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## **NATURAL RESOURCES MANAGEMENT PROJECT**

### **PROGRESS REPORT**

(August 1990 - December 1993)

**NRM Project Coordinating Committee Meeting**

**Thursday, 16 December 1993**

**Safari Garden Hotel - Puncak**

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## GLOSSARY

Bappeda	Provincial Planning Board
Bappenas	National Development Planning Bureau
Bina Swadaya	Indonesian NGO specialized in community based
BPPT	Agency for the Application of Technology
BPS	Bureau of Statistics
Dinas	Provincial office of central government department
GPS	Global Positioning System
Kanwil	Regional office of central ministry (ie. Forestry, Tourism etc.)
LH	State Ministry of Environment
NGO	Non Governmental Organization
PHPA	Directorate General of Forest Protection and Nature Conservation (Ministry of Forestry)
PCC	NRM Project Coordinating Committee
PWG	NRM Project Working Group
Repelita	Five Year Development Plan
TPTI	Indonesian Selection Felling and Replanting System

## NRMP PROGRESS REPORT

### INTRODUCTION

This report marks the progress achieved to date in the implementation of NRMP activities and is based on the logical framework in the 1990 NRM project paper (see Chart 1). Following this logframe the report is broken down into the following sections:

Part I : Progress according to the narrative summary by the objective verifiable indicators in the NRM project log frame (A through K).

This section of the logframe provides a means to evaluate the project by its aims and by eleven verifiable indicators.

Part II : Progress according to the narrative summary outputs in the NRM project log frame (A through G).

This section of the logframe of logframe provides seven outputs by which progress in the project are to be measured.

Part III: Annexes. The Annexes provide additional data on the NRMP activities completed to date.

It should be noted that since the log frame was written in 1990 there have been considerable changes during the implementation of the project and thus there is a need to assess the original logframe indicators and outputs. However for the purpose of reporting the progress to date in the project the original log frame format has been followed. Secondly in matching up the precise project impacts on policy changes it should be noted that the NRM project in agreement with its counterpart agencies in government keeps a low profile and does not widely publicize recommendations made. In this it follows the normal practice of donor projects assisting government agencies in Indonesia. Consequently in many cases the policy changes that have taken place as the result of the activities of the NRM project are often the result of a mixture of NRM inputs (ie. discussions, presentations, project reports and briefings) and are not always the result of a single recommendation given at any particular time.

**LOGICAL FRAMEWORK MATRIX  
NATURAL RESOURCES MANAGEMENT**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>GOAL:</b> To sustain income and employment opportunities for a growing population by adjusting policies and management practices regarding key natural resources</p> <p><b>PURPOSE:</b> To strengthen selected Indonesian institutions so that they can:</p> <p>a. identify natural resource management practice which constrain economic growth, and</p> <p>b. design and implement improved policies to address these constrains.</p>	<p>Continued economic growth -- employment growth and increase in real incomes</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 resources management.</p> <p>e. Policy analysts conducting economic policy research in other government institutions such as KLH and EKUIN</p>	<p>National and international economic reports</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>Continued political and economic stability, both national and international</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 flora.</p>

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. NGO's 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>		

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 organization at national and local level concerning natural resources issues. NGO's 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 US.</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 reorganized value.</p> <p>g. Ten seminars, workshops, media presentations based upon Ten seminars, workshops, media presentations based upon project activities.</p>	<p>a. Analyse, studies, organizations trained analysis, 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>	

## **PART I**

## PART I

### PROJECT ACHIEVEMENTS (PURPOSE LEVEL IN THE LOGFRAME) NATURAL RESOURCES MANAGEMENT PROJECT

#### A. NEW ECONOMIC POLICIES

New economic policies addressing natural resource management constraints incorporated in GOI policy documents such as REPELITA VI.

##### Baseline Status

General needs in natural resource policy analysis identified but not specific policy issues. Important planning documents, such as the second 25-year development plan (1995-2020) and REPELITA VI (1994/95-1998/99) envisioned by GOI (1992/93) but not prepared.

##### Accomplishments

Contributions to the formulation of Indonesia's second 25 Year Development Plan/ Repelita VI included:

1. Four special papers prepared at the request of Bappenas relating to forestry sector and natural resources management strategies. Distributed to policy analysts and more widely to other policy study institutions (see Annex 1-A -- Briefing Papers 1-4).
2. Dynamic I/O model constructed including natural resources sectors for the processing of basic data for both plans. Model used to extrapolate different economic growth scenarios for Bappenas and natural resource policy implications (see Annex 1-D -- Project Reports No. 31).
3. Individual NRM reports distributed to Bappenas and Ministry of Forestry raising relevant policy issues to be addressed in both plans (see Annex 1-D -- Project Reports No. 1 - 31).
4. Policy Briefs prepared on policy recommendations in natural resource field. Distributed to policy analysts in Bappenas, Ministry of Forestry, State Ministry of Environment, Ministry of Home Affairs and Ministry of Finance (see Annex 1-C -- Policy Briefs).

5. Seminars organized in Bappenas for discussion of major policy issues in natural resource fields for both plans (see Annex 1-F -- Bappenas Seminars No. 1-4).
6. General summary of NRM policy recommendations in natural resources area prepared and used for presentations in Bappenas (see Annex 2 -- Summary of Policy Recommendations).

## **B. HIGH-LEVEL POLICY FORUMS**

**High level policy forums (e.g. interministerial Policy Working Group) addressing sustainable natural policy issues.**

### **Baseline Status**

Informal natural resource policy forums existing but are not supported by detailed and systematic analysis of natural resource policies.

### **Accomplishments**

1. The senior level inter-Ministerial NRM Policy Working Group (PWG) officially established.
2. PWG meetings held in 1991/92/93 to discuss current and planned policy outputs required from the NRM project and to provide overall guidance for the implementation of project activities.

## **C. DEPARTMENTAL POLICY UNITS**

**Several ministries with policy units actively developing and evaluating sustainable natural resource management policies.**

### **Baseline Status**

No active and influential policy units as such existed.

## **Accomplishments**

1. Setting up and development of the NRMP Policy Secretariat to provide policy analysis on natural resource issues to Bappenas for the formulation of natural resource management policies. Group of senior and junior research associates recruited from the private sector and trained as policy analysts in various macro techniques in NRM policy studies working with GOI agencies in natural resource field (see Annex 3 -- Policy Analysts Trained in Policy Secretariat).
2. Cadre of GOI natural resources management policy analysts built up through long- and short-term training:
  - a. Long-term training:

12 masters degree participants currently in USA doing policy related work (10 other participants leaving for USA in 1994). Participants selected from Bappenas (4), MoFr (11), Home Affairs (1), University and NGO's (6) (see Annex 4-A).
  - b. Short-term training (international):

19 participants attended 12 international training courses in policy areas; 10 other courses being arranged (see Annex 4-B).

Study tour to Philippines and Thailand of key local government officials (Bappeda, Kanwil Ministry of Forestry, Dinas Ministry of Forestry, Kanwil Tourism, Dinas Tourism, Sub-office Nature Resource Conservation) to look at marine eco-tourism development policy issues applicable to marine protected areas in Indonesia (see Annex 4-B).

## **D. BAPPENAS SUPPORT FOR POLICY STUDIES**

**BAPPENAS funding natural resource policy studies and pre-feasibility studies for donor investments in sustainable natural resource management.**

### **Baseline Status**

Sporadic funding initiatives through Indonesian budget to local universities for Bappenas related needs.

### **Accomplishments**

1. Macro policy studies undertaken at Bappenas' request by Policy Secretariat relating to natural resource utilization. This included dynamic I/O Modelling, Trade and Exchange Rate Policy, Policy Towards Direct Investment, Forestry Sector Policy, Employment Effects of Sectoral Policy, Policies Towards Protected Areas, Marine Sector study, Integrated Development, Community Development, and Overall Development Strategy (see Annex 5 -- Implementation Schedule).
2. Individual studies under (1) will provide guidelines to Bappenas in identifying areas needing donor support.
3. Field level studies carried out in Bukit Baka-Bukit Raya and Bunaken on forestry and marine issues linked to policy analysis at the Policy Secretariat for recommendations to be made to Bappenas for further studies and possible donor support (see Annex 2 -- Summary of Policy Recommendations).
4. Five host country contracts awarded and completed in natural resource policy analysis (see Annex 6). TORs developed for five further studies.

### **E. POLICY ANALYSIS IN GOVERNMENT INSTITUTIONS**

**Policy analysts conducting economic policy research in other government institutions such as State Ministry of Environment and Coordinating Ministry for Finance.**

#### **Baseline Status**

Sporadic, short-term demand-driven initiatives. Some highly confidential analyses conducted by institutions such as Central for Policy Implementation Studies (CPIS).

#### **Accomplishments**

1. Policy study teams working closely with Bureau of Statistics (BPS), Agency for the Application of Technology (BPPT) and other agencies in macro policy studies carried out by the Policy Secretariat.

2. Workshop series training policy analysts from government, universities, private sector and NGOs run by the NRMP Policy Secretariat. These include:
  - Training workshop No. 1 "Planning for Sustainability" (Dec. 93)
  - Training workshop No. 2 "Trade Policy" (Dec. 93)
  - Training workshop No. 3 "Employment Effects" (Jan. 94)
3. Policy relationship with advisors to EKU, involving forestry issues.
4. Policy dialogue with CPIS. Support for marine sector studies.

## **F. POLICY ANALYSIS IN NON-GOVERNMENT INSTITUTIONS**

**Private sector/government "think tanks", university departments and local private consultants undertaking sustainable natural resource policy research.**

### **Baseline Status**

Limited policy research in natural resource areas done by government/private think tanks, universities and local communities with very limited impact.

### **Accomplishments**

1. Close links established for cooperation in sustainable natural resource policy research with Environmental Management Development in Indonesia Project, Development Studies Project, the University of Indonesia, the University of Tanjung Pura and the University of Sam Ratulangi.
2. Close links also established with Institute Economic and Social Research (LPEM) - University of Indonesia focussing increasingly on natural resource management. Policy Secretariat building up LPEM's ability to perform such research and advise and train government counterparts.
3. Local consulting firms steered toward research on sustainable natural resource use via host country contract studies (see Annex 6 -- Host Country Contracts Completed by December 1993).

## **G. NEW FOREST MANAGEMENT AND PROTECTED AREA POLICIES**

**New policies regarding management practices for sustaining natural forests and developing economic potential of protected areas implemented by the Ministry of Forestry.**

### **Baseline Status**

1. Old selective felling scheme, the TPI, replaced by TPTI, including enrichment planting. Nevertheless many concessionaires not following Ministry guidelines for improved forest management, and forest resources continue to be overexploited.
2. Protected areas legislation exists but is inadequate particularly regarding translation from general aims to park management. Role of local communities is poorly recognized.

### **Accomplishments**

1. The Ministry of Forestry improved its policies for determining annual allowable cuts based on project-supported research.
2. Recommendations to reduce the annual allowable cut proposed by BAPPENAS to Ministry of Forestry based on applied forest ecological research carried out under the project.
3. Supported by project field research and policy analysis, Ministry of Forestry increased stumpage fee from US\$15 to US\$22/m<sup>3</sup>.
4. Guidelines for sustainable forest management laid down, including a role for community participation.

## **H. SUSTAINABLE FOREST MANAGEMENT BY CONCESSIONAIRES**

**Private forest concessionaires applying policies and research findings concerning sustainable forest management.**

### **Baseline Status**

1. Few concessionaires managing their forest resource sustainably.
2. Some research inappropriate.
3. Technical improvements discovered by policy incentives to overexploit.

### **Accomplishments**

1. Greater awareness of concessionaires of need for sound management, largely because of threat of international trade ban on tropical timber.
2. Project concessionaires, SBK, testing recommended improvements to logging practices such as waste reduction (see Annex 1-D -- Project Reports Nos. 4,10,28 & 29).
3. Recommendations made to Ministry of Forestry on the setting up of conservation zones within production forests for incorporation into proposed Ministry of Forestry guidelines.

## **I. APPLICATION OF PRODUCTION FOREST AND PROTECTED AREA POLICIES**

**MOFr applying policies and research findings for improved management of natural production forests and protected areas, including the active participation of local communities.**

### **Baseline Status**

1. Local community roles neglected.
2. Narrow, technical view of production forest management, and protected areas, e.g. strict, inflexible logging rules, and, complete isolation of protected areas. These over ambitious goals were not practical and often ignored.

## **Accomplishments**

1. As result of NRMP research, Ministry of Forestry is developing a traditional forest area concept which involves the participation of local communities in the sustainable use of forest resources in a bufferzone of a national park and within a forest concession (see Annex 1-D -- Project Reports No. \_\_).
2. Draft 25-year Management Plan, Five and One year operational plans (Indonesian Fiscal Year 1994/95) prepared for the Bunaken National Park. Plans include recognition that community involvement, and integration with local government and non-government institutions are pivotal to success (see Annex 1-D -- Project Reports No. \_\_).
3. Draft 25-year Management Plan, Five and One Year operational plans (IFY 1994/95) prepared for the Bukit Baka-Bukit Raya National Park. Plans include recognition that community involvement, and integration with local government and non-government institutions are pivotal to success (see Annex 1-D -- Project Reports No. 20).
4. Improvements to MoFr guidelines for diagnostic studies and implementation of the PT. SBK's "Program Bina Desa" (community development program) (see Annex 1-D -- Project Reports No. \_\_).
5. Ministry of Forestry's policies regarding the preparation of 20-year management plans by forest concession holders strengthened by recommendations for more rational and systematic guidelines (see Annex 1-D -- Project Reports No. 29).
6. Recommendations for logging waste reduction and more rational silvicultural processes incorporated into MoFr thinking on official guidelines for sustainable forest management (see Annex 1-D -- Project Reports No. 4).
7. NRM analyze of local communities profiles and potential for integration in Bunaken and Bukit Baka-Bukit Raya actively used to change MoFr policy (see Annex 1-D -- Project Reports Nos. 5,12,14 & 25).
8. New MoFr policy on forest management adapted based on five aspects: national security of forest resources, human resources development, conservation of biological diversity, social participation and institutional development.

9. Recommendations made for improved road and bridge construction based on US Forest Service team visit.
10. Use of better technology for management of natural production forests through training in Global Positioning System (GPS) organized by US Forest Service.

## **J. NGO ROLE IN SUSTAINABLE FOREST MANAGEMENT**

**NGOs actively involved in public awareness programs regarding sustainable natural resource management.**

### **Baseline Status**

1. Great suspicion on the role of government regarding NGO's, especially foreign NGO's.
2. Regarded more as an irritation and obstacle to development than as a resource and partner in development.

### **Accomplishments**

1. Strategies for environmental awareness prepared and implemented in the two pilot project areas in Bukit Baka-Bukit Raya and Bunaken with involvement of local NGOs (see Annex 1-D -- Project Reports No. 9 & 17).
2. Orientation and training provided to local NGOs in Kalimantan by Bina Swadaya to assist on implementation of NRMP activities in Bukit Baka-Bukit Raya including public awareness programs (see Annex 1-D -- Project Reports No. \_\_).
3. A network of NGOs in North Sulawesi set up to inform the public regarding the management of the Bunaken National Park, resulting in numerous publications in local media, workshops, field side training and production of training materials.

## **K. PUBLIC DEBATE ABOUT SUSTAINABLE NATURAL RESOURCE MANAGEMENT**

**Debate regarding sustainable natural resource management issues being openly conducted in national press.**

### **Baseline Status**

Limited number of environmental articles in national press discussing general environmental issues.

### **Achievements to date**

1. Discussion of natural resource management issues in national media stimulated by Policy Secretariat/Bappenas seminars, policy outreach network, and training program.
2. Six papers (6) given by the NRM advisors and five by NRM funded government officials/university staff at international conferences. These with attendances by other NRMP participants at both international and in-country policy related meetings have contributed to the on-going debate on sustainable natural resource management (see Annex 1-G -- Other Seminars).
3. Extensive coverage of environmental issues by regional newspapers in North Sulawesi encouraged by project activities to support the management of the Bunaken National Park. Also programs on local TV to discuss Bunaken National Park Management Plan with PHPA counterparts and NRMP advisors.

## **PART II**

## PART II

## LOGFRAME NARRATIVE SUMMARY – OUTPUTS

Page 1

NARRATIVE SUMMARY (1)	OBJECTIVELY VERIFIABLE INDICATORS (2)	MEANS OF VERIFICATION (3)	EVALUATION CATEGORY (4)	BENCHMARK TARGET (5)				COMMENTS (6)
				Nos.	Completed	In progress	%	
Policy and Pre-feasibility studies concerning natural resource issues	Fifteen policy analyses of national relevance and recognized value	Studies requested by GOI, findings presented and accepted by PCC	<b>A. POLICY ANALYSIS</b>					
			A.1. POLICY STUDIES	15	6	6	60	Ten macro studies being undertaken by NRM Policy Secretariat (one completed/six in progress). Five studies completed through host country contracting.
			A.2. DEMAND-DRIVEN POLICY STUDIES		4	—	100	Four papers prepared at the request of Bappenas. Other will be completed as requested.
Self-supporting Secretariat for the Natural Resources Policy Group	One secretariat, affiliated to Bappenas, but able to generate supporting funds through grants and research contracts	Project Quarterly and Annual Reports, and Progress Reports to PCC	<b>B. SECRETARIAT DEVELOPMENT</b>					
			B.1. SECRETARIAT ESTABLISHED AND FUNCTIONING	1	1	—	100	Policy Secretariat set up, equipped and staffed. Acts as base for all project policy work, linking in with other government departments and research institutions, NGOs and others
			B.2. SELF-SUSTAINING DEVELOPMENT	1	—	—	—	Aim of generating independent funding not feasible and needs reappraisal.
Trained policy analysts in Bappenas, LH, FIN, MoFr, local universities and private consulting companies.	Five analysts given Master's training in U.S.  Fifteen analysts trained.	PCC records and reports	<b>C. POLICY TRAINING</b>					
			C.1. OVERSEAS	5	—	5	60	Two policy analysts already in USA for MSc; three being admitted in Spring '94. All will return by 1996.
			C.2. LOCAL TRAINING	15	5	10-40	40	Five policy analysts trained through international short-term training courses, 10-40 to be trained in Policy Secretariat courses Dec. '93 to August 1994.

NARRATIVE SUMMARY (1)	OBJECTIVELY VERIFIABLE INDICATORS (2)	MEANS OF VERIFICATION (3)	EVALUATION CATEGORY (4)	BENCHMARK TARGET (5)				COMMENTS (6)
				Nos.	Completed	In progress	%	
Management Plans for natural forest production concessions and protected areas	Three plans developed for natural production forest concessions	Modifications completed and accepted by GOI	<b>D. RESOURCE MANAGEMENT PLAN</b>					
			D.1. FOREST CONCESSIONS	3	3	2	40	Plans already completed prior to project start up. NRM advisors are now providing advice on improvements.
	Three management plans developed and implemented for protected areas	Plan completed and approved by PCC	D.2. PROTECTED AREA IMPLEMENTATION PLAN	3	2	-	65	Two draft Management Plans completed and submitted to GOI; Plan for Gunung Palung exists - project will revise in 1994/95.
	Fifteen participants given Master's training in U.S.	Training completed	D.3. OVERSEAS TRAINING DEGREE	15	-	17		Two additional MSc. candidates added 10 already studying in USA and seven being processed to leave for USA in Spring 1994. In addition, one PhD completed and one more to be finished by June 1994.
			D.4. INTERNATIONAL SHORT-TERM TRAINING	-	24	27		51 participants being sent on international short-term training courses - 24 already returned.
Forestry Research and Training Station at Bukit Baka	One forestry research and training station operating and supported by MoFr and private forest concessionaire.		<b>E. RESEARCH AND TRAINING STATION</b>	1			15	Station being build by ITTO but delayed to 1994/95. NRM carried out basic preliminary support activities including topography survey and building of mini-hydro electric power and water supply systems.
Applied research studies regarding sustainable management of natural protected areas.	Ten [research studies] of national relevance and recognized value.		<b>F. APPLIED RESEARCH</b>					
			F.1. COMPETITIVE AWARDS SYSTEM	1		1	30	Earlier planned system redesigned (Jan.'93) and under implementation as pilot approach.
			F.2. RESEARCH STUDIES	10		10	20	Ten research studies identified by NRM consultants with implementation in 1994.

NARRATIVE SUMMARY (1)	OBJECTIVELY VERIFIABLE INDICATORS (2)	MEANS OF VERIFICATION (3)	EVALUATION CATEGORY (4)	BENCHMARK TARGET (5)				COMMENTS (6)
				Nos.	Completed	In progress	%	
Discussion organized at national level concerning natural resources issues. NGOs and local communities and participants in the debate.	Based upon project activities:		<b>G. NATURAL RESOURCE DIALOGUE</b>					
	Ten seminars,		G.1. FORMAL SEMINAR ON SPECIFIC STUDIES	10	10	4	40	Four national level seminars held on Forestry Sector Policy During the Second Long-Term Development Plan, The Role of Natural Resource Management During the Second Long-Term Development Plan, Input-Output Modelling of Environmental Planning and Eco-Labeling and Forestry Products. Others planned for 1994.
	Workshops,		G.2. PRESENTATION OF PROJECT REPORTS		25	10	70	25 NRM project presentations based on completed reports on work on natural resource issues. NGOs and local communities fully involved. 10 further presentations planned for 1994.
	Media presentations							

**NOTES:**

- (1) - (3) are as found in the original logframe with editorial changes for clearer understanding  
 (4) Breakdown/disaggregation of (2) reflect implementation of NRMP  
 (5) Benchmark targets  
 (6) Comments

## **ANNEXES**

## NRM PROJECT REPORTS, PUBLICATIONS PAPERS AND SEMINARS

### A. Briefing Papers

Briefing papers prepared for Bappenas including:

1. Long-term Forestry Development, Objectives and Policies in the Context of the Second Long-Term Development Plan
2. Natural Resources Issues for the Second Long-Term Development Plan
3. Policy Issues in Indonesia's Forestry Sector
4. Rent Capture in Indonesia's Forestry Sector

### B. Policy Studies

1. Dynamic Input-Output Modelling for the Second Twenty-five Year Plan and the Sixth Five Year Plan (NRM report No. 31)
2. Trade and Exchange Rate Policy
3. Foreign Direct Investment Policy
4. Forestry Sector Policy
5. The Employment Effects of a Natural Resources Management Policy
6. Policies Toward Protected Areas
7. Marine Sector Study
8. Integrated Development Study
9. Community Development Study
10. Overall Development Study

**C. Policy Briefs**

1. Integrating Spatial Planning and National Parks
2. Commercial Forest Management
3. Improving Species Management in Forest Concessions

**D. Project Reports**

1. Procurement Plan for Research Equipment at Bukit Baka and Equipment Installation at Samarinda Forestry Research Station
2. Agroforestry in Bukit Baka/Bukit Raya
3. Pengukuran dan Pemetaan Topografi Sebagian Daerah Taman Nasional Bukit Baka/Bukit Raya (Topography Survey for Research Station Site - Bukit Baka/Bukit Raya National Park)
4. Applied Research Recommendations for Production Forest Management: An Economic and Ecological Review of the Indonesian Selective Cutting and Replanting System (TPTI)
5. Balancing Forest and Marine Conservation with Local Livelihoods in Kalimantan and North Sulawesi
6. Proposal to the GOI and USAID for the Development of Comprehensive Environmental and Natural Resources Accounts (CENRA) for Economic Planning and Management
7. Bukit Baka Mini-Hydraulic System Implementation Plan
8. Final Report: Bukit Baka-Bukit Raya 1992  
Station Protocol: Bukit Baka-Bukit Raya 1992  
Research Protocol: Bukit Baka-Bukit Raya 1992
9. Environmental Education and Awareness in Bukit Baka (Volume 1)  
Environmental Education and Awareness in Bukit Baka Guide to Environment and Fire Campaign (Volume 2)
10. Recommendations for Controlled Timber Harvesting in the SBK Forest Concession
11. Cruiser Identification at SBK and Local Uses of Trees by Local People
12. Community Water Supply Feasibility Study for Bukit Baka-Bukit Raya, Kalimantan

13. Recommendation for Reorganizing NRM Library (Sept. - Dec. 1992)
14. Livelihood Strategies and Marine Resource Use among Residents of Bunaken National Park, North Sulawesi: Recommendations for Local Involvement in Park Management
15. A Competitive Awards Scheme for Applied Forest Management and Nature Conservation
16. Design of a Management Information System for the Natural Resources Management Project
17. Environmental Education and Awareness Strategy for Bukit Baka-Bukit Raya National Park (Vol. 1)  
NGO Training for a Local Environmental Education and Awareness Strategy (Vol. 2)
18. Water Supply and Sanitation (WS&S) Program in Bukit Baka-Bukit Raya, Kalimantan (Program Status Report)
19. The role of Non-Governmental Organizations (NGOs) in supporting the Natural Resources Management Project in Bukit Baka-Bukit Raya National Park
20. Integration of Provincial Regional Development Planning into the Bukit Baka-Bukit Raya National Park Management Plan
21. Communication, Information and Education Strategy for Bunaken National Park
22. Report on the Preparation of a Design for a Study of the Natural Resource Impacts of Marine Sector Policy during the Second Long-term Development Plan Period
23. Management Information System for the Natural Resources Management Project: Report on the Second Mission to Jakarta, July - August 1993 (Vol. 1)  
Management Information System for the Natural Resources Management Project: User Manual and Technical Documentation (Vol. 2)
24. Water Supply and Sanitation Program in Bukit Baka-Bukit Raya, Kalimantan
25. Report on Communities Living Within Reach of the Bukit Raya National Park in Kalimantan Tengah
26. Effective Protection and Natural Resources Management in Indonesia
27. The Role of Conservation Areas in Production Forest (in Draft)

28. Economic Issues Associated with the TPTI Management System (In Draft)
29. A Review of Planning Arrangements for Sustainable Management of Natural Production Forest on Forest Concessions in Indonesia. An Interim Report
30. Eco-tourism Development in Bunaken National Park and North Sulawesi
31. Environment and Development in Indonesia: An Input-Output Analysis of natural Resource Issues (plus 16 working papers and two manuals)
32. Survei Pemakaian Tumbuhan Obat di Nanga Juoi Kecamatan Menukung, Kalimantan Barat (in process)
33. Mid Term Report: Guidelines and Implementation Issues Concerning Natural Production Forest Management (in process)

**E. Other publications**

1. Abstracts of NRM Project Reports

September 1993

Vol.1 - English version

Vol.2 - Indonesian version

December 1993

Vol.1 - English version

Vol.2 - Indonesian version

2. NRM Project Newsletter

No. 1 - September 1993

No. 2 - December 1993

No. 3 - January 1994

3. NRM Project Brochure

**F. Bappenas Seminars Held**

1. Forestry Sector Policy During the Second Long-Term Development Plan (February 1992)

2. The Role of Natural Resource Management During the Second Long-Term Development Plan (May 1992)
3. Input-Output Modelling of Environmental Planning (May 1993)
4. Eco-Labeling and Forestry Products (July 1993)

## G. Other Seminars

### 1. International Meetings

- Second Biennial International Conference Borneo Research Council, Inc., Sabah in July 13 - 17, 1992. The NRM/ARD Social Forestry Advisor (Mering Ngo) attended and presented a paper entitled: **"Structure of the Local communities Within and Around the Bukit Baka - Bukit Raya National Park, West/Central Kalimantan."**
- Quality of Life Survey of the ESCAP Region, Seoul, Korea in August 10 - 15, 1992. The NRM/ARD Macro Economist (Erik Scarsborough) attended and presented a paper entitled: **"Quality of Life with Respect to the Physical Environment in the Asia -Pacific Region."**
- Harvesting and Silviculture for Sustainable Forestry in the Tropics, Kuala Lumpur, Malaysia in October 5 - 9, 1992. This was attended with a paper jointly presented by NRM/ARD short-term Forestry Research consultant (Lisa Curran) and Ir. Nana Supriana from SBK, entitled: **"Forest Management Issues in Kalimantan"**
- What do Environmentalist Need from Economists, at the University of Tufts, Boston, November 11 - 14, 1992. The NRM/ARD Resource Economist (Clive Hamilton) attended and presented a paper entitled: **"Economic Values and Environmental Values: from Coolangubra to Kalimantan."**
- Trade, Knowledge, and the network Economy, Australia, December 7 - 16, 1992. The NRM/ARD Project Assistant (Edison Hulu) attended and presented a paper entitled: **"The Performance of Inter-Industrial Relationships Between Indonesia and Japan."**
- Study on the Quality of Life in the Asia - Pacific Region, UNDP, Bangkok, February 26-28, 1993. Attended by the NRM/ARD Macro Economist (Erik Scarsborough).
- Tropical Rainforest Research Current Issue Conference, Brunei, April 9 - 17, 1993. Attended by the West Kalimantan NRM/ARD Team Leader (Roy Voss).

- International Cocoa Conference, Bali, Indonesia, 1993. The NRM/ARD Forestry Advisor (Chris Bennett) attended and presented a paper entitled:

## 2. In-country Meetings

- Sustainable Tropical Forest Management, Hotel Horizon, Jakarta, December 9 - 10, 1991 (Colin MacAndrews and Tom McKenzie).
- The Role of Natural resource Accounting in Sustainable Development, State Minister for Population and the Environment, July 8, 1992 (Colin MacAndrews & Erik Scarsborough).
- Strategy for the Conservation and Management of Coral Reefs (Terumbu Karang), State Minister for Population and the Environment, August 7 - 8, 1992 (Colin MacAndrews, Graham Usher, and R.M. Rompas).
- Employment Effects of the wood-Based Processing Industry, Palembang, BAPPENAS - ILO, September 25, 1992 (Erik Scarsborough).
- Application of Research Results for Dipterocarpaceae Development, Samarinda, November 8 - 13, 1992 (Lisa Curran and Dwi Astiani (UNTAN) ).
- Peranserta Masyarakat Lokal dalam Pengelolaan Hutan di Indonesia, University of Indonesia & MoFr, February 9, 1993 (Mering Ngo).
- Strategi Nasional dan Aksi Mangrove di Indonesia, LIPI, February 11, 1993 (Colin MacAndrews and Erik Scarsborough).
- Environmental Business Management; Assessment of Threats and Opportunities in Indonesia, LPEM-UI and Lippo Land Development, Jakarta, November 18, 1993 (Ken Leathers)

**NATURAL RESOURCES MANAGEMENT PROJECT**  
**SUMMARY OF POLICY RECOMMENDATIONS**

## NATURAL RESOURCE MANAGEMENT POLICY RECOMMENDATIONS

Policymaking aimed at promoting sustainable natural resource use occurs in three key dimensions:

- (a) physical management of the natural resource base at the field level,
- (b) policy directed toward natural resource use at the sectoral level, and
- (c) impacts of policymaking at the macroeconomic or cross-sectoral level on the natural resource base.

Policymaking within the first dimension [i.e. (a)] may involve site-specific interventions that impact natural resource use within a localized area (e.g. "To preserve the productivity and natural beauty of Bunaken Island's coral reefs, the uses to which these reefs may be put must be limited."). Or it may aim at management of a specific resource across geographic areas (e.g. "To avoid excessive post-felling damage to the forest, all concessionaires must use wheeled skidders wherever conditions of terrain permit.").

By contrast, policymaking at the sectoral level (e.g. methods of allocating fishing rights or the level at which stumpage fees are set) and the macroeconomic level (e.g. rates of import or export taxes on natural resource-intensive goods) tends by nature to be non-site-specific.

The following summary of the policy recommendations formulated between Project start-up and this writing contains recommendations pertaining to all three dimensions of natural resource management policymaking.

### MACROECONOMIC AND CROSS-SECTORAL POLICIES

Article 34 of the Indonesian Constitution states that the country's natural resources are to be used to benefit all Indonesians. However, the current policy regime tends to distribute the benefits of natural resource use narrowly, and to threaten exhaustion of these resources within a few generations. The following policy changes are recommended to help reorient natural resource use towards a more sustainable pattern:

- (1) Adopt Article 34 of the Indonesian Constitution as the guiding principle of natural resource development.<sup>20</sup>
- (2) Recognize natural resource impacts, constraints, and efficiency in all economic plans and growth targets.<sup>20</sup>
- (3) Formulate a long-term, cross-sectoral natural resource development plan which specifies the role of each natural resource-intensive sector in economic development.<sup>20</sup>

- (4) Introduce natural resource accounting as a tool for assessing the impacts of project investments across diverse sectors.<sup>17,18,20</sup>
- (5) Examine the natural resource implications of the Government's on-going program of tariff reform.<sup>15</sup>
- (6) Revamp fiscal policy (taxes and subsidies) pertaining to natural resource use so as to allow the Government to capture a greater share of economic rent from natural resource exploitation.<sup>19</sup>
- (7) Allocate at least some portion of the economic rents from natural resource use captured by the Government to sustainable development initiatives.<sup>17,18,19,20</sup>
- (8) Eliminate the anti-employment bias inherent in the present natural resource development policy regime.<sup>21</sup>
- (9) Reform policies that underprice natural resources or subsidize their exploitation.<sup>17,18,20</sup>
- (10) Dismantle all export marketing boards in natural resource-intensive sectors, or at least make participation in their activities non-compulsory.<sup>22</sup>
- (11) Strategically plan foreign involvement in natural resource development and screen imported technologies with significant impacts on the natural resource base.<sup>20</sup>

## SECTORAL POLICIES

### Forestry Sector

There are a number of policy changes that would facilitate sustainable development of Indonesia's forestry resource. Important steps in this direction include making forest-based industries technologically more efficient, reforming the structure of incentives within the sector, improving international competitiveness, and decentralizing decision-making. To these ends, the following policy initiatives are recommended:

- (1) Remove price and quantity restrictions on forest-based exports.<sup>15,17</sup>
- (2) Raise government royalties on harvested log volumes by 100%.<sup>17,19,20</sup>
- (3) Shift from a subsidized operating environment to one reflecting increasingly scarce and costly raw materials.<sup>17</sup>
- (4) Introduce waste reduction incentives for wood-processing industries.<sup>17</sup>
- (5) Abolish the requirement that each concessionaire have access to facilities of processing of logs.<sup>17</sup>
- (6) Intensify management of and investment in natural forests and plantations.<sup>17</sup>
- (7) Enhance the economic and ecological benefits of mandated forest management practices as a means of encouraging their adoption by concessionaires.<sup>17</sup>

- (8) Counterbalance incentives that encourage concessionaires to maximize timber volume per hectare harvested with financial incentives that encourage ecological damage during log harvesting to be minimized.<sup>17</sup>
- (9) Require logging companies to post a performance bond equal to 75% of the value of the timber within their concession area. This bond would then be returned when criteria for sustainable management of that particular concession are met.<sup>17</sup>
- (10) Repeal the requirement that each concession have an associated forest plantation (HTI).<sup>4,17</sup>
- (11) Include reclamation and industrial plantation components in the HTI program.<sup>4,17</sup>
- (12) Allow private land rehabilitation companies to assume responsibility for forest reclamation.<sup>17</sup>
- (13) Prevent natural forests with high management potential to industrial plantations from being converted to plantations.
- (14) Limit activities in industrial plantations to producing cost-efficient timber for long-term industrial needs.<sup>4,17</sup>
- (15) Establish a widely representative and independent Forest Products Marketing Institute that advises all parties on industrial policy, strategy, management, and marketing.<sup>17</sup>
- (16) Assign a greater proportion of revenues from forestry royalties to local and provincial governments (perhaps 25% and 20% respectively vs. present levels of 11% and 9%).<sup>17,19,20</sup>
- (17) Establish widely representative Provincial Forestry Development Commissions (PFDCs) that advise the Ministry of Forestry on industrial development, provincial forest management, government forestry investments, and concession management and monitoring.<sup>17</sup>
- (18) Assign private companies, policed by the PFDCs, the responsibility for monitoring concession management and reporting logging volumes.<sup>17</sup>

### **Marine Sector**

Policy toward Indonesia's marine sector remains fragmented and dispersed across a large number of government agencies. This results in poorly-coordinated and often inefficient policy. Indonesia's essentially open-access marine development regime biases marine productive activities towards short-term gains in output, income, and foreign exchange earnings. This threatens the sector's prospects for sustainable development. The following policy initiatives are recommended as a first step in marine sector policy reform:

- (1) Use individual transferable catch quotas as the basic mechanism for assigning marine fishing rights.<sup>18</sup>

- (2) Institute a comprehensive plan and set of policies for development of open- water fisheries, aquaculture, and wetlands.<sup>18</sup>
- (3) Make marine sector policymaking the responsibility of a single Governmental agency.<sup>18</sup>
- (4) Integrate the role of traditional communities into marine sector policymaking.<sup>5,14,18</sup>

#### POLICY TOWARD PROTECTED AREAS

In order to preserve Indonesia's unique and rich biodiversity, the Directorate General for Forest Protection and Nature Conservation (PHPA) has designated 366 terrestrial, coastal, and marine protected areas. Integrating conservation with regional development needs within these 49.5 million hectares is an extremely large task.

If PHPA is to fulfill this challenging mandate, it will need to considerably upgrade its institutional capability. It must also enlist private sector support for its initiatives. The following policy initiatives are recommended as initial steps in this regard:

- (1) Establish a widely representative Protected Areas Institute (PAI) responsible for conducting policy analysis and strategic planning for the Protected Areas System (PAS).<sup>23</sup>
- (2) Decentralize protected area management and coordinate park management with local and provincial needs.<sup>23</sup>
- (3) Create Provincial Protected Areas Commissions (PPACs) responsible for advising and supporting PHPA in developing and managing protected areas within their respective provinces.<sup>23</sup>
- (4) Charge the PAI with building the PPACs' capacities to participate fully in protected area development within their respective provinces.<sup>23</sup>
- (5) Formalize PHPA's role as a guiding, steering, and coordinating body.<sup>23</sup>
- (6) Allow private sector contractors to develop and implement protected area management plans under PHPA supervision.<sup>23</sup>
- (7) Develop innovative and flexible guidelines for funding to support protected areas.<sup>23</sup>
- (8) Initiate a Land Status Change Committee that systematically addresses petitions to change protected area status or to undertake restricted activities within protected areas.<sup>20,23</sup>
- (9) Do away with current restrictions that limit PHPA's activities to areas within protected area boundaries.<sup>23</sup>
- (10) Assign the administration of protected areas and their buffer zones to a single administrative entity.<sup>23</sup>

- (11) Encourage PHPA to improve its relationship with local communities.<sup>23</sup>
- (12) Incorporate local community needs into the design of protected area management schemes.<sup>23</sup>

### COMMERCIAL FOREST MANAGEMENT

In addition to a policy environment conducive to sound management practices, sustainable commercial forestry sector development requires an effective regulatory framework. Unfortunately, the Indonesian Selective Cutting and Replanting System (TPTI) has as yet failed to provide a regulatory framework conducive to widespread adoption of sound forest management practices. Major obstacles in this regard are inadequate or inappropriate forest management regulations, a limited understanding of sound forest management practices by field staff, and use of inefficient harvesting technologies. The following policy initiatives are recommended as first steps in filling these gaps:

- (1) Make TPTI directives more transparent to foresters and forestry officials in the field.<sup>4</sup>
- (2) Deploy more staff in implementing the TPTI.<sup>4</sup>
- (3) Ensure that concessionaires, cruisers, and logging crews understand and observe timber cruising directives.<sup>4</sup>
- (4) Use volume, exploitation, and production factors that reflect a stand's predicted regenerative capability in calculating the allowable annual cut.<sup>4</sup>
- (5) Improve the enrichment, replanting, and nucleus tree components of TPTI regulations as a means of improving prospects for natural regeneration.<sup>4</sup>
- (6) Introduce regulations that limit damage from felling, skidding, and road building.<sup>10</sup>
- (7) Encourage replacing trucks with wheeled skidders on branch logging roads.<sup>10</sup>
- (8) Mitigate adverse impacts on the forest associated with existing logging roads.<sup>4</sup>
- (9) Control flammable residual logging wastes and deploy fire-fighting teams.<sup>10</sup>
- (10) Incorporate non-timber forest products into forest management policy.<sup>4,17,20</sup>

### SUPPORTING RESOURCES

Although correct macroeconomic and sectoral policies and an effective regulatory framework are crucial to a sound natural resource management regime, implementation of the latter depends on availability of human and physical resources as well as appropriate

information. The following initiatives relating to research, training, and information management are recommended in order to improve natural resource management in Indonesia:

#### The Knowledge Base

- (1) Collect and use appropriate baseline data when formulating integrated conservation or natural resource development schemes.<sup>4,5,14</sup>
- (2) Identify the fundamental causes of environmental degradation resulting from activities of residents living in areas within or adjacent to designated conservation or natural resource development areas.<sup>5,14</sup>
- (3) Formulate a generic model for sustainable, multiple-use management of wetlands and mangroves that recognizes both traditional and large-scale commercial uses of these resources.<sup>18</sup>
- (4) Test alternative forest management and harvesting methods in experimental demonstration plots.<sup>4,10</sup>
- (5) Equip timber cruisers with appropriate tree identification manuals and tools.<sup>11</sup>
- (6) Perform a survey of the distribution, use, management, and marketing of commercial timber species from Indonesian forests.<sup>4</sup>
- (7) Perform a survey of the distribution, use, management, and marketing of non-timber forest products.<sup>4</sup>
- (8) Inventory rare species of flora and fauna and their distribution.<sup>4</sup>
- (9) Establish herbaria as a means of assisting identification of floral species.<sup>11</sup>
- (10) Build and integrate natural resource and environmental management libraries and information systems.<sup>4,9,10,11</sup>
- (11) Support natural resource management research via appropriate facilities, educational opportunities, training in equipment operation and maintenance and funding.<sup>1,8</sup>
- (12) Introduce a single competitive awards scheme for natural resource management research.<sup>17</sup>
- (13) Focus research on resolution of natural resource management problems and the role of policy in resolving such problems.<sup>20</sup>

#### Human Resource Development

- (1) Develop a cadre of Indonesian scientists skilled in applied conservation and research focusing on resolution of natural resource management problems.<sup>2,4,5,8,9,10</sup>
- (2) Develop a cadre of Indonesian technicians trained in the operation and maintenance of research and resource management equipment.<sup>1,8,11</sup>
- (3) Provide training and equipment to all field personnel appropriate to proper implementation of all phases of the TPTI.<sup>1,4,7,8,10,11</sup>

- (4) Establish forest resource management demonstration centers at which foresters can be trained in improved methods of forest management, logging, and wood-processing.<sup>2,4,8,10,11,17</sup>
- (5) Develop a national cadre of taxonomists or parataxonomists as an aid to the correct identification of species of flora and fauna.<sup>11</sup>

#### NOTES

1. "Procurement Plan for Research Equipment at Bukit Baka and Equipment Installation at Samarinda Forestry Research Station", NRMP, January 1992.
2. "Report of the Short-term Agroforestry Advisor", NRMP, March 1992.
3. "Report on Topographic Mapping and Measuring of a Portion of Bukit Baka-Bukit Raya National Park [*Laporan Pengukuran dan Pemetaan Topografi Sebagian Daerah Taman Nasional Bukit Baka/Bukit Raya*]", NRMP, April 1992.
4. "Applied Research Recommendations for Production Forest Management", NRMP, May 1992.
5. "Balancing Forest and Marine Conservation with Local Livelihoods In Kalimantan and North Sulawesi", NRMP, May 1992.
6. "Proposal to the Government of Indonesia and USAID for the Development of Comprehensive Environmental and Natural Resource Accounts (CENRA) for Economic Planning and Environmental Management", NRMP, May 1992.
7. "Bukit Baka Mini-hydroelectric System Implementation Plan", NRMP, June 1992.
8. "Report on a Proposed Organizational Structure for the Bukit Baka Research Station", NRMP, June 1992.
9. "Environment Education and Awareness in Bukit Baka", NRMP, July 1992.
10. "Recommendations for Controlled Timber Harvesting in the PT. Sari Bumi Kusuma Forestry Concession", NRMP, Aug 1992.
11. "Cruiser Identifications at PT. Sari Bumi Kusuma and Local Uses of Trees by Local People", NRMP, December 1992.

12. "Community Water Supply for Bukit Baka Feasibility Study", NRMP, December 1992.
13. "Report on NRM Library Consultancy--September-December, 1992", NRMP, December 1992.
14. "Livelihood Strategies and Marine Resource Use Among Residents of Bunaken National Park, North Sulawesi: Recommendations for Local Involvement in Park Management", NRMP, December 1992.
15. "Trade and Exchange Rate Policy and Natural Resource Management During the Second Long-Term Development Plan (SLTDP) Period", NRMP (in progress).
16. "Policy Toward Foreign Direct Investment and Natural Resource Management During the SLTDP Period", NRMP (in progress).
17. "Forestry Sector Policy During the SLTDP Period", NRMP (in progress).
18. "Marine Sector Policy During the SLTDP Period", NRMP (in progress).
19. "Fiscal and Monetary Policy and Natural Resource Management During the SLTDP Period", NRMP (in progress).
20. "Overall Development Strategy and Natural Resource Management During the SLTDP Period", NRMP (in progress).
21. "The Employment Effects of Sectoral Policy in the Natural Resource-Intensive Sectors During the SLTDP Period", NRMP (in progress).
22. "Export Marketing Boards and Their Impact on the Natural Resource Base", NRMP (in progress).
23. "Policy Toward Protected Areas in Indonesia During the SLTDP Period", NRMP (in progress).
24. "Input-Output Analysis of Natural Resources and the Environment in Development Planning", NRMP, June 1993.

## APPENDIX 1

### RECOMMENDATIONS RELATING TO COMMUNITY PARTICIPATION

Even the best planned natural resource management schemes may fail if local community support for them is lacking. In addition, conservation and natural resource management initiatives developed without input from local residents often result in resource use conflicts. The following generic approaches to facilitating community participation in the design of conservation and natural resource management schemes as a means of ensuring local community support and absence of resource use conflicts are therefore recommended:

- (1) Recognize the diversity and site- and culture-specific nature of natural resource use patterns by residents living within or adjacent to designated conservation or natural resource management areas.<sup>5,14</sup>
- (2) To the extent possible, accommodate these resource use patterns when formulating natural resource management plans or integrated conservation and development schemes.<sup>5,14</sup>
- (3) Build initiatives for removing the fundamental causes of environmental degradation by local residents into conservation or natural resource development schemes.<sup>4,5,9,14</sup>
- (4) Support community initiatives that relieve pressure on the resources targeted by natural resource management schemes. Examples include strengthening distribution chains through which renewable non-timber forest products are marketed, encouraging sustainable agroforestry initiatives on eroded land, upgrading educational services that expand livelihood opportunities, encouraging offshore fishing in areas in which near-shore areas are overfished, and supporting locally-managed small-scale ecotourism initiatives.<sup>5,14</sup>
- (5) Initiate public information campaigns and "community participation committees" when formulating conservation or natural resource management plans.<sup>9</sup>
- (6) Collaborate with both popular and officially-designated community leaders in distributing the benefits of integrated conservation and development among local residents.<sup>5,9,14</sup>
- (7) Initiate sanitation, electrification, education, and other community assistance projects that are consistent with local resource use patterns and capabilities.<sup>12</sup>
- (8) Encourage expansion of opportunities for direct employment and markets for local produce when formulating or implementing conservation or natural resource management initiatives.<sup>4,5,14</sup>
- (9) Build good foundations for collaborative resource development, conservation, and development efforts through communicative and respectful approaches to local communities.<sup>4,5,9,12,14,20</sup>
- (10) Support collaborative natural resource development, conservation, and community-building initiatives via community assistance projects that respond to locally- identified needs, priorities, and capacities.<sup>4,5,12,14</sup>
- (11) Guide community assistance projects towards community self-reliance.<sup>2,4,5,12,14</sup>

- (12) Raise the level of awareness of local residents about the consequences of environmental degradation in areas adjacent to villages or communities via a national environmental awareness program appropriately modified for specific areas.<sup>4,5,9,14</sup>
- (13) In vulnerable communities and the public-at-large, foster the notion that people can individually and collectively preserve the environmental integrity of their surroundings.<sup>4,5,9,14</sup>

## APPENDIX 2

### SITE-SPECIFIC NATURAL RESOURCE MANAGEMENT RECOMMENDATIONS

NRMP field activities have generated a large amount of information relating to the operation of social and ecological parameters in the areas adjacent to its two field stations. These have led to the following site-specific natural resource management recommendations:

#### **Bunaken National Marine Park, North Sulawesi**

- (1) Collect baseline data relating to the sociological aspects of coastal and marine resource use before finalizing the management plan for Bunaken National Marine Park.<sup>5,14</sup>
- (2) Clarify which agencies or entities have jurisdiction over use of specific lands or resources within the park prior to finalizing marine resource management plans.<sup>4,5,14</sup>
- (3) Resolve the following resource use conflicts: use of materials from live coral reefs for construction, harvesting mangrove resources for commercial purposes, near-shore commercial fishing employing the use of heavy nets, cultivation agricultural crops on sharply sloping terrain in the absence of soil conservation measures, disposal of human waste in near-shore areas, spontaneous informal-sector tourist infrastructure development.<sup>14</sup>
- (4) Address the following socioeconomic conditions leading to environmental degradation: limited supplies of household labor, high population density, skewed distribution of fertile land among local residents, seasonal shortages of fresh water, low or marginal levels of productivity in agricultural activities, poor access to offshore fishing equipment, religious and ethnic barriers to inter-community cooperation, poor representation of local interests by some village leaders, limited educational opportunities, and limited income-generating opportunities for women.<sup>14</sup>
- (5) Examine multiple-use options as means of resolving the above problems.<sup>4,5,14</sup>
- (6) Check speculation in land prices and unplanned development of tourist infrastructure by providing correct information regarding future development of tourism within the park.<sup>5,14</sup>

#### **Bukit Baka/Bukit Raya National Park, West/Central Kalimantan**

- (1) Recognize the diversity of livelihood strategies within and across local villages.<sup>5</sup>
- (2) Recognize household rice security as the dominant feature of decisionmaking concerning community resource use.<sup>5</sup>
- (3) Resolve the conflicts between commercial and community demands for timber and non-timber resources.<sup>4,5,9</sup>

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- (4) Determine how local forest species might be used for development of sustainable community agroforestry, extractive reserve harvesting, and cottage industry.<sup>4,5,14</sup>
- (5) Design a community extractive reserve that accommodates both destructive and non-destructive uses of local resources.<sup>4,5,14</sup>
- (6) Encourage the cultivation of agroforestry and perennial crops via secure land tenure or stewardship arrangements.<sup>2,4,5,9,12</sup>
- (7) Develop marketing networks for the rattan-based cottage industry.<sup>4,5</sup>
- (8) Encourage community initiatives for controlling fire, erosion, and ecological damage via environmental awareness programs.<sup>9</sup>
- (9) Construct community water supply systems in eight communities via cooperation among PT Sari Bumi Kusama, USAID, and local residents.<sup>4,5,9,14</sup>
- (10) Establish an herbarium as a means of supporting the inventorying of local species of flora.<sup>11</sup>

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## POLICY ANALYSTS TRAINED IN POLICY SECRETARIAT

Name	Degree	University	Age
<b>A. Senior Research Associates</b>			
Soegolo	Industrial Engineering	Inst. of Technology Bandung	43
Edison Hulu	Economics	University of Indonesia	34
Meyer Siahaan	Economics	Univ. of Queensland	42
Fadhil Hasan	Agricultural Economics	Univ. of Iowa (USA)	34
Dedi Nuryana	Statistics	IPB-Bogor	29
<b>B. Research Assistants</b>			
<b>1. A. I/O Modelling</b> (December 1992-April 1993)			
Suharno	Agribusiness	IPB - Bogor	32
Clarita Ligaya	Agriculture	IPB - Bogor	24
Aida Umayu	Economics	University of Indonesia	27
Jaka Setiawan	Economics	Gajah Mada University	26
Agus Sutjadi	Economics	University of Sriwijaya	25
Irebella	Economics	University of Indonesia	26
Marlianis	Economics	University of Indonesia	29
<b>2. A. Trade &amp; Exchange Rate / Employment Effect of Sectoral on the Natural Resource-Intensive Sectors</b> (February-December 1993)			
Bagus T. Nugroho	Economics	Islamic Univ. of Indonesia	27
Gunadi	Economics/Management	UKI	24
Rudianto	Accounting	University of Brawijaya	27
D. Simbolon	Economics	University HKBP Nommensen	29
Nabiha Z. Muhamad*	Mathematics	University of Indonesia	24
<b>3. Foreign Direct Investment</b> (May-September 1993)			
Triasi S. Sibuea*	Mathematics	University of Sumatera Utara	24
Erhash	Economics	Tri Dharma Widya University	24
Tonny Sinaga	Economics	University of Indonesia	27
Evelina Hartanti*	Economics/Management	University of Sebelas Maret	23
Mangasa Sitanggang	Accounting	University HKBP Nommensen	27
<b>4. Export Marketing Boards &amp; Their Impact on the Natural Resources Base</b> (September'93 - January 1994)			
Danang Joko Ismoyo	Economics	University of Krisnadwipayana	25
Leonardus S. Pamungkas	Economics	University of Padjadjaran	24
Tommy Martakusuma	Economics	University of Islamic Indonesia	25
Ratih Prabandari*	Mathematics	Inst. of Technology Bandung	30
Arief R. Rasyid	Economics	University of Trisakti	27
Siti A. Damayanti*	Economics	University of Brawijaya	24

\* Female

## GOI Natural Resources Policy Analysts Undertaking MSc. Studies in USA

NAME	UNIVERSITY	FIELD	DEPARTURE	RETURNING
<b>A. ALREADY ADMITTED</b>				
1. Sigit Pramono	PURDUE University	Forest & Natural Resources	August 1992	1994
2. Agus Sutito	NORTH DAKOTA University	Natural Resources	August 1992	1994
3. Adi Susmianto	MICHIGAN University	Natural Resources Mngmnt	August 1992	1994
4. Asep Sugiarta	University of NEW MEXICO	Wildlife Management	August 1992	1994
5. Sri Yanti W.*	CARNEGIE MELLON University	Resource Economics	January 1993	1995
6. Sri Winenang	LOUSIANA STATE University	Wildlife Management	August 1993	1995
7. Diana A. Barus*	University of CENTRAL FLORID	Environmental Sciences	August 1993	1995
8. Rahayu Riana*	MICHIGAN University	Forestry	August 1993	1995
9. Humala Pangaribuan	University of MAINE	Forestry	August 1993	1995
10. Emmy Endah Suwarni*	University of MAINE	Wildlife Management	August 1993	1995
11. Joko Pramono	IOWA STATE University	Forestry	August 1993	1995
12. Oktavianus Lingkubi	NORTH DAKOTA University	Natural Resources Mngmnt	August 1993	1995
<b>B. SPRING</b>				
1. Wahyuningsih Darajati*	University of Illinois	Environmental Science	1994	
2. Tamtama Poerwowinoto	Ohio State University	Environmental Planning	1994	
3. Ahmad Perwira Mulia	University of Florida	Marine Management	1994	
4. Gusti Hardiansyah	Washington State University	Forest Economics	1994	
5. Neil Makinuddin	North Dakota State University	Rainforest Management	1994	
6. Rusydi	Oklahoma State University	Forest Management	1994	
<b>C. SPRING/FALL</b>				
1. Tri Meinartini*	In process	Public Administration	1994	
2. Ida Ayu Purbasari*	In process	Coastal & Marine Env. Mgmt	1994	
3. Suraya Afiff*	In process	Coastal/Marine Ecosystem	1994	
4. Sudarsono Soedomo	In process	Forest Resources Management	1994	
<b>D. RESERVES</b>				
1. Izeфри Caniago	In process	Natural Resources Management	1994	

\* Female

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**IMPLEMENTATION SCHEDULE  
POLICY ANALYSIS STUDIES IMPLEMENTED  
BY NRMP POLICY SECRETARIAT**

NO	POLICY STUDIES	1993												1994								
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
1	Overall Development Strategy																					
2	Trade and Exchange Rate Policy *																					
3	Foreign Direct Investment Policy *																					
4	Forestry Sector Policy																					
5	Marine Sector Policy																					
6	The Employment Effects of Sectoral Policy on the Natural Resource-Intensive Sectors																					
7	Export Marketing Boards and Their Impact on The Natural Base																					
8	Policy Toward Protected Areas																					
9	Construction of Input-Output Model Incorporating Natural Resource Variables																					
10	Integrated Development																					
11	Community Development																					

 = start up work

 = full implementation

 = follow up training and additional runs on model as requested

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\* Addresses how policymaking in this area impacts natural resource parameters.

## HOST COUNTRY CONTRACTS COMPLETED BY DECEMBER 1993

NO.	TITLE OF STUDY	CONTRACTOR	INTERIM REPORT PRESENTED	FINAL REPORT PRESENTED
1.	DEVELOPMENT OF A PROCEDURE FOR EVALUATING THE POTENTIAL OF NATURE-BASED TOURISM DEVELOPMENT WITH TEST APPLICATION IN NORTH SULAWESI	PT. UNISYSTEM	Presented 14 July 1993	Final Report completed (in English and bhs Indonesia)
2.	EVALUATING INSTITUTIONAL ARRANGEMENT AND POLICIES FOR MULTIPLE-USE CONSERVATION AREA MANAGEMENT: PILOT APPLICATIONS FOR THE BUKIT BAKA/BUKIT RAYA AND THE BUNAKEN NATIONAL PARKS	PT. INDOCONSULT	Presented June 21, 1993	Final Report completed (in bhs Indonesia) (no English version)
3.	DEVELOPING REGULATIONS AND GUIDELINES FOR PROTECTED AREAS IN INDONESIA	PT. INDRA DEVELOPMENT CONSULTANT	Presented June 21, 1993	Final Report completed (in English and bhs Indonesia)
4.	ENHANCING THE ROLES OF LOCAL COMMUNITIES IN THE DEVELOPMENT OF FORESTRY RESOURCES	PT. ARDES PERDANA	Presented 14 July 1993	Final Report completed (in bhs Indonesia) (no English version)
5.	DESIGN OF A HUMAN RESOURCES DEVELOPMENT STRATEGY TO SUPPORT IMPROVED ENVIRONMENTAL AND NATURAL RESOURCES MANAGEMENT	PT. NAKARYA SEMBADA CONSULTANTS	Presented June 22, 1993	Final Report completed (in bhs Indonesia) (no English version)

LONG-TERM NRM/ARD TECHNICAL ASSISTANCE TEAM

ANNEX 7

NO.	NAME	POSITION	LOCATION	1993											
				J	F	M	A	M	J	J	A	S	O	N	D
1.	COLIN MACANDREWS	CHIEF OF PARTY	BAPPENAS												
2.	ERIK SCARSBOROUGH	MACROECONOMIST	BAPPENAS												
3.	CLIVE HAMILTON*	RESOURCE ECONOMIST	BAPPENAS												
4.	KEN LEATHERS**	SENIOR RESOURCE ECONOMIST	BAPPENAS												
5.	CHRIS BENNETT	FOREST ECONOMIST	FORESTRY												
6.	JAMES TAYLOR	FOUNDATION ADVISOR	JAKARTA												
7.	FERNANDO POTESS	NATURE CONSERVATION ADV.	BUKIT BAKA												
8.	MERING NGO	SOCIAL FORESTRY ADVISOR	BUKIT BAKA												
9.	GRAHAM USHER	MARINE CONSERVATION ADVISOR	MANADO												
10.	R.M. ROMPAS	MARINE CONSERVATION ADVISOR	MANADO												
11.	ARIEF WICAKSONO	COMMUNITY DEVELOPMENT ADVISOR	MANADO												

//// : initially short-term

\* Left in August 1993

\*\* Replaced Clive Hamilton in August 1993

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## SHORT-TERM NRM/ARD TECHNICAL ASSISTANCE TEAM

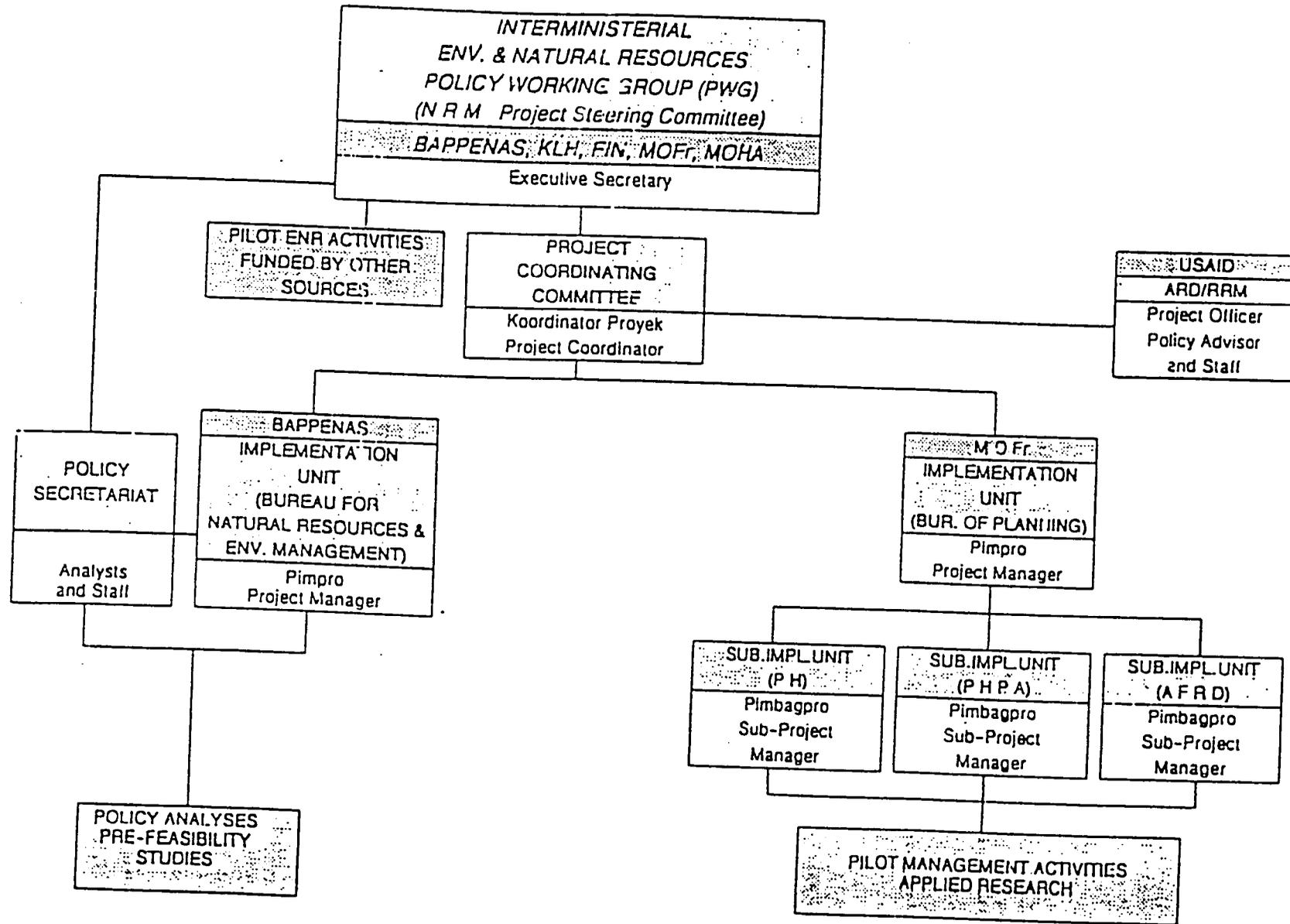
ANNEX 8

NO.	NAME	POSITION	COUNTERPARTS	M/M	DATES
1.	ROY VOSS	FORESTRY RESEARCH/PROCUREMENT	BUKIT BAKA	3	1 Nov. - 20 Dec '91
2.	LISA CURRAN	FORESTRY RESEARCH	BUKIT BAKA	3.5	20 Nov. '91 - 5 May '92
3.	MONITA KUSNETI	FORESTRY RESEARCH	BUKIT BAKA	3	18 Nov. '91 - 5 Mar. '92
4.	STEVE DENNISON	PROJECT MANAGEMENT	BAPPENAS	0.5	January '92
5.	JILL BELSKY	RURAL SOCIOLOGIST	BUKIT BAKA	1	Jan - Mar. '92
6.	WILLIAM GRANERT	AGROFORESTRY/COM. DEVELOPMENT	BUKIT BAKA	1.5	19 Feb. - 2 Apr. '92
7.	MIKE JOHNSON	MINIHYDRO ELECTRICITY STATION	BUKIT BAKA	0.5	1 Mar. - 15 Apr. '92
8.	SAHRI DENNY, cs	TOPOGRAPHY SURVEY	BUKIT BAKA	1.5	10 Mar. - 24 Apr. '92
9.	HENRY PESKIN	NATURAL RESOURCE ACCOUNTING	BAPPENAS	0.5	20 Apr. - 2 May '92
10.	JOY HECHT	NATURAL RESOURCE ACCOUNTING	BAPPENAS	1	20 Apr. - 2 May '92
12.	JOHN HENDRISON	FORESTRY HARVESTING	BUKIT BAKA	1	1 Jul. - 8 Aug. '92
13.	SUPARMAN	FORESTRY INDUSTRY	BUKIT BAKA	1	July - Sept. '92
14.	SUPRIYO AMBAR	ENVIRONMENTAL ASSESSMENT	BUKIT BAKA	1	July - Sept. '92
15.	KUNKUN GURMAYA	ENVIRONMENTAL ASSESSMENT	BUKIT BAKA	1	July - Sept. '92
16.	LISA CURRAN	FORESTRY RESEARCH	BAPPENAS	3	July - Sept. '92
17.	ISKANDAR	TPTI STUDY	BAPPENAS	3	July - Sept. '92
18.	HENRY PESKIN	NATURAL RESOURCE ACCOUNTING	BAPPENAS	0.5	17-27 Sept. '92
19.	SEAN FOLEY	INPUT-OUTPUT MODELLING	BAPPENAS	1.5	14 Sept. - Oct. '92
20.	GLENN MARIE LANGE	INPUT-OUTPUT MODELLING	BAPPENAS	0.5	1-15 Oct. '92
21.	JIM JARVIE	TAXONOMIST	MoFr.	2	Sept - Oct. '92
22.	JILL BELSKY	RURAL SOCIOLOGIST	PHPA	1	18 Sept. - 17 Oct. '92
23.	DAHLAN CARTWRIGHT	LIBRARY	NRMP	1	Sep. - Dec. '92
24.	RICK MACGOWAN	POTABLE WATER SUPPLY	BUKIT BAKA	2	Nov.-Dec'92 & May'93
25.	ALFONSO RIEWPASSA	POTABLE WATER SYSTEMS	BUKIT BAKA	2	Nov.'92 - Dec. '93
26.	SOEGOLO	INPUT-OUTPUT MODELLING	BAPPENAS	4	17 Dec 92 - Apr 93
27.	FAYE DUCHIN	INPUT-OUTPUT MODELLING	BAPPENAS	0.5	1 - 15 Aug 92
28.	MIKE JOHNSON	MINIHYDRO ELECTRICITY STATION	SBK	0.5	1 - 15 Apr 92
29.	PETER BURBRIDGE	COMPETITIVE RESEARCH AWARDS	MoFr.	0.5	4 - 21 Jan 93
30.	JOY HECHT	MANAGEMENT INFORMATION SYSTEM	NRMP	0.75	10 Jan - 8 Feb 93
31.	A. MATJIK	MANAGEMENT INFORMATION SYSTEM	NRMP	1	28 Jan - 28 Feb 93
32.	NANCY BERGAU	ENVIRONMENTAL EDUC. & AWARENESS	PHPA	2	Feb - Mar 93
33.	MEYER SIAHAN	TRADE & EXCHANGE RATE POLICY	BAPPENAS	2	Mar - May 93
34.	NANCY BERGAU	ENVIRONMENTAL EDUC. & AWARENESS	PHPA	2	5 Apr - 9 Jun 93
35.	MARCEL DE BRUNE	COMMUNITY DEVELOPMENT	NGOS	1.5	12 Apr - 31 May 93
36.	KATHRYN QUICK	NRM NEWSLETTER EDITOR	NRMP	2.5	Apr - Dec 93
37.	EDWARDS - MCKINNON	REGIONAL PLANNING	MOFR, KANWILS	1	29 Apr - May 93
38.	TIM G. O'BRIEN	FIELD SKILLS TRAINING	PHPA	0.5	18 Apr - 1 May 93
39.	MARGARET KINNAIRD	FIELD SKILLS TRAINING	PHPA	0.5	26 Apr - 8 May 93
40.	KEN LEATHERS	MACRO POLICY - EMPLOYMENT STUDY	BAPPENAS	1	5 Jun - 5 Jul 93
41.	RUTH CAHILL	ACCOUNTING	NRMP	0.5	14 - 30 Jun 93
42.	ANDREA KATZ	MACRO POLICY - MARINE SECTOR	BAPPENAS	1	5 Jul - 5 Aug 93
43.	JOY HECHT	MANAGEMENT INFORMATION SYSTEM	NRMP	0.5	18 Jul - 8 Aug 93
44.	HASRAT MADIADIPURA	DBASE PROGRAMMER (MIS)	NRMP	0.5	21 Jul - 31 Dec 93
45.	MIKE HEPELL	SOCIO-ECONOMIC SURVEY	PHPA	1	4 Aug - 2 Oct 93
46.	IAN ARMITAGE	FOREST MANAGEMENT SPECIALIST	MoFr	1.5	4 Aug - 17 Oct 93
47.	JONATHAN HODGKIN	POTABLE WATER SYSTEMS	BUKIT BAKA	0.5	3 - 17 May 93
48.	JANIS TOGASHI	TARIFF SPECIALIST	BAPPENAS	0.75	13 Sep - 9 Oct 93
49.	STEVE DENNISON	FORESTRY (TPTI)	MoFr	1	11 Sep - 9 Oct 93
50.	ARTHUR KLASSEN	FOREST MANAGEMENT SPECIALIST	MoFr	2.5	19 Sep - 3 Dec 93
51.	RICHARD SANDLER	ECO-TOURISM DEVELOPMENT	PHPA	1	26 Sep - 25 Oct 93
52.	DEDI NURYANA	TRADE & EXCHANGE RATE POLICY	BAPPENAS	6	1 Oct 93 - 31 Mar 94
53.	JOACHIM METZNER	PROTECTED AREAS POLICY STUDY	BAPPENAS	1.5	9-28 Oct 93/8-27 Nov 93
54.	FADHIL HASAN	PROTECTED AREAS POLICY STUDY	BAPPENAS	1	1 - 27 Nov 93
55.	MIKE HEPELL	MANAGEMENT PLAN - BB-BR	PHPA	1	25 Oct - 19 Nov 93
56.	KUNKUN GURMAYA	MANAGEMENT PLAN - BB-BR	PHPA	0.5	25 Oct - 6 Nov 93
57.	HARIJANTO SUWARNO	PUBLIC AWARENESS MEDIA	PHPA	3	15 Nov - 10 Feb 94
58.	REINER OINTOE	PUBLIC AWARENESS TRAINING	PHPA	0.5	17 Nov - 3 Dec 93
59.	SUWIRYO ISMAIL	PUBLIC AWARENESS TRAINING	PHPA	0.5	17 Nov - 3 Dec 93
60.	OZAY MEHMET	EMPLOYMENT EFFECT POLICY STUDY	BAPPENAS	1.5	Sep - Dec 93
61.	SIH YUNIATI	COMMUNITY DEVELOPMENT	NGOS	0.5	22 Nov - 3 Dec 93
62.	HARYONO	COMMUNITY DEVELOPMENT	NGOS	0.5	22 Nov - 3 Dec 93
63.	ALIX FLAVELLE	SKETCH MAPPING BUKIT BAKA	PHPA	1.5	25 Oct - 5 Dec 93
64.	WISMOYO SUHARDI	FORESTRY SECTOR STUDY	BAPPENAS	3	9 Dec - 15 Feb 94
		TOTAL		88.5	

## ANNEX 9

LOCAL ASSISTANTS – HELPING PROJECT ACTIVITIES IN THE FIELD SITES  
(BUKIT BAKA / BUKIT RAYA AND BUNAKEN)

POSITION	LOCATION	ORGANIZATION	NAME	DATES
<b>WEST KALIMANTAN</b>				
<u>Bukit Baka Support Staff</u>				
Field Assistant (Biodiversity)	Bukit Baka	Pontianak	Izefri	June – Dec. 1993
Field Assistant (Conservation)	Bukit Baka	Pontianak	Ali Hayat	June – Dec. 1993
Field Assistant (Agronomist)	Bukit Baka	Pontianak	Yuliantini	August – Dec. 1993
<b>MANADO</b>				
Field Assistant (Community Development)	Bunaken	Manado	Verrianto	July – ongoing 1993
Field Assistant (Community Development/NGOs)	Bunaken	Manado	Zohan	Sept. – ongoing 1993



**I. POLICY WORKING GROUP (PWG)**

**MEMBERS :**

1. Dr. Sayuti Hasibuan
2. Dr. Herman Haeruman
3. Ir. Aca Sugandi
4. Sugeng Notosaputro
5. Ir. Sutisna Wartaputra
6. Dr. Dedi M. Riyadi
7. Dr. Ali Kodra
8. Dr. Ir. Moh. Ikhwanuddin
9. Dr. Ngaloken Ginting
10. Dr. Agus Pakpahan

**LIST OF MEETINGS :**

- 5 March 1991
- 10 September 1992
- January 1993

**II. PROJECT COORDINATING COMMITTEE (PCC)**

**MEMBERS :**

1. Dr. Herman Haeruman
2. Ir. Tamtama Purwowinoto
3. Ir. Bambang Soekartiko
4. Ir. Harsono
5. Ir. M. Ari Soedarsono
6. Ir. Waskito Suryodibroto
7. Mr. Jerry Bisson
8. Ir. Moh. Kuswanda, MF
9. Ir. Idar Nasution
10. Dr. Ombo Satjapradja

**MEETINGS :**

- 27 February 1991
- 10 September 1991
- 21 October 1991
- 20 December 1991
- 11 March 1992
- 9 July 1992
- 8 December 1992