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NATURAL RESOURCES MANAGEMENT
PROJECT
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VOLUME I

PROJECT PAPER
AND
SELECTED ANNEXES

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

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NATURAL RESOURCES MANAGEMENT

PROJECT PAPER

This paper was prepared in the
Office of Agriculture and Rural Development

Marcus Winter, Chief

Division of Regional and Resources Management (RRM)

Principal writers were:

Jerry Bisson, Project Officer, RRM
David McCauley, Ph.D., Policy Advisor, RRM
Agus Widiyanto, Program Specialist, RRM
Graham B. Kerr, Ph.D., Division Chief

Technical analysis were prepared by Associates for Rural
Development (ARD) and individual consultants:

Phil Cheney, ARD	Carol Colfer, ARD
Francis Putz, ARD	Mering Ngo, ARD
Roger Sedjo, ARD	Sukarno
Wimar Witoelar	Michael Drilling
Mangara Tambunan, ARD	Rohadi Abdulhadi, ARD

Substantive Contributions were made by:

Isna Marifa, RRM
James Hradsky, PPS
Richard Layton, FIN
Rili Hawari Djohani, Worldwide Fund for Nature/Bogor
Alan Robinson, World Wildlife Fund/Bogor
Eugene Galbraith, PSC/USAID/Jakarta
Molly Kux, AID/Washington
Ronald Greenberg, AID/Washington
Mona Grieser, Institute for International Research

Principal Contributors in the Government of Indonesia were:

Sayuti Hasibuan, National Planning Agency (BAPPENAS)
Herman Haeruman, BAPPENAS
Aca Sugandhy, Ministry of Population & Environment (KLH)
Wartono Kadri, Ministry of Forestry (MOFr)
Djamaloedin Soeryohadikoesoemo, MOFr
Soedjadi Hartono, MOFr

The many drafts and final copy were typed by:

Susilowati Ibrahim, ARD/RRM

NATURAL RESOURCES MANAGEMENT
PROJECT PAPER

TABLE OF CONTENTS

	PAGE
Table of Contents (Volume I: Project Paper and selected Annexes	i
List of Figures and Tables	iv
Table of Contents (Volume II: Annexes)	v
List of Abbreviations	vi
Project Authorization	vii
1. PROJECT BACKGROUND AND RATIONALE	
1.1 Project Background	
1.1.1 The Development Challenge: Sustaining Indonesia's Economic Growth	1
1.1.2 Indonesia's Three Macroeconomic Challenges	1
1.1.3 Indonesia's Population and Natural Resources	2
1.1.4 Sources of Economic Growth from Exports	2
1.2 Project Rationale: Improving Natural Resource Policies and Management to Sustain Economic Development	
1.2.1 The Policy Framework Linking Development and Environmental Management	7
1.2.2 Priorities for Improving Natural Resource Management	8
1.2.3 Conformity with Indonesia's Development Strategy	9
1.2.4 Relationship with the Mission's CDSS and Performance Contract	10
1.2.5 Relationship with Other Donor Assistance	10

PAGE

2.	PROJECT DESCRIPTION	
2.1	Goal and Purpose	11
2.2	End of Project Status	11
2.3	Beneficiaries	13
2.4	Sustainability of Project Investments	14
2.5	Outputs	15
2.6	Project Components	
2.6.1	Policy Analyses for Sustainable Economic Development Component	16
2.6.2	Pilot Management of Natural Forests and Protected Areas Component..	19
2.7	Project Management and Implementation Responsibilities	
2.7.1	Interministerial Environmental and Natural Resources Policy Working Group (PWG) and its Secretariat	22
2.7.2	The Project Coordinating Committee (NRM/PCC)	24
2.7.3	MOFr NRM Project Implementation Unit (FPIU)	25
2.7.4	Policy Analyses for Sustainable Economic Development Component	25
2.7.5	Pilot Management of Natural Forests Sub-component	26
2.7.6	Multi-purpose Management of Protected Areas Sub-component	26
2.7.7	Applied Research on the Management of Natural Production Forests and Protected Areas Sub-Component	26
3.	IMPLEMENTATION PLAN, MONITORING AND EVALUATION	
3.1	Implementation Plan and Schedule	
3.1.1	Key Activities during First Year	27
3.1.2	Annual Plans of Activities and Reporting Requirements	27
3.2	Monitoring and Evaluation	
3.2.1	Monitoring of Implementation Progress	30
3.2.2	Evaluation	31

4.	FINANCIAL PLAN (not included in this version)	
5.	SUMMARIES OF ANALYSES	
5.1	Institutional and Administrative Analysis	
5.1.1	Institutional Analysis	31
5.1.2	Administrative Analysis	33
5.2	Economic and Financial Analyses	
5.2.1	Economic Analysis	33
5.2.2	Financial Analysis	35
5.3	Technical Analysis	37
5.4	Social Soundness Analysis	37
5.5	Environmental Analysis	38
6.	CONDITIONS AND COVENANTS	
6.1	Conditions Precedent to Disbursement	
6.1.1	Project Representatives	39
6.1.2	Establishment of Project Management Structure	39
6.1.3	Annual Work Plans and Budgets	40
6.1.4	For Research and Training Activities of the Bukit Baka Field Station	40
6.2	Covenants and Waivers	
6.2.1	Project Evaluation	40
6.2.2	Equipment Maintenance	40
6.2.3	Staffing	40
6.2.4	International Travel for Participants..	41
SELECTED ANNEXES FROM VOLUME I		
Annex 1	Log Frame	
Annex 2	Detailed Project Budget (not included in this version)	
Annex 3	Environmental Determination	
Annex 4	Gray Amendment Certification	

LIST OF FIGURES AND TABLES

Figure 1	Map of Indonesia	3
Figure 2	Indonesia's Changing Export Picture	5
Figure 3	The NRM Project Process	12
Figure 4	The NRM Project Activities	18
Figure 5	NRM Administrative Structure	23
Figure 6	Project Implementation Schedule	29
Table 1	Dates of Key Activities	28

NRM PROJECT PAPER VOLUME II

ANNEXES

- A. Project Analyses
 - 1. Institutional and Administrative Analysis
 - 2. Economic Analysis
 - 3. Technical Analyses
 - 3.1. Natural Resources and Environmental Management in Indonesia's Sustainable Economic Development
 - 3.2. Strategy for Supporting the Analysis of Natural Resource Policies
 - 3.3. Strategy for Promoting the Management of Natural Forests and Protected Areas for Sustained Yields
 - 3.4. Strategy for Human Resources Development to Support Sustainable Forestry and Protected Areas Management
 - 3.5. Elements of an Environmental Education and Public Awareness Strategy
 - 4. Social Soundness Analysis
 - 5. Environmental Analysis
- B. Logical Framework Matrix
- C. Terms of Reference for Umbrella Technical Assistance Contract
- D. Detailed Project Budget
- E. Suggested Format for Work and Financial Plans
- F. International Tropical Timber Organization (ITTO) Proposal
- G. Procurement Plan
- H. Statutory Checklist
- I. AID/W Guidance and PID Approval
- J. Cooperation with Other Donors in Environmental and Natural Resources Management
- K. Government of Indonesia Request for Assistance (Bluebook Entry)
- L. Environmental Determination
- M. Gray Amendment Certification
- N. Waivers
- O. List of Background Papers
- P. Bibliography

List of Abbreviations

AFRD	:	Agency for Forestry Research and Development, Ministry of Forestry
AID/W	:	Agency for International Development/Washington
BAPPENAS	:	National Development Planning Agency
CDSS	:	Country Development Strategy Statement
DIP	:	Daftar Isian Proyek (List of Projects and Budgets)
EKUIN	:	Office of the Coordinating Minister for Economic, Financial and Industrial Affairs and Development Supervision
FX	:	Foreign Exchange
FY	:	Fiscal Year (U.S.)
GDP	:	Gross Domestic Product
GOI	:	Government of Indonesia
IFY	:	Indonesia Fiscal Year
IGGI	:	Inter Governmental Group on Indonesia
ITTO	:	International Tropical Timber Organization
KLH	:	State Ministry for Population and Environment
LC	:	Local Currency
LIPI	:	Indonesian Institute of Science
FIN	:	Ministry of Finance
FPIU	:	Ministry of Forestry Project Implementation Unit
MOFr	:	Ministry of Forestry
NGO	:	Non-Governmental Organization
NRM	:	Natural Resources Management Project
PACD	:	Project Assistance Completion Date
PH	:	Directorate General for Forest Utilization, Ministry of Forestry
PHPA	:	Directorate General for Forest Protection and Nature Conservation, Ministry of Forestry
PID	:	Project Identification Document
PIL	:	Project Implementation Letter
PIMPRO	:	Project Manager
PIO/T	:	Project Implementation Order for Technical Services
PWG	:	Interministerial Environmental and Natural Resource Policy Working Group
PCC	:	Project Coordinating Committee
REPELITA V	:	The Indonesian Government's Fifth Five-Year Development Plan (1988-1992)
REPELITA VI	:	The Indonesian Government's Sixth Five-Year Development Plan (1993-1998)
RFP	:	Request for Proposals
SBK	:	P.T. Sari Bumi Kusuma (a forest concession in West/Central Kalimantan)
USAID	:	United States Agency for International Development

PROJECT AUTHORIZATION

Name of Country: Indonesia Name of Project: Natural Resources Management
Project Number : 497-0362

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Natural Resources Management Project for Indonesia, involving planned obligations not to exceed \$18.5 million in grant funds over a six year period from date of authorization, subject to availability of funds in accordance with the A.I.D. OYB/allowance process, to help in financing foreign exchange and local currency costs for the project. The planned life of project is seven years from the date of initial obligation.

2. The project consists of various activities designed to strengthen Indonesia's institutional capability to (a) identify natural resources management constraints on sustainable economic growth; and (b) design and implement improved policies and practices to address these constraints.

3. The Project Agreement which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Commodities, Nationality of Services

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

b. Conditions Precedent to Disbursement

1. Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement for any purpose other than technical assistance, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D. evidence of

the establishment of the following project structure: the Project Coordinating Committee; the Interministerial Working Group on Environment and Natural Resources Policy and its Secretariat; and BAPPENAS's and the Ministry of Forestry's NRM Implementation Units.

2. Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement for project activities to be implemented by BAPPENAS or the Ministry of Forestry after May 1, 1991, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D., an annual plan and budget for each agency for each project year which covers such activities.

3. Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement for project activities at the Bukit Baka Field Station, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D., evidence that an agreement has been concluded between the Ministry of Forestry and the cooperating forest concession holder which specifies the implementation responsibilities and contributions of both parties with regard to the cooperative technical assistance/applied research program to be carried out at the Bukit Baka Field Station.

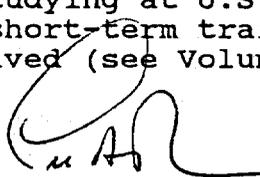
c. Covenants

The Cooperating Country shall covenant to:

- 1) provide sufficient funds to adequately and properly maintain all equipment financed under the grant; and
- 2) provide all Government of Indonesia personnel required to implement the Project in an effective and timely manner.

d. Waiver

The requirement for the Government of Indonesia to finance international travel for (a) thesis research conducted in Indonesia by participants studying at U.S. graduate schools, and (b) participants receiving short-term training in the U.S. and other countries has been waived (see Volume 2, Annex N).



 Lee Twentyman
 Acting Mission Director

7/27/90

 Date

**NATURAL RESOURCES MANAGEMENT
PROJECT PAPER**

1. PROJECT BACKGROUND AND RATIONALE

1.1 Project Background

1.1.1 The Development Challenge: Sustaining Indonesia's Economic Growth

Since 1960 Indonesia has achieved much of its economic growth from the direct exploitation of its rich natural resources endowment. This approach may have been appropriate during this stage of the country's economic development, when the income generated helped to establish economic and political stability. This cannot continue indefinitely because the natural resource base is being eroded and degraded rapidly. Many natural resources will be consumed by the early years of the 21st. century. Economic growth will inevitably slow with current policies and practices regarding natural resource use. Indonesia now must devise new policies which guide their management so the resources themselves and the prosperity they provide are sustained.

1.1.2 Indonesia's Three Macroeconomic Challenges

During the 1990's, Indonesia faces three economic challenges: diversifying the economy, creating jobs and reducing poverty, and decreasing a high debt service burden.

Indonesia must diversify its economy by reducing its dependence on oil and gas earnings. The proportion of export earnings attributable to oil and gas has fallen considerably during the past decade. However, oil and gas still provide 20 percent of GDP and over 40 percent of government revenues.

Indonesia must create jobs and reduce poverty to ensure political and economic stability. With 180 million people and a labor force growing at 2.5 percent per annum over the next decade, the country has to provide over 2 million jobs each year. The World Bank suggests that GDP must grow by 5 percent per annum just to keep pace with the labor supply. Closely associated with employment are challenges of poverty. Income disparities -- particularly across regions -- are widening despite steady national economic growth.

Indonesia must reduce its debt service burden. Its annual debt servicing is above 35 percent of export value. The total amount of its foreign debt is more than \$50 billion. It is almost twice that of the Philippines, roughly comparable to India's, and much greater than that of other large countries with comparable levels of per capita GDP (Pakistan, Nigeria, and Egypt).

The emerging strategy for addressing these challenges and capitalizing on the existing strengths of the economy is to increase exports based upon renewable natural resources.

1.1.3 Indonesia's Population and Natural Resources

Indonesia covers an area of land and sea greater than that of the continental United States (Figure 1). Despite success with the country's family planning program, its population will probably grow to 215 million by the year 2000. National per capita income is about \$500. It has not changed for five years as economic growth has just been keeping pace with the expanding population.

The uneven distribution of Indonesia's population also causes problems. The majority live on less than 10 percent of the land area on the fertile islands of Java, Madura and Bali. These "Inner Islands" are home to 100 million people and still largely agrarian. They are also the locus of the country's rapidly growing industrial and manufacturing sector. The "Outer Islands" are thinly populated and ecologically fragile. Their people are primarily engaged in agriculture, fisheries and forestry. In the Inner Islands, the renewable resources -- land, forest, water, and coastal resources -- are being pushed beyond their sustainable production limits. Far fewer people and more resources mean lower pressures in the Outer Islands. These areas are, however, also experiencing strains from natural resource mismanagement; their resources are being overexploited and are steadily disappearing.

1.1.4 Sources of Economic Growth from Exports

In 1988 the leading non-oil and gas growth sectors were (see Figure 2): non-natural resource manufacturing (\$3.5 billion), forestry (\$3.1 billion), agriculture (\$3.1 billion), non-oil/gas minerals (\$1.2 billion), tourism (\$1.0 billion) and fisheries (\$0.6 billion). Economic development will be determined and measured in these key growth sectors.

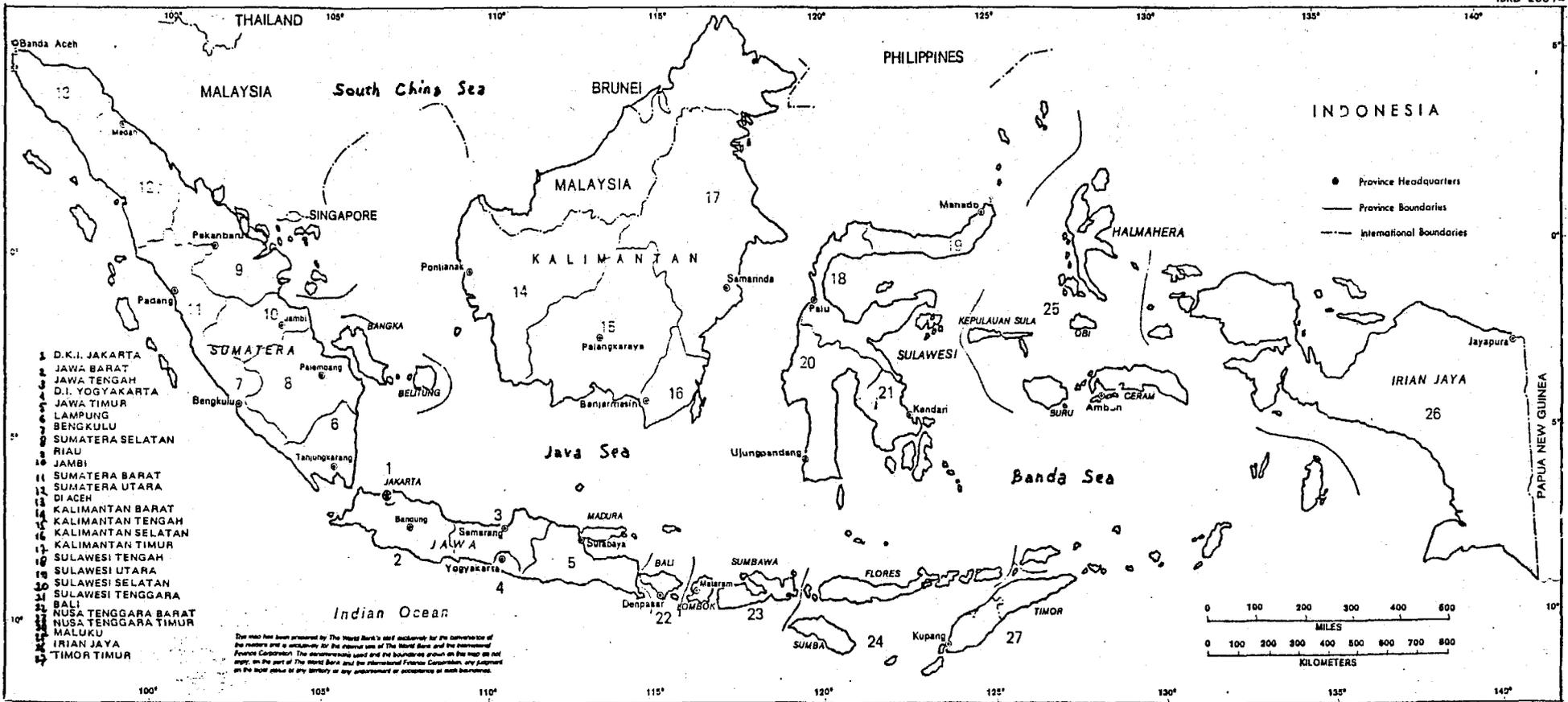


FIGURE 1: MAP OF INDONESIA AND ITS PROVINCES

The export data presented in Figure 2 also shows the changing structure of the Indonesian economy. It has been marked by a steady decline in both the absolute amount and relative share of oil and gas earnings since 1983. The rapid expansion of manufacturing industries, other than those processing natural resources, provides an encouraging picture. This expansion has largely been associated with urban development and the more efficient use of labor resources. However, two-thirds of export earnings are now generated from the non-oil natural resources. The dominance of these industries is even clearer when expressed as their contributions to employment and GDP. Forestry, fisheries, and agriculture together account for more than 50 percent of the nation's employment and 25 percent of GDP.

The relative contributions of these industries will continue to change over the next decade. The early years, however, will continue to be dominated by production using the country's primary assets of labor and natural resources. In time, the base of the economy will widen to include a greater variety of manufactured goods. Increased contributions from services such as the rapidly growing tourist industry will become evident.

The factors affecting the development of each key growth sector are summarized below:

a. Non-natural Resources Manufactured Products

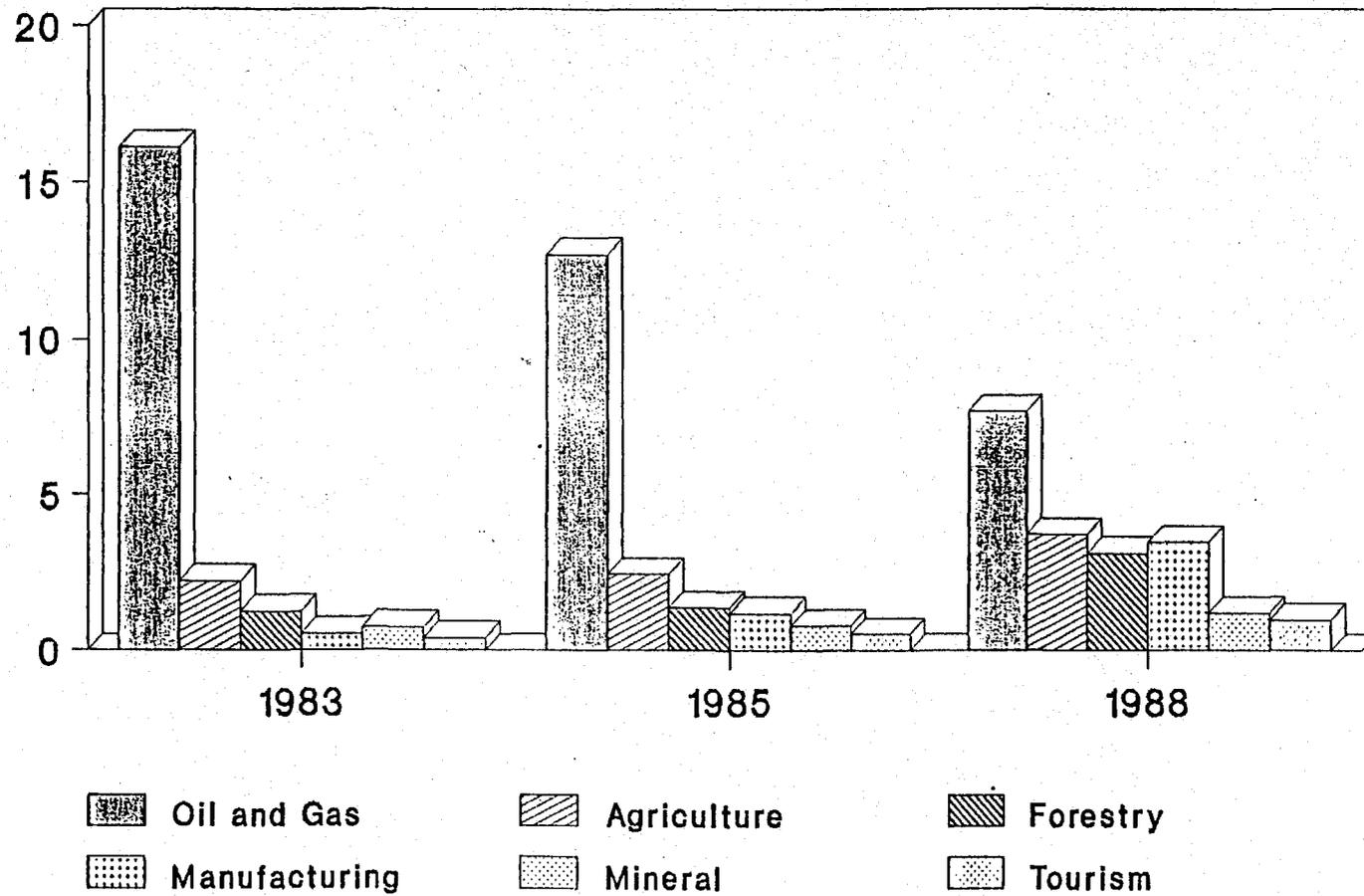
Manufacturing enterprises are concentrated on Java. Their exports are now dominated by the textile industry, with footwear, handicrafts, and light industrial exports also growing rapidly. Although growth in this sector should be relatively high, total non-natural resources manufacturing is less than 10 percent of GDP. Its share may expand to 10 to 15 percent of national income by the year 2000. A binding natural resource constraint facing economic growth on Java is the supply of clean water. There is not enough to support both industrialization and adequate living standards for the growing urban labor force.

b. Forest Products

The value of forest exports approached \$4.0 billion in 1989. Forestry is now the largest source of non-oil export earnings. Three-quarters of Indonesia's lands (144 million hectares) are classified as public forest domain. Actual forest coverage is estimated at 110 million hectares, because of conversion to other uses and degradation. Indonesia has the

Figure 2

INDONESIA'S CHANGING EXPORT PICTURE (In Billions of US Dollars)



Source : Central Bureau of Statistics

largest area of forest in Asia; 40 percent of the total. It has over 10 times the forest resources of the Philippines and Thailand combined. The forest stock is now valued at around \$500 billion in its unprocessed form. Roughly 45 percent of public forest lands are classified as commercial production forests, 35 percent are in a protected status, and 20 percent have been designated for conversion to non-forest uses; primarily for large agricultural projects.

Recently, international attention has been focused on Indonesia's forests as they help to regulate the global greenhouse effect. They also are a vast source and reservoir of genetic diversity. Current inefficiencies in Indonesia's forest management create ample "win-win" opportunities where management improvements make both economic and ecological sense. Steps to improve the sustainable management of Indonesia's forest assets also serve global interests.

c. Agricultural Products

Agricultural policy has centered successfully on achieving self-sufficiency in rice. Estate crops such as rubber, coffee, oil palm, tea, and various spices provide most of the agricultural export earnings. In addition to estate crops small-holders produce a variety of other food and industrial crops. These range from rice on minute paddies of the Inner Islands to an array of products from the Outer Islands. Together, these small farms are the backbone of the domestic economy and employ roughly one-half of the labor force.

d. Energy and Mineral Products other than Oil and Gas

The country has a rich endowment of nonrenewable natural resources. Deposits include tin, copper, gold, cobalt, coal, diamonds, and a range of other valuable minerals. Appropriate incentives and environmental safeguards will encourage a rational rate of exploration and depletion. Energy resources must be managed wisely as the people move to the cities and work in industrial jobs.

e. Tourism

Tourism may hold the greatest growth potential of all major non-oil export sectors. Tourism now earns 8 percent of total export revenues. However, it is booming in Asia, and Indonesia is expecting to expand its share of this market. Indonesia boasts diverse cultural attractions and natural environments of great interest to tourists.

f. Fishery and Other Coastal Products

Indonesia has a strong comparative advantage in shrimp production given its vast coastal areas and low wage rates. The real potential and sustainable yields of tuna fishing are still not known. Optimistic government projections suggest that capture fishery exports will be more than \$1 billion annually by the year 2000, but further study is needed to back up current estimates. In addition, the environmental and equity concerns from the current development of shrimp and tuna resources requires further study. For example conversion of mangrove forests for shrimp production, use of fine mesh nets for harvesting tuna, and the role of traditional fishermen, need to be assessed. The focus on shrimp and tuna makes sense for exports, but it oversimplifies the range of coastal and marine resources found in the world's most extensive, and biologically rich, archipelago. These other resources include a wide variety of fish species, shellfish, seaweeds, corals and shells, pearls, aquarium fish and other products. Many of these products are already exported.

1.2 **PROJECT RATIONALE: Improving Natural Resource Policies and Management to Sustain Economic Development**

1.2.1 The Policy Framework Linking Development and Environmental Management

The lack of data and analysis of existing economic inefficiencies hinders the development of new policies relating natural resources to economic growth. The inefficiencies are caused by a combination of misguided government interventions in the marketplace ("policy failures") and the poor functioning of markets ("market failures"). The GOI also needs better information about opportunities for productive investments which sustain rather than exploit the natural resources. Increases in the efficiency of production from existing resources and further expansion of productive resources through investment are central to Indonesia's economic development.

We know little about how current policies affect the efficient use, of or investment in, natural resources. There has been even less analysis of the problems associated with the management of "open access" resources or other market failures. There is no research to guide new economic and institutional policies which address the causes of natural resources mismanagement. In short, considerable analytical and field work is needed if the country is to achieve sustainable economic

growth. With better information and sound analysis for the policy framework, decision makers can develop improved policies and practices that promote more equitable and sustainable use of natural resources.

This view of a positive relationship between sound natural resource management and sustainable economic development contrasts sharply with a more common belief which holds that improving environmental management necessarily reduces economic development -- or vice versa. This common belief focuses on the environmental impact of the development process. Our new strategy posits increased developmental impact from better environmental management. The costs of renewable resource degradation and the contribution of sound resource management to the country's long-run economic growth are central to the analysis. The search is for the ways in which the mismanagement of natural resources constrain economic growth.

1.2.2 Priorities for Improving Natural Resources Management

Indonesia still has large natural forests but present uses do not bode well for their long-term sustainability. About one million hectares of the most productive trees are converted to other uses or seriously degraded each year. A recent World Bank report estimated that various inefficiencies in the management and use of forest resources cost the economy at least \$1 billion each year in foregone earnings. Indonesia introduced a ban on the export of unprocessed logs in 1980 to encourage domestic processing. This policy created considerable employment and additional "value-added" to the economy. These jobs and earnings, however, have been produced at the high cost of inefficiencies created by the protection of the domestic industry.

In addition to the crucial role forests play in the Indonesian economy, the international implications of continued rapid tropical forest loss must be considered. These include links to global warming and "biodiversity". Tropical forests help bind carbon from the atmosphere, reducing the "greenhouse effect"; they also serve as the source and storehouse for a large portion of the world's genetic resources. The combined domestic and international significance of Indonesia's forests, and the need for a long-term strategy for their sustained use, present a compelling case for giving them the highest priority for improvement.

There are similar needs for improved policy analysis of other key renewable resources (agricultural, coastal/marine and freshwater resources). These new policies will have to be both economic and institutional. They must adequately shape incentives for the efficient and sustainable use of existing natural resources and induce market-driven investments in their long-term management. Much better information also will be needed on resource-specific and economically efficient management methods. This combination of improved policies and management will assure a growing supply of renewable natural resource-based products for the domestic economy, for export.

Well-trained staff are a common bottleneck inhibiting improved management in Indonesia. The highest priority is to develop a cadre of staff in the key policy, planning and implementing agencies. Staff who are sensitive to the costs and causes of current natural resources mismanagement and engaged in finding solutions to these problems.

The Natural Resources Management (NRM) Project will directly address these pressing needs. The project will help to sustain Indonesia's development through macroeconomic studies to determine the best natural resources management policy options and steps for their implementation, practical fieldwork to demonstrate and establish improved management practices, and training.

1.2.3 Conformity with Indonesia's Development Strategy

Indonesia's current Five Year National Development Plan, 1989-1993 (REPELITA V) explicitly targets sound natural resource and environmental management as a national aspiration:

"Indonesia's natural resources must be used rationally in development ... A comprehensive policy must be adopted to ensure the interests of future generations ... The environment provides vital support for our life. Therefore, in exploiting and developing our resources, efforts must be made to preserve the environment and to maintain, with conservation and rehabilitation programs, a dynamic balance between its various elements ... in order to provide the most beneficial uses for present and future generations."

This represents an important change in the GOI's overall development philosophy. It came about as an unprecedented, though limited, public debate about REPELITA V, as it was being drafted. The change was given a further boost when environmental issues were chosen as a special topic for the 1988

IGGI meetings. Even though "sustainable development" is now accepted as a central pillar of Indonesia's development strategy, little has been done to develop and implement a policy agenda.

1.2.4 Relationship with the Mission's CDSS and Performance Contract

The project is guided by AID's Environmental and Natural Resources Policy (April, 1988) and the guidance from the A/PRE bureau. It contributes to the goals and strategy of the CDSS and the Mission's Performance Contract with AID/W. The project, if successful, will lead to more efficient use of natural resources in ecologically sustainable ways. Sound environmental management will provide long-term jobs and increased incomes. The project is the center piece of our strategy to "Sustain the Natural Resource Base" in our contract with AID/W. The project also plays to our comparative advantage by providing technical expertise and training in policy analysis and resource management. It will work with agencies responsible for allocating government and donor resources, as well as the testing and implementation of policies in the field.

1.2.5 Relationship with other Donor Assistance

All donors are increasingly interested in providing environmental aid. USAID established a framework for analyzing natural resource management concerns and donor assistance (see Annex J). The analysis identified six areas of concern, and the responsible Government agency and donors most involved in each area. This analysis also defined the broader macro-economic issues to be addressed through the project. It also indicated the importance of forest management and conservation of biological resources as an important sector for pilot field activities.

The project has been designed in collaboration with several donors, especially the World Bank and Japanese Government. For example, the World Bank's Forestry II project will promote better regulation of forest concessions in two pilot provinces while the NRM project will improve management practices through a pilot program with a forest concession holder. Other activities, such as research, training and nature conservation are also complementary. A companion project developed with the Ministry of Forestry will be funded by the Japanese through the International Tropical Timber Organization (see Annex F).

The project will strengthen the Government's ability to program donor assistance in natural resources through

pre-feasibility studies and a national action plan for environmental and natural resources investment by donors.

2. PROJECT DESCRIPTION

2.1 Goal and Purpose

The Government of Indonesia desires to sustain the nation's economic growth by improving the management of its rich endowment of natural resources. The Government of the United States shares this goal. Efficient and effective management of the country's natural resources will help to ensure the growth of income and employment opportunities for Indonesians.

The Government of Indonesia plans, through this project, to strengthen selected institutions so that it can:

- a. identify natural resource management policies and practices which constrain sustainable economic growth,
- b. design and implement improved policies and practices to address these constraints.

BAPPENAS and the Ministry of Forestry will cooperate closely to implement two strategically related project components (see Figure 3):

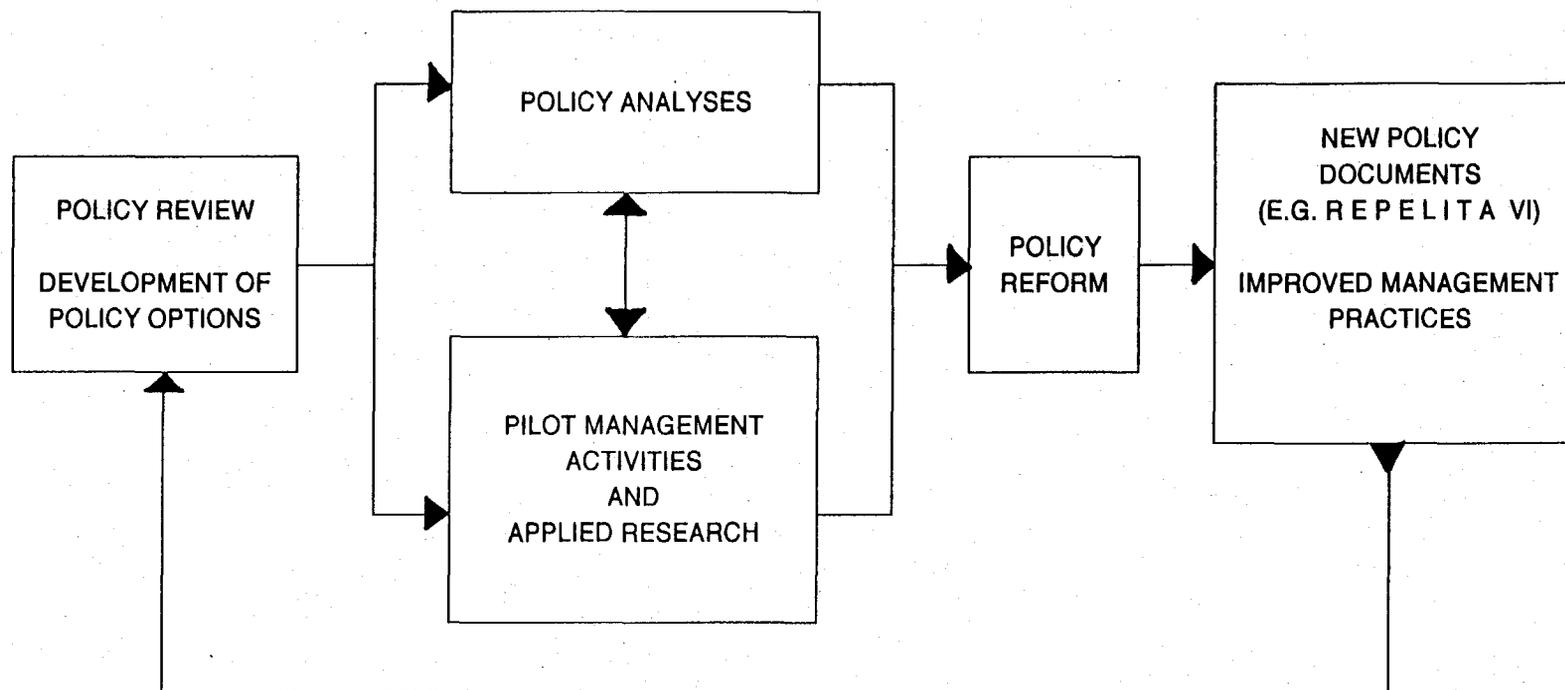
- a. **Policy Analyses for Sustainable Economic Development**
- b. **Pilot Management of Natural Production Forests and Protected Areas.**

2.2 End of Project Status

By the Project Assistance Completion Date BAPPENAS and the Ministry of Forestry will have achieved the following, through the implementation of the project:

- a. Strengthened capacity of institutions responsible for analyzing and formulating national policies and investments relating to the management of natural resources for sustainable economic development. Institutions include: BAPPENAS, KLH, Ministry of Finance, and the Office of the Coordinating Minister for Economics, Finance and

**FIGURE 3: NATURAL RESOURCES MANAGEMENT PROJECT
THE PROJECT PROCESS**



Industry (EKUIN) as well as several "think tanks", private consulting groups and university research institutes.

- b. Strengthened capacity at the MOFr (a) to manage natural production forests for sustained yields through a technical assistance effort with a private forest concessionaire aimed at demonstrating economically- and environmentally-sound management practices that can be replicated in other forest concessions, and (b) to program and administer applied research to support the management of natural forests and protected areas--in cooperation with other government agencies and the private sector--as the basis for improved forestry policies and practices.
- c. Strengthened ability of MOFr to prepare and implement management plans for protected areas which maintain biological diversity and demonstrate viable approaches for enhancing economic returns from development-oriented conservation.
- d. Strengthened analytical and managerial capacity of key policy institutions and the Ministry of Forestry through professional graduate training. Policy analysts, forest managers and scientists trained to identify and solve critical constraints to long-term natural resource management as the basis for sustainable economic growth.
- e. Increased transparency in the policy making process for natural resources management and an expanded range of institutions involved in the national dialogue on these policies through improved public awareness of issues and options relating to natural resources management and economic development. Seminars, training, and other activities in public awareness/environmental education (videos, publications, extension materials, etc.) supported under the project.

2.3 Beneficiaries

Policy analysts, forest concessionaires, research scientists and nature conservation managers will be the direct beneficiaries. Their analytical and managerial skills will be

increased through training, working with technical advisors and learning by doing. Key policy institutions will benefit from stronger institutional procedures for analyzing and reviewing policy. The pre-feasibility studies for public investments will strengthen BAPPENAS's ability to manage public funds, and especially donor-financed investments, more effectively. Three arms of the Ministry of Forestry, PH, PHPA and AFRD, will also directly benefit from project assistance. Forest concessionaires (natural production forests) will benefit from the design and implementation of management plans for sustained yields and the development of improved policies and practices. Encouraging long-term relationships for cooperative research between U.S. and Indonesian scientists, and involving the private sector will generate immediate as well as long-term benefits through improved efficiency and sustained productivity of the natural resource base.

Local communities at the project sites are expected to benefit from improved policies and practices, such as agroforestry and mariculture techniques and forms of land/sea tenure security. In addition to forest concessionaires, other private sector firms will benefit from new techniques and incentives to manage the natural resources for long-term productivity, including nature based tourism companies and companies participating in the development of genetic property rights.

The improved management of natural resources for long-term sustainable economic growth, resulting from project assistance, will indirectly benefit a broad cross-section of Indonesians by generating greater national income and employment opportunities. Furthermore, the maintenance of important biological diversity is expected to provide economically and environmentally-valuable benefits for future generations.

2.4 Sustainability of Project Investments

As the principal investments in this project are in technical assistance and training, we do not expect them to be continued at the same level after the Project Assistance Completion Date (PACD). We do, however, hope that the human resources developed by the technical assistance and training will continue to receive the funding and institutional resources to continue the policy development and reform process.

The activities, begun under this project, should be continued and expanded by the institutions involved as the activities fit within the agencies' assigned tasks, but the

agencies at present do not have staff with the qualifications and experience to carry out the work. Thus, the project will increase their capacity to perform their jobs more effectively and use their assigned budgets more efficiently. As this happens resource allocations for policy analyses and applied research in the GOI budget should increase. Funds and technical assistance from other donors and the private sector should also increase.

To facilitate the transfer of responsibility for supporting related, future activities, the project budget has been carefully designed. To the maximum extent possible the local costs will be paid by the GOI, and the one-time development inputs will be financed by USAID. The GOI will pay the local recurrent costs for salaries, per diem, maintenance of equipment, and local travel of Government officials; USAID will pay for selected policy studies, the Policy Working Group (PWG) Secretariat, applied research grants and multi-purpose management activities for protected areas, on a limited and declining basis, as illustrated in the project's expenditures plan in Table 4. USAID will pay for technical assistance and graduate training in the US. With regard to post project costs, the GOI, other donors and the private sector will finance the operating costs of the PWG Secretariat as well as multi-purpose management of protected areas. It is also planned that forest concessionaires will increase their contributions for developing improved techniques for managing natural production forests. In addition, nature-based tourism companies will make direct financial contributions (through taxes and conservation fees paid by tourists) as well as significant in-kind contributions to support the multi-purpose management of protected areas.

2.5 Outputs

The project will deliver the following outputs in order to achieve the project purpose:

- a. Several new natural resources policies spelled out in the next five year plan (REPELITA VI);
- b. Approximately fifteen analyses of natural resource policy/management issues and pre-feasibility studies;
- c. A Secretariat to the PWG, affiliated with BAPPENAS and generating 50% of its support costs from research grants and contracts.
- d. Seven policy analysis staff with advanced degrees, plus 20 analysts from the PWG Secretariat given short-term training in U.S.

- e. Three plans for management of sustainable natural production forests developed and tested.
- f. Three plans for management of multi-purpose protected areas developed and tested.
- g. One research and training station at Bukit Baka, Kalimantan, established and supported by MOFr and a private forest concessionaire.
- h. Ten applied research projects regarding sustainable management of natural production forest and protected areas.
- i. Fifteen participants with advanced degrees in natural resource management, plus 30 participants with short-term training in U.S.
- j. Ten seminars, workshops and media presentations based upon project activities, implemented as part of a coordinated public awareness campaign.
- k. Three hundred and eighty participants with short-term training in Indonesia, in relevant fields.

2.6 Project Components

There are two project components:

Policy Analyses for Sustainable Economic Development,
and
Pilot Management of Natural Production Forests and Protected Areas.

2.6.1 Policy Analysis for Sustainable Economic Development Component

2.6.1.1 Objective

This component will strengthen the capability of key institutions (a) to identify natural resources management constraints on sustainable economic growth and (b) to design and implement improved policies to address these constraints.

2.6.1.2 Description of Component

At present, the only mechanisms for a dialogue about important environmental and natural resource policy issues are several inter-agency committees; all are chaired by BAPPENAS. They are:

- a. Forest Rehabilitation,
- b. Environmental Management Policy,
- c. Marine Resource Management Policy, and
- d. Forestry Concession Management.

The committees will be consolidated under the **Interministerial Environmental and Natural Resource Policy Working Group (PWG)** and a Secretariat will be established to support the PWG's program. Technical analysts and support staff will be assigned to the Secretariat and supervised by BAPPENAS. Under the Policy Working Group's overall guidance, these analysts and their technical advisors will review and analyze critical issues. The technical assistance contractor will provide support for operating the Secretariat (e.g., office space, equipment and an office manager). The support of the operating costs of this Secretariat is required in order to bring together policy analysts from key policy institutions and focus analysis on priority issues. Having senior technical advisors assigned to the secretariat and working on critical policy issues is expected to attract other analysts from the key policy institutions (e.g., BAPPENAS, KLH, FIN and EKUIN) (see Figure 4).

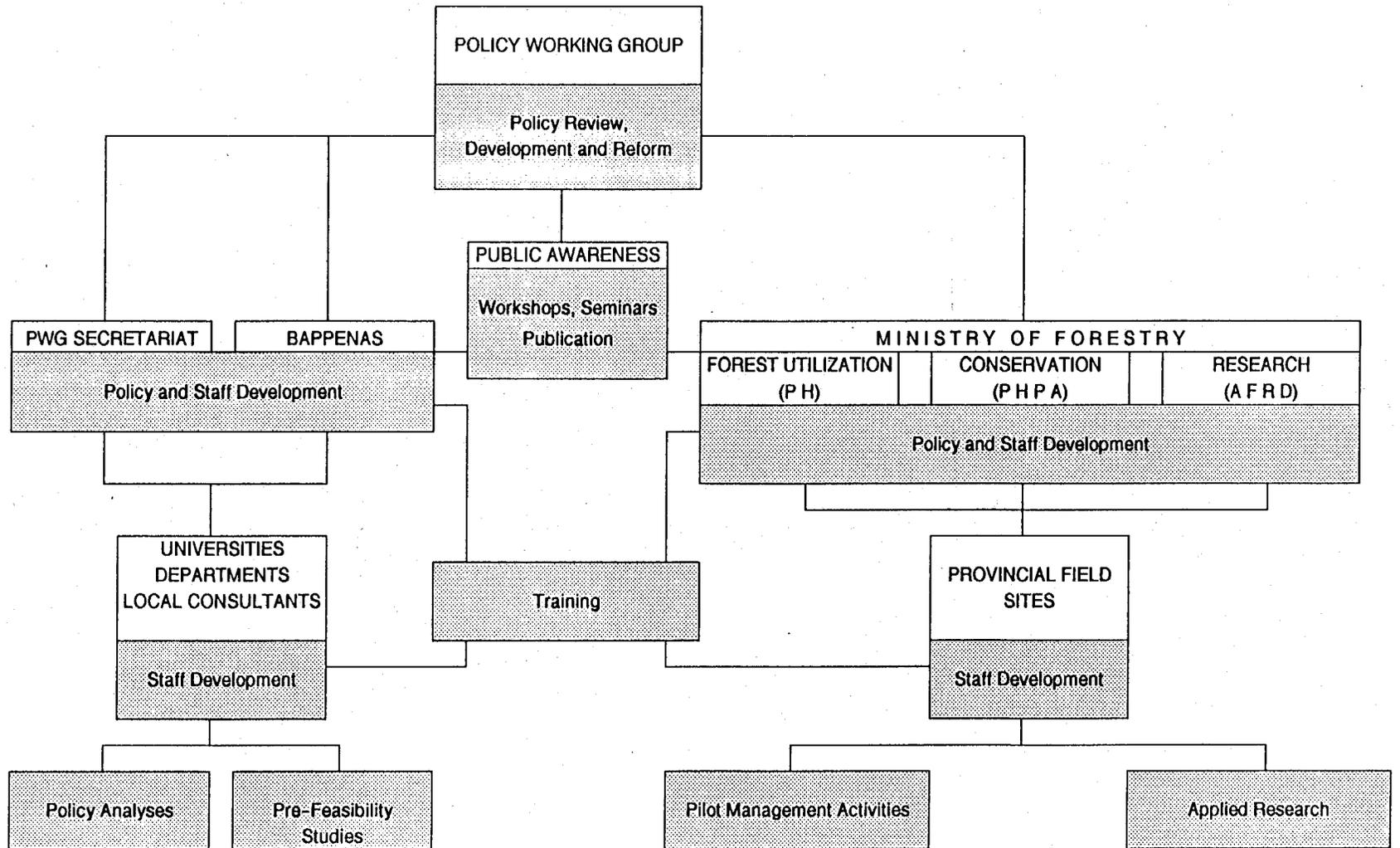
2.6.1.3 Policy Analyses

Policy analysts drawn from the appropriate policy agencies, with assistance from technical advisors, will carry out "in-house" analyses on topics of direct relevance to the implementation of the country's economic development plan. In addition the Secretariat will contract with university groups and domestic "think tanks" to do analyses. It is expected that about one third of the analyses will be done in this way. Technical advisors will help BAPPENAS to compete, award and manage these contracts.

The first task will be to produce an overview of policy reform priorities relating to natural resources and environmental management. The agenda for complementary policy studies for the initial year includes six topics: (a) the major policy and market failures causing the inefficient depletion of natural resources--especially forest resources; (b) assessment of the contribution of natural resources to the sustainable development of the macro-economy through the application of natural resources accounting methods in national income accounting (and other analytical techniques to measure long run costs of resource depletion and conditions for sustainable economic growth); (c) quantitative comparison of the benefits and costs associated with natural forest management versus plantation forestry; (d) strategies to overcome major constraints on Java's urbanization and industrialization process imposed by water shortages; (e) policy options for increasing marine fishery exports from Eastern Indonesia; and (f) a national strategy for developing marine-based tourism.

FIGURE 4: NATURAL RESOURCES MANAGEMENT PROJECT

Project Activities



07/20/90

2.6.1.4 Pre-Feasibility Studies

BAPPENAS will use project resources to conduct a limited number of pre-feasibility studies for public investments linked to identified natural resource-economic growth constraints. Technical advisors will assist BAPPENAS staff and the policy Secretariat in conducting these studies directly or contracting for them. The GOI -- especially BAPPENAS -- is expected to use these studies in approaching implementing ministries and donor agencies to implement projects whose feasibility is established by the studies. This work will direct additional funds into areas identified as high priority by the NRM project's analyses.

2.6.1.5 Improved Public Awareness

Seminars, workshops and other media will be used to disseminate findings and promote a broader discourse and improved public awareness of important policy issues. Annex 3.5 outlines the strategy for promoting public awareness.

2.6.1.6 Training for Policy Analysis

Graduate training in the U.S. will be provided for government staff professionals conducting the policy analysis. This will include both long-term and short-term training. Annex 3.4 describes the project's training strategy.

2.6.2 Pilot Management of Natural Forests and Protected Areas Component

2.6.2.1 Objective

The Ministry of Forestry wishes to evaluate policy options for better management of Indonesia's natural production forests and protected areas in order to sustain their yields. Strengthening Indonesia's ability to maintain its unique and valuable biological resources is also an important policy objective of USAID.

The Ministry of Forestry will implement the **Pilot Management of Natural Production Forests and Protected Areas** component, which comprises the three sub-components described below.

2.6.2.2 Pilot Management of Production Forests Sub-Component

The Ministry's Directorate General for Forest

Utilization (PH) will strengthen its ability to advise forest concessionaires on managing natural production forests (primarily *Dipterocarp* tree species). This will involve a cooperative program with P.T. Alas Kusuma on the Sari Bumi Kusuma (SBK) forest concession located in West/Central Kalimantan.

MOFr and forest concession staff and their advisors will develop improved practices for managing natural production forests that can be replicated in other forest concessions. This will include designing and implementing a long-term management plan, preparing case studies and practical manuals on improved practices, and training staff. The site will be an on-the-job training site for MOFr staff and forest concessionaires.

2.6.2.3 Multi-Purpose Management of Protected Areas Sub-Component

The MOFr's Directorate General for Forest Protection and Nature Conservation (PHPA) will formulate and test responsive policies and programs for maintaining biological diversity. It will also test viable approaches for enhancing economic returns from development-oriented conservation. PHPA will design and implement multi-purpose management plans for selected protected areas, with the assistance of technical advisors. Priority protected areas include: (1) the Bukit Baka Nature Reserve in West Kalimantan, (2) the Gunung Palung National Park in West Kalimantan, and (3) the Bunaken National Park (marine) in North Sulawesi. Annex A.3.3 describes the field sites and field activities in more detail.

The project will also finance short-term technical assistance to design viable management plans for other priority national parks, e.g., the Kutai National Park in East Kalimantan. PHPA is expected to use these plans in soliciting support for operating costs from government budgets and/or other donors. Approaches to be tested in all these plans will encourage the participation of local communities and the private sector in managing these resources. Using project resources, PHPA will develop approaches for involving non-governmental organizations (NGOs) in such activities as environmental awareness programs, conservation extension and special studies. Finally, the MOFr will work closely with the responsible provincial governments in developing these approaches in order to ensure that project investments are appropriate, supportive of regional economic development, and sustainable. Thus, it is expected that these areas will serve as training sites and that viable approaches can be replicated in other protected areas.

2.6.2.4 Applied Research on Managing Natural Production Forests and Protected Areas Sub-Component

The Ministry will develop and test improved techniques for managing natural production forests and protected area through applied research. This will involve strengthening the ability of the Ministry's Agency for Forestry Research and Development (AFRD) to plan and conduct policy-related, applied research to support the improved management of natural production forests and protected areas. Accordingly, the MOFr will conduct cooperative, applied research with P.T. Alas Kusuma, on the SBK forest concession which is adjacent to the Bukit Baka Nature Reserve. This cooperation will include establishing a field research and training station on the forest concession. The technical assistance advisors will assist AFRD in developing procedures for soliciting, evaluating and funding high-quality, policy relevant research. The objective is to develop the procedures and AFRD's capability to conduct "demand-driven" research.

AFRD staff, with assistance from technical advisors, will work with both the forest concessionaire, nature reserve management staff and local communities in identifying and conducting applied research to address priority management constraints. Focus will be on (a) managing natural production forests in Kalimantan for sustained yields and (b) developing viable approaches for the multi-purpose management of protected areas at selected sites. Initial studies will include: (a) determining the most appropriate method (diameter size and timing of cuts) for extracting timber from natural forests in order to ensure adequate regeneration; (b) determining the best harvesting techniques to minimize damage to residual stands; (c) recommend how to minimize negative environmental impacts from logging operations; (d) identify approaches for generating income through conservation; and (e) recommend measures for controlling the loss of forests from agricultural expansion, including shifting cultivation. The project will also support the development of improved techniques for managing the Bunaken National Park (a marine ecosystem) in North Sulawesi, (AFRD is expected to use an existing cooperative research agreement with the Indonesian Institute of Science (LIPI) to conduct this research).

The MOFr will finance applied research through competitive awards, grants and contracts. Graduate students in natural resource management funded under the project are also expected to conduct research for their degree programs at project field sites in close coordination with MOFr.

2.6.2.5 Training for the Management of Sustainable Natural Resources

Both long-term degree and short-term training (in-country and abroad) in the areas of natural resource economics, natural forest management and nature conservation will be provided. Approximately 15 forestry-related Master's Degrees and at least 250 person months of short-term training abroad and 380 person months of short-term training in Indonesia will be funded. Degree students are expected to conduct their research in Indonesia. These students will receive a research stipend and the project will provide technical advisors to supervise their research, in close cooperation with the students' academic advisors. For example, selected advisors may be brought to Indonesia to provide short-term technical assistance in supervising the students' research and in conducting short-term training. One third of all funds for overseas training provided by USAID will be reserved for women participants. In-country training will include: techniques for policy analysis, applied research methodology, and conservation extension--courses will focus on learning by doing. Annex A.3.4 describes the project's strategy in training in more detail.

2.7 Project Management and Implementation Responsibilities

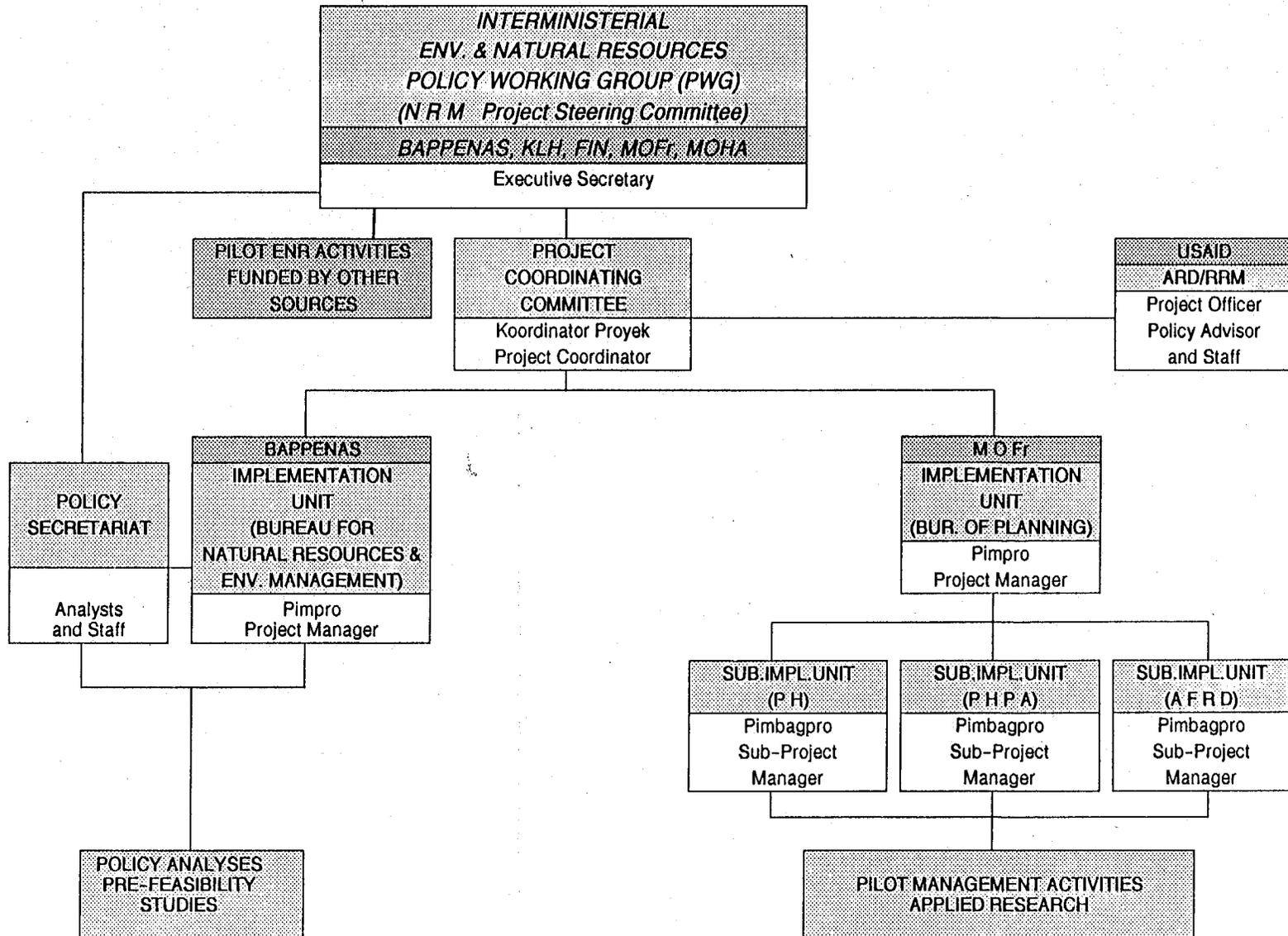
Figure 5 illustrates the project's administrative structure.

2.7.1 Interministerial Environmental and Natural Resources Policy Working Group (PWG) and its Secretariat

This PWG will be the policy forum for discussion of natural resource issues and will pass policy recommendations to the senior GOI decision-makers. It will develop a policy agenda and sponsor policy seminars and research. The PWG will also serve as the project steering committee, provide overall guidance on the conduct of the project, and be responsible for organizing the evaluations of the project. It will be convened by BAPPENAS and will comprise senior (Echelon I and above) members from BAPPENAS, KLH, EKUIN, the Ministry of Finance, representatives of line ministries and the private sector, when appropriate. Provisions will also be made for inclusion of NGOs in PWG discussions when appropriate.

The PWG will have an Executive Secretary who will be assisted by a Secretariat of technical staff, assigned for one

**FIGURE 5: NATURAL RESOURCES MANAGEMENT PROJECT
ADMINISTRATIVE STRUCTURE**



to three years, from the PWG's constituent ministries and agencies. The Executive Secretary of PWG will be the Chief of the Bureau for Natural Resources and Environmental Management, BAPPENAS.

USAID will provide technical assistance, office space, equipment, and training to enable the PWG, BAPPENAS and Secretariat staff to implement the policy agenda. USAID's financial support for the Secretariat is given with the expectation that after year four of the project the Secretariat will begin to generate its own funding from the government, private sources and other donors. By the end of the project, it is anticipated that the Secretariat will be generating more than 50% of its support costs from sources outside of the project.

BAPPENAS will also provide office space for advisors in its Bureau for Natural Resources and Environmental Management in order to facilitate supervision, coordination and transfer of technology to BAPPENAS.

The PWG Secretariat and BAPPENAS will commission analyses in several ways: (1) technical advisors working with their GOI counterparts, (2) the technical assistance team, after GOI concurrence will sub-contract for studies (fully financed by USAID), (3) BAPPENAS will award contracts jointly financed with USAID, and (4) BAPPENAS will contract for studies (fully financed by the GOI). The technical assistance team will assist BAPPENAS in managing the contracts.

2.7.2 The Project Coordinating Committee (NRM/PCC)

BAPPENAS will convene the Project Coordinating Committee comprising representatives of BAPPENAS, the Ministry of Forestry and USAID. It will be chaired by the Chief of the Bureau for Natural Resources on Environmental Management, BAPPENAS. The Executive Secretary of this Committee will be the Project Coordinator, who will be responsible to the PCC Chairman and assigned from an appropriate ministry. The Committee will be responsible for coordinating project implementation. It will review the annual work plans and budgets for all project components and present one consolidated annual plan and budget (covering both GOI and USAID contributions) to USAID for funding. The Committee will also review implementation progress and results, compiling vouchers and sending quarterly reimbursement requests and progress reports to USAID. The Committee will be assisted by the technical assistance team in carrying out its project responsibilities.

2.7.3 MOFr NRM Project Implementation Unit (FPIU)

The Ministry of Forestry (MOFr) is responsible for managing the implementation of the **Pilot Management of Natural Forests and Protected Areas** component which consists of three sub-components. Accordingly, MOFr will create a Project Implementation Unit (FPIU) within the Bureau of Planning to oversee the implementation of this component. A Project Manager (Pimpro) will be appointed to head this unit and oversee the implementation of activities under this component. This unit will also coordinate the implementation of the Ministry's **"Forest Management and Human Resources Development in Indonesia Project"** which is being funded by the **International Tropical Timber Organization (ITTO)**. This project has the same objectives at the MOFr components of NRM. Details of the ITTO project can be found in Annex F.

Staff of the FPIU will compile project documents (annual work plans, progress reports and vouchers) for the two MOFr sub-components and forward these documents to the Project Committee. The staff responsible for these three sub-components will work closely with the Implementation Unit in preparing and implementing annual plans. The MOFr/NRM Implementation Unit will also review implementation experience and policy information generated by field activities, and provide the Project Committee with quarterly progress reports. The technical assistance team will provide an administrative specialist and training to assist the staff in this work.

2.7.4 Policy Analyses for Sustainable Economic Development Component

The Bureau for Natural Resources and Environmental Management, BAPPENAS will be responsible for the implementation of activities under this component, including the operation of the PWG, its Secretariat and project implementation unit for this component. BAPPENAS will assign its own staff and arrange for staff from other ministries and agencies to be seconded to the PWG Secretariat so that they can implement the policy analyses component. A Project Manager (Pimpro) will be appointed to head the Policy Project Implementation Unit and oversee the implementation of activities under this component. The unit will submit annual plans, quarterly progress and financial reports to the Project Coordinating Committee as well as submit the results of the policies analyses to the PWG.

2.7.5 Pilot Management of Natural Forests Sub-Component

The Director General for Forest Utilization (PH) will be responsible for the implementation of activities under this sub-component. PH will designate staff to oversee work with the participating forest concessionaire. This will include: review and approval of the long-term forest management plan, monitoring the implementation of this plan, distribution of case studies and manuals on improved practices, and arranging the participation of Ministry and forest concessionaire staff for training to be conducted under the project. Technical advisors will be assigned to Jakarta and West/Central Kalimantan to assist PH staff and the forest concessionaire in designing and implementing project activities.

2.7.6 Multi-purpose Management of Protected Areas Sub-Component

PHPA will implement this sub-component. PHPA will appoint site managers for the selected protected areas. In addition, PHPA will appoint a sub-component manager who will supervise activities under this sub-component and who will report to the Project Manager in the NRM/MOFR Project Implementation Unit. Technical advisors will work in PHPA offices in Bogor, West Kalimantan and North Sulawesi to help to design and implement these activities.

2.7.7 Applied Research on the Management of Natural Production Forests and Protected Areas Sub-Component

The Agency for Forestry Research and Development (AFRD), MOFR will implement activities under this sub-component. AFRD will appoint a sub-component manager who will oversee the implementation of applied research activities under the project, and who will report to the Project Manager in the MOFR/NRM Implementation Unit. Implementation of forestry research at the Bukit Baka station will be through the Forestry Research Institute in Samarinda, East Kalimantan. AFRD will also appoint a site manager for the Bukit Baka station.

Technical advisors will assist the Ministry of Forestry and participating private concessionaires in identifying priority problems which can be addressed by applied research. Advisors will also assist the Ministry in competing and managing applied research grants. The MOFR's Research Council will evaluate and approve proposals. Graduate students in natural resource management, funded under the project, are also expected to conduct research for their degree programs at project

field sites in close coordination with MOFr. Technical advisors will work with AFRD counterparts in their offices in Jakarta and West Kalimantan to assist with these activities.

3. IMPLEMENTATION PLAN, MONITORING AND EVALUATION

3.1 Implementation Plan and Schedule

3.1.1 Key Activities during First Year

During the first quarter after the signing of the project agreement the two Governments will exchange sample signatures of their authorized representatives. The GOI will officially designate the membership of the project coordinating committees and appoint the project managers and leaders of the implementation units. After establishing implementation procedures and guidelines, the implementation units and coordinating committees will plan the start-up activities to be completed by mid 1991. They will also begin to formulate the first annual plans and unified budget for activities which will begin in IFY 1991/92.

Simultaneously the scope of work for the technical assistance will be developed, cleared by the GOI, and issued as an RFP by USAID, for a direct contract. USAID will also contract for short-term technical assistance, as it is needed to assist with the early planning of project activities. This assistance may include: (a) analyzing a priority natural resource management policy issues; (b) training assessment and preliminary design of the in-country training program; (c) assisting AFRD identify research priorities for Kalimantan.

During the next six months, plans for the first year's activities will be completed and underway. The technical assistance team will be mobilized and assisting GOI agencies to implement NRM activities. Together they will be designing the procurement and training plans for the components.

The dates of major implementation actions follows in Table 1 and an illustrative implementation schedule is provided in Figure 6.

3.1.2 Annual Plans of Activities and Reporting Requirements

After the planning and implementation of a few start-up activities the focus of BAPPENAS and MOFr staff will be on establishing implementation procedures and planning for IFY

TABLE 1 : DATES OF KEY ACTIVITIES

NO.	ACTIVITY	DATE
1.	Project Agreement signed	July, 1990
2.	GOI Signatures Designated and Project Manager Appointed	August/December, 1990
3.	Project Committee Established	August/December, 1990
4.	Policy Working Group Meets	August/December, 1990
5.	Framework for Secretariat to Policy Group Established	December, 1990
6.	MOFr/NRM Project Implementation Unit Established	December, 1990
7.	Procedures for Preparing/Approving Work and Financial Plans Established and 1991 Plan Drafted	December, 1990
8.	Install Accounting and Reporting System	December, 1990
9.	Contracting for Technical Assistance	August, 1990 to April, 1991
10.	Initial Policy Studies Started	October, 1990
11.	Operational Plan for Bukit Baka Approved by AFRD and Alas Kusuma	March, 1991
12.	Detailed Designs and Costs of Bukit Baka Station Approved	April, 1990
13.	1991 Annual Work Plan Approved	March, 1991
14.	Secretariat to Policy Working Group Established	June, 1991
15.	Training Plan Completed	June, 1991
16.	Commodity Plan Completed	June, 1991
17.	Applied Research Started	July, 1991
18.	Management Plans for Protected Areas Completed	August, 1991
19.	Training Program Ongoing (including Processing for Overseas Training)	August, 1991
20.	New Procedures for Awarding Research Proposals Developed	October, 1991
21.	Management Plans Being Implemented	September, 1991
22.	Bukit Baka Research Station Operating	December, 1991
23.	1992 Annual Plan Drafted	December, 1991
24.	Commodities Delivered	February, 1992
25.	Degree Students Abroad	June, 1992
26.	1993 Annual Plan Drafted	December, 1992
27.	Project Evaluation Conducted	August, 1993
28.	Evaluation Recommendations Incorporated into Project	December, 1993
29.	1994 Annual Plan Drafted	December, 1993
30.	Degree Students Return to Conduct Research	May, 1994
31.	1995 Annual Plan Drafted	December, 1994
32.	1996 Annual Plan Drafted	December, 1995
33.	Final Evaluation Conducted	December, 1996
34.	PACD	July, 1997

**FIGURE 6: NATURAL RESOURCES MANAGEMENT PROJECT
ILLUSTRATIVE IMPLEMENTATION SCHEDULE UNTIL DECEMBER 1993**

PRINCIPAL ACTIVITIES	1990					1991					1992					1993					97							
	J	A	S	O	N	J	F	M	A	M	J	J	A	S	O	N	J	F	M	A		M	J	J	A	S	O	N
1 Project Agreement Signed	■																											
2 Project Manager & GOI Counterparts Appointed	■	■	■	■	■																							
3 Project Committee Established & Meets		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4 Policy Working Group Meets		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5 Framework for Secr. to Policy Working Group Established		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6 MOFr NRM Implementing Unit Established		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
7 Procedures for Prep./Apr. Annual Work Plans Agreed		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
8 Work Plans/Budgets Drafted (D U P)		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
9 Work Plans/Budgets Approved (D I P)		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
10 Install Accounting & Reporting System		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
11 Contracting for Technical Assistance	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Contractor Mobilized</i>																												
12 Policy Study Started		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
13 Operational Plan for Bukit Baka Approved by AFRD		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
14 Detailed Design & Costs of Bukit Baka approved		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
15 Secretariat to Policy Working Group Established		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
16 Training Plan Completed		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
17 Commodity Plan Completed		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
18 Applied Research Started		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
19 Management Plans for Protected Areas Completed		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
20 Training Program Started		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
21 Management Plans being Implemented		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
22 New Procedures for Awarding Res.Proposals developed		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
23 Bukit Baka Research Station Operating		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
24 Commodities Delivered		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
25 Degree Students Abroad		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
26 Degree Students Return to Conduct Research		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
27 Project Evaluation Conducted		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
28 Eval. Recommendations Incorporated into Project		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
29 P A C D		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

As of July 20, 1990

1991 (Indonesian Fiscal Year, April 1 - March 31). The planning and budgeting procedures used for the NRM activities will be those, to the maximum extent possible, that the GOI uses to plan and implement its development activities (the DIP process). BAPPENAS and MOFr implementation units will begin to prepare the 1991 annual work and financial plan in September, 1990. (Annex E includes a suggested format for a work and financial plan). The NRM Project Coordinating Committee will review and endorse the plan to USAID for earmarking and commitment of funds, where feasible. The final plans and budgets will be prepared between December and March and submitted with complete details of GOI and USAID contributions during March. The GOI will finance the implementation of all activities, except those covered by USAID direct contracts.

The PCC will submit to USAID quarterly progress reports with the request for reimbursement of USAID contributions. Each component will submit, to the PCC, quarterly progress and expenditure reports as well as an annual report summarizing this information.

3.2 Monitoring and Evaluation

3.2.1 Monitoring of Implementation Progress

One of the most important initial implementation tasks is installing a management information system and training GOI staff in the use of this system. The management system will record progress in key activities, financial earmarkings, commitments, and expenditures and the activities of the technical assistance team. Quarterly reports will be issued and an annual report will be prepared for a full implementation review by the PWG and the USAID Mission Director. During this annual review a careful assessment will be made of the delivery of project outputs and the achievement of the project's purpose. Thus the system will include three key reports: (1) annual work and financial plans, (2) quarterly progress and financial reports (with reimbursement requests), and (3) annual reports reviewing implementation performance.

GOI and USAID management staff will periodically visit field sites and policy institutions working on NRM activities in order to monitor progress.

Short-term technical assistance will be provided to develop and install a management information system. Staff of all implementation and coordinating units and field sites will be trained to use the system.

3.2.2 Evaluation

An Indonesian/Expatriate team of consultants will conduct an independent evaluation, during the project's third year, in order to evaluate the performance of project procedures, assess progress towards achieving outputs and purpose, and recommend modifications as appropriate. The evaluation team will visit field sites, interview project staff and review project documents (e.g., project-funded studies as well as annual summaries and progress reports). In particular, the evaluation will focus on the planned outputs and performance indicators outlined in the Logical Framework in Annex 1. The team will gather sufficient information to assess implementation progress and performance of implementation procedures, and to recommend appropriate modifications. If deemed necessary by the PWG and/or USAID, the project will finance an audit of all project activities including local currency expenditures.

A team of Indonesian and expatriate consultants will conduct an independent evaluation during the project's last year in order to document the project's "End of Project Status" and to identify recommendations for future assistance. The evaluation will be conducted at least six months before the end of the project, this will allow sufficient time to address specific recommendations.

4. **FINANCIAL PLAN** (not included in this version)

5. **SUMMARIES OF ANALYSES**

Full reports of all analyses are contained in Annex A.

5.1 **Institutional and Administrative Analysis**

5.1.1 Institutional Analysis

In order to design a viable organizational and management structure for the project, the design team analyzed the appropriate roles and administrative capability of institutions involved in natural resources management. BAPPENAS plays a lead role in formulating long-term development strategies for the National Development Plans, in managing the annual development budget, and in programming donor assistance. BAPPENAS is also involved with the analysis of natural resource policy issues. KLH is responsible for ensuring that line

ministries incorporate environmental considerations into their planning and operations. The Ministry of Finance determines fiscal and monetary policy as well as influencing macro-economic policies, such as trade and management of state enterprises. EKUIN serves as a staff to the President in providing oversight for economic policy.

Currently, the only mechanism for a broad dialogue on natural resource policy issues is through several inter-agency committees, all chaired by BAPPENAS. Accordingly, the project will support the operation of a senior-level Interagency Environment and Natural Resources Policy Working Group (PWG), with members drawn from the above committees and key agencies/organizations. It will also support the establishment of a permanent natural resource policy Secretariat to analyze key issues and prepare policy options.

MOFr is the ministry responsible for the management of Indonesia's production forests and protected areas. Forest concessionaires and nature-based tourist companies are important users and managers of these resources as well. There is an urgent need to strengthen the Ministry's ability to manage the economically and environmentally-important natural production forests and protected areas. Thus, the project will strengthen three arms of the Ministry, the Directorate General for Forest Utilization (PH), the Agency for Forestry Research and Development (AFRD), and the Directorate General for Forest Protection and Nature Conservation (PHPA). The project will support a cooperative technical assistance/applied research program between PH, AFRD and a forest concessionaire to address priority problems in managing natural forests. Secondly, project assistance will strengthen PH and PHPA's ability to design and implement pilot management activities. These plans will involve local communities, NGOs and the private sector. Private sector firms in forestry and nature-based tourism have a vested interest in the sound management of the natural resources. Thus, their active participation will help ensure that project activities are realistic and that project investments are sustainable. NGOs are expected to play an important role in discussing policy issues, conducting specific studies and promoting environmental awareness.

The design team considered several different organizational structures, including making KLH the principal implementation agency and having two separate projects (one for policy analysis and one for field activities). The first option was not viable because KLH does not have sufficient implementation authority. Splitting the project into two would

significantly reduce the benefits of linking policy analysis with field activities and also increase the management burden for the Mission.

5.1.2 Administrative Analysis

The project organization consists of four major parts: (1) the **Policy Analyses for Sustainable Economic Development** component which will be implemented by the Policy Working Group, its Secretariat and the Bureau for the Environment and Natural Resources at BAPPENAS; (2) the **Pilot Management of Natural Production Forests** to be implemented by the Ministry of Forestry; (3) the **Project Coordinating Committee**; and (4) the **Technical Assistance Team**. The details regarding the operation of these components are contained in sections 2 and 3 above.

The Government agencies involved with the project have the authority, willingness and general capability to implement the project. There is, however, an agreed upon need for technical advisors to assist the GOI in implementing the project. This assistance is aimed at strengthening the Government's ability through on-the-job training - "learning by doing". Advisors will assist the GOI in developing managerial and technical skills and developing improved techniques and approaches for managing natural production forests and protected areas.

USAID Jakarta will assign a Project Officer, Policy Advisor, two program assistants and a secretary as well as sufficient assistance from staff offices to manage the U.S. resources being supplied to the project.

5.2 **Economic and Financial Analyses**

5.2.1 Economic Analysis

Natural resources are the core of Indonesia's economy. Present patterns of natural resources mismanagement are exacting considerable costs on both the current economy and on the basis for future production. Steps are urgently needed to establish an environmental and natural resources policy and management framework which will help to sustain Indonesia's economic growth into the next century.

The high costs associated with drawing down the nation's environmental capital have been mentioned. For example, there are clearly major inefficiencies and costs associated with the current pattern of forest use and the conversion of forest

lands to other uses. The productivity of many lands under agricultural uses is also at considerable risk, as production on both primary and lesser quality lands is being pushed beyond sustainable limits. The basis for sustainable yields of coastal and marine products is threatened by very heavy utilization of natural systems, often involving destructive harvesting practices. Constraints of water quantity and quality will increasingly impinge on the urbanization and industrialization process.

The most important underlying causes of these natural resource patterns of mismanagement and the costs they entail may be found in the combined effects of distortions created by certain public policies ("policy failures") and the difficulties markets often encounter in steering the efficient use of natural resources and investment decisions ("market failures"). Examples of policy distortions include: incentives for forest plantation development which encourage the uneconomic conversion of natural forests, agricultural input subsidies, restrictions on the trade of natural resource products, and industrial policies which distort investment patterns in favor of capital-intensive technologies. Problems of market failure include unaccounted downstream costs of upstream pollution or soil erosion, unpriced agricultural water and underpricing of urban and industrial water supplies, and misallocations of resource rights due to uncertain tenurial rights governing public forests, agricultural lands, and coastal and marine fisheries.

Positive changes in the management of Indonesia's most valuable natural resources as the basis for sustaining economic development will come about as policy adjustments are made to correct these underlying problems. An important part of the policy development process will be analysis to better document and demonstrate the physical, economic and social consequences of environmental and natural resources mismanagement for government and private decision makers and for the general public. It is especially important that the long-run costs associated with current patterns of natural resources use be quantified as the basis for setting priorities for improving the efficiency with which these vital productive resources are used. Innovative thinking will be required to develop new economic and institutional policies--and see them implemented--to address the major underlying problems currently distorting natural resource use decisions. As noted elsewhere in this paper, this process will place particularly high demands on very limited human resources involved with the development of improved policies and management practices.

The Natural Resources Management Project seeks to directly respond to these demands by supporting this policy development process. It will sponsor studies to identify current natural resources mismanagement and degradation patterns and their costs, to diagnose the underlying causes of these problems, to evaluate policy options, and to formulate policy reforms. In the case of the sub-sectors covering natural production forests and protected areas management, this will be further supported by field activities to identify and demonstrate improved management practices. This link between policy-level and field-level activities is a cost effective approach to maximizing the likelihood of large pay-offs in improved economic and natural resources management through policy and institutional reforms.

The objectives of and benefits expected from the project can be placed into five categories: (1) improvements in broad economic and institutional policies governing the management of key natural resources sectors, (2) specific improvements in policies and management practices for natural production forests, (3) specific improvements in policies and management practices for parks and protected areas, (4) broadened capacity both within and outside of the government to analyze and understand key natural resources policy issues, including improved public awareness of and participation in debates regarding strategies to address environmental and natural resources management challenges, and (5) an expansion of the trained personnel capable of continuing this policy development process, especially in government policy and planning agencies.

5.2.2 Financial Analysis

Due to the (non-revenue producing) policy orientation of the project, it is not possible to directly compute an internal rate of return to project investments. Because of the very large economic magnitude of natural resources management activities in the domestic economy, improved efficiencies associated with any of the first three objectives will result in considerable absolute gains to the Indonesian economy. The fourth and fifth objectives and associated benefits are considered to be complementary to these economic gains, especially to build the basis for sustaining policy reform. Though difficult to quantify, this paper has argued that the costs to the economy of current natural resources mismanagement is high. Even minor improvements in the private allocation of resources brought about by policy changes affecting incentive structures will lead to significant social and economic benefits. Such changes should also result in increased government revenues and reduced demands for certain types of public expenditures. For example, the annual private sector losses from inefficiencies

in the forestry sector are on the order of \$1 billion dollars, and this adversely affects the tax base as well. Public investments in water management, degraded lands rehabilitation and other natural resources management activities also are at least this large. Even a 1-2 percent improvement in these efficiencies over the life of the project would result in a very favorable comparison between the benefits derived from project interventions and project costs.

The opportunity for such large net benefits places the NRM project in a strong position vis-a'-vis other competing claims on USAID's limited assistance resources in Indonesia. The project's strategy will provide sufficient flexibility in implementation to channel assistance into those activities which appear to provide the highest net returns. The decision to focus project-assisted field activities on the sub-sectors of natural production forests management and protected areas management was based on an assessment of all key natural resource sectors which showed the high relative importance of these resources to the domestic economy. There is also a coincidence of global benefits from their improved management. The choice of specific field sites was made after a careful evaluation of alternatives based on an assessment of the prospects for directly linking the findings from field activities into the national policy dialogue.

Project benefits and costs are not highly sensitive to changes in the economic and political assumptions embodied in the project's design. As a non-revenue producing project, price fluctuations are not a major consideration for sensitivity analysis. Because of the large size of natural resource sectors, the analysis of net benefits to be derived from the project is not highly sensitive to changes in the underlying economic assumptions. Though potential export gains would be affected, even a global recession during the project's life would not significantly alter this picture. A major effort has been made to link project assistance with contributions from other donor agencies, but the ability to conduct project activities and to achieve objectives is not contingent on these complementary investments. Because the project is directly oriented towards improving the policy development process, there are certain risks associated with possible changes in domestic political leadership during the life of the project. The relatively broad range of institutions involved in implementing the project will help to assure that steady progress can be made in achieving the project's objectives--even as continuous adjustments are made to changes in personnel and the relative influence of institutions and organizations involved in the policy development process.

5.3 Technical Analysis

The planned activities build upon current development theories, Agency policies and take advantage of USAID's strengths in providing technical assistance and training.

The project's policy-based approach is consistent and supportive of the Agency's environment and natural resources management strategy. Supporting the analysis of critical natural resources management constraints on economic growth and policy options is also a cost-effective investment of development assistance.

The focus on developing improved policies and practices for managing natural production forests and protected areas employs direct technical assistance with a participating forest concessionaire, degree and field training, applied research and implementation support for selected protected areas. Annex A.3.3 outlines the project's strategy for supporting field activities in this area and Annex A.3.4 presents a strategy for training under the project. Training is also considered to be one of USAID's most effective long-term investments and an area of US expertise.

Finally, the project will promote an increased awareness of environmental conservation and the sound management of natural resources (see Annex A.3.5). Environmental education/public awareness activities will focus on encouraging local communities to participate in project field activities as well as on promoting a greater awareness among decision makers, the general public and school children. Again, supporting education is one of USAID's strengths and a sound investment of development assistance.

5.4 Social Soundness Analysis

The design team concluded that the planned activities would greatly benefit the development of local communities. A team of social scientists (expatriate and Indonesian) interviewed Government officials, reviewed design documents and traveled to two field sites. Accordingly, their main focus was on how the project would address the social aspects of the field sites, and involve the local communities in the design and implementation of the project activities.

Sound natural resources management has the basic objective of using forest, land and marine resources for sustainable yields. Local people and the private sector are

primary users of these resources - uncontrolled, improper or over-intensive exploitation represent the gravest threats to sustainable management. It is not possible nor desirable to "fence off" the natural resources or to move the people away. Therefore, the alternative to be used in this project is to involve local communities and the private sector in developing viable approaches for managing these resources. In addition, this approach will benefit the national economy by providing a solid foundation for natural resource-based economic growth as well as by promoting a more equitable distribution of benefits from the nation's natural resource endowment.

The project will support pilot multi-purpose management activities at three protected areas with the objective of developing socially-sound approaches for involving local communities and the private sector in managing these resources (both terrestrial and marine). The project intends to assist the Government (primarily, PHPA) in involving the local communities and relevant private sector firms in identifying management problems, production constraints and development opportunities as input into multi-purpose management plans. Accordingly, the project will support the implementation of these plans, with assistance from technical advisors experienced in addressing social soundness concerns. Implementation analysis must understand the current level of technology and cultural factors before testing improvements (based on the identified activities above). Thus, the project will finance studies and surveys on such topics as indigenous knowledge of plant and animal species, land/sea tenure systems, and social dynamics. Following this, the project will test specific development activities, e.g., agroforestry development and coral reef management.

An important aspect of the project will be the ability of women to participate. At project field sites, there are no significant barriers to female participation, and women and men are actively engaged in economic development activities. However, if barriers are identified during implementation, the project will investigate and address them accordingly.

5.5 Environmental Analysis

A categorical exclusion from A.I.D.'s Initial Environmental Examination, Environmental Assessment and Environmental Impact Statement requirements is proposed for the technical assistance, policy studies, public awareness and training aspects of the project. This determination would be in accordance with A.I.D. Regulation 16, Sections 216.2(c)(1)(i), (iii) and (xiv), which provide for a categorical exclusion in

situations where the action does not have an effect on the natural or physical environment.

A negative determination is proposed for the applied research activities in accordance with A.I.D. Regulation 16 Section 216.3(a)(3)(iii). The applied research may result in negative but limited environmental impacts. These activities include construction of buildings, mini-hydroelectric power generator, agroforestry and mariculture development, road improvement and trail establishment. Any potential or real impact on the environment will be monitored carefully and mitigated expeditiously. Project advisors and staff will include experts who are familiar with and have practiced environmental management in tropical eco-systems to ensure that these effects are minimized, mitigated and monitored. Mitigation measures will include: leaving at least a 10 meter strip of vegetation between construction activities and adjacent streams; ensuring that the diversion canal for the mini-hydro power supply does not significantly reduce downstream water supplies; minimizing potential soil erosion with structural techniques and vegetation; and avoiding the use of banned chemicals in agroforestry and mariculture development.

With regard to the pilot management activities in production forests and protected areas, full environmental assessments of all management plans will be made before they are implemented. This will ensure that the plans are environmentally sound and act as an on-the-job training opportunity for GOI staff.

6. CONDITIONS AND COVENANTS

6.1 Conditions Precedent to Disbursement

6.1.1 Project Representatives

Prior to the disbursement of USAID funds, USAID will be provided with the names and specimen signatures of the project representatives for the Government of Indonesia.

6.1.2 Establishment of Project Management Structure

Prior to the disbursement of USAID funds for any purpose other than for technical assistance, USAID will receive documentation that the following project management structure has been established: Interministerial Environment and Natural Resources Policy Working Group, Project Coordinating Committee, and the Project Implementation Units for the Policy and Pilot

Management components. Documentation will include a description of the structure, staff assignments and responsibilities.

6.1.3 Annual Work Plans and Budgets

For activities implemented by BAPPENAS and the Ministry of Forestry in project years after May 1, 1991, the Government of Indonesia will provide USAID with annual work plans and budgets for the project, which describe both USAID and GOI contributions.

6.1.4 For Research and Training Activities of the Bukit Baka Field Station

Prior to disbursement of USAID funds for research and training activities at the Bukit Baka field station, the GOI will provide USAID with evidence that an agreement has been concluded with the cooperating forest concession holder. This documentation will specify the implementation responsibilities and contributions of both the Ministry of Forestry and the forest concession holder under the project.

6.2 Covenants and Waivers

6.2.1 Project Evaluation

The GOI and USAID agree to establish an evaluation program that will (a) evaluate progress toward attaining the project objective; (b) identify and evaluate problem areas or constraints that may inhibit such attainment; (c) assess how to overcome such problems; and (d) evaluate, to the degree possible, the overall developmental impact of the project.

6.2.2 Equipment Maintenance

The GOI agrees to provide sufficient funds in its annual development (DIP) budget or routine recurrent budgets to adequately maintain all equipment financed by the project.

6.2.3 Staffing

The GOI and USAID agree to provide the required personnel to implement the project in an effective and timely manner.

6.2.4 International Travel for Participants

The requirement for the GOI to pay for international travel for short-term training and thesis related travel will be waived.

LOGICAL FRAMEWORK MATRIX

**LOGICAL FRAMEWORK MATRIX
NATURAL RESOURCES MANAGEMENT**

Annex 1-1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>GOAL: To sustain income and employment opportunities for a growing population by adjusting policies and management practices regarding key natural resources.</p>	<p>Continued economic growth -- employment growth and increase in real incomes.</p>	<p>National and international economic reports.</p>	<p>Continued political and economic stability, both national and international.</p>
<p>PURPOSE: To strengthen selected Indonesian institutions so that they can:</p> <p>a. identify natural resource management practices which constrain economic growth, and</p> <p>b. design and implement improved policies to address these constraints.</p>	<p>a. New economic policies addressing natural resource management constraints, incorporated in GOI policy documents such as REPELITA VI.</p> <p>b. High level policy forums (e.g. Interministerial Policy Working Group) addressing sustainable natural resources policy issues.</p> <p>c. Several ministries with policy units actively developing and evaluating sustainable natural resource management policies.</p> <p>d. BAPPENAS funding natural resource policy studies and pre-feasibility studies for donor investments in sustainable natural resource management.</p> <p>e. Policy analysts conducting economic policy research in other government institutions such as KLH and EKUIN.</p>	<p>a. Project evaluations.</p> <p>b. REPELITA VI: National Development Plan: 1993-1998.</p> <p>c. BAPPENAS and MOFr records and reports.</p> <p>d. Project studies and Reports.</p> <p>e. National and local public media.</p>	<p>a. Government continues to become more open and transparent and allows policy process to respond to improved information about natural resource management and the respective roles of the public and private sectors.</p> <p>b. Public debate regarding environmental issues is allowed in national and local fora.</p>

63

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	<p>f. Private sector /government "think tanks", university departments and local private consultants undertaking sustainable natural resource policy research.</p> <p>g. New policies regarding management practices for sustaining natural forests and developing economic potential of protected areas implemented by the Ministry of Forestry.</p> <p>h. Private forest concessionaires applying policies and research findings concerning sustainable forest management.</p> <p>i. MOFr applying policies and research findings for improved management of natural production forests and protected areas, including the active participation of local communities.</p> <p>j. NGOs actively involved in public awareness programs regarding sustainable natural resource management.</p> <p>k. Debate regarding sustainable natural resource management issues being openly conducted in national press.</p>		

2/1/01

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>OUTPUTS:</p> <p>a. Policy and pre-feasibility studies concerning natural resource issues.</p> <p>b. Self-supporting Secretariat for the Natural Resource Policy Working Group.</p> <p>c. Trained policy analysts in BAPPENAS, KLH, FIN, MOFr, local universities and private consulting companies.</p> <p>d. Management plans for natural forest production concessions and protected areas.</p> <p>e. Forestry research and training station at Bukit Baka.</p> <p>f. Applied research studies regarding sustainable management of natural production forest and protected areas.</p> <p>g. Discussion organized at national and local level concerning natural resources issues. NGOs and local communities participants in the debate.</p>	<p>a. Fifteen policy analyses of national relevance and reorganized value.</p> <p>b. One secretariat, affiliated to BAPPENAS, but able to generate supporting funds through grants and research contracts.</p> <p>c. Five analysts given Master's training in U.S. Fifteen analysts trained.</p> <p>d. Three plans developed for natural production forest concessions. Three management plans developed and implemented for protected areas. Fifteen participants given Master's training in U.S.</p> <p>e. One forestry research and training station operating and supported by MOFr and private forest concessionaire.</p> <p>f. Ten of national relevance and recognized value.</p> <p>g. Ten seminars, workshops, media presentations based upon project activities.</p>	<p>a. Analyses, studies, organizations trained analysts, plans, research and debate are officially reorganized and permitted to influence sustainable natural resource policies.</p> <p>b. Project Evaluations and Monitoring reports.</p> <p>c. BAPPENAS and MOFr records and reports.</p>	

ANNEX 3

ENVIRONMENTAL DETERMINATION



UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT
AMERICAN EMBASSY
JAKARTA, INDONESIA

INITIAL ENVIRONMENTAL EXAMINATION

- (A) PROGRAM COUNTRY: Indonesia
- (B) ACTIVITY: Natural Resource Management Project (497-0362)
- (C) FUNDING: \$18.5 million
- (D) PERIOD OF FUNDING: FY 1990 - FY 1996
- (E) STATEMENT PREPARED BY: Isna Marlifa/G. Kurr, ARD/RRM, USAID, Indonesia
- (F) ENVIRONMENTAL ACTIONS RECOMMENDED:
- (1) Categorical Exclusion AID Regulation 16, Sections 216.2(c)(1)(i), (iii) and (xiv) (Technical Assistance, Policy Studies, Public Awareness and Training), and
 - (2) Negative Determination AID Regulation 16, Section 216.3(a)(3)(iii) (Applied Research)
 - (3) Full environmental assessment of all management plans, which will be implemented by project, prior to their implementation (Management Plan for Natural Production Forests and Multi-Purpose Management of Protected Areas).
- (G) ENVIRONMENTAL OFFICER CLEARANCE: Jerry P. Bisson
Jerry Bisson, USAID/Indonesia
- (H) DECISION OF USAID/INDONESIA DIRECTOR
- APPROVED: Janita Munnis
- DISAPPROVED: _____
- DATE: 7/9/90
- (I) DECISION OF ANE ENVIRONMENTAL OFFICER
- APPROVED: M. Lee, AUE/ID/ENV
- DISAPPROVED: _____
- DATE: 7-10-90

EXAMINATION OF THE NATURE, SCOPE AND MAGNITUDE OF THE ENVIRONMENTAL IMPACT

A. DESCRIPTION OF THE PROJECT

The proposed project will strengthen the capability of the Government of Indonesia (a) to identify critical natural resource management constraints on economic growth and (b) to design and implement improved policies and strategies to address these constraints. The project will operate at two levels, namely macro-economic analysis of a wide range of issues at the National level, and complemented by special field-level activities on sustainable management of natural production forests and protected areas. The project will support an existing inter-agency policy group, chaired by the National Planning Agency (BAPPENAS), by assisting this group in preparing analysis of priority policy issues concerning natural resource management -- both sectoral and cross-sectoral. Issues may range from natural resource accounting techniques, water allocation on Java to sustainable forestry. Accordingly, the project will enhance the analytical skills of Government policy analysts, Indonesian economists in universities and independent "think tanks" to conduct these analyses. It will also promote greater public awareness on sustainable natural resource management through seminars, publications and audiovisual productions.

In addition, the project will strengthen the ability of the Ministry of Forestry (MOFr) (a) to manage natural production forests for sustained yields, (b) to plan and conduct applied research on the management of natural production forests and protected areas, (c) to design and implement management plans for three protected areas (two terrestrial and one marine), and (d) to generate policy-related information from field activities. The project will support a cooperative program with a forest concessionaire. It will also establish a field research and training station on the forest concession which is adjacent to a nature reserve in Kalimantan.

The station will be located on an abandoned logging road (log yard area) in a logged-over forest and very near to pristine forest in the nature reserve. The project will construct simple facilities, e.g., a laboratory, lecture area, dormitory, herbarium, and a mini-hydroelectric power generator (20 megawatts). The access road to the site will be improved, and several trails to research sites will be established.

The project will provide technical advisors and training to assist the forest concessionaire in developing management practices that can be replicated in other forest concessions. This will include preparing a management plan, case studies, practical manuals and training materials.

48

Annex 3-3

Applied research on production forests will be conducted with the timber concessionaire as part of their regular logging operations. Research will focus on developing improved forest management practices, including directional felling to reduce damage to residual stands, and improved timber extraction techniques aimed at reducing soil erosion or compaction and damage to residual trees and seedlings. Experiments will be conducted in the logged-over and actively logged areas, as well as in nurseries.

Applied research to support the management of protected areas will focus on developing approaches for the sustainable management of the natural resources which maintain biological diversity and generate economic benefits through conservation. These approaches will encourage the active involvement of the local communities and the private sector. In Kalimantan, this will involve studies on indigenous knowledge on plants, improved shifting cultivation practices, techniques for controlling fires (e.g., testing fire-resistant native tree species and developing improved grasslands management practices), and economically important non-timber forest products. In North Sulawesi, research will include studies on ecologically-sound fishing methods and equipment, economically-important marine products, and coral reef management. In cooperation with MOFr, local communities and private companies are expected to participate in identifying, implementing and evaluating the research activities.

The project will develop multi-purpose management approaches for protected areas in Kalimantan and North Sulawesi which can be replicated in other areas. Thus, the project will support multi-purpose management activities, such as boundary delineation; establishment of conservation posts, information centers and campgrounds; conservation extension for extractive and cultivation activities, and resources rehabilitation; nature-based tourism; genetic resource exploration to varying degrees and at specifically designated locations; training; and environmental awareness. In cooperation with MOFr, local communities and private companies are expected to participate in identifying, implementing and evaluating these activities.

The project will support both long-term (app. 20 masters degrees) and short-term training in the areas of policy analysis, resource economics, forest management and nature conservation. The project will also provide both long-term and short-term technical advisors to support project implementation. Project personnel will have expertise in resource economics, tropical forest management, nature conservation, marine biology, and human ecology. The project will also supply commodities and equipment to support implementation.

E. Environmental Analysis

The project will finance macro-economic analysis of key policy issues at the National level complemented by special attention on the sustainable management of natural production forests and protected areas. This will include the development of a management plan and improved techniques for natural production forest concession, multi-purpose management of selected protected areas (e.g., conservation extension) and applied research to support these activities. The project will also promote a broader understanding of natural resource management issues through environmental awareness efforts. Technical advisors and training will be provided to support implementation.

Accordingly, a categorical exclusion from A.I.D.'s Initial Environmental Examination, Environmental Assessment and Environmental Impact Statement requirements is proposed for the technical assistance, policy studies, public awareness and training aspects of the project. This determination would be in accordance with A.I.D. Regulation 16, Sections 216.2(c)(1)(i), (iii) and (xiv), which provide for a categorical exclusion in situations where the action does not have an effect on the natural or physical environment. Policy studies, technical assistance, training and environmental education activities will not have a direct impact on the environment.

The applied research may result in negative but limited environmental impacts. These activities include construction of buildings, mini-hydroelectric power generator, agroforestry and mariculture development, road improvement and trail establishment. As these activities are designed to promote sound management of natural resources, any potential or real impact on the environment will be monitored carefully and mitigated expeditiously. Furthermore, the impacts will be minimized in degree and location from the very early stages of project implementation. Project advisors and staff will include experts who are familiar with and have practiced environmental management in tropical ecosystems to ensure that these effects are minimized, mitigated and monitored. Mitigation measures will include: leaving at least a 10 meter strip of vegetation between construction activities and adjacent streams, ensuring that the diversion canal for the mini-hydro power supply does not significantly reduce downstream water supplies, minimizing potential soil erosion with structural techniques and vegetation, and avoiding the use of banned chemicals in agroforestry and mariculture development. Furthermore, the project will act as an ongoing environmental assessment since it aims to develop

Annex 3-5

environmentally-sound approaches for managing production forests and protected areas.

Thirdly, with regard to the management plans implemented by the project, Environmental Assessments will be conducted on all management plans before they are implemented. The EAs will be done by the Ministry of Forestry, or by KLH, or by qualified groups of experts (international and local). The EAs will be conducted in accordance with Indonesian Law and will meet requirements of USAID.

In conclusion, the objectives of the project, the nature of the activities, and the personnel employed in the project will collectively ensure that no significant adverse impact on the environment will result. Therefore, a categorical exclusion is justified for the technical assistance, policy analyses, public awareness and training activities, a negative determination is justified for the applied research activities, and full EAs will be done on all management plans, implemented by the project, prior to their implementation.

b:annex3:07/24/90

51

ANNEX 4

CERTIFICATION PURSUANT TO
GRAY AMENDMENT

**CERTIFICATION PURSUANT TO
GREY AMENDMENT**

As the Acting Director and Principal Officer of the Agency for International Development in Indonesia, I certify that during the design of the Natural Resources Management (NRM) Project (497-0362) full consideration has been given to the potential involvement of small and/or economically and socially disadvantaged enterprises, and historically black colleges universities and minority controlled private and voluntary organizations covered by the Gray Amendment.

The project procurement plan is based on the need to utilize contractors with highly specific substantive knowledge and technical competence in analyzing natural resources policies, and developing improved approaches for managing natural production forests (*Dipterocarp* tree species) and protected areas (see Section IV of the Project Paper to which this certification is attached). The necessary knowledge and expertise are not available, to the best of our knowledge, from minority controlled and women-owned firms, historically black colleges and universities, and minority controlled private voluntary agencies. However, it is anticipated that the prime contractor will use such concerns for at least 10% of the total contract value. If all other aspects of the evaluation of contract bids are equal, the participation of such concerns may become the determining factor for selection.



Lee Twentyman
Acting Mission Director

7/27/90

Date

53