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NATURAL RESOURCES MANAGEMENT PROJECT

BAPPENAS – Ministry of Forestry
Assisted by
USAID

One Year Operational Plan (1994 – 1995) for the BUKIT BAKA – BUKIT RAYA NATIONAL PARK

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PREFACE

The management of the Bukit Baka-Bukit Raya National Park (BB-BR NP) is guided by a set of three management documents produced at one, five, and 25 year intervals.

The 25 Year Management Plan (MP) is a flexible and general guideline as to how the National Park's (NP's) resources are to be managed for both natural resource base conservation and the benefit of society for a period of 25 years. The plan offers guidelines and management prescriptions, and identifies program priorities and organizational structures needed to attain BB-BR NP's nature conservation and socioeconomic development goals. It also directs the development of facilities and institutions needed to support the management and potential use of natural resources.

The Five Year Development Plan's (DP) purpose is to advance management prescriptions stated in the 25 year MP working framework. DPs describe general mid-term management objectives and activities to accomplish projected long-term NP goals and objectives. Five year DPs prescribe objectives, scope of activities, time frames, implementing entities, and management prescriptions for the various Sub-Programs within the BB-BR NP's functional program: The Environmental Management and Human Development Program.

Annual Operational Plans (AOP) describe specific short-term activities to be accomplished on a yearly basis, according to the Indonesian fiscal year, and as prescribed by the BB-BR NP 25 Year MP. These plans are produced annually to define objectives and identify activities, management conditions, and budgets to manage individual NP Sub-Programs. Management decisions for AOPs are guided by the NP's nature conservation and local community socioeconomic development short-term goals.

This document is the first BB-BR NP Annual Operational Plan. The plan describes specific short-term activities to be accomplished by the BB-BR NP's Environmental Management and Community Development Program during the fiscal year of 1994-1995. This AOP is guided by the framework of NP priorities and objectives to manage NP resources and promote environmental conservation in the Bukit Baka and Bukit Raya region of West and Central Kalimantan.

BUKIT BAKA-BUKIT RAYA NATIONAL PARK SITUATION MAP



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1. INTRODUCTION

Conservation of nature denotes to maintain natural conditions which give ecosystems and related biotic components the opportunity to continually evolve and adapt to ever changing environments.

As prescribed in its Management Plan, the Bukit Baka-Bukit Raya National Park goal for nature conservation is to advance activities that preserve genetic diversity and ensure that ecosystems, ecological processes, and life-support systems are maintained.

The national park's nature conservation efforts are guided by the relationships between regional living natural resources and human economic and social development. An underlying working premise of the Park Management Plan is that nature conservation goals are related to human socioeconomic development objectives. Therefore, a basic principle of the MP is to combine nature conservation and human development elements to promote the development of local populations and the nature conservation objectives of the Park. The national park incorporates its underlying working premise within its long-term goals and objectives through its Functional Program.

2. NATIONAL PARK VISION, GOALS, AND OBJECTIVES

2.1 National Park Vision and Vision Components

The vision of the Park, which guides its management goals and objectives and helps publicize the Park for tourism, includes nature conservation as well as human development aspects. The national park vision is:

Bukit Baka-Bukit Raya National Park comprises pristine montane, semi-montane and lowland tropical forest modified in part by the economic activities of local Dayaks. It represents a cross section of Kalimantan for the last millennium and has great potential visitor appeal.

Table 1. Park Vision Components

- | |
|---|
| <ul style="list-style-type: none">- Conserve pristine forest areas for posterity and, where practical, reintroduce species made extinct by human activities.- Allow forests to regenerate in areas altered by human economic activities.- Conserve historical human artifacts located within the boundaries of the Park.- Stabilize local agricultural, hunting, and gathering activities while allowing for human adaptations and for the conservation of flora and fauna.- Encourage the continuing development of traditional cultural activities of local Dayaks to supplement the Park's visitor appeal. |
|---|

2.2 Primary Goal

The national park primary goal ensures the conservation of outstanding natural values on which many other activities of the Park such as research and tourism depend. The national park primary goal is to:

Protect and maintain a natural and self-sustaining tropical rainforest expanse which will enable each ecosystem and its constituent biotic elements to continue to adapt to the demands of the environment.

Table 2. Primary Goal Objectives

-	Allow natural environmental processes to continue with the minimum of disturbance.
-	Protect and conserve the natural environment and landscape, including water catchments, rivers and streams.
-	Protect, maintain and, where possible, enhance wilderness values.
-	Develop particular programs to protect significant flora, fauna and landform.
-	Manage and rehabilitate damaged habitats.
-	Make positive action to reintroduce extinct natural species which formerly were resident in the Park.
-	Provide for and encourage scientific research that is compatible with the goals of the Park.
-	Take adequate precautions to prevent the loss of any part of the Park from fire.
-	Take necessary steps to prevent any threat to the Park's integrity from illegal activities such as timber extraction and mining.
-	Control and, where possible, eradicate exotic plants, animals and diseases.

2.3 Secondary Goal

The national park secondary goal recognizes long term Dayak activities within the Park and the fact that they constitute a reservoir of knowledge and an important human resource which can contribute to attain the primary goal. The secondary national park goal is to:

Provide local communities with the opportunity to continue to pursue traditional methods of enjoying the benefits of the local rainforest and rivers flowing through it so that their cultures will continue to develop with reference to the rainforest. Part of that development will be an understanding of the value of sustaining that resource.

Table 3. Secondary Goal Objectives

- | |
|--|
| <ul style="list-style-type: none">- Establish and maintain a partnership with local Dayak communities in the management of the Park and in achieving its goals.- Conserve and protect sites and areas of cultural and historical significance.- Accommodate traditional hunting and gathering practices so long as they do not conflict with the primary goal of the Park. |
|--|

2.4 Tertiary Goal

A third goal of the national park recognizes that the Park does not enjoy pristine isolation from the economic activities around its borders. The third goal of the national park is to:

Promote ecologically viable land use practices in areas adjacent to the park and to assist in the development of socioeconomic opportunities for local communities so that they are able to enjoy a sustainable quality of life which does not threaten the integrity of the Park.

Table 4. Tertiary Goal Objectives

-	Promote the well-being of local Dayak communities.
-	Assist in the development of sustainable land use practices on the part of local communities.
-	Minimize the impact of adjacent land uses upon Park values and recreation opportunities.

2.5 Promotional Goal

The fourth national park goal recognizes the need to promote environmentally conscious and better educated communities. The fourth goal of the national park is to:

Enhance the Park's facility as a place for visitors to enjoy an undisturbed rainforest and other natural features and to gain the opportunity of appreciating the Dayak achievement of interpreting the rainforest for their own adaptation.

Table 5. Promotional Goal Objectives

-	Provide a range of opportunities for appropriate recreational use, tourism and enjoyment of the Park.
-	Promote the Park as a valuable world resource as a basis for fund raising activities.
-	Promote an appreciation and understanding of Park natural and cultural values.

3. GENERAL MANAGEMENT OBJECTIVES

Bukit Baka-Bukit Raya National Park's management policy comprises three management objectives to support the Park goals.

3.1 Intensify the Protection of National Park Biota

Table 6. National Park Resource Protection Tasks

<ul style="list-style-type: none">- Maintain natural distributions, characteristics, and interactions of indigenous plant and animal species.- Allow natural ecosystem processes with few alterations by humans.- Manage and rehabilitate damaged habitats to improve protected plant and animal species components.- Discourage potentially destructive activities which threaten ecosystem components and functions.- Manage the Park, including its Collaboration-Buffer Zones, as a single management unit.

3.2 Increase Local Community Welfare

Table 7. National Park Community Welfare Tasks

<ul style="list-style-type: none">- Create Collaboration-Buffer Zones adjacent to the national park to help maintain local ecosystem integrity by expanding habitats to support viable species populations.- Integrate regional conservation and socioeconomic development activities to strengthen long-term national park goals for biological conservation and socioeconomic development.- Accommodate local community forest resource needs so that their demands do not conflict with the goals and objectives of the Park.- Encourage ecologically and economically viable land-use practices in Traditional Use Zones, and Collaboration-Buffer Zones.- Promote an active and continuing cooperation between the national park management and the provincial governments in the implementation of Park policies.

3.3 Increase Awareness for Nature Conservation

Table 8. National Park Conservation Awareness Tasks

To increase people's awareness for nature conservation, the Park will develop regional environmental conservation awareness programs to promote social support for national park goals through recreation, education, training, and research.

4. NATIONAL PARK FUNCTIONAL PROGRAM

Principal Management Objective

Execute all Park development program components

The National Park Functional Program is the program through which the Park administers all conservation, community development, recreation, research, monitoring, and public relations activities. This Program is guided by the national park vision and consists of seven Sub-Programs, comprising components and activities needed to attain Park development and achieve Park goals and objectives.

Table 9. National Park Functional Program Sub-Programs

-	Resource Conservation Sub-Program.
-	Community Development Sub-Program.
-	Recreation and Interpretation Sub-Program.
-	Research and Development Sub-Program.
-	Implementation Support Sub-Program.
-	Monitoring and Evaluation Sub-Program
-	Public Relations Sub-Program

Table 10. Bukit Baka-Bukit Raya National Park Management Policy

MANAGEMENT POLICY		
PROTECT NATIONAL PARK BIOTA	INCREASE LOCAL COMMUNITY WELFARE	INCREASE NATIONAL PARK AWARENESS
<p>Maintain natural distributions, characteristics, and interactions of biota.</p> <p>Limit ecological alterations by humans.</p> <p>Manage and rehabilitate damaged habitats.</p> <p>Prevent destructive activities to national park ecosystems.</p> <p>Manage national park and Collaboration-Buffer Zones as a single management unit.</p>	<p>Create Collaboration-Buffer Zones for ecosystem integrity and population habitat expansion.</p> <p>Integrate national park regional conservation and socioeconomic development activities.</p> <p>Accommodate local community forest resource needs that do not conflict with Park goals and objectives.</p> <p>Encourage ecologically and economically viable land-use practices.</p> <p>Promote cooperation between the Park and the provincial government to implement Park policies.</p>	<p>Increase people's awareness for nature conservation through:</p> <p>Recreation</p> <p>Education</p> <p>Training</p> <p>Research.</p>

MANAGEMENT STRATEGY	
NATIONAL PARK FUNCTIONAL PROGRAM	<ul style="list-style-type: none"> - Resource Conservation Sub-Program. - Community Development Sub-Program. - Recreation and Interpretation Sub-Program. - Research and Development Sub-Program. - Implementation Support Sub-Program. - Monitoring and Evaluation Sub-Program - Public Relations Sub-Program

Table 11. Bukit Baka-Bukit Raya National Park Management Strategy
National Park Functional Program

FUNCTIONAL PROGRAM SUB-PROGRAM COMPONENTS	
Resource Conservation Sub-Program	
-	Biological Inventories
-	Management and Protection of National Park Habitats
-	Management of Regionally Used Species
-	Enforcement of Resource Conservation Regulations
Community Development Sub-Program	
-	Community Extension
-	Land-Use Stabilization
-	Sustainable Use of Wildlife
Recreation and Interpretation Sub-Program	
-	Nature Tourism
-	Environmental Awareness
Research and Development Sub-Program	
-	Conservation Biology
-	Natural Forest Management
-	Ethnobiology
-	Agricultural Systems
Implementation Support Sub-Program	
-	Training and Development on Institutional Capacity
-	Training Support for 1995-1996 Technical Needs
-	Infrastructure Development
Monitoring and Evaluation Sub-Program	
-	Monitor Biophysical and Human Resources
-	Monitor Park Management Programs
Public Relations Sub-Program	
-	Publicity
-	Fund Raising

**Table 12. Bukit Baka-Bukit Raya National Park
Sub-Program Component Priorities for 1994-1995**

RESOURCE CONSERVATION	COMMUNITY DEVELOPMENT
<p>BIOLOGICAL INVENTORIES</p> <ul style="list-style-type: none"> Conducting Biodiversity Survey [HP] • Train NP staff in survey methods [HP] • Conduct field survey [HP] <p>MANAGEMENT AND PROTECTION OF NP HABITATS</p> <ul style="list-style-type: none"> Managing National Park Resources [HP] Assuring Legal Use of Non-NP Resources [LP] • Rehabilitate NP boundaries [HP] • Define a ranger patrol plan [RW] • Establish a radio communication network [RW] • Survey of Potential problems in enclaves [HP] • Periodical censuses of enclaves [RW] • Information on rights and regulations [HP] • Identify problems/extractive equipment [RW] <p>MANAGEMENT OR REGIONALLY USED SPECIES</p> <ul style="list-style-type: none"> Identifying potential utilitarian species [LP] • Develop booklet on methods/materials [HP] • Train NP staff on methods/materials [HP] • Define data collection schedule duties [RW] • Contact local people to participate [RW] <p>ENFORCEMENT OF RESOURCE CONSERVATION REGULATIONS</p> <ul style="list-style-type: none"> Increasing NP ranger force [HP] Conducting regular NP boundary maintenance [HP] • Identify three new ranger post sites [RW] • Identify and place rangers at new sites [RW] • Identify needs for additional post site [RW] • Construct NP boundaries in enclaves [HP] • Place NP board signs where needed [HP] 	<p>COMMUNITY DEVELOPMENT EXTENSION</p> <ul style="list-style-type: none"> Developing agroforestry extension [MP] Selecting villages and diagnostic study [LP] • Select village priority needs [RW] • Conduct diagnostic surveys w/ villagers [MP] <p>LAND-USE MANAGEMENT AND IMPROVEMENT OUTSIDE NATIONAL PARK</p> <ul style="list-style-type: none"> Continuing with fire management techniques [HP] Designing agroforestry projects [MP] Continuing to produce village sketch maps [LP] Identifying riparian agroforestry crops [LP] • Conduct training in fire management [HP] • Conduct field visits to ladang area [RW] • Foster tree crops for riparian area [RW] • Continue to encourage planting tree crops [RW] • Continue to promote home gardens [MP] • Continue to produce sketch maps [MP] <p>SUSTAINABLE USE OF WILD PLANTS AND ANIMALS</p> <ul style="list-style-type: none"> Assessing game farming possibilities [LP] Assessing butterfly farming possibilities [LP] • Collect data on bearded pig [RW] • Collect local data on scheme interests [RW] • Initiate training in butterfly farming [LP]

(Cont.) Bukit Baka Bukit Raya National park
 Sub-Program Component Priorities for 1994-1995

RECREATION AND INTERPRETATION	RESEARCH AND DEVELOPMENT
<p>NATURE TOURISM</p> <p>Furnishing and equipping NP visitor centers [HP] Developing nature trails at NP Interp center [LP] Developing NP field center/offices site plan [LP] • Determine furnishing and equipment needs [HP] • Conduct site plan/interp. center study [HP]</p> <p>ENVIRONMENTAL AWARENESS</p> <p>Assessing local environm. awareness needs [HP] Conducting feasibility study/s.plan. inter.center [HP] • Define envir. communication strategy [HP] • Plan/schedule envir. communic. strategies [RW] • Identify participants campaign [RW]</p>	<p>APPLIED RESEARCH IN CONSERVATION BIOLOGY</p> <p>Identifying priority rare and endangered sp. [HP] Assessing rare/endangered sp. populations [LP] • Train staff to monitor species/habitats [HP] • Begin to study sp. incidence/hab. req. [MP] • Begin studying sp. pop. dynamics [LP] • Identify priority sp. conservation needs [MP] • Monitor local sp. mortality pressures [MP]</p> <p>APPLIED RESEARCH ON NATURAL FOREST MANAGEMENT</p> <p>Assess extractive effects of loc. people [MP] • Continue to assess local consumption [RW] • Visit villages for data on product usage [RW]</p> <p>APPLIED RESEARCH IN ETHNOBIOLOGY</p> <p>Assessing village and environment interactions [LP] • Collect data on resource extraction [RW] • Identify forest product local economics [RW]</p> <p>APPLIED RESEARCH IN AGRICULTURAL SYSTEMS</p> <p>Assessing agroforestry tech. applicability [LP] Identifying local product market structures [LP] • Assess prospects to enhance agriculture [LP] • Field visits to local agricultural areas [RW]</p>

(Cont.) Bukit Baka Bukit Raya National park
 Sub-Program Component Priorities for 1994-1995

IMPLEMENTATION SUPPORT	MONITORING AND EVALUATION
<p>TRAINING AND DEVELOPMENT OF INSTITUTIONAL CAPACITIES</p> <p>Identifying institutional development needs [HP] Identifying comm. instit. development needs [MP] • Assess NP institutional weaknesses [HP] • Assess community institutional weaknesses [MP]</p> <p>TRAINING SUPPORT FOR 1995-1996 TECHNICAL NEEDS</p> <p>Training staff in natural res. monitoring [HP] Training in community development strategies [HP] • Identify training needs and opportunities [RW] • Identify trainees and trainers [RW]</p> <p>INFRASTRUCTURE DEVELOPMENT</p> <p>Constructing ranger posts/patrolling trails [HP] Developing site plan for NP field headquarters [HP] Constructing NP buildings at site [LP] Constructing field interpretation center [LP] • Build prescribed ranger posts [HP] • Develop site plan for NP field headquarters [HP] • Build patrolling trails [HP] • Construct NP administrative buildings [HP]</p>	<p>MONITOR PARK BIOPHYSICAL RESOURCES</p> <p>Developing monitoring system for species pop. [HP] Monitoring local natural resource use [HP] Monitoring extent, use, and changes in swiddens [LP] • Define monitoring for species populations [RW] • Continue to assess use impacts on resources [RW]</p> <p>MONITORING OF LAND-USE SYSTEM ACTIVITIES</p> <p>Training, selecting methods and criteria [MP] Developing monitoring agreements [LP] • Produce guideline booklet on methods/materials [MP] • Train staff in monitoring forest changes [MP] • Define monitoring schedules and responsibilities [LP]</p> <p>MONITORING PARK PROGRAMS</p> <p>Developing the NP Advisory Council [HP] Assessing NP Program weaknesses and strengths [HP] • Develop NP Advisory Council [HP] • Determine how well program targets were met [HP] • Identify Park program strengths, weaknesses, opportunities, and threats [HP]</p>

Cont.) Bukit Baka Bukit Raya National park
 Sub-Program Component Priorities for 1994-1995

PUBLIC RELATIONS

EXTERNAL PUBLIC RELATIONS

- | | |
|--|------|
| Developing information materials to support the Park | [HP] |
| Developing talks, shows and presentations on the Park | [HP] |
| * Conduct surveys to identify envir. awareness audiences | [HP] |
| * Develop information concepts and materials | [HP] |
| * Identify schedules for materials | [RW] |

TRAINING SUPPORT FOR 1995-1996 FINANCIAL NEEDS

- | | |
|--|------|
| Identifying priority programs without adequate funding | [HW] |
| * Train Park staff in writing proposal | [HP] |
| * Identify possible funding institutions | [HP] |
| * Develop and submit proposals | [HP] |

- | | | |
|-------------------|-----------------|--|
| High P) | High Priority | = Activity/Task needed for Program development |
| Mid P) | Medium Priority | = Activity/Task needed to support Program work |
| Low P) | Low Priority | = Activity/Task needed but may be postponed |
| Routine W) | Routine Work | = Activity/Task routine for NP staff |

5. PARK SUB-PROGRAMS

5.1 Resource Conservation Sub-Program

Principal Management Objective

Understand, protect, and manage national park resources for posterity.

The Conservation Sub-Program is designed to develop and implement management strategies to protect the sustainability of national park biophysical resources. The Sub-Program seeks to develop an understanding of national park forest resources through biophysical inventories and definition of rare, endangered, or threatened species. In addition to understanding national park biophysical components, the Park seeks to develop strategies to protect these resources for perpetuity and implement management programs to manipulate resource endangerment elements. Underlying objectives of this program include long-term resource inventories to quantify the Park's biotic richness, including inventories of ecological types and species ecological life histories, and conservation status (un-threatened, threatened, rare, or endangered).

5.1.1 Sub-Program Priority Component Activities for 1994-1995

5.1.1.1 Biological Inventories

Within the Sub-Program's biological inventories component, 1994-1995 activities include:

- Continuing habitat and species diversity surveys within and immediately adjacent to the national park.

Activity tasks include to:

- Train Park staff participating in habitat and species diversity surveys through formal theoretical training.
- Conduct field survey and monitoring of Park species and habitats, encouraging local people to participate.

5.1.1.2 Management and Protection of National Park Habitats

Within the Sub-Program's management and protection of national park habitats component, 1994-1995 activities include:

- Managing and protecting Park resources, with special emphasis in decreasing illegal extraction of forest products (plants and animals).
- Assuring that the extraction of forest products in areas adjacent of the national park is legal.

Activity tasks include to:

- Rehabilitate national park boundaries where needed, and mark posts with Park initials, post number, direction of next post, and location coordinates.
- Define a ranger patrol plan to safeguard the national park from illegal forest extraction practices.
- Establish a radio communication network within the Park and between the national park and local authorities.
- Conduct surveys to identify present and potential problems in Park enclave areas.
- Conduct periodical censuses of communities living in enclaves and try to control their immigration into the area.
- Develop information material on the rights and obligations of communities living in enclaves and adjacent to the national park.
- Identify current problems with local carrying of weapons, hunting artifacts, axes, and saws within the national park, including enclave areas.

5.1.1.3 Management of Regionally Used Species

Within the Sub-Program's management of regionally used species component, 1994-1995 activities include:

- Identifying potential utilitarian species and collecting information regarding their ecology and population status.

Activity tasks include to:

- Develop a field booklet on methods and materials for collecting data on the ecology and population status of regional utilitarian species.
- Train Park staff on methods and materials to collect field data on ecology and population of regional utilitarian species.
- Define schedules and Park staff to collect data on the ecology, populations, and pressures on regional utilitarian species.
- Identify and contact local communities to participate in Park data collection.

5.1.1.4 Enforcement of Resource Conservation Regulations

Within the Sub-Program's enforcement of resource conservation regulation, 1994-1995 activities include:

- Increasing the national park ranger force.
- Conducting periodical national park boundary inspections and maintenance.

Activity tasks include to:

- Identify three new ranger post sites (1 Kal-Bar, 2 Kal-Teng) to enforce national park policies in enclave communities and other sensitive areas.
- Identify and place rangers for new rangers posts (six rangers).
- Identify the need and sites for additional ranger posts and rangers.
- Construct boundaries in enclave areas and mark posts with Park initials, post number, direction of next post, and location coordinates.
- Place Park board signs where needed (local trails, entries, and roads near the Park, sensitive areas, enclave boundaries) with national park initials, and regulations to the particular location.

**Table 13. Resource Conservation Sub-Program
Activity Priorities, Implementors, Quarterly Schedules, and Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
BIOLOGICAL INVENTORIES (ACTIVITIES)						
A. [High P] Continuing habitat and species diversity surveys within and immediately adjacent to the NP.						
BIOLOGICAL INVENTORIES (TASKS)						
A. [High P] Train NP staff participating in habitat and species diversity surveys through formal theoretical training. Needs: Theoretical training: 1 training course of 1 week. Contract 1/4 person months. NP staff time.	Contract NP Staff	X				Rp 5.000.000
B. [High P] Conduct field survey and monitoring of NP species and habitats, encouraging local people to participate Needs: Field training for diversity surveys: 1 field training of 4 weeks. Contract 4/4 person months. NP staff time.	Contract NP Staff NP Prg.Staff (Local people who on Park Programs)	X				Rp 5.000.000
MANAGEMENT & PROTECTION OF NP HABITATS (ACTIVITIES)						
A. [High P] Managing and protecting NP resources, with special emphasis in decreasing illegal extraction of forest products (plants and animals).						
B. [Low P] Assuring that the extraction of forest products in areas adjacent of the NP is legal.						
MANAGEMENT & PROTECTION OF NP HABITATS (TASKS)						
A. [High P] Rehabilitate NP boundaries were needed, and mark posts with NP initials, post number, direction of next post, and location coordinates. Needs: 100 Km boundaries. Contract 4 person months. NP staff time.	Contract NP Staff	X	X	X	X	Rp 10.000.000
B. [Routine W] Define a ranger patrol plan to safeguard the NP from illegal forest extraction practices. Needs: NP Staff time.	NP Staff	X	X	X	X	NP routine work "
C. [Routine W] Establish a radio communication network within the NP and between the NP and local authorities. Needs: NP staff time.	NP Staff	X	X	X	X	NP routine work

D. [High P] Conduct surveys to identify present and potential problems in selected NP enclave areas. Needs: Field training for surveys: Contract 1 person month. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X	X	X	Rp 2.000.000
E. [Routine W] Conduct periodical censuses of communities living in enclaves and try to control their immigration into the area. Needs: NP staff time.	NP Staff	X		X		NP routine work
F. [High P] Develop information material on the rights and obligations of communities living in enclaves and adjacent to the NP. Needs: Materials: 1.000 posters and 3.000 leaflets. Contract 1/4 person month. NP staff time.	Contract NP Staff			X		Rp 10.000.000
G. [Routine W] Identify current problems with local carrying of weapons, hunting artifacts, axes, and saws within the NP, including enclave areas. Needs: NP staff time.	NP Staff		X		X	NP routine work
MANAGEMENT OF REGIONALLY USED SPECIES (ACTIVITIES)						
A. [Low P] Identifying potential utilitarian species and collecting information regarding their ecology and population status.						
MANAGEMENT OF REGIONALLY USED SPECIES (TASKS)						
	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3RD 4th				BUDGETS
A. [High P] Develop a field booklet on methods and materials for collecting data on the ecology and population status of regional utilitarian species. Needs: 1.000 booklets. Contract 1/4 person month.	Contract	X	X			See item B. Rp 2.000.000
B. [High P] Train NP staff on methods and materials to collect field data on ecology and population of regional utilitarian species. Needs: Training on data collection and monitoring: Theoretical training 1 week. Field training 2 weeks month. Contract 3/4 person month. NP staff time.	Contract NP Staff NP Pgr.Staff		X			Rp 7.500.000
C. [Routine W] Define schedules and NP staff to collect data on ecology, populations, and pressures on regional utilitarian species. Needs: NP staff time.	NP Staff			X		NP routine work

D. [Routine W] Identify and contact local communities to participate in NP data collection. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
ENFORCEMENT OF RESOURCE CONSERVATION REGULATIONS (ACTIVITIES)						
A. [High P] Increasing the NP ranger force.						
B. [High P] Conducting periodical NP boundary inspection and maintenance.						
ENFORCEMENT OF RESOURCE CONSERVATION REGULATIONS (TASKS)	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [Routine W] Identify three new ranger post sites (1 Kal-Bar, 2 Kal-Teng) to enforce NP policies in enclave communities and other sensitive areas. Needs: NP Staff time.	NP Staff	X		X		NP routine work
B. [Routine W] Identify and place rangers for new rangers posts (six rangers). Needs: NP staff time.	NP Staff		X	X	X	NP routine work
C. [Routine W] Identify the need and sites for additional ranger sites and rangers in Kal-Bar and Kal-Teng. Needs: NP staff time.	NP Staff	X	X	X	X	NP routine work
D. [High P] Construct NP boundaries in enclave areas and mark posts with NP initials, post number, direction of next post, and location coordinates. Needs: 20 Km boundaries. Boundary construction in 2 enclave areas. Contract 2 person months. NP staff time.	Contract NP Staff	X		X		Rp 20,000,000
E. [High P] Place NP board signs where needed with NP initials, and regulations to the particular location. Needs: 50 NP board signs. NP staff time.	NP Staff	X	X	X	X	NP routine work
TOTALS						Rp 61,500,000

5.2. Community Development Sub-Program

Principal Management Objective

Assist local communities to obtain a satisfactory quality of life which will allow them to enjoy the amenity of the Park and contribute to its conservation.

The function of the Community Development Sub-Program is to conduct extension activities to foster nature conservation and socioeconomic development. Sub-Program objectives include to promote viable use of natural resources and establish agroforestry and agriculture systems to improve local socioeconomic conditions. National park extension activities should demonstrate new or improved agricultural technologies, conduct training programs, and monitor technology acceptance.

Underlying objectives of the Sub-Program include to promote viable use of natural resources and establish agroforestry systems to improve local socioeconomic conditions

5.2.1. Sub-Program Priority Component Activities for 1994-1995

5.2.1.1. Community Extension

Within the Sub-Program's community extension, 1994-1995 activities include:

- Developing agroforestry extension activities.
- Selecting target villages and conducting agricultural diagnostic survey of new target communities.

Activity tasks include to:

- Continue to select target village priority extension needs.
- With local people, conduct diagnostic surveys in target villages to evaluate present agricultural yields and identify promising crops.

5.2.1.2. Land-Use Stabilization

Within the Sub-Program's land-use and improvement outside the national park, 1994-1995 activities include:

- Continue promoting fire management techniques in grassland and forested areas.
- Designing site-specific agroforestry projects based on land-use capabilities.
- Continue producing sketch maps of swidden areas of enclave communities and villages adjacent to the Park and map villages based on land-use capabilities.
- Identifying potential agroforestry crops in riparian areas outside the NP.

Activity tasks include to:

- Conduct training activities in fire management and develop fire control guidelines for grassland and forested areas.
- Conduct periodical field visits to swiddens and gardens to identify land-use capabilities.
- Foster local private tree crop nurseries for riparian areas through the Park Programs.
- Encourage planting of low impact tree crops through the NP Barter Program and provide technical assistance to villagers through the Park's nursery extension programs.
- Promote home gardens for nutritional supplement and possible cash crops. Offer technical assistance and training to participating communities.
- Continue to produce sketch maps of village land-use capabilities and local swidden areas for two enclave communities. Begin to identify swidden rotation possibilities with local people.

5.2.1.3. Sustainable Use of Wildlife

Within the Sub-Program's sustainable use of wildlife component, 1994-1995 activities include:

- Assessing the possibilities of establishing game farming for bearded pig with local communities.
- Assessing the possibilities of initiating a butterfly farming scheme with local communities.

Activity tasks include to:

- Begin to collect data on local bearded pig consumption, seasonal availability, and migrations patterns.
- Collect data on local interests in wildlife farming and ranching.
- Initiate training in butterfly farming with local Pramuka school children by first encouraging the practice as a hobby.

**Table 14. Community Development Sub-Program
Activity Priorities, Implementors, Quarterly Schedules, and Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
COMMUNITY DEVELOPMENT EXTENSION (ACTIVITIES)						
A. [Medium P] Developing agroforestry extension activities.						
B. [Low P] Selecting target villages and conducting agricultural diagnostic survey of new target communities.						
COMMUNITY DEVELOPMENT EXTENSION (TASKS)						
A. [Routine W] Continue to select target village priority extension needs. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
B. [Medium P] With local people, conduct diagnostic surveys in target villages to evaluate present agricultural yields and identify promising crops. Needs: Field training 1 week. Contract 1/2 person months. 4 surveys. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X	X	X	Same as Item B, Applied Research in Agriculture Systems, Research SP Rp 12.000.000
LAND-USE MNGT. & IMPROV. OUTSIDE THE NP (ACTIVITIES)						
A. [High P] Continue promoting fire management techniques in grassland and forested areas.						
B. [Medium P] Design site specific agroforestry projects based on land-use capabilities						
C. [Low P] Continue to produce sketch maps of swidden areas adjacent to the NP and map villages on land-use capabilities.						
D. [Low P] Identifying potential agroforestry crops in riparian areas outside the NP.						
LAND-USE MNGT. AND IMPROV. OUTSIDE THE NP (TASKS)						
A. [High P] Conduct training activities in fire management and develop fire control guidelines for grassland and forested areas. Needs: Training : 1 field workshop. Contract 1 person month. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X	X	X	- Rp 5.000.000
B. [Routine W] Conduct periodical field visits to swiddens and gardens to identify land-use capabilities. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff

C. [Routine W] Foster local private tree crop nurseries for riparian areas. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
D. [Routine W] Encourage planting of low impact tree crops through the NP Barter Program and provide technical assistance through NP Central Nursery extension programs. Needs: Contract 2 villagers for nursery maintenance. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X	X	X	Rp 3.300.000
E. [Medium P] Promote home gardens for nutritional supplement and possible cash crops. Offer technical assistance and training to participating communities. Needs: 2 training courses. Contract 1/2 person months. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X	X	X	Rp 1.000.000
F. [Medium P] Continue to produce sketch maps of village land-use capabilities and local swidden areas. Begin to identify swidden rotation possibilities with local people. Needs: Develop swidden sketch maps for 2 enclave communities. Contract 1 person month. NP staff time.	Contract NP Staff NP Pgr.Staff	X	X			Rp 3.750.000
SUSTAINABLE USE OF WILD PLANTS & ANIMALS (ACTIVITIES)						
A. [Low P] Assessing the possibilities of establishing game farming for bearded pig with local communities.						
B. [Low P] Assessing the possibilities of initiating butterfly farming with local people.						
SUSTAINABLE USE OF WILD PLANTS & ANIMALS (TASKS)						
	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [Routine W] Begin to collect data on local bearded pig consumption, seasonal availability, and migrations patterns. Needs: Long-term activity with NP staff time.	NP Staff			X	X	NP routine work
B. [Routine W] Collect data on local interests in wildlife farming and ranching. Needs: Long-term activity with NP staff time.	NP Staff			X	X	NP routine work
C. [Low P] Initiate training in butterfly farming with local Pramuka school children by first encouraging the practice as a hobby. Needs: NP staff time.	NP Staff NP Pgr.Staff		X		X	NP routine work NP Pgr.Staff
TOTALS						Rp 25.050.000

5.3. Recreation and Interpretation Sub-Program

Principal Management Objective

Provide recreation and environmental awareness opportunities to further nature conservation objectives

The function of the Recreation and Interpretation Sub-program is to provide a range of recreation opportunities for visitors, to provide experiences to advance knowledge on nature and nature conservation in a natural setting, and to inform the public on national park values, benefits, and overall purposes. The Program also seeks to emphasize the Park's conservation policy to and provide practical environmental awareness training related to conservation objectives.

5.3.1. Sub-Program Priority Component Activities for 1994-1995

5.3.1.1. Nature Tourism

Within the Sub-Program's nature tourism component, 1994-1995 activities include:

- Furnishing and equipping the national park visitor information center in Sintang and Pontianak.
- Developing a site plan for Park field offices and interpretation center at site.
- Developing a visitor interpretation center with nature trails at the Park.

Activity tasks include to:

- Determine priority needs for the Park visitor information centers.
- Conduct a feasibility study and site plan for the Park interpretation center, including: self-guided trails, camping sites, camping cabins, and other tourist facilities.

5.3.1.2. Environmental Awareness

Within the Sub-Program's environmental awareness component, 1994-1995 activities include:

- Assessing local environmental awareness needs on the NP concept and on nature conservation. Define participants and schedules.

Activity tasks include to:

- Define needs, target audience, methods, and messages for an environmental awareness campaign on environmental conservation and the national park.
- Plan and schedule activities to assess and define local environmental awareness needs in villages surrounding the national park.
- Identify participants and conduct environmental awareness campaign for local communities of the Bukit Baka and Bukit Raya region.

**Table 15. Recreation and Interpretation Sub-Program
Activity Priorities, Implementors, Quarterly Schedules and Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES				BUDGETS
		1st	2nd	3rd	4th	
NATURE TOURISM (ACTIVITIES)						
A. [High P] Furnishing and equipping the NP Sintang and Pontianak visitor information centers.						
B. [Low P] Developing nature trails near the visitor interpretation center at the NP field quarters.						
C. [Low P] Developing a visitor interpretation center, with self-guided trails at, the NP field quarters.						
NATURE TOURISM (TASKS)						
A. [High P] Determine priority needs (furnishings and equipment) for the NP visitor information centers in Sintang and Pontianak. Needs: NP staff time.	NP Staff	X				NP routine work
B. [High P] Conduct a feasibility study and site plan for the NP site interpretation center, including: self-guided trails, camping sites, camping cabins, and other tourist facilities. Needs: Contract 2 person months. NP staff time.	Contract NP Staff		X			See Item B, Infrastructure Development, Implementation SP
ENVIRONMENTAL AWARENESS (ACTIVITIES)						
A. [High P] Assessing local environmental awareness needs on the NP concept and on nature conservation. Define participants and schedules.						
ENVIRONMENTAL AWARENESS (TASKS)						
A. [High P] Define needs, target audience, methods, and messages for an environmental awareness campaign on nature conservation and the NP. Needs: NP staff time.	NP Staff	X				NP routine work
B. [Routine W] Plan and schedule activities to assess and define local environmental awareness needs in villages surrounding the NP. Needs: Same as A.	NP Staff	X				See Item A.
C. [Routine W] Identify participants and conduct environmental awareness campaign for local communities on the BB/BR region. Needs: Same as A.	NP Staff NP Pgr.Staff		X	X	X	See Item A.
TOTALS						Other

5.4. Research and Development Sub-Program

Principal Management Objectives

To develop an understanding of the Park's history, ecosystems, flora, and fauna as a necessary precondition for effective management planning.

The function of the Research and Development Sub-Program is to conduct short and long-term studies to understand specific ecological processes and biological interrelationships within and adjacent to the national park. Objectives of this Program include applied research activities in conservation biology, natural forest management, ethnobiology, and ecosystems ecology to prescribe appropriate management strategies for nature conservation in the Bukit Baka and Bukit Raya region.

Park research activities will entail short and long-term studies to understand specific ecological processes and biological interrelationships within and adjacent to the national park. This will provide information on how to manage the Park resources. Researchers must follow research protocols established by the Park, LIPI and MoFr to conduct studies within the protected forests.

5.4.2. Sub-Program Priority Component Activities for 1994-1995

5.4.2.1. Research in Conservation Biology

Within the Sub-Program's conservation biology component, 1994-1995 activities include:

- Identifying priority rare, threatened, and endangered species for conservation.
- Assessing the distribution, abundance, and population of endemic and rare species and their habitats.

Activity tasks include to:

- Train Park staff in species and habitat monitoring activities.
- Initiate field studies to assess species incidence and habitat requirements within the national park. Encourage local communities to participate.
- Initiate data collection and monitoring activities for priority endangered species, ecological life histories, and population dynamics.

- Identify priority conservation needs of rare, endangered, and threatened species. Examine data from field observations and monitoring activities.
- Monitor local species pressures. Examine data on harvesting patterns of local communities and other species mortality factors.

5.4.2.2. Research in Natural Forest Management

Within the Sub-Program's natural forest management component, 1994-1995 activities include:

- Assessing activities on the extractive effects of local communities on natural forests.

Activity tasks include to:

- Continue to assess local consumption of forest products by observing and talking to local people.
- Conduct periodical field visits to local villages and collect data on forest product use.

5.4.2.3. Research in Ethnobiology

Within the Sub-Program's ethnobiology component, 1994-1995 activities include:

- Assessing village interactions with the environment, including manners in which local people classify and evaluate plants, animals, and ecosystem functions for their own use.

Activity tasks include to:

- Continue to collect information on local community natural resource extraction (direct observation and talks with local people).
- Identify the names, uses, classification, extent, seasonality and economics of forest products harvested by local communities, through field visits to local forests with villagers.

5.4.2.4. Research in Agricultural Systems

Within the Sub-Program's agricultural systems component, 1994-1995 activities include:

- Assessing the applicability of agroforestry techniques, such as forage, food crop, and livestock inter-cropping trials.
- Identifying possibilities and constraints for harvesting, processing, and marketing of local crops and forest products.

Activity tasks include to:

- Assess opportunities to enhance local agricultural practices, including enrichment of swidden fallow, soil and water conservation, and improved annual perennial crops.
- Conduct periodical field visits to local agricultural areas.

**Table 16. Research Sub-Program
Priority Activities, Implementors, Quarterly Schedules, and Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
APPLIED RESEARCH IN CONSERVATION BIOLOGY (ACTIVITIES)						
A. [High P] Identifying priority rare, threatened, and endangered species for conservation.						
B. [Low P] Assessing the distribution, abundance, and population of endemic and rare species and their habitats.						
APPLIED RESEARCH IN CONSERVATION BIOLOGY (TASKS)						
A. [High P] Train NP staff in species and habitat monitoring activities. Needs: 1 training course. Contract 1/4 person month. Long-term activity on NP staff time.	Contract NP Staff				X	See Item A & B, Biological Inventories, Resource Conservation SP
B. [Medium P] Initiate field studies to assess species incidence and habitat requirements within the NP. Encourage local communities to participate. Long-term activity on NP staff time.	NP Staff	X	X	X	X	NP routine work
C. [Low P] Initiate data collection and monitoring activities for priority endangered species, ecological life histories, and population dynamics. Needs: Long-term activity with NP staff time.	NP Staff	X	X	X	X	NP routine work
D. [Medium P] Identify priority conservation needs for rare, endangered, and threatened species. Examine data from field observations and monitoring activities. Needs: Long-term activity on NP staff time.	NP Staff		X	X	X	NP routine work
E. [Medium P] Monitor local species pressures. Examine data on harvesting patterns of local communities and other species mortality factors. Needs: Long-term activity on NP staff time.	NP Staff	X	X	X	X	NP routine work
APPLIED RESEARCH IN NATURAL FOREST MNGT. (ACTIVITIES)						
A. [Medium P] Assessing activities on the extractive effects of local communities on natural forests.						
APPLIED RESEARCH IN NATURAL FOREST MANAGEMENT (TASKS)						
A. [Routine W] Continue to assess local consumption of forest products by observing and talking to local people. Needs: NP staff time.	NP Staff	X	X	X	X	NP routine work

B. [Routine W] Conduct periodical field visits to local villages. Collect data on forest product use. Needs: NP staff time.	NP Staff	X	X	X	X	NP routine work
APPLIED RESEARCH ON ETHNOBIOLOGY (ACTIVITIES)						
A. [Low P] Assessing village interactions with the environment, including manners in which local people classify and evaluate plants, animals, and ecosystem functions for their own use.						
APPLIED RESEARCH ON ETHNOBIOLOGY (TASKS)						
	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [Routine W] Continue to collect information on local community natural resource extraction by direct observation and talks with local communities. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
B. [Routine W] Identify the names, uses, classification, extent, seasonality and economics of forest products harvested by local communities, through field visits to local forests with villagers. Needs: NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
APPLIED RESEARCH IN AGRICULTURAL SYSTEMS (ACTIVITIES)						
A. [Low P] Assessing the applicability of agroforestry techniques, such as forage, food crop, and livestock inter-cropping trials.						
B. [Low P] Identifying possibilities and constraints for harvesting, processing, and marketing of local cash crops and non-timber forest products.						
APPLIED RESEARCH IN AGRICULTURAL SYSTEMS (TASKS)						
	IMPLEMENTOR	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [Low P] Assess opportunities to enhance local agriculture practices, including enrichment of swidden fallow, soil and water conservation, and improved annual perennial crops. Needs: 1 week field training. Contract 1 person month. NP staff time.	Contract NP Staff NP Pgr.Staff		X			Same as item B, Community Development Extension, Community Development SP
B. [Routine W] Conduct periodical field visits to local agricultural areas. Needs: Monthly field visits by NP staff time.	NP Staff NP Pgr.Staff	X	X	X	X	NP routine work NP Pgr.Staff
TOTALS						Other

5.5. Implementation Support Sub-Program

Principal Management Objective

To facilitate the implementation of all Park field activities

The Implementation Support Sub-Program facilitates the implementation of the Park's Functional Program. Underlying objectives of this Program include to develop support facilities to manage the national park and fostering national park institutional development for self support. Activities entailing national park staffing and infrastructure development are also included in this Sub-Program.

5.5.1. Sub-Program Priority Component Activities for 1994-1995

5.5.1.1. Training and Development in Institutional Capacity

Within the Sub-Program's training and development of institutional capacities component, 1994-1995 activities include:

- Identifying national park institutional development needs and opportunities.
- Identifying local community institutional development needs to support Park objectives.

Activity tasks include to:

- Assess national park institutional weaknesses and needs (personnel, disciplines, and organizations).
- With local communities, assess local community institutional weaknesses, needs, and opportunities.

5.5.1.2 Training Support for 1995-1996 Technical Needs

Within the Sub-Program's training support for technical needs component, 1994-1995 activities include:

- Training ranger staff in general natural resource monitoring and evaluation techniques.
- Training Park staff in community development strategies for nature conservation.

Activity tasks include to:

- Identify training needs and opportunities in natural resource monitoring and evaluation. Assess Park staff knowledge deficiencies in data collection and monitoring techniques.
- Identify potential trainee trainer candidates for courses to improve Park staff skills and conduct identified training courses.

5.5.1.3 Infrastructure Development

Within the Sub-Program's infrastructure development component, 1994-1995 activities include:

- Constructing rangers posts and patrolling trails.
- Developing a site plan for national park field administrative offices and tourist interpretation center.
- Constructing national park administrative field offices.

Activity tasks include to:

- Construct ranger posts (1 in Kal-Bar and 2 in Kal-Teng).
- Develop a site plan for national park administrative offices and interpretation center.
- Construct administrative field offices at site (extension of existing ranger posts at Belaban Ella)
- Construct patrolling trails (10 km) in enclave areas.

**Table 17. Implementation Support Sub-Program
Priority Activities, Implementors, Quarterly Schedules, Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES				BUDGETS
		1st	2nd	3rd	4th	
TRAINING ON INSTITUTIONAL CAPACITIES (ACTIVITIES)						
A. [High P] Identifying NP institutional development needs and opportunities.						
B. [Medium P] Identifying local community institutional development needs to support NP objectives.						
TRAINING ON INSTITUTIONAL CAPACITIES (TASKS)						
A. [High P] Assess NP institutional weaknesses and needs (personnel, disciplines, and organizations). Needs: PhPA Support. NP staff time	NP Staff				X	NP routine work PhPA Support
B. [Medium P] With local communities, assess local community institutional weaknesses, needs, and opportunities. Needs: NP staff time.	NP Staff				X	NP routine work
TRAINING SUPPORT FOR 1995-1996 TECHNICAL NEEDS (ACTIVITIES)						
A. [High P] Training ranger staff in general natural resource monitoring and evaluation techniques.						
B. [High P] Training NP staff in community development strategies for nature conservation.						
TRAINING SUPPORT FOR 1995-1996 TECHNICAL NEEDS (TASKS)						
A. [Routine W] Identify training needs and opportunities in natural resource monitoring and evaluation. Assess NP staff knowledge deficiencies in data collection and monitoring techniques. Needs: NP staff time.	NP Staff	X				NP routine work
B. [Routine W] Identify potential trainee/trainer candidates for courses to improve NP staff skills and conduct identified training needed. Needs: 4 additional training courses. NP Staff time. Contract trainee (4 day/course)	Contract NP Staff		X		X	Rp 2,000,000
INFRASTRUCTURE DEVELOPMENT (ACTIVITIES)						
A. [High P] Constructing ranger posts and patrolling trails.						
B. [High P] Developing a site plan for NP field administrative offices and interpretation center.						
B. [Low P] Constructing NP administrative field offices.						
C. [Low P] Constructing a field interpretation center at the NP site.						

INFRASTRUCTURE DEVELOPMENT (TASKS)	IMPLEMENTOR	QUARTERLY SCHEDULES				BUDGETS
		1st	2nd	3rd	4th	
A. [High P] Construct ranger posts (1 in Kal-Bar and 2 in Kal-Teng). Needs: External contract. NP staff time.	Contract NP Staff	X				
B. [High P] Develop a site plan for NP field administrative offices and Interpretation center. Needs: Contract 1 person month. NP staff time.	Contract NP Staff	X				Same as item B, Nature Tourism, Recreation and Interpretation SP
B. [High P] Construct patrolling trails (10 km) in enclave areas. Needs: External contract. NP staff time.	Contract NP Staff			X		Rp 7,500,000
C. [High P] Construct Park administrative field offices at site (extension of one existing ranger post)	Contract	X				See budget of Priority Infrastructure Devel.
TOTALS						Rp 7,500,000

5.6 Monitoring and Evaluation Sub-Program

Principal Management Objective

Monitor the biological condition of the Park and monitor the effectiveness of Park Programs to attain Park management.

The function of the Monitoring and Evaluation Sub-Program is to monitor changes in park biophysical resources in order to predict endangerment and define management needs; to observe the progress and development of national park personnel in order to enable the Park to formulate needed training, additional staff, or changes; and to monitor the effectiveness of Park programs in order to determine required Program modifications. Park monitoring activities thus operate at three levels:

- At the Park level, to monitor biophysical resources;
- At the Park management level, to monitor Park human resources; and,
- At the Park directional level, to monitor Park management Programs.

1994-1995 activity tasks to support this Sub-Program component include to seek local community participation to monitor natural resource base changes, identify resources to be monitored, and define monitoring methodologies and set schedules.

5.6.1 Monitor Biophysical and Human Resources

Within the Sub-Program's biophysical and human resources component, 1994-1995 activities include:

- Training, selecting monitoring methodologies, and identifying problem criteria.
- Developing monitoring program agreements with local communities, and timber concessionaires.
- Developing a monitoring system for selected Park species to detect population changes and pressures.
- Monitoring and evaluating local natural resource use by target communities.

Activity tasks include to:

- Train IIP staff in monitoring methods to assess forest productivity changes (seed productivity, animal-hunt availability, crop yields) and environmental problems (soil erosion, river siltation, pest threats) in local land-use systems.
- Begin to define a monitoring system to identify population changes and prevalent pressures on local utilitarian species.
- Continue to assess the environmental impact of human activities upon Park resources in enclave areas of Kal-Teng and other selected villages adjacent to the national park.
- Produce a guideline booklet on methods and materials to monitor forest productivity changes and potential environmental problems.
- Define monitoring schedules for resources and land-use systems to be monitored and determine responsibilities of participants.
- Monitor the extent, use, and changes of swidden areas in target villages.

5.6.2. Monitor Park Management Programs

- Developing the National Park Advisory Council
- Assessing Park program weaknesses and strengths.

Activity tasks include to:

- Develop the National Park Advisory Council
- Determine how well prescribed Park program targets for 1994-1995 were met.
- Identify Park program strengths, weaknesses, opportunities, and threats.

**Table 18. Monitoring and Evaluation Sub-Program
Priority Activities, Implementors, Quarterly Schedules, Budgets**

ACTIVITIES AND TASKS	IMPLEMENTOR	QUARTERLY SCHEDULES				BUDGETS
		1st	2nd	3rd	4th	
MONITOR PARK BIOPHYSICAL RESOURCES (ACTIVITIES)						
A. [High P] Developing a monitoring system for selected NP species to detect population changes and pressures.						
B. [High P] Monitoring and evaluating local natural resource use by local target communities.						
C. [Low P] Monitoring the extent, use, and changes of swidden areas in target villages.						
MONITOR PARK RESOURCES (TASKS)						
A. [Routine W] Begin to define a monitoring system to identify population changes and prevalent pressures on local utilitarian species. Needs: NP staff time. NP Program staff.	NP Staff					NP routine work NP Pgr.Staff
B. [Routine W] Continue to assess the environmental impact of human activities upon NP resources in enclave areas of Kal-Teng and adjacent NP villages. Needs: NP staff time.	NP Staff	X	X	X	X	
MONITORING OF LAND-USE SYSTEMS (ACTIVITIES)						
A. [Medium P] Training, selecting monitoring methodologies and, identifying problem criteria.						
B. [Low P] Developing monitoring program agreements with local communities and timber concessionaires.						
MONITORING OF LAND-USE SYSTEMS (TASKS)						
A. [Medium P] Produce a guideline booklet on methods and materials to monitor forest productivity changes and potential environmental problems. Needs: Contract 2/4 person month. NP staff time.	Contract NP Staff					See item A & B, Biological Inventories, Resource Conservation SP
B. [Medium P] Train NP staff in monitoring methods to assess forest productivity changes and to spot local environmental problems. Needs: 1 training course of theory. Contract 1/4 person month. NP staff time. NP Program staff. Long-term activity with NP staff time.	Contract NP Staff NP Pgr.Staff					See item A & B, Biological Inventories, Resource Conservation SP
C. [Low P] Define monitoring schedules for resources and land-use systems to be monitored and determine responsibilities of participants. Needs: NP staff time.	NP Staff					NP routine work

MONITOR PARK PROGRAMS (ACTIVITIES)							
A. [High P] Developing the NP Advisory Council							
B. [High P] Assessing Program weaknesses and strengths.							
MONITOR PARK PROGRAMS (TASKS)		IMPLEMENTORS	QUARTERLY SCHEDULES				BUDGETS
A. [High P] Develop the NP Advisory Council, as stated in the NP Master Plan. Needs: NP Staff time.		NP Staff			X		NP routine work
A. [High P] Determine how well prescribed Park program targets for 1994-1995 were met. Needs: NP Advisory Council session		NP Advisory Council				X	Rp 2,000,000
B. [High P] Identify Park program strengths, weaknesses, opportunities, and threats. Needs: NP Advisory Council session		NP Advisory Council				X	
TOTALS							Rp 2,000,000

BEST AVAILABLE DOCUMENT

5.7 Public Relations Sub-Program

Principal Management Objective

Use the full range of media, publicity, and information outlets to establish and maintain the reputation of the Park as a resource of national and international importance and standing to be protected for the enjoyment of future generations

5.7.1 Publicity

Within the Sub-Program's publicity component, 1994-1995 activities include:

- Developing posters and brochures that describe national park benefits, policies and actions to support nature conservation.
- Developing talks, shows, and presentations with information on the Park's goals, objectives, policies, and programs.

Activity tasks include to:

- Conduct surveys to identify target audiences for environmental information needs in Nanga Pinoh and Sintang.
- Develop information concepts and materials according to priority target audiences.
- Identify schedules for producing and distributing environmental awareness materials.

5.7.2 Fund Raising

Within the Sub-Program's training support for technical needs component, 1994-1995 activities include:

- Identifying priority Park program activities without adequate funding. Submit proposals for funds.

Activity tasks include to:

- Identify priority Park program activities without adequate funding.
- Train Park staff to writing proposals for funding priority national Program activities.
- Identify possible funding institutions.
- Develop and submit funding proposals.

**Table 19. Public Relations Sub-Program
Priority Activities, Implementors, Quarterly Schedules, Budgets**

EXTERNAL PUBLIC RELATIONS (ACTIVITIES)	IMPLEMENTORS	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [High P] Developing posters and brochures that describe NP benefits policies and actions to support nature conservation.						
B. [High P] Developing talks, shows, and presentations with information on the NP's goals, objectives, policies, and programs.						
EXTERNAL PUBLIC RELATIONS (TASKS)	IMPLEMENTORS	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [High P] Conduct surveys to identify target audiences for environmental information needs in Nanga Pinoh and Sintang. Needs: PHPA support 1 person month. NP staff time.	NP Staff			X		NP routine work PHPA Support Rp 1.500.000
B. [High P] Develop information concepts and materials according to priority target audiences. Needs: PHPA support 1/2 person month. NP staff time.	NP Staff			X		NP routine work PHPA Support See Item A, Above
C. [Routine W] Identify schedules for producing and distributing environmental awareness materials. Needs: NP staff time.	NP Staff				X	NP routine work
TRAINING SUPPORT FOR 1995-1996 FINANCIAL NEEDS (ACTIVITIES)						
A. [High P] Identifying priority NP program activities without adequate funding. Submit proposals for funds.						
TRAINING SUPPORT FOR 1995-1996 FINANCIAL NEEDS (TASKS)	IMPLEMENTORS	QUARTERLY SCHEDULES 1st 2nd 3rd 4th				BUDGETS
A. [Routine W] Identify priority NP program activities without adequate funding. Needs: NP staff time.	NP Staff	X				NP routine work
B. [High P] Train NP staff to writing proposals for funding priority NP Program activities. Needs: PHPA Support. NP Staff time.	NP Staff		X			PHPA Support
C. [High P] Identify possible funding institutions. Needs: Same as B.	Contract NP Staff			X	X	See Item B.
D. [High P] Develop and submit funding proposals. Needs: NP staff time.	NP Staff				X	See Item B.
TOTALS						Rp 1.500.000

Table 20. Personnel Needs for 1994-1995

PERSONNEL NEEDS	LOCATION	LEVEL	CURRENT	NEEDED	ALLOCATION				BUDGETS
					1st	2nd	3rd	4th	
Technical Staff Supervisor (General Ecologist, listed below)	Kal-Bar/Teng	Senior/ Graduate	0	1	X				Rp 600.000
Technical Staff - General ecology (1) - Extension (1)	Kal-Bar/Teng	Graduate Graduate	0 0	(1) 1	X X				----- Rp 600.000
Ranger Head	Kal-Bar	Senior	0	(1)	X				-----
Ranger Head	Kal-Teng	Senior	0	(1)	X				-----
Rangers (1 Ranger Head, above)	Kal-Bar	Senior (1) Junior (1)	2	1	X				Rp 600.000
Rangers (1 Ranger Head, above)	Kal-Teng	Senior (2) Junior (2)	0	3	X				Rp 1.800.000
NP Program Staff (Local villagers working with NP Programs) - Local Extensionists	Kal-Bar/Teng		2	6	X				Rp 348.000
TOTALS									Rp 3.948.000

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Table 21. Equipment Needs for 1994-1995

EQUIPMENT NEEDS	ALLOCATION	CURRENT	NEEDED	TIMING				BUDGETS
				1st	2nd	3rd	4th	
Electric Generators	New Guard Posts	0	3	X				Rp 4.950.000
Hand Camera and Tele-lens	Main Guard Posts	1	1	X				Rp 1.000.000
Outboard Motors	Guard Posts	0	4	X				Rp 8.000.000
Short Wave Radio Receiver for Handy Talkies	New Guard Posts	1	3	X				Rp 15.000.000
Handy Talkies	Guard Posts	0	3	X				Rp 4.500.000
Binoculars 5x50	Guard Posts	0	4	X				Rp 1.000.000
Coleman Lamps	Guard Posts	0	4	X				Rp 250.000
Too' Sets	Guard Posts	0	4	X				Rp 200.000
50 m Measuring Tape	Guard Posts	0	4	X				Rp 200.000
White Boards	Guard Posts	0	4	X				Rp 100.000
Cassette Recorders	Guard Posts	0	4	X				Rp 150.000
Cassette Tapes	Guard Posts	0	24	X				Rp 50.000
Flashlights	Guard Posts	0	10	X				Rp 100.000
Storage Cabinets	Guard Posts	0	4	X				Rp 400.000
File Cabinets	Guard Posts	0	4	X				Rp 1.000.000
Office Supplies	Guard Posts	-	4 sets	X				Rp 1.000.000
Field Clipboards	Guard Posts	0	8	X				Rp 80.000
Type Writers	Guard Posts	0	4	X				Rp 1.000.000
Book Cases	Guard Posts	0	4	X				Rp 600.000
Working Table and Chair	Guard Posts	1	3	X				Rp 375.000
Beds	Guard Posts	2	6	X				Rp 840.000
Kitchen Sets	Guard Posts	1	3	X				Rp 300.000
Dining Sets	Guard Posts	1	3	X				Rp 150.000
Room Ventilator	Guard Posts	0	4	X				Rp 300.000

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Parangs	Guard Posts	0	8	X				Rp 160.000
Shovels	Guard Posts	0	8	X				Rp 160.000
Sheers	Guard Posts	0	4	X				Rp 80.000
Metal Bar (for digging holes)	Guard Posts	0	8	X				Rp 160.000
NP Sign-boards	Field	0	50	X	X	X	X	Rp 1.000.000
Indoneslan Flags	Guard Posts	2	2	X				Rp 25.000
Loud Speaker	Main Guard Posts	0	2	X				Rp 500.000
Stencil Machine	Main Guard Posts	0	2	X				Rp 1.000.000
Uniforms	Rangers and Technical Staff	-	4 sets/ person	X				Rp 1.600.000
Footwear and Caps	Rangers Technical Staff Field Personnel	-	2 sets/ person	X				Rp 500.000
TOTALS								Rp 46.730.000

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Table 22. Priority Infrastructure Development Needs for 1994-1995

PRIORITY INFRASTRUCTURE NEEDS	LOCATION	CURRENT	NEEDED	ALLOCATION				BUDGETS
				1st	2nd	3rd	4th	
Field Interpretation Center	Kal-Bar/Teng	0	1	X				Rp 5,000,000
NP Field Offices (KPTN)	Kal-Bar/Teng	0	1	X				
Ranger Posts	Kal-Bar	1	1	X				Rp 17,500,000
	Kal-teng	0	2	X				
TOTALS								Rp 22,500,000

Table 23. Park Functioning Budgets for 1994-1995

Park Programs	Rp 99,550,000
Personnel Needs for 1994-1995	Rp 3,940,000
Equipment needs for 1994-1995	Rp 46,730,000
Priority Infrastructure Development Needs	Rp 22,500,000
TOTAL	Rp 172,720,000

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