustainable improvement in productivity. Obviously, the farsightedness and efficiency that otherwise characterize Thai economic development have not been operative in the area of natural resource management and utilization.

Inasmuch as there is no intrinsic reason why a growth-oriented society such as Thailand should choose to run down its resource base and undermine its potential for future growth, the explanation must be sought in the functioning of the institutions entrusted with the allocation of resources and the structure of incentives that these institutions generate. It has been hypothesized (see Annex J) that the excessive exploitation, inefficient utilization, inadequate conservation and lack of investment in regeneration of natural resources in Thailand are the results of massive market failures within an institutional vacuum compounded by unintended but powerful policy distortions. That is, allocation of natural resources in Thailand has been left to the market but without the necessary institutional base for its efficient functioning. Because of the common property nature of many of the resources, such as fresh and marine waters and some forest areas, the normal processes of market forces and individual revenue-maximization can easily lead to resource degradation. Policy interventions have not been aimed at mitigating market failures and have inadvertently led to a distortion of incentives that reinforce the malfunctioning of the market. These market failures and distorted incentives in the allocation of land, water and forests are the latent forces that lead to the degradation of the natural resource base.

Examples of such market failures include: (a) insecurity of ownership of agricultural land, which deprives farmers of access to credit and the incentive to invest in agricultural improvements and soil conservation, and encourages inefficient use and "mining" of the resource base; (b) unpriced irrigation water, which encourages wasteful use, leads

to waterlogging, limits total irrigated areas to a fraction of irrigable areas, and deprives the government of funds required for operation and maintenance of irrigation systems and rehabilitation of degraded watersheds; (c) unenforceable public ownership of forests and lack of alternative employment opportunities, which have led to encroachment and squatting on public lands and to inefficient use of both forest and land resources; and (d) free entry into coastal and offshore fisheries, which has caused crowding, overfishing, and waste of scarce capital.

Examples of policy distortions which limit incentives for efficient resource use and conservation include: (a) agricultural taxation, which discourages investments in land improvements and soil conservation (especially the export taxes on rubber and rice -- both still on the books); (b) low concession fees, taxes, and royalties on forest products, which fail to adequately compensate society for the loss of a valuable and perhaps irreplaceable resource; (c) misguided industrial policies, such as tariffs, tax exemptions for imported machinery and credit subsidies for investment, which turn the terms of trade against agriculture and encourage adoption of capital intensive technologies in industry; and (d) interest rate ceilings, which divert funds from the high-cost rural market to the low-cost urban market forcing rural borrowers into the much more expensive noninstitutional credit market.

It is our contention that, unless these forces are removed, the process cannot be reversed and sustainable economic development in Thailand would become an elusive goal. It is further contended that rearrangement of the current portfolio of government interventions toward mitigation of market failures and reduction of policy distortions will go a long way towards bringing about improved management and efficient utilization of natural resources and thereby put the Thai economy on a sustainable development path.

Past experience and the current state of Thailand's natural resource base cast doubts on the prospects of intensifying and diversifying agriculture and other natural resource-based activities on a sustainable basis and without serious effects on the environment. Fortunately, there is growing recognition by Thai policymakers that a healthy resource base, broad participation in the benefits of development, and environmental quality commensurate with economic prosperity are as essential to sustainable development as is prudent macroeconomic management. The proper and sustainable management of natural resources is thus a topic of wide ranging importance to Thailand in terms of GDP growth, employment and exports.

Institutional and human resource development for natural resources management in Thailand has been neglected while outdated policies have been accumulating and distorting incentives for efficient (natural and human) resource management. To keep the Thai economy on a sustainable development course, scarce productive resources must be used more efficiently, structural problems and imbalances must be remedied, and the social and physical environment improved.

In accordance with the RTG's Sixth National Economic and Social Development Plan (1987-1991), the MANRES Project aims to assist the RTG in addressing these problems and in facilitating the attainment of these objectives by identifying current problems of resource mismanagement and environmental degradation, and diagnosing the underlying root causes of the problems as opposed to their observable symptoms. Rather than focus entirely on discrete action projects that are easier to quantify and value in economic terms, the MANRES Project also addresses the more illusive but also more pervasive institutional mismanagement, market failure, and policy distortion aspects. These aspects are of fundamental importance in assuring the longer run economic viability of these natural resource-dependent sectors.

It is exceedingly difficult to calculate expected changes over time in, say, levels of exports or per capita income attributable to the MANRES Project because the activities and elements comprising the project do not easily lend themselves to this sort of analysis. Nonetheless, the Project deals with a set of resources and economic activities that are very important, are of large economic and social significance, and are under threat of degradation and misuse. The pervasive importance of natural resources to the present and future well-being of Thailand's economy is a powerful argument for their careful management. Improved management will yield large additional economic and social benefits; continued mismanagement will produce even larger costs. Since natural resources can be managed so as to degrade, maintain or enhance their productivity, the challenge is large and immediate. The MANRES Project is designed to help meet part of this challenge.

F. ENVIRONMENTAL ANALYSIS

The proposed project will support the development of improved environment and natural resources management practices and is subject to a "Categorical Exclusion" under the provision of 22 CFR 216, "A.I.D. Environmental Procedures." The project will serve to actively promote the following U.S. Congressional mandates for A.I.D. to support productive work in environment and natural resources: Foreign Assistance Act, Section 117, "Environment and Natural Resources;" Section 118, "Tropical Forests;" and Section 119, "Biological Diversity." The project also supports the recommendations of the Congressionally established "Committee on Health and the Environment" through activities designed to address the improved management of pesticides, industrial pollution control, and the management of toxic and hazardous materials.

DEPARTMENT OF TECHNICAL AND ECONOMIC COOPERATION

Krung Kasem Road, Bangkok, Thailand

Cable: DTEC

TEL 817555

URGENT

No. 1702/22008

July 22 , B.E. 2531

Dr. John R. Eriksson
Director
USAID/Thailand

Dear Dr. Eriksson,

Subject : Management of Natural Resources and Environment

The Department of Technical and Economic Cooperation (DTEC) wishes to refer to discussions between official of the Royal Thai Government (RTG) and USAID regarding the Management of Natural Resources and Environment Project in which it was agreed that the RTG should submit an official request for a project grant from the United States Government.

On behalf of the Royal Thai Government, we hereby request a grant of US\$ 44 million for financing the costs of this project. The RTG also agrees to provide its counterpart funds for co-financing of the costs of the Project as planned.

We trust that our request will have your rly and affirmative reply.

Yours sincerely,

Wanchai Sirirattana

(Mr. Wanchai Sirirattana)
Director - General

DEC-I
United States of America
Sub-Division
Tel. 2810966, 2813963

of

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX B

Life of Project: 7 years
From FY 1988 to FY 1995
Total U.S. Funding: US\$44 Million
Date Prepared: May 1988

Project Title and Number: Management of Natural Resources and Environment (493-0345)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p>	<p>Measures of Goal Achievement:</p>	<p>National data on economic growth, agricultural and resource-dependent productivity, industrial production, employment, trade and exports</p>	<p>Assumptions for Achieving goal targets:</p>
<p>To promote the economic and social development of Thailand through improved management of natural resources and the environment</p>	<p>Sustained economic growth and social progress: Thailand's continued emergence as an advanced developing country of middle income status</p> <p>Greater incorporation of natural resources and environmental policies and programs in RTG development plans/budgets</p>	<p>Natural Resources and Environment Sub-Plan in 7th National Economic and Social Development Plan; RTG sectoral development plans and budgets</p>	<p>Continued stable international and regional economic situation</p> <p>Thailand's economic outlook and investment opportunities remain stable</p> <p>Thailand's political environment remains stable</p>
<p>Project Purpose:</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project Status:</p>	<p>RTG policy implementation (see attached Table 1)</p> <p>National print and broadcast media</p> <p>RTG records and statistics</p> <p>Project records and documents</p> <p>Project monitoring and evaluation</p>	<p>Assumptions for achieving purpose:</p>
<p>To develop the capacities of Thai governmental and non-governmental institutions to define, analyze and respond effectively to current and emerging natural resource and environmental management problems, and thereby to build consensus and capacity for advancing policy options that will lead to sustainable development</p>	<ol style="list-style-type: none"> 1) Increased awareness among decision makers of trends in natural resources depletion, and greater commitment of RTG and private sector to needed policy and program adjustments and changes (see Table 1) 2) Expanded public awareness and understanding of natural resources and environmental management issues 3) Strengthened human resource base for natural resources and environmental assessment, research, planning and management 4) Advancement of management concepts and procedures for integrated natural resources management at regional, provincial and local levels 5) Improved information dissemination channels and institutional arrangements for supporting 1) through 4) above 	<p>RTG and private sector officials receptive to improved information demonstrating need for progressive policy and program adjustment and changes</p> <p>Financial viability and adequacy of staffing at key implementing and coordinating agencies through life-of-project;</p> <p>Improved technical and institutional approaches to natural resources management do not present significant financial/political/sociocultural burden on implementors and beneficiaries</p>	

Project outputs:	Magnitude of outputs:	Means of Verification:	Assumptions for achieving outputs:
1) Policy studies and supporting research	1) 10-15 major policy studies undertaken collaboratively by Thai and U.S. research institutions/universities	RTG records and statistics	Counterparts and support facilities identified and established
2) Public awareness programs and development of environmental education materials	2) 6-8 grants to Thai NGOs for public awareness programs; development and implementation of a national environmental education program	Project work plans and reports	Appropriate technical services obtained
3) Trained personnel of RTG agencies NGOs, universities and the private sector	3) 80 graduate degrees; 350 short-term training placements	Project monitoring and evaluation	Action programs at provincial and local levels prove feasible in context of RTG administrative and institutional support required
4) Action programs to demonstrate institutional and technical approaches to natural resources and environmental management	4) Action programs undertaken in 4 strategic resource management sectors: coastal resources, industrial environment, rural resources, and biological resources		Appropriate individuals identified and released for training
5) Conferences, seminars, workshops and publications	5) 50-60 conferences/workshops; 75-100 publications		

Project inputs:	Implementation target (types and quantity): (contributions in \$000)	Assumptions for providing inputs:
AID: Technical assistance, training, workshops/conferences, observation/study tours, studies, direct grants to universities and NGOs, commodities, local costs for implementation, monitoring and evaluation, project administration	Type of input Tech. Assistance Training Workshops/ Conferences Observation/ Study Tours Studies/Applied Research	Qualified organizations and individuals can be identified and contracts negotiated
RTG: Operational/support costs (person-years, facilities, local expenses)	Direct Grants Commodities Operational/ Support Costs	
Other: U.S./Thai NGO matching funds and private sector contributions	Other	
	Total	
	44,000	13,746
		3,033

TABLE 1Policy Options and Indicators of Policy Implementation
Resulting in Improved Allocation and Use of Natural Resources

1. Implementation of land use controls (zoning, permitting programs) for improved management of coastal area development.
2. Introduction of alternatives to entry into capture fisheries, such as community-based development of coastal aquaculture and the use of artificial reefs to discourage illegal trawling and mechanized push-netting.
3. Increased use of financial incentives and disincentives in advancing improved methods of industrial pollution control and corporate accountability for worker health and safety.
4. Reform of current forest concession and taxation system to enable improved private sector management of logging and reforestation enterprises.
5. Identification of options for community management of "open access" public forest lands not classified as protected areas or critical watershed areas.
6. Reduction of environmentally adverse agricultural taxation and subsidies, and promotion of on-farm tree crops, ecologically sound farming systems, and integrated pest management.
7. Provision of economic incentives for local participation in biological conservation and protected area programs.
8. Identification of appropriate "institutional incentives" to foster improved interagency planning and management of resources now subject to competing sectoral interests.
9. Increased role of public advocacy and participation in improving the environmental impact assessment process as a planning tool for effective natural resources and environmental management.
10. Increased opportunities for privatization of land and water resources currently under the jurisdiction of public sector agencies (production forests, small-scale irrigation schemes).
11. Introduction of tax and other incentives for industries that adopt improved methods of toxic and hazardous waste management and disposal.
12. Introduction of a national water quality policy with monitoring and enforcement measures to ensure compliance.

3M(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? Yes.

A. GENERAL CRITERIA FOR PROJECT

1. FY 1988 Continuing resolution Sec. 523; FAA Sec. 634A.

If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?

The Project was included in FY 88 OYB.

2. FAA Sec. 611(a)(1).

Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes.

3. FAA Sec. 611(a)(2).

If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

N/A

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4. FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501.

If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)

N/A

5. FAA Sec. 611(e).

If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?

N/A

6. FAA Sec. 209.

Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

N/A

7. FAA Sec. 601(a).

Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

Project will only address concerns discussed in 7(e) by supporting activities to: improve the effectiveness of waste management systems; improve the management of marine and coastal resources; and establish systems for sustained agriculture.

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8. FAA Sec. 601(b).

Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

The project will support the establishment of channels for the exchange of technical information and training between Thai agencies and U.S. private sector organizations.

9. FAA Secs. 612(b), 636(h).

Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.

The Royal Thai Government (RTG) contribution to the project will exceed 25% of total requirements.

10. FAA Sec. 612(d).

Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

There is no U.S. owned local currency available for this project.

11. FY 1988 Continuing Resolution Sec. 521.

If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

N/A

12. FY 1988 Continuing Resolution Sec. 553.

Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from

The project does not contemplate assistance for such activities.

U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

13. FAA Sec. 119(g)(4)-(6).

Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?

Activities included in the project will directly support the concerns discussed in 13(a) and (c).

14. FAA 121(d).

If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?

N/A

15. FY 1988 Continuing Resolution.

If assistance is to be made to a United States PVO (other than a cooperative development

Yes.

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organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?

16. FY Continuing Resolution Sec. 541.

If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D. and is the PVO registered with A.I.D.?

Yes.

17. FY 1968 Continuing Resolution Sec. 514.

If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained?

N/A

18. FY Continuing Resolution Sec. 515.

If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified?

N/A

19. State Authorization Sec. 139.

(as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).

Once the Project Agreement is executed the Mission will follow these procedures.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria.

- a. FY 1988 Continuing Resolution Sec. 552 (as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?

The project does not contemplate assistance for such activities.

- b. FAA Sec. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions;

The project will promote decentralized management which fixes project authority and responsibility at the local level. In addition, the project will support activities which systematically identify and match appropriate natural resource uses and agricultural technology. In general, it is anticipated that the project should have significant direct and indirect impacts on the lives of the vast majority of the country's women (See Annex I).

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(b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economics of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

- c. FAA Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used? Yes.
- d. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? Yes.
- e. FAA Sec. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)? Yes.
- f. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority? Yes. The project has been designed to establish systems which will improve the management of the Thailand's natural resource base. The Nation's poor, who are dependent primarily on this base for their livelihood, will be the ultimate beneficiaries of an improved natural resource.

- g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government. To the maximum extent possible the project will maximize the utilization of Thailand's significant stock of highly talented professionals. In addition, the project will emphasize the use of joint public and private sector problem-solving mechanisms.
- h. FY 1988 Continuing Resolution Sec. 532. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? No.
- Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations? No.
- Are any the funds to be used to pay for any biomedical research which related, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? No.
- i. FY 1988 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization? No.

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- If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?
- N/A
- j. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
- Yes.
- k. FY 1988 Continuing Resolution. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?
- During the implementation of the first year planning activities for the Human Resources Development subproject, USAID will invite the National Association for Equal Opportunity Higher Education (NAFEO) to schedule a visit to Thailand of appropriate and interested HBCU representatives in the area of national resource management to discuss the project, review training needs and to explore options for joint efforts. USAID will also continue to explore possible use of Gray Amendment firms as sources of technical assistance under the project. In particular, the Mission will attempt to contract qualified Gray Amendment firms to carryout needed project evaluations.
- l. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests?
- Yes. The overall objective of this project is to provide a mechanism to enable Thailand to begin the process of effectively addressing the concerns expressed in this section.

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Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest

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clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas;

(j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and

(k) utilize the resources and abilities of all relevant U.S. government agencies?

- m. FAA Sec. 118(b)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity? Yes.
- n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? The project does not contemplate assistance for such activities.

- o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development?

The project does not contemplate assistance for such activities.

- p. FY 1988 Continuing Resolution. If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in accordance with the policies contained in section 102 of the FAA; (c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grass roots activities on behalf of long-term development in

N/A

- 13 -

Sub-Saharan Africa; (d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production land natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economics, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

2. Development Assistance Project
Criteria (Loans Only)

- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest. N/A
- b. FAA Sec. 610(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest? N/A
- c. FY 1988 Continuing Resolution. If for a loan to a private sector institution from funds made available to carry out the provisions of FAA Sections 103 through 106, will loan be provided, to the maximum extent practicable, at or near the prevailing interest rate paid on Treasury obligations of similar maturity at the time of obligating such funds? N/A
- d. FAA Sec. 122(b). Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities? N/A

3. Economic Support Fund Project
Criteria

- a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with N/A

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the policy directions,
purposes, and programs of Part
I of the FAA?

- b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes? N/A

- c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Accounts (counterpart) arrangements been made? N/A

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262285

(0) ACTION AID4 INTO AND DCN2 ICON STORR ACN: 493-0345

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24 AUG 1987

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F.O. 123561 N/A
TAGS: N/A
SUBJECT: THAILAND; MANAGEMENT OF NATURAL RESOURCES AND ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT (408-0345)
APPROVAL OF PROJECT IDENTIFICATION DOCUMENT (PID)

1. AMPAC REVIEWED AND APPROVED SUBJECT PID JUL 2. IT ALSO CONFIRMED MISSION AUTHORITY TO APPROVE PP SUBJECT TO GUIDANCE OUTLINED BELOW. AUTHORITY TO AUTHORIZE THE PROJECT IN AN AMOUNT NOT TO EXCEED DOLS 44 MILLION IS HEREBY REDELEGATED TO USAID DIRECTOR.

2. POLICY CONSTRAINTS: THE PID POINTS OUT THAT THE GOVERNMENT'S RESOURCE MANAGEMENT AND ENVIRONMENTAL PROTECTION POLICIES ARE WEAK. MANY ARE OUTDATED, ILL-DEFINED, INCONSISTENT OR UNENFORCEABLE. HOWEVER, BUDGET OUTLAYS FOR DEVELOPMENT AND ENFORCEMENT OF POLICIES AND REGULATIONS ARE INADEQUATE, AS ARE INCENTIVES FOR THE PRIVATE SECTOR TO PRACTICE SOUND RESOURCE MANAGEMENT. HOWEVER, IT IS UNCLEAR REGARDING HOW KEY POLICY CONSTRAINTS AT NATIONAL, PROVINCIAL AND LOCAL LEVELS WILL BE IDENTIFIED AND PRIORITIZED. HOW A POLICY REFORM AGENDA WILL BE FORMULATED, HOW POLICY CHANGE WILL BE SUPPORTED OR HOW SUCH CHANGE WILL ESTABLISH A LEGAL REGULATORY ENVIRONMENT THAT WILL

PROVIDE APPROPRIATE INCENTIVES/DISINCENTIVES AT THE NATIONAL, PROVINCIAL AND LOCAL LEVELS TO BRING ABOUT THE BEHAVIORAL MODIFICATIONS REQUIRED BY RESOURCE PLANNERS, POLICY ENFORCERS AND USERS. THE PP SHOULD INCLUDE AN IN-DEPTH DISCUSSION OF POLICY CONSTRAINTS ASSOCIATED WITH THE PROPOSED PROJECT COMPONENTS, THE POLICY AGENDA THE PROJECT WILL ADDRESS, INCLUDING THE IDENTIFICATION AND PRIORITIZATION OF POLICY CHANGE OBJECTIVES AT THE MACRO AND MICRO LEVELS, THE STRATEGY AND PLAN FOR SUPPORTING POLICY CHANGES, AND THE MEANS FOR MEASURING PROGRESS AND FOR CHANGING POLICY SUPPORT PRIORITIES AND ACTIVITIES UNDER THE PROJECT AS NECESSARY DURING THE PROJECT.

3. INSTITUTIONAL CONSTRAINTS: WE RECOGNIZE THAT IT IS NOT POSSIBLE AT THIS STAGE TO ASCERTAIN ALL OF THE INSTITUTIONS THAT WILL PARTICIPATE IN THE PROGRAM. THE

PID INDICATES THAT FOR EACH COMPONENT SEVERAL NATIONAL, PROVINCIAL AND LOCAL INSTITUTIONS (INCLUDING GOVERNMENT, UNIVERSITY AND NON-GOVERNMENTAL) WILL BE INVOLVED AT THE PLANNING, COORDINATING AND IMPLEMENTATION LEVELS. FURTHER, THE LATTER WILL INVOLVE SEVERAL LAYERS OF INTERACTION BETWEEN NATIONAL AGENCIES, REGIONAL ADMINISTRATIVE CENTERS, FIELD IMPLEMENTATION UNITS AND USERS. THE NEED TO INVOLVE USERS/BENEFICIARIES IN THE ANALYSIS OF RESOURCE/ENVIRONMENTAL PROBLEMS AND IN MAKING AND ENFORCING NEW RULES FOR MANAGING NATURAL RESOURCES AND THE ENVIRONMENT FURTHER COMPLICATES THE TASK. THE SKILLS NECESSARY TO IMPLEMENT THIS APPROACH ARE SCARCE, DIFFICULT TO DEVELOP AND SUSTAIN WITHOUT APPROPRIATE ORGANIZATIONAL AND INDIVIDUAL INCENTIVES. THE SHEER NUMBER OF INSTITUTIONS INVOLVED COMBINED WITH THE COMPLEXITY INVOLVED IN DEVELOPING THEIR CAPACITY TO EMPLOY A MORE PARTICIPATORY APPROACH TO DECISION MAKING ENSURES THAT ADDRESSING INSTITUTIONAL CONSTRAINTS WILL PRESENT A MAJOR CHALLENGE. THE PP SHOULD DISCUSS INSTITUTION STRENGTHENING NEEDS, PRIORITIES, OBJECTIVES, STRATEGIES AND METHODOLOGIES. IN ADDITION, THE PP SHOULD DISCUSS HOW SUSTAINABILITY WILL BE ACHIEVED. IT SHOULD ALSO DESCRIBE MANAGEMENT SYSTEMS THAT WILL BE EMPLOYED FOR MEASURING PROGRESS AND FOR MODIFYING PRIORITIES, OBJECTIVES AND IMPLEMENTATION METHODS IF SUCH CHANGES PROVE NECESSARY DURING IMPLEMENTATION.

4. MANAGEMENT CONSTRAINTS: THE LARGE NUMBER OF COMPONENTS, THE WIDE VARIETY OF SKILLS REQUIRED, AND THE LARGE NUMBER OF PUBLIC AND PRIVATE MANAGEMENT UNITS AT THE NATIONAL, PROVINCIAL, AND LOCAL LEVELS WILL PROVIDE SIGNIFICANT MANAGEMENT CHALLENGES. NOTWITHSTANDING THE

ACTIONS PLANNED BY THE MISSION AND THE DTG TO ADDRESS MANAGEMENT CONSTRAINTS, THE AMPAC EXPRESSED CONCERN REGARDING THE MISSION'S CAPACITY TO REASONABLY HANDLE THE MANAGEMENT WORKLOAD THAT THE PROJECT WILL GENERATE. THIS CONCERN IS BASED IN PART ON THE BUREAU'S INABILITY TO ACCOMMODATE THE MISSION'S PLAN FOR ADDITIONAL LONG-TERM U.S. STAFF. ALSO RECENT EXTENSIONS IN THE PACDS OF FOUR PROJECTS SCHEDULED FOR TERMINATION IN FY 07, WILL EXTEND THE OVERLAP BETWEEN CCE PROJECTS IN THE DIFFICULT START-UP YEARS AND THE MORE TRADITIONAL ONGOING PROJECTS IN THE PORTFOLIO. TO ADDRESS THIS CONCERN, THE PP SHOULD PRESENT A COMPREHENSIVE STRATEGY AND PLAN FOR ADDRESSING THE ADMINISTRATIVE, TECHNICAL AND MANAGEMENT BURDEN THE PROJECT WILL IMPOSE ON THE MISSION. SUCH A PLAN SHOULD BE BASED ON AN ASSESSMENT OF APPROPRIATE IMPLEMENTATION STRATEGIES, INCLUDING PRIORITIZING AND PHASING PROJECT COMPONENTS, AND AN EXAMINATION OF THE PROJECT'S IMPACT ON THE ENTIRE MISSION STAFF AND THE ROLE OF EACH STAFF MEMBER IN IMPLEMENTING

ANNEX D

IT.

5. GENDER-RELATED CONCERNS: THE PID NOTES THAT QUOTE ALL SECTIONS OF THE SOCIETY (SHOULD BE)...EXPOSED TO THE BENEFITS OF IMPROVED MANAGEMENT OF NATURAL RESOURCES AND THE ENVIRONMENT END QUOTE. HOWEVER, THERE IS NO EXPLICIT CONSIDERATION OF THE ROLE OF GENDER IN THE NATURAL RESOURCES AND ENVIRONMENT SECTORS. WE RECOMMEND THAT THE PP DESIGN TEAM'S SOCIAL SOUNDNESS ANALYSIS PROVIDE A GENDER-DISAGGREGATED DATA BASE TO FACILITATE DATA COLLECTION FOR MONITORING AND EVALUATION. SUCH A DATA BASE WOULD ALLOW MONITORING AND EVALUATION OF THE INTEGRATION OF WOMEN IN TECHNOLOGY TRANSFER AND TRAINING ACTIVITIES.

6. PROJECT FUNDING CATEGORIES: THE PID CALLS FOR THE USE OF 103 ACCOUNT FUNDING FOR THE ENTIRE PROGRAM. HOWEVER, AS THE MISSION IS AWARE, THE URBAN INDUSTRIAL ENVIRONMENTAL QUALITY COMPONENT CANNOT BE FUNDED FROM THIS ACCOUNT. WE UNDERSTAND THAT THE MISSION NOW PLANS TO USE HEALTH ACCOUNT (104) FUNDS FOR THIS COMPONENT. HOWEVER, 104 MONEY MAY ALSO BE CONSTRAINED NEXT FISCAL YEAR. WE RECOMMEND THAT THE MISSION INVESTIGATE OTHER FUNDING SOURCES FOR THE PROJECT INCLUDING THE PDE BUREAU.

7. PROJECT DEVELOPMENT: THE ANPAC EMPHASIZED THAT CLOSE COLLABORATION BETWEEN AID/W AND THE MISSION SHOULD BE CONTINUED DURING THE PP DEVELOPMENT PHASE. THE ANPAC ALSO EMPHASIZED THAT AID/W SHOULD BE KEPT INFORMED OF ON-GOING PROGRESS IN ADDRESSING THE POLICY SUPPORT

AGENDA DURING THE IMPLEMENTATION STAGE. THIS MAY BE DONE THROUGH THE PID SYSTEM SUPPLEMENTED BY APPROPRIATE REPORTS DURING KEY JUNCTURES OF POLICY NEGOTIATION AND PROGRESS EVALUATION. WHITEHEAD

BT

#2705

NNNN

Responses to Issues Raised in
PID Approval Message (STATE 262285)

1. Policy Constraints

A thorough analysis of the policy constraints associated with the MANRES project was carried out by Dr. Theodore Panayotou, Harvard Institute for International Development (HIID). A summary of the analysis is included in Annex J. The full report is available in the Mission files.

Using this analysis, the project committee identified several policy areas which will receive high priority attention under the project. Using the Mission's preliminary list of policy change indicators (which will be modified and/or expanded as the project is implemented) the project monitoring and evaluation system (discussed in Annex K) will provide an important means of measuring progress towards achieving the project's broader policy objectives (See Annex B).

2. Institutional Constraints

During the intensive review of the Project Design, a careful analysis of the participating institutions was carried out by Thai consultant, from the National Institute for Development Administration (NIDA). The full report is available in the USAID files. A summary presentation is included in Annex H.

The analysis indicates that no single Thai agency is capable of managing the entire project, and that the creation of a new unit to perform this function would be ineffectual. Accordingly, it was determined that the administrative structure least likely to fail in the MANRES project is one that can be decomposed into separately administered components, each capable of being implemented independently of the rest. This project administrative structure is described in Section I. D (4) and Section IV. D.

The activities included in each project component (subproject and/or subproject element) include extensive incountry and offshore training activities to develop the required skills of the involved Thai implementing agencies. Since all project activities will be carried out by Thai organizations with long standing records, the sustainability of the acquired skills, methodologies and systems is considered highly probable. The project monitoring and evaluation system (discussed in Annex M) will provide an important means of measuring progress in building the necessary institutional capacities.

3. Management Constraints

The Project Design Committee has carefully reviewed the USAID administrative and management burdens which are anticipated to be

generated as a result of the proposed project activities. A summary of this analysis is included in Annex H.

The analysis demonstrates that while the project will require significant levels of regular and intensive inputs of staff resources, the USAID staff which are currently available and those staff members which are projected to become available should be sufficient to meet the demands of the project. Furthermore, the analysis indicates that the proposed project activities should not generate any unreasonable demand for increased USAID logistic support.

4. Gender-Related Concerns

The project Social Soundness analysis examined the role of women in Thai Society and their possible participation in the project. The full report, prepared by Dr. Terry Grandstaff, East-West Center, is available in the USAID files. Annex I provides a summary presentation.

In addition, USAID has recently financed the services of a Thai contractor to provide an analytical study of the role of women in the Thai economy which will identify the constraints to increased participation. This study will focus its analysis on four ongoing USAID projects and the MANRES project. Accordingly, the study will serve as an important first step in the conceptualization and design of a gender-disaggregated data base. This will be an important element of the overall project monitoring and evaluation system as discussed in Annex K.

5. Project Funding

The Industrial Environmental Management subproject will not establish a loan fund to support demonstration of improved municipal waste management facilities or pollution control equipment as originally contemplated in the PID. Instead this subproject will focus on increasing the awareness and understanding of Thai industrial leaders of the need to reverse current adverse environmental impacts of industrialization in order to sustain Thailand's economic growth. As a result, the funding to be made available for this subproject no longer constitutes a major portion of total project grant resources. The large bulk of the project grant resources will be directed at agricultural and related renewable resource sector targets. In sum, the project will support activities which improve Thailand's national resource base, an objective which fits the criteria for funding under Section 103 of the FAA.

6. Project Development

USAID/Bangkok has kept AID/W closely advised of project development activities. The Environmental Coordinator for ANE/PD/ENV provided extensive TDY assistance to the Mission during project development. The Mission has also maintained an ongoing and constructive dialogue with the Director of ANE/PD.

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UNITED STATES GOVERNMENT

memorandum

DATE: February 26, 1988

REPLY TO
ATTN OF: ANE/PD/ENV, Stephen F. Lintner SFL
Environmental Coordinator

SUBJECT: THAILAND - Management of Natural Resources and Environment for
Sustainable Development (493-0345) - Environmental Clearance

TO: Michael Q. Philley, Natural Resources Officer/Project Officer
USAID/Bangkok

THRU: Mr. Mintara ^{Silawatshananai} Silawatshananai, Mission Environmental Officer
USAID/Bangkok

I have reviewed the proposed project and recommend that it be given a "Categorical Exclusion" under the provisions of 22 CFR 216, "A.I.D. Environmental Procedures." It should be noted that the project is designed to support the following Congressional mandates for A.I.D. to work in environment and natural resources: Foreign Assistance Act, Section 117, "Environment and Natural Resources;" Section 118, "Tropical Forests;" and Section 119, "Biological Diversity."

cc: ANE/PD/ENV, K. Saterson, Environment and Natural Resources Officer

CERTIFICATION PURSUANT TO
GRAY AMENDMENT

As the Director and Principal Officer of the Agency for International Development in Thailand, I certify that during the design of the Management of Natural Resources and Environment Project (493-0345) full consideration has been given to the potential involvement of small and/or economically and socially disadvantaged enterprises, historically black colleges and universities and monitoring controlled private and voluntary organizations covered by the Gray Amendment.

The project procurement plan is based on the need to utilize contractors with highly specific substantive knowledge and technical competence as discussed in Section IV of the Project Paper to which this certification is attached. The necessary knowledge and expertise are not available, to the best of our knowledge, from minority controlled and women-owned firms, historically black colleges and universities and minority controlled private voluntary agencies.



John R. Eriksson
Mission Director

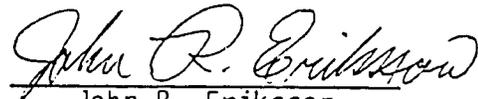
July 18, 1988

Date

CERTIFICATIONS PURSUANT TO SECTION 611 (e) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, John R. Eriksson, the principal officer of the Agency for International Development in Thailand, having taken into consideration among other factors, the maintenance and utilization of projects in Thailand previously financed or assisted by the United States, do hereby certify that in my judgment Thailand has the technical capability and physical, financial, and human resources to utilize and maintain effectively the capital assistance to be provided under the Management of Natural Resources and Environment Project (493-0345). This project will build consensus and capacity for advancing policy options that will lead to improved sustainable management of natural resources and the environment for economic development.

This judgment is based on the facts presented in this Project Paper to which this certification is attached and the Mission's previous experience with grant and loan funded projects in Thailand.



John R. Eriksson
Director, USAID/Thailand

July 18, 1988

Date

FINANCIAL ANALYSIS

I. Subproject Financing:

The Management of Natural Resources and Environment (MANRES) Project will consist of seven major subprojects each of which will utilize a combination of established financial procedures and an adaptation of these procedures for procuring the unique services that may be required to implement specific elements of any of the subprojects. The following is a summary outline of the flow of funds that are presently anticipated in each of the subprojects (See Tables 1-6). It should be noted that these flows may, in fact, require modification as project implementation proceeds. The following narratives are provided to illustrate the types of interventions that are planned and the financial management requirements that the project may require:

A. The Coastal Resources Management (CRM) Subproject: It is anticipated that overall management and implementation assistance for this subproject will be provided by a uniquely qualified U.S. institution under a direct Cooperative Agreement with USAID. Eligible costs under such a Cooperative Agreement will include: technical assistance and the required U.S. and local support costs; non-degree training costs; and limited procurement of project related commodities, which directly impact upon the contractor.

It is presently anticipated that the following RTG agencies may receive project funding for implementation of various elements of this subproject: ONEB, NESDB, Department of Fisheries (MOAC), Royal Forest Department (MOAC), Department of Land Development (MOAC), Prince of Songkla University and/or other Universities in Thailand, and the Department of Local Administration (MOInt) or selected provincial governments. Reimbursement of eligible project costs for these RTG agencies will be channeled through the standard DTEC procedures for bilateral projects.

In addition to the above, it is anticipated that funding for Degree and/or Certificate long-term training required under the Training Capacity Development element of the CRM subproject will be funded under the Human Resources Development (HRD) subproject and that a portion of the funds for the development of Training Materials required for the implementation of the CRM subproject will be provided under the Environment Awareness and Education (EAE) subproject.

B. The Industrial Environmental Management (IEM) Subproject: It is anticipated that significant levels of consultant assistance will be provided under this subproject by two uniquely qualified and experienced U.S. private organizations under individual direct

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Cooperative Agreements with USAID. In order to facilitate implementation and to fully utilize available existing mechanisms the initial involvement of such organizations may be financed as 'Buy-ins' to existing AID/W Cooperative Agreements which may, over time, evolve into separate USAID project funded Cooperative Agreements. Eligible costs under such Cooperative Agreements will include: technical assistance; the required U.S. and local support costs; non-degree training and exchange visits; and limited procurement of project related commodities, which directly impact upon the contractor.

The implementation of the local cost elements of the subproject will be the responsibility of the Federation of Thai Industries (FTI). FTI will develop Annual Work and Financial Plans for AID approval and will receive reimbursement directly from USAID for eligible project expenditures utilizing procedures that will be detailed in Project Implementation Letters.

C. The Rural Resources Management (RRM) Subproject: Under the RRM subproject, project resources will be made available based upon Annual Work and Financial plans developed in cooperation with DTEC. Under the Provincial Natural Resources Planning and Management element, the project will establish a fund to provide the initial financial support needed for improved provincial natural resources management. DTEC, NESDB, MOInt, and USAID will enter into a Memorandum of Agreement (MOA) describing the operations of the fund. The MOA will require every best effort to progressively increase RTG funding over the life-of-project in order to promote the institutionalization of permanent funding sources for provincial natural resources management and the extension of the natural resources planning process to all provinces.

Under the Rural Resources Technical Support and Training element, a grant will be made to NEROA, and to each of the following four universities: Khon Kaen, Prince of Songkla, Kasetsart (Faculty of Forestry), and Chiang Mai. The indicative funding level for the total life of each grant will be established in conjunction with the preparation of the work and financial plan for the initial year of the grant, and will be the basis for the preparation of subsequent year work and financial plans. These university grants will also incorporate support for research networks.

Long-term and short-term technical assistance for the Rural Resources Management Subproject will be provided through an appropriate contracting mechanism with a qualified U.S. organization and/or individuals.

D. The Biological Resources Management (BRM) Subproject: Under the Protected Areas Planning and Management element, USAID will enter into a Participating Agency Services Agreement (PASA) with the U.S. National Park Service to provide technical assistance and training support to the NPD and WCD.

Under the Biological Diversity Research and Conservation element, direct grants will be made to selected RTG agencies and NGOs. Technical assistance will be provided through a buy-in to the new AID centrally-funded Biological Diversity Conservation Project. This new project will provide access to technical services and administrative support through an AID cooperative agreement with the World Wildlife Fund-U.S.

The details of specific subproject elements and activities carried out by RTG agencies will be defined in Annual Work and Financial Plans prepared by the RFD, NEB, and Zoological Parks Organization in cooperation with DTEC. Direct grants to Wildlife Fund Thailand and other NGOs will be based on USAID review of proposals and DTEC letters of non-objection.

E. Environmental Awareness and Education (EAE) Subproject: Funding under the Natural Environmental Education element will be provided to the Ministry of Education (MOE) based upon Annual Work and Financial Plans developed in cooperation with DTEC. The Public Environmental awareness element will be administered through grants issued directly to selected NGOs by USAID, based on review of proposals and work plans and DTEC letters of non-objection. An Advisory Committee comprised of representatives of MOE, ONEB, participating NGOs, and USAID will be convened, as needed, to assure regular review and coordination of the various activities under the subproject. Short-term technical assistance for the subproject will be provided through an appropriate contracting mechanism with a U.S. university or private organization able to provide the required expertise.

E. The Policy Analysis and Development (PAD) Subproject: The Strengthening of National Support Capacity at NESDB and ONEB element will be administered by these two respective agencies. Budget allocations to each agency will be determined in Annual Work and Financial Plans developed in cooperation with DTEC. Long-term technical assistance will be provided to NESDB through the services of a policy advisor under host-country contract.

Project funding will be made available under the Prospective Policy Research Program through a direct grant from AID to TDRI. TDRI will administer the grant with the support of long-term and short-term technical assistance provided under USAID direct contract with a qualified U.S. university or private policy research institution.

The Policy Information Dissemination element will be administered jointly by NESDB and ONEB, in consultation with TDRI and selected Thai universities, RTG resource management agencies, and NGOs.

Where necessary the financing of long-term Degree and/or Certificate training for these RTG agencies will be provided under the HRD subproject.

G. The Human Resources Development (HRD) Subproject: The RTG will contract, under this subproject, for the services of a uniquely qualified and experienced consultant to assist in the management of the overall subproject and to develop needed training plans. Eligible costs under such an arrangement will include the required technical services and U.S. and local support costs.

Notwithstanding the above, it is anticipated that the vast majority of subproject expenditures will flow through the existing S&T contractual arrangement for arranging participant training. DTEC will insure that appropriate counterpart funding is being provided under the participating agency's annual RTG budget and/or the DTEC counterpart budget. As such this particular subproject is seen as a means of supporting activities under all of the other subprojects. The HRD subproject will finance the degree and/or certificate long and short-term training that is required under all of the other subprojects. DTEC and USAID will follow well established participant training selection and approval procedures and appropriate PIO/Ps will be issued and approved as necessary.

II. Other Elements of the Project: In addition to the above noted subprojects the Illustrative Financial Plan for the life-of- Project provides for a number of other budget categories. These include the following:

A. Audit and Financial Review

Funds have been programmed to be used by USAID to carry out Non-Federal audits and financial reviews of organizations involved in the project.

B. Project Administration, Monitoring and Evaluation

Grant funds allocated under the Project Administration and the Monitoring and Evaluation budget line items will be used by DTEC and USAID to procure required project support services. DTEC will contract the services of an Administrative Systems Analyst/Liaison Officer for the duration of the project. DTEC will also procure commodities needed for administrative and logistical support (computer hardware/software, photocopy and facsimile equipment, office furniture and materials, and vehicle). USAID will contract the services of a Natural Resources and Environment Advisor for the duration of the project and the services of a Monitoring and Evaluation Specialist for at least the first two years of the project. USAID in cooperation with DTEC will also contract short-term technical services to assist in organizing and carrying out Pre-Project Implementation Workshops, and finance the development

of printed and audio-visual materials to orient the RTG implementing agencies responsible for preparing Annual Work and Financial Plans.

C. Contingency: Finally, given the relative experimental nature of the overall project and the very real possibility that there may be cost overruns in some to the budget categories and short-fall in others, the project planners have established a Contingencies line item in the project budget. This line item also incorporates a slight inflation factor for the overall project cost. Funds in this line item may be redistributed to other line items during the life of the project, subject to RTG and USAID agreement.

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
1. COASTAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	1228	0	1228	140	0	0	0	1368
B. Short-Term Technical Assistance	790	200	990	50	0	0	0	1040
C. Studies	200	350	550	130	0	50	0	730
D. Workshops/Seminars/Conferences	50	170	220	200	0	20	0	440
E. Training/Observation/Study Tours	190	330	520	250	0	40	30	840
F. Commodities	250	300	550	330	0	0	0	880
G. Applied Research Grants	0	450	450	150	0	50	0	650
H. Other	180	970	1150	110	0	160	0	1420
SUBTOTAL	2888	2770	5658	1360	0	320	30	7368
2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT								
A. Short-Term Technical Assistance	780	300	1080	48	0	267	516	1911
B. Commodities	0	170	170	75	0	100	0	345
C. Studies	0	125	125	30	0	0	0	155
D. Training/Observation/Study Tours	520	200	720	180	0	63	0	963
E. Workshops/Seminars/Conferences	0	240	240	25	0	100	0	365
F. Other	35	630	665	5	0	114	0	784
SUBTOTAL	1335	1665	3000	363	0	644	516	4523
3. BIOLOGICAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	661	0	661	80	0	15	0	756
B. Short-Term Technical Assistance	180	90	270	170	0	15	10	465
C. Studies	0	2640	2640	660	0	156	0	3456
E. Training/Observation/Study Tours	280	104	384	104	0	0	0	488
F. Workshops/Seminars/Conference	150	150	300	90	0	40	15	445
G. Commodities	0	248	248	132	0	52	0	432
H. Other	0	600	600	600	0	200	0	1400
SUBTOTAL	1271	3832	5103	1836	0	478	25	7442
*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.								

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	O.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
4. RURAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	549	0	549	21	0	0	0	570
B. Short-Term Technical Assistance	360	0	360	30	0	0	0	390
C. Training/Observation/Study Tours	238	792	1030	314	0	0	0	1344
D. Commodities	52	330	382	348	0	0	0	730
E. Workshops/Seminars/Conferences	36	472	508	220	0	0	0	728
F. Studies	0	220	220	220	0	0	0	440
G. Sustainable Rural Resources Development Fund	0	1000	1000	3000	0	0	0	4000
H. Applied Research Grants	0	750	750	750	0	0	0	1500
I. Other	0	880	880	880	0	0	0	1760
SUBTOTAL	1235	4444	5679	5783	0	0	0	11462
5. HUMAN RESOURCES DEVELOPMENT								
A. Long-Term Technical Assistance	424	0	424	0	0	0	0	424
B. Technical Support	0	35	35	0	0	0	0	35
C. Observation/Study Tours/Seminars	83	75	158	22	0	0	0	180
D. Long-Term Training								0
-Technical (770 PMs)	1816	0	1816	428	683	0	0	2927
-Masters Degree (50@ x 24 months)	2472	0	2472	412	547	0	0	3431
-Doctoral Degree (30@ x 48 months)	2956	0	2956	405	515	0	0	3876
E. Short-Term Training (455 PMs)	1555	378	1933	224	78	0	0	2235
F. Commodities	0	46	46	0	0	0	0	46
G. Other	200	450	650	0	110	0	0	760
SUBTOTAL	9506	984	10490	1491	1933	0	0	13914
*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.								

TABLE 1
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A. I. D.			HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
6. ENVIRONMENTAL AWARENESS & EDUCATION								
A. Short-Term Technical Assistance	300	90	390	3	1	0	0	394
B. Workshops/Seminars/Conferences	0	130	130	30	0	0	0	160
C. Training/Observation/Study Tours	100	340	440	80	0	50	10	580
D. Commodities/Video Production	230	300	530	20	0	80	0	630
E. PVO Grants	0	1000	1000	0	0	250	0	1250
F. Other	0	860	860	270	0	90	0	1220
SUBTOTAL	630	2720	3350	403	1	470	10	4234
7. POLICY ANALYSIS & DEVELOPMENT								
A. Long-Term Technical Assistance	875	10	885	100	0	0	0	985
B. Short-Term Technical Assistance	480	0	480	60	0	0	0	540
C. Commodities	0	100	100	20	0	10	0	130
D. Studies	0	1000	1000	60	0	70	0	1130
C. Workshops/Seminars/Conferences	0	130	130	20	0	20	0	170
D. Training/Observation/Study Tours	200	100	300	30	0	50	30	410
E. Policy Research Grants	0	2000	2000	50	0	330	0	2380
F. Other	0	420	420	70	0	30	0	520
SUBTOTAL	1555	3760	5315	410	0	510	30	6265
8. MONITORING/EVALUATION/AUDIT								
	300	100	400	0	0	0	0	400
9. PROJECT ADMINISTRATION								
	1200	900	2100	0	145	0	0	2245
10. CONTINGENCIES								
	1161	1744	2905	0	21	0	0	2926
GRAND TOTAL	21081	22919	44000	11646	2100	2422	611	60779

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

TABLE 2
DETAILED FINANCIAL PLAN
LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND TOTAL
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
1. COASTAL RESOURCES MANAGEMENT								
A. TA - Long-Term								
Team Leader	175	48	700					700
Home Office & Overhead	30%	0	210					210
Administrative	15	72	90	140				230
Secretary	8	72	48					48
Accountant	10	72	60					60
Facilities	20	72	120					120
Sub Total		336	1,228	140	0	0	0	1,368
B. TA - Short-Term								
Various	180	66	990					990
Support Staff (Salary, Travel, Misc.)				50				50
Sub Total		66	990	50	0	0	0	1,040
C. Studies								
Various	25	22	550					550
Support Staff (Salary, Travel)				130				130
Personnel, Equipment, Facility						50		50
Sub Total		22	550	130	0	50	0	730
D. Workshops/Seminars/Conferences								
Various	10	22	220					220
Support Staff (Salary, Travel)				150				150
Personnel, Equipment, Facility				50		20		70
Sub Total		22	220	200	0	20	0	440
E. Training/Observation/Study Tours								
Various	20	26	520					520
Support Staff (Salary, Travel)				250				250
Personnel, Equipment, Facility						40	30	70
Sub Total		26	520	250	0	40	30	840
F. Commodities								
Various			550					550
Transport, Installation, Operation				330				330
Sub Total			550	330	0	0	0	880
G. Applied Research Grants								
Applied Research Grants	75	6	450					450
Support Staff (Salary, Travel, Misc.)				150		50		200
Sub Total		6	450	150	0	50	0	650
H. Other								
Materials Development			350	40		50		440
Publications			230	40		50		320
Newsletter			70	30		60		160
Implementation Support			500					500
Sub Total			1,150	110	0	160	0	1,420
GRAND TOTAL			5,658	1,360	0	320	30	7,368

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TABLE 2
DETAILED FINANCIAL PLAN
LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND TOTAL
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT								
A. TA - Short-Term								
Various Facilities	180	72	1,080					1,080
				48		267	516	831
Sub Total		72	1,080	48	0	267	516	1,911
B. Studies								
Various Support Staff (Salary, Travel)	25	5	125					125
Personnel, Equipment, Facility				30				30
Sub Total		5	125	30	0	0	0	155
C. Workshops/Seminars/Conferences								
Various Support Staff (Salary, Travel)	10	24	240					240
Personnel, Equipment, Facility			0	25				25
			0			100		100
Sub Total		24	240	25	0	100	0	365
D. Training/Observation/Study Tours								
Various Support Staff (Salary, Travel)	20	36	720					720
			0	180		63		243
Sub Total		36	720	180	0	63	0	963
E. Commodities								
Various Transport, Installation, Operation			170					170
Personnel, Equipment, Facility			0	75				75
			0			100		100
Sub Total		0	170	75	0	100	0	345
F. Other								
Tech. & Admin. Group								0
- Project Manager	30	84	210					210
- Project Engineer	25	84	175					175
- Project Pub Relation Specialist	20	84	140					140
- Administrative	15	84	105					105
- Training	11.5	3	35					35
- Facilities				5		114		119
Sub Total		339	665	5	0	114	0	784
GRAND TOTAL			3,000	363	0	644	516	4,523

TABLE 2
DETAILED FINANCIAL PLAN
LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
3. BIOLOGICAL RESOURCES MANAGEMENT								
A. TA - Long-Term								
Technical Advisor (PASA)	175	24	350					350
Home Office & Overhead	26%		91					91
Technical Advisor (PSC)	175	12	175					175
Administrative	15	36	45					45
Facilities				80			15	95
Sub Total		72	661	80	0	15	0	756
B. TA - Short-Term								
Technical Advisor (U.S.)	180	12	180					180
Technical Advisor (Local)	36	30	90	90				180
Facilities				80			15	105
Sub Total		42	270	170	0	15	10	465
C. Studies								
Management Plan	40	30	1,200	300				1,500
Demarcation Study	40	10	400	100				500
Inventories Study	80	7	560	140		120		820
Small Study & Pilot	15	20	300	75		30		405
Published Report	9	20	180	45		6		231
Sub Total		87	2,640	660	0	156	0	3,456
D. Workshops/Seminars/Conferences								
Various	10	15	150					150
Int'l Meeting	50	3	150					150
Support Staff (Salary,Travel)				90				90
Personnel,Equipment,Facility						40	15	55
Sub Total		18	300	90	0	40	15	445
E. Training/Observation/Study Tours								
Local			104	104				208
Int'l	7	40	280					280
Sub Total		40	384	104	0	0	0	488
F. Commodities								
Vehicle	25	4	100	50		25		175
Computer	15	6	90	30		15		135
Communication,A.V.,Book,Material			58	52		12		122
Sub Total		10	248	132	0	52	0	432
G. Other								
Implementation Pilot	200	3	600					600
Support Staff (Salary,Travel,Misc.)				600		200		800
Sub Total		3	600	600	0	200	0	1,400
GRAND TOTAL			5,103	1,836	0	478	25	7,442

TABLE 2
DETAILED FINANCIAL PLAN
LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per Unit/ PM	QTY Unit/ PM	USAID Grant	HOST COUNTRY			U.S. PRIVATE SECTOR	GRAND TOTAL
				RTG	DTEC	OTHER		
4. RURAL RESOURCES MANAGEMENT								
A. TA - Long-Term								
Technical Advisor (PSC)	175	36	525					525
Secretary	8	36	24					24
Facilities				21				21
Sub Total		72	549	21	0	0	0	570
B. TA - Short-Term								
Various	180	24	360	30				390
Sub Total		24	360	30	0	0	0	390
C. Studies								
Various	20	2	40					40
Various - Major	180	1	180					180
Support Staff (Salary,Travel)				40				40
Personnel,Equipment,Facility				180				180
Sub Total		3	220	220	0	0	0	440
D. Workshops/Seminars/Conferences								
Various	10	50.8	508					508
Support Staff (Salary,Travel)				220				220
Sub Total		50.8	508	220	0	0	0	728
E. Training/Observation/Study Tours								
Local			792					792
International	7	34	238					238
Support Staff (Salary)				314				314
Sub Total		34	1030	314	0	0	0	1,344
F. Commodities								
Vehicle	25	6	150	150				300
Computer	15	8	120	86				206
Seedlings,cement,etc.			80	80				160
Books, materials			32	32				64
Sub Total		14	382	348	0	0	0	730
G. Applied Research Grants								
Support Staff (Salary,Travel,Misc.)	25	30	750					750
Support Staff (Salary,Travel,Misc.)				750				750
Sub Total		30	750	750	0	0	0	1500
H. Other								
Implementation Pilot	220	4	880	880				1,760
Sustainable RRD Fund			1,000	3,000				4,000
Sub Total		4	1,880	3,880	0	0	0	5,760
GRAND TOTAL			5,679	5,783	0	0	0	11,462

TABLE 2
 DETAILED FINANCIAL PLAN
 LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
5. HUMAN RESOURCES DEVELOPMENT								
A. TA - Long-Term								
Training Consultant (U.S.PSC-Thailand)	60.5	84	424					424
Secretary-Thai	5	84	35					35
Sub Total		168	459	0	0	0	0	459
B. Training/Observation/Study Tours								
Observation Tour (35 PP., 15 days)	4.5	35	158	22				180
Technical LT-Training (70 PP., 6 MM.)	15.5	70	1,085	428	683			2,196
Technical LT-Training (35 PP., 10 MM.)	21	35	735					735
Masters Degree (50 PP., 24 MM.)	49.5	50	2,475	412	547			3,434
Ph.D. Degree (30 PP., 48 MM.)	98	30	2,940	405	515			3,860
ST-Training (105 PP., 1 MM.)	7	105	735	224	78			1,037
ST-Training (105 PP., 3 MM.)	11.5	105	1,207					1,207
Sub Total		430	9,335	1,491	1,223	0	0	12,649
C. Commodities								
Computer	4.6	10	46					46
Sub Total			46	0	0	0	0	46
D. Other								
Administrative Support			450					450
Technical Support			200		110			310
Sub Total			650	0	110	0	0	760
=====								
GRAND TOTAL			10,490	1,491	1,933	0	0	13,914
=====								

TABLE 2
 DETAILED FINANCIAL PLAN
 LOP BUDGET MANRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
6. ENVIRONMENTAL AWARENESS & EDUCATION								
A. TA - Short-Term								
Various	180	20	300					300
Administrative (Overhead)	30%		90					90
Support Staff				3	1			4
Sub Total		20	390	3	1	0	0	394
B. Workshops/Seminars/Conferences								
Various	10	10	100					100
National Symposium	30	1	30					30
Support Staff (Salary, Travel)				30				30
Sub Total		11	130	30	0	0	0	160
C. Training/Observation/Study Tours								
Various	20	22	440					440
Support Staff (Salary, Travel)				80		50	10	140
Sub Total		22	440	80	0	50	10	580
D. Commodities/Production Costs								
VIDEO Equip, Computer, Audio-visual			530					530
Transport, Installation, Operation				20		80		100
Sub Total			530	20	0	80	0	630
E. Applied Research Grants								
PVO Grants	125	8	1,000			250		1,250
Sub Total		8	1,000	0	0	250	0	1,250
F. Other								
Curriculum & Materials Development			600	200		70		870
Regional EE Centers			200	50				250
Community EE Campaigns			60	20		20		100
Sub Total			860	270	0	90	0	1,220
GRAND TOTAL			3,350	403	1	470	10	4,234

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TABLE 2
DETAILED FINANCIAL PLAN
LOP BUDGET MAHRES PROJECT

(U.S. \$000)

SOURCE/USES	Cost per	QTY	USAID	HOST COUNTRY			U.S.	GRAND
	Unit/ PM	Unit/ PM	Grant	RTG	DTEC	OTHER	PRIVATE SECTOR	
7. POLICY ANALYSIS & DEVELOPMENT								
A. TA - Long-term								
Technical Advisor - TDRI	175	24	350					350
Home Office & Overhead	50%		175					175
Policy Advisor - NESDB (PSC)	175	24	350					350
Secretary	5	24	10					10
Facilities				100				100
Sub Total		72	885	100	0	0	0	985
B. TA - Short-Term								
Various	180	32	480					480
Facilities				60				60
Sub Total		32	480	60	0	0	0	540
C. Studies								
Policy Studies/Research - NESDB/DWEB	25	40	1,000					1,000
Support Staff (Salary,Travel)			0	110		70		180
Sub Total		40	1,000	110	0	70	0	1,180
D. Workshops/Seminars/Conferences								
Various	10	10	100					100
National Policy Symposium	30	1	30					30
Support Staff (Salary,Travel)			0	20		20		40
Sub Total		11	130	20	0	20	0	170
E. Training/Observation/Study Tours								
Various	20	15	300					300
Support Staff (Salary,Travel)			0	30		50	30	110
Sub Total		15	300	30	0	50	30	410
F. Commodities								
Computer			100					100
Transport,Installation,Operation			0	20		10		30
Sub Total			100	20	0	10	0	130
G. Applied Research Grants								
Core Program Support Grant - TDRI	2,000	1	2,000			330		2,330
Sub Total		1	2,000	0	0	330	0	2,330
H. Other								
Library/Information Systems			200	40		30		260
Publications			150	20		10		180
Policy Journal Development			70	10				80
Sub Total			420	70	0	30	0	520
GRAND TOTAL			5,315	410	0	510	30	6,265

TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
1. Coastal Resources Management			
-TA(URI)	AID-Direct CA	Direct Pay	2218
-Studies	HC Contract	HC Reimbursement	550
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	220
-Training/Observation/ Study Tours	PIO/P &	Credit Transfer	520
-Commodities	HC Contract	HC Reimbursement	550
-Research Grants	HC Contract	HC Reimbursement	450
-Other	HC Contract	HC Reimbursement	1150
Total			5658
2. Urban Industrial Environ. Mgt.			
-TA(WEC)	AID-Direct CA	Dir. Pay/LOC(FRLC)	600
-TA(CF)	AID-Direct CA	Dir. Pay/LOC(FRLC)	480
-Studies	HC Contract	HC Reimbursement	125
-Commodities	HC Contract	HC Reimbursement	170
-Training/Observation/ Study Tours	HC Contract/ PIO/P	HC Reimbursement/ Credit Transfer	720
-Workshops/Seminars/Conferences	HC Contract	HC Reimbursement	240
-Other	HC Contract	HC Reimbursement	665
Total			3000
3. Biological Resources Mgt.			
-TA(USMPS,USF & WS)	PASA	Direct Pay	661
-TA(WWF)	AID-Direct Grants	Direct Pay	270
-Research Grants	HC Contract	HC Reimbursement	2640
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer HC Reimbursement	384
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	300
-Commodities	HC Contract	HC Reimbursement	248
-Other	HC Contract	HC Reimbursement	600
Total			5103

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TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
4. Rural Resources Management			
-Technical Assistance	HC Contract	HC Reimbursement	909
-Training/Observation/ Study Tours	HC Contract & PIO/P	HC Reimbursement/ Credit Transfer	1030
-Workshops/Seminars Conferences	HC Contract	HC Reimbursement	508
-Studies	HC Contract	HC Reimbursement	220
-Applied Research Grants	HC Contract	HC Reimbursement	750
-Sustainable Rural Resources Development Fund	HC Contract	HC Reimbursement	1000
-Commodities	HC Contract	HC Reimbursement	382
-Other	HC Contract	HC Reimbursement	850
Total			5679
5. Human Resources Development			
-TA(Consultant)	AID-Dir Contract	Direct Pay	424
-Tech. Support	AID-Dir Contract	Direct Pay	35
-Training	PIO/Ps	Credit Transfer	9177
-Observation/Seminars Study Tours	HC Contract	HC Reimbursement	158
-Commodities	HC Contract	HC Reimbursement	46
-Other	HC Contract	HC Reimbursement	650
Total			10490
6. Environ.Awareness & Education			
-TA(PSC & NGOs)	AID-Dir Contract	Direct Pay	390
-TA(Universities & NGOs)	AID-Dir.Contract	Direct Pay	1000
-Commodities	HC Contract	HC Reimbursement	530
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	130
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer/ HC Reimbursement	440
-Other	HC Contract	HC Reimbursement	860
Total			3350

TABLE 3
Methods of Implementation and Financing

Subproject Inputs/Elements	Methods of Implementation	Methods of Financing	Approximate Cost (\$000)
7. Policy Analysis & Development			
-TA(Long-Term)	AID-Dir Contract	Direct Pay	885
-TA(Short-Term)	AID-Dir.Contract	Direct Pay	
-TDRI Core Program Support Grant	& HC Contract	HC Reimbursement	480
-Commodities	HC Contract	HC Reimbursement	2000
-Policy Studies/Applied Research	HC Contract	HC Reimbursement	100
-Workshops/Seminars/ Conferences	HC Contract	HC Reimbursement	1000
-Training/Observation/ Study Tours	PIO/P & HC Contract	Credit Transfer/ HC Reimbursement	130
-Other	HC Contract	HC Reimbursement	300
	HC Contract	HC Reimbursement	420
Total			5315
8. Monitoring/Evaluation/ Audit	AID-Dir Contract	Direct Pay	400
9. Project Administration	HC Contract	HC Reimbursement	1200
	AID-Dir Contract	Direct Pay	900
10. Contingencies	X	X	2905
Grand Total	X	X	44000

TABLE 4
 COST OF PROJECT INPUTS (USAID GRANT)
 LOP BUDGET MAHRES PROJECT
 (U.S. \$000)

SUBPROJECT	PROJECT INPUTS								GRAND TOTAL
	Technical Assistance Long-Term	Technical Assistance Short-Term	Studies	Workshops/Seminars/Conferences	Training/Observation/Study Tours	Commodities/Video Production	Applied Research Grants	Other	
1. Coastal Resources Management	1228	990	550	220	520	550	450	1150	5658
2. Industrial Environmental Management	0	1080	125	240	720	170	0	665	3000
3. Biological Resources Management	661	270	2640	300	384	248	0	600	5103
4. Rural Resources Management	549	360	220	508	1030	382	750	1880	5679
5. Human Resources Development	459	0	0	0	9335	46	0	650	10490
6. Environmental Awareness & Education	0	390	0	130	440	530	1000	860	3350
7. Policy Analysis & Development	885	480	1000	130	300	100	2000	420	5315
8. Monitoring/Evaluation/Audit	0	0	0	0	0	0	0	400	400
9. Project Administration	0	0	0	0	0	0	0	2100	2100
10. Contingencies	500	500	400	305	300	200	400	300	2905
TOTAL	4282	4070	4935	1833	13029	2226	4600	9025	44000

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TABLE 5
 MANRES PROJECT
 LOP ILLUSTRATIVE FINANCIAL PLAN
 OF
 ANNUAL COMMITMENT
 (U.S.000)

Source/Uses	Yr.1 FY89	Yr.2 FY90	Yr.3 FY91	Yr.4 FY92	Yr.5 FY93	Yr.6 FY94	Yr.7 FY95	TOTAL
1.Coastal Resources Management	2318	337	720	990	600	393	300	5658
2.Industrial Environmental Management	238	441	607	523	487	427	277	3000
3.Biological Resources Management	945	1500	1300	658	400	225	75	5103
4.Rural Resources Management	1000	1750	1300	900	350	225	150	5679
5.Human Resources Management	1212	1346	1570	1829	1869	1572	1092	10490
6.Environmental Awareness and Education	270	880	1215	335	335	225	90	3350
7.Policy Analysis and Development	2000	925	750	630	460	350	200	5315
8.Monitoring/Evaluation/Audit	25	25	50	150	25	25	100	400
9.Project Administration	500	450	350	300	250	175	75	2100
10.Contingencies	217	450	750	550	450	350	138	2905
TOTAL	8725	8104	8612	6865	5226	3971	2497	44000

TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP LUOGE MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
1. COASTAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	1228	0	1228	140	0	0	0	1368
B. Short-Term Technical Assistance	790	200	990	50	0	0	0	1040
C. Studies	200	350	550	130	0	50	0	730
D. Workshops/Seminars/Conferences	50	170	220	200	0	20	0	440
E. Training/Observation/Study Tours	190	330	520	250	0	40	30	840
F. Commodities	250	300	550	330	0	0	0	880
G. Applied Research Grants	0	450	450	150	0	50	0	650
H. Other	180	970	1150	110	0	160	0	1420
TOTAL	2888	2770	5658	1360	0	320	30	7368
1. CRH Subproject Elements/Inputs								
1. Special Area Management Planning:								
A. Planning:								
1) Technical Assistance	635	47	682	62	0	0	0	744
2) Studies	100	150	250	60	0	20	0	330
3) Workshops/Seminars/Conferences	10	40	50	45	0	4	0	99
4) Observation/Study Tours	70	60	130	0	0	8	0	138
B. Implementation:								
1) Technical Assistance	635	46	681	63	0	0	0	744
2) Workshops/Seminars/Conferences	10	40	50	50	0	5	0	105
3) Observation/Study Tours	0	100	100	190	0	8	0	298
4) Commodities	100	200	300	200	0	0	0	500
5) Implementation Support	0	500	500	0	0	0	0	500
Subtotal	1560	1183	2743	670	0	45	0	3458
2. National Policy Development:								
1) Technical Assistance	638	47	685	65	0	0	0	750
2) Studies	100	200	300	70	0	30	0	400
3) Workshops/Seminars/Conferences	10	30	40	35	0	5	0	80
Subtotal	748	277	1025	170	0	35	0	1230
3. Institutional Strengthening:								
1) Technical Assistance	110	60	170	0	0	0	0	170
2) Commodities	150	100	250	130	0	0	0	380
3) Faculty Exchanges	90	0	90	30	0	8	0	128
4) Applied Research Grants	0	450	450	150	0	50	0	650
Subtotal	350	610	960	310	0	58	0	1328
4. Training Capacity Development:								
1) Workshops/Seminars/Conferences	10	30	40	35	0	3	0	78
2) Training of Trainers	30	70	100	0	0	8	30	138
3) In-Service Training	0	100	100	30	0	8	0	138
4) Materials Development	150	200	350	40	0	50	0	440
Subtotal	190	400	590	105	0	69	30	794
5. Project Integration/Outreach:								
1) Workshops/Seminars/Conferences	10	30	40	35	0	3	0	78
2) Publications	30	200	230	40	0	50	0	320
3) Newsletters	0	70	70	30	0	60	0	160
Subtotal	40	300	340	105	0	113	0	558
TOTAL	2888	2770	5658	1360	0	320	30	7368

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET-MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	TOTAL
2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT								
A. Short-Term Technical Assistance	780	300	1080	48	0	267	516	1911
B. Commodities	0	170	170	75	0	100	0	345
C. Studies	0	125	125	30	0	0	0	155
D. Training/Observation/Study Tours	520	200	720	180	0	63	0	963
E. Workshops/Seminars/Conferences	0	240	240	25	0	100	0	365
F. Other	35	630	665	5	0	114	0	784
TOTAL	1335	1665	3000	363	0	644	516	4523
2. IEM Subproject Elements/Inputs								
1. Technical/Administrative Group Development	35	630	665	5	0	114	0	784
2. Environmental Awareness in Industry:								
1) Studies	0	125	125	30	0	0	0	155
2) Workshops/Seminars/Conferences	0	240	240	25	0	100	0	365
3) Training/Observation/Study Tours	520	200	720	180	0	63	0	963
4) Commodities	0	170	170	75	0	100	0	345
Subtotal	520	735	1255	310	0	263	0	1828
3. Cooperative Technical Assistance	780	300	1080	48	0	267	516	1911
TOTAL	1335	1665	3000	363	0	644	516	4523

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TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET, MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
3. BIOLOGICAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	661	0	661	80	0	15	0	756
B. Short-Term Technical Assistance	180	90	270	170	0	15	10	465
C. Studies	0	2640	2640	660	0	156	0	3456
E. Training/Observation/Study Tours	280	104	384	104	0	0	0	488
F. Workshops/Seminars/Conference	150	150	300	90	0	40	15	445
G. Commodities	0	248	248	132	0	52	0	432
H. Other	0	600	600	600	0	200	0	1400
TOTAL	1271	3832	5103	1836	0	478	25	7442
3. BRM Subproject Elements/Inputs								
1. Protected Areas Planning & Management:								
1) LT Technical Assistance	486	0	486	80	0	15	0	581
2) ST Technical Assistance	180	45	225	95	0	8	5	323
3) Studies	0	1600	1600	400	0	0	0	2000
4) Training/Observation/Study Tours	140	52	192	52	0	0	0	244
5) Implementation Pilot	0	600	600	600	0	200	0	1400
6) Commodities	0	124	124	66	0	26	0	216
Subtotal	806	2421	3227	1283	0	249	5	4764
2. Biological Diversity Research and Conservation:								
1) LT Technical Assistance	175	0	175	0	0	0	0	175
2) ST Technical Assistance	0	45	45	85	0	7	5	142
3) Studies	0	1040	1040	260	0	156	0	1456
4) Workshops/Seminars/Conferences	150	150	300	90	0	40	15	445
5) Training/Observation/Study Tours	140	52	192	52	0	0	0	244
6) Commodities	0	124	124	66	0	26	0	216
Subtotal	465	1411	1876	553	0	229	20	2678
TOTAL	1271	3832	5103	1836	0	478	25	7442

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A. I. D.			HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
4. RURAL RESOURCES MANAGEMENT								
A. Long-Term Technical Assistance	549	0	549	21	0	0	0	570
B. Short-Term Technical Assistance	360	0	360	30	0	0	0	390
C. Training/Observation/Study Tours	238	792	1030	314	0	0	0	1344
D. Commodities	52	330	382	348	0	0	0	730
E. Workshops/Seminars/Conferences	36	472	508	220	0	0	0	728
F. Studies	0	220	220	220	0	0	0	440
G. Sustainable Rural Resources Development Fund	0	1000	1000	3000	0	0	0	4000
H. Applied Research Grants	0	750	750	750	0	0	0	1500
I. Other	0	880	880	880	0	0	0	1760
TOTAL	1235	4444	5679	5783	0	0	0	11462
4. RRM Subproject Elements/Inputs								
1. Provincial Natural Resources Planning and Management:								
1) LT Technical Assistance	275	0	275	11	0	0	0	286
2) ST Technical Assistance	90	0	90	0	0	0	0	90
3) Workshops/Seminars/Conferences	0	100	100	40	0	0	0	140
4) Training/Observation/Study Tours	70	226	296	55	0	0	0	351
5) Action Research/Implementation	0	880	880	880	0	0	0	1760
6) Sustainable RR Development Fund	0	1000	1000	3000	0	0	0	4000
7) Commodities	0	215	215	183	0	0	0	398
Subtotal	435	2421	2856	4169	0	0	0	7025
2. IGALD Training Program:								
1) LT Technical Assistance	274	0	274	10	0	0	0	284
2) ST Technical Assistance	90	0	90	0	0	0	0	90
3) Studies	0	220	220	220	0	0	0	440
4) Training/Observation/Study Tours	0	296	296	55	0	0	0	351
5) Commodities	0	85	85	83	0	0	0	168
Subtotal	364	601	965	368	0	0	0	1333
3. RR Technical Support & Training:								
1) ST Technical Assistance	180	0	180	30	0	0	0	210
2) Workshops/Seminars/Conferences	36	372	408	180	0	0	0	588
3) Training/Observation/Study Tours	168	270	438	204	0	0	0	642
4) Commodities	52	30	82	82	0	0	0	164
5) Applied Research Grants	0	750	750	750	0	0	0	1500
Subtotal	436	1422	1858	1246	0	0	0	3104
TOTAL	1235	4444	5679	5783	0	0	0	11462

*A.I.D. reserves the right to alter the illustrative amounts set aside for each component following consultation with DTEC.

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TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MAHRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
5. HUMAN RESOURCES DEVELOPMENT								
A. Long-Term Technical Assistance	424	0	424	0	0	0	0	424
B. Technical Support	0	35	35	0	0	0	0	35
C. Observation/Study Tours/Seminars	83	75	158	22	0	0	0	180
D. Long-Term Training								0
-Technical (770 PMs)	1816	0	1816	428	683	0	0	2927
-Masters Degree (50@ x 24 months)	2472	0	2472	412	547	0	0	3431
-Doctoral Degree (30@ x 48 months)	2956	0	2956	405	515	0	0	3876
E. Short-Term Training (455 PMs)	1555	378	1933	224	78	0	0	2235
F. Commodities	0	46	46	0	0	0	0	46
G. Other	200	450	650	0	0	0	0	650
TOTAL	9506	984	10490	1491	1823	0	0	13804
5. HRD Subproject Elements/Inputs								
1. Human Resources Assessment	200	0	200	0	0	0	0	200
2. Participant Training:								
1) Observation/Seminars/Study Tours	83	75	158	22	0	0	0	180
2) LT Technical (770 PMs)	1816	0	1816	428	683	0	0	2927
3) Masters Degree Programs (50 participants)	2472	0	2472	412	547	0	0	3431
4) Doctoral Degree Programs (30 participants)	2956	0	2956	405	515	0	0	3876
5) ST Training (455 PMs)	1555	378	1933	224	78	0	0	2235
Subtotal	8882	453	9335	1491	1823	0	0	12649
3. Training Management:								
1) Consultant and Support Staff	424	485	909	0	110	0	0	1019
2) Commodities	0	46	46	0	0	0	0	46
Subtotal	424	531	955	0	110	0	0	1065
TOTAL	9506	984	10490	1491	1933	0	0	13914

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TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
6. ENVIRONMENTAL AWARENESS & EDUCATION								
A. Short-Term Technical Assistance	300	90	390	3	1	0	0	394
B. Workshops/Seminars/Conferences	0	130	130	30	0	0	0	160
C. Training/Observation/Study Tours	100	340	440	80	0	50	10	580
D. Commodities/Video Production	230	300	530	20	0	80	0	630
E. PVO Grants	0	1000	1000	0	0	250	0	1250
F. Other	0	860	860	270	0	90	0	1220
TOTAL	630	2720	3350	403	1	470	10	4234
6. EAE Subproject Elements/Inputs								
1. National Environmental Education:								
1) Technical Assistance	300	90	390	3	1	0	0	394
2) Workshops/Seminars/Conferences	0	130	130	30	0	0	0	160
3) Training/Observation /Study Tours	80	280	360	60	0	30	8	458
4) Curriculum & Materials Development	0	600	600	200	0	70	0	970
5) Regional Environmental Educ.Centers	0	200	200	50	0	0	0	250
6) Community Environmental Educ. Campaigns	0	60	60	20	0	20	0	100
Subtotal	380	1360	1740	363	1	120	8	2232
2. Public Environmental Awareness:								
1) Training/Observation/Study Tours	20	60	80	20	0	20	2	122
2) Commodities/Video Production	230	300	530	20	0	80	0	630
3) PVO Grants	0	1000	1000	0	0	250	0	1250
Subtotal	250	1360	1610	40	0	350	2	2002
TOTAL	630	2720	3350	403	1	470	10	4234

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TABLE 6
ILLUSTRATIVE FINANCIAL PLAN *
LOP BUDGET MANRES PROJECT
(U.S. \$000)

SOURCE/USES	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
7. POLICY ANALYSIS AND DEVELOPMENT								
A. Long-Term Technical Assistance	875	10	885	100	0	0	0	985
B. Short-Term Technical Assistance	480	0	480	60	0	0	0	540
C. Commodities	0	100	100	20	0	10	0	130
D. Studies/Applied Research	0	1000	1000	110	0	70	0	1180
E. Workshops/Seminars/Conferences	0	130	130	20	0	20	0	170
F. Training/Observation/Study Tours	200	100	300	30	0	50	30	410
G. Core Program Support Grant	0	2000	2000	0	0	330	0	2330
H. Other	0	420	420	70	0	30	0	520
TOTAL	1555	3760	5315	410	0	510	30	6265
	A.	I.	D.	HOST COUNTRY			U.S.	GRAND TOTAL
	FX	LC	TOTAL	RTG	DTEC	OTHER	Private Sector	
7. PAD Subproject Elements/Inputs								
1. Strengthening National Support Capacity:								
1) LT Technical Assistance & Support Staff	350	10	360	0	0	0	0	360
2) Policy Studies/Applied Research	0	1000	1000	110	0	150	0	1260
3) Workshops/seminars/Conferences	0	130	130	20	0	20	0	170
4) Training/Observation/Study Tours	200	100	300	30	0	50	30	410
5) Library/Information System Enhancement	0	200	200	40	0	20	0	260
Subtotal	550	1440	1990	200	0	240	30	2460
2. Prospective Policy Research at TDR1:								
1) LT Technical Assistance	525	0	525	100	0	0	0	625
2) ST Technical Assistance	480	0	480	60	0	0	0	540
3) Core Program Support Grant	0	2000	2000	0	0	250	0	2250
Subtotal	1005	2000	3005	160	0	250	0	3415
3. Policy Information Dissemination:								
1) Commodities	0	100	100	20	0	10	0	130
2) Publications	0	150	150	20	0	10	0	180
3) Policy Journal Development	0	70	70	10	0	0	0	80
Subtotal	0	320	320	50	0	20	0	390
TOTAL	1555	3760	5315	410	0	510	30	6265
8. MONITORING/EVALUATION/AUDIT	300	100	400	0	0	0	0	400
9. PROJECT ADMINISTRATION	1200	900	2100	0	145	0	0	2245
10. CONTINGENCIES	1161	1744	2905	0	21	0	0	2926
GRAND TOTAL	21081	22919	44000	11646	2100	2422	611	60779

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ADMINISTRATIVE ANALYSIS

I. Project Implementing Arrangements

A. Introduction:

The administrative analysis performed for the project comprised the following. First, a specification of criteria or guiding principles for evaluating alternative structural arrangements. Second, a review of the existing Thai institutional and legal framework in order to identify appropriate lead implementing agencies. Third, derivation of conclusions concerning feasible administrative arrangements.

Devising a suitable administrative structure for the project involved reconciling two potentially conflicting requirements: the need for programmatic unity, which is usually interpreted to mean a centralized decision structure; and the equally compelling need for flexibility and timeliness of decisions, which necessarily implies some degree of decentralization or delegation authority. The administrative analysis and evaluation of the suitability of choices for an administrative structure for the project were informed by the following considerations:

1. The administrative structure for the project should not be centralized to the point of producing decision bottlenecks. The more layers in the hierarchy, the more approvals needed for any given decision, the greater the chances of untimely delays in the implementation process.

2. In order to ensure continuity after the end of the project, the administrative structure should be integrated as much as possible with existing structures that already enjoy credibility and acceptance within the Thai system. Creation of new forms with no promise of sustainability after the end of the project should be an option of last resort.

3. Selection of lead implementing agencies should respect jurisdictional demarcations in the Thai system. For example, the Office of the National Environment Board should not be called upon to perform functions that "belong" to the Department of Local Administration. Moreover, account should also be taken of Thai bureaucratic realities such as Department autonomy and compartmentalization, as well as traditional alliances (and rivalries).

4. The administrative structure should include arrangements to achieve (insofar as possible) synergistic, as opposed to unrelated, outcomes.

Documentary review of the existing institutional framework and agency jurisdictions was provided by the report on Analysis of the Legal, Institutional, and Budget Framework for Environment and Natural Resources in Thailand. In addition, interview data were gathered from key RTG agencies, e.g., NESDB, DTEC, the Royal Forest Department, the Forestry Faculty of Kasetsart University, the Ministry of Interior (DOLA, the Local Administration Academy, the Office of Policy and Planning), the Department of Fisheries, the Ministry of Education. For the Coastal Resources Management (CRM) subproject, first-hand observational data were obtained at a CRM Workshop held in Phuket in March 1988, attended by more than twenty participating agencies.

B. Major Findings:

Review of the existing institutional framework led to the conclusion that there is no single RTG or non-RTG agency that is suitable for managing the entire project. Effective management requires that each of the seven subprojects have its own set of administrative arrangements. As it turns out, administrative structures for each of the subprojects can be quite easily put in place on the Thai side, since many either already exist or could be installed following standard procedures.

The rationale for having separate administrative arrangements for each subproject is to decentralize decision making processes, and hence to increase flexibility and reduce complexity in project management. The design is appropriate for this project precisely because each component (subproject and/or subproject activity) can stand alone: the success of the project does not depend on all of the components having to succeed simultaneously. While some components are interrelated, they are not interdependent to the extent that failure of any single component automatically entails failure of other components. In sum, the projects' objective of developing cost effective and sustainable approaches for resolving key natural resource problems and for increasing public and private sector understanding and involvement can best be met by encouraging the participation of relevant RTG and non-RTG agencies through multiple administrative arrangements.

In fact, once the project is "decomposed" into separate subprojects and subproject activities, sets of administrative arrangements fall naturally into place. Some, such as the CRM subprojects Special Area Management Planning activity, require integration with routine Changwat (Provincial) planning processes.

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Administrative arrangements should follow the standard planning model. Others involve "bilateral" agreements with individual implementing agencies.

Parenthetically, we note that although the number of implementing agencies appears to be unusually large, in the final analysis the option of choosing from among a field of candidate agencies simply did not arise. In many cases, for a given activity only one key implementing agency could be identified -- e.g., the National Parks Division for parks planning and management, the Wildlife Conservation Division for wildlife conservation, the National Forest Land Management Division for buffer communities development, and the Department of Economic and Technical Cooperation for participant training.

C. Administrative Arrangements

A summary description of proposed administrative arrangements for each subproject follows. We caution, however, that the proposed arrangements should by no means be viewed as a blueprint. For sustainability in the long run, the critical issue is that administrative arrangements be acceptable to all concerned--participating agencies as well as those with a cooperative role. Such acceptance can best be achieved when participating agencies are allowed to take the initiative in devising workable administrative structures. This pre-empts USAID from making proposals unilaterally. In other words, in our judgment, it is inadvisable for USAID to take the initiative in proposing administrative arrangements for the project.

Coastal Resources Management

The elements of this subproject are implemented by different levels of government; therefore, they require different sets of administrative arrangements.

1. The Special Area Management Planning element can be integrated with routine planning processes, using existing mechanisms and following established procedures. The Coastal Resources subplan is attached to the annual Changwat (Provincial) Plan for submission to the Ministry of Interior, other central line ministries, NESDB, ONEB, etc. Each of the central agencies then reviews its section of the Changwat Plan. Approved items are then implemented following usual procedures.

2. Similarly, the National Policy Development element should be integrated with planning activities in drawing up the Environmental subplan for Thailand's next Five-Year Economic and Social Development Plans. The NESDB subcommittee in charge of the Environmental subplan should be assigned responsibility for this task.

3. Institutional Strengthening and Training Capacity Development element can be coordinated by ONEB. This relieves USAID of a direct management responsibility, but the management burden placed on ONEB may lead to untimely delays and breakdowns. ONEB's strength lies in its technical, rather than managerial, expertise. Selection of other Thai agencies to carry out this function is not an option, since the Coastal Resources Management subproject is already lodged with ONEB.

4. Project Integration and Outreach element will be carried out at both local and national levels. At the local level, Changwat and District Offices and local governments are responsible for disseminating materials prepared by ONEB. These may be supplemented by locally prepared materials. At the national level, ONEB is the responsible agency for preparation of a newsletter and other materials and reports for dissemination, and for organizing seminars, round tables, and conferences.

Industrial Environmental Management

This subproject consists of three major elements: Development of a Technical and Administrative Group within the Federation of Thai Industries to provide locally based leadership for the implementation of this subproject; Promotion of Public Awareness and Consensus Building concerning the need to address environmental issues relating to industrialization and urbanization in Thailand; and Cooperative Technical Assistance to support preliminary site specific actions to address urban-industrial environmental problems of immediate concern. The Federation of Thai industries is assigned the lead implementing role.

Rural Resources Management

This subproject consists of three separate but interrelated elements. Innovation research methods will be developed by university-based researchers and applied to support the Provincial Natural Resources Planning and Management element, which in turn will be a source of case studies for the new IGALD Training Program. At the provincial and local levels, participating government agencies will integrate these activities with existing

planning processes to enhance the likelihood of sustainability of a national RRM program after completion of USAID assistance.

The Provincial Natural Resources Planning and Management element will be jointly administered by the National Economic and Social Development Board (NESDB) and the Ministry of Interior (MOInt). The IGALD Training Program element will be funded directly with IGALD. Under the Rural Resources Technical Support and Training element, a grant will be made to NEROA, and to each of the following four universities: Khon Kaen, Prince of Songkla, Kasetsart (Faculty of Forestry), and Chiang Mai.

Biological Resources Management

This subproject consists of two elements. The Royal Forest Department (RFD) will be the lead coordinating and implementing agency for the Protected Areas Planning and Management element. No single lead agency will be designated for the Biological Diversity Research and Conservation element; activities will be carried out independently by governmental and non-governmental organizations receiving grants under this element.

Human Resource Development

This subproject consists of three independent elements. The Initial Human Resource Assessment element will be conducted by a local research institution. The Participant Training element and the Training Management element will be administered by the Department of Technical and Economic Cooperation, following established procedures.

Environmental Awareness and Education

This subproject consist of two major elements. The National Environmental Education element will be administered by the Ministry of Education (MOE). An interdepartmental task force or committee will be established to coordinate and review proposals, as well as monitor implementation. It is expected that this committee will be chaired by the MOE Department of Curriculum and Instructional Development.

The Public Environmental Awareness element will be administered through grants issued directly to selected NGOs by USAID, based on review of proposals and work plans and DTEC letters of non-objection.

Policy Analysis and Development

The Strengthening of National Support Capacity at NESDB and ONEB element will be administered by these two respective agencies. Long-term technical assistance will be provided to NESDB through the services of a policy advisor under host-country contract. The Prospective Policy Research Program at TDRI will be administered by TDRI with the support of long-term and short-term technical assistance provided under USAID direct contract with a qualified U.S. university or private policy research institution. The Policy Information Dissemination element will be administered jointly NESDB and ONEB, in consultation with TDRI and selected Thai universities, RTG resource management agencies, and NOGs.

C. Summary

In summary, the administrative analysis concluded early on that no single Thai agency is capable of managing the entire project, and that the creation of a centralized control committee to perform this function would be ineffectual. After reviewing the data, the analysis reached the conclusion that the administrative structure least likely to fail in a project as complex as the Management of Natural Resources and Environment Project was one that could be decomposed into separately administered components, each capable of being implemented independently of the rest.

The basic premise of the overall project is that each subproject will be managed by a different set of Thai implementing agencies, with one USAID Subproject Manager attached to each subproject. "Synergism," defined as, "the joint action of agents that when taken together increase each other's effectiveness," can be facilitated through (1) creation of a strong monitoring and evaluation unit comprised of USAID staff, responsible for tracking each of the subprojects and reporting to a designated Project Officer; (2) creation of a Thai-U.S. advisory group (or Resource Group) convened at regular intervals to review project progress and to advise the USAID Project Committee. In short, in the initial stages, USAID will have to assume a lead monitoring, evaluation, and coordinating role. Once tangible results are produced, however, it may be advantageous to set up an RTG committee, chaired by NESDB with ONEB as secretariat, to perform this function.

II. Contracting Capability of Implementing Agencies

USAID has analyzed the host-country's capability to carry out the contracting actions contemplated under the project. Since a

significant number of the major contracting actions will be carried out by USAID, the resulting level of contracting actions to be administered by DTEC should be reasonable. In addition, USAID recently completed a review of DTEC's contracting procedures (a copy of the report is available in USAID files). While the Mission continues to encourage improvement, DTEC contracting system appears to be basically sound. In addition, the project committee recommends that counterpart funds be utilized to finance one additional DTEC contracting officer to handle the RTG procurements contemplated under the project.

Within the Industrial Environmental Management subproject FTI will carry out certain project financed activities. The process will be similar to that currently being followed by FTI under the ongoing Rural Industries and Employment Project. Based upon recent reviews carried out by O/FIN, FTI's financial management and accounting procedures appear adequate for this purpose (a copy of the review findings are available in the USAID files).

In accordance with AID HB 3 procedures, Thai participating universities will carry out planned activities under a process similar to that used under the ongoing USAID Khon Kaen University Project. Prior to the initiation of any project financed procurement actions, USAID will review and approve the participating universities financial procedures.

Under the project USAID will also make grants to approximately eight Thai NGOs to carry out specific field level activities. All of these NGOs are known by the USAID office of Technical Resources to be able to undertake the efforts which USAID is interested in supporting and stimulating. In depth Financial and Administrative reviews of the NGO's were carried out as a part of the registration process under the USAID PVO Co-Financing II project (copies of the full reports are available in USAID files). These organizations are now or will be registered by AID. For U.S. NGOs to receive grants under the project, they will have to be registered with AID/W.

III. USAID Administrative Considerations

A. USAID Project Management

The project design committee has carefully reviewed the USAID administrative and management burdens which are anticipated to be generated as a result of the proposed project activities. The review included a thorough analysis of the expected durations of ongoing USAID projects and the related impacts on the Mission's transition strategy to phase over to full implementation of the

revised "middle income" program. This review indicates that while each MANRES subproject will require a significant amount of regular USAID project officer backstopping, the administrative burden created by the project can be accommodated by the Mission.

The Agriculture and Natural Resources Development Division (TR/ANR) within the Office of Technical Resources (O/TR) will have the primary responsibility for carrying out the required USAID project oversight, monitoring and management actions. Initially one USDH professional staff member from TR/ANR will be assigned to serve as the full-time MANRES project Officer. This Project Officer will be supported by four FSN professional staff members of TR/ANR, one US PSC professional, one FSN professional of PD/PERE and two professionals of PD/PS (one USDH and one FSN). The staff members mentioned above are all currently working in USAID on the design of the project and will be available during project implementation to provide the required levels of USAID administrative support.

In addition, as discussed in Section III A, approximately two PSC consultants will be contracted by USAID to complement and augment existing USAID staff. The above mentioned personnel will constitute the core group of the USAID project committee during the initial 12-18 months of project implementation. The Project committee will be chaired by the USAID Project Officer and will meet on a monthly basis, or as frequently as needed, to review the status of implementation actions. The Project Officer will then report to USAID management at the Mission's PIR meeting.

During the initial 12-18 months of implementation there will be very few project field activities undertaken. Accordingly, the principal work of the USAID Project Committee will be focused primarily on meeting of Conditions Precedent, on the preparation of the necessary scopes of work and PIO/Ts, and on the negotiation of the related Contracts, Cooperative Agreements and NGO Grant Agreements.

During this initial 12-18 month implementation period, major changes are expected to take place within the overall USAID project portfolio. Specifically, it is expected that the number of activities requiring regular USAID monitoring support will be reduced from 14 active projects to about 4 projects. This should free up about 3 additional USAID professional level staff (1 USDH, 2 FSN) to supplement the above mentioned USAID project core group and help provide the intensive USAID monitoring support needed once field level project implementation gets underway. During this same period of portfolio transition, the staff of the USAID support offices (PDS, FIN and EXO) should also experience an increase in

the amount of available time that their existing staff members will be able to allocate to the support of the project. At the same time, the RCO is expected to experience significant continued heavy workload with a resulting need for increased FSN staff support.

In large part the staff to be included in the MANRES project core group and the additional USAID staff to be assigned to the project following the initial start-up period, already have many years of experience working on USAID projects with similar kinds of issues and activities (some of which have elements that are the precursors of activities that will be carried out under the MANRES project). Thus it is anticipated that the USAID staff assigned to the project will be able to effectively apply their previous USAID experience to the management of the MANRES project and, indeed, in many cases the management will only result in supporting a continuing monitoring need, or a shifting of monitoring between projects, to maintain continuity in moving ahead with the Mission's transition strategy.

In addition to the above, a significant amount of monitoring support will be built into the project financed technical services contracts and will effectively supplement the regular USAID monitoring activities for the MANRES project. Under the Coastal Resources Management subproject the University of Rhode Island will monitor and evaluate all subproject activities and submit regular reports to USAID. Under the Biological Resource Management subproject the US Fish and US National Park Service (USNPS) will provide USAID with regular overall monitoring support. Finally, under the Human Resources Development subproject, the DTEC contracted consultant will provide the bulk of the needed day-to-day monitoring and administrative support.

B. USAID Logistic Support

The project design committee has determined that the proposed project activities should not generate any unreasonable demand for increased USAID logistic support. Only the long-term consultants to be obtained under the USNPS PASA (approximately 2-3 persons to arrive in country at varying points in time during the first 30 months of the project) will require the provision of USAID housing support. The advisory assistance obtained through Cooperative Agreement arrangements should not require any USAID logistic support. The PSC advisors to be hired locally (about four long-term professionals) will require only limited USAID office and equipment support.

C. Summary

In sum, the project design committee has determined that even though the project will require significant levels of regular and intensive inputs of staff resources, the USAID staff which are currently available and those staff members which are projected to become available should be sufficient to meet the needs of the project. In addition, the planned staffing arrangements for the project fully support the USAID transition strategy. Accordingly, the staffing arrangements described herein will not cause any unreasonable administrative burden on USAID nor any significant disruptions in the overall management of the USAID project portfolio, while providing adequate AID monitoring and administrative support for the project.

SOCIAL SOUNDNESS ANALYSIS

A. Introduction

A "social programmatic analysis" was conducted by Dr. Terry Grandstaff, East-West Center, as a part of the intensive review of the project. Grandstaff analysis used a "landscape zone" type of analytical approach in order to begin to relate population and sectors of the society with natural resource contexts and practices. The full social soundness report is available in the USAID file. The following discussion summarizes: (1) present-day Thai society's ability to undergo the kind of developmental process this project entails ("sociocultural feasibility"); (2) the likely manner in which wide communications and spread effects may be achieved ("spread effects"); (3) the immediate beneficiaries likely to be involved, as well as the probable ultimate beneficiaries likely to be differentially affected within the society, with special reference to differential effects by gender ("beneficiaries"); and (4) how the project will deal with social issues and social analysis during implementation as these become more clear during the (developmental) life of the project ("implementation issues").

B. Sociocultural Feasibility

The project is considered feasible in the Thai sociocultural context. Perhaps most important, the project is now extremely timely: many indicators show there is clear need, and there is an increasing recognition of the urgency of that need throughout many sectors of the society. Indicators include the serious growth of environmental and natural resource problems affecting all sectors, urban and rural. In the rural sector, population pressure and increasing market involvement have resulted in widespread deforestation, water scarcity problems, increasing fuelwood scarcity in some areas, decreasing crop yields on marginal land, some salinization of farmlands and pesticide contamination. In the Gulf of Thailand, fishing yields have dropped dramatically due to overfishing and urban waste contamination of coastal areas is posing further potentially serious problems for both fishing and tourism. In urban areas, industrial waste pollution, air and noise pollution, water contamination and sewage disposal problems are all becoming problematical as urban population, industry and manufacturing all expand at unprecedented rates. On the farms, in the forest, on the coasts and in the cities, technological changes are occurring. All these things are happening rapidly, and many of them have occurred in the past five or six years.

Furthermore, there is increasing widespread public recognition of these problems and of the sense of urgency they impose on the society. Debates on deforestation and how to reverse it appear in both

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parliament and electoral system are becoming increasingly important and viable, offering further channels for the expression of needs and forums for helping to reach consensus on what should be done. Fourth, there are many values strongly embedded in Thai culture that will tend to support finding solutions to environmental and natural resources management issues. These include a strong desire for social and natural order, reinforced by Buddhism and deep respect for the Monarchy. Finally, the nature of information exchange and decision-making in Thai society offers many venues that the project can take advantage of, both to help the society manage the process, and to contribute to spread effects as well. These are discussed in the next section.

C. Spread Effects

The probability for society-wide spread effects is potentially very high. Spread effects and communications strategies have been considered in the design of the project and are seen as essential to the project goal. The way in which information is passed and opinions are formed within Thai society means that issues can be more quickly addressed and the "best way" to solve problems can be widely shared (i.e., through informal contacts and "lateral" connections, such as classmate and kinship networks which interconnect separate agencies and economic sectors). The project plans to take advantage of these modes by use of workshops, conferences, and separate committees some of whose memberships will partially overlap. Also, the role of the mass media, especially television, is proving to be a new and powerful venue for the sharing of opinion and in helping to reach consensus on issues. The project, through its Public Awareness and Environmental Education Subproject, plans to take advantage of this venue as well.

D. Beneficiaries

The potential beneficiaries of the project can be summarized at subproject level. Under the Urban-Industrial Environmental Management Subproject, the immediate beneficiaries will be private and public administrators and technicians who will receive training in urban environmental management and industrial pollution control. Ultimate beneficiaries of this subproject are the 10 million people living in Thailand's municipal cores and the additional 4 million people who live in the adjacent urban areas. Under the Coastal Resources Management Project, the immediate beneficiaries are local officials and technicians who will receive training and technical assistance. The intermediate beneficiaries will be the residents of coastal zones in the immediate pilot project areas, about a quarter of a million people. Ultimately, this subproject should particularly benefit all those dependent on coastal zones for their livelihoods, about a million people, primarily in South and East Thailand, including about 500,000 people who live in families primarily dependent on marine fishing. The vast majority of these are in small, family enterprises.

the English and Thai press daily. The recent unfortunate disputes and property damage concerning the tantalum factory on Phuket Island taught a clear lesson on the need for adequate representation and public awareness in planning and decision-making involving the use of natural resources and environment. Even more recently the widespread public debate on the planned (but now shelved) Nam Choan dam disclosed a far more widespread and emotional interest in the fate of natural resources than had been previously recognized. Many other issues of this type are now occurring and receiving public scrutiny. For example, a group of farmers in the Northeast recently destroyed eucalyptus nurseries and pulled up eucalyptus trees planted on nearby land, arguing that trees of multipurpose use and that provided habitats for edible flora and fauna were more needed. In the rural villages, people are widely aware of the diminishing natural resource base and of issues in alternative uses of what remains, and are very concerned about it. For example, conflict over use of waterways for kenaf retting (which pollutes the water) and other uses is common. Even where trees are still abundant, villagers voice strong concern about diminishing forests and what will happen in their children's time.

Another aspect of sociocultural feasibility concerns the ability of Thai society to undertake a process in which hard decisions must be made about natural resource usage practices. In the past, many issues of this type could be avoided due to relatively low population densities, abundance of natural resources and the expansion of the land frontier. For example, much of the increased productivity in Thai agriculture over the past forty years was due to more and more land being brought under cultivation. With the effective end of the land frontier, however, much more difficult choices must be made about the use of land and other components of the natural resource base, and many of these will involve conflict, as people may have to curtail, or in one way or another, pay for, natural resource utilizations that were previously considered free. This involves every sector of the society and every social class, from the small charcoal maker in the forests of North Thailand to the Bangkok factory owner who dumps his factory's waste into the canal.

The degree to which Thai society will be able to respond to and successfully manage natural resource usage issues, so that the natural base can be sustained, is still an open question. Clearly it will involve some new modes. Conflict avoidance through "shelving the plan if it offends enough people" will not be sufficient, since sacrifices will have to be made somewhere - the threat to the resource base and increasing scarcity will increasingly mean that not offending one group will be likely to offend another. There are indications, however, that the society will be able to manage the process, given the assistance the project will provide. First, environmental problems are now much more widely recognized. Second, the way in which decisions are made in Thai government is often iterative. That is, "firm" plans are subjected to short waiting periods while various groups and sectors of the society react, allowing a better chance for a more equitable, and thus more potentially successful solution. Third, formal processes such as the

The Rural Resources Management Subproject will benefit the research and teaching staff of the three regional universities (Chiang Mai, Khon Kaen, Prince of Songkhla) and Kasetsart University. Their research activities will be focussed on addressing the rural resource usage problems of the rural populations, especially in hinterland rainfed areas where nearly half the population of Thailand resides. Pilot activities in forest management under this subproject are intended to ultimately benefit the estimated six million people who now reside in reserve forest lands throughout the country. This includes half a million "tribal" people in North Thailand. Tribal people will be involved in the initial pilot project activities.

The importance of off-farm employment has long been recognized. The ability of part-time farmers to combine off-on-farm employment with on-farm agriculture should be a key influence on what happens to natural resources in "hinterland" (marginal upland and mountain) zones, since the harder it is to make a living from agriculture or off-farm employment, the more one must fall back on the exploitation of accessible, usually common land and forest, natural resources.

The Biological Resources Conservation Subproject is intended to achieve national and international benefit by conserving irreplaceable biological resources for use by future generations. Immediate beneficiaries also include thousands of villagers living adjacent to national parks, through a subproject activity intended to develop their roles as guides and concession operators, etc. so that they may receive more direct economic benefit from the parks, and thus help relieve the pressure these people might otherwise be forced to put on park resources, given population pressure and fixed land-holdings.

The other three subprojects (Public Awareness and Environmental Education, Human Resources Development, and Policy Analysis and Research) will benefit hundreds of public and private persons most directly involved in training, education and research activities throughout the life of the project. Ultimately, however, it is expected that the activities these people then undertake will be of widespread benefit to the nation. Ultimate benefit from this type of subproject is impossible to predict. However, recent studies in Thailand using widespread interviewing techniques are showing that, almost uniformly, education and training activities provided by the United States government over the past twenty five years are cited to be the most valuable type of aid this country has received during this period.

The role of women in Thai society and in development efforts in the country is now widely recognized to be far more equitable than in many other countries. Women participate in all sectors of the society, and their representation in the labor force is nearly equal to that of men. In some sectors and many higher-paying and more prestigious jobs, however, women are still very under-represented. In urban populations, women work mostly in the service and manufacturing sectors, in lower paid and less prestigious jobs than men. In most rural households, women

manage the money. In fishing communities, however, the role of women is somewhat different, apparently due to the nearly exclusive role men have in working on the boats at sea. In many households whose main livelihood is from fishing women apparently do not manage the money, and in these households, according to a recent study, fertility rates are also higher than in farming families.

In research and education, however, women are very well represented, and according to some indicators, are beginning to do better than men. Since nearly all the subprojects involve substantial immediate beneficiary training, education and research activities, it is possible that female immediate beneficiaries will outnumber male. In any case, the differential effects of project activities on females will be monitored by the project support unit, and corrective actions encouraged where warranted (per ANPAC guidance, STATE 262285). Management at the subproject level will also insure that women are not discriminated against and are fairly represented in those participating in all subproject activities.

When more detailed information becomes available, it should be possible to say with more certainty who will and will not benefit from particular project activities. It is possible, however, to say in a very general way who may not, and how this can be ameliorated. Whenever major decisions are made in the public good, it is always possible that the interests of minorities and the less powerful may be sacrificed to those to others. Remote rural dwellers, landless villagers dependent on common land resources and tribal peoples are likely candidates in this category. Others in the minority, although far better off, such as factory owners, mining concession operators, etc. can also be differentially disadvantaged. Most of all it is important to recognize that decision-making about natural resource usage will inevitably, in almost every case, have equitability implications. Project monitoring and evaluation will track the developments, and where warranted, work to insure that interests of minorities and the less powerful, whoever they may be are fairly considered in decision-making processes.

E. Implementation Issues:

1.1 During the in depth social soundness analysis several important project implementation issues were identified by the social soundness consultant. First the consultant indicated that issues are likely to arise during the life of the project that the project will have to be aware of and flexible enough to respond to. It was therefore recommended that the project include a focus on human ecological monitoring and analysis that goes beyond any form of environmental and natural resource monitoring and assessment attempted thus far at the national level in Thailand.

1.2 It was also recommended that social analysis of project activities be an important part of implementation. Social scientists will be needed to participate in almost all sub-project activities,

especially in early stages. It will also be important that training and degree programs increase social science expertise in the country in ways most beneficial to increase contribution to natural resource issues. Fields such as ecological anthropology, rural sociology (with a human ecological emphasis), and human geography will be particularly important. Such fields now are severely under-represented in Thai institution staffing and degree programs.

F. Conclusions:

Overall, the analysis carried out by the consultant indicated that the proposed subprojects will address natural resources related issues relevant to the majority of people in the nation. Furthermore the design of the overall project is compatible with the sociocultural environment in which it is to be introduced.

THAILAND
MANAGEMENT OF NATURAL RESOURCES FOR SUSTAINABLE DEVELOPMENT:
MARKET FAILURES, POLICY DISTORTIONS AND POLICY OPTIONS¹

Executive Summary

Thailand's economic takeoff from an agrarian society in the 1950s into a rapidly industrializing economy in the 1980s has been one of the few truly remarkable success stories in economic development. This rapid take-off was fuelled by a generous resource endowment, facilitated by a favorable sociocultural climate and stirred by prudent macroeconomic management. Having weathered the political instability of the 1970s and the turbulence of the world economy throughout the 1970s and early 1980s, Thailand appears to be on a sustainable development course. A closer examination, however, reveals that the rapid thrust forward has resulted in a wasteful use of resources, structural imbalances, environmental problems and social tensions which, while not immediately threatening, may gradually undermine the sustainability of the development process.

In the course of Thailand's economic takeoff critical natural resources that have fuelled growth--such as land, water, forests, fisheries, and genetic resources--have been inefficiently used and heavily depleted or degraded. An unbalanced structural change that saw the share of agriculture fall to 20% of Gross Domestic Product (GDP) while its share in employment remained at 70% has widened income inequalities and created social tensions even as poverty declined. Rapid industrialization and urbanization (especially of the Greater Bangkok area) have reduced environmental quality, a major component of the quality of life, thereby reducing the value and attractiveness of development itself. While the demand for environmental quality has been growing with development, its supply has been shrinking by growing urban and industrial pollution. A healthy resource base, broad participation in the benefits of

¹ Prepared for USAID/Thailand by Theodore Panayotou, Harvard Institute for International Development (HIID), Harvard University, May 1988.

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development, and environmental quality commensurate with economic prosperity are as essential to sustainable development as is prudent macroeconomic management.

To keep the Thai economy on a sustainable development course, the remaining resources must be used more efficiently, structural problems and imbalances must be remedied, and the social and physical environment improved. This can be done by diagnosing and treating the root causes of natural resource mismanagement, environmental degradation, and structural imbalance. The present study has identified these causes as being massive market failures and accumulated policy distortions. In the course of the rapid thrust forward, institutional and human resource development has been neglected while outdated policies have been accumulating and distorting incentives for efficient (natural and human) resource use and management.

Failing Markets

No other sector of the economy is as vulnerable to market failures as the resource sectors. Insecurity of ownership over 50% of the agricultural land deprives the farmers of access to credit and of the incentive to invest in agricultural improvements and soil conservation, and encourages inefficient use and mining of the resource base. Unpriced irrigation water encourages wasteful use that leads to waterlogging and limits the irrigated area to a small fraction of the irrigable area, while at the same time it deprives the Royal Irrigation Department of the badly needed funds for O & M and rehabilitation of degraded watersheds. Unenforceable public ownership over Thailand's forests combined with lack of alternative employment opportunities has led to encroachment and squatting on public lands and has created a climate of insecurity and lawlessness, that results in inefficient use of both forest and land resources. Unaccounted downstream externalities or spillover effects, such as runoff, soil erosion and sedimentation result in one activity imposing heavy losses on another activity. Logging and shifting cultivation result in soil erosion, flooding and sedimentation of

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irrigation systems. Use of chemical fertilizers and pesticides by farmers damages downstream fish production. Free disposal of urban and industrial wastes lowers property values, damages fisheries and tourism, harms human health and imposes high water treatment costs on other water users. Free entry into Thailand's coastal and offshore fisheries leads to crowding, overfishing, and waste of scarce capital. Encroachment, irreversible changes in tropical forest habitat, and lack of funds (itself the result of free riding by potential beneficiaries) recks havoc on Thailand's valuable biological and genetic resources.

Distorted Policy Incentives

As if these markets failures were not enough to undermine Thailand's resource base, an accumulation of outdated and misguided government policies compounds the problem by distorting further the incentives for efficient resource use and conservation. Agricultural taxation, in general, discourages investments in land improvements and soil conservation. The export taxes (premia) on rice and rubber discourage the production of two crops that can be environmentally beneficial and encourage production of crops such as casava and maize which deplete or at least fail to protect the soil. The protection of the domestic fertilizer industry in the past has encouraged the use of unsuitable mixed fertilizers and, by raising the price considerably above the world price, has discouraged agricultural intensification on existing lands and encouraged extensification by clearing new forest lands. The more recently introduced fertilizer subsidy does little to rectify the situation, since it benefits only a few large farmers who have already been using heavy doses of fertilizers. Moreover, subsidizing chemical fertilizers biases farmers' incentives against the use of organic fertilizers which improve soil structure and reduce soil erosion and water pollution. Similarly, any subsidy of pesticides, however indirect, biases the farmers' choice against integrated pest management which is environmentally and economically superior to heavy pesticide use. In forestry, the combination of concession fees, taxes, and royalties are too low to compensate the society for

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the loss of a valuable, and perhaps irreplaceable, resource. Uncollected rents (stumpage value) encourage logging in marginal and fragile areas with significant social costs in terms of soil erosion and loss of biological diversity. Moreover, partial extraction of rents from timber harvest is an implicit subsidy of deforestation and a tax on reforestation, because it results in undervaluation of both timber and forest. The basing of the stumpage fee (or tax) on the harvested rather than the marketable timber on the site encourages high grading and damages the remaining stand. The setting of concession duration at 30 years, which is half the growing cycle of tropical timbers, deprives the concessionaire of any incentive to preserve and enhance the long-term productivity of the forest.

In fisheries, over capitalization of the industry and an excessive number of fisherman relative to the amount of fishing effort that can be sustained has led to serious depletion of coastal and off shore stocks. Any assistance to the fishermen, whether through input subsidies, price supports or export promotion, in the absence of effective limitation on entry, is self-defeating because it attracts new entrants into the fishery leading to further depletion of the resource and a decline in fishermen's incomes. Industrial policies such as import tariffs, tax exemptions for imported machinery and credit subsidies for investment turn the terms of trade heavily against agriculture and encourage capital intensive technologies in industry. This ultimately leads to increased pressure on rural resources, by reducing industrial employment and increasing rural poverty. The imbalance between the structural change in agricultural output and the structural change in agricultural employment, that leads to ever-widening income inequalities between the rural and the urban areas, and between agriculture and industry, is precisely due to the protection of industry, the subsidization of capital intensity and the heavy taxation of agriculture. The net result is a relatively unprofitable agriculture, limited off-farm employment, and massive encroachment of public forest lands, with the known consequences. Moreover, the reduced profitability of agriculture brought about by industrial protection results in reduced incentives for land development and

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soil conservation because of reduced returns to such investments as well as reduced savings resulting from depressed incomes.

In contrast to the sectoral policies, Thailand has pursued prudent macroeconomic (fiscal, monetary and external debt) policies, with the notable exception of interest rate ceilings. While the acknowledged purpose of such ceilings has been to help small rural borrowers, in reality they divert funds from the high-cost rural market to the low-cost urban market forcing rural borrowers into the non-institutional credit market where 60% rates of interest are not uncommon. A Central Bank provision requiring commercial banks to lend a certain percentage of their deposits to agriculture has benefited large farmers and agribusiness while over 60% of the farmers have no access to institutional credit. Lack of secure land titles to use as collateral for credit has further compounded capital scarcity for many farmers, leading to liquidation of public forests and soil "mining" as the only source of "capital".

The Need for Policy Reform

The first priority is to eliminate, reduce, or cushion policies that have significant environmental costs or create perverse incentives that encourage the expansion of resource depletion and environmental degradation beyond the level that even a free market would produce. Reforming policies that distort incentives for efficient resource use is a priority because unless perverse incentives are removed project investments aiming at improved utilization and conservation of natural resources are unlikely to succeed, and, when they do, their impact would be unsustainable-lasting for as long as the projects last. Reforming policies that are detrimental to both the economy and the environment are an earlier point to start because no difficult development-environment tradeoffs or budget outlays are involved. Eliminating policy distortions usually reduces government expenditures and may even generate additional budget revenues. The distributional implications are also in the right direction since many of these distortions are not only sources of inefficiency and resource depletion but

also sources of inequality. Finally, eliminating policy distortions can be done by adjusting prices, taxes, and subsidies which is easier than introducing new instruments or developing new institutions to deal with market failures. Therefore, eliminating policy distortions is the place to start but not the place to finish because without correction or at least mitigation of market failures, efficient use and conservation of resources cannot be secured.

A comprehensive long-term policy reform program that is both necessary and sufficient to ensure the sustainability of the development process would include five components:

- 1) elimination or at least reduction of policy distortions that favor environmentally unsound practices while, at the same time, they discriminate against the poor, reduce economic efficiency and waste budgetary resources;
- 2) correction or at least mitigation of market failures such as externalities, insecurity of ownership, and absent or imperfect markets that result in overexploitation of resources, through a system of institutions, incentives, regulations, and fiscal measures;
- 3) investment in human resource development rural industry and resource rehabilitation to provide alternative employment to disadvantaged groups such as shifting cultivators, landless farmers, coastal fishermen and underemployed workers to lessen the pressure on natural resources;
- 4) application of a broad social benefit-cost analysis to all public projects by: (a) casting them in the overall sectoral and macropolicy context; (b) by taking into account all benefits and costs, whether near or distant, whether economic, social, or environmental, and whether quantitative or qualitative; and (c) by avoiding projects that lead to irreversible changes of the environment or foreclosure of options,
- 5) development of indigenous analytical capability and institutional capacity for analyzing, formulating and implementing policies and projects that have environmental dimensions.

Policy Options

There is a rich menu of policy options and instruments available to the government for reducing policy distortions and mitigating market failures which lead to inefficient use and mismanagement of Thailand's natural resources and the environment. These policy options have been discussed in detail in Chapter 5 of the study. Here, we will provide only a partial but indicative list of these options and instruments in no particular order:

1. Issue secure land titles to squatters in public forest lands.
2. Promote the establishment of water users associations, water rights and water charges.
3. Invest in O & M of irrigation systems and rehabilitation and management of critical watersheds.
4. Degazette and privatize forests that do not involve significant externalities.
5. Promote communal ownership of resources and territorial use rights in forests, buffer zone to national parks, and coastal resources.
6. Eliminate direct and indirect taxes on environmentally benign crops and inputs (rice; IPM) and stop subsidizing and begin taxing crops and inputs (e.g. casava, pesticides) that are environmentally destructive.
7. Increase the duration of forest concessions and award them through competitive bidding; change the tax base from "harvested" to "marketable" timber on site to eliminate the incentive for high grading and destructive logging.
8. Provide incentives to the private sector, such as long-term credit and mechanisms for accumulating equity from forest investments to encourage private participation in reforestation.
9. Introduce licensing schemes, artificial reefs and territorial use rights (TURFS) to limit entry into the fishery, reduce conflicts and allow the fishery resources to recover from overfishing.
10. Provide economic incentives for biological conservation to local populations, such as rights to access fees for recreation, tourism and scientific research; rights to non-timber

forest products; employment and franchises in tourism or other park-related activities.

11. Replace or at least supplement the current emission standards by emission charges and encourage industrial associations to participate in the enforcement and collection of these charges; and, introduce specialized charges such as refundable deposits for beverage containers and package materials; recycling incentives, waste disposal fees and congestion charges.

12. Eliminate or at least counter the current protection and subsidization of capital-intensive urban-based industry and provide incentives for labor-intensive rural industry to reduce the pressure on rural resources.

The Political Economy of Policy Change in Thailand

While this is not an easy task and requires considerable political will, a movement in this direction is both necessary and feasible. It is necessary because the current situation is clearly untenable: the current trends of resource depletion and environmental degradation are not only unsustainable, but if continued will undermine an otherwise successful development strategy. The proposed policy reform should be feasible, as it would promote several national objectives simultaneously with a minimal amount of trade-offs and budgetary costs: increased economic efficiency and growth, resource conservation and environmental protection, reduction in income inequalities, and in some cases savings in or additional sources of government revenues. Policy reforms in other areas such as the foreign debt, the exchange rate, and general macroeconomic policy suggest that the political will for change does exist among Thai policy makers. And, while there is a perception among the Thai public that natural resources are abundant and free, in recent years there has been a significant change in that perception and a growth in awareness of resource limitations and of environmental problems. More could be done in this area through education and public awareness campaigns by both the government and non-governmental organizations (NGOs), to enhance this awareness and channel the energies of the nascent Thai environmental movement to constructive causes.

A major obstacle to the proposed policy reform would be vested interests created by the existing market failures and policy distortions. A second obstacle is the inadequacy of existing analytical basis for policy formulation, and the lack of analytical capability and institutional capacity for policy research in the area of resource management.

A third and perhaps more important obstacle is the way the system works: policy change in Thailand is made either incrementally, almost imperceptively, or by consensus in response to a major crisis that makes the need for change apparent to all. Even then, major policy reforms are politically destabilizing as exemplified by the fall of the Kriangsak government in 1980 following an increase in the price of oil made inescapable by the depletion of the Oil Fund, the source of the oil subsidy. Similarly, the 1984 devaluation of the baht necessitated by falling exports and rising trade deficits has caused a political turmoil that threatened to undermine government stability. A radical policy reform is both politically and culturally unacceptable except at times of a major crisis. Waiting for a major environmental crisis to attain consensus would be disastrous for the resource base and possibly irreversible. Pushing forward with an outright policy reform would be equally disastrous in sociopolitical terms and could cause a backlash against similar efforts for years.

Political economy considerations leave only one pragmatic alternative: incremental, almost imperceptible, policy changes advanced on several fronts by activities and projects that are feeding into the policy process without being perceived as advocating or leveraging particular policies. This is critical in the Thai cultural and political context: policy change is not effected in Thailand unless it is understood, espoused and promoted indigenously; leveraging, conditionality or pressure from outside is rarely well-received and is often counterproductive. The recent political crisis triggered (though not caused) by US pressures to enact a Copyright Law is a case in point. Even solicited expert advice from outside is filtered, molded, modified and recast in terms and time dimensions that are often untraceable to its origin.

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USAID as a Catalyst and Facilitator of Change

In this context, two questions arise for the ManRes Project and the role of USAID in helping to bring about policy changes that would improve natural resource management and promote sustainable development. First, if pressure, leverage or conditionality are judged to be counterproductive what role can USAID play to assist the process of policy change and what instruments can it use for this purpose? Second, if policy change must be gradual and incremental, almost imperceptible, how is progress towards the objectives, and the overall performance of the project to be assessed? If the individual projects are removed from the policy process how is the project management to ensure that each project does not take a life of its own and become an end in itself rather than a means towards a policy objective? The need for performance and evaluation criteria is particularly important since the project does not lend itself to conventional cost-benefit analysis and internal rate of return criteria. Below we discuss first the project instruments and then the evaluation criteria.

Project Instruments as Catalysts for Policy Change

A list of instruments for a seven-year project cannot be either comprehensive or binding. Some flexibility must be preserved to make adjustments as new knowledge is gained or as circumstances change. The selection of instruments is based on three criteria: (a) the recognition that the most acceptable, and in the long run, most effective role for USAID to play in effecting policy change in Thailand as that of a catalyst and a facilitator that helps create a conducive environment for change and assists the process of change; (b) a judgement of what brings about policy change in Thailand, that is, the conditions and prerequisites that will need to be met for the slow and tenuous process of change to gather momentum and become sustainable beyond the life of the project; and, (c) an assessment of USAID's areas of comparative advantage based on its long experience of involvement in Thailand and elsewhere.

The ultimate objective of the project instruments is to build consensus and capacity for

policy change that will improve the management of natural resources and the environment and, thereby, ensure the sustainability of the development process underway. The intermediate or proximate objectives of the project instruments are:

- (a) to generate and disseminate factual information and analytical knowledge on the state, management and potential of natural resources in Thailand;
- (b) to increase public awareness of environmental issues and promote acceptance of the need for change in private behavior and public policy;
- (c) to build analytical capacity and hands-on experience in analysing environmental problems and formulating policy solutions; and,
- (d) to build the institutional strength of relevant government agencies, NGO's, educational and research institutions and the private sector and to generate commitment among decision makers and bureaucrats for policy change and implementation.

The project instruments may be grouped into four interconnected, partially overlapping and mutually reinforcing groups: (a) pilot projects, institutional support and technical assistance; (b) research support; (c) environmental awareness activities and (d) education and training. The Table below lists the individual instruments in each group and their primary, secondary and incidental objectives. The instruments are self-explanatory, except for the pilot policy projects which constitute the closest and most apparent link between projects and policies. As indicated earlier, one of the obstacles for policy change is the lack of the necessary parameters and analytical basis for formulating alternative policies. For example, we cannot predict the consequences of privatization of forest lands or the establishment of communal ownership in a buffer zone around a national park. We have a priori hypotheses based on theory and experience in other countries but these hypotheses have not been tested in Thailand. It is far more difficult to effect policy change when its consequences are unknown or highly uncertain.

The pilot policy projects would provide a testing ground for a number of policy options

that are amenable to localized application. For example, with the support of local authorities, communal ownership could be introduced in an estuary with a multiplicity of resources (fisheries, aquaculture potential, mangrove forest, tourism etc) in proximity of a community known to have a cohesive social organization. Such a pilot project can be reinforced with support for social science research and observation/study tours in countries such as Sri Lanka and Japan which have a long history of successful communal property systems. The results of such pilot projects can be used to make improvements and to replicate them in other sites with increased local participation. If successful, the knowledge and publicity generated from such experiments would help their extension to the national level.

Performance Criteria for Project Monitoring and Evaluation

The performance of the project and its individual subprojects and instruments can be evaluated at two levels: at the level of the intermediate or proximate objectives or at the level of the ultimate objective, the inducement of a policy change that would improve resource management. Evaluation of performance at the intermediate (policy input) level is easier but less satisfactory than at the final (policy output) level. For example, human resource development or training can be evaluated based on the number of persons who have successfully completed their training under the project; this is an easier but a less satisfactory evaluation than one based on the policy changes effected but those who have participated in the training. Similarly, research support may be evaluated based on the number and quality of research reports and publications but more pertinent would be an evaluation of the impact of supported research on policy. Following are some indicators for monitoring and evaluating the project against its primary and secondary objectives.

The contribution of the project to information and knowledge could be monitored and evaluated based on the number and quality of research reports, publications and statistical data banks, as well as, the number of successfully completed, pilot policy projects, and the

circulation of the project publications and Journals. The contribution of the project to awareness and acceptance may be judged by polling a cross section of the public or by observing a number of related indicators such as: the trend in press coverage of environmental issues; the reference to environmental issues in public statements by government officials, politicians and the private sector; public reaction to development projects with environmental implications such as the Nam Choan Dam; the acknowledged consideration of environment development trade-offs in policy decisions etc; the circulation of the newsletter and audiovisual productions etc.

The project's performance in terms of enhancement of analytical capacity and experience may be evaluated in terms of the number of trainees that have successfully completed training; the number of pilot projects and study tours; the amount and quality of research completed under the project, and the degree of competition for research grants. Finally, the project's contribution to institutional strength and commitment may be inferred from: (a) increasing budget allocations to environment-related projects especially by government agencies and NOS's supported by the project; (b) spontaneous introduction of new projects by Thai agencies and NGO's patterned after the ManRes Project; (c) increasing number of government scholarships earmarked for environment-related training; (d) increasing number of environment-related bills submitted to Parliament; and, (e) increasing borrowing by RTG for natural-resource-related projects. Recognizing that success in intermediate objectives (policy inputs) may not necessarily be translated into policy changes (policy outputs) it would be appropriate to monitor and evaluate the project in terms of its impact on policy formulation, as well. While it would be difficult to attribute or even link policy changes directly to the project, since some policy changes would have taken place anyway, it is possible to infer the contribution of the project by observing the differential speed and ease of policy change in areas where the project has supported pilot projects, study tours, conferences, policy research and training compared to other areas where the project had minimal involvement. Because of

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the slowness and incremental nature of policy change in Thailand the criteria for monitoring and evaluation of the projects' policy impact must be cast in terms of "movement in the right direction" or "progress towards" rather than "reversal of policies" or major "new initiatives".

Here, are some examples:

- progress towards issuing secure and transferable land titles to insecurely held land (squatted land, STK and SPK land).
- progress towards degazetting and privatizing certain forest lands
- progress towards reform of the current concession and forest taxation system
- increasing recognition of the importance of non-timber forest products and services
- increased economic incentives for private sector participation in reforestation
- increased public investment allocations to rehabilitation and protection of critical watersheds
- shift of RID funds from construction to O & M for existing irrigation systems
- progress towards the establishment of water user associations, water rights and water pricing
- reduction of agricultural taxation, elimination of agricultural chemical subsidies, and promotion of tree crops, ecologically sound farming systems and integrated pest management
- movement towards recognition, rejuvenation and strengthening of communal property rights as a cost-effective means of managing coastal resources, village forests, and buffer zones around national parks.
- progress towards introduction of effective limitations on entry into fisheries such as licensing schemes, territorial use rights (TURFs) and artificial reefs
- progress towards introduction of pollution charges to replace or at least supplement the ineffective emission standards currently in use
- experimentation with refundable deposits for beverage containers and packaging material and with disposal charges and recycling incentives
- progress towards reduction of protection and capital subsidies to large scale industries and

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increased allocation of resources to rural industry

One may go one step further and monitor actual changes in resource use and the state of the environment through the leading resource indicators to be developed as part of this project e.g: reduction in the rate of deforestation, increase in the rate of reforestation, reduction in soil erosion and sedimentation, reduction in BOD in Chao Phaya river etc. and then attempt to link these changes to the project. While this is the ultimate test of the project's success, the linkage is too indirect and tenuous to be meaningful. It is also important to note that even the linkage between project and policy changes, in many cases, it would not be based on an "with and without" comparison, most appropriate for project evaluation, but on a "before and after" comparison, which is acceptable for a pioneering project of this kind.

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PROJECT INSTRUMENTS TO BUILD CONSENSUS AND CAPACITY FOR POLICY CHANGE
 THAT WILL IMPROVE THE MANAGEMENT OF NATURAL RESOURCES AND ENVIRONMENT

PROJECT INSTRUMENTS	Information and Knowledge	Awareness and Acceptance	Analytical Capacity and Experience	Institutional Strength and Commitment	Consensus and Capacity for Policy Change
<u>PILOT PROJECTS, INSTIT. SUPPORT & TA</u>					
Pilot Project and Micropolicy Tests	xxx	x	xxx	xx	xxx
Targeted Catalytic Technical Assistance	xx		xx	xxx	xxx
Institutional Support/Networking	x	x	xx	xxx	xxx
Leading Resource Indicators	xxx	x	xx	x	xxx
Environmental Accounts	xxx	x	xx	x	xxx
Monitoring Environmental Change	xxx	x	x	x	xxx
<u>RESEARCH SUPPORT</u>					
Research Support-Policy Analysis	xxx		xxx	xx	xxx
Research Support-Applied Research	xxx		xxx	xx	xxx
Competitive Research Grants	xx	x	xxx	x	xxx
Observation/Study Tours	xxx	x	x	x	xxx
Studies and Publications	xxx	x	xx	x	xxx
Natural Resources Journal	xxx	x	xx		xxx
Conferences, Seminar & Workshops	xxx	xxx	x	x	xxx
<u>ENVIRONMENTAL AWARENESS</u>					
Sustainable Development Forum	xx	xxx	x		xxx
Guest Speakers' Series	xx	xxx	x		xxx
Newsletter	xx	xxx	x	x	xxx
NGO Support	x	xxx		xxx	xxx
Environmental Awards	x	xxx	x	x	xxx
Environmental Awareness Activities		xxx		x	xxx
Audiovisual Productions	x	xxx	x		xxx
<u>TRAINING</u>					
Environmental Education/Curricula	xx	xxx	x	x	xxx
Degree Training/Thesis Support	xx	x	xxx	xxx	xxx
Non-degree Training	xx	x	xx	xxx	xxx
In Service Training	xx	x	xx	xxx	xxx

xxx : Primary objective
 xx : Secondary objective
 x : Incidental

MONITORING AND EVALUATION

Generators and Users of Information and Information Process

This is a "program" type project which will involve a wide number of types of communications and information management. Various government agencies and other organizations will be involved in information/data generation, and various agencies, institutions and sectors of the society will be involved in the use of the information. Furthermore, information will be generated at multiple levels in the project, and what information will be generated and how and by whom it will be used will also vary by level. Given the uncertainty of the project at this stage of development, the design team considered that it was impractical to identify the exact types of information needed during implementation at the project paper stage. The project is therefore planned so that these needs will be progressively addressed, many of them during the first year of the project.

Institutional Locus

There will be more than one institutional locus of the information processes described above. Key planning and monitoring agencies will be involved (NESDB, ONEB and DTEC) as will functional government agencies (RFD, MOE), as well as universities and research institutions. During the life-of-the-project USAID will serve as the primary locus for the collection and maintenance of project related data and information. During project implementation the locus of this information process should be phased into the regular operations of an RTG institution.

Feedback and Installation Processes

Much of the primary monitoring information will be generated and used at the project component level (subproject and/or element). Component activities will be monitored directly by the responsible implementing agency and in many cases this will be supplemented by the project financed consultants. Using this information all the routine problems, together with recommended solutions can be brought to the attention of the appropriate Thai and USAID officials in the form of periodic progress reports. These progress reports will examine input/output level progress. Review of project component progress at the input/output level will also take place during the submission of the Annual Work and Financial Plans by the responsible Thai implementing agencies. Each subproject will have an appropriate mechanism (e.g. an advisory committee) for coordination among the different subproject elements to which this information will be submitted. Each project component manager

will be required to maintain the needed information and submit it to the committee, with copies to USAID.

The project also provides for a significant amount of monitoring and evaluation to be carried out by USAID. The USAID staff members, mentioned in Annex II Section III A, will provide a central source of regular support for carrying out this function throughout the life-of-the-project. USAID will also use these persons to facilitate the exchange of project implementation information between components. Furthermore the project will introduce the use of a Resource Group, or a "think tank", to monitor the overall project and help synthesize and disseminate subproject data.

During the first year of implementation, project resources will finance the costs of a long-term evaluation advisor (and perhaps some short term IQC assistance). This assistance will be used to help collaboratively develop and install the detailed evaluation and monitoring program for all the aspects of the project. This will involve the design of the overall information system, to include detailed elaboration of key questions, identification of the indicators, and the data collection methodologies to be used. At the same time, no precise methodological "blue print" is likely to appear during the first year of the project for developing the perfect project information system. Accordingly, the AID financed evaluation advisor will have to design and install many elements of the information system as the management needs become clearer based on actual implementation experience. Objective indicators and data acquisition methodologies will be identified and installed within each subproject/activity, and baseline data established that will meet needs for later evaluation purposes.

The following outlines the likely framework for measuring progress on policy change objectives.

Performance Criteria

The performance of the project and its individual subprojects and instruments can be evaluated at two levels: at the level of the intermediate or proximate objectives or at the level of the ultimate objective, the inducement of a policy change that would improve resource management. Evaluation of performance at the intermediate (policy input) level is easier but less satisfactory than at the final (policy output) level. For example, human resource development or training can be evaluated based on the number of persons who have successfully completed their training under the project; this is an easier but a less satisfactory evaluation than one based on the policy changes effected by those who have participated in the training. Similarly, research support may be evaluated based on the number and quality of research reports and publications but more pertinent would be an evaluation of the impact of supported research on policy. The following are some of the possible indicators that may be used for monitoring and evaluating the project against its primary and secondary objectives.

The contribution of the project to information and knowledge could be monitored and evaluated based on the number and quality of research reports, publications and statistical data banks, as well as, the number of successfully completed, pilot policy projects, and the circulation of the project publications and Journals. The contribution of the project to awareness and acceptance may be judged by polling a cross section of the public or by observing a number of related indicators such as: the trend in press coverage of environmental issues; the reference to environmental issues in public statements by government officials, politicians and the private sector; sophistication of public reaction to development projects with environmental implications such as the Nam Choan Dam; the acknowledged consideration of environment development trade-offs in policy decisions etc; the circulation of the newsletter and audio visual productions etc.

The project's performance in terms of enhancement of analytical capacity and experience may be evaluated in terms of the number of trainees that have successfully completed training; the number of pilot projects and study tours; the amount and quality of research completed under the project, and the degree of competition for research grants. Finally, the project's contribution to institutional strength and commitment may be inferred from: (a) increasing budget allocations to environment-related projects especially by government agencies and NGO's supported by the project; (b) spontaneous introduction of new projects by Thai agencies and NGO's patterned after the Project; (c) increasing number of government scholarships earmarked for environment-related training; (d) increasing number of environment-related bills submitted to Parliament; and, (e) increasing borrowing by RTG for natural-resource-related projects.

Recognizing that success in intermediate objectives (policy inputs) may not necessarily be translated into policy changes (policy outputs) it would be appropriate to monitor and evaluate the project in terms of its impact on policy formulation, as well. While it would be difficult to attribute or even link policy changes directly to the project, since some policy changes would have taken place anyway, it may be possible to infer the contribution of the project by observing the differential speed and ease of policy change in areas where the project has supported pilot projects, study tours, conferences, policy research and training compared to other areas where the project had minimal involvement. Because of the slowness and incremental nature of policy change in Thailand the criteria for monitoring and evaluation of the projects' policy impact must be cast in terms of "movement in the right direction" or "progress towards" rather than "reversal of policies" or major "new initiatives". Examples are indicated in Table I.

Table IPreliminary List of Indicators of Policy Change
Resulting in Improved Allocation and Use of Natural Resources

1. Progress towards issuing secure and transferable land titles to squatters in public forest lands not classified as critical watershed areas.
2. Progress towards degazetting and privatizing public forest lands that are classified as economic zones.
3. Progress towards reform of the current forest concession and taxation system.
4. Increased provision of economic incentives for private sector participation in reforestation.
5. Reduction of agricultural taxation, elimination of agricultural chemical subsidies, and promotion of on-farm tree crops, ecologically sound farming systems and integrated pest management.
6. Movement towards recognition, rejuvenation and strengthening of communal property rights as a cost-effective means of managing coastal resources, forest villages, and buffer zones around national park and protected areas.
7. Progress towards introduction of effective limitations on entry into fisheries, such as licensing schemes, territorial use rights, and the use of artificial reefs.
8. Increased provision of economic incentives for local participation in biological conservation -- e.g., rights to access fees for recreation, tourism products; employment and franchises in tourism or other park-related income-generating activities.
9. Progress towards introduction of pollution charges to replace or at least supplement the ineffective emission standards currently in use.
10. Progress towards reduction of protection and capital subsidies to large scale industries and increased allocation of resources to rural industry.

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The project might even go one step further and monitor actual changes in resource use and the state of the environment through the leading resource indicators to be developed as part of this project e.g: reduction in the rate of deforestation, increase in the rate of reforestation, reduction in soil erosion and sedimentation, reduction in BOD in Chao Phaya river etc. and then attempt to link these changes to the project. While this is the ultimate test of the project's success, the linkage is too indirect and tenuous to be meaningful. It is also important to note that even the linkage between project and policy changes, in many cases, it would not be based on a "with and without" comparison, most appropriate for project evaluation, but on a "before and after" comparison, which is acceptable for a pioneering project of this kind.

Gender-Related Concerns

Another important element of the design of the monitoring and evaluation system will be a gender-disaggregated data base to facilitate data collection for monitoring and evaluation. This data base would allow for the regular monitoring and evaluation of the integration of women in the subproject activities. USAID has recently financed the services of a Thai contractor to provide an analytical study of the role of women in the Thai economy and will identify the constraints which prevent increased participation. This study will focus its analysis on four ongoing USAID projects and the MANRES project. The study will therefore serve as an important first step in the conceptualization and design of the gender-disaggregated data base.

Levels of Information Management

The project will support and encourage a number of research and information generation initiatives in many of the subprojects (especially the Policy Analysis subproject) that will contribute to the generation of more useful information about the human processes of natural resource usages, the changing state of natural resources, and issue areas and implications. Information of this type will then be circulated throughout the society and mechanisms will be set up to insure that the people in the best positions to make use of this information to encourage beneficial changes will receive it, in forms that are most useful for this purpose. The mechanisms to be used include three basic types: (1) a substantial public awareness program that will make use of multiple public communications media (television, radio, newspaper and magazines); (2) forums for communications and increased interaction among selected individuals in key positions and sectors, including the use of meetings, symposia, conferences, networks, publications and newsletters; and (3) the subproject committees and a Resource Group to be set up under this project.

Evaluation Types and Scheduling

A mid-term and final evaluation will be held at the project level (exact timing to be determined with the assistance of the USAID evaluation

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advisor during the early stages of project implementation). These evaluations will include an examination of progress at all levels; particularly at the purpose, output and input levels. Because of the programmatic nature of this project, however, it is also expected that the evaluation team will make full use of key informants and semi-structured interviewing to obtain a comprehensive view of the project's role in and contribution to the social processes occurring that effect natural resource management in the country.

In addition to overall evaluations, "special purpose" evaluations will be held for particular subprojects and activities, based on the information provided to the project during monitoring, to include direct USAID monitoring. Many of these will be done "in house" by the project support personnel; others may be done by short-term contracting procedures. They will generally be of the rapid, low-cost variety, using techniques such as those recommended in the 1987 AID M & E Guidelines. Evaluations of this type will be used to help explain anomalies, to overcome unforeseen obstacles or to help decide how best to exploit unforeseen opportunities for expansion, greater spread effect, or initiation of new activities.

Other types of project evaluation, considered to be of major importance, will also be used, on no less than an annual basis throughout the life of the project. These will be based on yearly review meetings to which identified Thai citizens with high skills, integrity and capability are invited to participate along with USAID and RTG project staff and consultants. These meetings will be well prepared for, for example, by conducting rapid appraisal studies. The meetings will serve as a mechanism for evaluation and mid-course correction of project activities.

Examples of the various broad types of information, their means of monitoring and uses are summarized in this matrix:

	<u>Type of Information</u>	<u>Means of Monitoring</u>	<u>End Use</u>
Societal Level	general or major issues	research/collation	Thai govt. society
Major Project Level	goal/purpose/output indicators	appraisals and project processes	interim & final
Major Subproject Level	purpose/output indicators	appraisals and project processes	special evaluation
Routine Management Level	output/input finance	routine processes	project management

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Institutionalization

It is expected that the type of information system, monitoring, and evaluation to be used in this project, or implications from the data types and methodologies, can be used to help monitor both the state of society in relation to environment and natural resources in Thailand, and also to help monitor other projects focusing on change in practices designed to improve the way natural resources are managed. At the subproject level, institutionalization is expected to occur within the particular agencies and organizations participating. Additionally, however, it is expected that further loci for institutionalizing these in Thai government and society can be identified and developed during the life of the project. A process by which this will be carried out during the life of the project will be identified during the first year by the USAID evaluation advisor.

Budget

Within each of the subprojects and activities, funding will be used to support monitoring and evaluation needs. In addition, approximately \$400,000 in grant resources will be used to support project monitoring and evaluation.

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Project Implementation

1. Major Contracting Actions.
2. Summary Implementation Schedule.
3. Training Plan.
4. Request for AID/W Ad Hoc Redefinition of Authority (BANGKOK 21061).
5. PVO's To Be Included Under MANRES Project.
6. PSC Additional Mission Staff Support.
7. Illustrative qualifications for Training Specialist Consultant.

Management of Natural Resources and
Environment Project
Major Contracting Actions

A. Host Country

1. Under the Policy Analysis and Development subproject NESDB AND ONEB will jointly administer a small grants program. Criteria and guidelines to be applied by NESDB and ONEB in the administration of these funds will be approved by USAID. Subcontracts will be awarded based upon the solicitation and review of proposals from all qualified institutions. Long-term technical assistance will be provided to NESDB through the services of a policy advisor under host-country contract.

2. The initial Human Resource Assessment will be carried out under a host country contract. Requests for proposals will be sent to a list of qualified Thai organizations. DTEC will also contract for the services of a long-term training consultant.

3. DTEC will contract the services of an Administrative Systems Analyst/Liaison Officer for the duration of the project. DTEC will also procure commodities needed for administrative and logistical support (computer hardware/software, photocopy and facsimile equipment, office furniture and materials, and vehicle).

4. All of the above mentioned contracts will be awarded in conformance with AID HB 11 procedures. All consultant contracts will, to the maximum extent possible, be competed and contracted locally.

B. AID

1. The assistance provided under the Coastal Resources Management subproject, will follow from the existing cooperative agreement between AID/W and the University of Rhode Island (URI) Coastal Resources Center. A waiver for consideration of only one application must be approved by the AA/ANE. (As presented in this Annex, USAID has requested an Ad Hoc Redefinition of Authority to waive normal AID competitive procurement procedures). A separate Cooperative Agreement between USAID Thailand and URI will therefore be negotiated and executed prior to the preparation of a first Annual Work and Financial Plan; this arrangement will build on the present MOU among URI, DTEC, ONEB and USAID as developed under the Mission-funded EPD II grant for CRM activities in Thailand. URI will continue as the prime contractor for managing USAID assistance to the CRM program, so as not to disrupt the continuity of technical and administrative relationships with the RTG that have painstakingly been nurtured over the past two years. Furthermore URI will make a significant resource contribution under the Cooperative Agreement.

2. Under the Industrial Environmental Management subproject, technical services and training will be provided under existing AID/W Cooperative Agreements with the World Environment Center (WEC) and the Conservation Foundation (CF) to provide assistance to FTI based upon specific requests to USAID. WEC has a demonstrated capability in areas such as: industrial pollution control; industrial health and safety; and industrial accident prevention and recovery. CF has a demonstrated capability in areas such as: toxic and hazardous waste management and environmental policy and planning. Furthermore under a Cooperative Agreement both WEC and CF will contribute substantial resources which would be in addition to the resources provided by AID. In particular, WEC will make available senior level executives from major U.S. Corporations to provide needed expertise at no cost to the project other than travel expenses and per diem.

3. Under the Protected Areas Planning and Management element of the Biological Resources Management subproject, technical services and training will be provided by the U.S. National Park Service (USNPS). These services will be provided through a project funded PASA through AID/W following AID HB 12 procedures. The Project Committee has determined that USNPS is particularly well suited to provide the expertise needed in parks and protected areas planning, management and administration. For example, USNPS has managed programs of similar magnitude in several developing countries, including a large technical assistance and training program in Sri Lanka. In addition, since some of the needed services will involve the development of government regulatory functions, such work can best be performed by the agency charged with the same regulatory functions in the U.S. USNPS has also been involved in various activities in Thailand including work related to the design of the MANRES project and the implementation of activities under the EPD II project. As a result USNPS has been able to develop excellent working relationships with key RTG officials.

4. Under the Biodiversity Research and Conservation element of the Biological Resources Management subproject, technical assistance, small research grants, training, information networking, and pilot demonstration activities will be carried out through buy-ins available under the new ST/FENR FY 88 Conservation of Biological Diversity Project (No. 936-5554). Utilizing this ST/FENR project mechanism, the needed USAID financed inputs will be provided through a Cooperative Agreement with World Wildlife Fund-U.S., as the lead institution working collaboratively with the Nature Conservancy (TNC) and the International Institute for Environment and Development (IIED), which recently became affiliated with the World Resources Institute (WRI). Under this buy-in arrangement, close linkages will also be available with other U.S. Institutions with overseas conservation programs such as the New York Zoological society, the Missouri and New York Botanical Gardens, and selected universities. Collaborative arrangements are also possible with the Peace Corps Conservation and Environmental Education Program, the

U.S. Forest Service, Fish and Wildlife Service and the National Park Service.

5. Long-term and short-term technical assistance for the Rural Resources Management subproject, will be provided through an appropriate contracting mechanism with a qualified U.S. organization and/or individuals. In addition, selected technical resources will be obtained through the IIED buy-in mechanism described in paragraph 4 above.

6. Under the Environmental Awareness and Education subproject, USAID will make grants to several registered U.S. NGOs and Thai NGOs to carry out specific field level activities. In accordance with Chapter 2, Section 3 of AID HB 13, USAID will invite applications from about eight Thai NGOs that have expressed interest in carrying out activities in the areas contemplated under the MANRES project. These include: the Thai Environmental and Community Development Association (TECDA); Wildlife Fund Thailand (WFT); Rural Friends Association (RFA); the Concerned American for Relief Everywhere-Thailand (CARE/T); the Population and Community Development Association (PDA); Catholic Relief Services in Thailand (CRS/T); the SVITA Foundation; and the National Council of Social Welfare of Thailand (NCSWT). These NGOs are known by the USAID office of Technical Resources to be able to undertake the efforts which USAID is interested in supporting and stimulating. Each of these NGOs is properly registered in Thailand and with USAID, and have established institutional capacities to carry out field level activities with target groups. Indeed, most of the above mentioned Thai NGOs have already received grants under USAID's ongoing PYO Co-Financing II project to implement activities very similar in nature to those being contemplated under the proposed MANRES project. (Annex L briefly summarizes some of the relevant activities of these NGOs). For those NGOs specifically identified in Annex I to the Project Agreement, USAID will solicit proposals and when appropriate will enter into direct negotiations and execute grant agreements. Annex I to the Project Agreement will be modified when necessary to identify additional NGOs. All grants will be provided in accordance with AID HB 13 procedures.

7. Under the Prospective Policy Research Program element of the Policy Analysis and Development subproject, USAID will enter into a direct contract with TDRI. In addition the required long-term and short-term technical assistance will be provided under USAID direct contract with a qualified U.S. university or private policy research institution.

8. The expenses related to the outside Advisory Group (or Resource Group) discussed in Section III A will be reimbursed following a process similar to that used under the ongoing Science and Technology for Development Project (493-0370). In order to provide a mechanism for consultant type support on an "as needed" bases, USAID will consider

establishing an IQC arrangement with a local consulting organization. This contract will be awarded based upon the solicitation and review of proposals from all qualified institutions.

9. The two additional USAID project staff (mentioned in Section III A) will be contracted directly by USAID under personal service contracts. This will include: (1) an Environmental Resource Advisor; and (2) a Monitoring and Evaluation Specialist. To the fullest extent possible contracting for these personnel will be competed and carried out locally.

9. USAID will also contract for consultants to carry out needed project evaluations and audits. To the maximum extent possible these services will be contracted competitively, taking into full consideration the utilization of qualified Gray Amendment Organization.

**Management of Natural Resources
and Environment Project**

Project Schedule of Contracting Actions

SUBPROJECT	SOURCE/MODE OF CONTRACT	TARGET DATE
<u>Coastal Resources Management</u>	University of Rhode Island USAID Cooperative Agreement	1/89
<u>Industrial Environmental Management</u>	World Environment Center Cooperative Agreement (Buy-in)	2/89
	IIED* (The Conservation Foundation) Cooperative Agreement (Buy-in)	6/89
<u>Rural Resources Management</u>	Individual Consultant USAID or Host Country PSC	2/89
	IIED* Cooperative Agreement (Buy-in)	6/89
<u>Biological Resources Management</u>	National Park Service PASA	12/88
	World Wildlife Fund-U.S. Cooperative Agreement (Buy-in)	1/89
<u>Human Resources Development</u>	Individual Consultant Host Country PSC	12/88
<u>Environmental Awareness and Education</u>	Institutional Contract USAID Direct	9/89
	IIED* Cooperative Agreement (Buy-in)	6/89
<u>Policy Analysis and Development</u>	Individual Consultant (NESDB) Host Country PSC	2/89
	Institutional Contract USAID Direct	2/89

* One-buy-in to IIED cooperative agreement covering 3 subproject areas

Summary Implementation Schedule
Phase One

<u>Activity</u>	<u>Completed by Month/Year</u>
Project Agreement Signed	August 1988
PIO/T for URI Cooperative Agreement Prepared	November 1988
Initial CP's satisfied	October-December 1988
PIO/T's for PSC's (so advertising can be done)	February 1988
Pre-Implementation Workshops Completed	December 1988
PASA Document Sent to AID/W	November-January 1988
Initial Financial and Work Plans Development	November 1988
FTI Implementation Group set up	December 1988
Initial Requests for Assistance from WEC and CF made to AID/W	December 1988
Additional PSC Project Technical Advisors on board	December 1988
Project Resource Group Set Up	December 1988
Cooperative Agreement with URI executed	January 1989
Initial NGO Financial Reviews completed	January 1989
Initial group of Training Participants identified.	February 1989
PASA with U.S. Park Service executed (AID/W)	February 1989
Initial Human Resources Assessment contracted (HCC,	April 1989
Initial Requests for Assistance from WWF-US made to AID/W	April 1989
Initial Human Resource Assessment completed	August 1989
Training of FTI Staff completed	June 1989
Second Set of Financial and Work Plans developed	August 1989

Annex L-8

Environmental Awareness in Industry Workshops initiated	August 1989
First Group of Training Participants sent to U.S.	August 1989
PVO Grants with WFT, CARE and Magic Eyes executed (RCO)	October 1989
Second Group of Training Participants sent to U.S.	August 1990
Third Group of Training Participants sent to U.S.	March 1991
First Joint Project Evaluation completed	December 1991

FILE NAME: NRMPIRD
 Date: April 20, 1988

NATURAL RESOURCES MANAGEMENT PROJECT
 HUMAN RESOURCE DEVELOPMENT
 TRAINING PLAN 1988 - 1994

TYPE OF TRAINING	YEAR 1 FY89	YEAR 2 FY90	YEAR 3 FY91	YEAR 4 FY92	YEAR 5 FY93	YEAR 6 FY94	YEAR 7 FY95	TOTAL	NUMBER OF P/M
Academic Training									
Masters Degree (24 months)									
New starts	5	10	10	10	10	5	0	50	
Carry-over		5	10	10	10	10	5	50	
In Training - Total	5	15	20	20	20	15	5	100	1200
Ph. D. Degree (48 months)									
New starts	3	10	10	7	0	0	0	30	
Carry-over		3	13	23	27	17	7	90	
In Training - Total	3	13	23	30	27	17	7	120	1440
Total - Academic Training	8	20	20	17	10	5	0	80	2640
Technical									
Observation Study Tour (15 days)	5	5	5	5	5	5	5	35	35
1-Month Course	15	15	15	15	15	15	15	105	105
3-Month Course	15	15	15	15	15	15	15	105	315
6-Month Course	10	10	10	10	10	10	10	70	420
10-Month Course	5	5	5	5	5	5	5	35	350
Total - Technical Training	50	50	50	50	50	50	50	350	1225
Total by Year (New Start)	58	70	70	67	60	55	50	430	3865
Total by Year (In Training)	58	78	93	100	97	82	62		

PSD:SCMPONGSE:04/20/88

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CLASS: UNCLASSIFIED
 CHRG: AID 04/28/88
 APPRV: AD:LTWENTYMAN
 DRFTD: PSD:THAMMANN:RM
 CLEAR: 1. PD:VB
 2. TR:DJC
 5. ADD:EJP
 3. TR:MP
 4. RCO:NE
 DISTR: CHRON AID CDA2
 CR TR PSD

AIDAC

E.O. 12356: N/A
 SUBJECT: MANAGEMENT OF NATURAL RESOURCES AND
 ENVIRONMENT PROJECT (493-0345)-SOLE SOURCE PROCUREMENTS

REF: STATE 262205

1. SUMMARY: MISSION IS IN THE FINAL STAGE OF DEVELOPMENT OF THE SUBJECT PROJECT AND HAS IDENTIFIED A SIGNIFICANT PROCUREMENT ACTION WHICH WILL REQUIRE AN EXCEPTION TO NORMAL AID COMPETITIVE PROCUREMENT PROCEDURES. IN ORDER TO FACILITATE THE FINAL PREPARATION OF THE PROJECT PAPER AND THE AUTHORIZATION AND OBLIGATION OF PROJECT BY THE END OF THIRD QUARTER, MISSION REQUESTS AD HOC REDELEGATION OF AUTHORITY FOR MISSION TO GRANT THE WAIVER IDENTIFIED IN PARAGRAPH 3 BELOW. FOR AID/W INFORMATION, PARAGRAPH 4 IDENTIFIES THREE PASA PROCUREMENT ACTIONS WHICH ARE ANTICIPATED TO BE EXECUTED UNDER THE SUBJECT PROJECT. NO SPECIFIC AID/W ACTION REGARDING THESE PASA PROCUREMENTS APPEARS REQUIRED THIS TIME. FULL PASA JUSTIFICATIONS WILL BE INCLUDED WITH THE PLOT FOLLOWING OBLIGATION OF THE SUBJECT PROJECT. END SUMMARY.

2. BACKGROUND: THE GOAL OF THE PROPOSED POLS. 44 MILLION MANAGEMENT OF NATURAL RESOURCES AND ENVIRONMENT PROJECT (MANRES) IS TO PROMOTE SUSTAINED ECONOMIC DEVELOPMENT OF THAILAND. ITS PURPOSE IS TO IMPROVE THE MANAGEMENT AND UTILIZATION OF THAILAND'S NATURAL RESOURCES AND ENVIRONMENTAL SYSTEMS. THE PROJECT WILL SUPPORT THE DEVELOPMENT OF COST EFFECTIVE AND SUSTAINABLE APPROACHES FOR RESOLVING KEY NATURAL RESOURCE UTILIZATION PROBLEMS AND FOR INCREASING PUBLIC AND PRIVATE SECTOR UNDERSTANDING AND INVOLVEMENT. THE PROJECT WILL INCLUDE ACTIVITIES IN THE FOLLOWING AREAS: COASTAL RESOURCES MANAGEMENT; URBAN-INDUSTRIAL ENVIRONMENTAL QUALITY; RURAL RESOURCES MANAGEMENT; BIOLOGICAL RESOURCES MANAGEMENT; HUMAN RESOURCES DEVELOPMENT; ENVIRONMENTAL AWARENESS AND EDUCATION; AND POLICY ANALYSIS AND DEVELOPMENT. THE PLANNED LIFE OF THE PROJECT IS SEVEN YEARS. PER REETEL ANPAC REVIEWED AND APPROVED THE PID FOR THE SUBJECT PROJECT AND REDELEGATED TO THE USAID DIRECTOR THE AUTHORITY TO AUTHORIZE THE PP.

3. A. DURING THE INTENSIVE DESIGN OF THE PROJECT WE DETERMINED THAT THE ASSISTANCE PROVIDED UNDER THE

COASTAL RESOURCE MANAGEMENT (CRM) SUBPROJECT WOULD NEED TO FOLLOW FROM THE EXISTING COOPERATIVE AGREEMENT BETWEEN AID/W AND THE UNIVERSITY OF PHOENIX ISLAND (UPI) COASTAL RESOURCES CENTER, WHICH INCLUDES THEIR ONGOING ACTIVITY IN THAILAND. A SEPARATE COOPERATIVE AGREEMENT BETWEEN USAID THAILAND AND URI WOULD THEREFORE BE NEGOTIATED UNDER THE SUBJECT PROJECT AND WOULD BUILD ON THE PRESENT MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN URI, RTG AND USAID AS DEVELOPED UNDER THE MISSION-FUNDED EPD II GRANT FOR CRM ACTIVITIES IN THAILAND. UNDER THE PROPOSED USAID AGREEMENT URI WILL CONTINUE AS THE PRIME CONTRACTOR FOR MANAGING USAID ASSISTANCE TO THE CRM PROGRAM, SO AS NOT TO DISRUPT THE CONTINUITY OF TECHNICAL AND ADMINISTRATIVE RELATIONSHIPS WITH THE RTG THAT HAVE PAINSTAKINGLY BEEN NURTURED OVER THE PAST TWO YEARS. URI HAS A LONG STANDING SUPERIOR CAPABILITY FOR DEVELOPING AND IMPLEMENTING INTEGRATED CRM POLICY INITIATIVES AT THE LOCAL AND REGIONAL LEVELS IN THE U.S. OVER THE PAST THREE YEARS THESE CAPABILITIES HAVE BEEN FURTHER ENHANCED THROUGH APPLICATION TO TROPICAL CLIMATE COUNTRIES IN SOUTHEAST AND SOUTH ASIA AND IN SOUTH AMERICA. UNDER THE ONGOING AID FINANCED ACTIVITY IN THAILAND, URI HAS BEEN PERFORMING SATISFACTORILY IN THE DESIGN AND IMPLEMENTATION OF THAILAND'S FIRST COMPREHENSIVE CRM INITIATIVE. MANY OF THE KEY URI ADVISORS ASSIGNED TO THIS ONGOING EFFORT WOULD PROBABLY FORM THE CORE GROUP OF ADVISORS UNDER THE FOLLOW-ON EFFORT, THEREBY CAUSING A SIGNIFICANT SAVINGS IN TIME NORMALLY SPENT IN MOBILIZATION AND PERSONNEL SELECTION AND SETTLING IN. FURTHERMORE URI CAN MAKE A SIGNIFICANT RESOURCE CONTRIBUTION UNDER THE COOPERATIVE AGREEMENT. THE ESTIMATED VALUE OF THE COOPERATIVE AGREEMENT WITH URI IS DOLS. 4 MILLION.

B. HANDBOOK 13, CHAPTER 2B 2 REQUIRES THE SPECIFIC APPROVAL OF THE ASSISTANT ADMINISTRATOR OR THEIR DESIGNEE WHEN APPLICATIONS ARE RESTRICTED TO A SINGLE ENTITY. SINCE WE WANT TO MAKE THE AWARD TO URI AN AD HOC DELEGATION IS REQUESTED TO ALLOW THE USAID MISSION DIRECTOR TO ACT IN THE AA'S PLACE TO ALLOW A SINGLE APPLICATION.

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4. AT THIS STAGE, USAID ALSO ANTICIPATES THAT THE FOLLOWING PROJECT FUNDED PASA AGREEMENTS WILL BE EXECUTED BY AID/W UNDER THE MANRES PROJECT:

- A. UNDER THE BIOLOGICAL RESOURCES SUBPROJECT TECHNICAL SERVICES AND TRAINING FOR PROTECTED AREA MANAGEMENT WILL BE PROVIDED BY THE U.S. NATIONAL PARK SERVICE (USNPS).

- B. THE U.S. FISH AND WILDLIFE SERVICE (USFWS) WILL PROVIDE TECHNICAL ASSISTANCE AND TRAINING TO SUPPORT BIOLOGICAL DIVERSITY AND WILDLIFE CONSERVATION ACTIVITIES OF THE BIOLOGICAL RESOURCES MANAGEMENT SUBPROJECT.

5. AS A RESULT OF INITIAL DISCUSSIONS ON MANRES PROJECT WITH RTG OFFICIALS, AGREEMENT HAS BEEN REACHED IN PRINCIPLE TO USE PASA MECHANISMS FOR PROCUREMENT OF CERTAIN NEEDED SERVICES. ALL PARTIES AGREE THAT ESSENTIAL TA SERVICES MUST BE IN PLACE DURING THE FIRST YEAR FOLLOWING EXECUTION OF THE PROJECT AGREEMENT IN ORDER TO EFFECTIVELY BUILD ON THE EMERGING LOCAL MOMENTUM FOR ACTION ON KEY NATIONAL RESOURCE MANAGEMENT ISSUES. ALL THE U.S. SOURCE INSTITUTIONS IDENTIFIED ABOVE ARE CONSIDERED BY BOTH USAID AND RTG TO BE EITHER UNIQUELY OR PREDOMINATELY QUALIFIED.

6. MISSION IS WORKING HARD TO AUTHORIZE SUBJECT PROJECT BY JUNE 30, 1988. MISSION WILL BE IN A GOOD POSITION TO MEET THAT TARGET WITHOUT ANY UNNECESSARY DELAY IF THE AUTHORITY TO GRANT THE NECESSARY WAIVER (IDENTIFIED IN PARAGRAPH 3) IS AVAILABLE AT THE FIELD LEVEL. AID/W PRIORITY ASSISTANCE WOULD THEREFORE BE MOST APPRECIATED. WINDER

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PVO's To Be Included Under MANRES Project
Summary of PVO Activities

- The Thai Environmental and Community Development Association (TECDA). This PVO is currently producing social marketing and educational audio-visuals materials regarding environmental conservation to complement previously-developed printed materials.
- Wildlife Fund Thailand (WFT). This PVO is currently carrying out simultaneous conservation education and ecologically sound rural development activities on the Khao Yai National Park periphery in order to help stop deforestation and to reforest selected areas.
- Rural Friends Association (RFA) is carrying out activities to increase the incomes of landless farmer and small land holders using ecologically-sound development strategies.
- The Concerned Americans for Relief Everywhere - Thailand (CARE/T) is currently developing local capacities to publish/distribute a children's magazine aimed at improved awareness of relevant health and environment issues and with other donor support, has implemented a successful social foresting project.
- Population and Community Development Association (PDS). PDS has been supporting various small reforestation projects in five provinces and a number of small irrigation projects.
- Catholic Relief Services in Thailand (CRS/T). This PVO is about to initiate a project to rehabilitate environmental condition in 12 selected villages of Buriram province.
- The National Council of Social Welfare of Thailand (NCSWT). NCSWT has been supporting for several promotional campaigns throughout Thailand to address issues related to narcotics awareness and prevention and driver safety.
- The SVITA Foundation has strengths in training, in contacts which cut across rural-urban and GO-NGO lines, and in environmental conservation and development.

Augmentation of DTEC/Mission Staff**

The project will require additional technical and administrative support, provided by up to four individual contractors in the following areas:

- 1) Environmental Resource Generalist -- responsible for working closely with and advising the Project Officer on all aspects of project development and implementation. Located at USAID. Life-of-project duration.
- 2) Administrative Systems Analyst/Liaison -- an individual with substantial Thai experience and language capability to help DTEC maintain effective liaison with RTG implementing agencies and to assist the USAID Project Officer and FSN Subproject Managers with administrative and financial analysis. Located at DTEC under host-country contract. Life-of-project duration.
- 3) Monitoring and Evaluation Specialist -- an expert in project monitoring and evaluation design who can help USAID and the RTG to build into the MANRES Project an effective M&E information system that will respond to project requirements as well as RTG policy development needs. Located at USAID as direct PSC. First two years of project.
- 4) Training Coordinator -- an experienced training program advisor, familiar with USAID participant training procedures, who can work with DTEC to manage the Human Resources Development Subproject and maintain effective monitoring and follow-up of training placements. Located at DTEC under host-country contract. First three to four years to project.

** These positions will be funded under the Project Administration budget line item.

Illustrative Qualification for a
Training Specialist Consultant

Minimum

- Experience in the management of training (training not education) including training needs assessment, planning of training, supervision of staff
- Familiarity with the U.S. education and training systems
- Proven ability to write planning documents and manage a planning process
- Worked with government and/or university staff development processes

Desirable:

- Experience with the Government of Thailand
- Experience with large training systems
- Experience with USAID and participant training
- Knowledge and experience in natural resources
- 3-5 years experience in the management of training

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- (1) Economic Analysis for Annex
 - (2) Tables for Economic Analysis for Annex
 - (3) Project Economic Analysis for Project Paper
 - (4) Social Programmatic Analysis for Annex
 - (5) Tables for Social Programmatic Analysis for Annex
 - (6) Summary for Social Programmatic Analysis for Annex
 - (7) Project Social Soundness Analysis for Project Paper
 - (8) Notes/Talking Points for Monitoring and Evaluation
 - (9) Monitoring and Evaluation Report
 - (10) Economic and Social Science Training Recommendations
 - (11) Summary of Major Recommendations
 - (12) Products, Persons Contacted and Documents Consulted
- Notes: Items 1 to 3 were the work of Somluckrat Grandstaff
Items 4 to 7 were the work of Terry Grandstaff
Items 8 to 12 were the work of both
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