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## **NATURAL RESOURCES MANAGEMENT PROJECT**

BAPPENAS – Ministry of Forestry  
Assisted by  
USAID

### **Five Year Development Plan (1994 – 1999) for the BUKIT BAKA – BUKIT RAYA NATIONAL PARK**

Volume 2

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## PREFACE

Management of the Bukit Baka-Bukit Raya National Park is guided by three management documents produced at one (Operational Plan), five (Development Plan), and 25 (Master Plan) year intervals.

The 25 Year Master Plan is a flexible and general guideline as to how the National Park and its resources should be managed for natural resource base conservation and the benefit of society for a period of 25 years. The plan offers guidelines and management prescriptions, and it identifies program priorities and organizational structures needed to attain the Park's goals and objectives. It also directs the development of institutions and facilities needed to support the management and potential use of national park resources.

The five year Development Plan's purpose is to advance management prescriptions stated in the 25 year Master Plan working framework. The Development Plan describes general mid-term management objectives and activities to accomplish projected long-term national park goals and objectives. The five year plan prescribes objectives, scope of activities, time frames, implementing entities, and management prescriptions for the various Sub-Programs within the national park's functional program: The Environmental Management and Human Development Program.

Annual Operational Plans describe specific short-term activities to be accomplished on a yearly basis, according to the Indonesian fiscal year, and as prescribed by the national park 25 Year Master Plan. These plans are produced annually to define objectives and identify activities, management conditions, and budgets to manage individual Sub-Program components. Management decisions for annual plans are guided by the Park's nature conservation and local community socioeconomic development short-term goals.

This document is the first five year Development Plan for the Bukit Baka-Bukit Raya National Park. The plan describes specific mid-term activities to be accomplished by the park between 1994 and 1999. This Development Plan is guided by the Park's framework of priorities to manage its resources and promote environmental conservation in the Bukit Baka and Bukit Raya region of West and Central Kalimantan.

The five year plan is a flexible document which allows for changes in policy, environment, and socioeconomic conditions in the national park region. This plan should be examined by the Park's advisory council every year, in coordination with the provincial government and taking into account their year and five year plans. Revisions should be reflected in the working components of the Park's annual operational plans.

SITUATION MAP



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## 1. INTRODUCTION

Nature conservation is often viewed as the act of preserving plant and animal species in perpetuity. Nature conservation should be, however, the preservation of natural conditions which give ecosystems and their biotic components the opportunity to continually evolve and adapt to their ever changing environment.

General goals of nature conservation should include activities that preserve genetic diversity, ensure that species and ecosystems are sustainable, and maintain ecological processes and life-support systems for human survival and development. More importantly, however, nature conservation efforts should entail an intrinsic relationship between natural resources and human economic and social development; natural resource base conservation cannot succeed without development and development cannot be achieved without resource conservation.

Bukit Baka-Bukit Raya National Park is part of a wider regional environmental system and is therefore influenced by the society and environment surrounding it. It can be described as an open and incomplete system. Biotic and abiotic elements flow in and out of the Park's environmental realms and local societies contribute to the process of environmental change. The Park's Management Plan incorporates the above elements into three regional human and natural sub-system relationships, namely: behavior, interactions, and changes.

The national park's underlying working premise is that nature conservation goals are related to human socioeconomic development objectives. Therefore, a basic principle of the Management Plan is to combine nature conservation and human development elements to promote the development of local populations and the nature conservation objectives of the national park. In this regards the Park is an open rather than a closed system in which the development needs of local peoples are key factors in the national park's nature conservation management strategy.

## 2. ORGANIZATION OF PLAN COMPONENTS

This five year plan is guided by goals and objectives to attain Park vision components. Park goals will be accomplished through a Functional Program designed to accommodate priority objectives. Park goals and objectives are grouped under seven Functional Sub-Programs designed to address all park management and development needs.

The plan is organized in three main sections. The first section includes a short introduction to the Park's goals and objectives. The second section comprises the plan's Functional Program and its working Sub-Programs. This section describes Sub-Program components and defines Park priority objectives projected for 1994-1999. The third section includes anticipated component implementation schedules and predicted budgets.

## 3. REGIONAL PLANS

Given the relative remoteness of the national park, corresponding provincial plans do not include significant activities, except for plans to further develop and open the Trans-Kalimantan highway, linking West and Central Kalimantan. As planned, branches of the highway will connect with existing Sari Bumi Kusuma forest concessionaire corridors, but present plans indicate that the main highway will not run adjacent to the national park.

Current provincial development objectives include increasing social community welfare in remote areas. Identified development priorities include an increase in the number and diversity of agriculture production units. Perennial agriculture is sought to raise provincial food self-sufficiencies and regional agriculture activities are to be supported by the increase of transportation possibilities to markets.

Environmental considerations are taken into account. Provincial plans anticipate environmental problems caused by changing swidden agricultural patterns. Therefore, the provincial governments are looking into maximizing agriculture productivity and extension programs to reach farmers practicing swidden agriculture. Promoting stationary farming systems is high in the regional agenda. Provincial policies in environmental management include the support for natural resource base conservation and management activities which aim at maintaining the natural system's capabilities of providing development alternatives for present and future generations.

### 3.1 Coordination

All current provincial development plan objectives have been addressed by this 1994-1999 Development Plan. As provincial development plans develop for the Park region, however, these will be addressed by the national park's dynamic Functional Program and incorporated into structural frameworks of subsequent five and one year plan.

It is anticipated that changes in provincial development plans will not alter Park objectives, but the development and implementation of national park activities will be coordinated with all relevant government agency programs. As regional plans develop, these will be examined by the national park advisory council before formulating program activities.

#### 4. NATIONAL PARK VISION, GOALS, AND OBJECTIVES

##### 4.1 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

•	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.

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## 4.2 National Park Goals and Objectives

### 4.2.1 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 landforms.
-	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.

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#### 4.2.2 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



#### 4.2.3 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

#### 4.2.4 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

<ul style="list-style-type: none"><li>• Provide a range of opportunities for appropriate recreational use, tourism and enjoyment of the Park.</li><li>• Promote the Park as a valuable world resource as a basis for fund raising activities.</li><li>• Promote an appreciation and understanding of Park natural and cultural values.</li></ul>
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### 5. NATIONAL PARK FUNCTIONAL PROGRAM

Principal Management Objective

Execute all Park development program components

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

Table 6. National Park Functional Program Sub-Programs

<ul style="list-style-type: none"><li>• Resource Conservation Sub-Program.</li><li>• Community Development Sub-Program.</li><li>• Recreation and Interpretation Sub-Program.</li><li>• Research and Development Sub-Program.</li><li>• Implementation Support Sub-Program.</li><li>• Monitoring and Evaluation Sub-Program.</li><li>• Public Relations Sub-Program.</li></ul>
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## 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.

#### 5.1.1 Biophysical Inventories

##### Principal Management Objective

Determine the Park's natural resources and biological richness.

The function of this program is to conduct long-term biophysical monitoring to determine what biological resources are protected by the Park. Two types of inventories are anticipated: complex inventories implemented by foreign or Indonesian researchers and basic inventories conducted by Park staff. Anticipated inventories include: plant and animal species, survey of eco-types and constituent species, ecological life histories of species, and status of rare, threatened, and endangered species. Biophysical inventories will be complemented by habitat and species monitoring programs designed to identify indicators of ecosystem health, such as: species richness stability, sustained population structures, and proportional trophic configurations.

#### 5.1.2 Protection of Park Habitats

##### Principal Management Objective

Safeguard Park resources from threatening elements.

Protection of natural habitats is the national park's priority objective. Park protection components will therefore introduce, maintain, and enforce incentives and disincentives to local communities, forest concessionaires, and visitors to comply with national park policies. Protection of national park habitats will ensure that the Park maintains representative populations of plant and animal species.

Habitats outside the national park, which are needed to maintain viable animal populations of protected species, should be proposed as Park extension areas or should be managed in conjunction with the Provincial Government within Collaboration-Buffer zones. The Park should make every effort to develop good relations with local forest concessionaires so that the status of rare, endangered, or threatened species leaving the Park temporarily will still be respected outside the protected area.

Table 7. Management and Protection of Park Habitats



### 5.1.3 Species Protection

#### Principal Management Objective

Protect national park rare, endangered, and threatened species.

In formulating species protection efforts, the national park will give priority to regionally rare and endangered plant and animal species. Priority conservation efforts will also be provided to endemic species that represent sole taxonomical representatives. Regionally recognized rare or endangered species and species which are threatened because of restrictive distributions or external pressures will be monitored for needed protection (Map, Appendix 7).

Protection efforts will be focused on keystone, top predator, important seed dispersing, and pollinating species. To protect endangered plant and animal species, the national park will conduct environmental awareness programs directed to local villagers and forest concessionaires. Species protection programs should advance according to national park conservation priorities. Species protection priorities could include species suffering from hunting and habitat destruction.

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#### 5.1.4.1 Species Recuperation, Rehabilitation, and Reintroduction

The national park will consider developing species recovery, rehabilitation, and reintroduction programs. The Park should start by identifying all threatened species and by collecting additional information regarding these. Elements of this program will consider species habitat requirements, endangerment cause, species functions, direct and indirect economic benefits, and potential program success. Studies to support this program should determine the species' home range requirements and minimum viable populations. An adequate cost-benefit analysis study must be prepared to include species in recuperation, rehabilitation, and reintroduction programs. Initial rare or endangered species for this Program could include the orangutan (Pongo pygmaeus), helmeted horn-bill (Rhinoplax vigil), and great argus (Argusianus argus).

#### 5.1.4.2 Management of Locally Used Species

Park management strategies for locally used plant and animal species will be developed according to conservation priorities, use pressures, and ecological particularities. Since the national park could apply these strategies throughout the region, it should work in cooperation with the local government, local communities, forest concessionaires, land owners, and Park visitors. An objective of this component is to develop a sustainable use of certain target species through appropriate management techniques.

##### 5.1.4.2a Local Use of Animal Species

Seasonal harvesting of local animal species may be introduced as a wildlife management tool. Selective and restrictive hunting should be introduced locally through environmental education and awareness campaigns and later reinforced by the national park's protective regulations. Environmental education and awareness campaigns should help bring conservation awareness needs to distant villages of the Bukit Baka and Bukit Raya region. Once users understand the need to harvest forest resources in ways that do not harm the resource base, they are more likely to support policies entailing resource base conservation.

Table 9. Guidelines for Managing Locally Used Species

-	Identify actual and potentially used species and collect and revise available information regarding its ecology and local use.
-	Develop research plans for priority species and encourage national or international institutions to participate.
-	Conduct research on limiting population viability factors for target species sustainability.
-	Develop a species management plan that includes such factors as capturing and harvesting methods, seasonal population distributions, extractive pressures, and species distributions.
-	Implement a monitoring system for selected species to detect unpredicted changes in their populations.

#### 5.1.4.2b Locally Used Plants

Enrichment planting with local perennial species such as tengkawan, rattan, ironwood, will be promoted on degraded areas or in areas immediately adjacent to protected forests, and within Buffer-Collaboration Zones. Swidden enrichment is to be developed in line with local customs and beliefs.

With emphasis on meeting local community needs, management schemes for locally used species will provide ideal opportunities for conserving semi-cultivated plant resources which may otherwise not be possible within the Park Core Zone. Planting multipurpose local perennial or specialized species should be promoted on Collaboration-Buffer Zones. Multipurpose tree species can be encouraged for firewood, live fences, erosion control, fire control, alternative income generation, and Park boundaries. Use of indigenous crops in Collaboration-Buffer Zones should be encouraged as alternate strategy to manage locally used plant species. Conserving stocks of wild and local adapted species, such as medicinal plants, herbs, and commercial trees, should also constitute part of this program.

#### 5.1.5 Enforcement of Resource Conservation Regulations

##### Principal Management Objective

Prevent any potential hazards to Park resources.

##### 5.1.5.1 Ranger Force and Posts

Ranger posts for Park resource protection will be established in strategic locations, such as Park entry points, critical boundaries, and areas of potential encroachment and poaching (Map, Appendix 11,12). Ranger posts at biologically interesting sites may be combined with research posts established to conduct research and monitoring of Park resources.

Park regulations will be enforced by appointed rangers. Boundary patrolling, law enforcement, biological and species monitoring will be their main responsibilities. Ranger staff must be well distributed, properly equipped, and educated to cope with different circumstances involving Park protection activities. Rangers should keep a good working relationship with local communities. It is important that rangers frequently visit and interact with villagers and Park visitors. Their appearance and conduct will ultimately determine the image and perceptions of the Park.

##### 5.1.5.2 Boundary Inspection and Maintenance

Planting multipurpose species should be promoted on national park Collaborative Buffer Zones and Park boundaries in grassland areas (Map, Appendix 11). Local beneficial species with conspicuous leaves, fruits or flowers should be selected. Durian, mangris, and tengkawan and rattan are good potential species. Park personnel must consult local people on the selection of species. Selected species, however, will be local species which bring potential benefits to the local communities.

Park personnel will be responsible for boundary inspection and maintenance activities. Local communities, however, should be granted rights to harvest tree crops. This should maintain a local recognition of Park boundaries. Inspections should be conducted periodically and reports, stating the time, location, and results of each inspection should be made and submitted to the Head of Rangers. Ranger patrol paths are also to be established along the boundaries of the Park, with

priority boundaries being those adjacent to forest concessionaires and human settlements.

Demarcation of Park boundaries should follow clearly defined physical features such as rivers or brooks. Paint-marks or blazing of tree trunks is sufficient. Artificial markers such as cement markers, however, must be placed in delicate conservation areas at 100 meter intervals. These markers must also be placed where boundary directions change. Boundary posts must state the Park's initials, a serial number, and an arrow pointing in the direction of the next post. The boundary must be a two-meter-wide clearing with markers through the middle.

Sign boards must be positioned at trail entry points and where trails run adjacent to protected forests. These sign boards must state the national park's name, extension, status and governing decree, and any relevant regulations to the immediate area. The Park needs to develop a collection of signs for different purposes. These must be made of durable material other than iron-wood, be inexpensive, and easy to maintain.

Table 10. Guidelines for Developing Park Signs

Define:	<ul style="list-style-type: none"> <li>• What is the purpose of the message in the sign and who is the audience.</li> <li>• What is the interpretative technique under the given circumstances.</li> </ul>
Requirement:	<ul style="list-style-type: none"> <li>• The message should be short, clear, and give accurate information.</li> <li>• Standard formats, color combination, and letter types for all signs.</li> </ul>
Purpose:	<ul style="list-style-type: none"> <li>• Indicate direction and distances.</li> <li>• Inform visitors on places, features of interest, and the location of facilities.</li> <li>• Communicate Park rules and regulations.</li> </ul>

ble 11. Resource Conservation Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
RESOURCE SURVEY				
Park Habitat Inventories	<ul style="list-style-type: none"> <li>Recognition and location of Park habitat types</li> <li>Designation of park zonation</li> <li>Appraisal of Park potential for ecotourism</li> <li>Estimation of Park restoration and rehabilitation needs</li> </ul>	<p>[HP]</p> <p>[HP]</p> <p>[MP]</p> <p>[LP]</p>	<p>Scaled Map &amp; Listing</p> <p>Scaled Map &amp; Guidelines</p> <p>Appraisal &amp; Guidance</p> <p>Scaled Map &amp; Guidance</p>	<p>Percentage of Park covered in the inventory</p> <p>Accuracy of Park zonation map and quality of guidelines</p> <p>Percentage of Park covered in the study and quality of guidelines</p> <p>Percentage of Park covered in the assessment, quality of guidelines</p>
Park Vegetation Inventories	<ul style="list-style-type: none"> <li>Location of Park vegetation types and diversity</li> <li>Assessment of Park species conservation status</li> <li>Estimation of species long-term viability</li> </ul>	<p>[HP]</p> <p>[HP]</p> <p>[LP]</p>	<p>Scaled Map &amp; Listing</p> <p>Scaled Map &amp; Listing</p> <p>Analysis &amp; Guidelines</p>	<p>Percentage of Park covered and number of species recognized</p> <p>Accuracy of scaled map and number of species covered in the study</p> <p>Number of species covered in the study and quality of guidelines</p>
Park Animal Inventories	<ul style="list-style-type: none"> <li>Location of Park populations and species diversity</li> <li>Definition of species conservation status</li> <li>Valuation of species long-term viabilities</li> </ul>	<p>[HP]</p> <p>[HP]</p> <p>[LP]</p>	<p>Scaled Map &amp; Listing</p> <p>Analysis &amp; Guidance</p> <p>Analysis &amp; Projections</p>	<p>Number of species recognized and percentage of Park covered</p> <p>Depth of understanding on Park species conservation status</p> <p>Depth of understanding of Park species long-term viabilities</p>
Park Ecosystem Inventories	<ul style="list-style-type: none"> <li>Determination of Park ecosystem types and richness</li> <li>Designation of Park zonation</li> <li>Definition of Park ecosystem conservation needs</li> <li>Assessment of long-term viability of Park ecosystems</li> </ul>	<p>[HP]</p> <p>[HP]</p> <p>[MP]</p> <p>[LP]</p>	<p>Scaled Map &amp; Listings</p> <p>Scaled Map</p> <p>Scaled Map Descriptions</p> <p>Assessment Projections</p>	<p>Percentage of Park covered and accuracy of scaled map</p> <p>Accuracy of zonation map and percentage of Park covered</p> <p>Percentage of park covered and accuracy of needs descriptions</p> <p>Percentage of park covered and authenticity of projections</p>

RESOURCE PROTECTION				
Enforce Park Regulations	<ul style="list-style-type: none"> <li>Enforcement of Park regulations</li> </ul>	[HP]	Patrol reports	Number of infractions stopped
Establish Ranger Posts	<ul style="list-style-type: none"> <li>Establishment of Park presence in the Bukit Baka/Raya region</li> </ul>	[HP]	Park awareness	Local recognition of Park and Number of villages covered
	<ul style="list-style-type: none"> <li>Control of illegal harvest of Park resources</li> </ul>	[HP]	Monitoring reports	Number of infractions reported and percentage of Park covered
	<ul style="list-style-type: none"> <li>Patrol of Park areas</li> </ul>	[HP]	Patrol reports	Number and distribution of report findings
Conduct boundary Inspection and maintenance	<ul style="list-style-type: none"> <li>Assessment of Park boundary condition and needs</li> </ul>	[HP]	Monitoring reports	Percentage of park boundaries covered
	<ul style="list-style-type: none"> <li>Assessment of infractions on Park boundaries</li> </ul>	[HP]	Monitoring Reports	Number and distribution of infractions reported
Monitor Resource-Use	<ul style="list-style-type: none"> <li>Detection of threats to Park resources</li> </ul>	[HP]	Monitoring Reports	Percentage of park covered and distribution of assessed threats
	<ul style="list-style-type: none"> <li>Definition of Park resource endangerment</li> </ul>	[NP]	Analysis and Listings	Percentage of park covered and completeness of listings
	<ul style="list-style-type: none"> <li>Monitoring and evaluating local resource use</li> </ul>	[NP]	Evaluation Reports	Percentage of resource types and regional villages covered
PROTECTION AND MANAGEMENT OF RARE, ENDANGERED, AND THREATENED SPECIES	<ul style="list-style-type: none"> <li>Protection of target species</li> </ul>	[HP]	Threat Reports	Percentage of Park covered and threat distribution
	<ul style="list-style-type: none"> <li>Protection of habitats</li> </ul>	[HP]	Threat Reports	Percentage of Park species
	<ul style="list-style-type: none"> <li>Monitoring of target species populations and distributions</li> </ul>	[NP]	Scaled Maps and Listings	Percentage of Park covered and number of species listed
	<ul style="list-style-type: none"> <li>Management of target species populations</li> </ul>	[LP]	Guidelines	Number and workability of species management plans
Species Recuperation	<ul style="list-style-type: none"> <li>Assessment of target species populations</li> </ul>	[NP]	Listings and Guidelines	Number of species covered and guideline feasibility
Species Rehabilitation	<ul style="list-style-type: none"> <li>Definition of opportunities to rehabilitate target species</li> </ul>	[LP]	Listings and Guidelines	Number of species covered and guideline feasibility
Species Reintroduction	<ul style="list-style-type: none"> <li>Assessment of species reintroduction opportunities</li> </ul>	[LP]	Assessment and Guidelines	Number of species covered and guideline feasibility

Plants	- Inventory of locally used plant species	[MP]	Listings	Number and distribution of villages covered
	- Definition of use pressures of local plant species	[MP]	Scaled Map and Listings	Percentage of Park and villages covered
Animals	- Inventory of locally used animal species	[MP]	Listing	Number and distribution of villages covered
	- Definition of use pressures of local animal species	[MP]	Scaled Map and Listings	Percentage of Park and villages covered

## 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.

### 5.2.1 Community Extension

#### Principal Management Objective

Encourage local communities to use improved agricultural technologies to further land-use stabilization and local economic development.

The national park must establish a network of village coordinators. These villager representatives should be selected from recognized villagers who possess authority and are highly esteemed locally. The task of these villages is to be well-informed on the policies and programs of the Park, its goals and objectives, and to inform local communities regarding these. The villagers should also communicate with Park authorities on infractions about community development problems. Through these representatives, national park extension staff will be able to better determine:

- Improvements to raise the quality of life and economic conditions;
- Constraints to development;
- Potential agricultural crops people want; and,
- Agricultural and marketing constraints.

Working partnerships with local communities will help the Park define needed activities to help villagers attain needed livelihood requirements. The Park will need to work with local technicians to supervise projects such as community tree nurseries, and to help distribute information on agricultural and agroforestry developments to local farmers. These technicians could also operate as liaison national park personnel for communication of technologies and policies between local farmers and the Park. These technicians should be appointed as national park program staff.

Table 12. Elements of National Park Extension Activities

<ul style="list-style-type: none"><li>• Train trainers to assimilate new and improved technologies.</li><li>• Transfer newly adopted technologies to local villagers.</li><li>• Practice demonstration of the newly adopted technologies.</li><li>• Follow-up and monitor technology applicabilities.</li><li>• Integrate newly adapted technology into local systems.</li><li>• Further develop adapted technologies.</li></ul>
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### 5.2.2 Land-Use Stabilization

#### Principal Management Objective

#### Stabilize land requirements through improved agricultural practices

The national park's agricultural extension component aims to help local communities meet their socioeconomic development needs and stabilize their current agricultural practices outside the Park (Map, Appendix 9). The national park will seek the cooperation of relevant provincial agencies and institutions. Activities should be coordinated with both provincial Dinas departments, Kanwil Kehutanan, and BAPPEDA. Collaboration of local and regional NGOs and universities can also form an integral part of this program, since these institutions can be major catalysts for land-use management in these areas.

Since 1992, a Ministry of Forestry Decree requires all forest concession holders to implement community development programs (Bina Desa Hutan Programs) within or near their concessions. National park extension staff should coordinate all community development activities with Bina Desa Hutan Programs of adjacent forest concessionaires (Map, Appendix 9). This will assure that community development activities are complementary rather than conflicting. The national park will seek to establish nurseries in cooperation with Bina Desa Hutan Programs. Species selection, however, must be decided with local communities. For each land-use system activity, villagers must participate in making recommendations for possible crops, known local technologies and give input in selecting materials and changes.

Agroforestry activities promoted by the Park must consider the natural conditions of the area relative to species composition and structural characteristics. The purpose is to combine maximum production efficiency with minimum ecological disruption to benefit local communities. Enrichment planting exercises in riparian belts should retain indigenous trees to minimize changes in microclimate and ecosystem composition. Trees can provide corridor habitats for wild animals, shelter for other crops, reduce soil erosion, and enrich soil fertility.

### 5.2.2.1 Land-Use Systems for Park Extension

The national park region accommodates a variety of land-uses where the Park can help local communities with extension programs to stabilize land requirements and improve agricultural practices (Map, Appendix 9,10). The Park should seek the participation of local villagers when designing extension activities. Local villagers could help determine crops, contribute with known local technologies and have input in selecting working materials and needed technology changes.

Table 13. Land-Use Systems for Extension

▪ Swiddens in Use	▪ Residual Forest Areas
▪ Swiddens in Fallow	▪ Riparian Belts
▪ Stationary farming	▪ Home gardens
▪ Tree Crop	▪ Traditional Forest Areas
▪ Grassland Areas	

#### - Swiddens in Use

These are areas planted and harvested by local communities, primarily for rain-fed rice production. In coordination with timber concessionaire Bina Desa Hutan programs, provincial agricultural departments, interested NGOs, and local agricultural communities, the Park should promote swidden improvement by planting perennial crops. These systems, however, must be studied carefully before encouraging modifications, and drastic changes must be avoided.

#### - Swiddens in Fallow

These areas refer to former swiddens with permanent rotation patterns which are currently in recess between planting periods. Originally, fallows lasted up to eight years; recently, however, fallow periods have decreased due to increasing distances from the villages, increasing village populations, decreasing secondary forests, and exhaustion of swidden soils. The national park should coordinate with other concerned parties to promote crop enrichment, to encourage appropriate land-use within swidden rotations, and to study the possibility of prolonging swidden fallows.

#### - Stationary Farming

These areas refer to farming systems where villagers grow annual or perennial crops for self consumption or for cash. The Park's extension program should work with local farmers, relevant government agencies, and local forest concessionaires to improve stationary farming activities. Improvement of rain-fed and non-rain-fed rice production will take precedence. After careful study, extension agents should encourage improved crop varieties, additional crops, and livestock, including fish farming and game ranching.

- Tree Crops

These are small scale and non-industrial tree crop plantations developed by local communities in village "gardens." Some trees, such as rubber, may be planted in communal areas but generally belong to several families and are managed individually. The national park, in coordination with other relevant parties, should try to transform burned over alang-alang grassland areas into more economically and environmentally suitable land use-systems by encouraging local communities to establish low impact tree crops.

- Grassland Areas

The extensive alang-alang and intermittent gallery forests north of the national park are areas with agricultural potential. These may be rehabilitated for increased cattle production and annual and perennial crops, if burning is controlled. In these areas, the Park should assess the possibility of promoting livestock farming activities that are compatible with conservation.

Extension activities should aim to use and convert these degraded areas to accommodate more efficient land-use systems. NGOs and provincial government agencies should be encouraged to help in fire prevention and control. Establishment of secondary forests on these grasslands may be possible through accelerated natural regeneration (ANR) activities. Secondary forests will help restore soil fertility on these areas and make them suitable for tree crops such as rubber and fruit trees.

- Residual Forest Areas

Residual forest areas, or logged-over forests are often used by local farmers to collect tengkawan, fruits, ironwood, and animal products for self consumption or cash. Extension activities in these areas should include enrichment and sustainable use of residual forests by planting indigenous species with high potential yields.

- Riparian Belts

River banks and riparian belts serve as buffer zones for farm fields and have favorable soils to plant a variety of annual and perennial crops, such as bamboo, cocoa, and coffee. National park extensionists should work with local communities to promote enrichment planting in riparian belts with desired perennial crop species.

Table 14. Guidelines for Conducting Extension Activities

<ul style="list-style-type: none"><li>- Demonstrate new technologies</li><li>- Train in new or improved technologies</li><li>- Transfer the new technologies</li><li>- Conduct practice and demonstration activities with the new technologies</li><li>- Follow-up and monitor developments in the new technologies</li></ul>
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- Home Gardens

Home gardens are areas near village homes where villagers maintain a diversity of annual and perennial crops, generally for self consumption. The national park should look into establishing and improving home gardens to increase crop diversity, income generating alternatives, and nutrition. The park should seek the collaboration of provincial governments, NGOs, and local forest concessionaires to develop these land-use systems with local communities.

- Traditional Forest Areas

Natural forest areas outside forest concessions have been used by local communities for collecting secondary forest products such as rattan, fruits, nuts, roots, construction materials, and animals. Some of these areas may be used and managed under a sustained management system. The Park should work with local communities and the provincial forestry department to establish sustainable forest areas within Collaboration-Buffer Zones. Traditional Forest Areas offer local communities a potential to increase household economies by sustainably harvesting forest products.

#### 5.2.2.2 Sustainable Use of Wildlife

##### Principal Management Objective

Assist local communities in developing commercial activities to reduce their dependencies on agriculture

Through its Functional Program, the national park should begin to study the feasibility of ranching and farming activities with local plant and animal species, such as locally used species with promising marketing perspectives like the bearded pig.

Game farming activities with local animal species, such as the bearded pig (*Sus barbatus barbatus*), local butterflies, moths, and other insects, could be an alternative source of income generation for local communities. For example, indigenous species raised within their own natural environment, such as the bearded pig, present unique game farming opportunities. Although the bearded pig has apparently never been domesticated in the area, it has a history of being the local choice for wild meat. Weighing up to about 150 kg, these animals, once domesticated, may be used as a local and continuous source of meat. Bearded pigs are accustomed to living in groups, which makes the species suitable for husbandry or game management. The species may be interbred with the common pig to produce fertile offsprings with considerable hybrid vigor. The bearded pig is well adapted to the national park region, its population is relatively abundant, and there is a local ample supply of food and water sources.

Table 15. Community Development Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
COMMUNITY DEVELOPMENT				
Develop Agroforestry Extension Activities	<ul style="list-style-type: none"> <li>▪ Sustainable use of natural resources</li> <li>▪ Improved local socioeconomic alternatives</li> <li>▪ Establish conservation compatible systems</li> <li>▪ Soil conservation</li> <li>▪ Social forestry development in riparian belts</li> </ul>	<p>[HP]</p> <p>[HP]</p> <p>[HP]</p> <p>[MP]</p> <p>[LP]</p>	<p>Agroforestry Plots</p> <p>Extra Income Generation</p> <p>Sustainable Agric. Plots</p> <p>Implemented Techniques</p> <p>Agroforestry Plots</p>	<p>Number of developed agroforestry systems</p> <p>Percent increase local income to labor ratio</p> <p>Change in the number of cases of soil erosion</p> <p>Diminishing cases of soil erosion</p> <p>Number of sustainable systems and farmers adopting the system</p>
Select Target Communities for Agroforestry Extension	<ul style="list-style-type: none"> <li>▪ Prioritize villages for extension needs</li> <li>▪ Village territories and land tenure definition</li> </ul>	<p>[HP]</p> <p>[LP]</p>	<p>Listing and Strategies</p> <p>Scaled Maps and Analysis</p>	<p>Number of priority villages and planned strategies</p> <p>Depth of understanding in local tenure systems</p>
Conduct Agricultural Diagnostic Surveys in Target Villages	<ul style="list-style-type: none"> <li>▪ Definition of agricultural system viability</li> <li>▪ Definition of villager extension needs</li> </ul>	<p>[MP]</p> <p>[MP]</p>	<p>Analysis and Guidance</p> <p>Listings and Guidance</p>	<p>Understanding of local systems and percentage villages studied</p> <p>Percentage of systems evaluated and workability of guides</p>

BEST AVAILABLE DOCUMENT

<p>LAND-USE STABILIZATION</p> <p>Promote Fire Management Techniques</p> <p>Identify Potential Agroforestry and Home Garden Crops</p>	<ul style="list-style-type: none"> <li>• Protect local habitats</li> <li>• Prevent escape fire daaages to local agriculture plots</li> <li>• local land-use improvement</li> <li>• Determine home garden possibilities in the region</li> <li>• Improve local economies and nutrition standards</li> </ul>	<p>[EP]</p> <p>[EP]</p> <p>[EP]</p> <p>[MP]</p> <p>[MP]</p>	<p>Guidelines</p> <p>Guidelines</p> <p>More Suitable Land-Use</p> <p>Analysis and Guidance</p> <p>Better standards</p>	<p>Incidence of fire suppression techniques adopted</p> <p>Number of plots saved from fire by fire management</p> <p>Number of home garden plots established and functional</p> <p>Spatial broadness of analysis and workability of guidance</p> <p>Decrease in disease levels and increase in health standards</p>
<p>SUSTAINABLE USE OF WILDLIFE</p> <p>Identification of Potential Species</p>	<ul style="list-style-type: none"> <li>• Sustainable uses of wildlife</li> <li>• Management for local species with commercial prozise</li> </ul>	<p>[LP]</p> <p>[LP]</p>	<p>Listings and Guidelines</p> <p>Strategies Report</p>	<p>Applicability of guidelines and species protection possibilities</p> <p>Number of species with management plans and applicability of strategies</p>

BEST AVAILABLE DOCUMENT

### 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 Nature Tourism

#### Principal Management Objective

Provide a range of opportunities in remote and natural settings which will enable visitors to experience the Park's richness without threatening the principal Park values

The development, administration, and promotion of national park tourism activities should be organized in collaboration with the West and Central Kalimantan provincial tourism departments (Dinas Pariwisata). All park tourism must be non-extractive, meaning that tourists will enter the Park with the sole purpose to appreciate and enjoy the regional scenery and local wildlife. This will govern all Park policies dealing with nature tourism.

The national park should develop recreational opportunities, environmental educational activities, and informational facilities for tourists and visitors. Adequate facilities, such as interpretation trails, guide services, visitor centers, and trained visitor-service personnel should be developed. However, only recreational activities and accommodations compatible with the Park goals and objectives will be permitted. Nature tourism must present activities for different types of tourists:

- Naturalist Tourists, who will visit the NP with the purpose of seeing and understanding its natural attributes;
- Adventure tourists, who visit the NP to undertake an unusual trip; and,
- Casual tourists, who join nature tourism activities incidentally as a part of a broader trip to the region.

### 5.3.1.1 Visitor Information Centers

#### Objective of Visitor Centers

Provide visitors with information about the Park's natural history, its fauna and flora, and of Dayak adaptations and culture in and around the Park.

The national park will develop two Visitor Information Centers; one in Pontianak, West Kalimantan and another in Palangka Raya, Central Kalimantan. The function of the Visitor Information Centers is to attract visitors to the Park. It will provide information such as Park location, facilities, recreational activities, and transportation. The Center should have posters and pictures of local forests, wildlife and landscapes, and a Park model showing protected watersheds, location of facilities, and management zones. Descriptive pamphlets will also be available to provide graphic information.

Visitor Information Centers will initiate tourist promotions with Provincial Tourism Departments (Kantor Wilaya Departemen Pariwisata Pos Dan Telekomunikasi, Dinas Pariwisata) and Indonesian travel agents. Tourist promotions should emphasize tourist visits to the Park and provide visitor packages linking tourist attractions between Pontianak or Palangka Raya and the national park.

#### 5.3.1.1a Visitor Interpretation Center

##### Principal Management Objective

Provide visitors with opportunities to experience the Park's natural history, its fauna and flora, and its mountainous landscape.

The Park will have a Visitor Interpretation Center at the park headquarters to support recreational and environmental education activities (Map, Appendix 11). The Visitor Interpretation Center differs from the Information Centers in that it will not be limited to the listing of facts, but it will also reveal ecological and nature conservation information, that is concepts, implications, and biophysical component interrelationships occurring in the natural setting.

The Center will explain and educate the visitor on the park's purpose, ecosystem components, and management strategies. It will also help the visitor appreciate the natural features of the national park and increase the visitor's awareness and interest in Park policies, objectives, and goals through media such as: posters, brochures, and pamphlets. The Visitor Interpretation Center will have all elements of the Visitor Information Centers. It will, however, be supplemented with nature trails, watch towers, and interpretation panels and signs within the Park and public recreation areas.

Through supplied information and ranger services, visitors will be protected from possible injuries or from getting lost in the forest. Safety regulations will be established at the entrance to the Park's trail and Visitor Interpretation Center. Simple first-aid facilities should be available at the Center. Rangers need to be trained to apply first-aid and emergency assistance procedures; the Park will also have arrangements with organizations and public health offices for rescue activities and emergency services.

Table 16. Visitor Centers Exhibits and Information

Exhibits
<ul style="list-style-type: none"><li>- Maps, posters, vitrines, models, and photographs of Park attributes.</li><li>- Slide presentations of national park features and automatic play-back sounds of Park jungle sounds.</li><li>- Collections of skulls, antlers, horns, plaster cards of animal foot prints and national park flowers, seeds, and plant specimens.</li><li>- Posters indicating life stages and natural histories of Park animals.</li><li>- Models of national park areas and wall-maps indicating boundaries, roads, trails, campsites, picnic sites, and other facilities.</li></ul>
Information
<ul style="list-style-type: none"><li>- Carry-out maps and pamphlets, with general and self-guiding national park information.</li><li>- Listing of publications related to the NP and its features.</li><li>- Information on access to the Park and available infrastructures and services.</li><li>- Information on Park goals, objectives, and policies, including guidelines for tourist behavior and park regulations.</li><li>- Information on Park attractions and activities, including regional guided tours and cultural activities, interpretations, and information regarding Park natural settings.</li></ul>

#### 5.3.1.1b Nature Trails

Nature trails will provide interpretation experience and recreational enjoyment to the visitor. Watchtowers and wildlife viewing hides should be constructed in appropriate sites throughout the nature trail system. These must not spoil, however, the natural setting.

Nature trails will be constructed in selected areas near the interpretation center where natural features can be appreciated by the visitor (Map, Appendix 11). Selection of nature trail sites will keep in mind visitor overcrowding possibilities. Panels and signs describing interesting features will be placed along nature trails to inform of the natural history of the area. Detailed leaflets, with trail maps and numbered sites along the trail, will present additional information on NP interesting features.

Table 17. Guidelines for Nature Trail Development

- Use existing trails as much as possible.
- Assure that the proposed trail serves its purpose and is located in an area where Park features are enjoyed.
- Survey the designated area; list notable natural features and arrange trail route.
- Assess expected visitor impact to the trail and list fragile features.
- Make a landscape assessment and review trail technical aspects.
- Walk the trail; check its length and access; and determine the feasibility of trail construction.
- Clear proposed trail of obstacles; cut overhanging vegetation to two meters height; do not cut large trees and do not clear to bare soil; and, fill depressions with rocks or soil.
- Select trails on slopes below 17% and avoid tracing the trail vertically on the slope.
- Angle the trail across the slope and avoid narrow angles.
- Design an interpretative program for the trail and list facilities provided.
- Establish a maintenance schedule and work schedule for patrolling and collection of litter.
- Build the trail with curves; avoid straight stretches; and, avoid designs which encourage visitors to take short cuts.
- Avoid steep hillsides and waterlogged areas; install water bars and drains to drain water off and not down the trail; and, if needed raise the trail on a wooden walkway or stepping stones.
- At rest stops provide simple benches.
- At stream crossings or deep gorges build bridges. Steps may be cut into rock. A fallen tree may be used for passage if safe.
- At trail entrances place signs with basic information, directional signs, and interpretation plaques. Also place information signs at trail junctions.

#### 5.3.1.1c Self-Guided Nature Trails

The Park will have self-guided interpretation trails, camping ground facilities, observation towers, and limited accommodations near the Visitor Interpretation Center and throughout the Park's utilization zone (Map, Appendix 11). Interpretation trails should be developed for different tourist interests, ages, and physical capabilities. Short-easy access trails with low hiking skill and fitness requirements will be developed near the Visitor Interpretation Center. These trails will represent national park ecosystems without having to enter deep into the forest. Standard nature trails will be short with an approximate walking distance of about 1.5 km and an estimated walking time of 60 to 90 minutes.

#### 5.3.1.1d Guided Mountain Trails

Guided mountain trails could be the last of the trails, i.e., the most difficult. These trails will tailor to tourists seeking a wilderness experience and take the tourist into isolated mountain ranges with overnight camping grounds (Map, Appendix 11). They should be guided by a naturalist and local guide or interpretation officer who will give explanations at selected sites.

Mountain trails will have more difficult access, require longer time commitments, and demand moderate to high hiking skills. They will tailor to tourists who want to explore the forest with extended schedules, as these will be trails with steep mountain slopes and valleys and require more than one night stay in the forest. Here, tourists will experience night camping in the forest and the diversity of local wildlife at daybreak. Access may require good physical condition and flexible time schedules.

#### 5.3.1.1e Guided Tours

Guided tours should be available to meet general tourist recreational needs. Local guides will need to be hired for local knowledge of fauna and flora for visiting parties and wilderness trekking excursions. Local communities should be assisted by national park personnel in efforts to offer their villages, customs, and crafts to tourism. Areas or villages where tourists are likely to visit will be offered visitor awareness programs. Local people, however, must determine the extent to which these guided tours are developed.

#### 5.3.1.1f Camping Sites and Picnic Units

Camping sites should be developed within the Park's Utilization Zone (Map, Appendix 11). They must be located near a stream and support about five small size (five people) camping tents. The site should remain sheltered by natural vegetation, have common rest-rooms, cooking-eating shelters, and adequate facilities for trash collection.

Cooking must only be permitted in designated areas near each tent site, with kerosene stoves available for rent at the Interpretation Center. Bathing should be permitted only within a designated areas, and hiking must be limited to the nearby trails.

Picnic grounds will be relatively larger areas with facilities limited to picnic tables and benches, shelters, and common rest-rooms. Small grocery shopping for picnicking or rental of basic camping equipment should be available from the national park. The design standards for camping sites and picnic units inside the Utilization Zone will be dependant on the environmental conditions of the site.

Table 18. Guidelines for Camping Sites

- A maximum of five camping sites and ten picnic units per hectare should be accepted.
- Every picnic unit should include a table with sitting benches, barbecue facilities, and disposal containers.
- For every 5 camping sites or picnic units a sanitary latrine must be provided.
- A trash collector should be located every 5 picnic units and should not be located more than 30 meters away from the picnic unit.
- A rain shelter should be provided for every 5 picnic units.

#### 5.3.1.1g Tourism Cottage and Cabin Facilities

Cottages and cabins for tourism facilities within the Utilization Zone will be owned and managed by the national park unless concessionaire arrangements have been agreed upon by PHPA. If such, a percentage from concessionaire proceeds from these facilities will be allocated to the Park, and employment of personnel must include a majority of local communities.

Waste disposal facilities must be developed at selected tourist sites. Visitors will be encouraged to use these facilities through sign boards and information. Litter bins will be clearly visible, easy to use, and available at nature trails, camping sites, and cabin and cottage sites. The design of litter bins should fit the natural setting, and scavenging animals must not be able to access the bin and disperse its contents.

Table 19. Tourism Facilities

- Cottages: simple tourist quarters containing basic furnishings and cooking utensils to accommodate a small family for a short-term. The units may consist of two bedrooms, a simple kitchenette, a bathroom, a dining-living room, and a screened porch.
- Cabins: unfurnished tourist units consisting of one or two rooms, a common eating place, and a kitchenette. Visitors must provide their own cooking utensils and bedding for sleeping on the floor or bunks.

### 5.3.2 Environmental Awareness

#### Principal Management Objective

Provide information on the purpose and benefits of the national park and its goals and objectives.

Management and protection of the Park requires the cooperation of local people. Initially, the Park will have minimal visitor interpretational needs. The primary goal of the Recreation and Interpretation Sub-Program, therefore, will be to explain the purpose and values of the Park to the public and local communities. This also entails an understanding and cooperation in achieving national park goals and objectives. Considerable time must be spent by Park officers to establish working relationships with local communities and to encourage their active involvement in Park programs.

Developing an environmental awareness and education program for local people will be a priority. This program must aim at increasing the people's understanding of the Park to gain their support. Activities need to be conducted in both formal and informal settings and for local students as well as farmers. In liaison with local communities, forest concessionaire extension workers, NGOS, local government officials, and Park personnel, the Sub-Program will be responsible for the planning, coordination, and implementation of all environmental awareness activities.

Table 20. Guidelines for Environmental Awareness Targets

<ul style="list-style-type: none"><li>- Assess local environmental awareness needs.</li><li>- Plan activities to satisfy prevalent environmental awareness needs.</li><li>- Define activity participants and responsibilities to address needs.</li><li>- Make a schedule of activities to address the above needs.</li><li>- Plan activity follow-ups.</li></ul>
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The Park's Environmental Awareness component aims to inform and develop local community understanding of the aims and benefits of Park programs. Local community participation in national park functions, public awareness activities, and programs are fundamental. Public awareness programs must be practical and must reach villages surrounding the national park. This will require considerable planning and execution efforts, and therefore, it must be granted sufficient manpower and authority.

Formal and informal environmental awareness activities should be planned in collaboration with the local school teachers and relevant parties.

#### 5.3.2.1 Formal Environmental Awareness

The national park should develop formal environmental education activities such as classroom and workshop learning sessions in villages with school infrastructures (Map, Appendix 10). These sessions can be conducted by environmental awareness staff in liaison with local school teachers. Formal environmental awareness activities will be primarily conducted for school children from different villages. An effort should be made, however, for these activities to enter the local school curricula in subjects such as science, reading, composition, and painting.

#### 5.3.2.2 Informal Environmental Awareness

Informal environmental awareness activities will be introduced to further regional conservation efforts. The Program should contain a "Mobil Environmental Awareness Unit." This unit could bring practical activities to remote areas where schools are yet to be developed (Map, Appendix 10). The unit can also work with village farmers on issues such as fire control, agroforestry practices, and nature conservation. The Unit should work in connection with school teachers, forest concessionaire Bina Desa Hutan Program extensionists, and the Indonesian "Scholars Assisting in Village Development Program" (SP3D--Sarjana Pembantu Penggerak Pembangunan Desa).

Table 21. Recreation and Interpretation Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
<b>NATURE TOURISM</b>				
Select Suitable Park Ecotourism Zones	<ul style="list-style-type: none"> <li>Definition of Park areas with tourism potential</li> </ul>	[MP]	Scaled Map and Listings	Suitability of definitions and percentage of Park covered
	<ul style="list-style-type: none"> <li>Definition of Park tourism types and recreation zones</li> </ul>	[MP]	Scaled Map and Guidelines	Percentage of park surveyed and accuracy of maps
Define Park Ecotourism Potential	<ul style="list-style-type: none"> <li>Assess tourism prospects within Park zones</li> </ul>	[MP]	Assessment Report	Number, quality, and feasibility of Park tourism prospects
Develop Park Visitor Information Centers	<ul style="list-style-type: none"> <li>Information/interpretation facilities for tourists</li> </ul>	[MP]	Facilities Built and Furnished	Level of assimilation of information and suitability of facilities
Develop Park Visitor Facilities	<ul style="list-style-type: none"> <li>Park visitation</li> </ul>	[LP]	Park tourism	Park visitation and stay-over/year
	<ul style="list-style-type: none"> <li>Adequate facilities for Park tourism</li> </ul>	[MP]	Facilities Available	Ratio number of tourists visiting to number using Park facilities
	<ul style="list-style-type: none"> <li>Park tourism</li> </ul>	[LP]	Park tourism	Number of tourists visiting the Park
<b>ENVIRONMENTAL AWARENESS</b>				
Provide information on Conservation Needs and Objectives	<ul style="list-style-type: none"> <li>Support for Park conservation activities</li> </ul>	[HP]	Information Materials	Level of local participation in Park conservation programs
	<ul style="list-style-type: none"> <li>Regional resources-base conservation</li> </ul>	[HP]	Information Materials	Number of cases of resource over-exploitation
Provide Information on Park Conservation Policies	<ul style="list-style-type: none"> <li>Knowledge of Park conservation policies</li> </ul>	[HP]	Information Materials	Number of cases of Park policy negligence
Distribute Information on Park Resources and Values	<ul style="list-style-type: none"> <li>Local understanding of Park significance</li> </ul>	[HP]	Information Materials	Percentage of villagers who know and understand Park functions

## 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.

#### 5.4.1 Research in Conservation Biology

The Park should promote research and monitoring on conservation biology to assess the long-term viability of local species and to prescribe appropriate management strategies. Within this component, the national park should encourage national and international scientific research in topics such as habitat fragmentation effects on natural systems and the ecological viability of passageways between undisturbed areas within timber concessions and protected areas.

#### 5.4.2 Research in Natural Forest Management

Research to enhance current natural resource management strategies will assure that forest concessionaire management programs will support the goals and objectives of the national park. The Park should promote research activities to enhance silvicultural and other natural forest management activities.

#### 5.4.3 Research in Patterns and Processes of Local Ecosystems

In order to develop long-term management strategies and to maintain protected and unprotected target habitats, the national park should promote research to study patterns and processes of local ecosystems, including the quantitative and qualitative ecosystem responses to environmental disturbance.

#### 5.4.4 Research in Ethnobiology

The national park should promote research activities to assess local villager interactions with the environment, including manners in which they classify and evaluate plants, animals, and ecosystem functions. Information on ethnobiology from local communities will help determine the potential use of local plant and animal species and the feasibility of establishing Traditional Forest Areas in the region.

Table 22. Guidelines to Attract Scientists to Conduct Research



#### 5.4.5 Natural Resources Utilization

To maintain the integrity of ecosystem functions in the region, the national park should encourage research into the management of natural resource use by local communities, forest concessionaires, and government agencies, including the effects of continuous harvesting pressures on the sustainability of the local resource base.

#### 5.4.6 Research in Agricultural Systems

Research in local agricultural systems should complement the Park's community development goals. The national park must foster research on technologies to improve the ecological sustainability and economic feasibility of local agriculture practices, including enrichment of swidden fallow, soil and water conservation, and annual, biannual, and perennial crops. Other research activities should include studies on local land and resource tenure systems to determine the applicability of Park programs to promote perennial crops.

**BEST AVAILABLE DOCUMENT**

Table 23. Research and Development Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
BIOLOGICAL RESEARCH				
Research in Conservation Biology	<ul style="list-style-type: none"> <li>▪ Identification of Park keystone species</li> <li>▪ Knowledge of species habitat needs</li> <li>▪ Species long-term viability projections</li> </ul>	[RP]	Listings and Inventory	Effectiveness of keystone species as indicators
		[MP]	Scales Map and Listings	Number of species studied and percentage of Park coverage
		[LP]	Projections and Guidance	Percentage of species in study and likelihood of projections
Research on Patterns and Processes of Ecosystems	<ul style="list-style-type: none"> <li>▪ Understanding of biological interactions</li> <li>▪ Understanding of biological thresholds of disturbance</li> </ul>	[LP]	Analysis	Percentage of habitats and species covered in the analysis
		[LP]	Analysis and guidance	Number of ecotypes covered in the analysis and level of understanding

BEST AVAILABLE DOCUMENT

RESOURCE USE RESEARCH				
Research in Natural Forest Management	<ul style="list-style-type: none"> <li>Information on ecological distress from resource uses</li> </ul>	[LP]	Analysis and Guidance	Percentage of resource uses analyzed
	<ul style="list-style-type: none"> <li>Information on the ecological sustainability of local uses</li> </ul>	[MP]	Analysis and Listings	Types of resources and local uses analyzed, number of villages/commissions covered
	<ul style="list-style-type: none"> <li>Information on the seasonality and extent of forest harvests</li> </ul>	[LP]	Analysis and Listings	Percentage of villages covered and accuracy of listings
Research in Agricultural Systems	<ul style="list-style-type: none"> <li>Assessment of possibilities for improved technologies</li> </ul>	[HP]	Assessment and Guidelines	Number and opportunity of technologies assessed and implemented
	<ul style="list-style-type: none"> <li>Assessment of locally used agroforestry techniques</li> </ul>	[HP]	Assessment and Guidance	Number of techniques assessed and implemented
	<ul style="list-style-type: none"> <li>Definition of sustainability strategies for local practices</li> </ul>	[MP]	Analysis and Guidelines	Workability of strategies, successful practices, and workability of guidelines
	<ul style="list-style-type: none"> <li>Assessment of local crop market possibilities</li> </ul>	[MP]	Assessment and Guidance	Percentage of crops assessed and accuracy of assessment
Research in Ethnobiology	<ul style="list-style-type: none"> <li>Understanding of local interactions with the environment</li> </ul>	[LP]	Analysis, Listings, and Guidance	Level of understanding accuracy of listings, and number of interactions assessed
	<ul style="list-style-type: none"> <li>Understanding on local knowledge of ecology and biology</li> </ul>	[LP]	Analysis and Guidance	Level of understanding and feasibility of guidance to utilize this knowledge

BEST AVAILABLE DOCUMENT

## 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 Bukit Baka-Bukit Raya Council

#### Principal Management Objective

Integrate into one group the different constituencies affected by management decisions for Park development.

To support the Park's integration into the different levels of government and local communities in the two provinces, the Bukit Baka-Bukit Raya Council should be established. This Council will give local and regional representatives the ability to influence Park management decisions regarding its approach and direction. The Council's task will be to ensure that Park management plans and implementation programs are carried out as stipulated and in accordance with regional development plans and local community development.

Table 24. Bukit Baka-Bukit Raya Council

### 5.5.2 Park Personnel and Administration

The national park will be initially managed under the direct supervision of the Kepala Sub-Balai Konservasi Sumber Daya Alam (SBKSDA) in Pontianak. However, a Kepala Sub-Balai Taman Nasional (PHPA) must be established once the Park is operational or within the first two years of this Development Plan.

Until the appointment of a Park Manager (Kepala Taman Nasional), management of the national park should be assisted by a temporary assistant to the SBKSDA in Pontianak and a Park warden at the national park site headquarters. These two officials should share the responsibility for all national park administrative and management activities.

#### 5.5.2.1 Personnel Tasks

Several senior Park staff will be required in the field: initially, a temporary warden to look after all field activities, three Sub-Program Officers to direct priority Public Relations, Resource Conservation, and Community Development Sub-Program activities, a Chief of Rangers to oversee all Park rangers, four senior rangers to look after activities in ranger posts, and four junior rangers.

The Chief of Rangers (a former ranger), the Resource Protection Sub-Program office, the Community Development Sub-Program office, and the Public Relations Sub-Program officer, are to be appointed within the first two years after the completion of the Park management plan. Initial duties of these senior staff are to initiate resource conservation, community extension, and Park public relation Program activities.

The Chief of Rangers will be responsible for the supervision of ranger personnel and their field activities. He/she and the Park Manager must be stationed at the national park site and regularly visit heads of Desas and Dusuns, inspect infrastructure construction, and participate in boundary surveys.

Table 25. Ranger Patrol Functions

<ul style="list-style-type: none"><li>▪ Implement national park regulations.</li><li>▪ Protect the national park Core and Wilderness Zones.</li><li>▪ Enforce visitor permits.</li><li>▪ Monitor visitor activities.</li><li>▪ Prevent illegal hunting, logging, or agriculture activities inside the national park.</li><li>▪ Maintain good relations with local communities.</li><li>▪ Conduct national park wildlife and habitat data collection and monitoring.</li></ul>
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Initially, the Public Relations Sub-Program officer will implement environmental awareness and education campaigns with local communities, in coordination with Desa, Kecamatan, and Kabupaten government officials. As priority local environmental awareness programs advance, the Park will initiate a broader range of public relations activities.

The Community Development Sub-Program officer must also be stationed at the national park site and work with local communities. The officer will be in charge of implementing socioeconomic development activities described in the Park Operational Plan. The officer must also coordinate with the Bina Desa Hutan Programs of regional forest concessionaires.

#### 5.5.2.2 National Park Personnel Management

Two rangers will be assigned at each ranger post. Each ranger must receive clear terms of reference and duty schedules. Work performance should be checked periodically by the Resource Protection and Management Sub-Program officer.

A standard patrolling system for Park rangers should be prepared jointly by the resource Protection and Management Sub-Program officer, the Head of Rangers, and the rangers. The primary function of the rangers is to patrol park boundaries and territories. Rangers will patrol in pairs and include routine inspections. Rangers must be encouraged to visit local villagers and participate in community development or environmental awareness programs. In addition, rangers should help monitor habitat or species changes by collecting biological and ecological data on the Park. The participation of rangers in such activities is fundamental to maintain the conservation and development theme of the national park and to encourage rapport between rangers and local villagers.

Table 26. Activities to Support Park Administration

<ul style="list-style-type: none"><li>• Prepare and evaluate national park Operational and Development plans, in cooperation with the Advisory Board.</li><li>• Coordinate and support the development of Park programs.</li><li>• Effectively manage personnel, infrastructures, equipment, and financial resources.</li><li>• Consolidate the management of different Park zoning systems and program components.</li><li>• Accommodate Park organizational structures according to available personnel and budgets.</li><li>• Promote the development of working agreements which support Park programs.</li><li>• Establish mechanisms that restrict encroachment to Park and oversee enclave communities.</li></ul>
--

Efforts should be made to recruit junior ranger staff locally. Locally recruited ranger personnel may have more affinities to local forests. It is important that the ranger force include representatives of different local ethnic groups. Initial appointments of junior rangers can be temporary. After a probation period, however, these should be appointed as full rangers if they prove competent.

Rangers are to be given adequate training by the Chief of Rangers and undergo a two month orientation to get acquainted with Park rules and regulations, proper law enforcement procedures, and the Park natural history. Rangers need to be trained in basic survey and monitoring, data collection, the use of simple equipment, and report preparations.

#### 5.5.2.3 Line of Responsibility

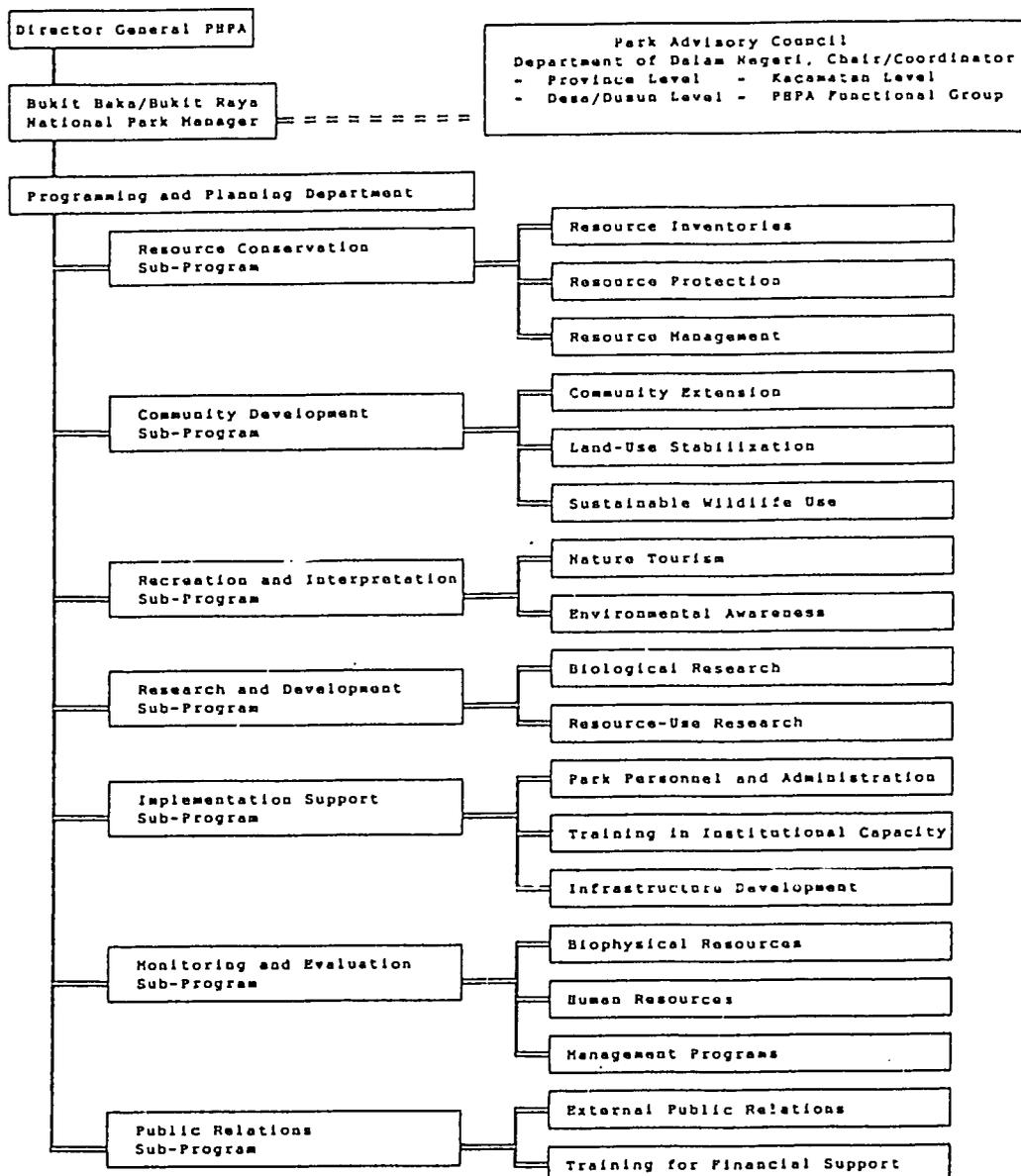
It is essential that a good line of responsibility be established among Park staff. The duties and responsibilities of all Park personnel must be clearly defined and supported through regular reports.

Brief patrol reports should be prepared by rangers after patrols or monitoring duties, including survey data. On special cases of law infringements rangers should make a special report to the head of rangers. In serious cases, reports must follow the line of command and be called to the attention of the Park Manager. The Chief of Rangers should use these reports to monitor threats to the Park.

The Chief of Rangers will be responsible for tabulating field monitoring data and for submitting relevant results to the appropriate Sub-Program Officer. Sub-Program officers will submit brief bimonthly reports summarizing progress and problems to the Park Manager, who then will submit annual reports to PHPA that summarize Park management progress and/or constraints.

Significant items in Sub-Program Officer reports regarding advancements or constraints in the implementation of national park management must be discussed with all Park senior staff on a periodical basis.

Table 27. National Park Organization Structure



### 5.5.3 Training and Development of Institutional Capacity

#### Principal Management Objective

Develop the national park capacity to be self-sufficient in technical and financial needs.

The purpose of initial training programs will be to help Park personnel understand and be able to implement the multi-purpose objectives of the national park. Training will need to supplement wildlife and forest management skills of rangers with knowledge on community development, applied research, and nature conservation.

Training for Collaborative-Buffer Zone management must be an integral part of Park institutional development activities. The Implementation Support Sub-Program will help develop the technical skills of Park personnel through specific training activities.

Table 28. Types of Practical Park Staff Training

<ul style="list-style-type: none"><li>• Field trips to other national parks.</li><li>• Short training courses and workshop sessions.</li><li>• Training programs in park management, natural resource base conservation, and environmental education, awareness, and interpretation.</li><li>• On site training of Park personnel.</li></ul>
--

Development of technical skills should not be restricted to training in managing park forests fauna and flora, and land and water resources. Training should also develop skills in dealing with activities which threaten the Park's integrity and with activities to alleviate local community development constraints.

Table 29. Guidelines on How to Determine Training Needs

<ul style="list-style-type: none"><li>• Prepare job descriptions for different types and levels of national park personnel.</li><li>• Describe skills needed to perform these tasks in job descriptions.</li><li>• Evaluate skills obtained through training and experience.</li><li>• Analyze deficiencies, additional skills required, and corresponding training needs.</li><li>• Determine the education level, knowledge, and experience of national park personnel.</li></ul>
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#### 5.5.4 Infrastructure Development

##### Principal Management Objective

Support Park administration and national park development programs.

After the Park's site plan for support infrastructures is developed, the park should begin to construct priority buildings, such as a Park central office at site, maintenance shops, stores, garages, radio room, and housing for Park employees. Buildings can be located within the Park Utilization Zone, but high impact quarters should be located near the borders of the Park.

The architectural design for all Park facilities must exhibit the principles of Indonesian national parks and the lifestyles of local communities. Basic shapes of buildings should reflect the forms of traditional buildings of local Dayak communities. Although design elements are not required and building designs may vary according to function. All exterior building materials and colors should be of natural earthy shades which blend in with their surroundings; this will promote the Park's principle of allowing nature to dominate the scenery.

The natural features of the national park should be developed primarily as tourist attractions. Facilities must not be built on exposed skylines or dominate the natural scene. For example, sites and designs of observation towers will be carefully selected to minimize unsightly visual impacts. Sites for tourist facilities must be selected for practical considerations such as access, visitor safety, and water supply. Special attention should be given to minimize the impacts of visitors and of development in the Park.

##### 5.5.4.1 Standard Furnishings

###### 5.5.4.1a Ranger Posts

Ranger posts will consist of simple quarters capable of accommodating two rangers.

Ranger posts should contain the following furnishings: 2 beds with pillows, mattresses, mosquito nets; 2 changes of sheets and cover; a 4 seat dining table and chairs; 2 armories; 1 work desk; kerosene lamps, cooking set with utensils, and eating utensils enough for four people. Ranger patrolling gear should also be provided.

###### 5.5.4.1b Ranger/Research Post

Research/ranger posts will consist of simple quarters sufficiently big to hold two rangers and two researchers at one time. These posts will have dual functions as ranger post and research stations, particularly in remote areas and in those areas where development is prohibited.

These posts should be larger than regular ranger posts and will have two additional rooms. They should contain the following furnishings: 6 beds with pillows, mattresses, mosquito nets; 2 changes of sheets and cover; a 6 seat dining table with chairs; 4 armories; 2 desks with chairs; 1 typewriter, file cabinet and supplies; and kerosene lamps; complete cooking set; and eating utensils enough for six people.

Table 30. Implementation Support Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
DEVELOPMENT OF INSTITUTIONAL CAPACITIES				
Training support for technical needs	<ul style="list-style-type: none"> <li>Improvement of Park staff technical capabilities</li> </ul>	[HP]	Training	Improved percentage of skills and technical capabilities
Training support for financial needs	<ul style="list-style-type: none"> <li>Availability of external funds for Park programs</li> </ul>	[HP]	Extra funds	Amount of funds for Park development programs proceeding from proposals
INFRASTRUCTURE DEVELOPMENT				
Define Park Site Plan	<ul style="list-style-type: none"> <li>Specified locations for Park support infrastructure</li> <li>Plans for utilization of Park areas and use functions</li> </ul>	[MP]	Plan with Scaled Map and Guidance	Completeness and feasibility of plan and guidance
		[MP]	Plan with Scaled Map Guidelines	Percent coverage of Park area functions and feasibility of guidelines
Construction of Park Management Buildings	<ul style="list-style-type: none"> <li>Available Park management support facilities</li> </ul>	[MP]	Management Buildings	Appropriateness of buildings and percentage of erected buildings
Construction of Park Tourism Facilities	<ul style="list-style-type: none"> <li>Available tourism support facilities</li> </ul>	[LP]	Tourism Facilities	Number of facilities constructed and percentage of tourist utilization

## 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.

### 5.6.1 Monitoring of Biophysical Resources

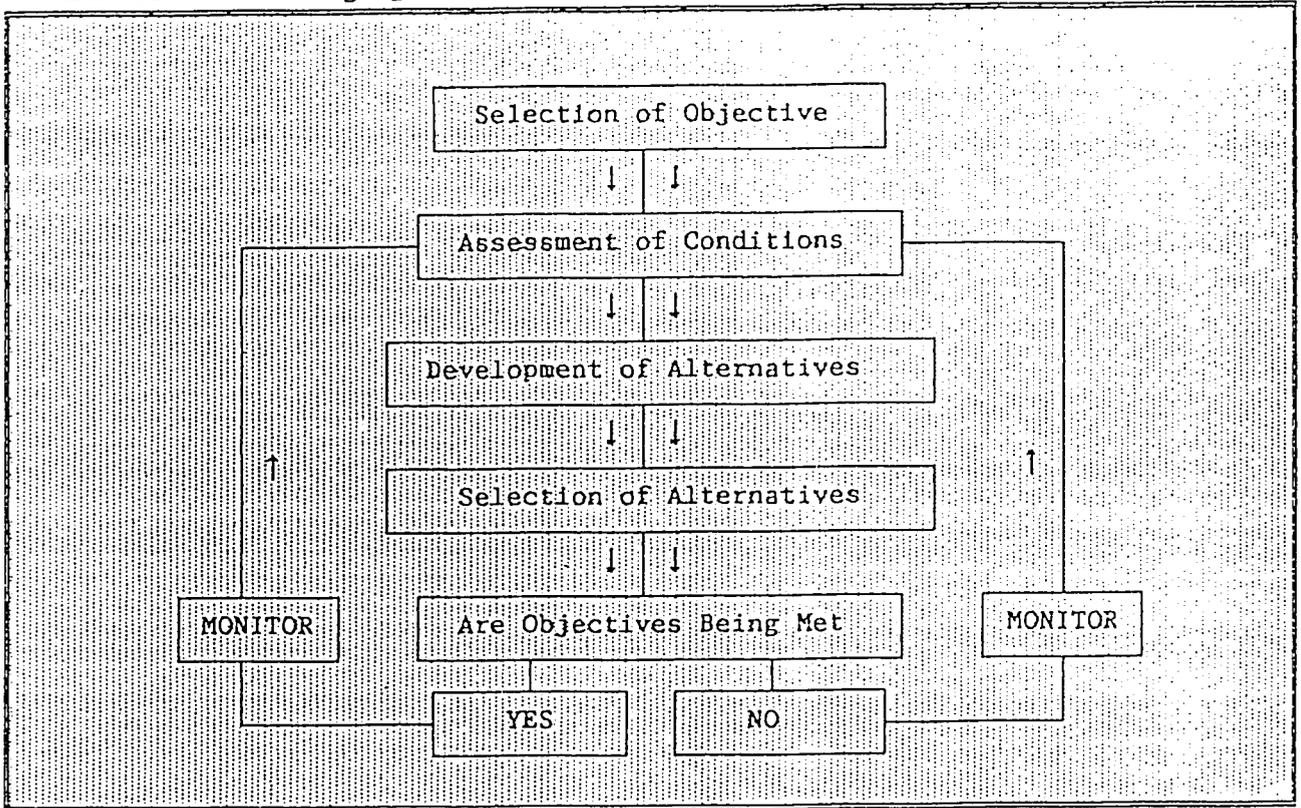
#### Principal Management Objective

Determine changes in biophysical resources to anticipate endangerment.

Monitoring of national park biophysical resources will enable Park management to determine the condition and prevalent changes affecting the natural resource base. Monitoring Park resources will also increase the knowledge of national park ecosystem components, functions, and characteristics for the purpose of implementing appropriate management and protection programs. Monitoring of Park resources will also help determine the environmental impact of human activities upon the natural resource base. This monitoring component is directly linked to the Resource Conservation Sub-Program, and monitoring results will directly affect the design and implementation of activities of this Sub-Program.

Local communities are a vital component of monitoring activities and changes of biological and species patterns. By pointing out the benefits of monitoring biological resources, local people can be encouraged to help assess and monitor tree growth rates, fluctuations in species populations, plant and animal interactions, breeding and fruiting seasons, and the use and incidence of plant and animal species. It is essential, however, that local people be trained in the technical skills to conduct monitoring activities. Training programs will also encourage villagers to use their ethnobiological knowledge and participate in resource monitoring activities.

Table 31. Monitoring System in Planning



### 5.6.2 Monitoring of Human Resources

#### Principal Management Objective

Determine changes in human resources to define training needs and identify Park management threats.

Monitoring of national park human resources will enable Park management to assess institutional training needs and to reinforce its administration. Results of training activities for institutional development should be closely monitored in order to assess their effectiveness and opportunity perspectives. This monitoring component is linked directly to the Implementation Support Sub-Program, as they both develop institutional capacities for Park management.

This component also includes monitoring activities of human resources and land-use systems outside the national park. Through monitoring activities Park management will be able to observe and determine trends and patterns of human resource and natural resource base changes outside the Park. Key measurements must be recorded periodically and records kept and tabulated to show trends. Monitoring changes in regional land-use systems is a management tool to assess production capabilities and potential problems of regional resource base use. Local communities and forest concessionaires should be encouraged to observe and report changes in

resource use and availability, changes in soil fertility, changes in crops or production levels, and incidence of diseases and pests.

Table 32. Steps to Establish a Land-use Monitoring Program

<ul style="list-style-type: none"><li>- Develop monitoring program agreements with local communities and local forest concessionaires.</li><li>• Teach monitoring methodologies to assess changes in forest productivity<ul style="list-style-type: none"><li>+ seed productivity</li><li>+ animal-hunt availability</li><li>+ crop yields;</li></ul></li><li>and incidence of environmental problems<ul style="list-style-type: none"><li>+ soil erosion;</li><li>+ river siltation; and</li><li>+ pest threats in local land-use systems.</li></ul></li><li>• Define monitoring schedules for resources and land-use systems to be monitored.</li><li>• Select monitoring methodologies and identify problem criteria.</li></ul>
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### 5.6.3 Monitoring of Management Programs

#### Principal Management Objective

Determine Park program weaknesses and strengths to prescribe program needs, direction, and new development.

Monitoring Park management programs will enable the national park to identify weaknesses and strengths in the Park's Functional Program and to prescribe needed changes. Park Operational Plans set annual targets for each Park Sub-Program. These will be monitored for their effectiveness in accomplishing targets. Monitoring of Park management programs will be done through annual reports to the Park Council, who will determine how well annual targets are met.

The monitoring of Park management programs should be done by assessing indicators and cross examining Program achievements with the overall goals and objectives of the national park, as stated in the Park's 25 year plan.

Table 33. Monitoring and Evaluation Sub Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
Monitoring of Biophysical Resources				
Monitor threats to Park resources	• Resource management	[HP]	Assessment and Listings	Number of threats listed and percentage of park coverage
Monitor changes in Park habitats	• Addressing of threats and rehabilitation needs	[HP]	Analysis and Guidance	Percentage of Park covered and workability of guidance
Monitor changes in species populations	• Understanding of long-term populations viability	[MP]	Analysis and projections	Percentage of Park species populations studied
Monitoring of Human Resources				
Monitor Park staff skills	• Determine the effectiveness of training programs	[HP]	Assessment and Guidance	Number of training programs assessed through staff skills
Monitor Park staff conservation commitment	• Committed Park personnel	[HP]	Reports and Guidance	Existing levels and changes in Park personnel commitment
Monitoring of Park Management Programs				
Monitor cost effectiveness of programs	• Allocation of funds to priority programs	[HP]	Analysis and Guidance	Percentage of priorities being implemented
Monitor workability of Park programs	• Revision of plans	[HP]	Analysis and Guidance	Feasibility of working plans

## 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

The primary function of the Public Relations Sub-Program is two-fold: to maintain an influential presence in order to insure that the Park's values are taken into account by the Government when contemplating policy changes and to ensure continuous funding for its management programs.

A secondary function of the Sub-Program is to maintain the national park's relationships with local communities and forest concessionaires. Park staff should also maintain good public relations with regional government authorities, local, national, and international scientific institutions, and other governmental and non-governmental institutions relevant for the development of the Park.

A good publicity campaign for the national park should be initiated during the earlier years of Park development. This will help the Park establish itself as an important conservation area contributing to the preservation of the world's biological heritage. The campaign should begin to promote the Park by describing its physical features and biological and anthropological values. Information on its multipurpose goals and objectives should follow. After publicizing the Park, the campaign should begin to establish partnership relations with regional development authorities, scientific institutions, and other governmental and non-governmental institutions relevant to the development of Park program components.

Table 34. Examples of Park Public Relations Materials

### 5.7.2 Fund Raising

Through this Public Relations Sub-Program, the Park will also train personnel in appropriate methods and materials to acquire financial support for programs with scarce funds or for those which lack Government finance. Training programs for Park staff should focus on needs assessment, potential funding sources, comprehensive proposal writing, and financial management. Through training, the program should enhance the ability of the Park to secure funds from corporate donors to finance important development programs without sufficient funding. Collaboration of foreign donor agencies and organizations such as the United States Agency for International Development (USAID), the World Wide Fund for Nature (WWF), the United States Forestry Support Program (USFSP), and Wor'd Bank (TWB) should be included when soliciting funds to support Park development programs.

Table 35. Fund Raising Strategies

<ul style="list-style-type: none"><li>• Secure continuing funds from Central and Provincial Governments by maintaining good public relations and coordinating with their own programs.</li><li>• Enhance the Park's ability to raise funds from donors by maintaining good public perceptions of the national park's programs that help local communities.</li><li>• Establish a reputation for the national park as a renown area for biological, ethnobotanical, and anthropological research.</li><li>• Train Park personnel in good public relations and proposal writing.</li><li>• Produce information materials on Park features and values to attract tourists and research and make the Park known for its values and management style.</li><li>• Contact international funding organizations for funding.</li></ul>
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#### 5.7.2.1 National Park Special Activity Fund

##### Principal Management Objective

Provide additional support for Park development programs.

An integrated Park Special Activity Fund (SAF) should be established for moneys and revenues derived from Park entrance fees and donor support. This fund should be separate from the Government-provided national park operational budgets. Monies generated for the Fund should help create an endowment to finance activities that lack financial support, such as additional training of Park personnel, special wildlife reintroduction programs, community development programs without financing, and revolving funds for local farmers. The SAF account must also be kept separate from monies already allocated to specific projects by donor agencies, private individuals, or organizations.

By-laws and governing rules to manage the Fund's moneys should be designed and implemented by the Park Advisory Board, in cooperation with PHPA.

Table 36. Sources of Funds for the Special Activity Fund

Table 37. Public Relations Sub-Program 1994-1999 Projections

COMPONENTS	OBJECTIVES	PRIORITY	OUTPUTS	INDICATORS
PARK PUBLICITY  Maintain Good Public Relations with the National and Local Government	• Secure continuing Government funds for Park development	[HP]	P.R. and Park Funding	Levels of continuous funding for Park Programs
	• Maintain an influential presence to ensure maintenance of Park values	[EP]	P.R. and Park Endurance	Support for Park development and endurance of Park values
Maintain Good Public Relations with Local Communities and Forest Concessionaires	• Ensure that Park policies are respected	[HP]	P.R. and Policy Respect	Changes in illicit activities in Park area
	• Develop a partnership relationship with local people	[EP]	P.R. and Local Partnerships	Level of local perceptions of Park and support for Park policies
	• Enhance working relationships with local forest concessionaires	[EP]	P.R. and Work Collaboration	Participation in Park development programs
Maintain Close Contact with National and International Research Institutions	• Enhance the Park's ability to raise funds for research needs	[HP]	Public Relations	Amount of Park research funded per year
	• Establish the Park as an important research site	[MP]	Public Relations	Amount and variety of external funded Park research conducted
	• Bolster the Park's world-wide reputation for uniqueness	[LP]	Public Relations	Levels of Park existence and values knowledge
Develop Park Information Materials	• Enhance the ability of the Park to raise funds	[EP]	Information Materials	Availability of funds from external sources
	• Foster environmental awareness in the Park region	[HP]	Information Materials	Changes in environmental awareness levels (behavior change)
	• Publicize Park values and gain support for Park Development	[EP]	Information Materials	Degree of park knowledge and support for its development
	• Encourage Park visitation	[LP]	Information Materials	Number of tourist visits with previous knowledge of the Park

Table 38. Sub-Program Components Projected Schedules

SUB-PROGRAM COMPONENTS	YEARLY SCHEDULES				
	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999
<b>RESOURCE CONSERVATION SUB-PROGRAM</b> - Resource Inventories - Resource Protection - Resource Management	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX
<b>COMMUNITY DEVELOPMENT SUB-PROGRAM</b> - Community Extension - Land-Use Stabilization - Sustainable Wildlife Use	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX
<b>RECREATION AND INTERPRETATION SUB-PROGRAM</b> - Nature Tourism - Environmental Awareness	XXXXXXXXXX	X X XXXXXXXXXX	X X X XXXXXXXXXX	X X X X X XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX
<b>RESEARCH AND DEVELOPMENT SUB-PROGRAM</b> - Biological Research - Resource-Use Research		X	X X X	X X X X X X	X X X X X X X X
<b>IMPLEMENTATION SUPPORT SUB-PROGRAM</b> - Park Personnel and Administration - Training in Institutional Capacity - Infrastructure Development	XXXXXXXXXX XXXXXXXXXX X	XXXXXXXXXX XXXXXXXXXX X X	XXXXXXXXXX XXXXXXXXXX X X X	XXXXXXXXXX XXXXXXXXXX X X X X	XXXXXXXXXX XXXXXXXXXX X X X X X
<b>MONITORING AND EVALUATION SUB-PROGRAM</b> - Biophysical Resources - Human Resources - Management Programs	XXXXXXXXXX XXXXXXXXXX	X XXXXXXXXXX XXXXXXXXXX	X X XXXXXXXXXX XXXXXXXXXX	X X X XXXXXXXXXX XXXXXXXXXX	X X X X XXXXXXXXXX XXXXXXXXXX
<b>PUBLIC RELATIONS SUB-PROGRAM</b> - External Public Relations - Training for Financial Support	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X

Table 39. National Park 1994-1999 Budget Projections

COMPONENTS	YEARLY BUDGETS				
	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999
SUB-PROGRAMS					
RESOURCE CONSERVATION	US \$ 29.286				
COMMUNITY DEVELOPMENT	US \$ 11.9				
RECREATION AND INTERPRETATION	In Other SP				
RESEARCH AND DEVELOPMENT	In Other SP				
IMPLEMENTATION SUPPORT	US \$ 3.571				
MONITORING AND EVALUATION	US \$ 952				
PUBLIC RELATIONS	US \$ 714				
NOTE: Some Sub-Program component budgets are combined)					
TOTAL SUB-PROGRAMS	US \$ 46.451				
PERSONNEL	US \$ 1.880				
EQUIPMENT	US \$ 22.252				
INFRASTRUCTURE	US \$10.714				
GRAND TOTAL	US \$81.297				

BEST AVAILABLE DOCUMENT