

PD-AAK-174-B1

9311209

(2)

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT AUTHORIZATION AND REQUEST
FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE

A ADD
 C CHANGE
 D DELETE

PAF

2. DOCUMENT CODE
5

3. COUNTRY ENTITY

DS/ST

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 digits)

[931-1209]

6. BUREAU/OFFICE

A. SYMBOL B. CODE
DSB [10]

7. PROJECT TITLE (Maximum 40 characters)

[Env./Natural Resources: Expanded Infor Base]

8. PROJECT APPROVAL DECISION

ACTION TAKEN

A APPROVED
 D DISAPPROVED
 DK DISAUTHORIZED

9. EST. PERIOD OF IMPLEMENTATION

YRS. [03] QTRS []

10. APPROVED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 79		H. 2ND FY 81		K. 3RD FY	
		C GRANT	D LOAN	F GRANT	G LOAN	I GRANT	J LOAN	L GRANT	M LOAN
(1) SD	759	877		1,290		888			
(2)									
(3)									
(4)									
TOTALS				1,290		888			

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		PROJECT FUNDING AUTHORIZED		A GRANT	B LOAN
	D GRANT	F LOAN	R GRANT	S LOAN	T GRANT	U LOAN	1. LIFE OF PROJECT	2. INCREMENTAL LIFE OF PROJECT		
(1)					2,178					
(2)										
(3)										
(4)										
TOTALS					2,178					82

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000)

A. APPROPRIATION	B. ALLOTMENT REQUEST NO.	
	C GRANT	D LOAN
(1)	1,290	
(2)		
(3)		
(4)		
TOTALS		1,290

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (C/NW/ R/R/ P/M/P/D)

SIGNATURE

DATE

14. SOURCE ORIGIN OF GOODS AND SERVICES

000 341 LOCAL OTHER

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR RRC/DIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE	18. ACTION REFERENCE (ORIGINAL)	ACTION REFERENCE DATE
		MM SS YY		MM SS YY

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

ENTITY : Development Support Bureau
PROJECT : Environment and Natural Resources: Expanded
Information Base
PROJECT NUMBER : 931-1209

A.I.D. grant financing up to \$1,290,000 in FY 1979 is authorized to begin this project to provide A.I.D. with improved information on environment and natural resource issues related to the development of LDCs.

A total life of project cost in the amount of \$2,177,431 is approved. This activity will require approximately four years to implement.

Signature: _____

Date: _____

Clearance: *Kmf*
DS/PO: RCS Simpson

ENVIRONMENTAL THRESHOLD DECISION

TO: DAA/DS, Dr. John Bruce
THRU: DS/PO, Robert Simpson
FROM: DS/ST, William M. Feldman
SUBJECT: Environmental Threshold Decision

MAR 23 1979

Project Title: Environment/Natural Resources Expanded Info. Base
Project #: 931-1209
Project Manager: Molly Kay
REFERENCE: Initial Environmental Examination (IEE) contained in
PTD (attached) dated

On the basis of the Initial Environmental/Examination (IEE) referenced above and attached to this memorandum I recommend that you make the following decision.

- 1 1. The proposed agency action is not a major Federal action which will have a significant effect on the human environment.
- 2 2. The proposed agency action is a major Federal action which will have a significant effect on the human environment, and:
- a. An Environmental Assessment is required; or
 - b. An Environmental Impact Statement is required.

The cost of and schedule for this requirement is fully described in the referenced document.

3 3. Our environmental examination is not complete. We will submit the analysis no later than _____ with our recommendation for an environmental threshold decision.

Approved: John D. Bruce

Disapproved: _____

Date: 3/23/79

9311209

AGENCY FOR INTERNATIONAL DEVELOPMENT

TRANSACTION CODE

A ADD
C CHANGE
D DELETE

PP

PROJECT PAPER FACESHEET

DOCUMENT CODE
3

1. COUNTRY ENTITY

DS/ST

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 digits)

931-1209

6. BUREAU/OFFICE

A SYMBOL

DSB

B. CODE

10

7. PROJECT TITLE (Maximum 40 characters)

Env./Natural Resources: Expanded Info Base

8. ESTIMATED FY OF PROJECT COMPLETION

FY 83

9. ESTIMATED DATE OF OBLIGATION

A. INITIAL FY 79

B. QUARTER

C. FINAL FY 82

(Enter 1, 2, 3, or 4)

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L.C.	D. TOTAL	E. FX	F. L.C.	G. TOTAL
AID APPROPRIATED TOTAL						
GRANT	690		690	1900		1900
LOAN						
OTHER						
U.S.						
HOST COUNTRY						
OTHER DONORS						
TOTALS						

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE	E. 1ST FY 79		H. 2ND FY 80		K. 3RD FY 81	
			C. GRANT	D. LOAN	GRANT	J. LOAN	GRANT	M. LOAN
SD	759	877	690		-		600	
TOTALS								

A. APPROPRIATION	N. 4TH FY 82		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVAL. DATE SCHEDULED
	C. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
SD	610				1900		
TOTALS							

MM YY
09 81

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA BLOCKS 12, 13, 14, OR 15 OR IN BPP FACESHEET DATA BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

NO
 YES

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: William W. Feldman

15. DATE DOCUMENT RECEIVED IN AID W/ OR FOR AID W/ DOCUMENTS. DATE OF DISTRIBUTION

DATE SIGNED: 5/2/79

TITLE: Acting Director, DS/ST

MM DD YY

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE

A ADD
 C CHANGE
 D DELETE

PP

2. DOCUMENT CODE

3

3. COUNTRY ENTITY
DS/ST

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 digits)

931-1209

6. BUREAU/OFFICE

A. SYMBOL B. CODE
DSB 10

7. PROJECT TITLE (Maximum 40 characters)

Env./Natural Resources: Expanded Info.

8. ESTIMATED FY OF PROJECT COMPLETION

FY 8 3

9. ESTIMATED DATE OF OBLIGATION

Base

A. INITIAL FY 7 9 B. QUARTER
 C. FINAL FY 8 2 (Enter 1, 2, 3, or 4)

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -

A. FUNDING SOURCE	FIRST FY 79			LIFE OF PROJECT		
	B. FX	C. LC	D. TOTAL	E. FX	F. LC	G. TOTAL
AID APPROPRIATED TOTAL						
GRANT	1,290		1,290	2,178		2,178
LOAN						
OTHER						
U.S.						
HOST COUNTRY						
OTHER DONOR(S)						
TOTALS	1,290		1,290	2,178		2,178

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 79		H. 2ND FY 81		K. 3RD FY	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	GRANT	LOAN	GRANT	LOAN
1) SD	759	877		1,290		888			
2)									
3)									
4)									
TOTALS				1,290		888			

A. APPROPRIATION

4. 4TH FY _____ 5. 5TH FY _____ LIFE OF PROJECT

12. NEEDED EVALUATION SCHEDULE:

A. APPROPRIATION	4. 4TH FY _____		5. 5TH FY _____		LIFE OF PROJECT	
	C. GRANT	D. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN
1)					2,178	
2)						
3)						
4)						
TOTALS					2,178	

MM YY
09 81

13. DATA CHANGE INDICATOR: WERE CHANGES MADE IN THE P10 FACESHEET DATA BLOCKS 12, 13, 14, OR 15 OR IN THE P11 FACESHEET DATA BLOCK 17? YES, ATTACH CHANGED P10 FACESHEET.

1 YES

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE

William Feldman

15. DATE DOCUMENT RECEIVED IN AID # OR FOR AID # DOCUMENTS: DATE OF DISTRIBUTION

TITLE

Acting Director, DS/ST

DATE SIGNED

MM DD YY
06 19 79

PROJECT PAPER

Environment and Natural Resources:

Expanded Information Base

Development Support Bureau
Office of Science and Technology
Division of Environment, Natural Resources
and Remote Sensing
April 1979

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Tab C		Department of the Interior, 1977 International Activities
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I. SUMMARY AND RECOMMENDATIONS

A. Summary

This is a \$2.1 million, three-year information-generating activity to be executed on behalf of the Development Support Bureau by the Department of the Interior, National Park Service (NPS). Information on a range of topics related to the agency's recent authorizations and directives on natural resources and environmental concerns (Policy Determination 63, Regulation 16, and Sections 118 and 103 of the Foreign Assistance Act) will be compiled or collected, organized and presented in a format useful to AID activities in these two related areas.

The initial beneficiaries of the project's information output will be the Regional Bureaus, who will be better able to support mission activities in project planning and design with the information supplied. The Regional Bureaus will at the same time participate actively in all stages of the information generating activities, in order to ensure correct focus and problem definition. The consequent on-going dialogue and learning will generally improve AID's ability to implement activities concerned with assisting LDC's to manage and conserve their environments and natural resources which will ultimately contribute to improving the quality of life of the poor in developing countries.

The project is organized into four categories of work, each with a number of studies, surveys or other activities:

- (1) Review papers
- (2) Case studies
- (3) Project design aids

(4) Communication and dissemination actions

The principal output of work in these different categories will be publications and workshops or other kinds of technical meetings.

Altogether 28 major publications are planned, 10 of these being special editions or summaries of larger works of a more specialized nature.

The project is designed to provide a single management system for the inputs of manpower, travel, etc., involved in the diverse, specific activities to be undertaken. After reviewing a number of management options - private, non-profit and Federal agencies, the conclusion was reached that the National Park Service in the Department of the Interior was the most appropriate and best qualified¹. A three-person management team in the National Park Service should administer the work done directly by NPS or other agencies in the Department.

During the preparation of the project, Regional Bureau environmental coordinators were closely consulted on the proposed study topics. There is general agreement on the activities selected. They are:

1. Review papers

- Natural resources and environmental surveys: state-of-the-art review.
- Legal, regulatory and institutional aspects of the conservation and management of natural resources and the environment.
- Environmental baseline data: review of methods.
- Humid tropics: review of selected ecological problems.
- Projections of future regional resource scarcities and environmental degradation.

¹ See Section IV, Part A, Administrative Arrangements for detailed discussion of alternatives and analysis of capabilities (pp. 55).

2. Case studies in LDC's

Integrated resource planning, development and management.

Public involvement in environmental protection.

Governmental response to pollution and conservation problems.

3. Project design aids

Irrigation project development and irrigated farming systems.

Rainfed farming systems in different climatic regions.

Watershed management and conservation.

Rural roads.

Malaria control.

4. Communication and dissemination

Special, edited versions of the project publications.

Four regional workshops.

These specific activities are planned and organized in considerable detail in the project paper, however, additional planning will be required in which AID and the contract management team develop scopes of work. In AID, DS/ST would appoint a counterpart manager, while scopes of work would be planned and approved by AID's Committee on Environment and Development (COED), chaired by PPC's Environmental Coordinator, Albert C. Printz. Notwithstanding the fact that the bulk of the management will be undertaken by the National Park Service, DS/ST will have to commit at least 4-6 person-months per year in the first full year of work (FY'80) and at least 4 person-months per year thereafter. The COED and other resource persons at the regional bureau level will be asked to participate in over 20 short workshops or planning sessions during the course of the project, as well as review and critique draft results of project work. This involvement can be considered a project benefit which results in opportunities to increase knowledge.

Explicit communication and dissemination of the project's results is the objective of the last category of project activity, which would take place in FY'82, after all the results have been drafted or published, and can be presented and discussed in workshops.

Figure 1. Schedule of Activities and Disbursements

	FY'79	FY'80	FY'81	FY'82	
Review papers	_____				
Case studies		_____			
Project design aids			_____		
Special editions			_____		
Regional workshops				_____	
	200	490	650	560	(1900)

B. Recommendations

1. Steps should begin immediately to develop terms of a specific PASA with the Department of the Interior's National Park Service who would manage this project:

- Letter from the DSB Assistant Administrator to the Assistant Secretary for Parks, Fish and Wildlife, indicating AID's desire to enter into a PASA for the project management, and requesting confirmation of NPS interest and ability to manage it, as well as assurances that the necessary management personnel can be assigned to the project.
- DS/ST should offer to meet with the Assistant Secretary for Parks, Fish and Wildlife to brief him on the project.

2. The project paper should be circulated to all technical offices within the Development Support Bureau as well as the Regional Bureaus and the Office of Manpower and Training.

3. To avoid duplication of efforts and confusion, close coordination with Regional Bureau initiatives is needed, especially in the area of training which has begun in the Africa and Asia regions. Regional Bureaus could consider combining certain activities, or participating with their own resources in others, such as case studies.

A foremost criterion for coordination of field work is the circumstance that collaborating LDC scientists and institutions are new and probably overcommitted.

4. Although this project is conceived as an information flow from DSb the Regional Bureaus and Missions, a functional link with UNEP, UNESCO, and possibly other U.N. agencies should be explored. First, duplication of effort can be avoided and joining of forces sought where this is desirable. Second, and more important in the long run, AID bilateral efforts can strengthen UNEP multilateral efforts thereby not only advancing the goals of UNEP and AID in environmental conservation, but also obtaining greater returns on dollars contributed by the U.S. to the UNEP program.

This project emphasizes the review, organization, summation and preparation of information on natural resources and the environment in formats and level useful to AID. It does not propose to set up an information system. Such a system is being improved through the efforts of the Office of Development Information Utilization (DIU). The communication and dissemination aspects of the project are designed to supplement

and provide special focus to the information generated, which would naturally be made accessible and disseminated through other established mechanisms, e.g. the library and the DIU.

II. PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. Background

A new and urgent need for well organized, focused information on various topics concerning the environment and natural resources management has resulted from AID's commitments to these two related concerns. In lesser developed countries the adverse and counter-productive environmental impacts of certain development technologies together with the general degradation and loss of soils, grasslands, and forests have become better understood, especially since the 1972 U.N. Conference on the Human Environment. However, there is a large gap between recognition of the problems and knowledge about how to reverse adverse trends and avoid impacts. A discriminating review of existing information and the collection of additional data are required in order to bridge that gap.

1. Antecedents and Institutional Response Since 1972

AID is gradually developing the information that assistance in these areas of concern requires. In 1972 and 1973 the Technical Assistance Bureau commissioned a series of case studies, undertaken by the Smithsonian Institution, designed to reveal the nature, causes and effects of environmental problems that were experienced in the course of development in lesser developed countries. Three case studies and companion guidelines for policy, planning and assessment were produced on environmental aspects of large dams in the tropics (the Volta Lake), rapid urban growth (Seoul, Korea) and oil pollution in the tropics (Indonesia).¹

¹Freeman, P.H. 1975. The Environmental Impact of Rapid Urbanization in Developing Countries; Guidelines for Policy and Planning Based Upon a

Continued...

AID's internal commitment in 1975 to assist developing countries to take environmental protection measures and identify the environmental effects of AID-financed activities (Policy Determination 63, August, 1975) generated the rationale for a DS/ST two-year activity titled Environmental Field Support which began in FY'77 and is still underway.

The need for this work was further justified, during its planning stages, by the adoption in 1976 of Regulation 16 (Environmental Procedures) and by directives embodied in the President's Environmental Message to Congress in May 1977, instructing AID to ensure the environmental soundness of its overseas development projects and to provide assistance to developing countries in natural resources management and environmental protection.

A RSSA was developed with the Department of State (RSSA No. SA/TOA 1-77) in order to carry out the Environmental Field Support and Training project, through the Secretariat for the U.S. National Committee on Man and the Biosphere Program (MAB). The project was to provide background information on the problems and capabilities of LDC environmental institutions (country profiles); prepare papers on environmental issues; develop reference works and design prototype training programs which could be adapted by

¹ Continued.

Case Study of Seoul, Korea, 1972-1973. Smithsonian Institution, Washington, D.C.

Freeman, P.H. 1975, The Environmental Impact of Tropical Dams; Guidelines for Impact Assessment Based Upon a Case Study of Volta Lake. Smithsonian Institution, Washington, D.C.

Freeman, P.H. 1975. Coastal Zone Pollution by Oil and Other Contaminants: Guidelines for Policy, Assessment and Monitoring in Tropical Regions Based Upon a Case Study in Indonesia. Smithsonian Institution, Washington, D.C.

Regional Bureaus and Missions for developing countries.

The Foreign Assistance Act of 1977 increased further the Agency's mandate in the form of Section 118, Environment and Natural Resources. Congress amended Section 118 in 1978¹ with the requirement that AID report on the major environmental problems of developing countries and their abilities to cope with them² and added forestry and soil conservation to the types of assistance provided under Section 103.

¹Section 118 of the Foreign Assistance Act of 1961 as amended, October 6, 1978, reads as follows:

"Section 118, Environment and Natural Resources:

a. The President is authorized to furnish assistance under this part for developing and strengthening the capacity of less developed countries to protect and manage their environment and natural resources. Special efforts shall be made to maintain and where possible restore the land, vegetation, water, wildlife, and other resources upon which depend economic growth and human well-being, especially that of the poor.

b. In carrying out programs under this chapter, the President shall take into consideration the environmental consequences of development actions.

c. In furtherance of the purposes of this section, the President shall carry out studies to identify the major environment and natural resource problems, and the institutional capabilities to solve those problems, which exist in developing countries. The results of these studies shall be reported to the Congress by March 1, 1979."

(Public Law 95-424, October 6, 1978

92 STAT 937)

²AID. 1979. Environmental and Natural Resources Management in Developing Countries: A Report to Congress (2 vols). Agency for International Development, Washington, D.C.

In response to this and previous mandates, AID missions and regional bureaus have planned activities for FY'80 that would total \$277 million and would represent approximately 8 percent of their total program.

Table 1. Proposed Funding Levels for Environmental and Natural Resources Activities, FY 1980¹

	Estimates for environmental and natural resources activities FY'80 (000's)	Percent of total FY'80 request
Latin American and Caribbean	\$ 10,618	4.6
Asia	58,667	11.6
Near East	167,250	8.8
Africa	33,488	7.9
AID Total	276,983	8.1

This increased level of activity is new work, not a continuation of established programs, and it has become evident that the Environmental Field Support Services project is only the first step in establishing an information base for the design and execution of new AID projects, and for projecting future needs or problems.

Although environmental and resource conservation activities are relatively new to AID, recognition of the need is growing rapidly in the

¹Estimated figures prepared by PPC, February, 1979.

Regional Bureaus and in AID missions. Both the Africa (AFR/DR) and Asia (ASIA/TR) Bureaus are in the early stages of designing regional environmental training programs. The Latin America and Caribbean (LAC) Bureau has recently decided that environmental and natural resource management problems should receive a greater emphasis. The NE Bureau has now hired a full-time environmental advisor. Developing countries are also responding to the grave problems of conservation as shown by the recent significant increase in environmental protection programs and/or agencies in host countries (Kenya, Ghana, Indonesia, Thailand, Philippines, Costa Rica, Peru, Ecuador, to name a few) and the growing number of requests for assistance.

2. The Need for Information

Activities that AID undertakes in support of natural resources management and environmental protection must be founded upon solid information and clear definition of problems and issues. While some of the needed information exists, it has not been collected, organized and tailored to the context of AID projects, namely, environmental assessments of various typical projects as well as the planning of activities in natural resources rehabilitation, conservation and management in LDC environments. In-house experience on these types of projects is scant and very dated.

Information on many important questions is not generally available to developing countries and AID mission personnel. Project conception and design are hindered accordingly. As yet, the Office of Development Information Utilization has not prepared "packages" of information on these topics of concern. The present project would begin to provide the needed ingredients.

It is important to collect and review existing information and experience worldwide and organize it according to AID's needs in project design. Also, foreseeable problems related to the population-resources-environment-development dynamic should be examined for their implications to future AID work.

Regional Bureaus as well as Missions will require support in the form of information for developing their initiatives. The opportunities for DSB to provide information support will certainly increase as programs get underway at the regional or mission level.

3. Evolution of the Present Project

Planning for this project began in May, 1977, when the original Project Identification Document (PID) was produced.¹ In ABS discussions, close coordination with regional bureaus in the design of the project was recommended. A new PID was prepared and circulated for comment in January, 1979.²

In preparing the Project Paper (PP), special attention was given to the interrelationship of AID with various Federal agencies and non-governmental organizations concerned with natural resources and environmental problems. While it was impossible to carry out in depth surveys of all the relevant institutions and groups that might manage the project, many interviews were undertaken in the Washington, D.C., area, in and out of government, in order to generally assess the potential resources. The institutions contacted were drawn from a list prepared by the Environmental

¹Appendix A

²Appendix B

Protection Agency¹ which summarized work being done in the international environmental area.

B. Detailed Description

This is an information-gathering and generating project in which AID is the immediate beneficiary. It is centered in Washington, D.C., for the most part, except for several case studies to be undertaken abroad. It will involve AID staff, especially those of the Regional Bureaus, in a dialogue with many scientists and experts of many different specialities, through the use of technical meetings and workshops in Washington.

The project will also involve AID with other Federal agencies as well as non-governmental entities and undoubtedly will result in a greater mutuality of understanding between AID and resource and environmental protection experts from other Federal agencies and non-governmental agencies.

The process of mutual learning inherent in the undertaking of this project is of considerable but unquantifiable importance, and can be fostered if it is recognized.

The project originates in the Development Support Bureau's Office of Science and Technology (DS/ST) which has the responsibility for DSB activities related to natural resources and environmental concerns.

The project's structure and logic is summarized in the Logical Framework (Figure 2).

The goal of the project is to assist LDC's to improve their capability to conserve and manage their natural resources and environment. The purpose of the project is to provide Regional Bureaus and, implicitly, Missions,

¹EPA 1977. International Environmental Issues: A Preliminary Resource Guide.

Fig. 2. PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: FY 79 to FY 82
Total U.S. funding: 1
Date prepared: April 1979.

Environment and Natural Resources: Expanded Information Base

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Goals</p> <p>To improve IDG capabilities for environmental protection and for assessing and managing their natural resources.</p>	<p>Increased or improved capabilities attributable to AID projects that have used information generated by this project.</p>	<p>Mission reports End-of-project reports</p>	<p>IDG's actively seek to protect and manage their natural resources and environmental quality.</p>
<p>Purposes</p> <p>To provide AID with an improved information base covering a range of topics related to environmental protection and natural resource management, and to identify and assess emerging problems of short and long term nature.</p>	<p>End-of-project status</p> <p>Reports, guidelines and special published materials have been reviewed, discussed in workshops and disseminated to regional bureaus and field missions.</p> <p>Information generated is being used in planning and designing development activities.</p>	<p>Distribution and attendance lists of workshops and seminars.</p> <p>Requests for materials. Project papers that have used the information.</p>	<p>AID and other development assistance organizations will support IDG efforts to protect and manage their natural resources and environmental quality.</p> <p>Information generated by the project effectively catches needs and is effectively utilized by AID and IDG's.</p>
<p>Outputs</p> <p>Review papers Case studies Project design aids Regional workshops Special editions</p>	<p>Magnitude of outputs</p> <p>10 review papers 3 case studies 3 project design aids 4 regional workshops 10 special editions</p>	<p>Publications and reports delivered to AID. AID participation in workshops.</p>	<p>Information generated will be effectively disseminated. Subject matter is accurately and attractively communicated. Information is presented in a format suited to AID's requirements.</p>
<p>Inputs</p> <p>Review of U.S. and international literature Planning and review workshops Senior scientists/professionals Junior scientists/professionals Travel International air travel Domestic air travel International per diem and domestic travel days (field work) Project management GS-15 manager GS-13 assistant manager GS-6 secretary</p>	<p>18 reviews 20 workshops 183 person months 172 person months 33 round world or equivalent 68 coast-to-coast or equivalent 1,413 days 36 months 36 months 36 months</p>	<p>Progress reports from prime contractor (Differential Post Service) Subcontractors</p>	<p>Suitable agreement can be negotiated with the selected prime contractor. Overhead costs will not exceed 30% of salaries of prime contractor, or 30% of direct costs of the project work. DNR/ST and prime contractor establish effective mechanism for consultation and communication. Prime contractor obtains competent staff for project management. AID fulfills its obligation to review and approve scope of work for specific tasks. Prime contractor can sub-contract expeditiously.</p>

with information useful to the design of activities that will help achieve this ambitious goal.

The project is predicated on the fact that there exists a large amount of information in many formats and for different audiences which can be useful to AID for project planning and design, but this information is so voluminous, difficult to access, or so highly technical or scientific that it is virtually unusable.¹ This information must not only be made more accessible, but it must be actively communicated to AID staff, so as to compete with the many other kinds of information and communication that demand attention. Thus, workshops and technical meetings will provide both inputs and outputs in this project, to the extent that AID staff actively participate.

For management purposes the project's outputs are divided into four categories, each of which has a number of activities, as follows:

(1) Review Papers

These would screen, organize, review and evaluate or critique literature and experience on a number of topics or themes so as to extract the information of most interest or use for AID; identify issues or controversies; and examine directions for AID. A number of activities were selected on a preliminary basis by means of consultation with environmental coordinators of regional Bureaus during the review of the PID:

- * Natural resources and environment surveys: state-of-the-art review.
- * Legal, regulatory and institutional aspects of the protection, management and conservation of natural resources and the environment.

¹Special attention will be given to gaining access to relevant information and documentation which exists but is not easily accessible within AID and other donor agencies such as IBRD.

- * Humid tropics: review of selected ecological and related developmental problems.
- * Regional projections of natural resources scarcities and environmental degradation.
- * Environmental Baseline data: a survey of methods.

(2) Case Studies

Three topics were selected:

- * Integrated planning and development of natural resources.
- * Governmental responses in LDC's to pollution and conservation problems.
- * Public involvement in environmental conservation and protection.

(3) Project design aids

These will be in the form of guidelines for project design that is environmentally benign and ecologically sound (as opposed to guidelines on how to do environmental assessments). Design aids for five kinds of projects were tentatively selected from an original list of nine topics all of which will be reviewed by AID's Committee on Environment and Development as the project progresses for a final decision on the most appropriate subject areas:

- * Irrigation project development and irrigated farming systems.
- * Rainfed farming systems in different climatic regions.
- * Watershed management and conservation.
- * Rural roads.
- * Malaria control and/or activities which tend to promote waterborne diseases.

(4) Communication and Dissemination

Not in the original PID, this activity was added in order to ensure the use of the results of the project. Three activities are planned:

- * Special editions of the reviews and case studies.
- * Regional workshops for AID personnel and host country colleagues.
- * Translations of reports and special editions.

Project inputs vary according to the category of activity, the details of which are contained in the following descriptions of each sub-activity.

In all of the above, the managers of the project will be asked to pay special attention to identifying and including the participation of women scientists from both the U.S. and host countries and incorporating concerns for the role of women in development.

1. Review Papers

(1) Natural resource and environmental surveys: a state-of-the-art review and workshops.

Estimated level of effort: 23 months of senior scientists
 24 months of junior scientists

Estimated cost: \$149,160

Estimated calendar time: 15 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Initial workshop															
Preparation of state-of-the-art papers on six categories of resource and environment surveys															
Six technical workshops in Washington															
Editing and publication of six reviews															

Section 118 projects in most cases will require surveys and evaluations of natural resources and of environmental conditions as a basis for planning

various kinds of interventions or developments. Surveys undertaken for environmental assessments must also be planned by AID, or jointly with host country representatives. In the course of planning such surveys decisions must be made on a number of questions related to the methods to be used: kinds, quantities and precision of data and mapping materials to be obtained; length of observation of data series for satisfactory confidence; utility and limits of various remote-sensing techniques; costs; and alternatives. Methods of data collection and interpretation in these areas are numerous and rapidly evolving--especially in the use of remote-sensing techniques, and there are many alternative methods.

This review would catalogue and evaluate the various survey and evaluation methods that can be applied to (1) soils, (2) forests, (3) rangelands, (4) wildlife and wildlife habitat, (5) water systems, and (6) urban environments. Emphasis would be on techniques for diagnosing the state of the resource or environment and developing data for its best use, management and conservation, or rehabilitation--as opposed to techniques which focus on the characterization of resources for their exploitation (e.g. timber surveys or minerals prospecting). Also, techniques proven or applicable to the environments of LDC's are of principal interest.

An initial one-day workshop would bring together the various experts, who will be undertaking the different reviews, with AID environmental coordinators and resource staff involved in project design to develop a context and understanding of AID's needs. This briefing will be essential to orient the reviews. The organization of the reviews by such criteria as major ecosystem or biome types, or by development problem could be treated in the initial workshop.

It is expected that six separate review efforts could be undertaken, in the topics noted above, or in topics determined through planning consultations with AID's COED and the project manager. The work of the United Nations agencies should be taken into account in these reviews, and their representatives should be invited to the final workshops.

In this project it will be important to validate the findings about gaps, problems and strategic opportunities in LDC's. This could be accomplished by allowing LDC scientists or administrators to review draft findings prior to the final workshop, and to react to these reviews. The procedure can also be seen as a forward step in a dialogue leading to the definition of AID projects in the subject areas.

Figure 3. Financial Plan, Natural Resources and Environmental Surveys Review

	Calendar month	Person-months		Travel		Per Diem		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Initial workshop	1,2	2			4		28	
State-of-the-art papers on six selected topics		18	18					
Technical workshops on topics reviewed		3	6		12		84	
Publications (6)								6
Subtotals		23	24		16		112	
Unit costs		\$ 3,000	\$ 2,000		\$ 500		\$ 55	\$ 3,000
Total costs		\$69,000	\$48,000		\$ 8,000		\$ 6,160	\$18,000

Grand total: \$149,160

Review Papers, continued:

- (2) Legal, regulatory and institutional aspects of the protection, management and conservation of natural resources and the environment.

Estimated level of effort: 15 months of senior scientists/professionals
15 months of junior scientists/professionals

Estimated cost: \$102,275

Estimated calendar time: 15 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Initial workshop															
Survey by major region (Asia, Latin America, Africa, Near East)															
Workshop(s) preceded by review															
Editing and publications															

How can AID best assist in these complex, culturally and politically sensitive aspects of natural resources conservation and environmental protection? What are present and foreseeable LDC problems in areas such as regulation, compliance and enforcement, and in related organizational and professional aspects? What form should technical assistance take and what can be learned from the efforts of others, such as UNEP, in this area? This review would attempt to answer these kinds of questions.

This review will examine the status of legal, regulatory and institutional development concerning environmental protection and natural resources conservation in the various LDC's and would attempt to identify the most strategic ways in which AID could assist in this development. The

transferability of U.S. experience and its translation into forms appropriate for LDC's would also be reviewed.

The review would be done by geographic region, in order to better accommodate cultural and historical differences. A recent overview by AID, in a report to Congress¹ of LDC institutional problems and potentials should be a useful starting point for better defining the scope of work. Extant work on these topics by the U.N. and the International Union for the Conservation of Nature (IUCN) should be especially valuable.

Close coordination with Regional Bureaus, and with special regional programs which are beginning to focus on these problems (such as work by Clark University in Eastern and Southern Africa) is imperative in this work.

A report on this work should identify the potentials and problems, and recommend the extent and nature of AID assistance in these aspects.

It is anticipated that this subproject could constitute the point of departure for case studies of individual countries, which could be subsequently carried out under the case study category in this project.

It would be desirable for foreign lawyers--perhaps law students or perhaps special interns--to be involved in this project review.

Because this area of study is so complex and diverse, considerable consultation and planning will be required to develop the detailed scope of work. Federal Agencies which have experience in advising other governments, including the Environmental Protection Agency's (EPA) Office of

¹AID. 1979. Environmental and Natural Resources Management in Developing Countries: A Report to Congress (2 vols.). Agency for International Development, Washington, D.C.

International Activities, should be consulted, and the work of the Food and Agriculture Organization's (FAO) Environmental Law Division should be reviewed. Local nongovernmental organizations such as the American Society for International Law, the International Institute for Environment and Development and the Environmental Law Institute could probably make important contributions to this project.

**Figure 4. Financial Plan, Legal Regulatory and Institutional Aspects of the
Protection, Management and Conservation of Natural
Resources and the Environment**

	Calendar month	Person-months		Travel		Per Diem		Total costs
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Initial workshop	1,2	1	1	2	4	-	30	
Review (three regions simultaneously)	3-8	9	9	3	-	45	-	
Workshop	9-12	2	2	2	4	-	30	
Prepare Reports	13-15	3	3	-	-	-	-	
Subtotals		15	15	7	8	45	60	
Unit costs		\$ 3,000	\$2,000	\$ 2,500	\$ 500	\$ 55	\$ 55	
Total costs		\$45,000	\$30,000	\$17,500	\$ 4,000	\$ 2,475	\$ 3,300	\$102,275

Review Papers, continued:

(3) Environmental baseline data: survey of methods

Estimated level of effort: 17 months of senior scientists
17 months of junior scientists

Estimated cost: \$105,700

Estimated calendar time: 15 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Initial workshop	—														
Preparation of review of methods and experience				—	—	—	—	—	—						
Technical workshop or conference										—	—	—	—		
Editing and publication														—	—

The diversity, level of productivity and other features of undisturbed ecosystems are the basic measures of the effect of man's actions. As LDC's begin to set goals for environmental quality and the conservation of ecosystem productivity, or alternatively initiate measures to reverse degradation of ecosystems and environmental quality, the requirement for baseline data will emerge. Baseline data for representative, undisturbed ecosystems or environments must be referred to, in order to understand the significance of man-made trends as well as to measure the effects of corrective actions. The usefulness of sophisticated environmental quality monitoring equipment is, for instance, directly related to the amount of accurate baseline data available.

A review of experience and requirements for accurate and useful environmental baseline data in different environments--e.g. coastal zones, agro-systems, estuaries, human settlements--would help to orient present

and future work. Inclusion of international work carried out by UNEP (Earthwatch Program) and the Man and the Biosphere Program is essential to the work. The reviews should provide insight into appropriate and efficient ways in which donor agencies can assist LDC's to obtain baseline data. The review should also examine how AID's bilateral assistance in this area could be strategically coordinated with regional or international programs sponsored by UNEP or various international commissions charged with monitoring environmental phenomena. The review may also draw attention to the ways in which LDC institutions of higher education and research centers can be encouraged to work on gathering baseline data.

The results of this review would be presented at a technical conference or series of workshops to which certain LDC scientists should be invited. (A wider dissemination of results would be achieved in the regional workshops at the end of this project.)

The results would be published in a manual or other suitable format.

Figure 5. Financial Plan, Environmental Baseline Data: Survey of Methods

	Calendar month	Person-months		Travel		Per Diem		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Initial workshop	1,2	2	2	-	4	-	28	
Prepare review of methods and experience	3-8	12	12	2	-	40	-	
Technical conference or conferences	9-12	3	3	2	6	30	42	
Publication	13-14	-	-	-	-	-	-	1
Subtotals		17	17	2	10	70	70	
Unit cost		\$ 3,000	\$ 2,000	\$ 2,500	\$ 500	\$ 55	\$ 55	
Total cost		\$51,000	\$34,000	\$ 5,000	\$ 5,000	\$ 3,850	\$ 3,850	\$2,000
				Grand total: \$105,700				

Review Papers, continued:

(4) Humid tropics--a review of selected problems

Estimated level of effort: 16 months of senior scientists
14 months of junior scientists

Estimated cost: \$115,480

Travel: To research stations and institutions
in major regions.

Estimated calendar time: 15 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Initial workshop		—													
Review of literature and international experience			—	—	—	—	—	—							
Peer review of first draft									—	—					
Technical workshop											—	—			
Editing and publication													—	—	—

AID projects in humid tropical regions must ultimately address unique and challenging problems of an ecological nature; the ecological impact of deforestation, ecologically suited agricultural systems, and the ecological aspects of human disease and nutrition in this environment, to name a few. Recently AID and world attention has focused on the disappearance of forests in this environment.

A review of literature, experience and institutional efforts that have addressed these selected problems would be made in order to provide the technical and scientific bases as well as up-to-date information,

useful for project development. The review would focus especially on the transfer of experience among the tropical nations.

The initial workshop should involve U.S.-based scientists with humid tropical expertise in order to obtain the best definition of the problems to be reviewed and lines of inquiry or methods.

The project should attempt to develop criteria for ecologically optimum exploitation and management of crops, livestock and forests in humid tropical areas, for human settlements, and other dimensions of human activities and welfare. Examples of questions that could be addressed are:

What are the ecological dynamics of no-till agriculture in the humid tropics?

What are the impacts of herbicides and pesticides in humid tropical environments, both terrestrial and aquatic?

How can the extraordinary productivity of tropical aquatic systems be better managed and protected?

Can the diversity and structure of humid tropical forests be paralleled with economic crops?

What would be the impact of exploitation of tropical forests for energy production (e.g. conversion to alcohol)?

How can soil productivity best be conserved in the humid tropical environment?

The results of this subproject would be of direct benefit in the drafting of project design aids, another category of activity to be undertaken in this project.

Figure 6. Financial Plan, Humid Tropics: Review of Selected Problems

	Calendar month	Person-months		Travel		Per Diem		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Initial workshop	1,2	2	-	-	2	-	14	
Review of literature and international experience	3-8	12	12	5	-	150	-	
Peer review of first draft	9,10,11	-	-	-	-	-	-	
Technical workshop to discuss review	12	2	4	2	6	30	42	
Incidental field costs	-	-	-	-	-	-	-	\$ 2,000
Publication	13-15	-	-	-	-	-	-	\$ 3,000
Subtotals		16	14	7	8	180	56	
Unit cost		\$ 3,000	\$ 2,000	\$ 2,500	\$ 500	\$ 55	\$ 55	
Total cost		\$48,000	\$28,000	\$17,500	\$ 4,000	\$ 9,900	\$ 3,080	\$ 5,000

Grand total: \$115,480

Review Papers, continued:

- (5) Projections of future regional scarcities and environmental degradation (or conservation problems)

Estimated level of effort: 10 months of senior scientists
16 months of junior scientists

Estimated cost: \$70,475

Travel: One, one-month round world trip, or equivalent.

Estimated Calendar time: 17 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Initial workshop			—														
Preparation of projections, maps and graphics				—	—	—	—	—	—	—	—	—	—	—	—	—	—
Review of draft												—	—	—	—	—	—
Workshop														—	—	—	—
Edit and Publish																—	—

The Global Year 2000 study of trends in resources, energy and population to the year 2000 (to be published by the President's Council on Environmental Quality (CEQ) in 1979) identifies a number of serious shortages of resources and environmental problems in the next several decades. What does this mean for future AID activities and what kinds of longer range problems should AID be anticipating? This review would examine more specific trends by regions or by specific countries in order to provide elements of judgment and program planning for future AID work in

research, training and program initiatives for preventing biospheric destruction or rehabilitating degraded ecosystems.

This review would use as its point of departure the Global 2000 study and U.N. Environment Programme (UNEP) studies. Other AID-sponsored studies of environmental problems in specific countries should also be taken into account. Ongoing related work by AID's various Regional Bureaus should be strategically linked to this project.

Figure 7. Financial Plan, Regional Projections of Natural Resource Scarcities and Environmental Degradation

	<u>Calendar month</u>	<u>Person-months</u>		<u>Travel</u>		<u>Per Diem</u>		<u>Other</u>
		<u>Sr.</u>	<u>Jr.</u>	<u>Int.</u>	<u>Dom.</u>	<u>Int.</u>	<u>Dom.</u>	
Initial workshop	1, 2	1	1	-	-	-	-	
Prepare projections	3-8	6	12	1	1	30	15	
Prepare maps/graphics	9-12	3	3	-	-	-	-	
Workshop	13	-	-	-	-	-	-	
Publication	14-16	-	-	-	-	-	-	1 publication
Subtotals		10	16	1	1	30	15	
Unit costs		\$ 3,000	\$ 2,000	\$ 2,500	\$ 500	\$ 55	\$ 55	\$ 3,000
Total costs		\$30,000	\$32,000	\$ 2,500	\$ 500	\$ 1,650	\$ 825	\$ 3,000

Grand total: \$70,475

2. Case Studies

Special field studies would be undertaken beginning in the second year of the project in order to draw lessons and facts from actual experience so as to validate concepts or methods that are proposed to be employed in AID's support of natural resources and environmental management, as authorized by Section 118.

Based on experience with prior case studies, it is estimated that each one would require approximately 19 months. The work would be scheduled roughly as follows:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17-19	
Prepare preliminary list of candidate cases	—																	
Workshop to select cases			—															
Planning trip to host countries				—														
Review of antecedents					—													
Field work							—											
Draft reports										—								
Review of drafts													—					
Workshop																—		
Edit and publish																	—	

Three case study topics are proposed:

1. Integrated planning and development of natural resources.
2. Public involvement in LDC's in environmental conservation and protection.
3. Governmental responses in LDC's to pollution and conservation problems.

The cases would be selected and work defined in consultation with the Bureau of Policy and Program Coordination's Office of Evaluation, the Regional Bureaus, related Offices in the Development Support Bureau, and potentially interested Federal agencies or MAB contacts.

Although three case studies have been defined for this project paper, it is suggested that they not be initiated until the foregoing review exercises are well advanced. It is certain that the reviews will help better define the proposed case studies, yield other possibilities, and produce strategically important connections with LDC and U.S. scientists and institutions.

The case studies will be done in close collaboration with a host country institution and scientists. Small grants would be made to collaborating host country institutions for field work (travel and per diem costs, related data preparation, copying, and graphics, etc.). Amounts would be determined on the basis of the preliminary planning visits. This would ensure local involvement and, in addition, build local institutional and scientific capability.

Inquiries undertaken in the course of case studies also can initiate new ways of thinking or lines of communication that ultimately lead to better knowledge about issues, and in this way further the resolution of resources or environmental problems.

The descriptions below do not describe the management effort involved in the preliminary planning and consultations in Washington that would necessarily precede initiation of the studies. However, this preliminary work will be of crucial importance to their success. It will

be essential to define the AID case study effort to
of host country governments and collaborating insti
avoid suspicions and the appearance of imposition,
constructive relationship that is seen as mutually
Predictably AID's primary interests and those of th
not totally overlap. The success of the studies w
coincidence of interests, however, which must be di
the basis for cooperation.

Close liaison with AID/Washington desk offic
tries and with AID missions will be important thro
Preliminary arrangements and approvals--before the
participating governments would be obtained possib
trips by the study directors.

Case Studies, continued:

- (1) Integrated natural resources planning, development and management: three cases.

This concept is becoming increasingly attractive for regions with a diversity of development opportunities, environments and conservation needs. Nepal has in recent years proved to be a leader in this approach to development. Rural development in Jordan, Kenya and Tanzania may also be cited. Emphasis in this case study, however, wherever it is done, should be on the way in which problems and opportunities related to natural resources and environment have been factored into planning, surveys, and development projects. Strong as well as weak points in the experience should be highlighted.

Special emphasis might be directed at the longer term management problems of natural resources and environmental quality, e.g. maintenance of soil and range productivity, rehabilitation of degraded sites, and conversion to land uses more conservative of resource productivity and ecological balance.

Figure 8. Financial Plan, Case Study on Integrated Planning and Development of Natural Resources

	Calendar month	Person-months		Travel		Per Diem		Other costs
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Prepare preliminary list of candidate case studies	1,2	1	1					
In-house workshop to select cases, determine scope of work	3	1	1					
Review published antecedents, design study, prepare Itinerary (3 cases)	4,5,6	3	3					
Field work (3 cases)	7-10	9	9	6		180		\$ 3,000 ^A
Draft reports	11-13	6	9					
Review of drafts	14,15							
Workshop	16	1	2	3		15	15	
Edit, publish studies	17-19	3	3					\$ 6,000
Subtotals		24	28	9		195	15	
Unit costs		\$ 3,000	\$ 2,000	\$ 2,500		\$ 55	\$ 55	
Total costs		\$72,000	\$56,000	\$22,500		\$10,725	\$ 825	\$ 9,000

^A (misc. field work costs)

Grand total: \$171,050

Case Studies, continued:

(2) Public involvement in environmental protection.

Is public participation important and effective in the conservation of the environment in LDC's? Should AID assist public environmental groups? These important questions can be perhaps answered best by means of case studies of citizen involvement in the resolution of environmental problems. As there is strong participation by women in many of the citizen organizations working on environmental issues, special attention will be paid to their role in the process of building local and national environmental awareness. Examples that may be studied are the Amigos de la Naturaleza in Costa Rica, various citizens groups in Sao Paulo, Brazil, who are fighting industrial pollution, and wildlife preservation groups in Thailand. Information about groups in Africa can be obtained from ENDA (Environmental Training Program), Dakar or from the Environmental Liaison Center in Nairobi which has extensive knowledge and connections with nongovernmental organizations throughout most of Africa. In Asia, contact should be made with the Asian Environmental Society which has offices in New Delhi, India and Tokyo, Japan, but specific possibilities include Sri Lanka and Thailand. In the Near East, Israel has very active public interest groups working in the area of water resources.

**Figure 9. , Financial Plan, Case Study on Public Involvement In
Environmental Conservation and Protection**

	Calendar month	Person-months		Travel		Per Diem ¹		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Select possibilities	1,2	1	1					
In-house workshop to select cases, determine scope	3	.5	1					
Review antecedents, design and prepare Itinerary	4-6	2	2					
Field work	7-9	3	3	2		90		\$ 2,000 [*]
Draft results	10-12	3	3					
Review workshop	13	.5	1		3		21	
Edit and publish	14-16	1	3					\$ 3,000
Subtotals		11	14	2	3			
Unit costs		\$ 3,000	\$ 2,000	\$ 2,500	\$ 500	\$ 55	55	
Total costs		\$33,000	\$28,000	\$ 5,000	\$ 1,500	\$ 4,950	\$1,155	\$ 5,000

^A Misc. field expenses

Grand total: \$78,005

Case Studies, continued:

(3) Governmental responses in LDC's to pollution and conservation problems.

This study would review some of the efforts made to date among those countries that are relatively advanced in regard to laws, regulations, institutional programs, and in monitoring and enforcement mechanisms. The cases would be selected after completion of the review of legal, regulatory and institutional aspects of the protection, management and conservation of natural resources and the environment. Countries whose experience could prove instructive include Costa Rica, Kenya, Ghana, Korea, Singapore, Mexico and Venezuela. An effort will be made to look at a range of experience and differing approaches. If "graduate" countries are to be studied, special agreement will be obtained from AID Regional Bureaus.

**Figure 10. Financial Plan, Case Study on Governmental Responses in LDC's
to Pollution and Conservation Problems**

	Calendar month	Person-months		Travel		Per Diem		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Prepare preliminary list of candidate case studies	1,2	1	1					
In-house workshop to select cases, determine scope of work	3	1	1					
Review of published antecedents, design study, prepare itineraries (3 studies)	4-6	3	3					
Field work (3 studies)	7-10	9	9	6		180		\$ 2,000*
Draft reports	11-13	6	9					
Review workshop	14-16	1	2	3		15	15	
Edit, publish studies	17-19	3	3					\$ 3,000
Subtotals		24	28	9		195	15	
Draft costs			\$ 3,000	\$ 2,000	\$ 2,500	\$ 55	55	
Total costs			\$72,000	\$56,000	\$22,500	\$10,725	\$ 825	\$ 5,000

* Misc. field expenses

Grand total: \$166,050

3. Project Design Aids

Estimated level of effort: 24 months of senior scientists/
professionals
16 months junior scientists/professionals

Estimated cost: \$137,150

Estimated calendar time: 18 months

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Initial workshop				—														
Preparation of background materials and antecedents				—	—	—												
Technical workshop to discuss antecedents, outline design aids							—	—										
Preparation of aids									—	—	—	—						
Workshop to review results																—	—	
Edit and publish design aids																		—

This activity is intended to produce project design aids, or guidelines, which would integrate the technical aspects of natural resources and environmental concerns, as authorized by Section 118, into the range of projects currently being undertaken by AID. A modest beginning to this approach to project design has been started through an AID grant to the Mohonk Trust, but it is aimed specifically at the Private Voluntary Organizations and is thus somewhat limited in depth, given that PVO's focus largely on small scale, community-based projects, conceived and executed by relatively untrained volunteers in many instances. Similarly, ACTION has published a number of guides, some in collaboration with VITA. More substantial aids are envisioned in this project.

The project would develop a series of guidelines, and other suitable publications for use in project development. These aids would set forth ways to incorporate ecological principles and considerations for environmental quality into the planning, design and management of various kinds of development. Alternative ways of development that are ecologically sound and environmentally desirable would be stressed.

Among the kinds of development projects that might be covered are:¹

1. irrigation project development and irrigated farming systems
2. rainfed farming systems in various climatic regions
3. watershed management and conservation
4. rural roads
5. malaria or other waterborne disease control

For each subject area a manual or guideline-type publication would be developed and reviewed by persons experienced in development before being published. It would include an index of reference materials, and key publications that Mission personnel and their counterparts should have at their disposal during project planning and which could be supplied to Bureaus and Missions as supplements to their libraries.

The preparation of design aids would not begin until about 20 months after the start of the project, at which time the reviews and issues papers would have been completed, and the case studies initiated. These related efforts, although not indispensable to the drafting of design aids, will generate information and insights that ultimately must be incorporated into the aids. Also it is likely that those who are involved in the case

¹This list is illustrative as of the time of PP approval and will be reviewed by AID's Committee on Environment and Development for final determination of subject matter as the project progresses.

studies and review paper may be able to participate in the preparation of some of the design aids.

Reviews of materials will be conducted by acknowledged experts in their fields. Technical and scientific review groups for each of the design aids which include professionals or scientists from LDC's will be formed. To the extent that the review involves additional costs, it will be incorporated within the budget for each design aid.

The review of background materials and previous work is an important element in this activity, in view of the very considerable body of development literature, including guidelines that exist, especially works prepared for FAO. The preparation phase will include such a compilation.

It is anticipated that much work and thinking in the field of ecology has not yet been translated into technical guidelines suitable for use in development and that a number of major questions may be identified in the preparatory phase related to the practical or technical extension of such ecological principles as the diversity/stability relationship, carrying capacity, and limiting factors. The workshops planned at the end of the preparatory phase will serve to help plot a clear course for the subsequent guidelines drafting stage.

Figure 11. Financial Plan, Project Design Aids

	Calendar month	Person-months		Travel		Per Diem		Other
		Sr.	Jr.	Int.	Dom.	Int.	Dom.	
Initial workshop	1,2	1			4		28	
Preparation of review, evaluation and annotated bibliography of existing resources	3-6	3	6					
Technical workshop to discuss reviews, determine objectives and scope of work	7,8	2	2		6		18	
Preparation of preliminary design aids	9-12	15	20		6		42	
Workshop to review results	15	1	2		6		42	
Final edit and publication	16-18	2	2					5 pubs.
Subtotals		24	16		22		130	
Ball costs		\$ 3,000	\$ 2,000		\$ 500		\$ 55	\$3,000
Total Costs		\$72,000	\$32,000		\$11,000		\$7,150	15,000

Grand total: \$137,150

4. Communication and Dissemination

This project component would disseminate actively in the results of the various reviews and studies to interested persons in AID, developing countries, and other development assistance institutions both bilateral and multilateral. Specially edited versions of the various studies, their translation into French, Spanish and Arabic and regional workshops are the principal activities contemplated here. Other avenues of information dissemination in AID would, of course, be employed (e.g. the Office of Development Information and Utilization, the various library services, and Agency training programs). In addition, translations of the previous studies into French and Spanish would be made so that these reports would be available for use at the workshops and elsewhere.

Video or slide tape presentations should also be considered for presentation of information and project results. While not planned and budgeted in the present project, this possibility should be explored with the Office of Personnel Management, Training and Development Division.

The case studies, in particular, might lend themselves to this mode of communication.

(1) Special editions or reviews

Estimated level of effort:	15 months, editor (1 year full time; 6 months half time) 6 months, graphic/layout artist
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Estimated cost:	\$90,000
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Estimated calendar time:	18 months
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(2) Translations of 13 reports and case studies in French and Spanish (26 publications)

Estimated cost:	\$156,000
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Translations of ten special editions in French, Spanish and Arabic (30 publications)	\$18,000
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Special Editions, continued:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Technical meeting with COED to - review alternative format and select priorities																		
Prepare special editions																		
Draft graphics																		
Final layout and graphics																		
Publish & Translate																		

Shortened, attractively presented versions of the various studies undertaken would be prepared for wide distribution. These edited versions anticipate the likelihood of lengthy or excessively specialized or scientific materials resulting from the different studies or reviews. The device of special editions of these longer studies serves as a communication bridge between the highly technical, but perhaps laborious-to-read material, and the reader new to the subject matter. The special editions would present in an attractive, easy-to-read format the essence of the studies, and serve as introduction for those who wish to delve into the subject. In this way the results would reach a greater number of readers while the full technical and scientific data would be conserved in the longer editions.

Only ten special editions are budgeted since, in the case of the design aids, only one publication treat all of them. As it is not appropriate to generalize and shorten the design aids, a general introductory and awareness-rising special edition will be prepared. Consideration should also be given to a special pamphlet or publication for the entire project which highlights the major findings and summarizes

efforts and experiences in the areas of environment and natural resources.

The output would therefore consist of special editions of:

5 review papers

3 case studies

1 ecological design of projects

1 on the whole project and AID's environment/natural resources work
10

(3) Regional workshops (six possible)

Estimated level of effort:	4 months, project manager
	4 months, assistant manager
	4 months, project secretary
Estimated cost:	\$105,000 (approx. \$17,000 each) ^{1/}
Estimated calendar time:	4 months (see Figure 12)

Up to six workshops would be undertaken in each of the four AID regions (Africa, Latin America, Asia, and Near East). A regional or sub-regional location would permit the attendance of a larger number of field personnel, including--if desired--LDC counterparts.

The objective of the workshops is to speed the communication of the project results and provide interested development workers--persons from LDC's and other development assistance agencies as well as AID personnel--with an opportunity to concentrate on the subject matter through readings,

^{1/}The cost estimate is based on costs of the one week environmental seminar in Pattaya, Thailand, in 1979. Costs would vary according to the actual number, the per diem rates for the sites chosen and the amount Missions would contribute for intra-regional travel by participants.

discussions, and presentations by experts. At a recent environmental seminar hosted by the Asia Bureau in Pattaya, Thailand, the response from nationals of the various Asian countries was reportedly very enthusiastic.

The regional workshops should be developed in close cooperation with the Regional Bureaus on basis of themes relevant to their interests with particular attention to coordination with regional programs in environmental training being developed, such as the Regional Environmental Training Program for Africans (PID AID/afr-C-1474, prepared by the South-East Consortium for International Development, the University of North Carolina and Clark University); and for the Asia region the proposed Natural Resource and Environmental Assessment for Development Planning and Assistance, that may be undertaken for AID by the East-West Center in Honolulu. The Latin American and Caribbean Bureau is also planning a regional activity in environmental training.

Figure 12. Financial Plan, Communication and Dissemination

	Calendar month	Person-months		Travel		Per Diem		Other
		Jr.	Sr.	Int.	Dom.	Int.	Dom.	
1. Special editions								
Initial planning meeting with CED	1	1						
Prepare editions	2-18	13						
Prepare graphics	6-18	6	6					
Publish booklets	18							10 books
Subtotals			20					
Unit costs			\$ 3,000					\$3,000
Total special editions			\$60,000					\$30,000
2. Translations								
								\$174,000
3. Regional workshops								
Initial planning	1							
6 regional workshops of 1 week (5 days) each (staff travel)	2-4			24		180		
Consultations		1	2					
Foreign national participation								\$25,000
Subtotals		1	2	24		180		
Unit costs		\$ 4,000	\$6,100	\$ 2,500		\$ 55		
Total costs reg. workshops		\$ 4,000	\$6,100	\$60,000		\$9,900		\$25,000
Total special editions: \$90,000; total workshops: \$105,000; total translations: \$174,000;								
Grand total: \$396.00								

III. PROJECT ANALYSIS

A. General

The purpose of this project is to mobilize a wide variety of U.S. technical expertise to strengthen the AID program in a systematic and practical manner and to assist the Bureaus and Missions in the design of environmentally sound programs and in carrying out environmental procedures and directives in the best possible way.

B. Technical Analysis

Details on scheduling of specific project activities are contained in the foregoing section.

No environmental assessment is required for this project. (See PID)

C. Financial Analysis and Plan

This support activity has a total cost estimate of \$2,177,431 \$1,290,00 is being requested in FY'79 and the balance in FY'81 and 82 as additional sources of funding become available. The initiation of program elements and the cost allocations among them were based on: (1) resources required for each category of work to achieve a measurable impact; (2) budgetary constraints during the two year start-up period, and (3) the fact that the last two categories of work ("project design aids" and "communication and dissemination") are dependent upon earlier scheduled studies.

The cost estimates and the scheduling of the sub-activities are shown in the attached Project Budget Plan (Table 2, p. 51), the Financial Plan (Fig. 13, p. 52) and the Schedule of Activities and Disbursements (Fig. 14, p. 53).

Table 2. Project Budget Plan (Estimated)

A. Direct costs

1. <u>Review papers</u>		\$543,090
Natural resource and environmental survey methods and workshops _____	\$ 149,160	
Legal, regulatory and institutional aspects of natural resources and environment _____	102,275	
Environmental baseline data _____	105,700	
Humid tropics: review of selected problems _____	115,480	
Projections of future regional resource scarcities and environmental degradation__	70,475	
2. <u>Case studies</u>		415,705
Integrated resource planning, development and management _____	171,050	
Public involvement in environmental protection _____	78,605	
Governmental response to pollution and conservation problems _____	166,050	
3. <u>Project design aids (5 to be developed)</u> _____		137,150
4. <u>Communication and Dissemination</u>		369,000
Special editions of project work _____	90,000	
Regional workshops _____	105,000	
Translations (special editions and reports)	174,000	
Total direct costs:		\$1,464,945
B. Overhead: 30% of direct costs		\$ 439,486

C. Project Management

Staff (three years)	
GS-15 project manager	\$114,000
GS-11 assistant manager	60,000
GS-6 secretary	36,000
	<u>\$210,000</u>
Overhead (30% of salaries)	63,000
Total	\$273,000

Total
Estimated Costs: \$2,177,431

Figure 13. Summary, Financial Plan for Direct Costs

	Total estimated costs	Person- months		Travel ^{c/}		Per diem ^{d/} (days)	Publications (number)
		Sr. ^{a/}	Jr. ^{b/}	Inter. trips	Domes. trips		
Review papers	\$543,090						
Natural resource and environment surveys: state-of-the-art review (\$149,160)		23	24	-	16	112	1
Legal, regulatory and institutional aspects of protection, management and conservation of natural resources and the environment (\$102,275)		15	15	7	8	105	1
Environmental baseline data (\$105,700)		17	17	2	10	140	1
Build tropics: a review of selected problems (115,480)		16	14	7	8	236	1
Regional projections of natural resource scarcities and environmental degradation (\$70,475)		10	16	1	1	45	1
Case studies	\$415,705						
Integrated planning and development of natural resources (\$157,050)		24	28	9	-	205	2
Governmental responses in LDC's to pollu- tion and conservation problems (\$166,050)		24	28	9	-	205	1
Public involvement in environmental conservation and protection (\$78,605)		11	14	2	3	111	1
i. Project design aids	\$137,150	24	16		22	136	5
ii. Communication and Dissemination	\$369,000	20	-	-	-	-	10
Special editions (\$90,000)		1	-	20	-	180	56
Regional workshops (\$105,000)							
Translations (\$174,000)							
Total direct costs:	\$1,464,945						

a/ \$3,000 per month b/ \$2,000 per month c/ \$2,500 per international trip; \$500 per domestic trip
d/ \$55 per day, International or domestic

D. Economic and Social Analysis

Because of the technical support nature of this project, it will not have a direct predictable effect on the society and economy of any AID-assisted country. Indirectly, however, this activity should contribute to the achievement of sustainable long-range economic growth and social soundness.

Economic and ecological considerations tend to parallel one another as the time frame for consideration is lengthened. In the short run, heedless exploitation of resources may increase a country's current GNP, and the discharge of wastes without treatment may keep industrial costs lower than they would be with environmental requirements. However a deeper look would show that these are either deferred expenses which succeeding generations must pay or they are transferred from the sector of society which is using the resources to the remainder of the people who have to pay for the damage caused to the environment.

Developing as well as developed countries are acquiring an appreciation of the "economics of environment". All are more concerned with the trade-off between immediate savings and long-range environmental problems. Nonetheless, developing nations will have to make hard choices. They will have to weigh carefully each decision involving trade-offs between immediate and longer-range benefits and costs and they will need new knowledge as to the manner in which this can be accomplished. Their "life equation" in the immediate future as well as in the longer term -- ten to fifty years from now -- will be largely dependent on how well they can understand the issues they face and make the best-informed decisions concerning them. All of this underscores the value to AID and to developing countries of an effective and selective source of information on environmental matters.

IV. IMPLEMENTATION PLANNING

A. Administrative Arrangements

1. Special Considerations

A foremost consideration in this project should be the fact that it is setting the stage for potentially complex and far-reaching actions that entail a considerable in-house learning process. The expeditious contracting and delivery of studies is not sufficient in this particular project. The learning requirements which lead to institutional change also need attention. This requires time and sharing of experience with others. It can be achieved through consultation and communication with agencies which have faced similar problems in the development of domestic policies and programs and through the explicit attention to the needs and interests of Regional Bureaus, Missions and LDCs so as to obtain the greatest insight and applications of U.S. experience to developing country situations.

The following criteria were considered important in the evaluation of potential contractors: experience in public policy issues relating to natural resources management; ready access to a broad range of S&T talent; physical location; managerial capability; interest in international environment/development issues; and experience in dealing with developing countries.

The importance of the subject matter to on-going AID programs and the preliminary definitions of specific activities place a special responsibility on the entity to be contracted for project management. Very

important elements of public trust and, responsibility, impartiality and active interest in international environmental and natural resource matters should be well demonstrated by the contractor. Managerial flexibility is also needed.

Project management must be based in the Washington, D.C., metropolitan area, in order to make possible the communications and interactions that will be essential to planning and execution of the work. This criterion alone limits the alternatives considerably.

Of the three categories of entities that could be considered as management possibilities - governmental, non-governmental non-profit, and profit-making organizations - only the first two were considered seriously in view of the nature of this project. Profit-making corporations were excluded not only by virtue of their high overhead costs, which range from 100% to 270% as a percentage of salaries, but also because it would be difficult for private businesses to access the federal government agencies, which should be involved in this project. While non-profit groups were investigated informally to determine their possible interest in managing the entire project, their overhead costs ranged from 30% to 60% and they would also lack the public administrative experience required.

2. Management Alternatives

a. Governmental agencies

U.S. Man and the Biosphere Secretariat, Department of State (USMAB)

This Secretariat is presently managing a preliminary effort for DS/ST: Environmental Field Support and Training. Although scheduled for completion in FY 1979, it will be extended. The project's execution has

been considerably delayed partially due to the inability of the Secretariat to obtain permission from the State Department to obtain a ceiling for a project manager. This situation has been alleviated by the assignment of a professional from the Interior Department on a part-time basis to manage the project. However, this level of effort has not proven adequate for this \$880,000 project.

It was intended that through MAB, AID could tap the expertise of the Federal Agencies with major environmental responsibility and expertise. Project activities also have been delayed by lack of knowledge of AID and understanding of the needs of developing countries on the part of participating agencies. Federal reorganization and freezes on hiring have slowed agency response as well and have held up the definition of international programs.

These latter problems are being resolved and federal agency response to the present project will be sharper and more informed as a consequence of involvement in the MAB-administered work. The Agency which has shown the greatest interest and support has been the Department of the Interior's National Park Service.

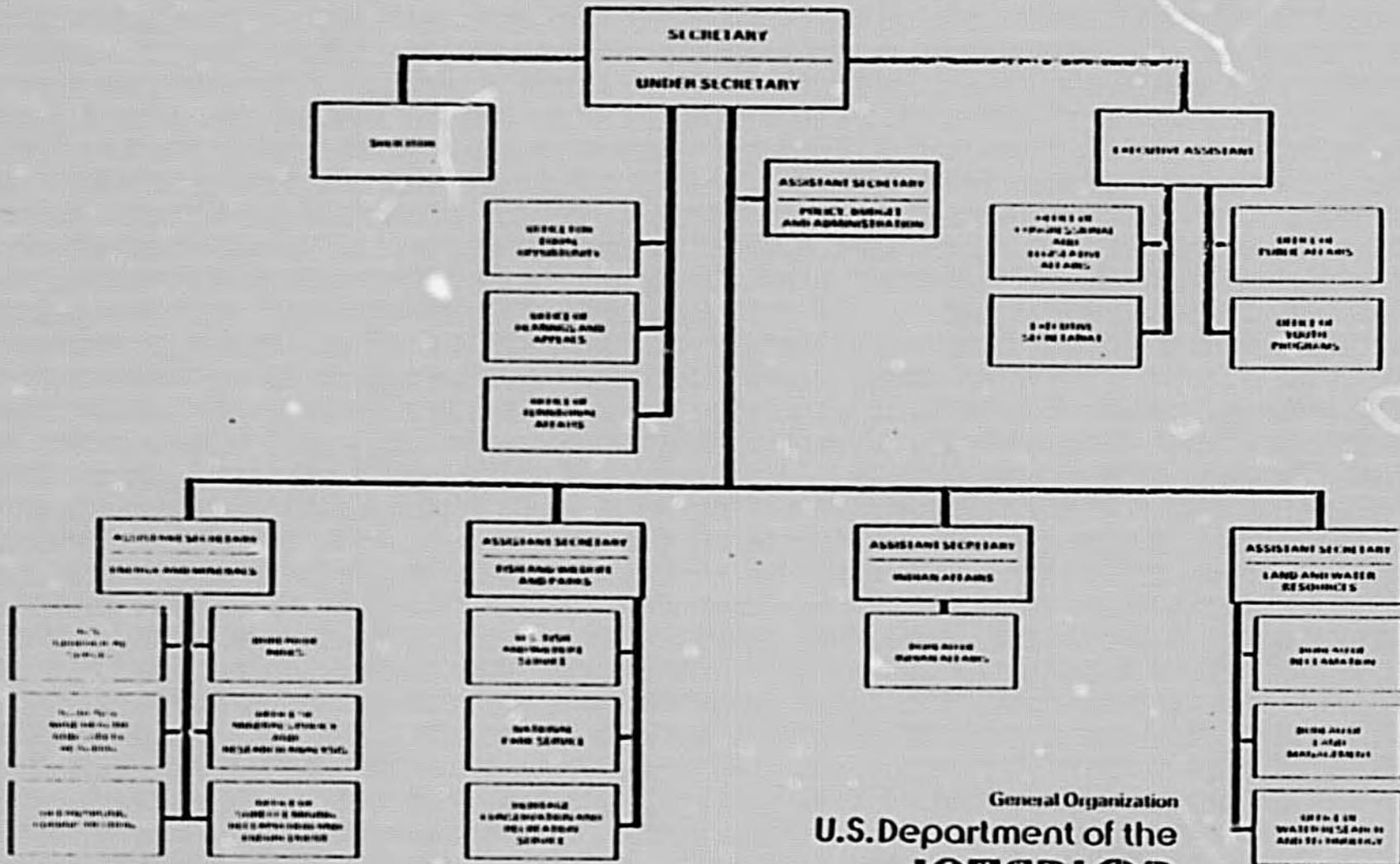
The Department of the Interior (DOI)

(Organization chart, Figure 15, page 58.) The Department of the

Interior is the principal conservation and natural resource management agency of the Federal government. It is concerned both with public policy development and with practical management programs and problems. The individual bureaus and offices within Interior are similarly engaged

Figure 15

U.S. DEPARTMENT OF THE INTERIOR



General Organization
U.S. Department of the
INTERIOR

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in both policy and management in their respective areas of responsibility.

Most are also involved in international activities. They are:

- U.S. Geological Survey
- National Park Service
- U.S. Fish and Wildlife Service
- Bureau of Reclamation
- Bureau of Land Management
- Office of Water Research and Technology

Most of Interior's international activities are now paid for by host countries. Of the total of 60 persons posted abroad in 1978, 52 were funded by the host countries and 41 of these persons were in Saudi Arabia. The total value of Interior's international work in 1978 was \$13 million, of which only 12% was financed by the Department itself. Most of the reimbursable work is in the Near East and is undertaken through the Joint Commissions on Economic Cooperation with Israel, Saudi Arabia, Egypt, and Jordan.

In 1977, over 250 activities involving 74 countries were carried out, at a cost of approximately \$30 million, of which \$14 million was from the Department. These activities were distributed among DOI agencies as shown in the following table:

Category	No. of countries	No. of activities	Man-years	DI	Cost (millions)	
					other	Total
Energy & Minerals	37	114	239	4.0	10.0	14
Fish, Wildlife, & Parks	60	49	126	7.5	2.5	10
Land & Water	42	102	69	2.0	3.0	5
Indian Affairs	6	10	8	0.3	0.7	1

Additional information on Interior's 1977 international work is presented in Appendix C .

Lesser developed countries represented over 50 percent of the countries in which the Department had activities but the largest programs in terms of funding and effort are in the relatively more developed countries on a reimbursable basis. The National Park Service and the Fish and Wildlife

Service, however, finance a greater share of their activities abroad and do more work in lesser developed countries than do the agencies involved in water, energy, and minerals. Also, these two agencies are more frequently involved with other federal agencies such as the U.S. Forest Service.

Interior's National Park Service and Agriculture's Forest Service have been assigned joint responsibility for developing and coordinating domestic participation in UNESCO's Man and the Biosphere Program (MAB)¹. The Park Service is already working on the Development Support Bureau's Environmental Field Support project, which is managed by the Secretariat for the U.S. National Committee to the Man and the Biosphere Program in the Department of State. The Fish and Wildlife Service is also participating, but other agencies in Interior have not yet been involved.

Summary Description of Interior's Activities

The following sections summarize the principal agencies in the Department of the Interior that could be involved in the project. One or another of Interior's agencies would have to be the equivalent of a prime contractor since the Department no longer has an Office of International Activities (it was abolished by Congress in 1976).

The U.S. Geological Survey(USGS). Since 1940, the Survey has provided technical assistance and training to other nations. In 1976, USGS scientists undertook 223 assignments in 44 countries, and 91 persons from 30

¹Memorandum to heads of certain Departments and Agencies from Executive Office of the President, OSTP and OMB, March 9, 1979. (Attached as Annex E)

countries pursued academic, observation, or intern experience in the U.S. The Survey's international work is largely in the areas of geology, geophysics, seismology, and, in recent years, remote sensing. AID's Office of Disaster Relief has enlisted Survey expertise on geological hazards and disasters (earthquakes, tsunamis, etc.). Survey personnel also work under the auspices of the IBRD, the Organization of American States, and various governments, preponderantly Saudi Arabia.

Survey expertise which should or could be tapped by the present project includes the following areas:

- earthquake studies
- engineering geologic studies
- environmental assessment
- environmental geology
- evapotranspiration
- flood discharge studies from small drainage areas
- flood hazard mapping
- geochemistry of water
- geomorphology
- hydrology, surface and groundwater
- land use and environmental impact
- limnology
- quality of water
- remote sensing

Most international activities of USGS are coordinated through the Office of International Geology, in the Geologic Division (Reston). That

Office has no departmental allocations for foreign assignments, and relies on contracts with AID or foreign countries to finance both salaries and overhead, for long-term as well as TDY assignments. Currently positions in Reston as well as in Saudi Arabia are being financed by Saudi Arabia.

International work in hydrology is undertaken by the Water Resources Division's Office of International Activities, and consists primarily of U.S.-based participant training in hydrology sponsored by AID or the U.N. The Office does have three hydrologists posted in Saudi Arabia presently, but the ceiling on hiring has resulted in cutbacks on long-term international work due to the shortage of management staff. The areas of expertise that could be offered by this office are groundwater hydrology, surface water hydrology, and water quality.

National Park Service. International work is carried out through two offices in the Park Service: the Office of Cooperative Activities' International Park Affairs Division and the Office of Science and Technology's Natural History Division. See Figure 15.

In the Office of Cooperative Activities, the International Park Affairs Division proposes, develops and coordinates international programs for exchanging information and for technical assistance to countries related to their parks and to other conservation and recreation matters. The Division also coordinates activities related to the World Heritage Convention. Appendix E summarizes the Office's activities in 1977.

The Natural History Division of the Office of Science and Technology is responsible for all matters related to natural history and natural

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NATIONAL PARK SERVICE

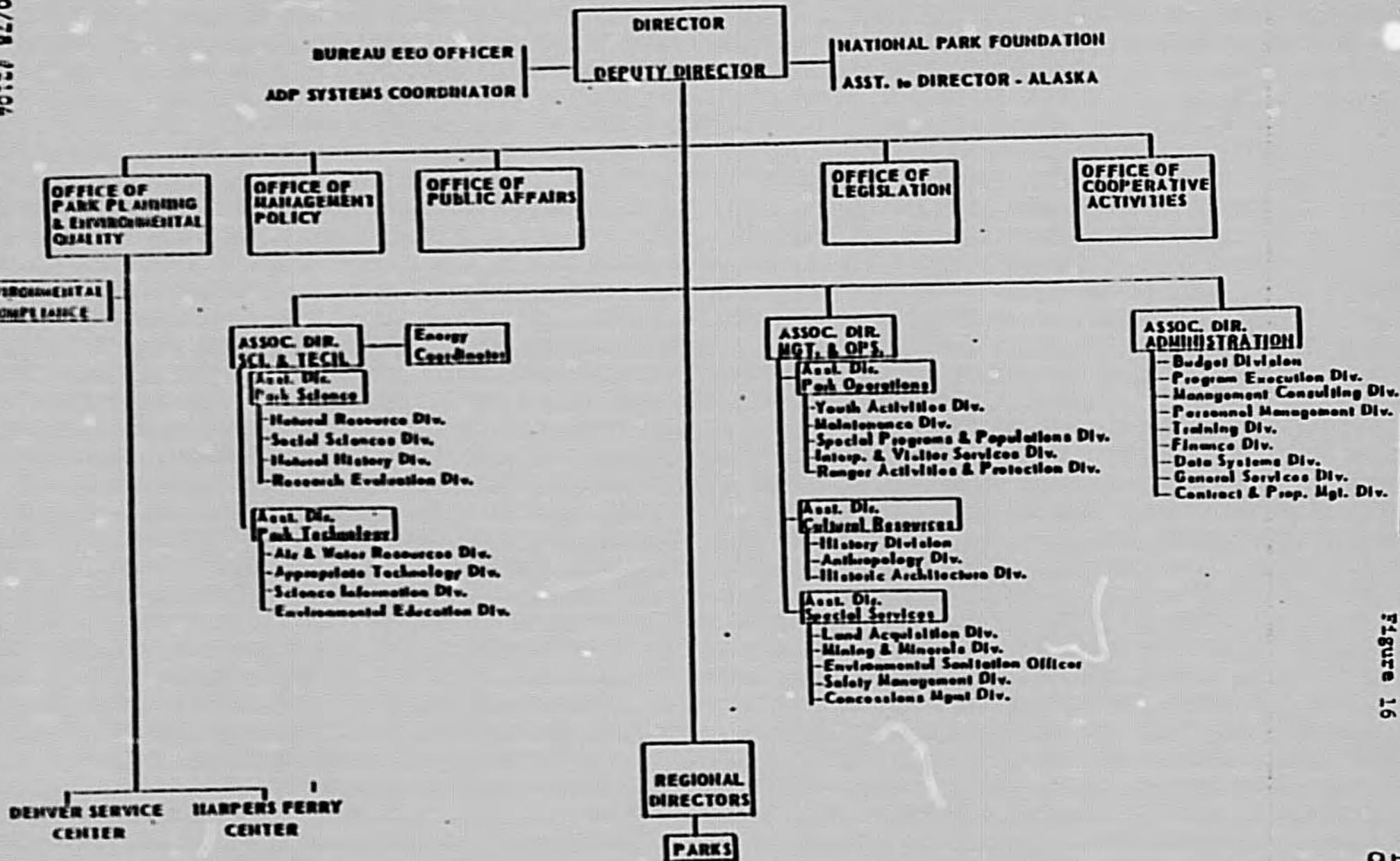


Figure 16

area preservation, including research, monitoring, and related publications. It is responsible also for developing and implementing all cooperative international programs relating to science and technology, including cooperative research programs, and the Man and the Biosphere Program.

Fish and Wildlife Service. Three offices within this agency do international work. The Office of International Activities is currently involved in the AID/DSB-funded Environmental Field Support project, administered by the MAB Secretariat in the State Department. The Office is to carry out a prototype endangered species survey and identify key persons or organizations in one developing country to develop a methodology which can be utilized by Regional Bureaus and Missions. The Office of Endangered Species works with the aforementioned office in providing scientists to countries requesting help in establishing critical habitats for endangered species. The Office of Biological Services focuses on ecosystem stresses and related management and development considerations. The Office supports scientific research on critical environmental problems and develops information in the form of manuals and guidelines. It also provides technical assistance and training to federal, state and private organizations. It has recently published a handbook on methods of conducting baseline ecological studies, and has documented methods used in the U.S. and abroad for predicting the effects of management or development on natural resources. A training program in adaptive environmental assessment for FWS personnel is being tested by the AID/MAB project for use in developing countries.

Appendix F contains the organizational chart for the Fish and Wildlife Service.

Bureau of Reclamation. The Bureau of Reclamation continues to supply technical assistance on water storage and distribution through AID's Reimbursable Development Office. Its present program of foreign activities is funded at about \$3.5 million and involves between 30 and 40 persons. These activities are largely initiated by the beneficiaries which include the IBRD and UNDP, as well as various countries such as Peru, Malaysia, Saudi Arabia, and Zaire.

Bureau of Land Management. The Bureau's Office of International Programs has only three professionals and training of foreign nationals is the principal focus of its program. Field activities are underway in Saudi Arabia and India, and proposals for work in China, Japan, Spain and Mexico are being prepared. The Bureau's expertise in multiple purpose land management and in range management could be a valuable contribution to AID's growing activities in natural resources management.

Office of Water Research and Technology. This Office is involved in a \$55 million research and development effort in desalinization in Israel, of which \$20 million is U.S. funds (through AID), while in Saudi Arabia similar work costing \$80 million, entirely reimbursable, is being coordinated through the Treasury Department.

Department of Agriculture (USDA).

Virtually all of the agencies in the USDA carry out international work. The informational booklet distributed by the USDA's Office of International Cooperation and Development, which coordinates international activities, states that the USDA "is the largest single source of agricultural expertise in the world."

In FY 1978, USDA provided 2,400 person-months of technical assistance by fielding a total of 275 technicians--mostly short term--from 10 different USDA agencies to 51 countries. The funding level was \$20.4 million. 56% of USDA's international work is funded by USAID; part is funded by the UN's FAO, the Organization of American States, and individual governments. The total number of agreements in FY 1978 was 140, and in recent years there has been an upturn in the number of agreements and technicians in Africa, Latin America and the Middle East, and "world-wide"; activities in Asia have decreased.

The work of the U.S. Forest Service and the Soil Conservation Service are of greatest significance to the present project. Their activities for FY 1978 are summed up in Table 3. Their overhead charges on AID's PASA are 18% in FY 1979.

Table 3. USDA's International Activities, FY 1978.

	Forest Service		Soil Conservation Service		USDA Totals	
	No. technicians	person months	No. technicians	person months	No. technicians	person months
Africa	5	30	18	60	197	647
Asia	4	6	29	173	37	232
Latin America	11	4	2	12	191	425
Middle East	-	-	6	8	96	379
Worldwide	<u>7</u>	<u>19</u>	<u>-</u>	<u>-</u>	<u>184</u>	<u>736</u>
Totals	27	59	55	253	725	2,419

Source: Office of International Cooperation and Development, USDA.

Technicians in the Forest Service and the Soil Conservation Service are working on questions of soil drainage, reforestation, range management, watershed management, soil and water conservation, and on-farm water management. Recent activities focused on Kenya, Botswana, the Gambia, Nepal, Afghanistan, Pakistan, Syria, Guatemala, Haiti, and Sri Lanka. There is a large SCS contingent working in Afghanistan on soil drainage in the Helmand

irrigation scheme. The USDA also supplies expertise to the Africa and Latin America bureaus through Resources Support Services Agreements (RSSA). The Forest Service¹ shares responsibility for the government's input to the U.S. Man and the Biosphere Program with the National Park Service.

While it will be important to involve components of USDA in this project, asking them to undertake prime responsibility would be inappropriate given their major focus on agricultural production.

The Council on Environmental Quality

The Council on Environmental Quality (CEQ) in the Office of the President is a possible candidate for much of the work to be managed in this project. CEQ's mission includes the application of the National Environmental Policy Act (NEPA) to the international arena. Also, the definition of environmental problems or issues has been a primary activity in CEQ. Recently, CEQ undertook the Global 2000 study (in cooperation with the State Department) under a Presidential directive to review worldwide trends in population, energy, food, water, land and forests, and the environmental consequences of these trends. To be published in late 1979, this study has drawn upon resources throughout the federal government as well as from the private sector.

The Global 2000 study will forecast a number of critical problems related to natural resources and the environment worldwide, which will be of potentially great import for U.S. foreign policy and for AID. In fact, U.S. Embassies throughout the world sent cable responses to a State/CEQ inquiry into trends in forests, agricultural land, and land productivity.

¹The Forest Service would be transferred to a new Department of Natural Resources which would replace the Department of Interior under the proposed Executive Branch reorganization plan submitted earlier this year to Congress.

The coincidence of the Global 2000 study with the general aims of the present project and the increasing interest in international problems indicate that CEQ could participate in a strategic way; however, they do not have the scientific and management capability which would be required for the entire program.

b. Non-Profit Organizations

There are a number of non-profit organizations with international programs or projects and with competence in the natural resources development and management issues and/or environmental conservation which could contribute to the present project or manage it.

International Environmental Issues: A Preliminary Resource Guide

(EPA, 1977) contains detailed descriptions of 53 non-governmental environmental organizations. The list was screened for organizations in the Washington, D.C., metropolitan area that have the following characteristics:

- (1) significant international programs or projects;
- (2) experience in lesser-developed countries;
- (3) experience and/or programs in environmental and natural resources problems in the context of underdevelopment.

Several development-oriented organizations were also considered. The following organizations possess the above characteristics, although in varying degrees:

American Association for the Advancement of Science (AAAS)

American Society of International Law (ASIL)

The Conservation Foundation (CF)

The Environmental Law Institute (ELI)

International Institute for Environment and Development (IIED)

The Natural Research Council (NRC)

Natural Resources Defense Council (NRDC)

Overseas Development Council (ODC) (not in the EPA guide)

Resources for the Future (RFF)

Smithsonian Institution (SI)

Volunteers in Technical Assistance (VITA) (not in the EPA guide)

Worldwatch Institute

In general none of the organizations except VITA and ODC have had direct experience with the development process. The focus of most international work of these organizations is on global issues (e.g. Worldwatch Institute, NRC, RFF) and their policy implications, or on institutional or legal aspects of natural resources and environment issues (e.g., NRDC, IIED, ELI, ASIL). Such issues are of concern to this project, but within the context of development in LDC's and in the context of AID's program, namely a field, or operationally oriented, context. This is outside the usual work of most of the organizations.

In general, the organizations claim no expertise in natural resources surveys and management, monitoring and various ecological or ecosystem studies. Instead their emphasis is largely on the political, legal, social and economic issues.

The various organizations are small in terms of staff and budget, generally. Few have yearly budgets in excess of \$1.0 million. None have across-the-board competence or experience in all the subjects addressed by the present project.

Except for the AAAS, the NRC, and the Smithsonian Institution, these organizations do not normally work with federal agencies. This would pose a potential complication for the project's management, to the extent that the involvement of persons or activities in the various federal agencies is to be sought.

Nevertheless, there is great interest in this project among the non-profit organizations who were contacted directly. It is judged that different organizations could make contributions in some portion of the project, particularly where their programs match the project's agenda of studies.

3. Analysis and Recommendation

a. Analysis

In the analysis of the management alternatives for the project, the probable pattern of future work on environmental and natural resources concerns was anticipated. The competent Federal agencies are a unique resource for information and expertise in many of the areas touched by the present project. Agencies in the Departments of Interior and Agriculture have a long history of international activities, in collaboration with AID and the State Department, and in recent years through reimbursable arrangements with multilateral development institutions such as the OAS, UNDP and the IBRD, as well as countries able to finance technical assistance, especially the OPEC countries. However, this work has generally consisted

of studies and investigations for the inventory (or discovery) and exploitation of natural resources, e.g., minerals, forests, water and land.

There has been little scope for the various federal agencies to exercise their expertise in the management and conservation of renewable natural resources and of the environment, since neither AID nor multi-lateral development assistance institutions have supported this work until very recently. In the coming years, however, there will be an increasing need and opportunity for utilization of federal expertise in bilateral assistance authorized by Section 118 of the FAA on Environment and Natural Resources.

Washington-based non-profit organizations, some of which were contacted during the design of this project, could potentially manage as well as execute some but not all of the activities. It would be difficult for such groups to collaborate with Federal agencies where necessary. Although no insurmountable legal problems are posed, the newness and unfamiliar aspects of such a procedure would no doubt complicate and slow the work. Only one of the non-governmental organizations contacted, the Conservation Foundation, expressed interest in the total management, but the prospect would overwhelm the Foundation's capacity. In addition, a 60 percent overhead would make the activity unduly expensive. Universities throughout the United States can also contribute scientific and research expertise in most areas of concern, but were not considered for management of the present project, since a continuous presence is required and the best qualified universities are not located in the Washington, D.C. metropolitan area.

The need for a single-management contract, when considered in conjunction with the necessity of obtaining the broadest possible range of relevant scientific expertise at the most reasonable cost, leads to the conclusion that a Federal agency would be the most appropriate contractor.

b. Recommendation: The National Park Service

The National Park Service in the Department of the Interior stands out as the Federal agency most qualified to manage this project. While it may seem to be an unusual selection for management of this project, owing to its apparently specialized mission, the Service has practical experience as well as policy involvement in many of the environment and development issues that concern the present project. Furthermore, it has gained management experience in this kind of project, since it has detailed staff to assist the U.S. MAB Secretariat administer DSB's Field Support and Training Project. The management requirements of that project and the present one are somewhat similar. Informal discussions with Park Service Staff indicate considerable interest in undertaking this work for AID.

Many of the themes or problems concerning the present project are also of concern to the management of national parks. For example, the Service must harmonize the conservation of nature and ecological balance in parks with large numbers of visitors and their impacts in the form of needs for food, water, waste disposal, housing, and fuel for cooking and heating. An energy conservation program has been started, by means of planning workshops. Air and water conservation are active concerns.

Environmental monitoring--one of the proposed topics for a state-of-the-art paper and workshop--is an on-going activity in which the Service has considerable experience. The Park Service, in cooperation with UNESCO and UNEP, has recently developed a preliminary methodology for an international program for the monitoring of water, air and soil in both natural and modified environments. Education is a foremost activity in the Service also. Much of this work, including some of the international activities such as Man and the Biosphere cooperative work, is coordinated through the newly established Office of Science and Technology.

In addition, the Park Service has demonstrated a commitment to international environment and development issues through assignment of personnel to UNESCO's MAB program, and to AID's MAB project. It is presently seeking authorization to assign a person to the Peace Corps to assist that agency develop its conservation program.

As the Park Service would not be the appropriate Interior agency to directly undertake all of the sub-activities, it would have to have the authority to enlist the expertise of other parts of Interior and, in some cases, other Federal agencies such as the Forest Service. There are precedents for interagency cooperation, including close cooperation with USDA on the Man and the Biosphere activities.

3. Implementation Plan

1. Project Management Responsibilities

This project would be managed for AID by the Department of the Interior through a Participating Agency Service Agreement. Technical management responsibility could reside in the Park Service.

Within AID project monitoring and coordination would be the responsibility of the Development Support Bureau's Office of Science and Technology (DS/ST). Activities involving overseas field work and travel would be carefully coordinated with the Regional Bureau Environmental Coordinators.

a. Prime contractor

National Park Service's management responsibilities would include:

- * Detailed planning of work to be done, including preliminary meetings and planning workshops with AID to further define work to be done.
- * Identification of sources of information and expertise within Interior and other federal agencies.
- * Operational liaison with relevant Man and the Biosphere activities being coordinated or carried out by the Departments of Interior and Agriculture.
- * Preparation of scopes of work for all proposed studies.
- * Planning and coordination of all travel abroad, including securing necessary AID or State Department approvals for persons and itineraries.
- * Management and fiscal administration of all work done, either directly by the Park Service or through other arrangements.
- * Technical monitoring of work and supervision of all publications and workshops.

To accomplish the management responsibilities listed above it is judged that three years of each of the following would be required:

Project manager, GS-15

Assistant project manager, GS-11

Secretary, GS-6

Level of effort would perhaps vary through the life of the project. Greater amounts of senior management will be needed at the beginning and ending of the project.

b. AID

AID's management effort would include:

- * Advisement in the planning stages of all work, in order to select from alternatives, guide in the preparation of scopes of work, and coordinate with on-going AID activities.
- * Review proposed scopes of work.
- * Facilitate overseas travel and field work.

The estimated average level of effort for project management is 50% of the time of one professional, GS-12 or above, and 50% of one secretary throughout the life of the project. However, more than 50% time would be required during the planning stages, i.e. during the first 6 to 12 months. DS/ST should consider an internship position from an interested sponsor to provide assistance, during this project.

2. Description of Project Implementation

Overall project implementation can be tracked using Figure 14, Schedule of Activities on page 53. Activity specific project performance

network charts should be constructed, as scopes of work become defined in detail.

The division of management responsibilities between AID and the Park Service is most clearly seen by viewing the planning and execution of the various activities as separate phases. (On Figure 14, Schedule of Activities, planning work is indicated only with a "bullet" preceding in time the initial workshop.)

Activity-specific planning would be accomplished by the Park Service's project manager, in close connection with AID. The actual work, or execution, following the initial workshop would be carried out by the most appropriate Interior agency. In some instances, sub-contracting may be desirable in order to obtain special expertise from non-profit groups or universities.

The planning phase of the project is designed to assure that:

- * the work to be done does not repeat extant or on-going work in or out of AID;
- * the specific work to be reviewed is targetted as precisely as possible to AID needs, especially those of regional bureaus;
- * the level of inquiry and the nature of the inquiry is appropriate in terms of antecedent knowledge and the definition of the problem;
- * the work involves maximum collaboration from on-going related programs in AID and elsewhere in the government;
- * work involving international travel and contacts with LDC institutions or professionals can be coordinated at the earliest time possible with Regional Bureaus and Missions.

a. Review papers -- summary of likely evolution of work

(1) Planning:

Meet with AID's Committee on Environment and Development and other in-house participants recommended by AID in order to:

- identify more precisely themes or issues to be examined and suggest substitute themes if necessary;
- identify sources of information and expertise.

Contact sources and prepare preliminary definition of themes to be examined for transmittal to planning workshop invitees.

Schedule technical planning workshop whose objectives would be to:

- validate and select themes to be examined or problem to be addressed
- elicit participation and involvement

(This workshop should involve a small number of scientists or authorities in the subject matter to be discussed.)

Prepare arrangements with other federal agencies and other appropriate organizations for their participation.

Draft scope of work for activities.

(2) Execution:

- Undertake preparation of annotated bibliography(ies); review(s) of literature; identification of principal problems, issues, lessons, conclusions, unresolved questions or controversies; and draft preliminary recommendations for AID.
- Prepare a draft of above and send for review prior to workshop
- Hold technical workshop
- Prepare proceedings and send for review by participants
- Hold briefings for AID and others in appropriate form
- Publish proceedings

It may be convenient for those instances where an extensive body of literature exists, to treat the review of literature and preparation of bibliography as a discrete operation to be done at a location known for the excellence and scope of its information resources on the particular subject.

Technical monitoring of review topics should be ensured by the constitution of a technical or scientific advisory and editing group, selected by the DOI and AID.

b. Case Studies--summary of likely evolution of work

(1) Planning

Meet with AID's Committee on Environment and Development in order to:

- review the choice of subject matter for studies
- define more precisely their objectives and scope
- identify potential participants both in the U.S.A. and in the case study host country.

Travel to host country to:

- consult with AID missions and obtain approval
- consult with appropriate host country governmental contacts for approval
- explore possible collaborating host country institutions or groups and the nature and extent of participation that could be obtained.

Validate or reformulate case study objectives and scope as necessary, and review with AID's project manager.

Draft scopes of work for studies for AID review and approval.

(2) Execution

Undertake review of literature and antecedents in U.S.A.

Define lines of inquiry, methods, travel schedule, etc.

Travel to host country and carry out field work with collaborating institution or persons

Draft results and leave in host country

Prepare report and distribute for review

Workshop to discuss results

Prepare and publish final report.

C. Project Design Aids--summary of likely evolution of work

(1) Planning

Analyze results of review papers and case study work, for material or insights of a normative nature.

Meet with AID's COED to:

- review the topics to be covered.
- identify sources of relevant information including AID projects;
- identify possible member of technical review group.

Draft scope of work and review with AID's COED.

Constitute technical editing group(s).

(2) Execution

- Collect and review literature and antecedents related to the guidelines topic: develop annotated bibliography and critique or evaluation of materials reviewed.
- Hold workshop or meeting with technical editing group to develop outline of work, level of communication, format and other details, including projects that could be used later to test the materials.
- Prepare preliminary design aids.
- Test against actual project.
- Modify and submit for review by editing committee.
- Hold workshop to review/communicate results.
- Edit and publish.

It is very important that those who prepare and review the design aids be experienced in the type of development or situation being treated. Initial drafting cannot be left to inexperienced, albeit intelligent, scientists or technicians. Furthermore, those who draft the aids should have had experience in writing such documents, namely materials designed to guide and instruct. This writing mode is very exacting.

d. Communication and Dissemination--likely evolution of work

Since this category involves two dissimilar activities--(1) the preparation of special editions of the project results and (2) regional workshops--implementation would have correspondingly different requirements.

Special editions

(1) Planning.

This effort should be planned in conjunction with AID's Office of Development Information and Utilization and Office of Personnel Management, as well as the COED. Coordination with AID's internal training program activities is especially important. It is also recommended that consultations take place with the World Bank's Office of Environmental and Health Affairs, and other donor agencies to coordinate with any possibly similar work.

- Review all results of the project with AID's COED and define scope of work.
- Identify potential editor(s).

(2) Execution.

- Preparation of draft series.
- Review by interested project participants.
- Edit and publish and translate.
- Distribute series.

Regional Workshops

(1) Planning.

Consult with COED and individual environmental coordinators from regional bureaus on location, timing, agenda, participants.

Prepare pre-conference materials and send to invitees.

(2) Execution.

Hold four workshops in suitable locations, one in each of the AID geographical regions.

Prepare report on proceedings.

It is recommended that AID and the Park Service co-host these workshops. The possibility of subcontracting part of the work to regional LDC training institutions should be considered.

3. Consultation, Communications and Approvals

All work, whether done entirely by the Park Service or by other entities within or outside of the Interior would be planned in detail and be subject to joint AID-Park Service discussions. Scopes of work would be subject to consultation and approval of the AID project manager and the Committee on Environment and Development. The steps would be as follows.

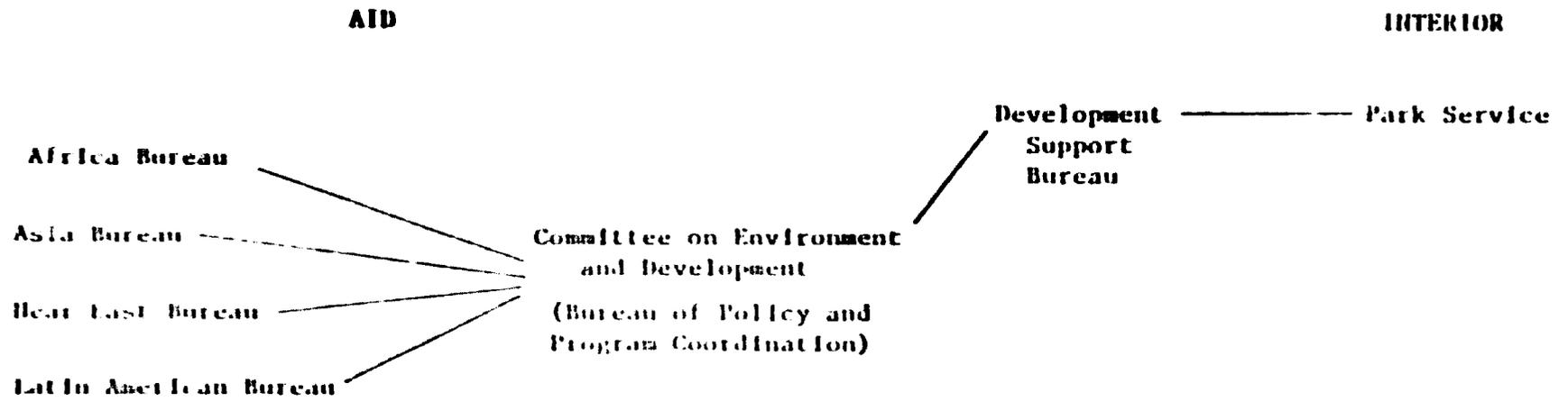
- (1) Initial meeting with AID's project manager to review the proposed program.
- (2) Implementation Plan prepared and sent to DS/ST for review and approval.
- (3) If the plan suggests major changes in scope, the project manager would meet with some or all members of the COED, according to the judgment of the DS/ST project manager.

The Park Service manager would meet with AID's COED once every six months, or alternatively at the initiation of major categories of work.

4. Monitoring

, in the first instance,
Because the beneficiary of this project is/AID itself, monitoring of progress and AID involvement in project management are one and the same. On-going project management and the consultation and communication arrangements described above will serve as checks on project progress. Any deviation from the project plan as set forth here and in later agreements would of course be automatically reviewed, in that consultations with AID on detailed scopes of work are required. AID participation in workshops at the finalization of different activities as well as in the regional workshop which will wrap up the project, will in effect constitute both a check on the project's satisfactory completion as well as an opportunity for evaluation, discussed in the following section.

Figure 17 Lines of Communication and Coordination



C. Evaluation

Information will be the tangible output of this project. The learning or educational dimension of acquiring or producing the information will be an intangible result, which is considered to be important to the implicit goal of improving individual and institutional response on questions of natural resources and the environment. Furthermore, new avenues and contacts of communication among persons and offices will result, and these can also be viewed as a parallel, intangible benefit. Notwithstanding their importance, these intangibles are more complex to evaluate than the direct benefits. An evaluation of the tangible information output is possible, however.

(1) A degree of evaluation toward the end of the project can be built into the regional workshops by means of an explicit evaluation exercise that requests reactions of participants to the materials presented. This should be scheduled in the regional workshops.

(2) Peer review of materials, which would be accomplished by means of the review process that all drafts would undergo prior to final publication, will constitute, in effect, an evaluation of content, if not of effectiveness of communication. Still, such an "evaluation" is essential for the widespread acceptance of the results, as well as for the assurance of best possible content and presentation.

Reviews of the various publications by editors of various professional journals involved in development, and the subsequent requests for the publications, or lack thereof, comprise another yardstick, though not as immediate as the first two.

(3) In addition, DS/ST will conduct regular annual reviews and an in-depth review 24 months after initiation of the project.

The ultimate test, however, is the degree in which development is improved, in design and execution, as well as management and achievement of goals, because of the information that this project will make available.

A number of years will have to pass before this measure of the project's value can be applied. Also, appropriately designed inquiries would be needed to isolate the information factor from the many other variables that affect the planning and execution of development projects. A discrete effort, not designed in the present project, would be needed after a suitable time interval, e.g. three to five years.

D. Implementation Issues

1. Level of Commitment in AID.

AID responsiveness to the contractor's proposals for scopes of work, participants in workshops and other activities is, on the one hand, essential for the technical elaboration of the project and, on the other, essential for the efficient execution of the project. Numerous meetings and consultations will be required. These are desirable as well since they are opportunities for individual and institutional learning. The same is true for reviews of drafts and project results. AID responsiveness and participation is therefore an active ingredient in the project's success. It is recommended that a corresponding allocation of time be planned during the project life for these efforts. Table 4 summarizes the distribution of activities over time that would involve AID participation.

Table 4. AID Management and Participation Tasks

	FY 79	FY 80	FY 81	FY 82
AID DSB/ST Project Manager (months)	1	4	4	4
Number of meetings with CED to approve/ review scopes of work	4	5	2	-
Number of Washington-based seminars, workshops or technical meetings	4	7	6	-
Number of technical review of drafts	-	8	-	-
Number of regional workshops	-	-	<u>2</u>	<u>4</u>

2. The Committee on Environment and Development's Role

DS/ST should establish in consultation with PPC and the Regional Bureau Environmental Coordinators the exact functions and communication modes that will be necessary in order that the COED can review and approve scopes of work.

3. Turn-Around Time for Proposed Actions by Prime Contractor, and AID Response

Given that COED's members often travel, there is ample likelihood for delays in responding. However, AID should commit itself to a maximum time lapse between receipt of proposed actions and response and, correspondingly, establish how this commitment can be observed when key persons are absent, or when there is disagreement on a course of action. The contractor's ability to meet the project schedule is partly determined by turn-around time for such communications.

4. Mission Support for Field Work

The level and type of support that would be provided to project field work should be determined in advance in order to avoid confusion or unrealistic expectations on the part of field workers.