THE VOICE OF NATIONAL PARKS IN KALIMANTAN, INDONESIA: Searching the Truth of Thirty Year National Park Development

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Tonny Soehartono
Ani Mardiastuti

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Nata Samastha Foundation
promoting a balance between development and conservation of biological resources

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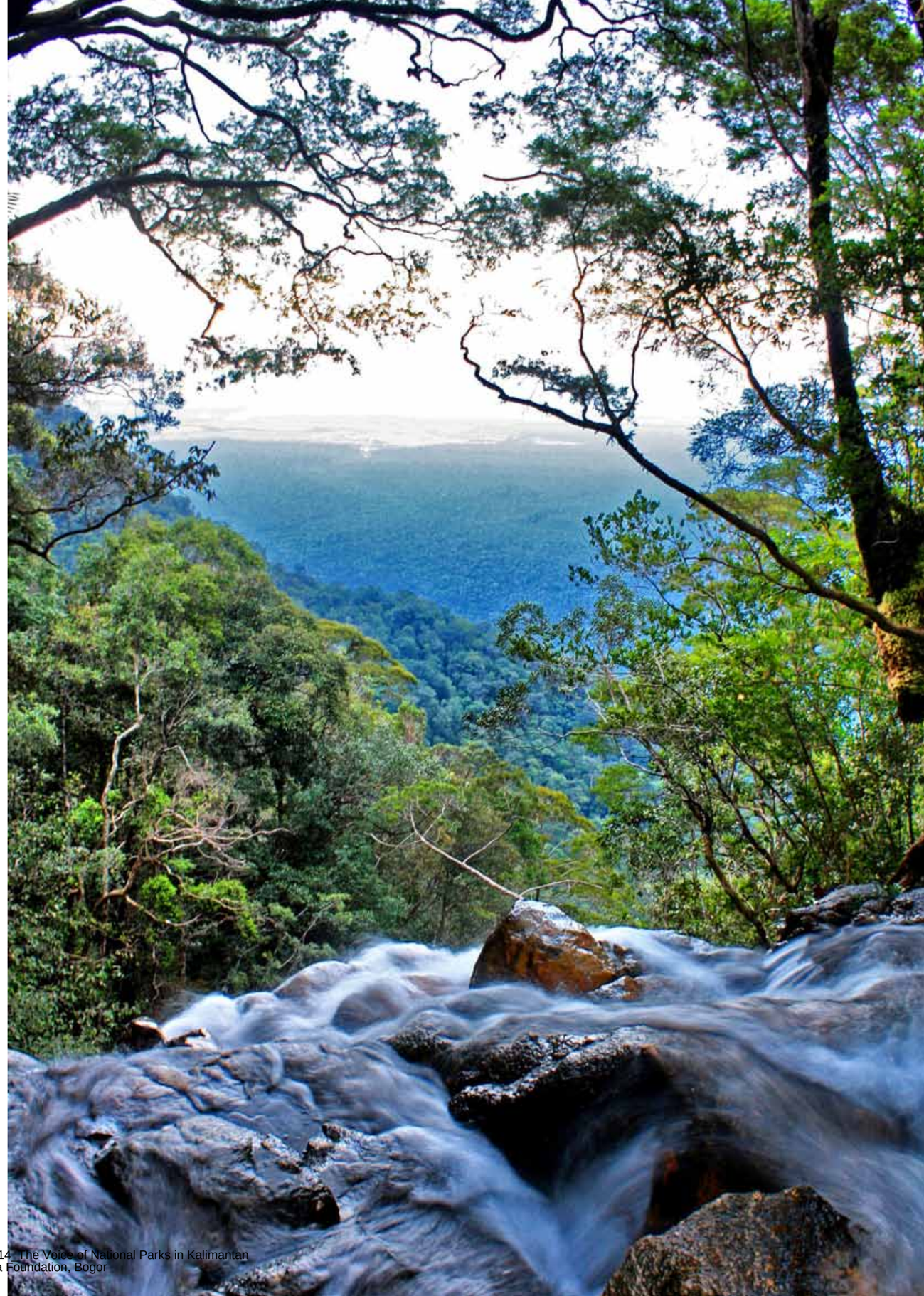
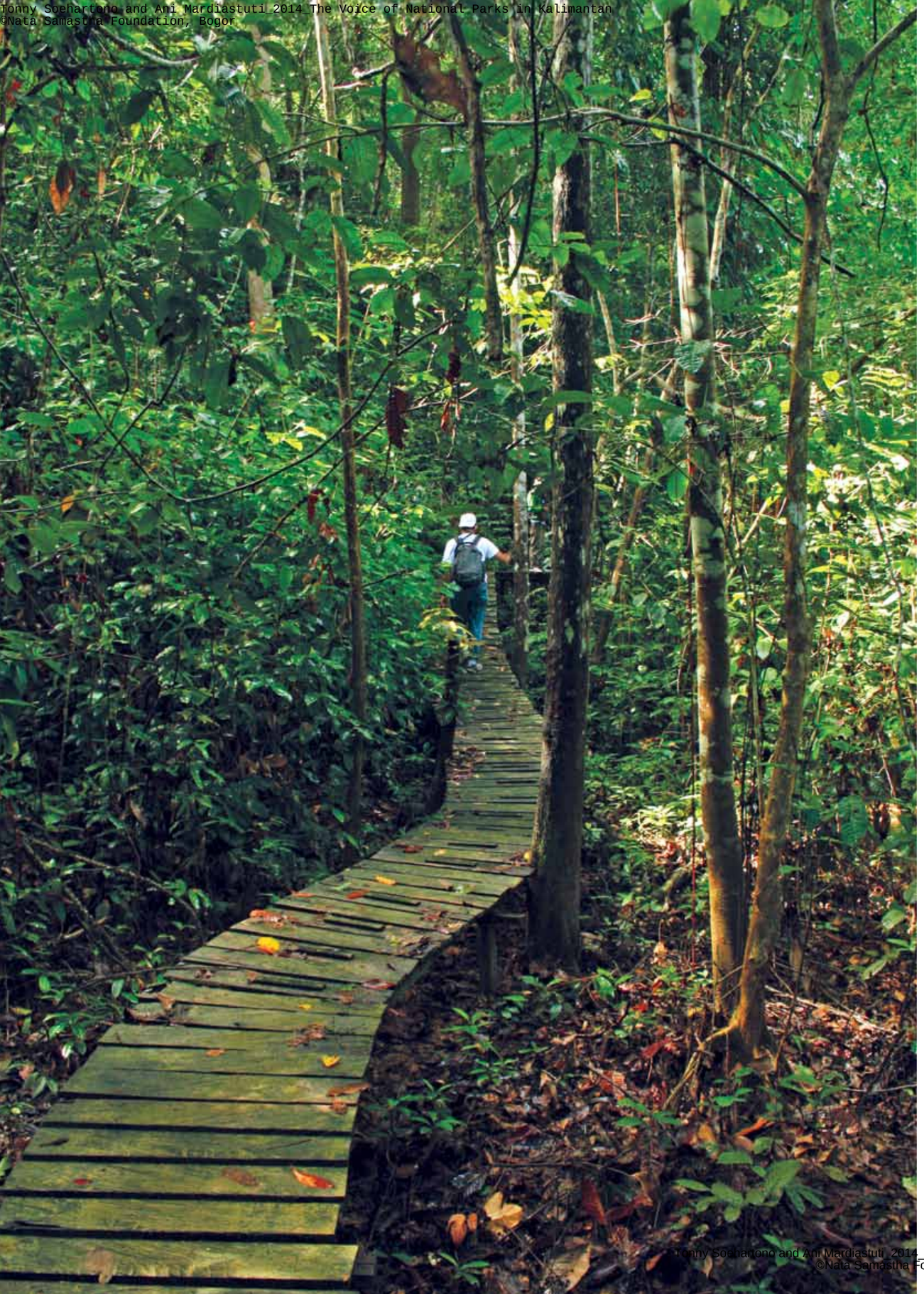


Gunung Palung National Park



Kutai National Park

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ACRONYMS AND ABBREVIATIONS

APDS	Asosiasi Periau Danau Sentarum (Danau Sentarum Apiarist Association)
ASEAN	Association of South East Asian Nations
AWB	Asian Wetland Bureau
Barat	West
Bikal	Bina Kelola Lingkungan
BKSDA	Balai Konservasi Sumber Daya Alam (Regional Office of Forest Protection and Nature Conservation – Ministry of Forestry)
BLU	Badan Layanan Umum
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Economic Cooperation and Development – Germany)
BOSF	Borneo Orangutan Survival Foundation
BPM	Batavia Petrolem Maskapij
BPS	Badan Pusat Statistik (Statistics Indonesia)
BSN	Badan Standardisasi Nasional, National Standardization Body
Bupati	Head of Regency
CBFM	Community-Based Forestry Management
CEO	Chief Executive Officer
CI	Conservation International
CIFOR	Center for International Forestry Research
CIMTROP	Center for International Cooperation in Sustainable Management of Tropical Peatland
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CKPP	Central Kalimantan Peatland Project
CSR	Corporate Social Responsibility
Danau	Lake
DANIDA	Danish International Development Agency
DAS	Daerah Aliran Sungai (Watershed, River Basin)
Desa	Village
DFID	Department For International Development
DG	Director General
DNS	Debt-for-Nature Swap
DPRD	Dewan Perwakilan Rakyat Daerah (Regional Council; Local Parliament)
DSCP	Danau Sentarum Conservation Project
Dusun	Sub-Village
EIA	Environmental Investigation Agency
FAO	Food and Agriculture Organization of the United Nations
FFI	Flora Fauna International
Fig.	Figure
FLEG	Forest Law Enforcement and Governance
FLEGT	Forest Law Enforcement, Governance, and Trade
FoMMA	Forum Musyawarah Masyarakat Adat
FORDA	Forestry Research and Development
GRASP	Great Apes Survival Partnership
GTZ	Gesellschaft für Technische Zusammenarbeit
Gunung	Mountain
Ha	Hectare
HDI	Human Development Index
HIMAKOVA	Himpunan Mahasiswa Konservasi Alam
HoB	Heart of Borneo
IBBE	ITTO Borneo Biodiversity Expedition
IDR	Indonesian Rupiah
IPB	Institut Pertanian Bogor (Bogor Agricultural University)
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature
JMHI	Jaringan Madu Hutan Indonesia (Indonesian Forest Honey Network)
Kabupaten	Regency
Kecamatan	District
Kerangas	Heath forest
KFD	Kemampuan Fiskal Daerah; Regional fiscal capacity per capita
Km	Kilometer
KPC	Kaltim Prima Coal
Kpts	Keputusan (Decision)
KSDA	Konservasi Sumber Daya Alam
LEWR	Lanjak Entimau Wildlife Reserve
LFTE	Laboratory of Tropical Forest Ecology
LIPI	Lembaga Ilmu Pengetahuan Indonesia (Indonesian Institute of Sciences)
LNG	Liquefied natural gas
MAF	Mission Aviation Fellowship
Menhut	Menteri Kehutanan (Minister of Forestry)
Mentan	Menteri Peertanian (Minister of Agriculture)
MFP	Multi-stakeholder Forestry Programme
MRP	Mega Rice Project
NCP	National Conservation Plan
NCPI	National Conservation Plan for Indonesia
NGL	Natural Gas Liquefaction
NGO	Non Governmental Organization
NRM	Natural Resource Management
NRMP	Natural Resource Management Program
OCSP	Orangutan Conservation Services Program
ODA	Overseas Development Agency
OFI	Orangutan Foundation Indonesia
PD	Project Document
Pers.comm.	Personal communication
PHKA	Perlindungan Hutan dan Konservasi Alam (Forest Protection and Nature Conservation)

PKT	Pupuk Kalimantan Timur
PT	Perseroan Terbatas
Rev.	Revised
SBKSDA	Sub-Balai Konservasi Sumber Daya Alam
SFM	Sustainable Forest Management
SK	Surat Keputusan (Letter of Decision)
SNI	Standard Nasional Indonesia (Indonesian National Standard)
Sp.	Species
SSI	Sinatra Sebangan Indah
Sungai	River
SVL	Snout-Vent Length
Teluk	Bay
Tengah	Central
TFCA	Tropical Forest Conservation Act
TGHK	Consensus Forest Spatial Plan
TGHK	Tata Guna Hutan Kesepakatan (Forest Spatial Land Use by Concensus)
Timur	East
TNC	The Nature Conservancy
UK	United Kingdom
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Framework Convention
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum of Forests
US	United States
USA	United States of America
USAID	United States Agency for International Development
USD	United States Dollar
WARSI	Warung Konservasi
WCS	World Conservation Society
WWF	World Wide Fund for Nature

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On the day we finished writing this book, we bow our heads and open our hands to thank God the Almighty for what He has bestowed on us. We sincerely thank Him, as this book has been gone a long process. At the very end of December 2010, one of us (TS) had to stay home for three months due to broken legs and ankle dislocation. This unfortunate situation was actually a blessing because it provided us an excellent opportunity that has been wanted by us since a long time ago: to write something about national parks in Kalimantan.

Trips to most national parks in Kalimantan to gather information and take photographs have been conducted since a year before. Questionnaires even has distributed to the stakeholders of national parks since 2004. Thus, January through March indeed was the right timing to write (by TS, while waiting for the recovery of his leg). Following the writing of most parts of the book, detailed was added (by AM) and the first draft was finished in August 2011. Several revisions were made, including corrections for English wording and elimination of grammatical errors. At last, the book was finished in early 2013.

This book is basically about the voice of communities who live in and around all national parks in Kalimantan. Our first and huge thanks go to the staffs of all eight National Parks in Kalimantan, who had been worked so hard to distribute thousands of questionnaires, and also to the people surrounding the National Parks who gave their honest opinion by filling in the questionnaires. Our special thanks go to the Head of all National Parks in Kalimantan and their staffs, including Leny, Budi Santoso (Kutai), Gunung Sinaga (Tanjung Puting), Franky Zamzani (Gunung Palung), Widada, Bambang Sukendro (Bukit Baka-Bukit Raya), Joko Prihatno (Betung Kerihun), Drasospolino, IGN Suteja, Helmi (Kayan Mentarang), Suwignyo, Budi Suryansyah, Deni Sofyan, Agus Triyanto (Danau Sentarum), Sumantri, Edi Sulistyo HS (Sebangau).

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CHAPTER 1

INTRODUCTION

For the last of thirty years, the Ministry of Forestry of Indonesia has invested about USD 5 billion for conservation management of national parks ('taman nasional'), nature reserves ('cagar alam'), wildlife sanctuaries ('suaka margasatwa'), forest recreation parks ('taman wisata alam'), and game reserves ('taman buru') across the country. This investment was for activities including protection, promotion, public awareness, management and capacity building for the institutions dealing with the issues of conservation. This large investment was in addition to the technical and financial support granted by various donor countries, intergovernmental agencies and environmental NGOs who deal with the conservation of wildlife, and marine and forest management.

During the thirty year period, the Ministry of Forestry was able to establish 27.6 million ha of conservation areas including 5 million ha of marine ecosystems. The terrestrial protected areas include 50 national parks (16.4 million ha), 246 nature reserves (4.6 million ha), 80 wildlife sanctuaries (4.9 million ha), and 124 forest recreation parks and game reserve areas (1.7 million ha). To prevent the extinction of biodiversity, up to 2009, the Government has also given legal protection to almost 300 endangered species including 70 species of mammals, 93 species of birds, 30 species of reptiles, 19 species of insects, 6 species of fishes, 14 species of *Anthozoa* and *Bivalvia*, 14 species of *Palmae* and *Rafflesia*, 28 species of orchids and *Nephentaceae* and 12 species of *Dipterocarpaceae*.

To show its commitment, at the global level Indonesia is a Party to the UN Conventions related to forests and biodiversity such as United Nations Convention on Biological Diversity (UNCBD), UN Convention to Combat Desertification (UNCCD), UN Framework Convention on Climate Change (UNFCCC), UN Forum on Forests (UNFF), Ramsar Convention, and CITES (Convention on International Trade of Endangered Species of Wild Fauna and Flora). More than 1,200 commercial species have been registered in the Appendices of CITES. On the timber tree conservation, Indonesia is a member of the ITTO (International Tropical Timber Organization), and a partner of CIFOR (Center for International Forestry Research).

In order to effectively manage the national parks, the Ministry of Forestry has set up support and management offices in each national park. In addition, management of wildlife sanctuaries, recreation parks and game reserves is supervised by the Provincial Offices of the Directorate General of Forest Protection and Nature Conservation (Balai Konservasi Sumber Daya Alam, BKSDA) located in each province in Indonesia. The BKSDAs are also responsible for monitoring and registering the traffic and trade of commercial and endangered species listed in CITES.

To provide a legal foundation for biodiversity conservation efforts, the Government of Indonesia has also enacted Law No. 5/1990 on the Conservation of Living Resources and Their Ecosystems (see Box 1-1). A series of Government regulations regarding biodiversity protection and sustainable utilization have been issued (e.g. Government Regulation 28/2011). In the effort to further strengthen the sustainable use and conservation of forest resources and to keep up with the dynamic developments in forest issues, in 1999 the Government revised the Basic Regulation on Forestry No. 5/1967 with Act No. 41/1999 on Forestry.

Junaidi

The revised Act on Forestry has accommodated the issue of the rights and tenure system of the local communities who reside in and adjacent to the forest area. An article in the Act gives ethnic communities the right to own and manage forests in accordance with the national constitution. Furthermore, the Act and its derivate regulations have granted Provincial and local Governments the authority to issue certain policies regarding forest resources within their jurisdiction.

There are millions of communities - including the local ethnic groups - living in or nearby conservation areas throughout the country. Many of them have lived in these areas for centuries, whilst others are immigrants from other regions in Indonesia but have assimilated with the local people. However, there are also people who have moved into the forest area recently, such as trans-migrants, loggers and traders.

In dealing with these communities, the Government - along with many donors and NGOs who are concerned with indigenous rights - has practiced a range of approaches varying from strict enforcement to participation models. Between 1980 and 1998 the more authoritarian Government favored the use of enforcement methods whereby the local people had no right to express their opinions about the management of the area. Enclaves and relocation or resettlement were typical of the methods used by the Government in dealing with local people in this era.

Since the end of 2000 the political atmosphere in Indonesia has changed dramatically. The reformed Government has started exercising democracy and thus people are able to express their opinion. During this period the researchers of the Center for International Forestry Research (CIFOR) introduced participatory methods for management of conservation areas in their research area in East Kalimantan. Later on, the Government also welcomed initiatives on collaborative management, community development and empowerment, with local communities supported by NGOs and private companies through their CSR (Corporate Social Responsibility) resources.

This new approach of the Government to dealing with local communities has not always had positive results. As the enforcement decreased, conflict between the local people and the Government frequently occurred in conservation areas. Many of the community members who used to obey and practice traditional rights rebelled against Park authority. These communities became increasingly courageous in expressing their opinions and claiming their rights and hence illegal practices such as timber cutting and hunting protected animals became uncontrollable in many protected areas. At present, there is no conservation area in Indonesia entirely free from conflict. To make things worse, in any conflict between development and conservation, it is most frequently the later which is the looser.

BOX 1-1

Selected Articles Related to Regulation and Management of National Parks Based on Act of the Republic of Indonesia No 5 of 1990 Concerning Conservation of Living Resources and Their Ecosystems

CHAPTER VII
Nature Conservation Area

Article 29
(1) Nature Conservation Areas as defined as in Article 1 Paragraph 13 consist of the following areas
  a. National Park
  b. Grand Forest Park
  c. Natural Recreation Park
(2) Further provisions regarding the designation procedure for Nature Conservation Areas and their buffer zones shall be regulated by a subsequent Government Regulations.

Article 30
The function of a Nature Conservation Area is the protection of life support systems, preservation of species diversity, and sustainable utilization of living resources and their ecosystems.

Article 31
(1) Activities relating to research, education, breeding enhancement, culture and nature recreation are allowed in a National Park, Grand Forest Park and Natural Recreation Park.
(2) Activities pertaining to Paragraph 1 must be carried out without diminishing the specified function for each area.

Article 32
A National Park is managed through a zoning system which may consist of Core Zone, Utilization Zone, and other zones depending on necessity.

Article 33
(1) Any and all persons are prohibited to do activities which may modify the natural integrity of the Core Zone.
(2) Activities considered a modifying the natural integrity of the Core Zone pertaining to paragraph (1) include to diminish or to degrade, the function and area of the Core Zone, as well as introduce exotic species of plants and animals.
(3) Any and all persons are prohibited to do activities which are inconsistent with the function of utilization and other zones of the National Park, Grand Forest Park and Natural Recreation Park.

Article 34
(1) Management of the National Park, Grand Forest Park and Natural Recreation Park is carried out by the Government
(2) Tourism facilities may be developed in the Utilization Zone of the National Park, Grand Forest Park and Natural Recreation Park, based on the management plan.
(3) For tourism and recreation activities, the government may grant concession rights in Utilization Zone of the National Park, Grand Forest Park and Natural Recreation Park. The rights holder should promote public participation.
(4) Further provisions pertaining to paragraph (1), paragraph (2) and paragraph (3) shall be regulated by a Government Regulation.

Article 35
Under certain conditions and when clearly necessary for the purposes of maintaining or rehabilitating natural resources natural resource and their ecosystem, the government may halt utilization activities and shut off National Park, Grand Forest Park and Natural Recreation Park.

A further challenge to the management of conservation areas was that around the end of year 2000 the central Government started decentralizing much of its power to the provincial and local Governments. At the same time, the Indonesian economy grew rapidly, resulting in an acceleration of development at provincial and regency levels. Many of these developments, including new urban areas, road developments, agriculture industries and mining, were at the expense of forests - including conservation areas – causing shrinkage and fragmentation of the forest and conservation areas. One result of this was that conflict between wildlife, such as tigers, elephants and orangutans, and local communities or developers became increasingly common.

More recently there has been strong resistance from local communities and local Governments towards the existence of conservation areas. This is mainly because the presence of conservation areas limits plans for regional development. Whilst there are some cases where the regions are interested in expanding the area of forest in order to obtain funds from carbon emissions reduction schemes such as REDD (Reduced Emissions from Deforestation and Forest Degradation) Programs, in most cases the Ministry of Forestry along with donor countries and relevant NGOs are struggling to convince local people and decision makers of the importance of forest resources in the midst of pressure for rapid economic development.

The fact is that although countless, relentless effort and huge investments have been made by Indonesia to conserve its biodiversity and ecosystems, no one can ensure that the initiatives to create and manage conservation areas - like national parks - have the support of local people and local Governments. There are also no comprehensive studies to evaluate this issue.

The Government of Indonesia has gazette eight national parks in Kalimantan. Kalimantan was selected as the main topic of this book mainly because the region still has relatively pristine forests, but development - particularly mining and agriculture industries - are escalating. Furthermore, the island is inhabited by many ethnic communities who have their own customary relationships with the forests.

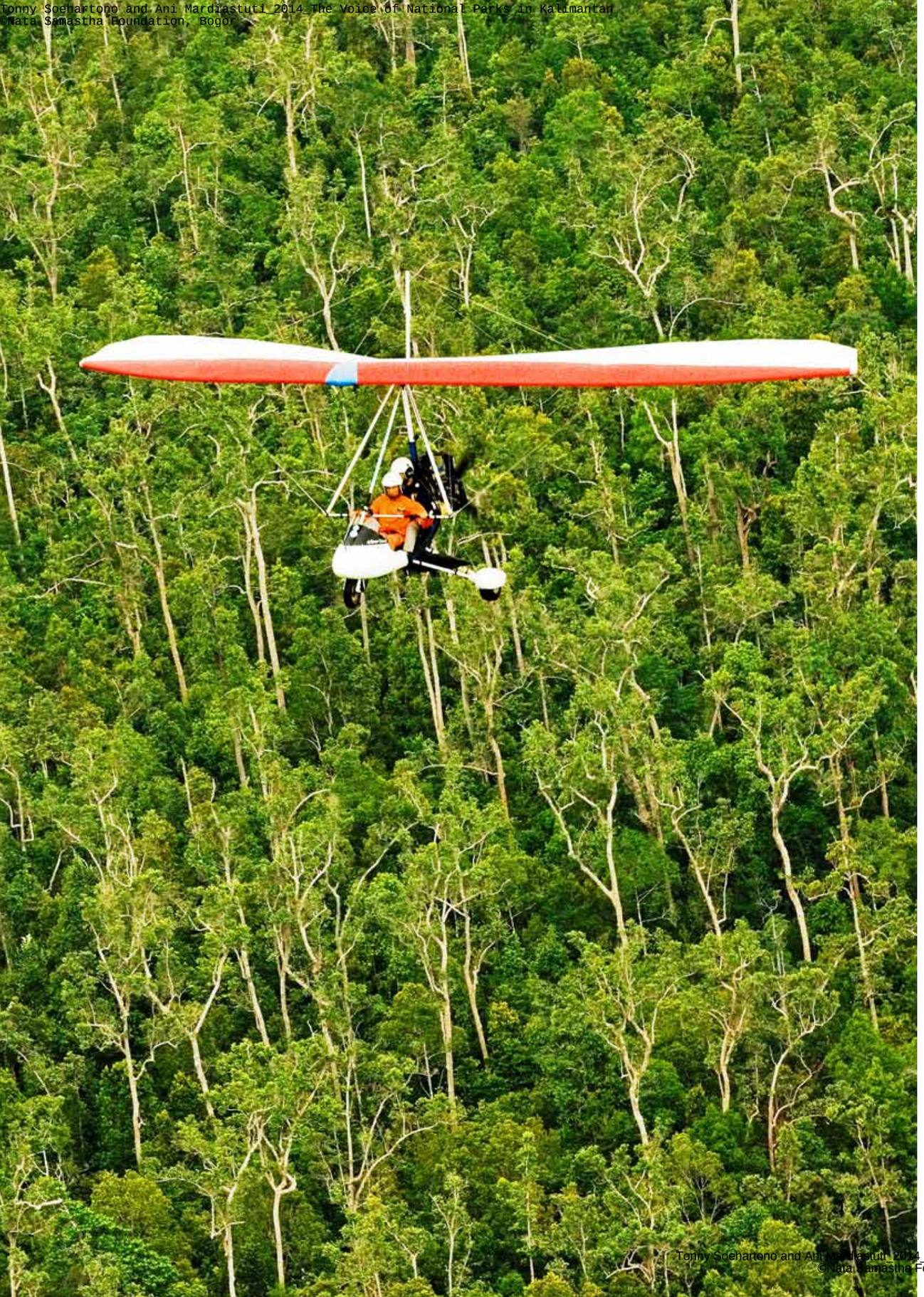
In order to understand and assess the opinions of local stakeholders on the subject of park development, between 2004 and 2011 the Authors distributed 1,000 questionnaires to each of the eight national parks in Kalimantan: Kutai, Tanjung Puting, Gunung Palung, Bukit Baka-Bukit Raya, Betung Kerihun, Kayan Mentarang, Danau Sentarum, and Sebangau (listed in order of year of gazettement). To determine whether the opinion of local people toward conservation areas was consistent, in 2009 the same questionnaires were also re-distributed to most national parks.

At each national park the questionnaires were distributed randomly throughout the community who reside around and inside the park. The respondents included from local ethnic groups, migrant people and civil servants who work for the local Government. The local Government in many cases assisted the distribution and collection of the questionnaires, including interviewing the respondents if necessary. Between 60-75% of the questionnaires were returned and analyzed by the Authors. The results of the questionnaires are presented in the relevant Chapter on each national park.

Budi Suryansyah

About the Book

The book comprises of 13 Chapters, which describes conservation and management of all (eight) national parks in Kalimantan and ends with recommendations. It starts with Introduction and 30-year history of conservation in Indonesia. Chapter 2 and 3 define the idea of having national parks and illustrate the development of national parks in the world. Chapter 4 to 11 contains the condition of all eight national parks in Kalimantan and their problems. These Chapters also presents the opinion and wish of people who live in and around the national parks. The book ends with the discussion and the way forward to deal with the issues of national parks in Kalimantan (Chapter 12) and outlook 2014 (Chapter 13).



Erick Danzer

CHAPTER 2

WHY DO WE NEED NATIONAL PARKS?

One might say that an area of land with exceptionally spectacular natural beauty and often dramatic expanses of relatively undeveloped landscape, belonging to and administered by the state, is a national park. These areas usually contain a high diversity of wildlife, and also offer opportunities for people to visit, observe and enjoy the scenery. The definition might also extend to include marine areas where people can snorkel, dive and enjoy the coral reefs and marine life.

National parks are generally areas of either terrestrial or aquatic ecosystems dedicated to conserving natural habitats and their wildlife, and for nature-based recreation, which are government-managed. A national park may be inhabited in part by local communities who have inherited and largely rely on the park's resources. The World Conservation Union (IUCN) defines a national park as 'a natural area designated to protect the ecological integrity of one or more ecosystems for present and future generations.' However, a national park may also be devoted to education, science, outdoor recreation and social-cultural heritage. According to the IUCN, national parks are Category II protected areas (see Box 2-1). Parks are usually designated by the national government, and in many cases have a higher level of protection than other classes of natural reserves (IUCN 1994). The largest national park in the world is the Northeast Greenland National Park (972,000 km^2), which was established in 1974.

As a protected area and valued piece of land, a national park is usually representative of an ecosystem, biotic community or diversity of species and genetic resources. It may contribute to the ecological stability of the region around it. National parks generally hold some of the richest and most charismatic biological and ecological diversity of the nation, and thus a primary function of the park is to prevent over-exploitation of the park's resources and to sustain minimal extraction for subsistence use by local people. At the same time, the scenic and natural beauty which normally characterizes parks can attract tourists into the area to enjoy the relative quiet that parks can offer. This brings its own opportunities and challenges.

Given the variety of roles and functions a park plays, parks are commonly managed through a zoning system which is likely to include zones for recreation, wilderness, and preservation, each designed to fulfil its specific management function. The basic zoning of national parks in Indonesia comprises a core zone (where protection and preservation is very strict), a wilderness zone (which is managed for wildlife) and an intensive use zone (designated mainly for recreation).

The need for National Parks

There are many reasons why we need national parks. Visitors to national parks often indicate that an important reason for visiting the parks is to enjoy the relative quiet that they can offer. When Indonesians were asked to identify some of the most important reasons for having national parks, the majority stated that the park provides opportunities to experience natural peace and take pleasure in the beauty of nature.

Ani Mardiastuti

Figure 2-1.
Iguazú National Park, Argentina.
The 550 km2 national park was created in 1934 and it contains one of the greatest natural beauties of Argentina, the Iguazú Falls, surrounded by a subtropical jungle.

These types of responses make sense, given that the Earth's population has reached seven billion, and that perhaps four times as many people are living on Earth now than 100 years ago. Many millions of square km of land are needed for development and urban areas (Rosenberg 2011), and more and more wildlife and plants species are either being forced into the remaining islands of habitat or pushed to the brink of extinction. The need has never been greater to establish and maintain adequate areas to protect specific natural resources and values where people can enjoy and learn from nature.

National parks also protect large parts of nature's heritage. They serve to ensure the conservation of the origins and uniqueness of nature and its inherent diversity and dynamism. National parks maintain and preserve both natural heritage and the ecological systems which sustain all life, including humankind. They also serve as reservoirs of species to support the local restoration of natural landscapes, and provide opportunities to educate people and promote the importance of protecting the world's ecosystem.

National parks should also allow people to connect with nature and with each other by linking people with a common interest in nature through the natural beauty of their ecology and the unique socio-cultural communities whose lives are part of many parks. Strengthening these links and support for the park from the general population is a vital way to protect the park and maintain its natural values. Networking and promotion can lead to an increase in the number of visitors to national parks across the world as people from the different countries and cultures mix and socialize around a common subject and vision, and perhaps promote the national parks that they visit (Wright 2010).

BOX 2-1
IUCN Category of Protected Areas

Category I:
Strict Protection

Category Ia: Strict nature reserve – strictly protected areas set aside to protect biodiversity and possibly geological/geo-morphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

Category Ib: Wilderness area – usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

Category II:
National park
Large natural or near-natural areas set aside to protect large-scale ecological processes and the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally- and culturally-compatible spiritual, scientific, educational, recreational and visitor opportunities.

Category III:
Natural monument or feature
Protected areas set aside to protect a specific natural monument, which can be a land form, seamount (underwater mountain), sub-marine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

Category IV:
Habitat/species management area
Protected areas to protect particular species or habitats and whose management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

Category V:
Protected landscape/seascape
Protected areas where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value, and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

Category VI:
Protected area with sustainable use of natural resources
Protected areas which conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

Source: IUCN (1994)

Ani Mardiastuti

Figure 2-2.
Taman Negara, Malaysia's first national park, seen from Kuala Tahan in Pahang state. Boat trips are its main tourist attraction.

A Brief History of National Parks around the World

The first effort by any Government to protect lands was in the United States of America, when on 20th April, 1832, President Andrew Jackson signed legislation to set aside four 'Hot Spring Reservations' around hot springs in Arkansas state to protect their natural character, thermal springs and adjoining mountainsides for the future disposal of the United States Government. On 30th June, 1864, President Abraham Lincoln signed an act of congress ceding the Yosemite Valley and the Mariposa Grove of Giant Sequoias. The two areas subsequently became national parks (Wikipedia 2011a).

However, the world's first national park was Yellowstone National Park in the United States, covering 2.2 million acres (about 8,903 km^2) of wilderness. The word 'Yellowstone' was coined in 1797 by David Thompson, an explorer and geographer who took part in the British fur trade in the north-western USA, and referred to the yellow rock of a canyon wall near the headwaters. The area came to public attention in the United States when the story of Yellowstone appeared in a Philadelphia newspaper in 1827. The Park was established on 1st March, 1872 by President Ulysses Grant. Since then, the United States has set aside 391 different sites as protected areas, of which 58 are national parks, including the well-known Yosemite National Park and Grand Canyon National Park (Wikipedia 2011b).

Following the idea pioneered at Yellowstone, parks were soon established in other nations. In Australia, the Royal National Park was established approximately 30 km south of Sydney city centre in 1879, covering an area of 132 km^2. The Park was originally named The National Park but this was changed to the Royal National Park in 1955 after a brief visit by Queen Elizabeth II. Since then Australia has established 16 national parks, including 10 marine parks. Apart from the national park system, Australia also has a number of areas under different protection mechanisms which also protect species and their ecosystems (Rivera 2011).

Canada's first national park was Banff National Park – later known as the Rocky Mountain National Park – established in 1885. The Park is 120 km west of Calgary in the Province of Alberta, and encompasses 6,641 km^2 of mountainous terrain with numerous glaciers and ice fields, dense coniferous forest, and alpine landscapes. The area and boundary of the park was changed several times before 1930, when the Canadian government signed the National Parks Act, which fixed the size of the park at 6,697 km^2 and renamed it Banff National Park, a reference to a station on the Canadian Pacific Railway named after the Banffshire Region of Scotland in the UK. Today Canada has 43 national parks across the country (Wikipedia 2011c).

The third country to follow the USA in protecting and preserving wildlife and its ecosystems by creating national parks was New Zealand. The country's first official national park established in 1887 was Tongariro, which covers an area of approximately 795 km^2, stretching into the heart of the North Island of New Zealand. The objective of the park was initially to prevent European immigrants from exploiting the mountains. Up until 2011 New Zealand had established 16 national parks, from wetlands to volcano ecosystems (Department of Conservation *Tee Papa Atawhai* 2011).

The Kruger National Park was the first national park in Africa. It was established in 1898, developed from the Sabie Game Reserve. The Park was named after President Paul Kruger, who at the time was concerned about the rapid destruction of wildlife and ivory poaching in the area by European hunters. The Park was officially opened in 1927 for visitors to view wildlife in the area (SA-Venues.com 2011). In 1947, the Kenyan Government established Amboseli National Reserve, which was declared a national park in 1971, and Kenya has since established another 23 national parks. Currently there are 336 national parks in Africa, spread across 54 countries (Wikipedia 2011d).

Europe had 370 national parks by 2011. In 1909 Sweden became the first European country to protect its countryside by passing legislation which established nine parks. Today there are 28 national parks in Sweden, safeguarding the country's rich natural diversity in the Arctic Circle. This lead was followed by the Spanish government, which set up Montaqa de Covadonga National Park to protect 230,000 acres (931 km^2) of limestone mountains along Spain's North Atlantic coast.

Italy declared Abruzzo its first national park in 1923 by royal decree. The park is in the heart of the Apennine mountains and protects of 400 km^2 of ancient forests. By 2011 the Italian Government had established 16 national parks (Wikipedia 2011d).

The Peak District was the United Kingdom's first national park, established in Derbyshire on 17th April, 1951. The park is in the heart of Britain, and is surrounded on all sides by urban sprawl. Unlike many countries, where park management is entirely in the hands of government, parts of UK parks may be privately-owned, and they are managed through partnerships between the government and the landowners. It is also normal to see settlements and agricultural areas within parks in the United Kingdom. In 1958, soon after the UK established its first park, Turkey created the Kuscenneti National Park, which protects one of the best wetlands in the country. Since then the number of parks in Turkey has increased to 37 (National Parks 2011).

In Latin America, Argentina seems to have been the pioneer in establishing national parks. There are now 29 parks in the country, and their creation commenced as long ago as 1903 with the establishment of a national park in the Lake District of the Andes foothills. In 1934, a law on the national parks system and protected areas was adopted in Argentina, and this was followed by the creation of the Iguazú National Park (Fig. 2-1).

Neighbouring Brazil has 62 national parks, with the Itatiaia National Park considered to have been the first national park in the country. The park was established in 1937 by a mandate from President Getulio Vargas, and covers an area of 120 km^2 containing zones of vegetation belonging to primitive ecosystems. To the north, Mexico now has 67 national parks, the first of them was the San Pedro Martir National Park, established in 1947. The Park protects a 165,000 acres (668 km^2) range of mountains and assemblies of pine, oak and *madrone* forest ecosystems. It is a home to various species of bats, mountain lions, and bighorn sheep (Tasa 2011).

India is considered to have been the first country in Asia to establish a national park. The Hailey National Park, now called Jim Corbett National Park, was created in 1935. Today the country has 166 parks covering a total area of 38,029 km^2, or approximately 1.16% of India's total land surface. Nepal has 12 national parks, the first being Chitwan National Park (932 km^2, formerly called Royal Chitwan National Park), established in 1971 (Wikipedia 2011e).

In the northern Asian regions of the Russian Federation and Mongolia, the concept of national parks has only recently been adopted. The Russian government established the first national park, Losiny Ostrov, in Moscow and Moscow Oblast in 1983. The park encompasses the largest forested area in the city, covering a total area of 116 km^2. By 2011 the Mongolian government had established nine national parks, Hustai National Park being the first. In 1992, Hustai National Park was famous for the re-introduction of Przewalski horses, which were at one time extinct in the wild. The horses bred successfully in the area, and some were released into the wild (Hustai National Park 2009).

The 1,300 km^2 Pudacuo National Park is recorded as the first national park in China, established on 25th June, 2007 in Shangri-La County in Yunnan Province. The park contains more than 20% of the country's plant species and almost 100 endangered species, including the vulnerable black-necked cranes (Pudacuo National Park, Wikipedia 2012).

Setonaikai, Unzen and Kirishima parks In Japan were established in March 1934 following the enactment of the country's first National Park Law 1931. Setonaikai National Park (66,934 ha) is a seaside national park rich in nature, people, famous shrines which are listed as world heritage sites, and traditional culture. It is in three regions of western Japan: the Kinki, Chugoku and Shikoku. The name of Unzen Park derives from Mount Unzen, an active volcano in the centre of the Shimabara Peninsula, close to the Amakusa islands. The area is closely connected with the early history of Christianity in Japan. Kirishima Park is an active volcanic mountain range stretching along the border of Miyazaki and Kagoshima Prefectures, and encompasses mountains, highlands, volcanic lakes and hot springs (Setonaikai, Unzen-Amakusa, Kirishima-Yaku National Park, Wikipedia 2012).

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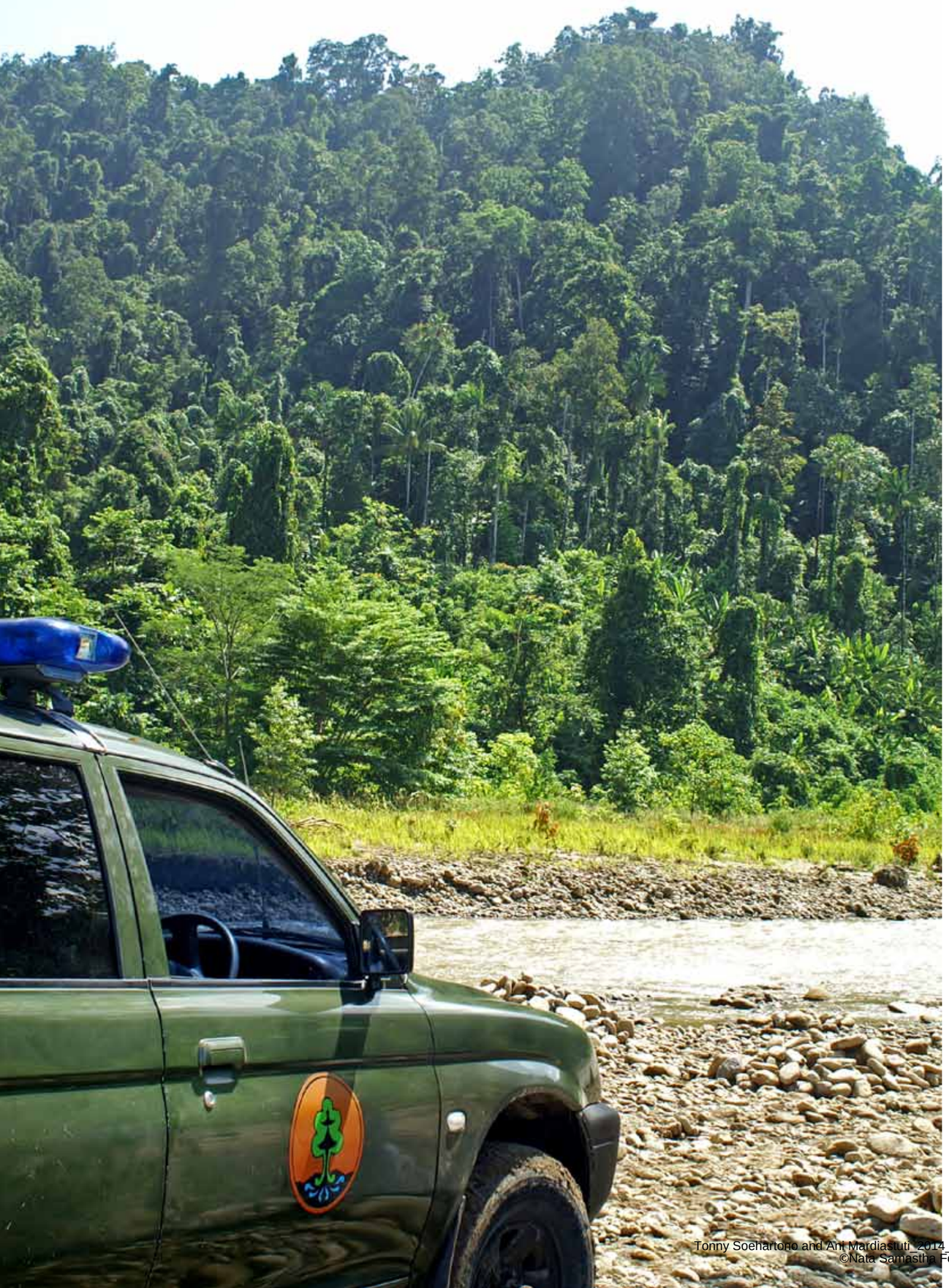
Figure 2-3.
Kinabalu National Park, Sabah, Malaysia. Mount Kinabalu (4,095 m above sea level) is a popular site for hiking and climbing.

The oldest recorded national park in Southeast Asia is Mount Arayat (3,715 ha) in the Philippines, established on 27th June 1933. The beautiful park is famous as a mystical mountain surrounded by many legends. The second oldest park in the region is Taman Negara National Park in Peninsular Malaysia (Fig. 2-2), covering 434,350 ha of pristine tropical rain forest. It was established in 1938 and is estimated to contain 185,000 species of fauna and 8,000 species of flowering plants. The next oldest national park in the region is Khao Yai (216,800 ha) in the provinces of Nakhon Ratchasima, Saraburi and Prachinburi in Thailand, established in 1961 (Khao Yai National Park, Wikipedia 2012). The park is home to over 3,000 species of plants, 320 bird species and 66 mammals, including the Asian elephant, the Asiatic black bear and the Indian muntjac. Another old national park in the region is Kinabalu National Park (Fig. 2-3), established in 1964. The 75,400 ha park on the west coast of Sabah (Malaysian Borneo) is estimated to contain more than 4,500 species of flora and fauna, including 326 bird species (Kinabalu Park, Wikipedia 2012).



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CHAPTER 3

HISTORY OF NATIONAL PARK DEVELOPMENT IN INDONESIA

The earliest effort for conservation of natural resources in Indonesia is recorded in the 14th century during the era of the Majapahit Kingdom in Java. In 1317 Jayanegara, the King of Majapahit, instructed his followers to protect the harvest of marine turtle eggs, prohibit the cutting of trees and prevent forest fire in East Java. During the colonial era, the Dutch established a number of protected areas in Java and produced a series of regulations pertaining to protected areas and endangered species within Java and Madura, and regulations on game hunting in western Indonesia.

After the country gained its independence, national economic and political turmoil prevented the Government of Indonesia from dealing with the issues of conservation until the end of the 1970s, when significant economic development commenced, and the Government received substantial global assistance for sustainable development.

Conservation of natural resources for terrestrial areas in Indonesia was formally revived and developed in the 1960s when the Government enacted the Basic Law on Forestry No. 5 of 1967 and established a Section for Natural Resource Protection under the Directorate General of Forestry. Since the Dutch left Indonesia, the Indonesian Government had been busy with economic development and political stability, and the issues of environment and natural resources were off the agenda. Despite this, the Government with its limited resources and capacity began maintaining and protecting several terrestrial reserves established by the Dutch during colonial time.

The aforementioned Government ainitiative was responded to by WWF International, which established a Rhino Conservation Project in Ujung Kulon Nature Reserve in West Java in 1964. Unfortunately, the overall political environment in 1960s was not conducive for the development of conservation of natural resources. Following the emergence of the new Government regime in Indonesia in the late 1960s, and influenced by the wave of environmental concern in the west, Indonesia was fortunate enough to be supported with grants from several International foreign aid donors including, among others, for action on conservation and environmental issues.

Rejuvenation of Conservation of Natural Resources

In the late 1970s UNEP and FAO supported a number of environmental and conservation projects, one of them the National Conservation Plan for Indonesia, published as volume 1 to 8. At the same time, WWF expanded its programs in Indonesia by establishing projects in Lore Lindu (Central Sulawesi), Tangkoko-Batu Angus (North Sulawesi), Meru Betiri (Tiger Project in East Java), Gunung Leuser (North Sumatra), Bali Barat (Bali Starling), and in Tanjung Puting (Central Kalimantan).

During the period up to the mid 1980s the number of civil society organizations, which worked for conservation of natural resources was limited. The well known local Non Governmental Organizations (NGOs) at that time were Yayasan Indonesia Hijau, based in Bogor (West Java) and Wahana Lingkungan Hidup (Walhi) who focused on advocacy on environmental issues.

On the Government side, in line with the inter-governmental and NGO initiatives and programs for conservation in Indonesia, the Ministry of Agriculture established a Directorate of Wildlife and Conservation Management within the Directorate General of Forestry in 1978. This Office was responsible for managing conservation of natural resources, in particular protected areas and endangered species across the country. The protected areas were those listed in the Basic Law on Forestry No. 5 of 1967 which includes strict nature reserves, wildlife reserves, game reserves and forest recreation parks. At this point Indonesia had not recognized the national park system.

As mentioned earlier, in 1979 the Government of Indonesia secured support from UNEP and FAO to develop the first National Conservation Plan for Indonesia (NCPI). The objective of the plan was to provide clear, concise and simple guidance for the Government to select or propose potential conservation areas throughout the country. The plan was coordinated by Dr. John MacKinnon of the FAO. The plan consisted of 8 volumes, each volume containing a plan for a major island group or biogeographic region in Indonesia (i.e. Sumatra, Java, Kalimantan, Sulawesi, Nusa Tenggara, Maluku, Irian Jaya) plus one volume of introduction depicting the methods and procedures and the complexity of the planning process, as well as an overview of national natural richness. The plan was completed and presented to the Government of Indonesia in 1983.

Aware that there was potential for conflicts between the communities who lived within or surrounding the proposed conservation areas, in parallel with the NCPI, in 1981 Dr. MacKinnon also developed a Guideline for the Development of Conservation Buffer Zones and Enclaves. This document was widely used by the conservationists in Indonesia as general guidance for managing the buffer zones of conservation areas (MacKinnon 1981).

In line with the initiatives for conservation of natural resources, in 1982 the Directorate General of Forestry succeeded in producing the first Indonesian Forest Spatial Land Use by Consensus (*Tata Guna Hutan Kesepakatan*, TGHK) for each province in Indonesia. The term consensus refers to the compromise between Government stakeholders in the province, agencies involved with land for economic development such as the Bureau of Land Management, Agriculture, Public Works, Housing Development, Mining, Transmigration, and provincial Government.

The TGHK, which has a scale of 1 to 500,000, divided the entire terrestrial area of each province into 'forest areas' and 'land for other development'. The forest area was then sub-divided into five classes: production forest, limited production forest, protected forest, nature reserves and convertible forest. To avoid confusion and overlapping ideas in selecting the nature reserves, the TGHK adopted the area of nature reserves proposed by the NCPI. Each TGHK was endorsed and signed by the relevant stakeholders, to indicate they agreed with the consensus on land use, including the relevant local Government and the Minister of Agriculture. This system became a powerful but controversial tool which was used by the forestry sector to defend the status of forests from any attempt to deviate from the plan of forest conversion.

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Komodo National Park.

The Birth of National Parks

Following the mandate of the National Conservation Plan for Indonesia document, by the mid 1980s the Government had established 18 million ha of conservation areas including the first five national parks in the country, namely Gunung Leuser National Park, Ujung Kulon National Park, Gunung Gede-Pangrango National Park, Baluran National Park, and Komodo National Park. At the same time the Government was able to produce national and provincial spatial plans by forest consensus, known as TGHK (as described in the section above). Approximately, 10 years later the Government produced Act No. 5 of 1990, concerning Conservation of Living Resources and Their Ecosystems, and this led to greater investment in conservation in the country.

In campaigning and preparing to be the host of the 1982 Third World National Parks Congress, the Government of Indonesia declared the first 5 national parks in Indonesia mentioned above: (1) Gunung Leuser National Park, to represent tropical montane ecosystems in Sumatra and as habitat for Sumatran Orangutan *Pongo abelii* and Sumatran Rhinoceros *Dicerorhinus sumatrensis*, (2) Ujung Kulon National Park to represent tropical lowland forest in Java and the remaining habitat for Javan Rhinoceros *Rhinoceros sondaicus,* (3) Gunung Gede-Pangrango National Park to represent tropical montane cloud forest in Java and habitat for Javan Gibbon *Hylobates moloch* and Javan Hawk-eagle *Spizaetus bartelsi*, (4) Baluran National Park to represent tropical savanna forest in Java and home for Javan Banteng *Bos javanicus*, and (5) Komodo National Park as the home for the giant and ancient Komodo Dragon *Varanus komodoensis*. The National Parks were declared through Decree of the Minister of Agriculture No. 811/Kpts/Um/II/1980 of 6 March 1980.

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Bromo-Tengger-Semeru National Park.

The Third World National Parks Congress in Bali between 11 and 22 October 1982 provided momentum and an excellent opportunity for Indonesia to launch its long-term plan to develop its national park system. The year also marked the beginnings of an emerging conservation movement for the country. Even though at that time the term national park was not acknowledged by any law relevant to natural resources in Indonesia, following the Bali Congress Indonesia launched a management system for national parks. The system allowed the management of a cluster of nature reserves which were located close together as a single national park management unit.

Using the natinal park management concept, during 1980s the Government declared additional national parks such as Kerinci Seblat, Way Kambas (both in Sumatra), Bromo-Tengger, Meru Betiri (both in Java), Bali Barat (Bali), Kelimutu (Flores), Lore Lindu, Dumoga Bone (both in Sulawesi), Manusela (Maluku), and Lorenz (in Irian Barat, now called Papua). The establishment of this series of national parks was followed by the creation of many types of new conservation areas, such as strict nature reserve, wildlife reserve, wildlife sanctuary, and game reserve. Up to 1990 the Government was able to establish 20 national parks and protect approximately 18 million ha of terrestrial ecosystem as conservation areas.

During the period, the Government of Indonesia also commenced a marine conservation program in the country. In 1983, with the support of FAO and WWF, Indonesia produced a road map for marine conservation which aimed to conserve approximately 10 million ha of important marine areas such as mangrove, coral reef and lagoon, sea grasses and unique coastal areas. The plan was extensively used as the master guideline for developing marine national parks in the country. Following the launch of the plan, the Kepulauan Seribu, on the coast close to Jakarta, was declared as the first marine national park.

After this declaration, a number of Governors also proposed or declared their own marine national parks, such as Bunaken Marine National Park in North Sulawesi, and Karimunjawa Islands Marine National Park in Central Java. In addition, at the end of 1980s the Government declared Taka Bone Rate Marine National Park in South Sulawesi and Teluk Cendrawasih Marine National Park in West Papua. Ujung Kulon, Bali Barat and Komodo National Park were also extended to cover coastal and marine areas.

Development of Regulations

The rapid and smooth development of national parks and conservation of natural resources in general was largely due to the national economic growth and political stability. The establishment of the Ministry of Forestry in 1983 raised the status, authority and responsibility of the Directorate General of Forestry, and resulted in greater attention being given to forestry issues, including conservation of natural resources. One of the outstanding issues of conservation at that time was a legal basis for the national park system and its operation in the country. The Basic Forestry Act No. 5 of 1967 and the Living Environment Act of 1983 had not covered the management of national parks. Therefore, in 1984 the Ministry of Forestry presented a draft regulation on the conservation of natural resources to the Parliament which would support and legalize the existing national parks.

Following long deliberations and after succeeding in agreeing draft number 32, the Parliament finally endorsed the conservation act and it was signed by the President of the Republic of Indonesia on 10 August 1990 with the title of 'Act on the Conservation of Living Resources and Their Ecosystems No. 5 of 1990'. The Act consists of 14 Chapters and 43 Articles which regulate the protection of life support systems, preservation of plant and animal diversity including their ecosystems, sanctuary reserves, preservation of plant and animal species, sustainable utilization of living resources and their ecosystems, nature conservation areas, citizen participation in conservation programs and activities, the executive tasks and delegation of duty and assistance with tasks, investigation, provisions for criminal punishments and transitional provisions (Republik Indonesia 1990).

Within the Act, a nature conservation area is defined 'as a specific terrestrial or aquatic area whose main functions are to preserve the diversity of plant and animal species, as well as to support the sustainable utilization of living resources and their ecosystems'. A national park is defined as 'a nature conservation area which possesses native ecosystems and which is managed through a zoning system which facilitates research, science, education, breeding, recreation and tourism purposes'.

In addition to that, the Act also accommodates the development of conservation areas under UNESCO terms such as biosphere reserve, which is defined as 'an area of native, unique and/or degraded ecosystems where all natural components need to

be protected and sustained for its importance research and education', as well as other terms that were developed at the national level such as nature recreation park, game reserves and a grand forest park.

The Act also supports the development of regulations pertaining to conservation of plant and animal species diversity including protection and enforcement, something which was badly needed by the country to protect the commercial and non-commercial endangered species including their habitat and ecosystems. The regulation is equally important because it demonstrates the nations commitment to the global conventions related to species and biodiversity such as CITES and UNCBD. There are also articles on citizen participation in conservation of natural resources, enforcement, and criminal actions relevant to conservation. The existence of these provisions stimulated the creation of Non Governmental Organizations to assist the Government in implementing relevant conservation programs.

Maintaining the Conservation Crusade through Social Turbulence

The period of 1990s appeared to be a golden moment for the conservation of natural resources in the country. Although there were challenges here and there from other sectors which focused on economic development, or other agencies within the Ministry of Forestry, with the support of relevant regulations, and the global concept of sustainable development, the Government was able to succeed in expanding the representation of unique and representative terrestrial and marine ecosystem in conservation areas.

The conducive atmosphere and political stability during that period also encouraged more international environmental and conservation NGOs to begin working in Indonesia. In addition to WWF, who had been working since 1960, The Nature Conservancy (TNC) began its program in Lore Lindu National Park in Central Sulawesi, Flora Fauna International (FFI) started its program in Gunung Leuser National Park, BirdLife International opened its first Indonesian Program in Bogor to assist Bali Starling conservation in Bali Barat National Park, the Asian Wetland Bureau (AWB, Bogor) began a wetland inventory in Indonesia, Conservation International (CI) started to develop conservation in West Papua, and Wildlife Conservation Society (WCS) commenced its program in Tangkoko-Batu Angus Wildlife Reserve (North Sulawesi).

The number of Indonesian civil society organisations working for conservation of natural resources increased in line with the arrival of international NGOs. Along with Yayasan Indonesia Hijau and Walhi, there were, among others, Yayasan KEHATI (The Indonesian Biodiversity Foundation) established with help of USAID, Dian Desa appeared and became well known for local and adaption technology to help and empower the villagers, PPLH Seloliman (East Java) which focused on conservation of medicinal plants and WARSI in Kerinci Seblat National Park working with WWF Indonesia to develop a model of conservation in villagers.

During that period, it seemed that there was almost no challenge from wider society to establishing and expanding conservation areas throughout the country. Most probably this was due to the strength of the central and local Government in maintaining political stability of the nation. The army and the police carefully monitored any action against national initiatives, and the Government goal of making everyone united for the nation and economic development made it virtually impossible for local aspirations to be voiced. Whilst this meant that there was little resistance to conservation proposals, it also resulted in a reluctance on the part of civil society to engage with Government programs, for fear of contraveninig policy.

In reality, there was lots of disatisfaction among the community who inhabited villages in and around the conservation areas about the sudden establishment of the areas without their consent. However they did not express these objections. Instead, they were choosing to keep quiet about their views and aspirations for forest areas which had, in practice, belonged to them and on their attitude to the actions by Government to enforce its regulations. Their disatisfaction with the arrangements is very understandable, as many communities - who used to have freedom in managing and harvesting the resources - found their resource use restricted when their area was declared a conservation area.

The Government actually recognized the problem but seemed reluctant to deal with local society face-to-face, and so appeared to have left the communities out of any decisions, and ignored the problems. As a result, in the mid of 1990s there were many civil society organisations which began questioning the economic benefit from the establishment of conservation areas for the local community. Some NGOs who worked with the community also started challenging the Government with the issue of tenure rights. At the time, these proposals were seen as irrelevant to the current mainstream of policy development, and therefore were diverted to other issues or silenced. Meanwhile, university and scientific organizations responded to the community-conservation conflict with scientific workshops and seminars on the economic valuation of intangible resources such as conservation of endangered species and their habitats within conservation areas.

Following the downfall of the new order regime of Suharto's Government in 1998, the claims by local communities relating to national parks and other conservation areas based on customary tenure and a history of use could no longer be contained. Practically no single national park was free from social and tenurial problems at this time. Along with the emergence of the reformation era and changes in governance, local community such as those in Kayan Mentarang National Park were among the first who claimed to have the right to manage the national park or at least be part of the management. People in Kutai National Park - regardless their origins - claimed to have the right to settle in the area. Lore Lindu National Park(Central Sulawesi) was also facing great difficulties in defending its area from communities who moved back to occupy the areas they had traditionally used for agriculture. In addition, Gunung Leuser National Park (Sumatra), Kerinci Seblat National Park (Sumatra), Tanjung Puting National Park and Gunung Palung National Park (bothin Kalimantan) were among the long list of national parks where social conflict erupted between park and community.

In 1999, the Ministry of Forestry had revised the Basic Forestry Law of 1967 with the issuing of Law 41 of 1999 (Republik Indonesia 1999). The new Act was more accommodating towards the involvement and participation of local communities in forestry programs and developments. However, the issue of tenure system and claims was still left out of this Act. At the same time, the Government was having great economic difficulties, facing the possibility of bankrupcy due to mismanagement by the previous Government, and distracting attention from the tenure issue. To make

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Kelimutu National Park.

things worse, as the enforcement during the period weakened, people were enjoying the euphoria of new democracy in many aspects, including managing resources. Later, in the name of equity, prosperity as well as poverty and reform, local communities was driven by corrupt companies to illegally extract resources from conservation areas and other types of forest, popularly known as illegal logging.

Propelled by the initiative of the Dayak community which had been granted the right to participate in a collaborative management system in Kayan Mentarang National Park in 2001, the Ministry of Forestry in 2004 issued a regulation on collaborative management in conservation areas. The regulation stimulated the creation of collaborative management programs for Bunaken National Park, Komodo National Park and other parks such Gunung Halimun - Salak National Park and Gunung Palung National Park, all of them trying to embrace community involvement through this concept. Yet the concept failed to encompass all aspects of the collaborative management between the communities who live in and around the park with the Government management authority. Lack of funding, limited capacity to fundraise and manage, and distrust between community and authority, as well as poor commitment of the parties involved are among the reasons for failure. In the end, this attractive concept was only good on paper, whilst park management remained entirely in the hands of the management authority.

Number and Distribution of Current National Parks

By the end of 2012 Indonesia had allocated about 27.6 million ha for conservation areas and 33 million ha for protected or catchment areas. Within these areas, about 17 million ha are lies within 50 national parks spread across the country (see Box 3-1 and Fig. 3-1).

Since the beginning of the era of reformation which commenced at the end of 1990s, local Government has had stronger rights to access local natural resources and is granted the authority to plan and manage their own land outside of state forest areas. However, in many cases local Governments, in the name of economic development and poverty reduction programs, have asserted their right to explore and exploit high value of natural resources such gold, gas, oil and coal deposited within park areas. Others local Governments, for the same reasons, are issuing licenses for mining and development of agriculture plantations such as oil palm estates within the park areas.

This situation, if not handled properly, could lead to the rapid deterioration of the ecosystems of many parks in the country. At the same time, community who reside in and around the parks are now more vocal in asserting they right to use the resources located in the park, which they claim as part of their own heritage. Chapter four to eleven elaborate on the case of national parks in Kalimantan and the voices of community who have long been settled in the parks. As mentioned previously, Kalimantan was selected because the area still contains substantial areas of primary forest whilst also attracting large investment for economic development.

BOX 3-1
List of 50 National Parks in Indonesia

Sumatra
1. Gunung Leuser
2. Siberut
3. Kerinci Seblat
4. Bukit Tigapuluh
5. Bukit Duabelas
6. Berbak
7. Sembilang
8. Bukit Barisan Selatan
9. Way Kambas
10. Batang Gadis
11. Tesso Nilo

Java
1. Ujung Kulon
2. Kepulauan Seribu
3. Gunung Halimun
4. Gunung Gede Pangrango
5. Gunung Ciremai
6. Karimunjawa
7. Bromo-Tengger Semeru
8. Meru Betiri
9. Baluran
10. Alas Purwo
11. Gunung Merapi
12. Gunung Merbabu

Kalimantan
1. Gunung Palung
2. Danau Sentarum
3. Betung Kerihun
4. Bukit Baka-Bukit Raya
5. Tanjung Puting
6. Kutai
7. Kayan Mentarang
8. Sebangau

Bali and Nusa Tenggara
1. Bali Barat
2. Gunung Rinjani
3. Komodo
4. Manupeu-Tanah Daru
5. Laiwangi-Wanggameti
6. Kelimutu

Sulawesi
1. Bantimurung-Bulusaraung
2. Bunaken
3. Bogani Nani Wartabone
4. Lore Lindu
5. Taka Bonerate
6. Rawa Aopa-Watumohai
7. Wakatobi
8. Kepulauan Togean

Maluku and Papua
1. Manusela
2. Aketajawe-Lolobata
3. Teluk Cendrawasih
4. Lorentz
5. Wasur

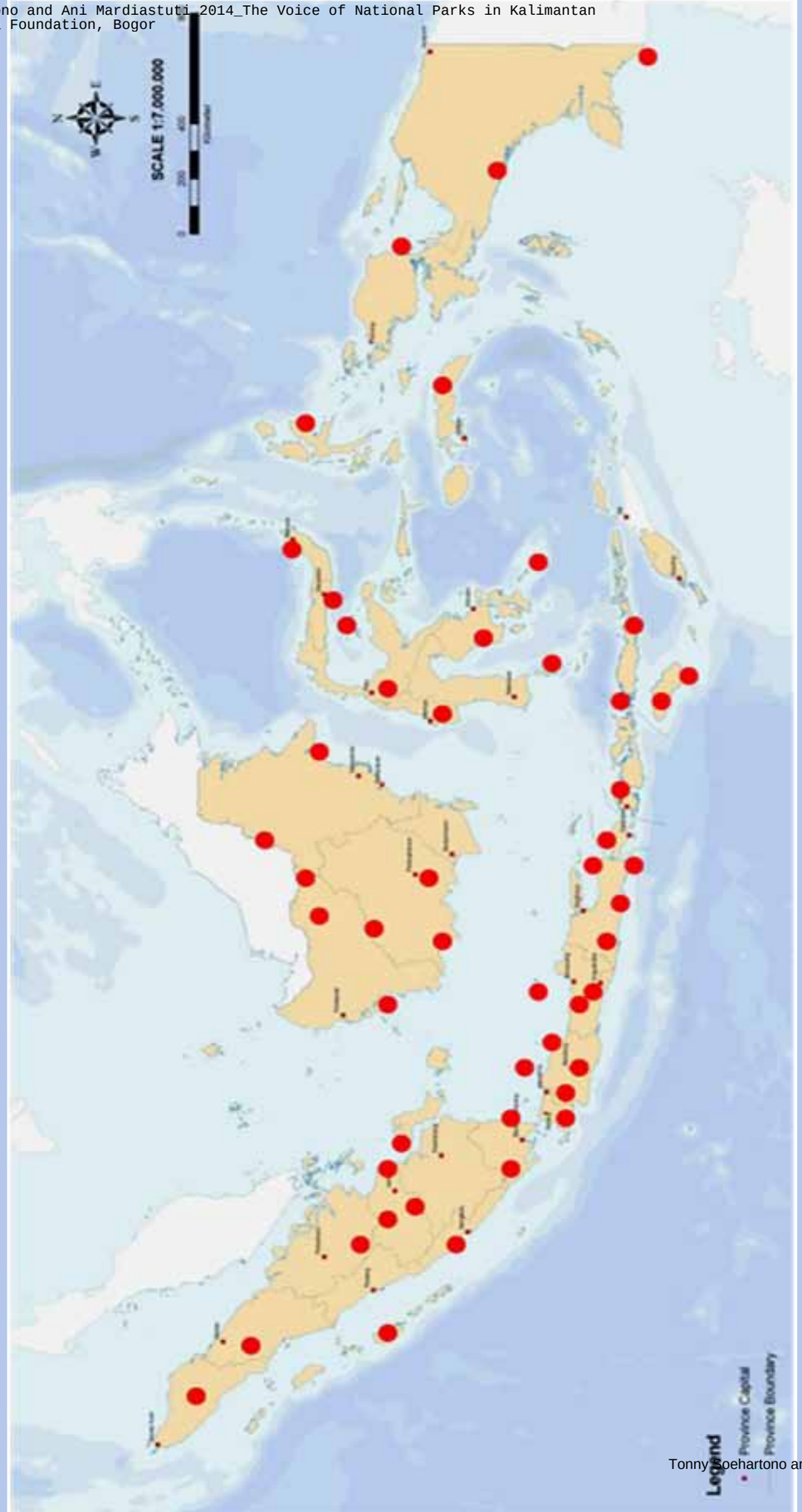


FIGURE 3-1
Distribution of fifty national parks in Indonesia.

Kalimantan: Nature and People

Kalimantan is the name of the Indonesian part of Borneo Island, the third largest island in the world after Greenland and New Guinea. There are four provinces in Kalimantan - West, Central, South and East Kalimantan (a fifth, North Kalimantan, will be created in 2013) – with a total area of 539,460 km^2, about 73% of Borneo's land area or 28% of the total terrestrial area of Indonesia.

Despite its vast area, Kalimantan supports only 5.8% (13.8 million people in 2010) of the total population of Indonesia (237.6 million) (BPS 2011). In comparison, the most populated island, Java has an area of 126,700 km2 and inhabited by 136.6 million people or about 57.5% of the total population of Indonesia.

Kalimantan has played a key role in Indonesia's economic development and as a source of foreign revenue. This is due to the island's rich reserves of natural resources: forests, oil, gas, coal, and other minerals including gold and diamond (MacKinnon *et al.* 1996). It is not surprising that the country has been heavily exploited the natural resources of Kalimantan since 1970s to earn domestic and foreign revenue.

The environmental changes in Kalimantan - as a result of the extensive and intensive exploitation - have been very rapid, caused mainly by forest conversion for plantation and settlements, logging (legal and illegal), mining, and wild fires (WWF undated). The rate of deforestation, estimated at 2% annually, has affected the wildlife and people of Kalimantan. The native people of Kalimantan are called Dayak. 'Dayak' literally means people of the interior, and is a collective name for a diverse group of tribal people who differ in language, art forms and many elements of culture and social organization (MacKinnon *et al.* 1996). The Dayak consist of six sub-ethnic groups: Apokayan (Kenyah-Kayan-Bahau), Ot Danum-Ngaju, Iban, Murut, Klemantan, and Punan.

The Government of Indonesia is fully aware of the threats from development to the biodiversity and people of Kalimantan. Establishing national parks is one of many efforts to conserve the natural wealth of this island.

Table 3-1
Summary of the features of national parks in Kalimantan, listed based on the year of establishment.

Kutai, 1982

198,629 hectare
East Kalimantan
00°08'-00 °34'S; 116°58'-117°36'E

Tropical lowland, mangroves and beach forest; important habitat for Ironwood *Eusideroxylon zwageri* and many other *Dipterocarps*

Tanjung Puting, 1984

415,040 hectare
Central Kalimantan
02°35'-03 °35'S; 111°50'-111°15'E

Dedicated mostly for Orangutan conservation, habitat type is a combination of tropical lowland forest and peat swamp forest

Gunung Palung, 1990

90,000 hectare
West Kalimantan
01°00'-01 °20'S; 01°00'-01°20'W

Tropical *Dipterocarp* forest, mostly in pristine condition, main habitat for endemic Black Orchid *Coelogyne pandurata*

Bukit Baka- Bukit Raya, 1992

181,090 hectare
West Kalimantan
01°00'-01 °20'S; 01°00'-01°20'W

Mostly in the area of Schwaner Mountain Range, an important catchment area for West and East Kalimantan, surrounded by many local Dayak tribes

Betung Kerihun, 1995

800,000 hectare
West Kalimantan
00°35'-01 °34'S; 112°18'-114°12'E

The first transboundary national park in Asia (with Lanjak Entimau Wildlife Sanctuary in Sarawak), contain 75% of the endemic plants of Kalimantan

Kayan Mentarang, 1996

1,360,500 hectare
East Kalimantan
01°59'-04 °24'N; 114°49'-116°16'E

Transboundary park (with Pulong Tao National Park, Sarawak), containing pristine montane forest ecosystems, of which some still scientifically little known, inhabited by various Dayak tribes

Danau Sentarum, 1999

132,000 hectare
West Kalimantan
00°39'-01 °00'N; 111°56'-112°25'E

Protects a vast area of seasonal wetlands, including lakes and freshwater swamps; catchment area of the Kapuas River, designated as a Ramsar Site

Sebangau, 2004

568,000 hectare
Central Kalimantan
01°55'-03°07'S; 113°18'-114°03'E

Peat swamp ecosystem with unique physical and biological features, provides water for 3 nearby river basins

National Parks in Kalimantan

At the moment there are eight national parks located in Kalimantan. These parks - listed based on the year of establishment - are: Kutai, Tanjung Puting, Gunung Palung, Bukit Baka-Bukit Raya, Betung Kerihun, Kayan Mentarang, Danau Sentarum, and Sebangau National Parks (see Table 3-1 and Fig. 3-2). These Parks represent the unique and original ecosystems of Kalimantan and together total approximately 3.7 million ha or about 6.44% of the Indonesian part of the island. Of the eight national parks in Kalimantan, three, namely Kayan Mentarang, Bukit Baka-Bukit Raya, and Danau Sentarum, have been included in a conservation initiative called Heart of Borneo (Box 3-2),

From the point of view of ecosystem types, half of those Parks (i.e. Kutai National Park, Tanjung Puting, Danau Sentarum, Sebangau) are in lowland areas. However, when compared to the vast size of lowland areas in Kalimantan, it is apparent that the size of these four National Parks may not be sufficient to represent the lowland ecosystems and biodiversity of Kalimantan. Further, few or none of the Parks in Kalimantan are free from social problems, and this is an issue especially for those Parks occupying lowland areas. In general problems arise from the issues of the tenurial system, resource rights and allocation, and human-wildlife conflict.

One source of problems is that, some of these Parks have not been equipped with adequate infrastructure and resources, such as boundary demarcation, patrolling support and facilities, social knowledge and conflict resolution, and adequate numbers of field personell. Another source of problems is that some of the Parks were established without prior intensive consultation with local stakeholders, especially local community, and so those Parks tend to have a lack of local support and political backing from the local Government. The combined effect of these two groups of problems is that some of the Parks have encountered serious problems with illegal occupation, illegal harvest of resources, wildlife-human conflict, and overlap from the activities of other sectors such as mining, agriculture and urban development. The result is that the ecosystems in some of them have been fragmented.

BOX 3-2
Heart of Borneo Initiative

The Heart of Borneo (HoB) Initiative is a conservation and sustainable development program aimed at conserving and managing the contiguous tropical forest in Borneo Island. The HoB covers ecologically interconnected rainforest in three countries: Indonesia, Malaysia (states of Sabah and Sarawak), and Brunei Darussalam. WWF Indonesia is an important partner for the HoB initiative.

The total area for the HoB is approximately 200,000 km2 (around 30% of the island's land area). Three Indonesian national parks are included in the HoB, namely Kayan Mentarang, Bukit Baka-Bukit Raya, and Danau Sentarum National Park. On the Malaysian side the HoB encompasses Batang Ai National Park, Lanjak Entimau Wildlife Sanctuary, Gunung Mulu National Park, Crocker Range National Park, and Kinabalu National Park. The Heart of Borneo harbors up to 6% of the world's total biodiversity and is the source of 14 of the island's major rivers, supporting life for wildlife and three million people.

The Heart of Borneo initiative provides a new platform to promote transboundary and possibly inter-regional cooperation. Its declaration was signed on 12 February 2007 by the representatives of Ministers of the three countries.

The general objective of the initiative is to carry out collaborative programs on conservation and sustainable development through the implementation of effective management and conservation of a network of protected areas, sustainable management of productive forests and implementation of sustainable land uses.

Currently five programs have been identified, namely transboundary management, protected areas management, sustainable natural resource management, ecotourism development, and capacity building. The area will not be managed by top-down governance, but from the bottom up.

Source: WWF (2008)

Ani Mardiastuti

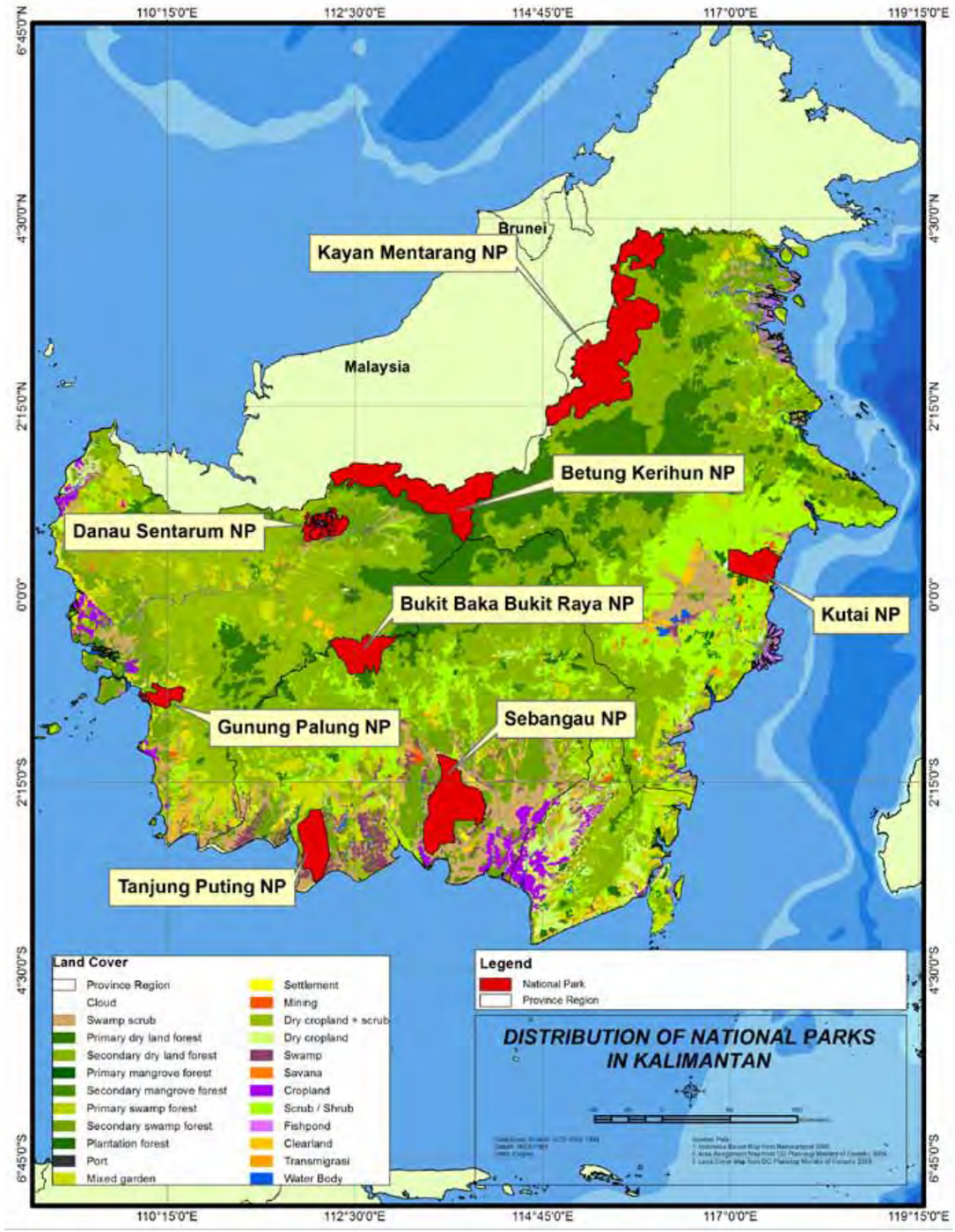


Figure 3-2.
Distribution of eight national parks in Kalimantan

Kutai National Park

CHAPTER 4

KUTAI NATIONAL PARK:
THE LAST DRY LOWLAND TROPICAL RAINFOREST

Kutai National Park (Fig. 4-1) is famous for its orangutans and vast ecosystem of Ulin (Ironwood) *Eusideroxylon zwageri*, which covers almost a quarter of the entire park. The park is also one of the last remaining large areas of lowland tropical forest in Kalimantan. Historically, the area was declared a 360,000 ha forest reserve by the Kingdom of Kutai in 1936 through decision No. 80 /22-ZB/1936. The area was selected based on a reserve created by the Dutch in 1934. The Dutch Governor's document No 3843/AZ/1934 indicates that the forest reserve area in Kutai District covered approximately 2 million ha (Purwanto 2005, Wulan *et al.*, 2004, Balai Taman Nasional Kutai 2003, Vayda & Sahur 1996).

In 1970, after Indonesia gained its independence, the park was changed into a 200,000 ha wildlife reserve (Anonymous, 1971). During the third National Park Congress in Bali in 1982, the Ministry of Agriculture designated the area as a candidate for the status of national park through Decree No. 736/Mentan/X/1982 (Sambodo 2006, Purwanto 2005).

In 1991, the Ministry of Forestry declared the area a 198,629 ha national park through Decree No. 325/Kpts-II/1995, and two years later the Forestry Ministry issued Decree No. 997/ Menhut-II/1997 establishing the Kutai National Park Management Unit, headquartered in Bontang town on the southeastern tip of the park (Balai Taman Nasional Kutai 2003, Pemerintah Kota Bontang 2003).

Biodiversity

Kutai National Park is the only lowland forest reserve in East Kalimantan covering a significant area of largely intact mangrove ecosystem along the coast and lowland *Dipterocarpaceae* forest, containing species such as *Shorea* and *Dryobalanops* mixed with Ulin *Eusidorexylon zwageri* (Fig. 4-2). The latter forms almost pure stands in the western part of the park, making the ecosystem unique. The mangrove ecosystem on the eastern coast of the park contains various species from the *Bruguiera, Sonneratia*, *Rhizophora* and *Avicenia* genera (CIFOR 2007, Sambodo 2006, Balai Taman Nasional Kutai 2003, Vayda & Sahur 1996).

The *Pongo pygmaeus* orangutan is the park's iconic species, and other species to be found there include the proboscis monkey *Nasalis larvatus*, the banteng *Bos javanicus,* the Malayan sun bear *Helarctos malayanus,* the Sambar deer *Muntiacus muntjak,* the slow loris *Nycticebus coucang borneanus*, the white-fronted leaf monkey *Presbytis frontata frontata*, the maroon leaf monkey *Presbytis rubicunda rubicunda*, and more than 300 species of birds, including the blue-banded kingfisher *Acledo euryzona,* the lesser adjutant stork *Leptoptilos javanicus*, the white-bellied sea eagle *Heliaeetus leucogaster*, the green imperial pigeon, *Ducula aenea*, the jungle fowl *Gallus* sp., the hill myna *Gracula religiosa* and the oriental darter *Anhinga melanogaster* (Moeliono *et al.* 2010, Ditjen PHKA 2007, Sambodo 2006, Purwanto 2005, Wulan *et al.* 2004, Balai Taman Nasional Kutai 2003).

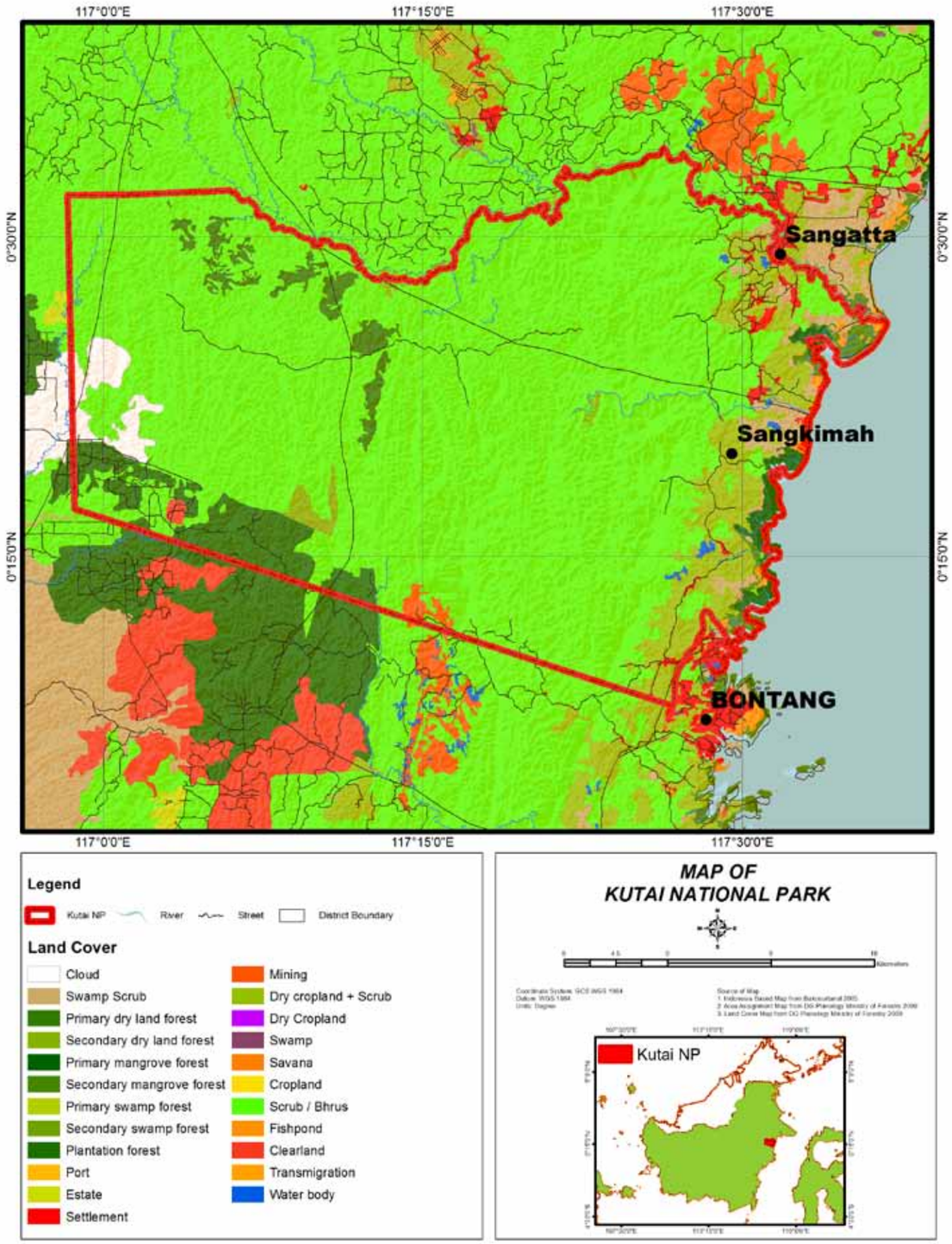


Figure 4-1. Map of Kutai National Park

Kutai National Park

Figure 4-2.
A large Ironwood *Ensideraxylon zwageri* tree in Kutai National Park.

To support the orangutan population, the park houses a special orangutan conservation programme in Mentoko, on the banks of the Sangata River (Box 4-1), founded and supported by Dr Akira Suzuki, a well-known researcher from University of Kyoto, Japan. The programme, which began in the early 1980s, focuses on orangutan evolution studies, and provides up-to-date counts of their population. The study is also used to a certain extent for ecotourism research, especially by students from Japanese universities (Balai Taman Nasional Kutai 2003).

The Park's Controversial Contraction

The park is in an area also known to contain large commercial deposits of gas, oil and coal which have attracted exploitation by local and national governments. In 1940 the Dutch colonial government, through its oil companies Stanvac and Batavia Petroleum Maschapij (BPM), started oil operations in the northeastern part of the park. The operation lasted until the oil field was handed over to the Indonesian state-owned oil company Pertamina in 1969. Since then the state-owned company has extended its support facilities and infrastructure in the area to cover almost 300 ha. The area has become the permanent settlement of oil workers who once worked for the company (Moeliono *et al.* 2010, Vayda & Sahur 1996).

During the early 1970s the park underwent a gradual reduction in area, first when the Indonesian government granted 60,000 ha to a gas and fertilizer development project known as PT Badak NGL and Pupuk Kalimantan Timur (PKT), and later a further 46,000 ha to forest concessionaires PT Kayu Mas Timber and PT Silva Duta to harvest commercial timber in the *Dipterocarp* forests. For reasons which were not clear, part of

BOX 4-1
Mentoko Research Centre

Mentoko is in the northwest of Kutai National Park in the district of Sangata Utara. On the banks of the Sangata River, the place is easily accessible either through Kaltim Prima Coal (KPC) or by water along the Sangata River. It was eminent Japanese primatologist Professor Akira Suzuki of Kyoto University who in 1988 developed approximately 500 hectares of the northern part of Kutai National Park as a Kalimantan orangutan research centre, particularly for primate evolution studies.

Up until 2005 Professor Suzuki employed a number of local people to monitor and record the movements of every single orangutan in the Mentoko area daily. In 1990, with permission from the park's management, he constructed a wooden two-storey house equipped with a simple library, herbarium and storage space as a base for his work.

Mentoko and its limited facilities gradually attracted domestic and international attention, particularly from Japan and a number of embassy staff in Jakarta who wanted to watch orangutans. The park and the East Kalimantan province and Kutai Timur regency local governments have consequently promoted the Mentoko area in the north of Kutai National Park as an ecotourism destination. Professor Suzuki is still continuing his research today.

Kutai National Park

Source: Budi Santoso (Senior Officer of Balai Taman Nasional Kutai; *pers. comm.*)

the concession area was subsequently abandoned and reintegrated into the reserve. The area of the park was reduced even further when the government decided to give up 1,371 ha for the development of Bontang Municipality through Minister of Agriculture Decree No 435/Kpts-VIII/1991 (Balai Taman Nasional Kutai 2003, Pemerintah Kota Bontang 2003).

In the late 1990s, at the outset of Indonesian decentralisation, the government decided to develop the East Kalimantan road network for the economic development of East Kalimantan province. The existing corridor between Bontang and Sangata, which crosses the eastern part of the park, was upgraded to become a semi-main road. The road development generated a lot of controversy among conservationists who were concerned about its possible negative impact on the park's ecosystems and wildlife.

However, the government continued with the plan, and this corridor eventually became the main thoroughfare connecting towns in East Kalimantan. Unfortunately, the road attracted settlements of new immigrants from other areas such as Bontang, Sangata, and even by the Buginese from regions as far as South Sulawesi. The industries around Bontang and Sangata have also contributed to the development of the area as they provide the communities with employment and basic services such as health and education (Sambodo 2006, Pramono 2005, Purwanto 2005, Wulan *et al.* 2004, Vayda & Sahur 1996) (see Box 4-2, 4-3).

BOX 4-2
The Buginese Story at Kutai National Park

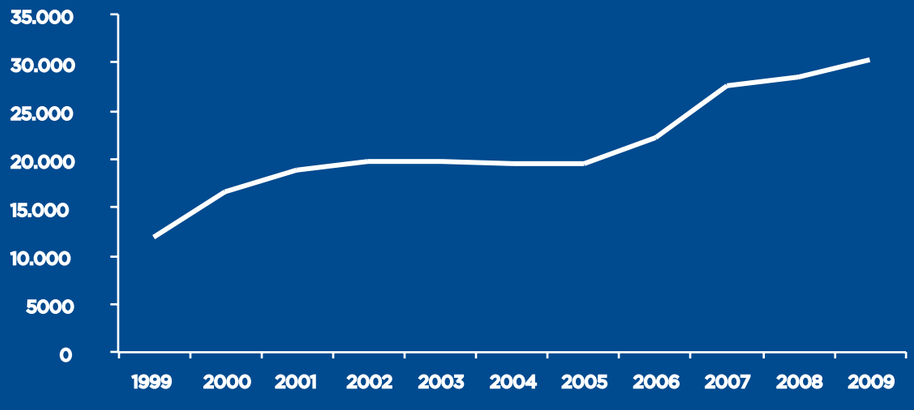
Kutai National Park

There is a lot of controversy as to when the influx of migrants into Kutai National Park began – especially the Buginese communities – and what has driven it. The story of a senior Buginese who settled in the Teluk Pandan area suggests that they first arrived in the early 1920s and settled in the Sangkimah area in the north-eastern part of the park, long before the area was established as a reserve by the Dutch Governor General. People claim that they came in search of a better life in East Kalimantan, with plenty of land available and later employment opportunities at the Stanvac oil company.

In the early 1960s other groups of Buginese from South Sulawesi followed their associates and families to the park, often due to political pressure in their homelands resulting from the controversial Kahar Muzakar's rebellion against the national government, which caused a volatile situation in South Sulawesi. Most of these people chose to settle in Teluk Pandan, and some of them joined their predecessors in the Sangkimah area. A third influx of Buginese occurred in the mid-1970s when the government developed the LNG and fertilizer industry in Bontang, and they became the workforce of the two industries' contractor companies. This group of people associated themselves with other labourers from Java and other regions, and occupied the Kandolo and Selimpus areas in the southeastern part of the park.

Since the 1970s these early communities have mingled and their populations increased. Eventually they considered the new area their 'home' and claimed the rights to settle, to own land, and therefore the right to use the land as they wished. This situation became increasingly complicated as more and more families arrived and joined existing communities, even after the area was established as a park, and this created a persistent conflict between the Buginese migrants and the park authority. Since the park was established in the early 1980's the government has tried many means to resolve this conflict. Numerous studies, seminars and workshops have been conducted, producing a variety of scenarios to resolve the issue, but none have been acceptable and implementable to both sides – perhaps because each side is unwilling to compromise over the land issue.

Sources: Sambodo (2006), Wulan et al. (2004), Balai Taman Nasional Kutai (2003), Vayda & Sahur (1996)



The population of Kutai National Park from 1999 to 2009 is illustrated in the accompanying graph. (Population is recorded as unchanged from 2003 to 2005, as no data are available locally for those years.)
Source: Kutai National Park and *Kutai dalam Angka 2006-2010*

BOX 4-3

Cost to Kutai National Park of Local Elections in 2000

In October 1998 the ecosystem of Kutai National Park was relatively pristine. People could easily watch wildlife, including orangutans, along the Bontang-Sangata corridor. At the time there were only a few 'recognised' settlements within the park: Teluk Pandan, Kandolo and the Sangkimah Pertamina base camp. In 1999 the government began widening and improving the corridor to connect to the East Kalimantan road network, and the state electricity company installed electricity connections along the corridor. The central government endorsed Teluk Pandan and Sangkimah as new districts, namely Teluk Pandan Selatan district and Pandan Utara district, establishing the two villages as legal administrative areas.

Concurrent decentralisation reforms at the national level created a euphoric atmosphere of democracy, triggering the formation of numerous new autonomous regencies. In East Kalimantan, the central government endorsed the establishment of Kutai Timur as a new regency on 28th

October 1998. The regency covers more than 3.5 million ha, and includes most (80%) of Kutai National Park. As stipulated in the homeland regulation, the new regency was obliged to organise elections for the area head (or Bupati) within a given timeframe. Awang Faruk Ishak, appointed as acting Bupati of Kutai Timur, was tasked with organising the election. He was also interested in running in the election for the first Bupati against two other candidates.

To influence his constituents, improve his popularity and smooth his road to the candidacy, Mr Ishak promised increased prosperity for Kutai Timur. His campaign promoted the need for a larger workforce and accelerated economic and infrastructure development in the area. He guaranteed prosperity for those moving to work in Kutai Timur on the basis of his plans for more agribusiness programmes such as oil palm and timber estates in the region.

He won the election and became the first Bupati, and his promises triggered another wave of migrants from South Sulawesi, most of whom were indirectly advised or forced to settle in the park area. The improved road access also encouraged people from older villages around Teluk Kaba and Kandolo, such as Sangata, Sangata Lama, and Hutan Lindung Bontang, to move and settle along the road, and huge areas of the road corridor were cleared for agriculture. Within a few months the dense forest was replaced with banana and cassava plantations and housing, and approximately 50 per cent of the corridor became a suburban area. By the time Mr Ishak was elected as Bupati of Kutai Timur in 2000, approximately 14,000 ha of the eastern park area along the Bontang – Sangata road was occupied by new settlers. During his tenure as bupati and that of his successor, the occupied area continued to expand, and by 2009 spanned almost 24,000 ha.

In 2008 Mr Ishak was elected governor of East Kalimantan province, and in his new position he continued pressing the proposal for an enclave around the occupied area, and for the settlements to be legalised by creating a special zone within the national park. His proposed changes would make the park smaller and less appealing to visitors due to the large number of people and the difficulty of observing wildlife in the park.

BOX 4-4

Resilience of Orangutans to a Disturbed Habitat

Bornean orangutan is an endemic species which has three subspecies: (1) *Pongo pygmaeus* subsp. *pygmaeus* (Northwest Bornean orangutan: northern West Kalimantan and Sarawak (Malaysia); (2) *Pongo pygmaeus* subsp. *wurmbii* (Central Bornean orangutan: Southern West Kalimantan and Central Kalimantan); and (3) *Pongo pymaeus* subsp. *morio* (Northeast Bornean Orangutan: East Kalimantan and Sabah). The total number of Bornean orangutans is estimated to have fallen to less than 14% of its population in the recent past (from around 10,000 years ago until the mid-twentieth century), and this sharp decline has occurred mostly over the past few decades due to human activity and development.

Orangutans live in primary and secondary tropical rainforests. Fruit makes up 65-90% of their diet, but they consume at least 317 different food items including young leaves, shoots, bark, insects, honey, and bird's eggs. Lowland Dipterocarp forests are preferred by orangutans because of their plentiful fruit.

Despite the fact that the forest of Kutai National Park has deteriorated, a recent study by Meijaard *et al.* (2010) estimated that there were more than 2,000 orangutans inhabiting the park. The researchers found that Bornean orangutans were capable of using both secondary forest and *Acacia* plantations for feeding and nesting, although it remains unclear whether such landscapes can maintain long-term viable populations. It therefore seems that selectively logged forests and timber plantations can serve as habitat for orangutans, and that populations of the ape may be more resilient than previously believed.

However, it is too early to know whether the populations recorded in secondary forest and tree plantations were transient individuals in search of new forest habitat, or whether this area was part of a re-colonisation process from nearby over-degraded forests. The long-term viability of these populations requires further study.

Orangutans in their nest in Kutai National Park
Source: Meijaard *et al. (2010*

Djumadi (left), Budi Santoso (right)

The recent migrants mingle with the existing Buginese communities who migrated to Bontang and Sangata in the early 1980s, and they have occupied the eastern side of the park, especially along the new road and coastal area, to develop agriculture and settlements (Fig. 4-3). This new community was able to get the support of local politicians to settle in the park during the provincial and regency elections of 2000.

Weak law enforcement from the Bontang and Sangata local governments, coupled with settlement support and political euphoria, meant that this new group of immigrants contributed to chaos in the park, with illegal logging, wildlife trafficking and forest conversion rampant. Since then, approximately 24,000 hectares of the eastern area of the park have gradually become a controversial settlement with permanent agriculture (Moeliono *et al.* 2010).

To resolve the situation, the Sangata regency supported by the East Kalimantan province requested the central government through the Ministry of Forestry to excise the occupied area from the park and allow a change in status to legal settlement within an enclave area. At the same time, the provincial government proposed to review and adjust the existing spatial plan of the east Kalimantan region by converting the proposed enclave area into non-forest area. As negotiations between local and central government continue, encroachment and inflow of migrants from other regions into the area also continues, making the situation in the park even more complicated (Moeliono *et al.* 2010, Purnama 2007).

The deterioration of the Kutai National Park has certainly affected the population of orangutans, the park's iconic species. A number of studies have been conducted to assess the remaining orangutan population, and although most scientists have found that their numbers have severely decreased due to habitat destruction and disturbance, recent studies show that the orangutans are surviving in the remaining habitat (see Box 4-4). As for the local people, recently there has been some movement towards environmental action following the degradation of the park (Box 4-5).

Kutai National Park

Figure 4-3.
Encroachment by local people following a catastrophic forest fire in Kutai National Park.

BOX 4-5

The Light Begins in Teluk Lombok
Written by Swary Utami Dewi

The story of Kutai National Park is not entirely one of loss. Recently, a promising seed was found which may yet grow to become a tree of hope. In 2001 a number of people from south Sulawesi who occupied Teluk Lombok (Lombok Bay), part of Kutai National Park, became aware that their fishing yields were declining even though they have increased their fishing efforts. They noted that in the past mangrove forest around Teluk Lombok was still in good condition, but that now, with the mangrove largely destroyed, their daily capture was significantly diminished.

Buginese fishermen began to ask their friends and family to rehabilitate the mangrove forest of Teluk Lombok, hoping that in the future the wealth of fishing in the area would return. This initiative was supported by the park manager and local East Kalimantan NGO BIKAL (Binakelola Lingkungan), a partner of Kutai National Park. In 2002 an initial 10 hectares was rehabilitated. The programme was then expanded under guidance from BIKAL, with the support of the Natural Resources Management Program, USAID, the Civil Society Support Program, and the Multi-stakeholder Forest Program (MFP)-UK.

To manage their rehabilitated area and to achieve their goal of improving their livelihoods sustainably, the community also created an organisation named Pangkang Lestari, the local name for certain species of mangrove. With BIKAL's assistance, the organisation explored alternative incomes for the fishermen by visiting organisations which had successfully rehabilitated mangrove in South Sulawesi, and by learning how to construct crab boxes for rearing crabs in the village of Kariangau in Balikpapan.

By 2004 Pangkang had managed not only to rehabilitate 12 ha of mangrove in Teluk Lombok, but had also developed a commercial nursery for mangrove restoration with a production capacity of 1 million seedlings per year. In 2006 the nursery had sold more than 1 million mangrove seedlings to the local governments of Bontang, Sangata and Bulungan worth more than IDR 500 million, or approximately USD 53,000.

The Pangkang women's group was also very supportive and active in enhancing livelihood options. They formed a working group named Kelompok Kerja Kerupuk Kepiting to produce and market crab chips. With the help of the Indonesian Institute of Sciences (LIPI), they also became active in a nursery program, and in 2006 with support from the MFP-UK, they started to develop commercial seaweed cultivation learned from fishermen in Bali.

The Pangkang Group's successful activities spilled over to five neighbouring villages in Kutai National Park, including Sangkimah. Through connections between women's groups, people in Sangkimah copied the crab chip production business, and were inspired to begin a natural sugar palm business. To help the community to improve their livelihoods, and in particular to earn an alternative income, in 2006 Pangkang Lestari successfully established the Daya Lestari credit union, with members in five villages in Kutai National Park.

Budi Santoso

Collaboration with Partners

Between 1996 and 2000 UNESCO-UNDP facilitated an alliance known as the 'Friends of Kutai' (Box 4-6), created to help the park develop financial sustainability and technical capacity. The Friends was formed from companies operating around the park, and its objective was to encourage and facilitate fund-raising from internal and external sources, improve the park's management capacity, and liaise with local and provincial governments when problems occurred. Until 2001 a number of companies including PT Badak NGL, PT Pupuk Kalimantan Timur, PT Kaltim Prima Coal (KPC), and PT Pertamina were committed to supporting the park, while others – in particular the timber concessions – were listed as friends but made little real contribution.

As a result of the complex and challenging socio-economic and ecological issues in Kutai National Park, several scientific assessments and field studies have been implemented or supported by researchers from CIFOR, LIPI (the Indonesian Institute of Sciences), the University of Indonesia, Hokkaido University, and the University of Mulawarman. Local NGOs in Kalimantan such as BIKAL have also regularly assisted the park in dealing with problems with the local community (Moeliono *et al.* 2010, CIFOR 2007, Sambodo 2006, Wulan *et al.* 2004, Balai Taman Nasional Kutai 2003, Pemerintah Kota Bontang 2003).

BOX 4-6
Friends of Kutai

The Friends of Kutai organisation, popularly known as Mitra Kutai, was created in 1994 by an agreement between the Directorate General of PHKA, Kutai National Park and eight companies operating in and around the park. The eight companies included two coal mining companies (PT Kaltim Prima Coal and PT Indominco), three timber concessions (PT Porodisa, PT Kiani Lestari and PT Surya Hutani Jaya), and three state oil, gas and fertilizer companies (PT Pertamina, PT Badak NGL and PT Pupuk Kalimantan Timur). In 1999 the two timber concessions went out of business and were no longer members of the Friends of Kutai, and in 2010 two new companies joined the Friends: PT Pama (a mining operator) and PT Kaltim Parna Industry (a bio-energy company).

The Friends of Kutai was established with the aim of assisting the development of Kutai National Park both through fund-raising and infrastructure development.

The Friends of Kutai provides funding for biodiversity inventory and mapping, community and buffer zone development, boundary demarcation, park facilities and infrastructure, ecotourism development, outreach programmes and the park secretariat.

As the Friends operate on a voluntary basis, member companies usually control the disbursement and use of funds they supply. With the exception of funding for the secretariat, the park itself has little control over the funds for the projects implemented by the members of the Friends, and merely registers the facilities and infrastructure supported by the Friends. The Friends meet regularly to discuss issues related to park development, and one a year to establish the yearly budget of the Friends. The registered budget of Friends in 2010 was around IDR 655 million, or USD 90,000.

Source: Soehartono & Mardiastuti (2001), Budi Santoso (Kutai National Park staff member; *pers. comm.)*

Park Resources

Park resources include its staff, financial support, its technical capacity, park management and its infrastructure. In 2009 the park employed 98 permanent staff, including a park director, and 11 non-permanent staff who work on annual contracts. Of that number, 21 are administrative staff responsible for finance, resource development and routine paperwork. The remainder are park rangers, scientists and extension officers. The park's staffing levels are far from optimal; a ratio of park officers (including office staff) to park area of one person to two thousand ha means every officer is responsible for over two thousand ha. This is the reality that the park is facing, but it is an improvement over most of the 1990s, when the staffing team was half what it is now (Fig. 4-4).

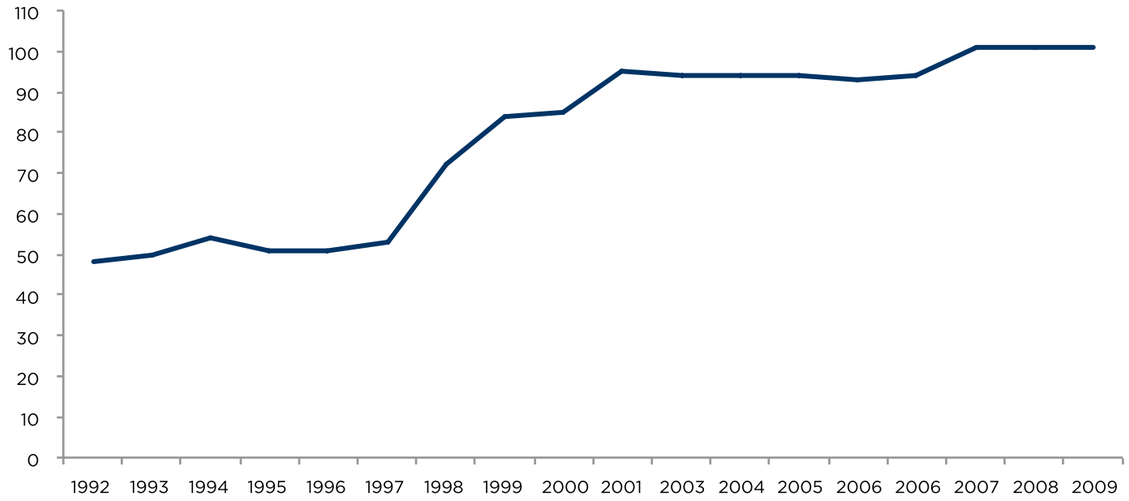


Figure 4-4
Number of staff in Kutai National Park, 1992-2009
Source: Statistics of Kutai National Park (2000, 2005, 2010)

The park is also struggling with inadequate funding to maintain infrastructure and implement park programmes and activities. In addition, owing to the park staff's limited capacity to raise financial support from public or private sector sources, it has limited financial support for tropical park ecosystems. Another constraint is that contributions from third parties such as Friends of Kutai are not legally allowed to be used for routine management activities, which is exactly where needs are greatest, so the positive impact of support from the Friends on overall park management has remained marginal.

Since 1995 the budget has gradually increased by a factor of more than ten, with a particularly dramatic jump in 2005 (Fig. 4-5). There is no clear explanation for the increase in the budget, but it may be that reforms in general and the move towards green development in particular played a role.

Ironically, except for the 1990s and 2005, the park management has had difficulty spending even this inadequate annual allocated budget. As explained by the Park Manager, the annual budget is often disbursed by the national government only in the fourth quarter of the year, usually in October or November, making it difficult for the park to spend it before the end of the year.

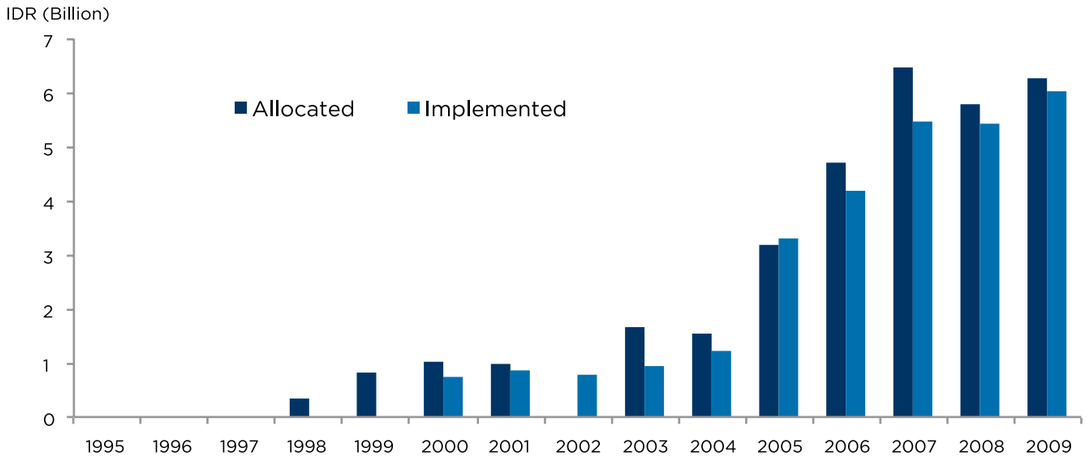


Figure 4-5
Budget of Kutai National Park, 1995-2009
Source: Statistics of Kutai National Park (2000, 2005, 2010)

The Park's Visitors

Visitors come to Kutai National Park primarily to watch the park's wildlife, in particular orangutans and forest birds. In the past, orangutans and other wildlife could easily be observed along the Bontang-Sangata corridor, but when the corridor became the main road with many illegal settlements along it, wildlife moved deeper into the forest and became more difficult to see. As a result, the number of domestic and international visitors has declined gradually (Fig. 4-6). There have been positive signs recently, however, with the number of visitors increasing between 2002 and 2010, particularly domestic visitors. The reasons for this increase in numbers are unclear.

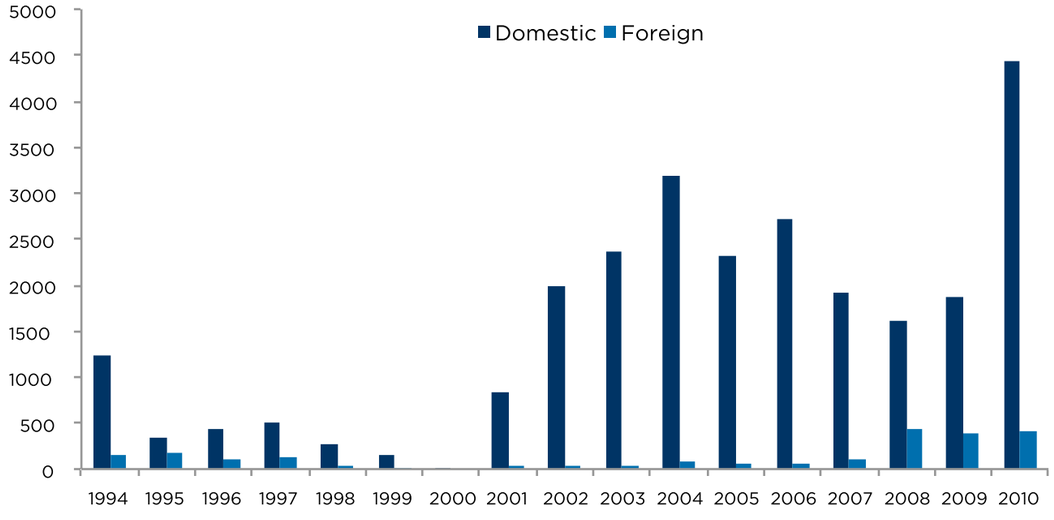


Figure 4-6
Number of visitors to Kutai National Park, 1994-2010
Source: Statistics of Kutai National Park (2000, 2005, 2010)

Kutai National Park

Crossing the bridge in Kutai National Park Area (above).
Visitors could see animal activities, for instance, Proboscis Monkey in National Park (below).

Local People's Views about Kutai National Park

To discover the views of local people towards Kutai National Park, in 2000 the park authority conducted a survey by randomly selecting respondents from communities which have settled inside the park and from people living in Bontang and Sangata. The questionnaire mainly asked whether the respondent was aware of the National Park and understood park regulations, their opinion of the park management, and what benefits the park brings to the community.

Of the 750 questionnaires, 590 (78%) were returned, and 53% of the respondents were male, 44% female and 1% unknown. The age of respondents ranged from 15 to over 50, and their education levels included elementary school drop-out (5%), elementary school (5%), high school (69%), bachelors degree (11%), masters degree (1%) and unidentified (7%). Respondents were farmers (9%), traders (4%), teachers (5%), freelancers (7%), students (51%) and others (23%).

Their views toward the park have been classified into opinions on (1) the park's familiarity, (2) park regulations, (3) the park's management system, (4) the park's protected species, and (5) the benefits and support the park brings to local communities (see Fig. 4-7).

1. Familiarity with the Park

Approximately 85% of respondents were aware of the existence of Kutai National Park and understood the function of the park. Of that number, 24% have visited the park's forest area or settled inside the park area. The rest obtained their information either from the radio or friends.

2. Park Regulations

When asked whether the respondents were aware of the park's boundaries, 45% replied not at all, while the rest admitted to being somewhat aware (32%) or very aware (1%). Around 34% of respondents did not know anything about the park's regulations, while only 14% of respondents were aware or very aware of the regulations. Some 48% of respondents were aware of the consequences of violating the rules and regulation of the national park. Only 14% of respondents understood the rights and responsibilities of a community which settles in or adjacent to the park area, and 41% of respondents stated that they did not know anything about this matter.

3. Park Management

Some 40% of respondents did not know or were not familiar with the park's officers, and 13% said they knew the park's management. However, about 49% of respondents admitted to being somewhat aware or very aware of the tasks and role of the park's officers. The fact that many of the respondents are aware of the task and role of the park officers is surprising, given that only 38% believe that the officers have done a good job in accordance with the rules and regulations, while the rest (42%) expressed a negative opinion on the matter. The latter figure was a great improvement on the 17% of the park's officers who were judged to have done a good job in 2001 (Soehartono & Mardiastuti 2001).

4. Knowledge of Protected Species

Approximately 60% of the community were aware of the protected species of fauna in Kutai National Park, while those who knew about protected tree species in the area was somewhat higher (65%). Surprisingly, only 54% of respondents admitted to knowing about the habitat of protected species in the national park.

5. Support for the Park and the Management System

About 72 % of respondents agreed or strongly agreed with the establishment of Kutai National Park, while around 68% of the community support the current management policy whereby the government is fully responsible for managing the park. Only 15% of the community supports the idea of the local community managing the park, but 52% of the community support the idea of collaborative management between the community and the government.

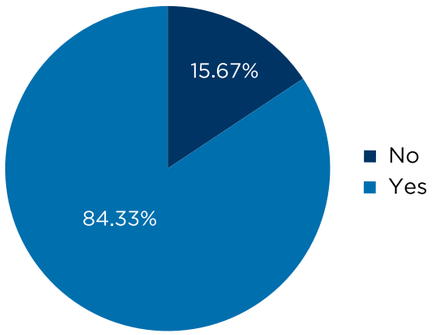
Given that the park is surrounded by mining activity, support for converting part of the park area into mining operations is surprisingly small (3%), while slightly more (6%) agree with the idea of converting part of the park into timber or oil plantations. Some 18% of respondents somewhat agree with the latter idea. Further, about 7% of the community agrees or somewhat agree (33%) with the idea of improving road conditions between Bontang and Sangata and developing housing along the road.

6. Benefits

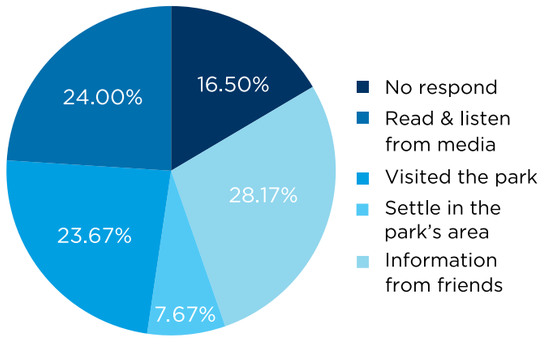
When the community was asked whether they agree that the Kutai ecosystem should no longer be a national park, most respondents disagreed (73%). This is lower than the percentage responding to a similar question in a 2001 survey, when 87% agreed Kutai should remain a national park (Soehartono & Mardiastuti 2001).

The number of respondents who believe that the park has provided economic benefits to the community was also low (21%), with 37% disagreeing. Surprisingly, only 11% of respondents agreed that the park authority should allow the community to harvest resources in the park area, and about 58% of the community somewhat agreed with this idea. Only 22% of respondents agreed that the park has provided protection for the livelihoods of the community. In contrast, around 66% agree with the idea of developing ecotourism in Kutai National Park.

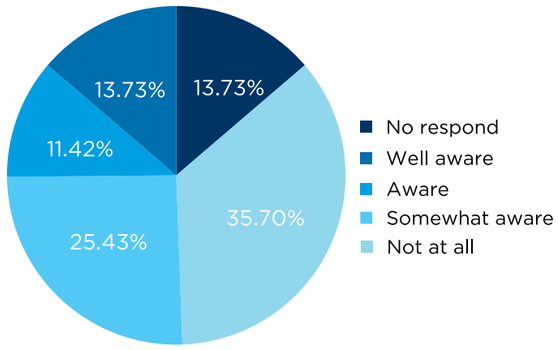
Figure 4-7.
Local people's opinions on various aspects of Kutai National Park



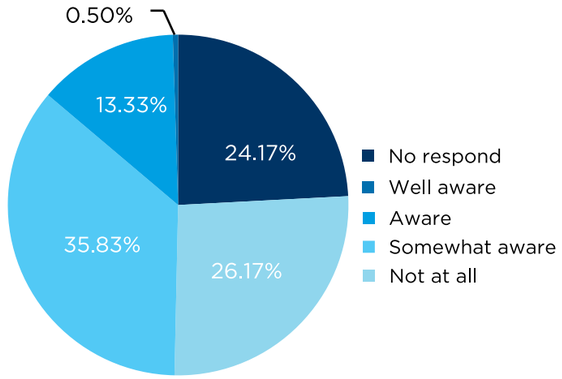
Aware of the park existence



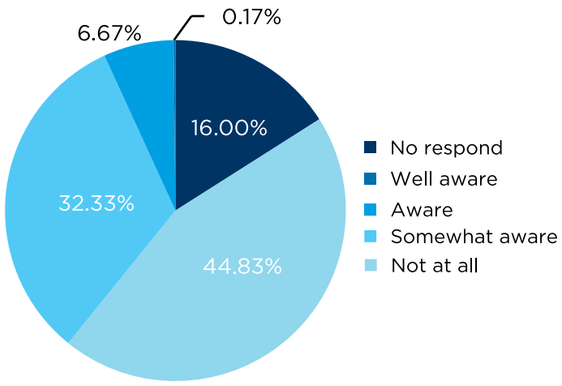
Source of information about the park's existence



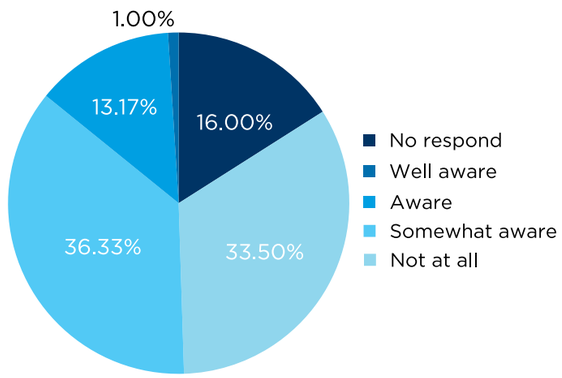
Aware of the existence of a park officer



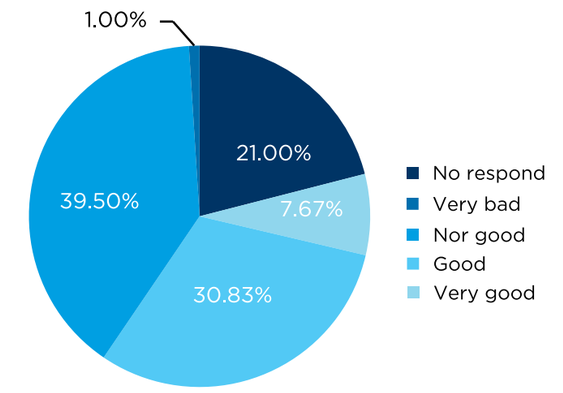
Aware of the tasks and role of the park's officers and their management



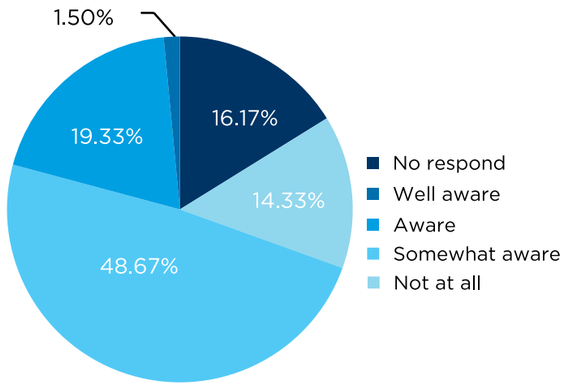
Aware of the park's boundaries



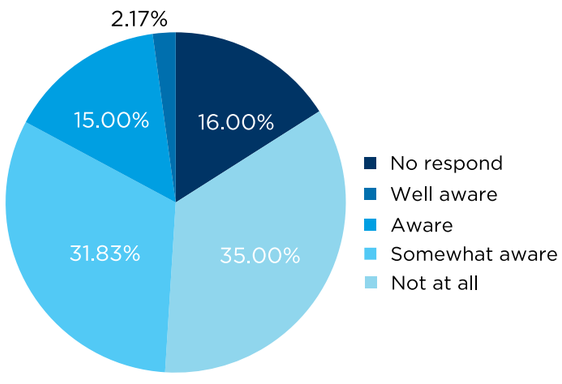
Aware of the park's regulations



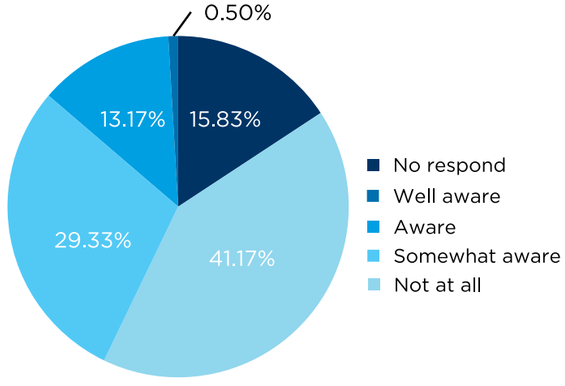
Quality of national park management



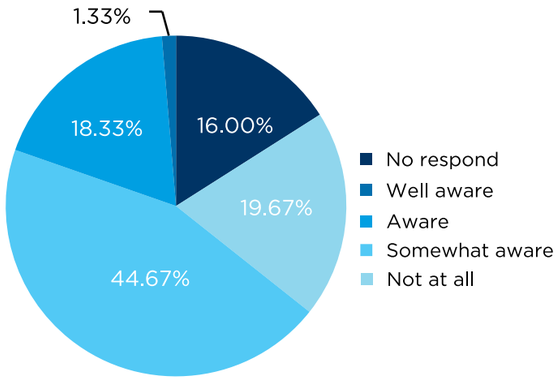
Aware of protected fauna



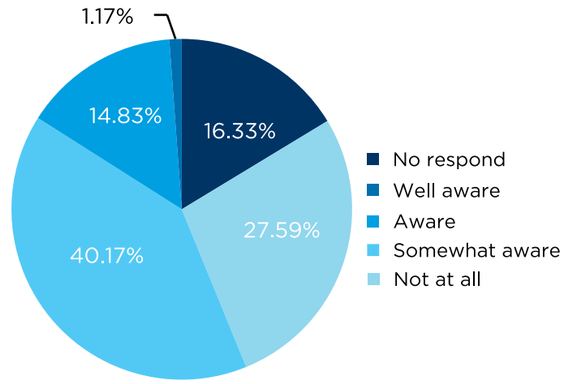
Aware of the consequences of violating the park's rules



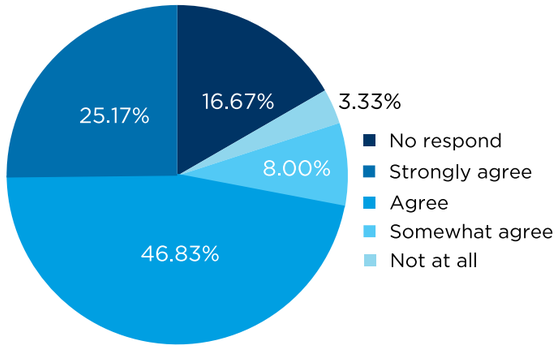
Aware of the rights and responsibilities of settling in the park



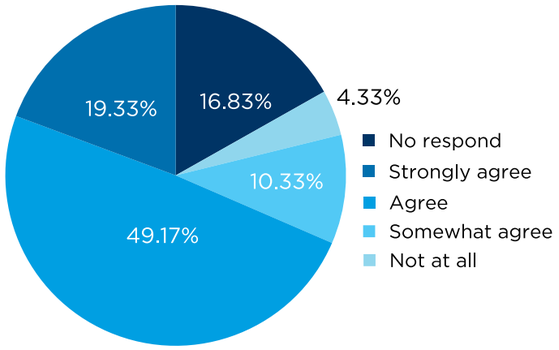
Aware of protected flora



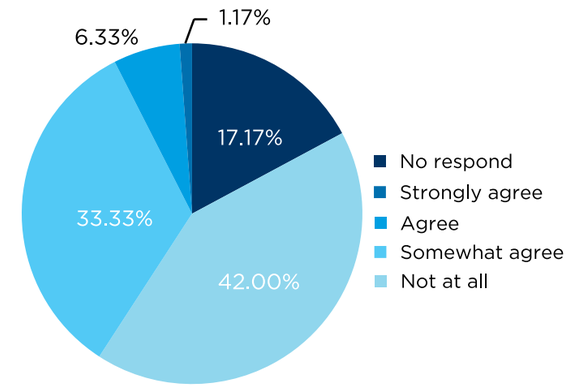
Aware of the habitats of protected species



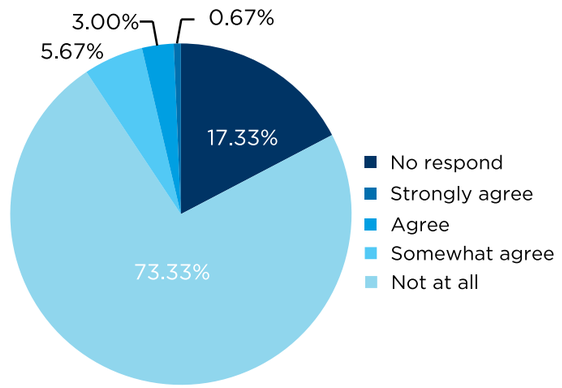
Agree with the park's establishment



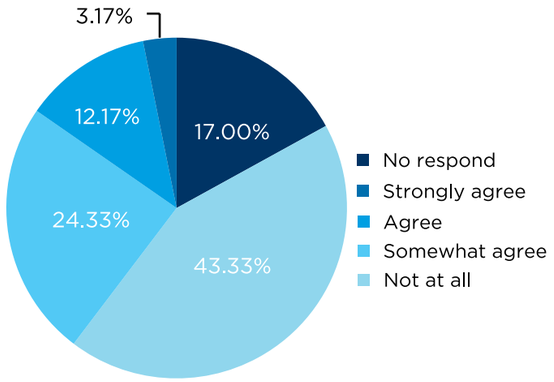
Agree that the government should fully manage the park



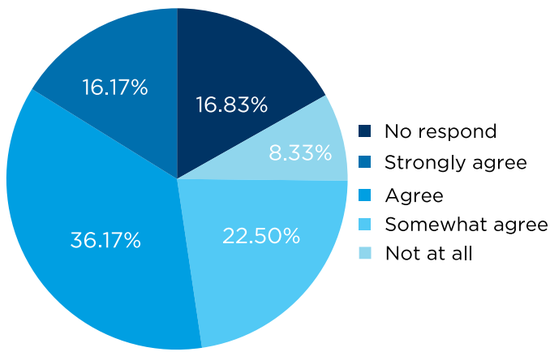
Agree with the development of roads and housing along the roads



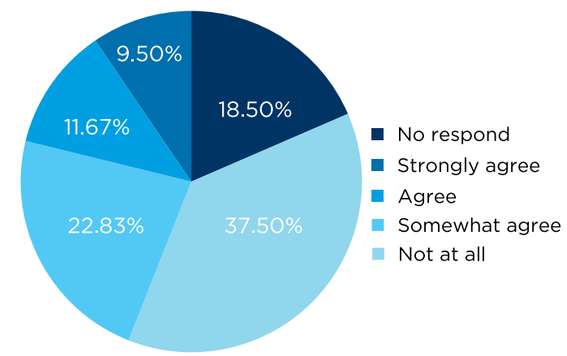
Agree that the Kutai ecosystem should no longer hold national park status



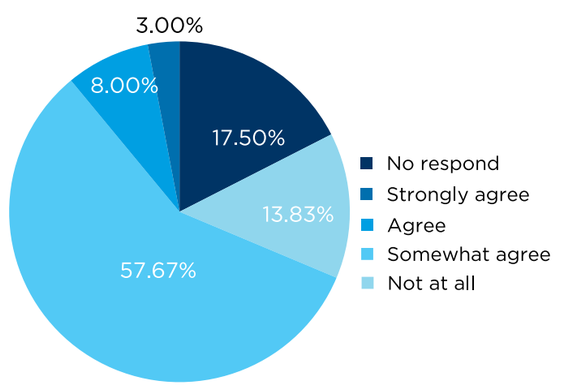
Agree that the local community should fully manage the park



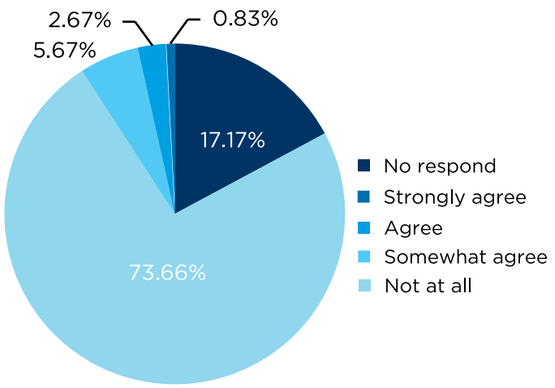
Agree on collaborative management between the local community and the government



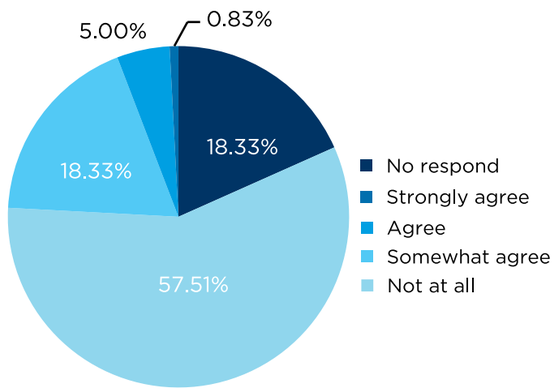
Agree that the community has benefitted economically from the park



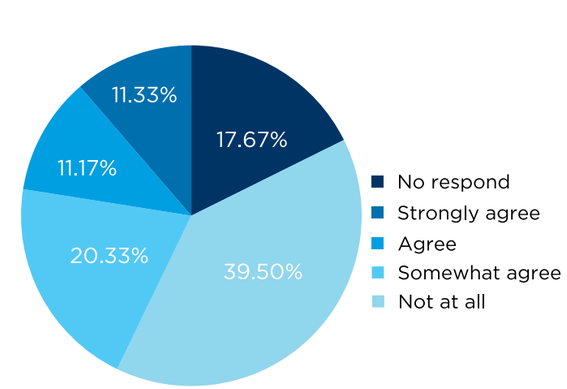
Agree that the community should be allowed to harvest resources in the park



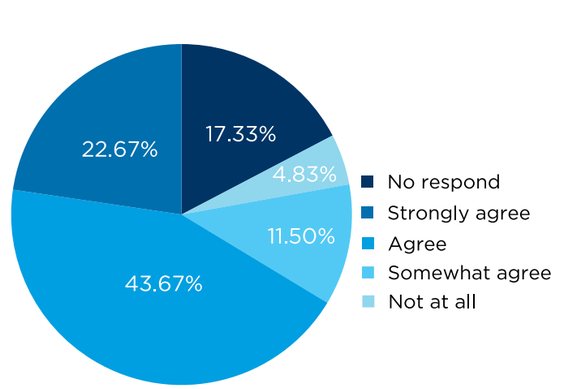
Agree that part of the park should be given to mining companies



Agree that part of the park should be converted to timber concessions or oil palm plantations



Agree that the park has protected the livelihood of the community



Agree that ecotourism programmes should be developed in the Park?

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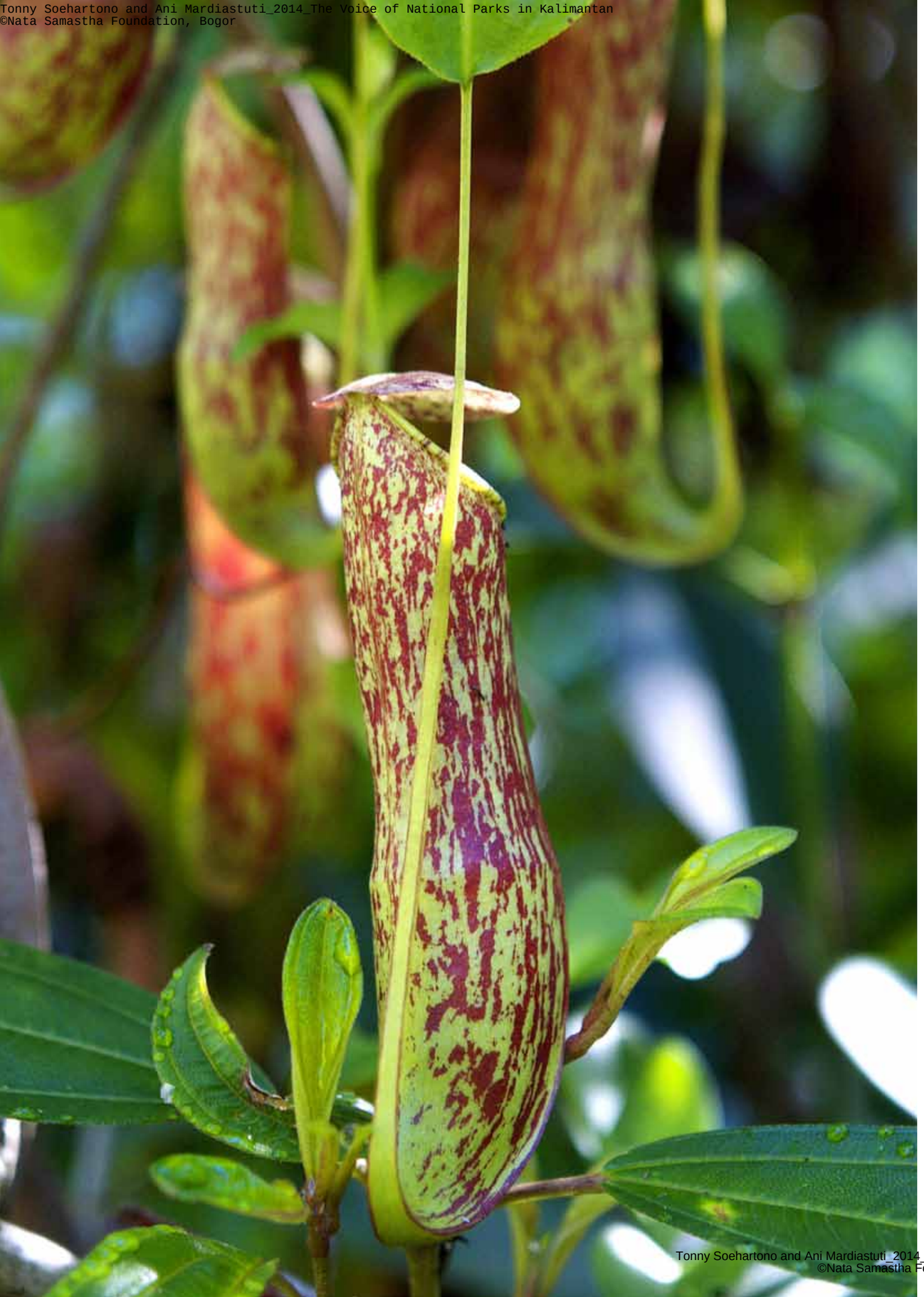


Ani Mardiastuti

CHAPTER 5

THE SPECTACLE OF WILDLIFE IN TANJUNG PUTING NATIONAL PARK:

Tanjung Puting National Park in Central Kalimantan (2°35'-3°20' S and 111°50'-112°15' E) is the biggest Orangutan habitat in Kalimantan. It is also a habitat for several other primate species, including Proboscis Monkey *Nasalis larvatus,* gibbons (*Hylobates mulleri, H. agilis*), and macaques. The area covers a wide range of tropical forest types, from coastal forest, mangroves, and peatland to lowland-swamp forest. The importance of this precious ecosystem was first recognized by the Dutch Government in June 1936. Because of its ecological importance, the Dutch Colonial Government declared the area a forest reserve, Kota Waringin Reserve, covering 100,000 ha (Ministry of Forestry 2010, Galdikas & Shapiro 1994, Galdikas 1985).

The next year, on 18 August 1937, the Dutch declared an adjacent area of forest covering 205,000 ha in Sampit as Sampit Wildlife Reserve on. The two areas were then known as Kota Waringin-Sampit Reserve, which later became Tanjung Puting Wildlife Reserve (Galdikas & Shapiro 1994, Galdikas & Brindamour 1978). In 1981 the Wildlife Reserve was declared a Biosphere Reserve by UNESCO's Man and the Biosphere Program. Following the declaration, the Ministry of Forestry of Indonesia - through Ministerial Decree No. SK 096/Kpts–II/84 on 12 May 1984 - improved the status of the Reserve to a National Park.

In 1985, the Government established a Management Unit for Tanjung Puting National Park with its head office in Pangkalan Bun (Ministry of Forestry 2010, Ministry of Forestry 1984). On 25 October 1996, following a series of ecological assessments, the Ministry of Forestry extended the Park area to 415,040 ha, adding a 90,000 ha logged over area previously the concession of ex PT Hesubasah. The company had been operating in the southern part of the Park to harvest Ramin (*Gonystylus bancanus*) wood (Ministry of Forestry 1996).

Biodiversity

The Park has a wide spectrum of biodiversity, including seven types of ecosystems: tropical lowland forest, heath forest (*kerangas*), tropical wetlands, peat-lands, mangroves, coastal forest, and secondary tropical forest. There is a high diversity of tree species in the Park, including various species from genera *Dipterocarpus*, *Shorea*, *Hopea*, *Alstonia*, *Durio,* also *Gonystylus bancanus, Dyera costulata, Eusideroxylon zwageri,* as well as mangrove and coastal trees such as *Rhizophora*, *Bruguiera*, *Sonneratia*, and *Barringtonia.*

The Park is also an excellent habitat for more than 220 bird species, including the rare Storm Stork *Ciconia stormii* and 5 species which are endemic to Borneo. There are also 9 primate species (including Bornean Orangutan *Pongo pygmaeus*, Proboscis Monkey *Nasalis larvatus*, and tarsier *Tarsius bancanus*), 28 large mammals such as Clouded Leopard *Neofelis nebulosa*, and Malayan Sunbear *Helarctos malayanus*, Sambar Deer *Cervus unicolor*, Barking Deer *Muntiacus muntjak*, and a broad range of reptiles, amphibians and fishes (Soehartono *et al.*, 2007, Rijksen & Meijaard 1999, Yeager 1997, Kaplan & Rogers 1994, Smits *et al.* 1994, Galdikas & Shapiro 1994, Galdikas 1988, Galdikas 1985, Galdikas & Brindamour 1978).

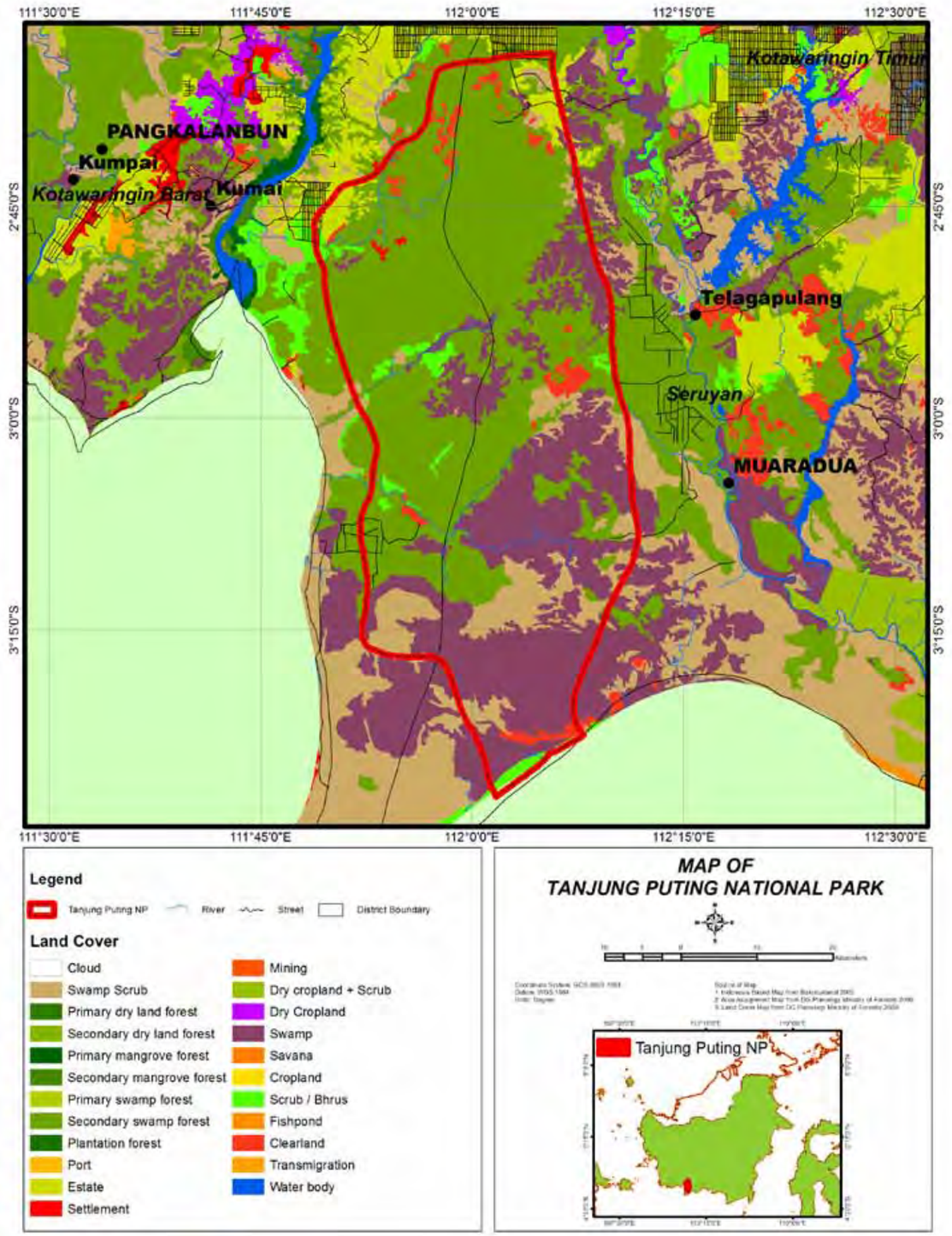


Figure 5-1. Map of Tanjung Puting National Park.

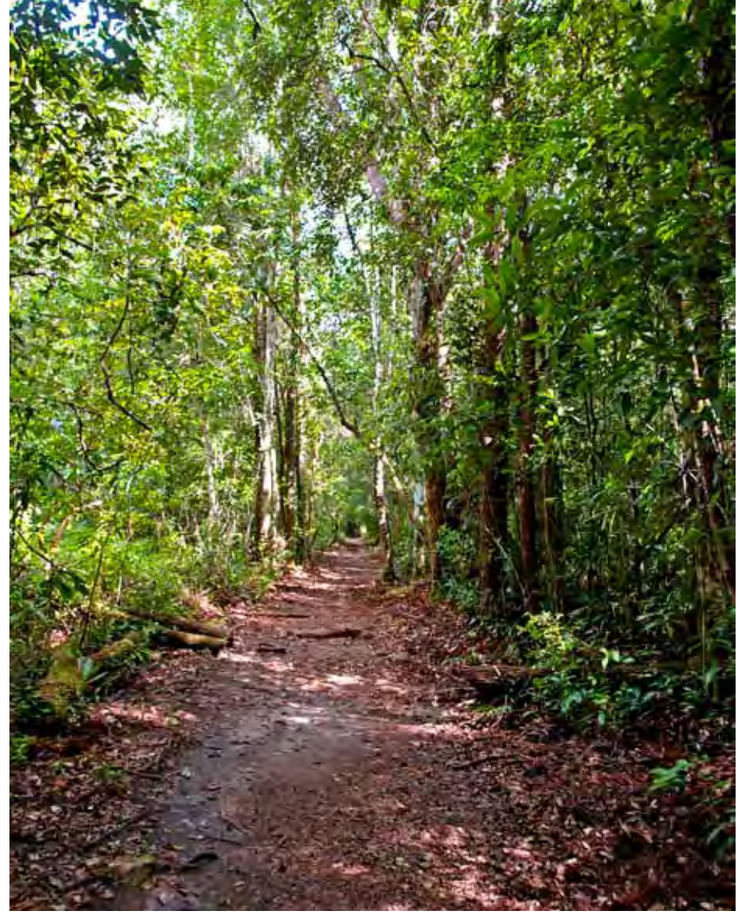


Figure 5-2. Heath forest of Tanjung Puting National Park.

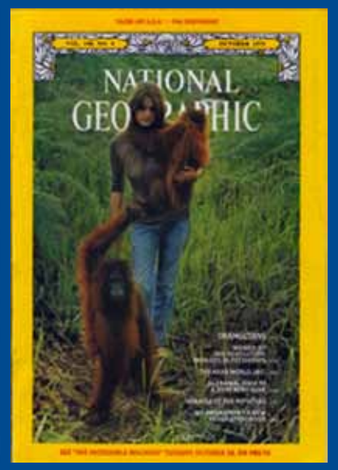
Ani Mardiastuti

From Research Site to International Tourism Destination

Tanjung Puting National Park has become widely known by the international community through the field work and conservation efforts focused on the Bornean Orangutan by Dr. Birute Galdikas (see Box 5-1). She established a camp, Camp Leakey, as a base to conduct research and rehabilitation of Orangutans (Galdikas & Shapiro 1994, Galdikas 1985, Galdikas & Brindamour 1978) (see Box 5-2). Further, In cooperation with the Indonesian Government, her organization (Orangutan Foundation International) and her colleague, Dr. Jane Goodall - through the Jane Goodall Institute - hosted the International Conference on the Great Apes of the World in Jakarta on 18-19 December 1991 followed by a field excursion to Tanjung Puting on 21-23 December 1991 (Wemmer 1991) (Box 5-3).

The Orangutans of Camp Leakey have attracted the attention of the international media as an example of efforts to conserve the Orangutan, with Julia Roberts perhaps the most famous program host to visit (Box 5-4). In addition, the species richness and the unique opportunity to see Orangutans have attracted many international tourists to the Park. A boat trip along Sekonyer River, ending at the Camp Leakey, is currently very popular amongst tourists, especially international tourists (Box 5-5).

BOX 5-1
Birutė Galdikas and Tanjung Puting National Park



Orangutan Foundation International (left), National Geographic (right)

Birute Galdikas now and then (appeared on the cover of National Geography Magazine, October 1975).

Birutė Marija Filomena Galdikas (born 10 May 1946) is a well known primatologist specializing in Orangutan. In 1971, as a graduate student of UCLA (USA), Galdikas and her then husband, photographer Rod Brindamour, arrived in Tanjung Puting to study Orangutan in its natural habitat. Galdikas is one of three students of Dr. Louis Leakey who studied great apes. The other two were Jane Goodall who studied chimpanzees in Africa, and Dian Fossey who studied mountain gorillas, also in Africa.

Leakey and the National Geographic Society initially helped Galdikas set up her research camp to conduct field studies on Orangutans in Borneo. She remained there for over 30 years and gave many valuable contributions to the scientific understanding of Indonesia's biodiversity and the rainforest as a whole, while also bringing the plight of the Orangutan to the attention of the rest of the world.

She also initiated the rehabilitation program for Orangutan and became an outspoken advocate for Orangutans and the preservation of their rainforest habitat, which is rapidly being devastated by loggers, palm oil plantations, gold miners, with the remaining fragments increasingly isolated. While campaigning actively on behalf of primate conservation and preservation of rain forest, Galdikas continues her field research, which is among the longest continuous studies of a mammal ever conducted.

Galdikas, along with Jane Goodall and preeminent field biologist George Schaller, became Tyler Prize Environmental Achievement laureates in 1997 for their groundbreaking field research and lifetime contributions to the advancement of environmental science. Other honors bestowed upon Galdikas include the Indonesia's Hero for the Earth Award (Kalpataru), Institute of Human Origins Science Award Officer, United Nations Global 500 Award in 1993, Elizabeth II Commemorative Medal, the Eddie Bauer Hero of the Earth (1991), PETA Humanitarian Award (1990), and the Sierra Club Chico Mendes Award (1992).

Source: http://en.wikipedia.org/wiki/Birut%C4%97_Galdikas

BOX 5-2
Camp Leakey in Tanjung Puting National Park

Camp Leakey was the first Orangutan Research Center in Indonesia and later also the first rehabilitation center for the species in the country. It was set up by Birutė Galdikas and Rod Brindamour in 1971. The name of Camp Leakey was taken from Dr. Louis Leakey, Galdikas' mentor who supported her to study on primatology, in particular Orangutan. Louis Leakey is also known as the mentor of other famous primatologists, Jane Goodall and Dian Fossey.

Camp Leakey is located on a branch of Sekonyer River within the Park and can be reached in 45-60 minutes from the Park headquarters in Pangkalan Bun. The Camp facilities include a simple laboratory, library, Orangutan museum, dormitory for the researchers and students, class room and dining hall with modest kitchen. The Camp used to be equipped with an Orangutan care center, but this has recently been moved to Tanjung Pasir.

The Camp is connected to the river with approximately 1 km of boardwalk. The forest area within perimeter radius of 3-4 km around the Camp is dedicated for the training and rehabilitation of Orangutan. Feeding places are also designated within the perimeter area, where the Camp staff regularly feed the rehabilitated animals.

Since the 1980's the Camp has started to attract both domestic and international tourists. The Park authority has been flexible by allowing tourists to visit the research and rehabilitation center. The gradual growth of numbers of tourists visiting the camp is welcomed by the local tourism authority in Palangkalan Bun and local communities. As a result, since the 1980s, the number of local tourist operators is growing both in number and in the quality of the service they provide to the tourists visiting the Park.

Source: Mr. Gunung Sinaga (Head of Tanjung Puting National Park, July 2010; pers. comm.); Galdikas & Brindamour (1978)

Boardwalk to Camp Leakey (left). Visitors patiently waiting for the arrival of Orangutan at the feeding station of Camp Leakey (right).

Tonny Soehartono (left), Ani Mardiastuti (right)

BOX 5-3

The International Conference on the Great Apes of the World

TANJUNG PUTING DECLARATION
CENTRAL KALIMANTAN
INDONESIA

INDONESIA IS HOME TO MANY OF THE WORLD ENDANGERED SPECIES SUCH AS THE ORANGUTAN, THE KOMODO DRAGON, THE JAVAN AND SUMATRAN RHINOCEROS, THE SUMATRAN TIGER, THE BALI STARLING AND THE BIRD PARADISE.

DECLARATION
WE, THE CONFERENCE PARTICIPANTS, WHO HAVE STUDIED AND WORKED TO CONSERVE THE GREAT APES AND OTHER ENDANGERED SPECIES,

RECOGNIZE
THE EFFORTS EXPENDED BY THE GOVERNMENT OF INDONESIA TO PROTECT ORANGUTANS AND THEIR LOWLAND RAIN FOREST HABITATS, PARTICULARLY IN THE ESTABLISHMENT OF NATURE RESERVES AND OF THE TANJUNG PUTING, KUTAI, GUNUNG PALUNG, AND GUNUNG LEUSER NATIONAL PARKS.

RESPECT
THE HIGH QUALITY OF THE NEW INDONESIAN LEGISLATION DEALING WITH ENVIRONMENTAL ISSUES AND THE NATURE PROTECTION.

SUPPORT
THE SCIENTIFIC ACHIEVEMENTS OF INDONESIAN EXPERTS AND STUDENTS IN THE STUDY OF INDONESIA'S FLORA AND FAUNA.

APPRECIATE
THE SUPPORT GIVEN BY THE INDONESIAN NON-GOVERNMENTAL ORGANIZATION AND BY THE INDONESIA PEOPLE IN THE PROTECTION OF TROPICAL LOWLAND RAIN FOREST AND OTHER HABITATS AND ENDANGERED SPECIES.

ACKNOWLEDGE
THE PROBLEM FACED BY THE GOVERNMENT OF INDONESIA IN ITS EFFORTS TO CONSERVE BIODIVERSITY AND
URGE ALL NATIONS OF THE WORLD
TO WORK TOGETHER TOWARDS A NEW WORLD ORDER OF AN ENVIRONMENT WHERE GREAT APES,
OTHER ENDANGERED SPECIES AND HUMANKIND CAN CO-EXIST IN PERPETUITY.

INTERNATIONAL CONFERENCE ON THE GREAT APES OF THE WORLD
TANJUNG PUTING, 21 DECEMBER 1991
PANGKALAN BUN, CENTRAL KALIMANTAN INDONESIA

The Government of Indonesia in cooperation with the Orangutan Foundation International and the Jane Goodall Institute on 18-23 December 1991 hosted the Third International Conference for the Great Apes (International Conference on the Great Apes of the World: Conservation in a Changing World) in Jakarta, followed by a field meeting and excursion to Tanjung Puting National Park, Central Kalimantan.

The Conference was held in the Presidential Palace in Jakarta and officially opened by the President of the then Republic of Indonesia, Suharto, followed by keynote addresses from Dr. Birutė M.F. Galdikas and Dr. Jane Goodall. The event was attended by relevant Ministers and the Governor of Central Kalimantan, and more than 300 primatologists from Indonesia and around the world participated, as well as representatives from international agencies such as the IUCN/Species Survival Commission, and CITES, and NGOs.

The objective of the event was to strengthen political and financial support from world leaders and the private sector for conserving the great apes, including Orangutan. The meeting also aimed to find better solutions for balancing conservation of great apes and economic development.

At the Conference, the President of Indonesia awarded "The World Leadership in Great Apes Conservation" to Dr. Jane Goodall. The five day excursion to Tanjung Puting National Park concluded with the issuing of the Tanjung Puting declaration endorsed by all delegates to the meeting.

Source: Wemmer (1991); Renie Djojoasmoro (Orangutan Foundation International, 29 January 2011; *pers. comm.*)

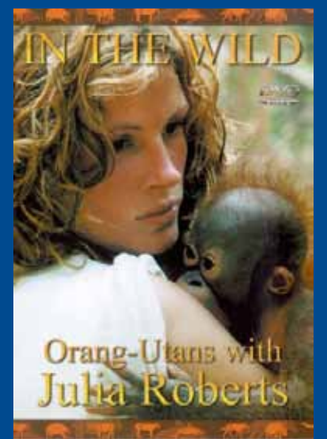
BOX 5-4

Julia Roberts filming in Tanjung Puting National Park

The famous Tanjung Puting National Park and its remarkable Orangutans attracted the Hollywood icon, actress Julia Roberts to visit the Park and support the conservation of Orangutans in Indonesia. She travelled to the Park in 1998 and visited the Camp Leakey area as host of a documentary movie about conservation of Orangutan. The movie was aired on 12 September, in the USA with the title of 'In the Wild: Orang-Utans with Julia Roberts' (picture on the left).

The visit of Julia Roberts increased the number of visitors to Tanjung Puting. Many of the visitors booked the room in the Rimba Lodge (picture on the right) where Julia Roberts stayed during her visit in the Park.

Source: Rudy (Rimba Lodge Manager; *pers. comm.*)



Ani Mardiastuti

BOX 5-5

The Journey along the Sekonyer River in Tanjung Puting National Park

There are many professional, local and international travel tours which are able to serve you during your visit in Tanjung Puting National Park. These tour operators can be accessed easily in the internet. Many international operators have special connections with professional local interpreters or local operators.

The tours offered cover a wide range of packages, from 3-day up to 7-day tours. One of the most popular tours is the the journey along the Sekonyer River with kelotok (wooden boat) while watching wildlife including the target species, Bornean Orangutan. The operators also offer the tourist the chance to observe the feeding of Orangutans in Camp Leakey area. The number of tourists who can watch Orangutan feeding is limited as it could disturb the process of rehabilitation.

In addition, tourists can enjoy an overnight stay on the kelotok which anchors in the river in the middle of tropical jungle of the National Park, including having a romantic dinner and breakfast on the boat. For tourists who do not want to stay overnight in the forest, there is the option of staying at the beautiful Rimba Lodge, where Julia Roberts stayed during the making of 'In the Wild: Orang-Utans with Julia Roberts'. The operators also offer tourist the chance to walk along the various tracks in the Park to do bird watching and observe other wildlife.

The price of a package tour in the Park varies according to the length of the visit and the services. The normal packet for a 3-day tour is between USD 750 to USD 1,500. For this price the tourists can expect to stay at the Rimba Lodge, enjoy its various services and to be served good local or European meals on the kelotok while relaxing and watching wildlife.

Source: Sujono (tourist guide and interpreter in Sekonyer river, July 2010; *pers. comm.*)

Ani Mardiastuti

Tour of Sekonyer River by using *kelotok*

Socio-Economic Status

Geographically the Park is located within the administration of Kotawaringin Barat and Seruyan Regencies. Within these two regencies, there are 4 districts located around the Park, Kumai (in Kotawaringin Barat Regency), Hanau, Danau Sembuluh and Seruyan Hilir (in Seruyan Regency). Approximately 40,000 people inhabit the four Districts, some of them dependent on forests for their livelihoods (Fig. 5-3), whilst others are traders, civil servant and teachers.

During the 1990s when the international demand for the timber Ramin *Gonystylus bancanus* was soaring, many members of these communities were involved with illegal harvesting of Ramin occurring inside and around the Park. The illegal activities drew the attention of national and international media (see Box 5-6). It was reported in 1999 that the illegal harvest of Ramin timber from the Park reached a peak of almost 5,000 m^3 per week.

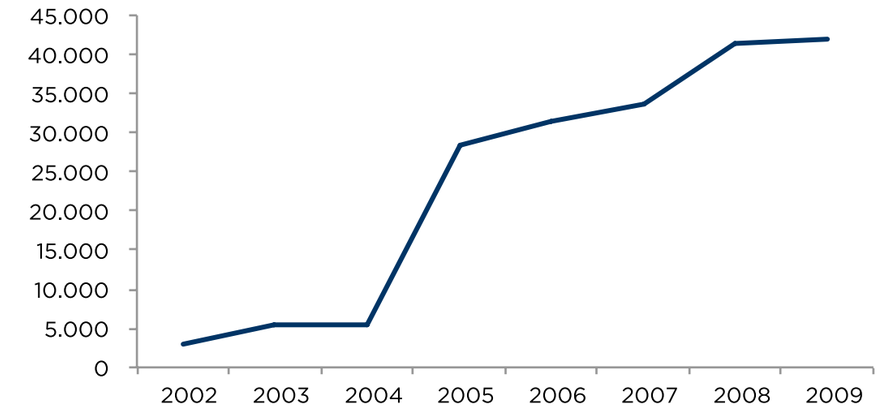


Figure 5-3. Population in districts surrounding Tanjung Puting National Park, 2002-2009.
Source: Tanjung Puting National Park (2010)

Telapak Indonesia (a local NGO) and EIA (Environmental Investigation Agency) highlighted the illegal timber logging in the Park between 1998 and 2002 through a controversial publication 'The Final Cut: Illegal Logging in Tanjung Puting National Park'. This issue also became the impetus for the creation of the FLEG (Forest Law Enforcement and Governance) Project supported by the European Union to resolve the issues of illegal logging in Southeast Asia. Furthermore, in 2001 the World Bank through its mission in Jakarta had supported Indonesia to host the East Asia FLEG Ministerial Conference to discuss the issue of illegal logging, including that happening in Tanjung Puting National Park.

During the turmoil of illegal logging between 2001 and 2005, the Park also experienced the decline of tourist numbers from both domestic and international origins. This was understandable as the situation in the Park was not conducive for tourism activities. Fortunately, the most severe problems have been resolved and the tourist activities are now growing again (Fig. 5-4) (Meijaard *et al.* 2005).

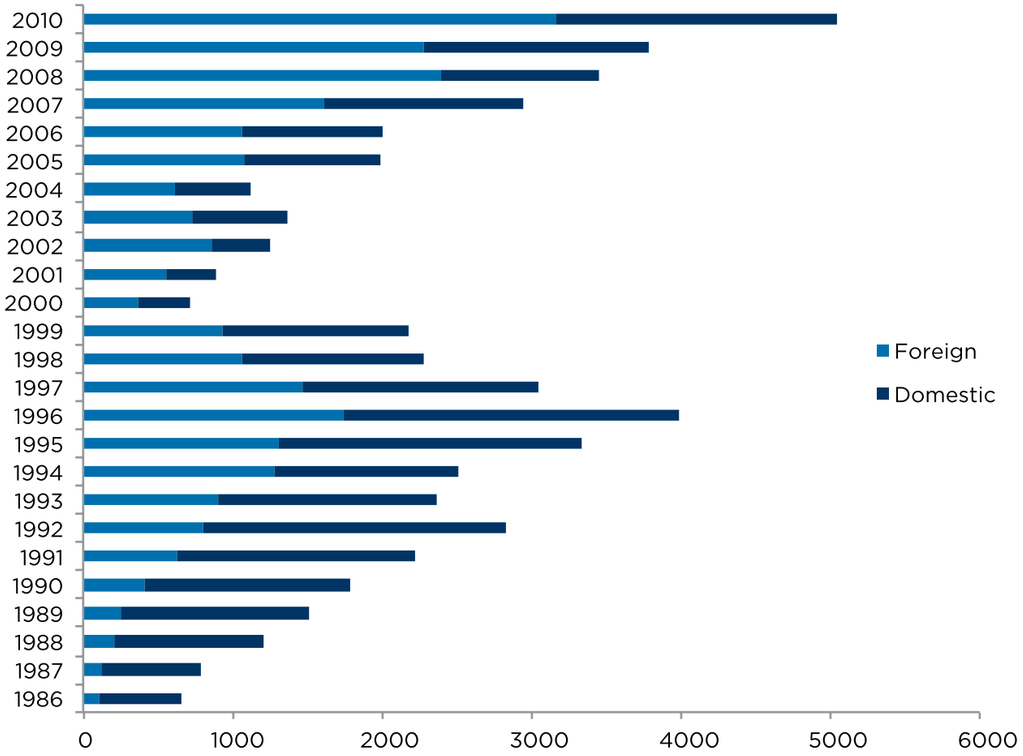


Figure 5-4. Number of visitors to Tanjung Puting National Park between 1986 and 2010.
Source: Tanjung Puting National Park (2010)

BOX 5-6
Illegal Timber Extraction in Tanjung Puting

Illegal logging around Tanjung Puting National Park has occurred since the early 1990's. The loggers at that period focused on Ramin, Gonystylus bancanus, a highly prized commercial timber. In the late 1990's, as Indonesia went through rapid political reform, these activities escalated and began moving into the periphery of the Park, with some loggers trying 'hit and run' illegal logging inside the Park area to test whether the Park authority would respond towards their activities.

In early 2000, the very slow response of the authorities to illegal logging in the area had allowed it to run out of control. In 1999 the national NGO, Telapak Indonesia and its partner Environmental Investigation Agency (EIA) discovered that illegal timber activities had destroyed almost 40% of Tanjung Puting National Park. Pangkalan Bun and the district surrounding the Park had become the base for local timber gangs and mafias. Thousands of logs were being transported along the Buluh River, Seruyan River and Sekonyer River every month to the mills in Pangkalan Bun and other areas nearby. Loggers huts and small scale log yards were almost everywhere along the river banks. The loggers also constructed wooden rails to transport the timber from the interior to the rivers.

As Ramin wood disappeared, the illegal loggers began extracting other species such as Meranti and Nyatoh. In 2002 Greenpeace reported that the loggers had reached the branch of the Buluh Kecil River in the eastern part of the Park, only a few kilometers away from the precious Orangutan research and rehabilitation center, Camp Leakey. The assault on Tanjung Puting National Park was reported to be backed by corrupt local Government officials, members of the local legislature (DPRD) and local police who were supported financially by the local timber bosses.

In the mid 2000s, following a relentless, vocal campaign by Telapak Indonesia and international NGOs in particular EIA and Greenpeace, the government of Indonesia launched series of enforcement programs in the Park area and its surroundings, as well as setting up cooperation with international timber buyers in Japan, China, Europe and the USA. The logging activities in the area declined and were completely gone by 2008. Recently the Park authority was equipped with a light plane furnished with camera and geo-positioning to regularly monitor the Park area.

Source: EIA-Telapak Indonesia (undated), EIA-Telapak Indonesia (1999), Greenpeace International (2004), Meijaard *et al.* (2005)

Ani Mardiastuti

Figure 5-5. Pollution along Sekonyer River caused by illegal mining.

Tanjung Puting and its Partners

The Orangutan Foundation International (OFI) was the first international organization to promote the National Park. This Foundation has been supported by many primate institutions and individuals from all over the world, particularly those in the USA and Canada. OFI has also regularly received financial support from the USAID and UNEP through the Great Ape Conservation Project.

Other Non Governmental Organizations which support the Park include WWF-Indonesia, Conservation International – Indonesia Programme and EIA. Within the last two years, the European Union has channeled support through a local NGO, Yayorin (Yayasan Orangutan Indonesia). The Park has also received tremendous support from the Ministry of Tourism of Indonesia and local NGOs. Along with the positive trend of incoming international tourism, between 2006 and 2007 the Ministry provided regular capacity building for local tourist operators and interpreters. The number of operators which had a *kelotok* increased dramatically from 20 to 47 in the late 1990s. As a result, job opportunities in tourism activities in the Park have also increased. Unfortunately, there has not yet been a study on the impact of tourism on the prosperity of the local communities who live in and around the Park.

Despite the positive news on the development of tourism and success in curbing illegal logging, recently a potential new threat has emerged, gold mining near the Park. In the past this activities was relatively small scale, but recently mining outside the Park has polluted the Sekonyer River (Fig. 5-5) (Anonymous 2010c, d; Anonymous 2007, Anonymous 2006 a,b).

Ironically, though the local government financially supports the Park, it does not really paid attention to the issue of gold mining and pollution in the Sekonyer River. This is perhaps because most of the miners are the poor members of the local community, who are being supported by the *cukong*, rich financiers from other parts of central Kalimantan. With few economic options the local Government seems to be reluctant to take action on this issue.

The Park Support and Management

The Park has had a relatively low number of officers. In 1995, records show that the Park had 26 officers, and this had increased to 90 officers including the Park manager by 2010 (Fig. 5-6). This number is inadequate to manage more than 400,000 ha of the Park area. The Park's budget in 2010 was IDR 9.9 billion or more than USD 900,000 to manage the entire Park (Fig. 5-7).

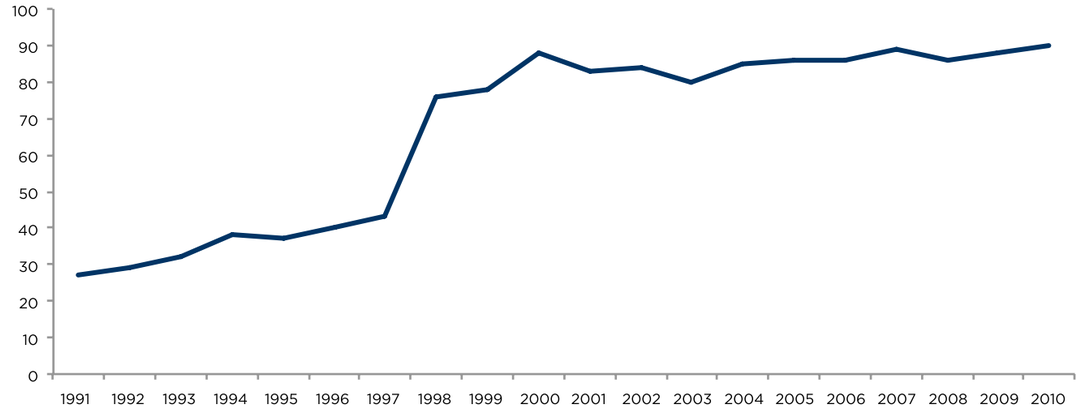


Figure 5-6. Number of officers in Tanjung Puting National Park, 1991-2010.
Source: Tanjung Puting National Park (2010)

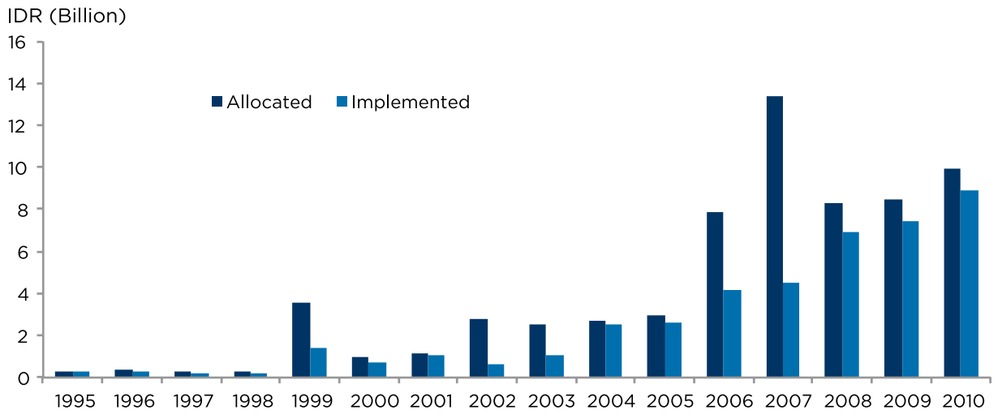


Figure 5-7. Budget of Tanjung Puting National Park, 1995-2010.
Source: Sekretariat Direktorat Jenderal PHKA (2010)

The Views of People Towards Tanjung Puting National Park

In April 2010 one thousand questionnaires were randomly distributed to the community of Pangkalan Bun, Tanjung Hanau, Muara Dua, Baung, Sungai Perlu, Sekonyer, Teluk Pulai, and Sungai Cabang. The aim was to uncover the general opinion of local people, in particular those who live in and around the Park, about the Park and its resources.

Of the one thousand questionnaires, 637 (64%) were returned. The respondents consisted of 425 men, 128 women and 28 unrecorded. Their ages ranged from 15 years up to more than 50 years old, and their educational achievement varied from no schooling (11%), elementary school (23%), junior high school (17%), high school (32%), *sarjana* degree (equal to Bachelor of Science), and above (17%). Their occupations consist of small-farmers (18%), traders (9%), educators (6%), independent labors (15%), students (13%), and unknown (39%).

Results of the questionnaires are presented in Fig. 5-8. Their view toward the Park, management of the Park and NGOs that have been assisting the Park management are classified into seven different groups as follows:

1. Familiarity with the Tanjung Puting National Park

More than 85% of the respondents know about the existence of the Park. Yet, it is surprising that most (80%) of the respondents have never been to the Park. The majority have learned about Tanjung Puting from the radio, newspapers, and from friends who live in the Park or have visited the area.

Given that most of the respondents learned about the Park from the media and only 20% of respondents have visited the Park, it is encouraging for the management and the protection of the area when more than 75% of the respondents agree or strongly agree with the establishment of Tanjung Puting as a national park. Nevertheless, despite that high level of support, only 5% of respondents were aware of the location of the Park's boundary.

2. Park Regulations and Management

Less than 13% of the respondents were aware of the Park's regulations and only 16% of the respondents understand the rights and responsibilities of settlers in the Park area. This figure suggests that the Park has a challenging homework - to maintain consistent and long-term support of the community toward the Park.

Further, only 23% of the respondents knew or frequently met the Park's officers and the management, while an even smaller percentage of respondents were aware of the tasks and roles of the management in Tanjung Puting National Park. However, when asked whether the current Park management has done a good job and playing its role in accordance with the rules, the response was less than 50% (45.53%). This is not surprising given the very small percentage of the respondents who knew of the Park's regulations.

3. Park's Protected Species

Even though only a small percentage of respondents have visited the Park, almost 50% of them were aware of the protected species in the Park. Consistent with their experience and knowledge of the Park, only 20% of respondents were aware about the habitat of protected species in the Park's area. In addition, almost 40% of the respondents understood the idea of protecting endangered or protected species in Tanjung Puting. Yet, a few respondents (20%) knew the consequences of violating the rules protecting species in the Park.

4. Park Management Effectiveness

More than 75% of the respondents support the current Park's management systems whereby the central Government fully manages the Park. At the same time, and somewhat inconsistent with this, is that slightly more than 50% of the respondents reject the idea of the local community managing the National Park. There was more support for involvement of the community in the Park through collaborative management, with more than 52% of respondents endorsing the idea of collaborative management in Tanjung Puting.

5. Support for the Park

It is encouraging for Park management that more than 75% of the respondents rejected the idea of abandoning the status of Tanjung Puting National Park or converting part of the Park into oil palm plantations or timber concessionaires (72%). Respondents also showed wide acceptance to the idea of ecotourism development in the Park.

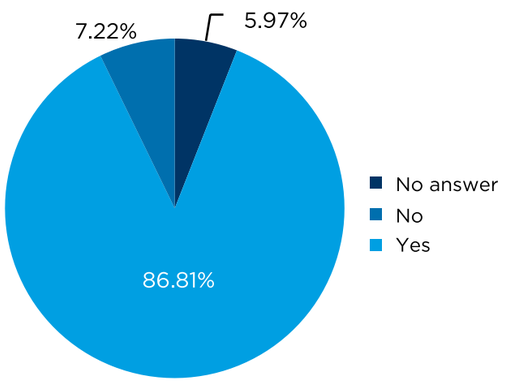
6. Benefits of Park

Surprisingly, almost 60% of the respondents agreed with the idea of allowing local people to extract the resources sustainably from the Park area. On the other hand, about 40% of the respondents do not agree that the Park would provide economic benefit to local community. Further, only 39% of the respondents agree that the Park has provided protection of their livelihoods.

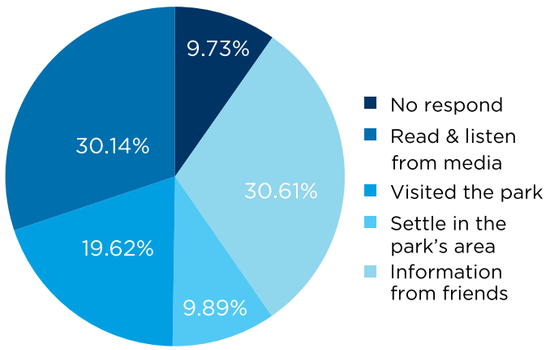
7. Observation on the NGOs

Approximately 12% of the respondents know about the presence of the famous Camp Leakey and Orangutan Foundation International in Tanjung Puting National Park. About 13% also know a lot about the long term work of Prof. Galdikas in the Park, with another 59% of the respondents saying they know a little about her work. Some of the respondent also indicated that they think that the presence of Prof. Birutė Galdikas in Tanjung Puting has been useful to them (27%).

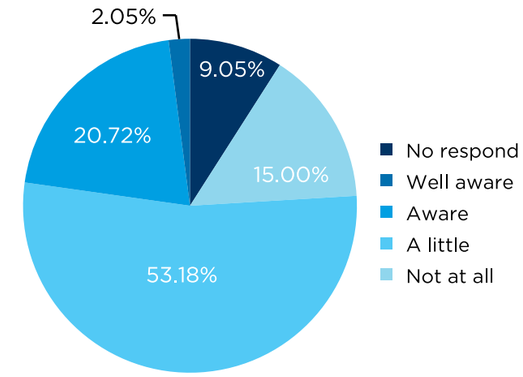
Figure 5-8. Opinion of local people regarding various issues of Tanjung Puting National Park.



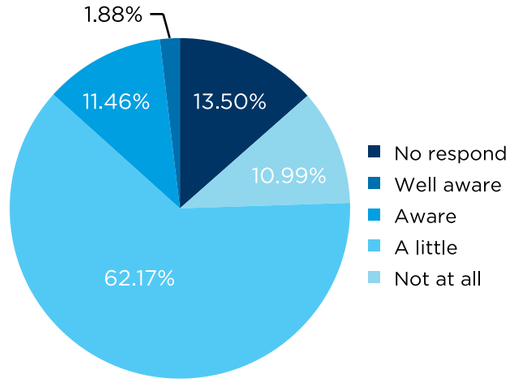
Aware of the park's existence



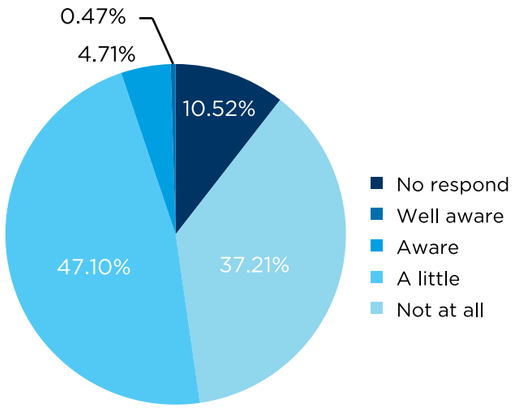
Source of information about the existence of the park



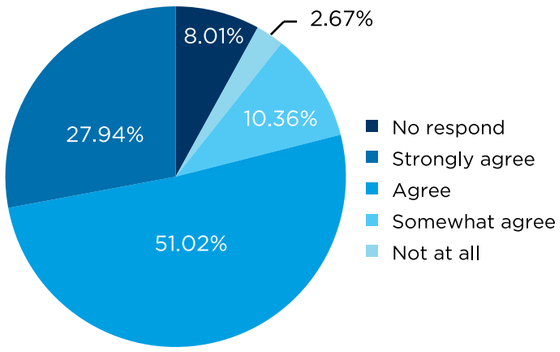
Aware of the existence of park officers



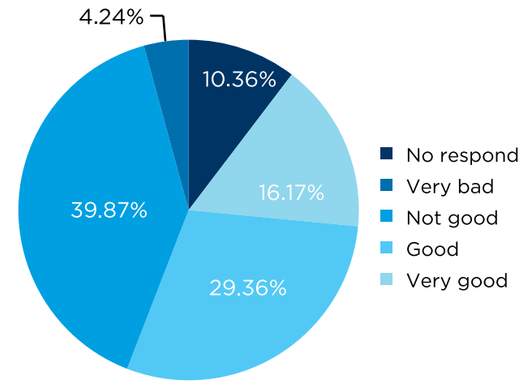
Aware of the tasks and role of the park's officers and their management



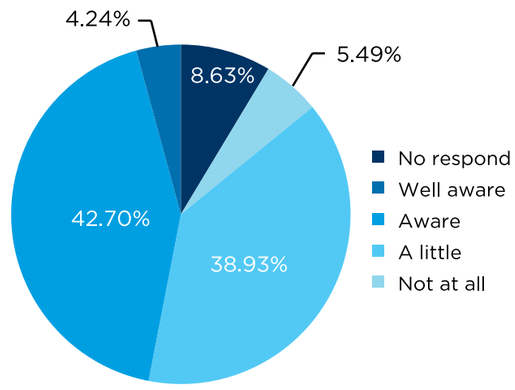
Aware of the park's boundaries



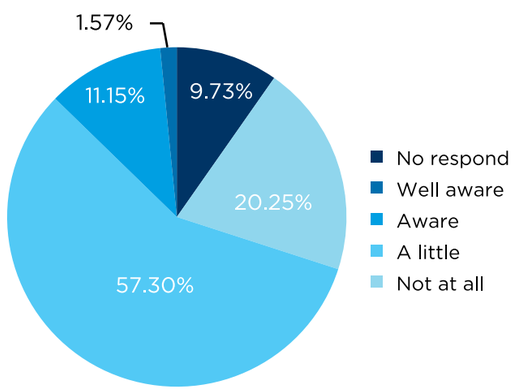
Agree with the establishment of the park



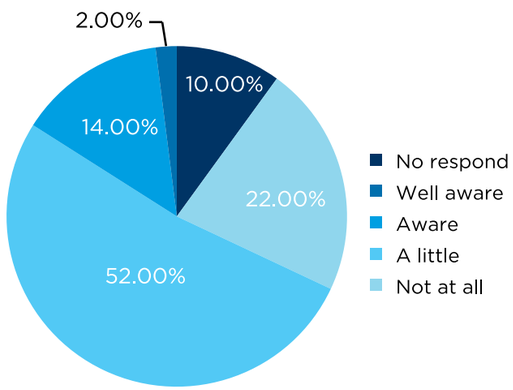
Management quality of the park



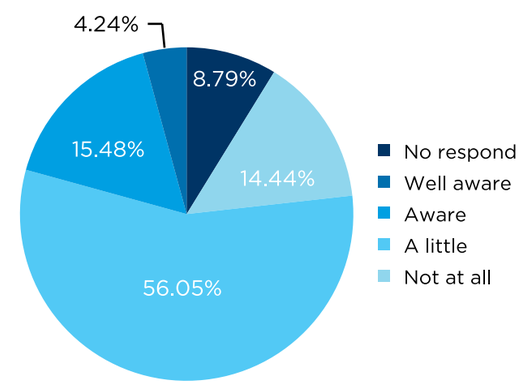
Aware of the protected species in the park



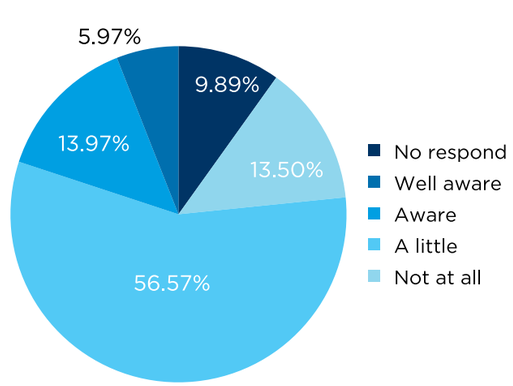
Aware of the consequences of violating rules of the park



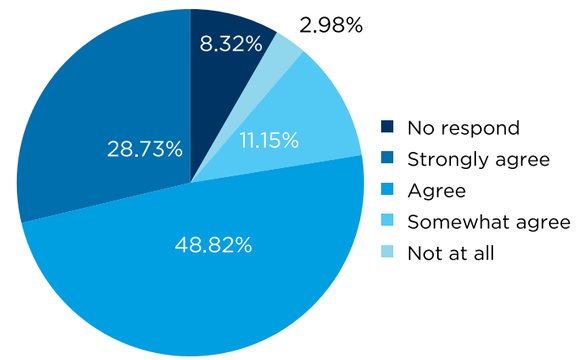
Aware of the rights and responsibilities of settlers within the park



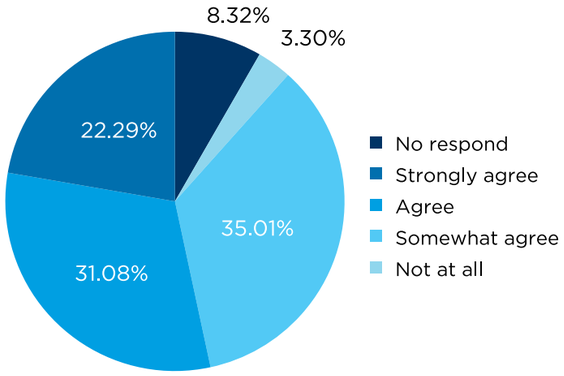
Aware of the habitat of protected species



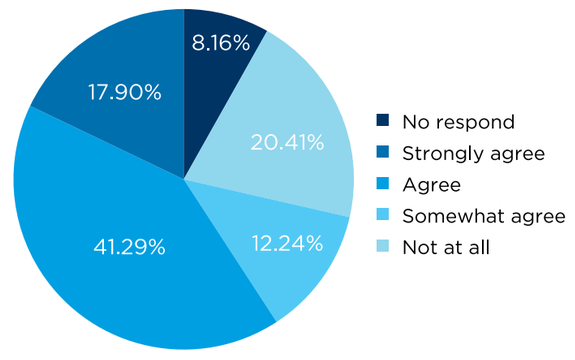
Aware of the consequences of violating the rules on species protection



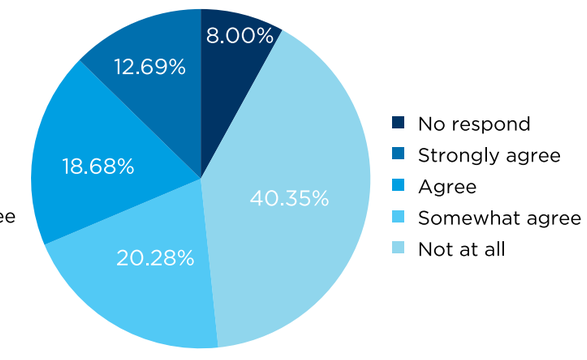
Agree with current park management



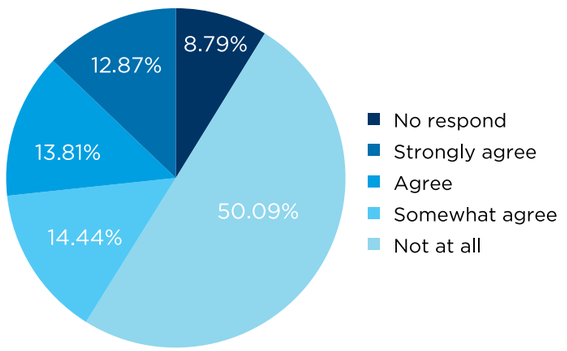
Agree with the idea of collaborative management



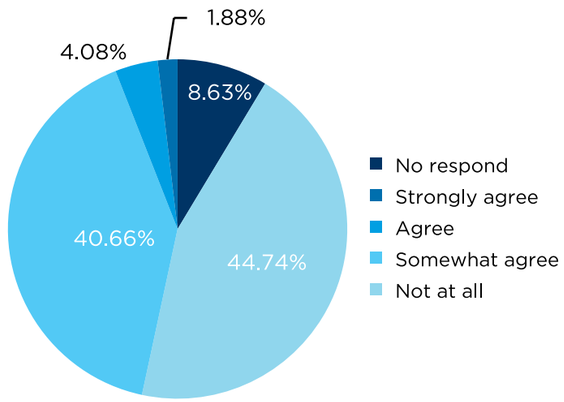
Agree that the community should be allowed to harvest resources from the park



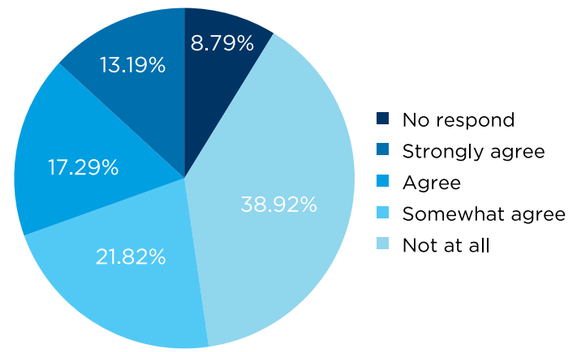
Agree that the park has provided economic benefit to the community



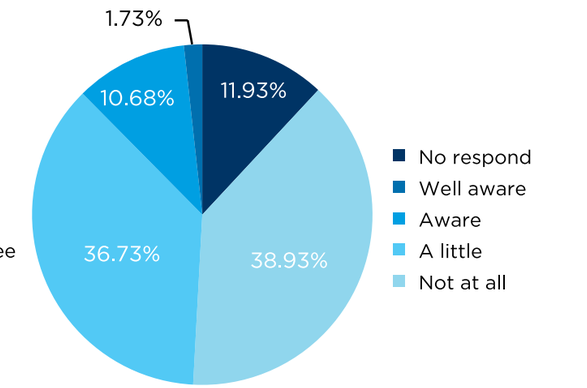
Agree that the park should be managed by the local community



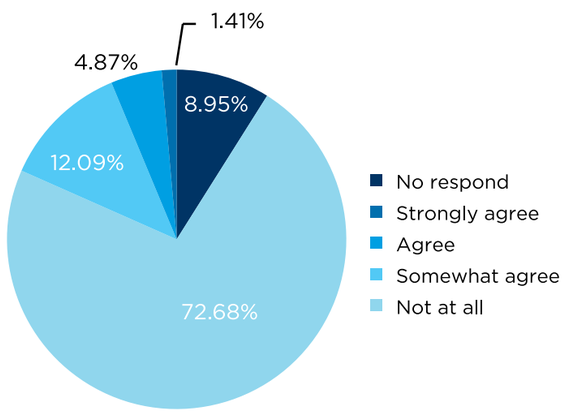
Agree that the park should no longer hold national park or protected area status



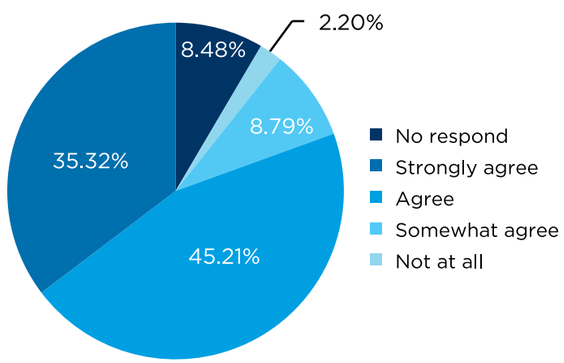
Agree that the park has provided protection for the community's livelihood



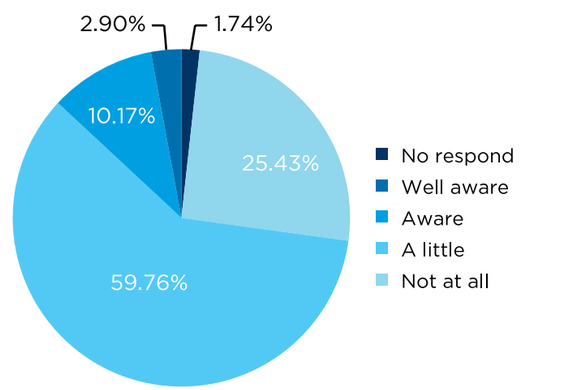
Aware of the existence of Camp Leakey and Orangutan Foundation Indonesia



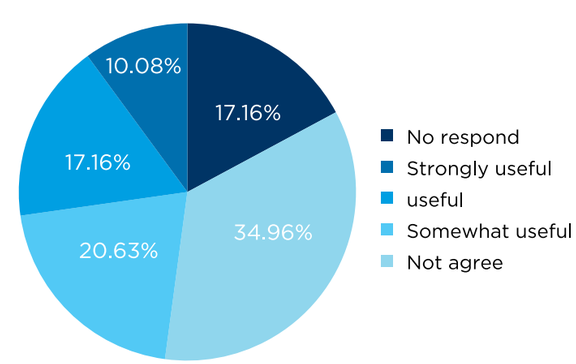
Agree that part of the park should be converted to timber concessions or oil palm plantations



Agree that ecotourism programmes should be developed in the park



Aware of Professor Birutė Galdikas



Agree that Birutė Gadikas and her organisation are useful?

Erick Danzer

CHAPTER 6

THE DIVERSE ECOSYSTEMS OF GUNUNG PALUNG NATIONAL PARK

Gunung Palung National Park is another tropical forest area with an extraordinary array of wildlife and a unique combination of representative tropical forest types, from mangrove and lowland forest to mountain ecosystems. It is also dedicated to preserving the habitat of orangutans. The park lies in West Kalimantan province under the administration of three regencies: Kayong Utara, Ketapang and Sukadana (Fig. 6-1). The Gunung Palung area of 30,000 ha was designated as a wildlife reserve in 1937 under the Dutch colonial government, who revised the status of the area into a strict nature reserve in 1939. In 1981 the Indonesian government extended the area to 90,000 ha and revised its status back to wildlife reserve (Anonymous 1990, Anonymous 1981). In 1990 the government declared the area as the first national park in West Kalimantan province through Ministerial Decree of Forestry No. 448/Kpts-II/1990, (Slamet 2007, Anonymous 1990).

Biodiversity

The park has a number different ecosystems including mangrove, peat land, swamp forest and dry lowland alluvial, mountains and sub-alpine forest (Fig. 6-2). The tree species known to grow in the park include members of the *Depterocarpacea* family, including *Hopea*, *Shorea* and *Litsea*, and other tree species found in the park include *Gonystylus bancanus*, *Eusideroxylon zwageri*, *Gluta rengas* and mangrove species such as *Rhizophora*, *Sonneratia*, *Bruguiera*, *Xylocarpus* and *Avicenia*.

The park is also an ideal habitat for many primate species, including the orangutan *Pongo pygmeus*, the proboscis monkey *Nasalis larvatus*, the pig-tailed macaque *Macaca nemestrina*, and the Bornean gibbon *Hylobates muelleri*. Other endangered species occurring in the park are the Malayan sun bear *Helarctos malayanus*, the tufted ground squirrel *Rheithrosciurus macrotis*, the rhinoceros hornbill *Buceros rhinoceros* and the helmeted hornbill *Rhinoplax vigil* (PHKA & OCSP 2007, Paoli *et al.* 2006, Cannon *et al.* 2004, Blundell & Peart 2001, Webb & Peart 2000, Peart 1996).

The park has long been famous for its excellent research centre, Cabang Panti Tropical Forest Research Station (Box 6-1). The centre was developed in the mid 1980s with the support of Harvard University Laboratory of Tropical Forest Ecology, and it serves as natural laboratory for studies of the Bornean tropical forest.

Cabang Panti has long been used by domestic and international students from many universities to learn about trees and wildlife, and especially to study orangutans (Box 6-2). The station is equipped with a herbarium collection and simple library which the students can consult, and it provides accommodation for researchers and students in a basic camp (Hiller *et al.* 2002, Webb 1997, Setiadi *et al.* 1996, Tanuwijaya *et al.* 1996).

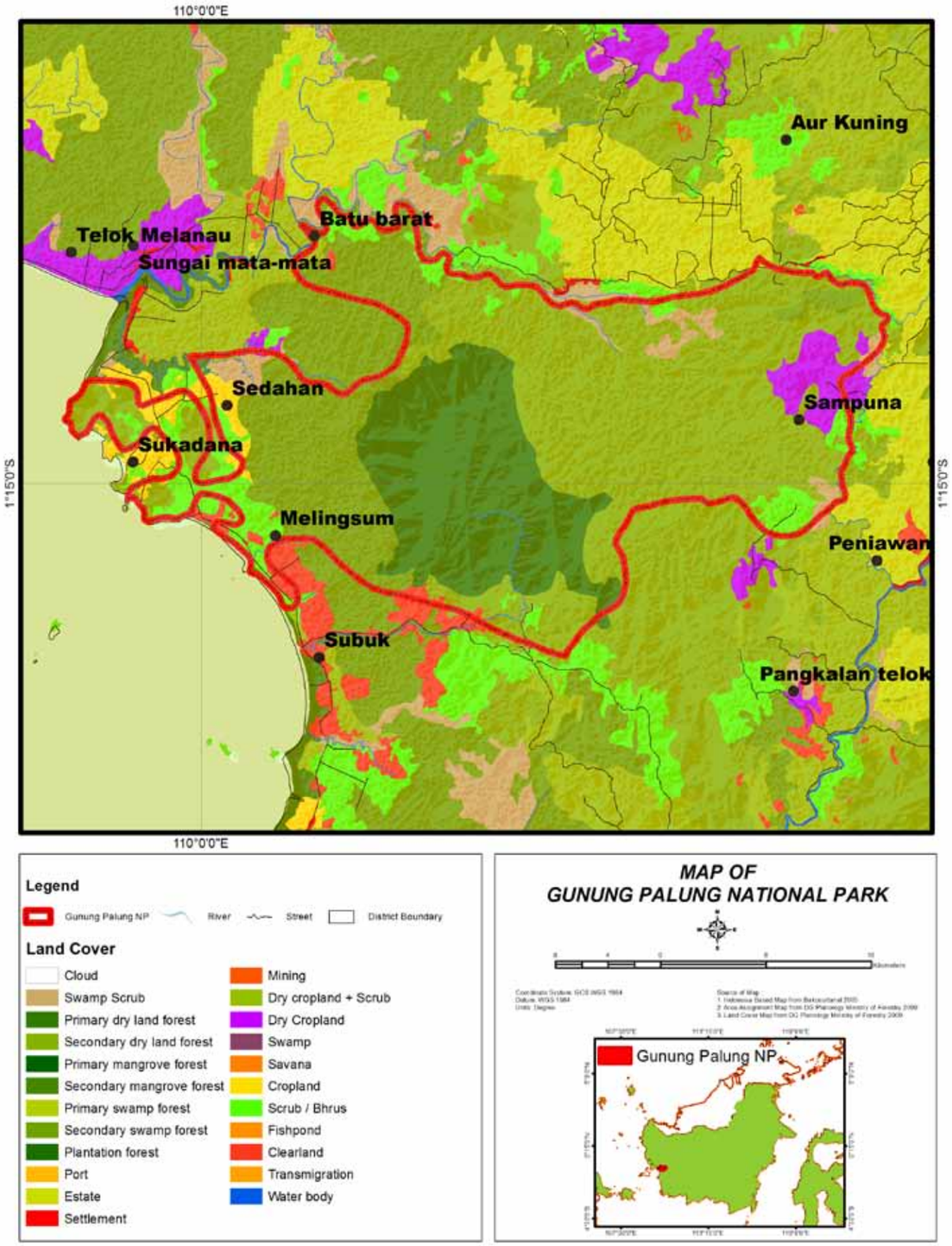


Figure 6-1. Map of Gunung Palung National Park

Figure 6-2.
The forests of Gunung Palung National Park

Gunung Palung National Park (all photos)

BOX 6-1

Cabang Panti Tropical Forest Research Station

Cabang Panti Tropical Forest Research Station was developed in 1985 by Dr. Mark Leighton of Harvard University's Department of Tropical Ecology. The station, which comprises a modest facility or camp for researching and studying tropical ecology, is on a branch of the Panti River in the interior of Gunung Palung National Park. The station is equipped with a simple library, a herbarium, and a camp for the students and researchers to stay in. The station's 60 km trail network covers about 2,100 ha of the park, and covers the major ecosystem types: lowland swamp forest, peatland and mountain forest. A number of the trees along the trail are identified and marked.

Cabang Panti provides an excellent opportunity to study species and different habitat types, from freshwater swamp to montane forest. The facility has been utilised by countless students from many Indonesian and international universities. Students and researchers stay at the station for anything from a few weeks to several years to learn about the tropical wildlife and ecology of Gunung Palung.

In the early 2000's the station was forced to reduce and eventually abandon its activities due to rampant illegal logging in the area. In 2007, when the situation was under control again, ecologist Dr. Andrew Marshall from the University of California-Davis – a former PhD student of Mark Leighton who had worked in Gunung Palung for the Orangutan Project – together with Dr. Cheryl Knott restored the Cabang Panti Research Station and set up short- and long-term projects on forest productivity and primate species, especially gibbons and leaf monkeys. The re-opening of the station was supported by GRASP (the Great Apes Sustainable Programme), and Dr. Cheryl Knott also returned to Gunung Palung to continue the orangutan project in the park, later setting up and chairing *Yayasan Palung* (the Palung Foundation).

Source: Leighton, *pers. comm*., Hiller *et al.* (2002), Webb (1997), Setiadi *et al.* (1996), Tanuwijaya *et al* (1996)

Gunung Palung National Park

BOX 6-2

Orangutan Project in Gunung Palung National Park

The Gunung Palung Orangutan Project was established in 1994 by Dr. Cheryl Knott, Professor of Anthropology at Boston University, who has long been associated with Cabang Panti Research Station. The project aims to integrate scientific research on orangutans with conservation programmes to preserve the species and its habitat, and its activities focus on Gunung Palung National Park and its surroundings.

Since its establishment, the project has collected information on a wide variety of aspects of orangutan ecology, including birth intervals and female hormonal functioning; gender differences in feeding behaviour and nutritional intake and foraging; socio-sexual behaviour and hormonal correlates; orangutans' social organisation; infections, parasite loads and medicinal plant use; habitat quality and orangutan densities; canopy locomotion and position behaviour; maternal behaviour and energetics; and ranging patterns, habitat use and energetics.

The project has so far cooperated with the Indonesian Ministry of Forestry, Gunung Palung National Park, the University of Tanjungpura Pontianak, the Indonesian Institute of Sciences, Conservation International, the Wildlife Conservation Foundation, National Geographic, Woodland Park Zoo, Atlanta Zoo, Houston Zoo, the Wenner-Gren Foundation, the Leakey Foundation, the Wildlife Conservation Network, Orangutan Conservancy, and the US Fish and Wildlife Services.

Gunung Palung National Park

Source: Wah (2011), Hiller *et al.* (2002), PHKA & OCSP (1997)

Socio-Economic Status

Over 30,000 people live in 26 villages in six districts within the borders of the park. The Gunung Palung area was once predominately occupied by Dayak ethic groups, with some Malays living on the western coast and in the hills of Sukadana. However, since the 1960s the human population has increased due to transmigration programmes from Bali and Java, and due to immigration from other areas in Indonesia. At the moment the population is a mixture of Malay, Javanese, Balinese, Dayak and ethnic Chinese (Slamet 2007, Ravenel 2004, Hiller *at al.* 2002).

For decades, the communities surrounding Gunung Palung relied on forest resources for their subsistence, but in the late 1960s, commercial logging was introduced to the area and local people became involved. The logging business in the area boomed in the 1970s and 1980s. At that time, there were 12 logging concessions in the area around Gunung Palung and most - if not all - of the communities were associated with the timber industry either as loggers, timber brokers, traders of logging equipment and spare parts, or as labourers for the companies. The timber industry could perhaps easily generate cash for the community in an area where other income options were very limited. The business of ecotourism was not too attractive, as the number of tourists visiting the park during those tough times was close to zero as a result of the dire conditions in the park (Slamet 2007, Anonymous 2003).

When the Indonesian government prohibited the export of logs in 1988 and allowed only processed timber to be exported, many saw mill businesses, both legal and illegal, appeared along the banks of the Sukada river. These activities continued until the mid 1990s when resources around the park were highly depleted. However, because most of population was by that time heavily dependent on the timber industry, loggers began to encroach on the park and other protected areas nearby. With little enforcement, illegal logging rapidly became out of control. Former concession companies collapsed, providing poor local villages with equipment and encouraging them to log timber in the park's periphery and, increasingly frequently, to encroach on the interior of the park (Wah 2011,Anonymous 2003, Hiller *et al.* 2002).

Logging around the park has not only deforested the area and degraded the remaining forest, it has also created social problems. Repeated logging has caused catastrophic forest fires in the area, including within the park in 1991, 1994 and 1997. As timber activities - including illegal logging - are the major source of income for most of the community, the availability of alternative livelihood options is a critical issue. To some extent, the timber business has eroded traditional customary values and norms, and has created corruption throughout the social structures of the community. These traditional institutions can no longer be depended on to maintain long-term sustainable forest resources as they did in the past.

In early 2000 the park introduced an airborne monitoring system, using light aircraft to regularly patrol and monitor the entire park area for illegal practices, including forest fires. This appears to have greatly reduced the problems in the park area (Box 6-3).

In 2007, the illegal logging issue was completely eliminated through a crackdown in Gunung Palung National Park and its vicinity. The government used multiple means to curb illegal activities within the park, including removing suspected corrupt police commanders in Ketapang and Pontianak. Since then, the park has begun restoring its image, and the number of tourists visiting the park has also started picking up (Wah 2011, Ravenel 2004, Hiller 2002).

The population of the 26 village communities between 1999 and 2010 has been declining (Fig. 6-3), perhaps due to the reduced availability of work opportunities in the area compared with the boom days of illegal logging in the 1990s and early 2000. The decline also suggests that most of the communities in the area in the past were immigrants who worked for the timber businesses.

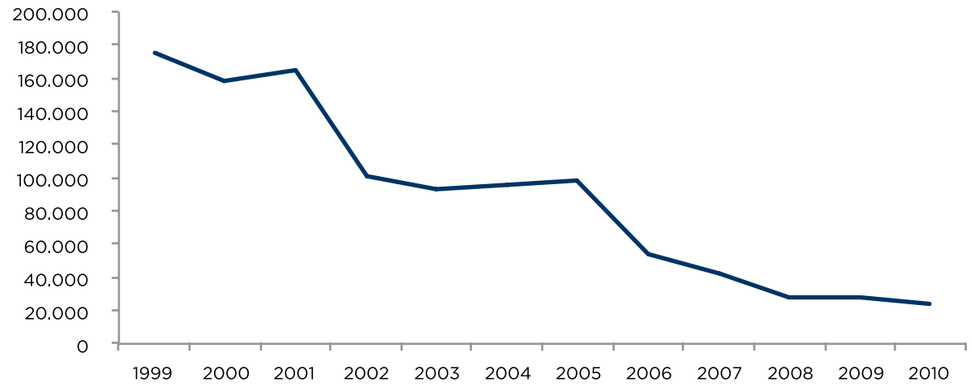


Figure 6-3.
Population of communities who settled within the buffer zone of Gunung Palung National Park between 1999 and 2010
Source: Gunung Palung National Park (2010)

Gunung Palung National Park and Partners

In an effort to improve the park's management and promotion and to protect it, the management has set up a long-term partnership with the Harvard University Laboratory of Tropical Forest Ecology, and the partnership has attracted national NGOs Biodiversity Conservation Network and Bina Swadaya Masyarakat to work with the park. In January 1998 these groups, along with the Ministry of Forestry's Directorate General of Forest Utilization, set up a Community-Based Forest Management Project (CBFM) on the border of the park (see Box 6-4).

The main objectives of the project were to educate and improve the capacity of local people in managing forest and forest businesses sustainably while also protecting the park from encroachment and illegal logging. The project covered 8,000 hectares of forest designated for production along the northwest border of the park, and involved almost all the people who used to work for the logging companies in the Simpang Hilir District of Ketapang Regency (GPOCP undated).

Harvard University and Flora and Fauna International (FFI) Indonesia have long helped Gunung Palung National Park to protect and promote orangutan conservation. FFI Indonesia set up the Orangutan Enforcement System, which carried out regular patrols of the park to protect the orangutan and its habitat from sporadic poachers and encroachment between 2002 and 2006.

More recently, the park has received substantial support from many international agencies and NGOs including Conservation International, the Food and Health Foundation, the US Fish and Wildlife Service Division of International Conservation Great Apes, Boston University and Harvard University.

Orangutan conservation has also received special attention from Gunung Palung National Park's partners. The Yayasan Palung Foundation (Box 6-5) was created to conserve the orangutan and its habitat, and continues to be active today.

Partners' activities and the research centre have attracted many international tourists and researchers. Since 2007 the number of international visitors to the park has been increasing (Fig. 6-4).

BOX 6-3
Park Patrolling by Air

Franky Zamzani (left), Erick Danzer (right)

A major constraint of national park management in Indonesia is difficulty accessing many locations within the park. The more accessible areas of the park are usually monitored and patrolled on foot, by motorcycle or by boat, leaving the park interior and other inaccessible areas with fewer regular patrols.

In 2003, following careful planning and evaluating the options, Gunung Palung National Park began using a Trike light aeroplane for airborne patrolling and monitoring. A standard Trike of the type used in Gunung Palung National Park is capable of carrying two people for as long as three hours, and has a flying distance of approximately 300 km and a cruising speed of 70-110 km/hour.

A Trike is a microlight plane, also known as a powered hang glider, which uses a high performance wing coupled to a propeller and a three-wheeled undercarriage. Its relatively low cost and low fuel consumption makes the Trike popular for many purposes. The plane relies on VFR (Visual Flight Rules), and is therefore only allowed to operate during daylight. The open cockpit allows the pilot to observe the Park area below. To take off and land, the Trike needs only a 250m grass airstrip.

Using a Trike, Gunung Palung National Park officers have been able to monitor forest fires, identify potential areas for ecotourism, and monitor land encroachment and illegal logging activities. The exact location of illegal logging in a remote area, for example, can be marked by GPS and photographed from approximately 300 m above the ground. This information can be obtained by two people flying for two hours. Between 2004 and 2007, Gunung Palung National Park successfully reduced deforestation due to illegal logging and land encroachment with support from the European Union's Illegal Logging Response Centre.

The Trike has proven effective for monitoring a small- to medium-sized (50,000-500,000 ha) conservation area, either on the mainland or in a small island system. Since it was pioneered by Gunung Palung National Park, other national parks in Indonesia have begun using Trikes for area monitoring, including Sembilang, Berbak, Alas Purwo, Tanjung Puting, Sebangau, Betung Kerihun, Wakatobi, and Wasur National Park.

Source: Franky Zamzani *(pers.comm)*

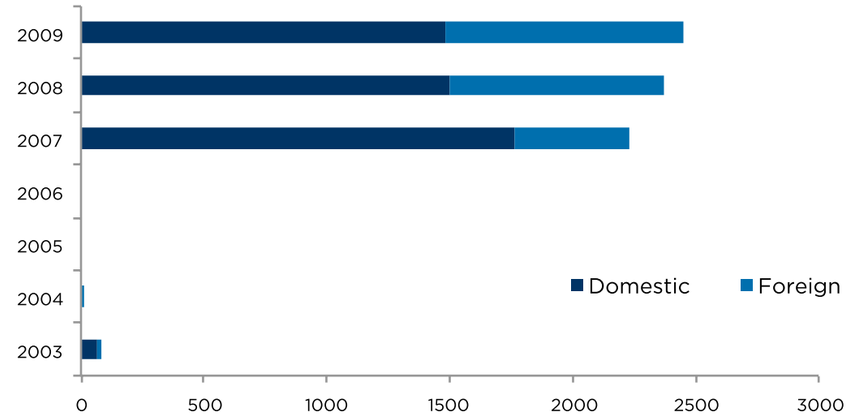


Figure 6-4. Visitors to Gunung Palung National Park, 2003-2009.

Source: Secretary to Directorate General of PHKA (2010)

BOX 6-4
Community-Based Logging

In 1998, in an effort to curb illegal logging in the buffer zone of Gunung Palung National Park and to educate the community in sustainable timber harvesting, the Biodiversity Conservation Network and West Kalimantan NGO Bina Swadaya, supported by Harvard University Laboratory of Tropical Forest Ecology (LTFE) and in cooperation with the Ministry of Forestry, set up the Gunung Palung National Park Community-Based Forest Management Project.

Some of the project's objectives were to establish a community-based management plan in the project area; to create an appropriate community organisation capable of supervising and managing the community forest and community enterprise; to develop the appropriate skills for community members to manage the enterprise; to provide training in forestry extension and education on sustainable forestry and conservation; and to develop good working relationships between the community and the park management.

The project was set up in the buffer zone along the northwest border of Gunung Palung National Park in the Simpang Hilir district of Ketapang, West Kalimantan. The 8,000 ha pilot site was a logged-over area of swamp forest and mixed lowland forest. The project ran for three years, and worked with 14 sub-villages of four villages.

The project made some progress in creating alternative employment opportunities for local workers who would otherwise be involved in illegal logging in the area. However, in 2000 the Ministry of Forestry revoked its policy allowing small-scale forest concessions to be licensed to local communities because it was extremely difficult to control wide-spread abuse of the system, and this resulted in increased illegal logging. It was unfortunate as the Gunung Palung project showed promise but was undermined by a policy change brought about by the failure of activities elsewhere.

Source: Ravenel (2004), Anonymous (2003), PHKA & OCSP (1997)

Park Management and Support

Records at the secretariat of the Directorate General PHKA in Jakarta show that in 2009 Gunung Palung was supported by 75 officers, including a park manager – a substantial increase on the number allocated when the park was established in 1990 (Fig. 6-5).

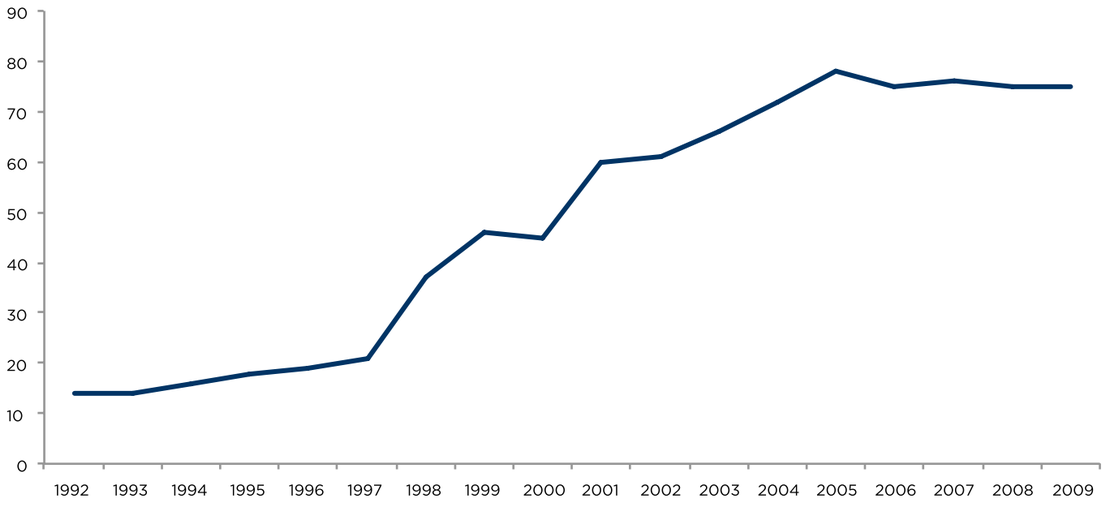


Figure 6-5
Number of officers in Gunung Palung National Park, 1992-2009.
Source: Secretary to Directorate General of PHKA (2010)

Since 2006 the park has received over seven billion IDR of funding per year. In 2007 13.32 billion IDR was allocated, but limitations on the park's capacity to implement activities meant that less than half of this budget was used, so the following year the budget was reduced to 8.28 billion IDR and stayed at that level until 2010 (Fig. 6-6).

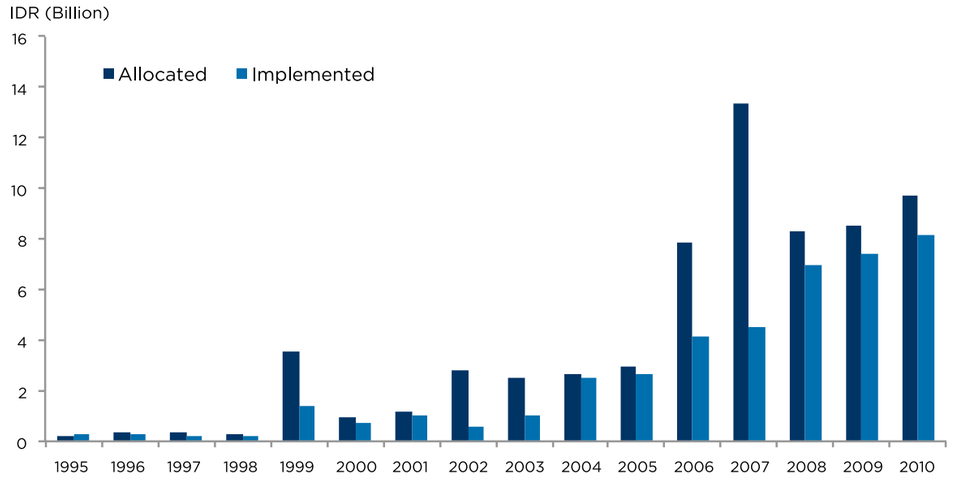


Figure 6-6.
Budget of Gunung Palung National Park, 1995-2010
Source: Secretary to Directorate General PHKA (2010).

BOX 6-5

Yayasan Palung, Gunung Palung National Park

Yayasan Palung (the Palung Foundation) was established in 2002 by a group of orangutan conservation activists: Darmawan Liswanto, Dr Sri Suci Utami, Elizabeth Yaap, Dr Cheryl Knott, Dr Andrew Marshall, Dr Barita Manulang and H Bahtiar. The foundation's aim is to conserve the orangutan and its habitat in Gunung Palung National Park. To achieve this objective, the Yayasan supports environmental activities within the villages adjacent to the park via community empowerment and outreach, and assists in strengthening institutions responsible for enforcement and for protecting the habitat of orangutans and other wildlife species in the park.

Within the last ten years, the foundation has managed an extraordinary range of outreach programmes in orangutan conservation, sustainable harvest of non-timber forest products, forest protection, peatland and catchment areas, flood prevention, urban waste management, pollution control and illegal logging. The foundation has also been active in developing a village forest and its management, medicinal plants, organic agriculture and garden plantations, and organising seminars and workshops on orangutans and sustainable forest management. These programmes and activities are conducted in villages in and around Ketapang, Kayong Utara and Pontianak.

Dr Cheryl Knot is the current chair and president of the foundation, and she is assisted by secretary Elizabeth Yaap and treasurer Dr Sonya Kahlenberg. Andrew de Sousa is the field director who manages the foundation's day-to-day activities in Ketapang, and the foundation's board of directors is supervised by H Bahtiar and Yudo Husodo. The foundation has an office in Ketapang, West Kalimantan and an international office in the USA. It can be contacted at P.O. Box 2250, Brattleboro, Vt 05303 USA, admin@saveGPorangutans.org.

Source: Ravenel (2004), Anonymous 2003, PHKA & OCSP (1997), Darmawan Liswanto, Flora Fauna International, *pers. comm.*, January 2011

Local People's Views About Gunung Palung National Park

In January 2010, 750 questionnaires were randomly distributed to the communities around Gunung Palung National Park to gather their views on the park's benefits, contributions, role and function, and importance in their lives. Of the questionnaires distributed, 384 were returned. The respondents consisted of 248 men and 136 women aged between 15 and 50. Their education levels ranged from no formal schooling (2.08%), elementary school (17.19%), junior high school (26.30%), high school (37.76%), to bachelor's degree (7.03%), with 9.64% having an unidentified educational back ground.

The responses were classified into different categories: (1) familiarity with the park; (2) the boundaries and regulations; (3) protected species and their habitat; (4) the park's management and officers; (5) the park management system; (6) support for the park; and (7) the park's benefits to the community. Detailed diagrammatic results are presented in Fig. 6-7.

1. Familiarity with the Park
Most respondents (92.71%) are aware of the existence of the national park, although only 19.79% had actually visited the park. The remaining respondents found out about the park either from friends or the media.

2. Park Boundaries and Regulations
Only 48.17% of respondents are aware of the park's boundaries, and 35.42% are not aware of the park's regulations. In contrast, and somewhat promisingly, 52.34% of respondents are aware of the rights and responsibilities of people who settle in and around the park area, and even more (57.03%) are aware of the consequences of violating the rules of a national park or protected area.

3. Protected Species
Most respondents (83.85%) are somewhat aware to very aware of the protected fauna species in Gunung Palung National Park, and a high proportion also had knowledge of their habitat (66.94%). However, only 57.30% are aware of protected tree species, and a large proportion of respondents (51.30%) admitted to not being at all aware of their habitat. When asked whether they were aware of the benefits of protecting endangered or protected species, 40.63% admitted to having no idea.

4. Popularity and Performance of Park Management
Many respondents (53.90%) know about or are acquainted with the park's management and its officers, and 45.05% are also aware of the roles and functions of Gunung Palung National Park staff, although slightly more (46.09%) admitted that they have no knowledge of this matter. Only 14.84% of respondents expressed a very good perception of the performance of the park management, and 30.21% said their perception is good. Most people answered that their perception is not good (42.19%) or very bad (1.23%).

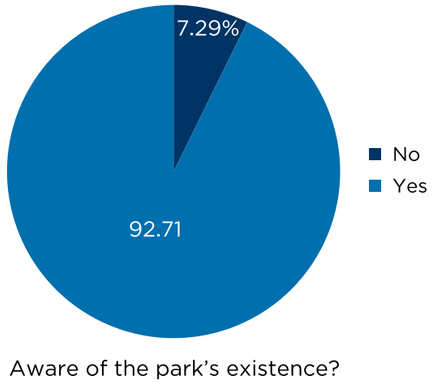
5. Park Management System
The majority of respondents support the establishment of Gunung Palung as a national park (90.37%). Likewise, most respondents (87.25%) are also in favour of the current park management arrangement whereby the government is fully in charge. Only 44.01% of respondents agree with the idea of the local community managing the park, and 56% support the notion of a collaborative management system.

6. Support and Benefits
Most respondents (83.07%) rejected the idea of abandoning the status of Gunung Palung as a national park, and the majority (70.05%) did not agree with the idea of converting part of the park into oil palm or timber concessions. On the other hand, as most of the communities who live around the park are heavily dependent on local resources, it is not surprising that 57.55% of respondents support the idea of allowing the local community to sustainably harvest resources from the park area. Most respondents (90.89%) agree with the idea of introducing an ecotourism program in Gunung Palung National Park.

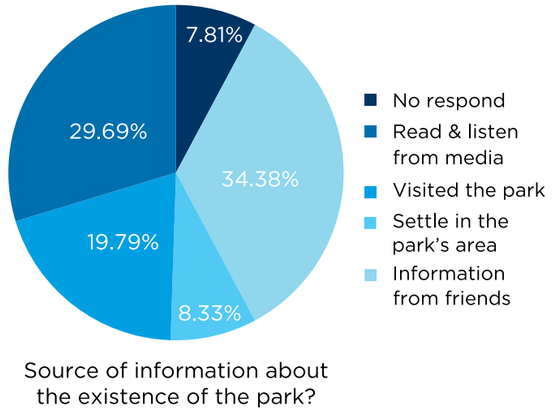
Slightly under half of those who responded (46.62%) do not believe that the park has provided economic benefits to the local community, whilst 44.27% disagreed. Likewise, 52.26% of respondents were not convinced that the park has provided protection for the livelihoods of the local community.

7. The Role of Civil Society
Some respondents (34.37%) were aware of the presence of FFI and its role in Gunung Palung National Park, but 53.91% admitted to not knowing anything about the NGO. However, 42.19% of respondents consider that FFI has done a good job in accordance with park regulations, and 51.82% believe that the presence of FFI in Gunung Palung has provided benefits to local communities.

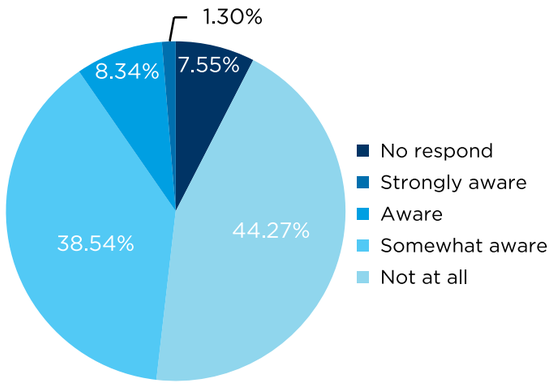
Figure 6-7.
Opinions of local people regarding various issues of Gunung Palung National Park



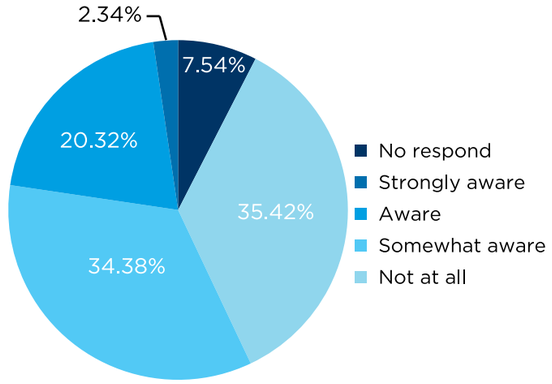
Aware of the park's existence?



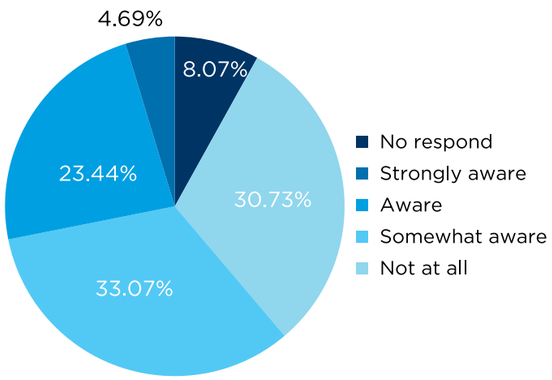
Source of information about the existence of the park?



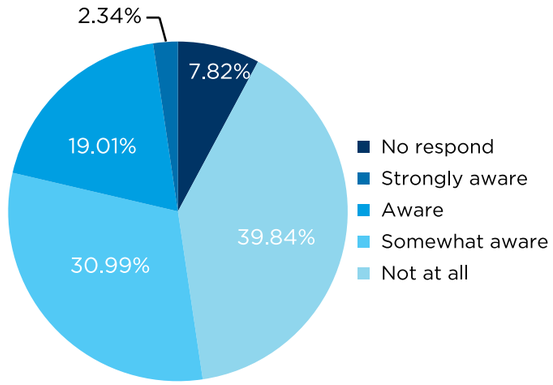
Aware of the park boundaries



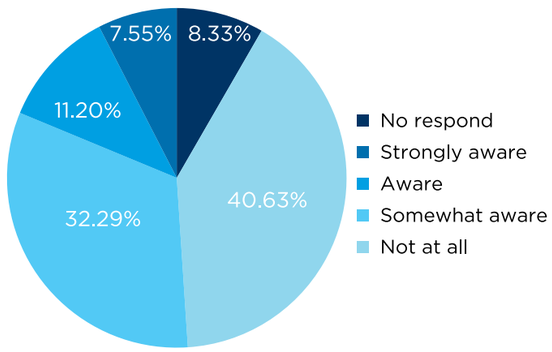
Aware of the park regulations



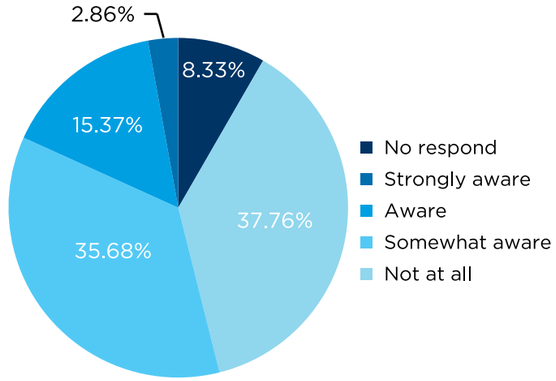
Aware of the consequences of violating the rules of the park



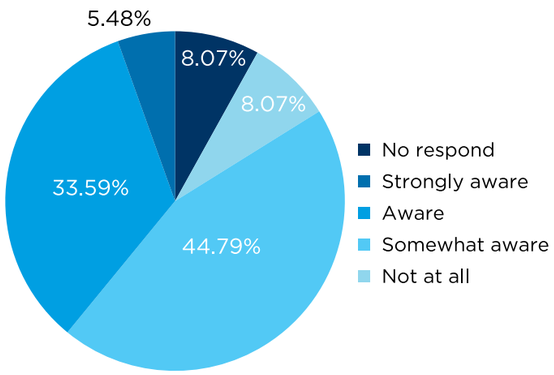
Aware of the rights and responsibilities of settlers within the park



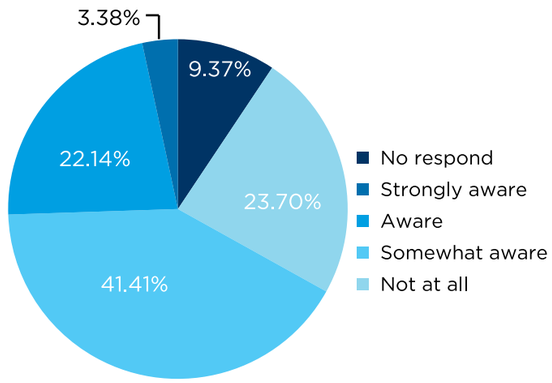
Aware of the benefits of protected species



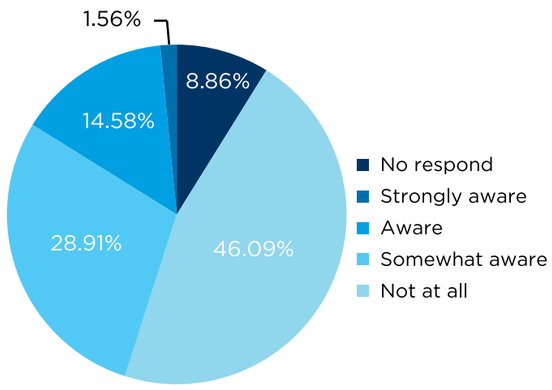
Aware of the park management and officers



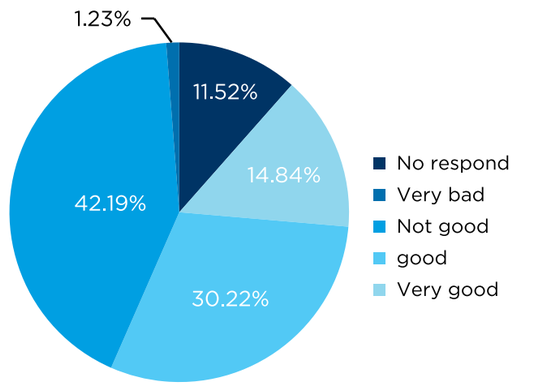
Aware of protected fauna



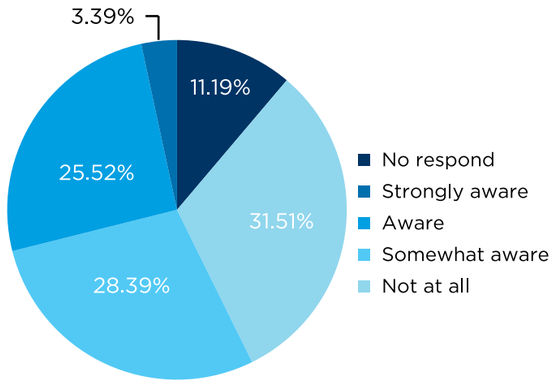
Aware of the habitat of protected fauna



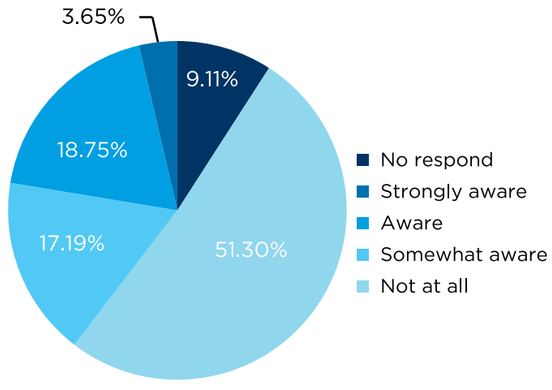
Aware of the role and function of the national park



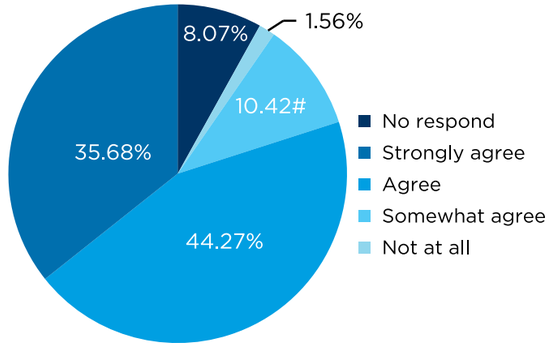
Quality of national park management



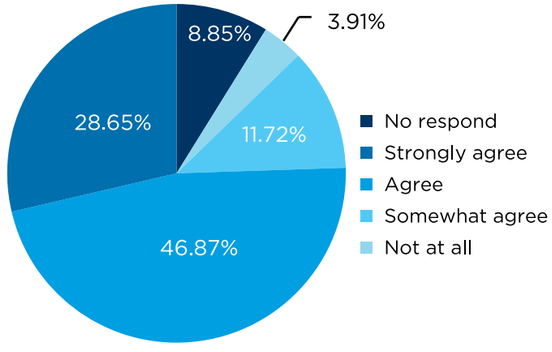
Aware of protected tree species



Aware of the habitat of protected tree species



Agree with the establishment of the park



Agree that the government should fully manage the park

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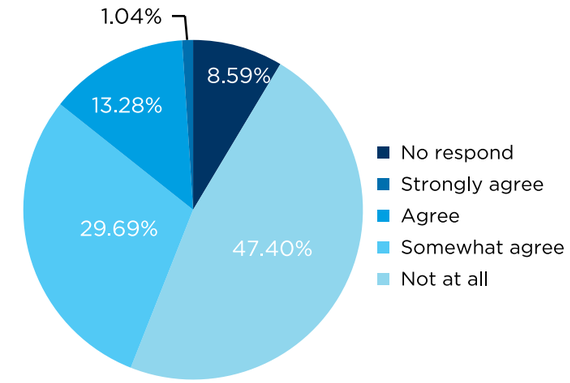
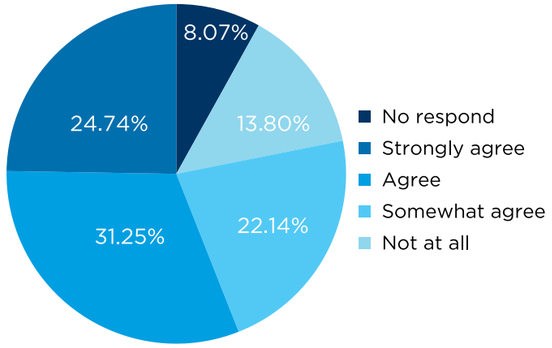
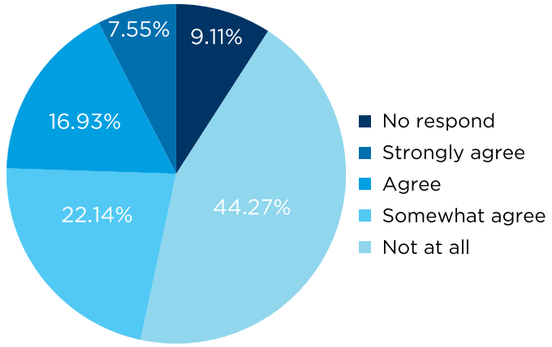


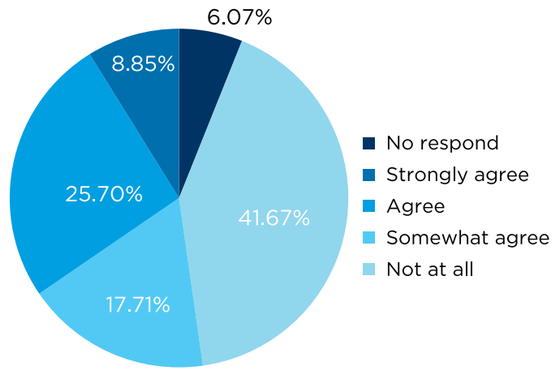
Agree the park should be managed by the local communities



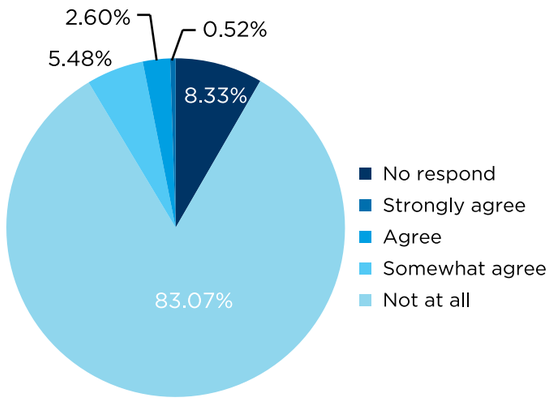
Agree with collaborative management between local communities and the government



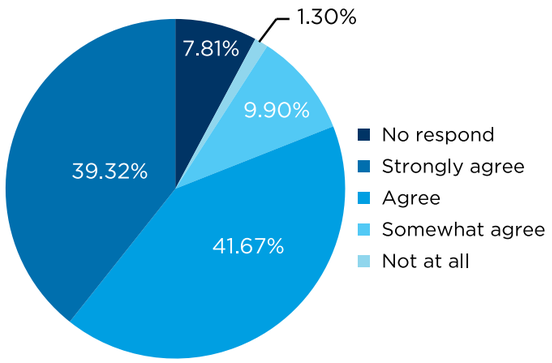
Agree that the park has provided economic benefits to the community



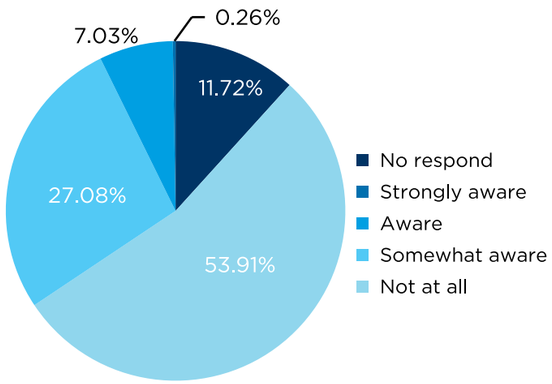
Agree that the park has provided protection for the livelihoods of the community



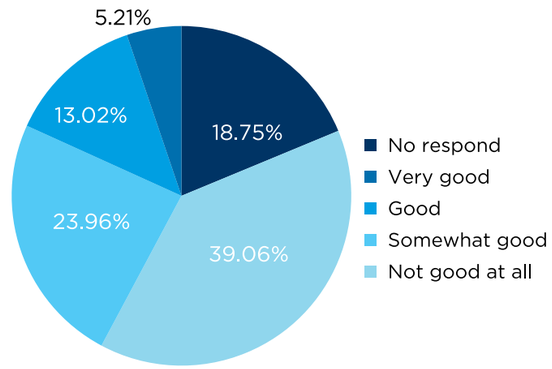
Agree that the Gunung Palung ecosystem should no longer have national park status



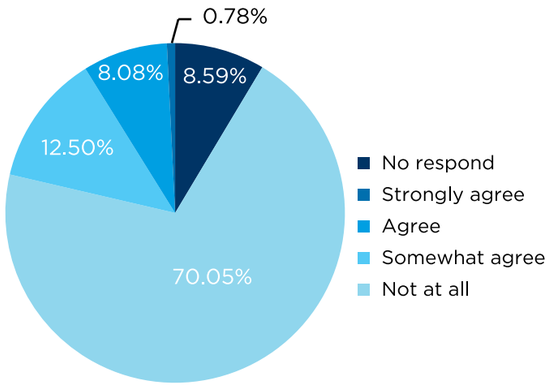
Agree that an ecotourism programme should be developed in the park



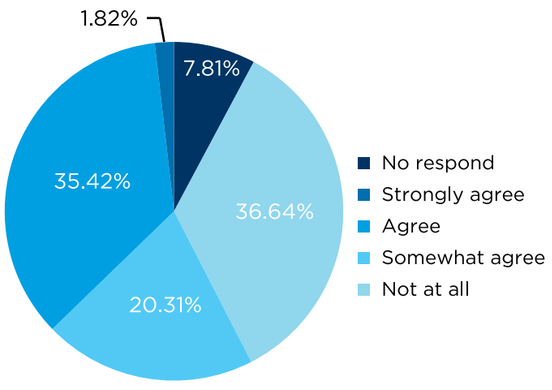
Aware of the presence of FFI and its role



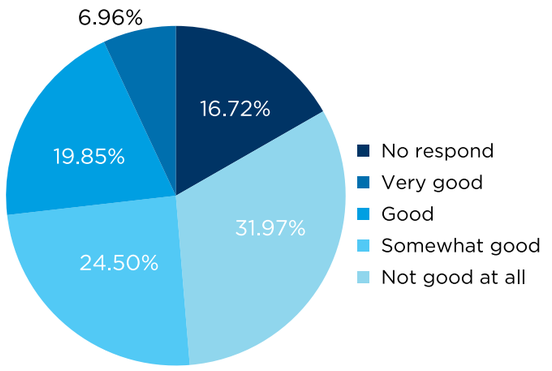
Opinion on quality of FFI's performance



Agree that part of the park should be converted to timber concessions or oil palm plantations



Agree that the community should be allowed to harvest resources from the park



Does FFI provide benefits to local community?

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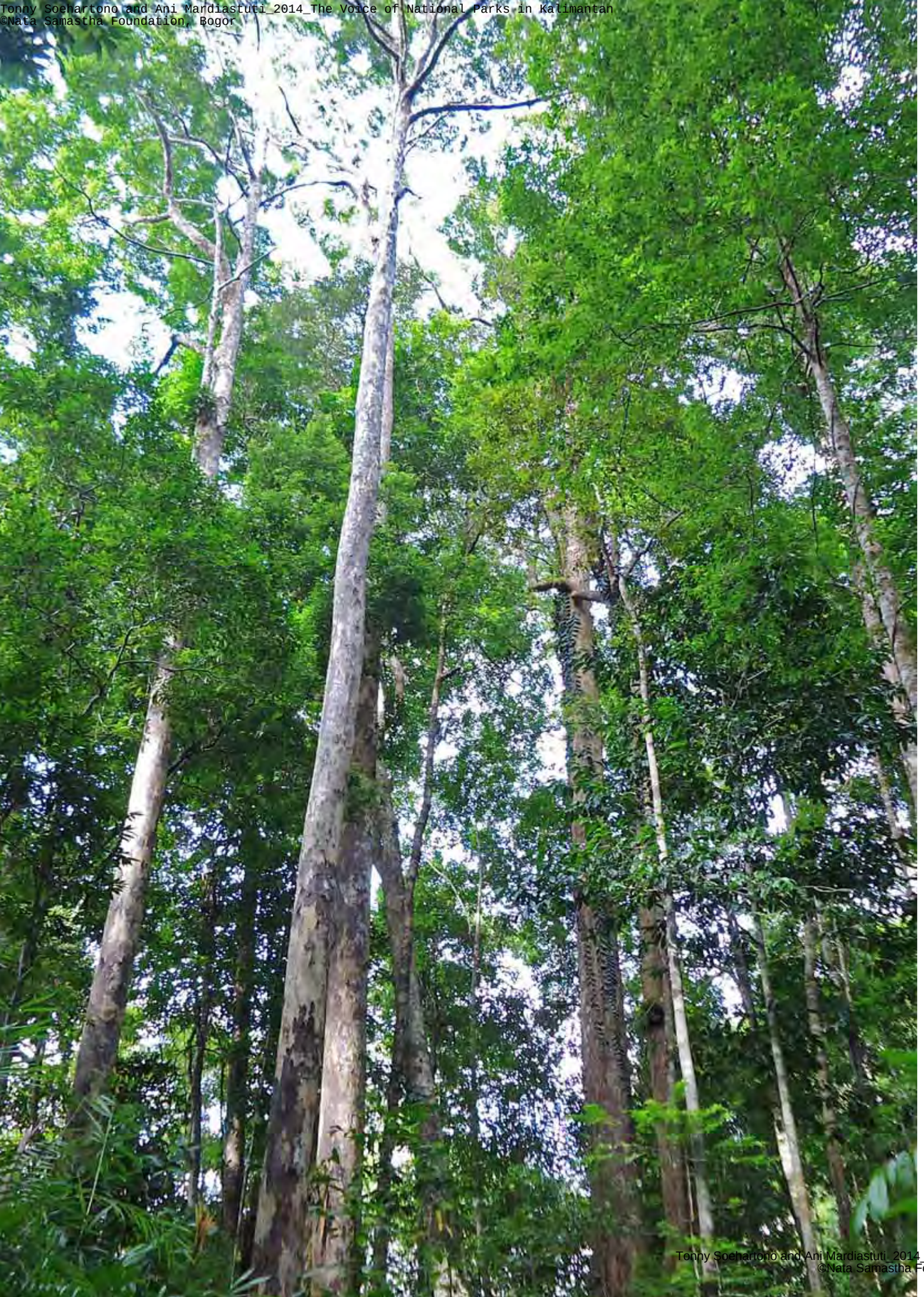


Bukit Baka-Bukit Raya National Park

CHAPTER 7

THE STUNNING MOUNTAIN PEAKS OF BUKIT BAKA-BUKIT RAYA

Bukit Baka-Bukit Raya National Park (Fig. 7-1) was established in 1992 and covers an area of 181,090 ha (Ministry of Forestry Decree No. 281/Kpts-II/1992). The park is in the mountainous Schwaner range, and its summit Bukit Raya is 2,278 m above sea level. The park is known to protect the watershed of the Katingan River in Central Kalimantan and of the Melawi River, which drains into the Kapuas River in West Kalimantan. It is also home to more than 3,000 Bornean orangutans *Pongo pygmaeus* and many other wildlife species in Kalimantan.

The park is immensely rich in tree species, including various commercial species belonging to the lowland and upland *Dipterocarpaceae* family, as well as unique limestone forest and tropical montane forest ecosystems (Bappenas-Ministry of Forestry-USAID, 1993). Administratively the park lies across the border of West Kalimantan and Central Kalimantan provinces, and belongs to the Sintang regency in West Kalimantan and Katingan municipality in the central part of Kalimantan.

Bukit Baka-Bukit Raya National Park was created through a merger of two strict nature reserves, Bukit Baka (70,500 hectares) and Bukit Raya (110,000 hectares). The 100,000 ha Bukit Baka was initially established in 1981 through Ministry of Agriculture Decree No 1050/Kpts/Um/12/1981 dated 24th December 1981 (Menteri Pertanian, 1981). A year later the area was increased to 116,063 ha (Balai Taman Nasional Bukit Baka Bukit Raya, 2009), but for unspecified reasons the government subsequently reduced the size of Bukit Baka to 70,500 ha through Minister of Forestry Decree No. 192/Kpts-II/1987 dated 9 June 1987. It was later discovered that the excised area had been given to a neighbouring timber concession.

Bukit Raya strict nature reserve was created in 1978 through Ministry of Agriculture Decree No. 409/Kpts/Um/6/1978 dated 6 June 1978, and in 1979 it was expanded to 110,000 ha through Minister of Agriculture Decree No. 781/Kpts/Um/12/1979 dated 17 December 1979 (Balai Taman Nasional Bukit Baka Bukit Raya, 2009).

Bukit Baka-Bukit Raya National Park has been managed under the auspices of the Regional Office of PHKA for West Kalimantan (*SB-KSDA Kalimantan Barat*) in Pontianak since it was established. The main objective of putting management in place early on was to prepare a management plan, and this was supported by USAID-Natural Resource Management (NRM) Project Phase I and the International Tropical Timber Organization (ITTO)-SFM Project (Box 7-1). In August 2002, the Ministry of Forestry established a dedicated management unit for Bukit Baka-Bukit Raya based in Sintang in West Kalimantan. The park has since been fully managed by the management unit.

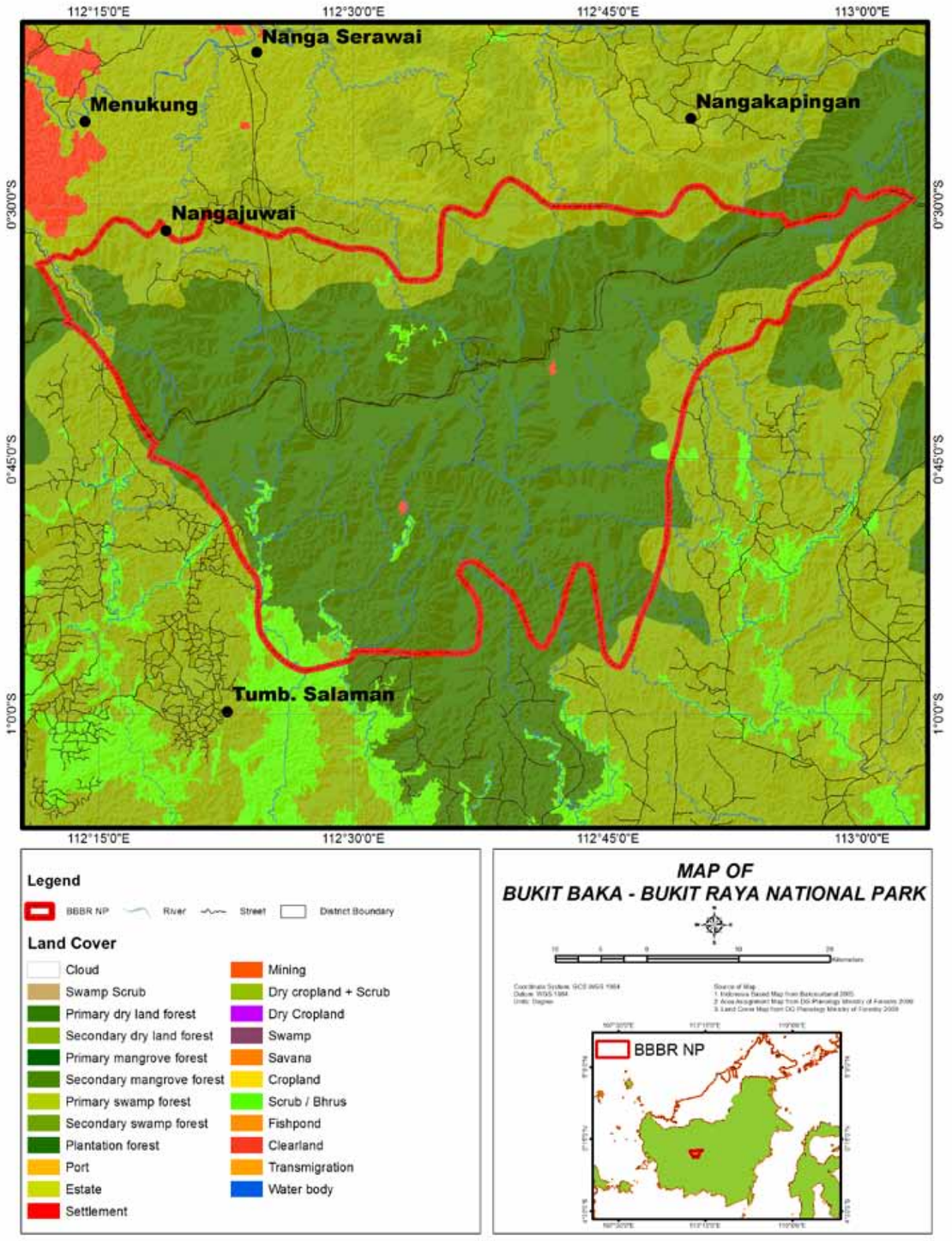


Figure 7-1. Map of Bukit Baka-Bukit Raya National Park

Bukit Baka-Bukit Raya National Park

Figure 7-2.
Forest of Bukit Baka-Bukit Raya National Park

Biodiversity

The vegetation in Bukit Baka-Bukit Raya is dominated by hill *Dipterocarpaceae* forest at lower elevations and *Fagaceous* and *Ericoid* forest at higher elevations (Jarvie *et al.*, undated; Fig.7-2). Within the park area, Jarvie *et al.* (undated) collected fertile flowering forest plants of 132 families, 357 genera and 1054 taxa, and identified their species.

USAID-NRM Project Phase I documented and published information on the numerous medicinal plants discovered in Bukit Baka-Bukit Raya National Park (Box 7-1). The report was produced by Izefri Caniago of the NRM Project in Pontianak. The survey of a small part of the Nanga Joui area revealed that the local community use more than 250 medicinal plant species from 165 genera and 75 families to heal various ailments such as fever, asthma, stomach ache, hepatitis, cholera, syphilis, tuberculosis and diarrhoea (Natural Resource Management Project, 1993, Caniago and Siebert, 1998).

The national park office has also recorded 221 species of wild fauna, including 65 species of mammals such as the Bornean orangutan *Pongo pygmaeus*, Horsfield's Tarsier *Tarsius bancanus*, the slow loris *Nycticebus coucang*, the pig-tailed macaque *Macaca nemestrina*, the clouded leopard *Neofelis nebulosa*, the Malayan sun bear *Helarctos malayanus*, and the Sambar seer *Cervus unicolor*; 140 species of birds including six species of hornbill (*Anorrhinus galeritus*, *Aceros corrugatus, Aceros undulatus, Anthracoceros malayanus, Buceros rhinoceros* and *Buceros vigil*); nine species of reptiles such as *Amyda cartilaginea, Heosemys spinosa, Malayemys subtrijuga* and *Orlitia borneensis*; seven species of amphibians and many other aquatic species and insects (Balai Taman Nasional Bukit Baka Bukit Raya, 2009). In addition, the Bornean flat-headed frog *Barbourula kalimantanensis* was rediscovered in the park in 2007 after a long period of no sightings (Box 7-2).

BOX 7-1

USAID NRM I and the ITTO Project Support for Bukit Baka-Bukit Raya National Park

Phase I of the USAID Natural Resource Management (NRM) Project was signed by the Indonesian and United States governments, with USAID channelling a grant of USD 2 million. Part of the grant was awarded to fund activities to develop Bukit Baka-Bukit Raya National Park in West Kalimantan:

1. Preparation of 25-year, five-year and the first annual Bukit Baka-Bukit Raya National Park management plans;
2. Equipment and infrastructure development for the Bukit Baka-Bukit Raya Forest Research Station in West Kalimantan, and equipment installation, training and needs assessment for the Forestry Research Station in Samarinda, East Kalimantan;
3. Agroforestry in Bukit Baka-Bukit Raya;
4. Topographical measurement and mapping in Bukit Baka-Bukit Raya National Park;
5. Bukit Baka-Bukit Raya Mini-Hydroelectric System Implementation Plan;
6. An environmental education and awareness Campaign for Bukit Baka-Bukit Raya National Park;
7. Identification of the use of trees by local people;
8. A community water supply feasibility study for the Bukit Baka-Bukit Raya Region;
9. A study of the role of non-government organisations in supporting the NRMP in Bukit Baka-Bukit Raya National Park;
10. Integration of provincial regional development planning into the Bukit Baka-Bukit Raya management plan;
11. A water supply and sanitation program in Bukit Baka-Bukit Raya National Park;
12. A socio-economic survey of communities living within reach of Bukit Baka-Bukit Raya National Park;
13. A study of the use of medicinal plants in Nanga Juoi, Menukung regency, West Kalimantan.

The ITTO Project PD 89/90 (F) was awarded to the Bukit Baka-Bukit Raya National Park in 1993. Supported by the Japanese Government and with a budget of USD 1,098,900, the project aimed to contribute to sustainable development in Indonesia by improving policies and practices to enhance the economic efficiency of tropical forest resource management. It provided infrastructure for a field research centre for the park, procured land for visitor and information centres, built the park's capacity to deal with forest fires, promoted sustainable harvesting of trees by local communities, identified commercial trees, and provided transportation for the project.

Bukit Baka-Bukit Raya National Park

Bukit Baka-Bukit Raya National Park visitor centre, built in 1995 with the support of ITTO SFM

Source: USAID NRM Project Annual Report (1993); ITTO (undated)

BOX 7-2

Rediscovery of *Barbourula kalimantanensis*

Barbourula kalimantanensis is one of only two known lungless frogs, breathing entirely through its skin. The species is medium-sized, with males growing to 66 mm Snout Vent Length (SVL) and females to 77.7 mm SVL. It is characterized by its distinct broad, extremely flattened, depressed head, a rounded snout, and a stocky, depressed body. It lives in cold, fast-flowing water, so it may have lost its lungs as an adaptation to a combination of factors: a higher-oxygen environment, the species' presumed low metabolic rate, severely flattened bodies with an increased surface area of skin, and a predilection for negative buoyancy—meaning that the frogs would rather sink than float.

Barbourula kalimantanensis was once declared extinct, but it was spotted again in the Ela River in Bukit Baka-Bukit Raya in March 2008 by park staff. The species was first discovered and identified in 1978 by a biological survey team from Bandung Institute of Technology led by Dr Djoko T Iskandar, but it had not been seen again until this sighting. The species is thought to also exist in Brazil and the Philippines.

Source: Haryo (2008), Bickford *et al.* (2008), Erwin Effendy *pers. comm.*

Socio-Economic Status

Most if not all of the local community in and around the park area belong to the Dayak Limbai, Ransa, Kenyilu, Ot Danum, Malahui and Kahayan ethnic groups. Traditionally they live in small groups across the park area but prefer to occupy the banks of the Malawi river in West Kalimantan and the Katingan river in Central Kalimantan, as well as smaller tributaries of these two rivers.

Local communities are highly dependent on the forest ecosystem for their livelihood. They hunt regularly for their protein, collecting other non-timber forest products such as wild fruits, leaves and rattan. They also practice shifting dry-land rice cultivation, rubber, coffee and agriculture products cultivation, and traditional husbandry. Their engagement with rubber plantations and agarwood and rattan collection has increased as the demand for these products has increased.

During the timber boom, with the backing of timber brokers and concessionaires, some local people were also associated with the illegal practice of timber harvesting. However, as enforcement has been stepped up and the market has become more focused on legal timber, these negative practices are now dying out.

Bukit Baka-Bukit Raya National Park

Filming the beauty of Bukit Baka-Bukit Raya National Park (above).
Dayak long house, Bukit Baka-Bukit Raya National Park (below).

Park Management

The park is not easily accessible as it is surrounded by 11 timber concessionaires, two in West Kalimantan, and most sharing a boundary with the park. From the West Kalimantan side, the easiest access is along the logging roads belonging to timber concessionaire PT Sari Bumi Kusuma, part of the Alas Kusuma Group, to a small logging yard in Popai on the banks of the Melawi river in Nanga Ela district. Travel time between Pontianak and Sintang is between two and eight hours or more, depending on the type of transport. Travelling from Sintang to Popai takes about four hours by boat along the Kapuas and Melawi Rivers, while by road it may take approximately three hours to travel the same distance. The logging yard is around 30 minutes away from the park's closest post at Belaban, where visitors will find the park lodge.

The journey to the park from Central Kalimantan side is also time-consuming. Visitors begin their journey in the provincial capital Palangkaraya, and travel to Kasongan either via Sampit or directly to Tumbang Kaburai district, where they may have to change transport mode from road vehicle to riverboat. The travel time between the two areas is approximately one day, after which visitors then need to make another boat journey of several hours to reach the periphery of the park on the eastern side, at Tumbang Hiran village.

Until 1997, the management of Bukit Baka-Bukit Raya National Park, was delegated to the Sub-Balai KSDA Kalimantan Barat or the PHKA Regional Office for the province. In the field, the park was managed largely by USAID-NRM I's nature conservation advisor. The project leader was supported by a number of officers and short-term consultants whose expertise included social economy, biodiversity inventory including medicinal plants, forest fire prevention, mapping, sanitation and water facilities, park organisation and staffing, and research station planning and developing (Box 7-3).

Alongside the support from the USAID-NRM I Project, ITTO contributed to the development of the park through its project to support the conservation of protected areas, construction of a tropical forest research centre, and sustainable management of production forest. ITTO also provided a car and a number of motorbikes for the Sub-Balai KSDA Kalimantan Barat, and the Representative Office of Forestry Research and Development Agency (FORDA) of the Pontianak office of the Ministry of Forestry.

The Ministry of Forestry provided funds for constructing posts and visitor centres, and a contribution to honorariums for the counterpart officers who worked with USAID-NRM I experts and short-term consultants in the field. In 1997 the Ministry of Forestry established the Bukit Baka-Bukit Raya National Park management unit, headquartered in Sintang, and the park's budget and staffing has since been administered by the unit.

The management structure of the unit was revised in 2002 and again in 2007, mainly in response to the need to establish field offices across the park area (Balai Taman Nasional Bukit Baka-Bukit Raya, 2009). In 2010 the park was supported by 67 staff including office staff in based in Sintang, and received Government funding of IDR 6.03 billion (Fig. 7-3 and 7-4).

BOX 7-3

Fernando Potess and Other Expatriates Who Worked in Bukit Baka-Bukit Raya: *Tonny Soehartono's Personal Experience*

Fernando Potess was the natural resource adviser and project field manager of the USAID-NRM Project Phase I for Bukit Baka-Bukit Raya National Park from 1992 to 1995. He is a young Columbian forester who graduated from Yale University, and he speaks Indonesian quite well.

I met him for the first time on 14th July 1992 in my office in the Pontianak Sub-Balai KSDA. He was the person who first enlightened me about the project and about Bukit Baka-Bukit Raya. During our first meeting, he told me that he knew nothing about the biodiversity of the area, but he claimed to understand protected area forest management, including park development.

His task was to develop the Bukit Baka-Bukit Raya National Park draft management plan for a 25-year period with the cooperation of local and national stakeholders. His vision for the park was something like the beautiful Columbian cloud forest, which he frequently showed to the foresters in the Pontianak office. To achieve his mission, the USAID-NRM provided a number of short-term consultants to work with him. His day-to-day counterpart in Pontianak and in the field was. Erwin Effendi, a junior forester staff from Pontianak Sub Balai-KSDA.

USAID-NRM Project Phase I contracted 64 short-term consultants to assist with developing the Bukit Baka-Bukit Raya National Park management plan, 44 of them expatriates from the United States and other developed countries who had experience in tropical forests. These expatriates coordinated many field activities in the park, including forest research, project management, agroforestry development, mini-hydroelectric station construction, natural resource accounting, taxonomy, a potable water supply and system, a management information system, environmental education and awareness, regional planning, community development, a socio-economic survey, field skills training, forest management, eco-tourism development, medicinal plants, sketch mapping the area, and in many other areas of expertise which were actually more suited to Indonesian experts.

In addition to the excessive number of expatriate consultants, three junior experts on biodiversity, conservation and agronomy provided direct support to project leader Fernando Potess. These three people were based in Pontianak and only went to the field when required.

The large number of experts coming to the KSDA office in Pontianak, where I was in charge, with or without my consent and as planned by the project leader in the Jakarta office, raised a concern among local stakeholders about whether the USAID-NRM Project Phase I was really helping the development of Bukit Baka-Bukit Raya National Park or was just an exercise in project implementation for the expatriates. However, regardless of such issues, it showed that the early development of the park was supported by very many experts from the developed world.

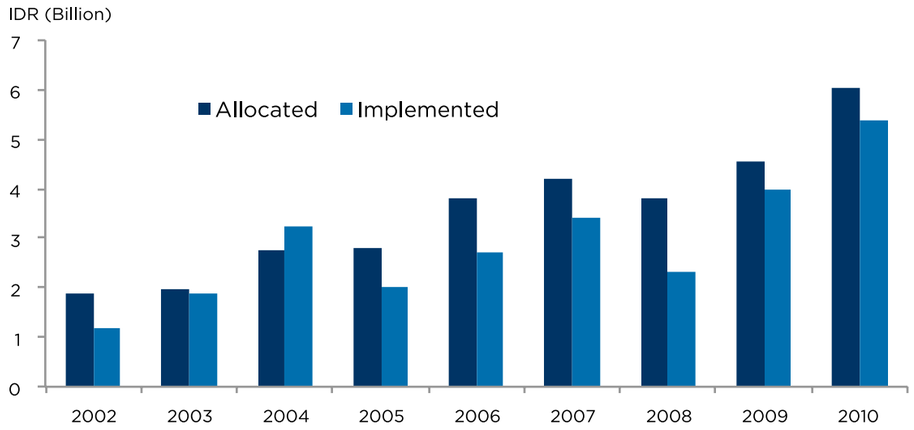


Figure 7-3.
Allocated and implemented budget for
Bukit Baka-Bukit Raya National Park between 2002 and 2010.
Source: Balai Taman Nasional Bukit Baka-Bukit Raya (2010)

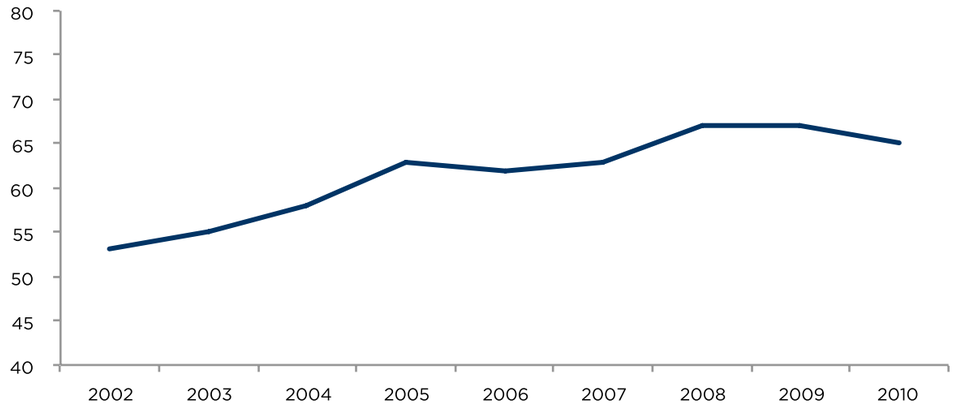


Figure 7-4.
Number of officers in Bukit Baka-Bukit Raya National Park, 2002-2010.
Source: Balai Taman Nasional Bukit Baka-Bukit Raya (2010)

Research Facilities

The park has always been equipped to support research activities with facilities which became known as the research centre (Box 7-4). The construction of the research facilities was supported by ITTO funding, and some of the equipment was provided by the USAID-NRM Project Phase I and the Indonesian government.

In the effort to encourage the concessionaires operating around the park to support the development of research facilities, the Indonesian government and the project successfully engaged PT Sari Bumi Kusuma, a concession of the Alas Kusuma group. Research centre construction began in 1994 at Tumbang Kaburai in the heart of the park, and was completed in 1995 (Annual Report Bukit Baka-Bukit Raya Project, 1993).

BOX 7-4
Research Centre and Its Activities

The Bukit Baka-Bukit Raya National Park Research Centre was developed by Indonesia's Ministry of Forestry with the support of the USAID NRM Project Phase I and the ITTO Sustainable Forest Management project (SFM). The centre aims to support the development of improved policies and practices for managing natural forests and protected areas.

Following the completion of construction of the Centre in 1995 in Tumbang Kaburai, activities officially began in December 1997 with eight staff including a Centre director from FORDA. However, due to access difficulties and limited support to run the Centre, it was only in operation for two years, and was able to achieve very little. Very few researchers visited the Centre, and by the end of 1999 the Centre had only managed to carried out three main activities: an inventory of the park's biodiversity and two training activities on stem cutting for employees of concessionaires operating near the park.

Since 2000 the Centre has been practically closed, and no staff from FORDA have been working there. In 2009 the management of the Centre was officially handed over from FORDA to the management unit of Bukit Baka-Bukit Raya National Park. As a result of the long idle period and lack of routine maintenance, the Centre and most of its facilities are now run down and badly in need of renovation. However, the park management unit seems to have neither a plan nor the right direction to run the centre. The latest development is that it has been suggested that FORDA would like to rethink its hand-over of the facilities and plans to run the Centre under the auspices of the FORDA unit in Samarinda, East Kalimantan.

Bukit Baka-Bukit Raya National Park

Abandoned research facilities, constructed in 1993 with financial support from ITTO SFM and USAID NRM Project Phase I in Bukit Baka-Bukit Raya National Park

Source: Thomas Nifinluri, the first Director of the Research Centre and Erwin Effendy, the park Director from 2007 to 2009 *(pers. comm.)*

BOX 7-5
Some Partners and Their Roles

PT Alas Kusuma Group
On 5th March 1993 the Ministry of Forestry, PT Sari Bumi Kusuma, USAID NRM Project Phase I, ITTO and the Association of Indonesian Forest Concessionaires signed a cooperative agreement on forest research and best practice forest activities in support of sustainable forest management. The agreement covered implementation of sustainable management of natural production forest, management of protected areas in Bukit Baka-Bukit Raya National Park, development and construction of a research centre and facilities, and research, training and education in forest issues in the area of the National park and the PT Sari Bumi Kusuma concession with the aim of empowering the community in and around the park area.

WWF
Since 2008, WWF Indonesia has assisted the park in reshaping and updating the old park management plan. Originally developed in 1992, the plan was considered out of date and required updating and revising in line with the changed social-political conditions in the region, especially in relation to provincial and local government decentralisation. WWF facilitated a number of stakeholder meetings on this issue in West and Central Kalimantan, and provided information about the plan to local communities. WWF Indonesia also helped the park to inventory and monitor biodiversity to some extent.

HIMAKOVA
Between July and August 2008, 70 students of IPB-HIMAKOVA (Himpunan Mahasiswa Konservasi Alam, or the Forest Conservation Students' Association) and five forestry students from the University of Tanjung Pura, Pontianak, explored and studied Bukit Baka-Bukit Raya National Park. Their objectives were to observe and learn about the richness of biodiversity in the park and the customary wisdom of the people living in and near the park, and to investigate the carbon biomass of the vegetation within the park.

The biodiversity study recorded 86 species of birds, 26 species of mammal, 60 species of herpetofauna, 26 species of butterfly, 77 species of timber tree, most belonging to the Dipterocarpaceae family, and 103 species of flora traditionally utilized by the local community.

Socio-economic studies were undertaken in five villages within the park area: Belaban Ella, Nanga Siyai, Nanga Dawai, Tumbang Kaburai and one village in the corridor controlled by PT Sari Bumi Kusuma Km 39. The study recorded traditional houses, historical sites, medicinal plants being used by the local people, and potential ecotourism destinations close to the study villages. In the light of the biomass analysis, the students estimated the average volume of carbon biomass in the park's ecosystem to be 250 tons/hectare.

Source: Ministry of Forestry and PT Sari Bumi Kusuma Cooperative Agreement (1993); Eddy Zulkarnaen, Balai Taman Nasional, *pers. comm.* (August, 2011); HIMAKOVA Blog at http://himakova.blogspot.com/ downloaded on 24 August 2011

The Park and Its Partners

The development of the park was largely supported by the USAID NRM Project Phase I and the ITTO Sustainable Forest Management project. The Indonesian Institute of Sciences (LIPI) and the University of Tanjung Pura's forestry faculty also contributed to the park's development. The students' association of Bogor Agricultural University's forestry faculty (IPB-HIMAKOVA) also worked with the park in connection with its biodiversity (Box 7-5).

WWF Indonesia has also shown consistent support for the park through its biodiversity and socio-economic assessments. The concessionaires operating adjacent to the park, PT Sari Bumi Kusuma and PT Kurnia Kapuas Plywood, have to some extent also worked and contributed to the park by allowing access via their logging roads. However the latter concluded its operations in 2001, leaving the access road to the park and the research centre without maintenance.

Local People's Views About Bukit Baka-Bukit Raya National Park

In an attempt to understand the perspectives of the people towards the park, 1,000 questionnaires were randomly distributed with the help of the park authority to the communities in or around the park area in 2010, and 649 completed questionnaires were returned to the park. Of those who responded, 21.51% were women and 73.61% men, with the remainder (4.88%) unspecified. In terms of age group, 11.75% were under 20, 20.62% were between 20 and 30, 29.49% were between 30 and 40 and 34.81% were over 40. Their educational backgrounds ranged from elementary school (25.50%) to junior high school (25.06%), senior high school (24.17%), and bachelors degree or above (14.85%). Respondents were farmers (47.67%), traders (6.43%), teachers (6.43%), uncertain occupation (7.10%) and students (9.09%), and the jobs of the remainder were unknown (4.66%).

The views towards the park are grouped into a number of categories: (1) familiarity with the park; (2) park boundaries and regulations; (3) the park management system; (4) protected species; (5) the support and benefits of the park to the community; and (6) the role of civil society (Figure 7-5).

1. Familiarity with Bukit Baka-Bukit Raya National Park

One third (33%) of respondents were aware of the existence of Bukit Baka-Bukit Raya National Park, and 36% were slightly aware. The rest of the respondents indicated that they were not at all aware of the park in their area.

2. Park Boundaries and Regulations

Approximately 18% of respondents were aware of the park's boundaries and 28% were somewhat aware. About 51% of the respondent stated that they did not know anything about the boundaries. Some 45% of respondents were not aware of the park regulations, and 51% said they were aware or somewhat aware. In addition, only 29% of the respondents were aware of the rights and responsibilities of people who settle in the park area, and the rest responded that they were either somewhat aware (31%) or did not know at all (35%).

3. Park Management System

As many as 34% of respondents were strongly aware or aware of the officers and their role in managing the park, while the rest were either somewhat aware or did not know at all about the presence of the park officers and their role (64%). When asked whether the management and its officers have performed their duties properly, only about 25% of the respondents responded positively. The remaining respondents either somewhat agreed or disagreed.

Approximately 72% of respondents agreed or strongly agreed with the establishment of the national park, and the same proportion agreed that the park should continue to be fully managed by the government. On the other hand, approximately 58% of the respondents supported the idea of the local community managing the park, and a large percentage (83%) was in favour of the idea of managing the park through a collaborative system.

4. Protected Species

On the issue of protected species, only 2.4% and 36% of the respondents respectively were strongly aware or aware of the presence of protected animals in the park, while about 32% were strongly aware or aware of the protected plants in the area.

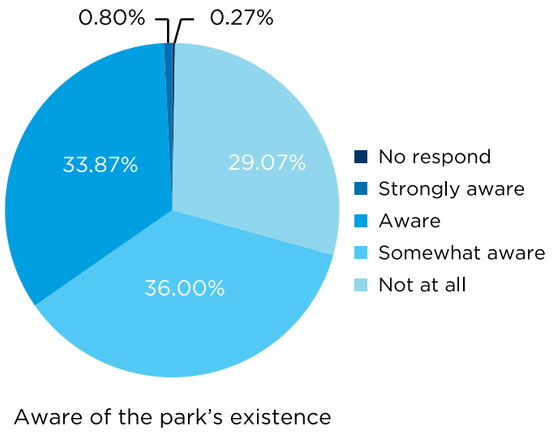
5. Support and Benefits

About 69% of respondents rejected the idea of converting the status of the national park into other purposes. Surprisingly, even more respondents (83%) rejected the notion of converting part of the park into a timber concession or palm oil plantation. However, most respondents (91.73%) supported the idea of allowing the community who live within the park's area to sustainably harvest resources from the park, and only 42% of respondents believed that the park has provided economic benefitted to the community. Despite this, most (82%) respondents agree that the park has provided protection for the livelihoods of the community.

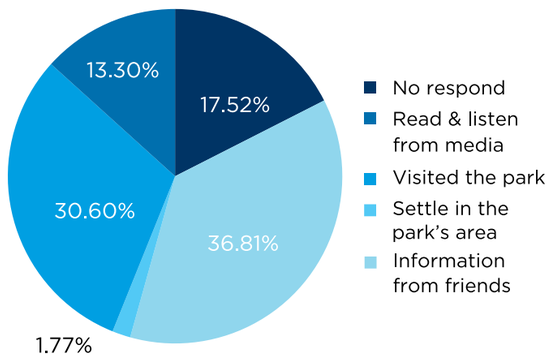
6. Role of Civil Society

Only about 23% of respondents were aware of the presence of WWF in Bukit Baka-Bukit Raya National Park. A small percentage (21%) of respondents believed that WWF has provided benefits to the park area and its management. Further, a small percentage (23%) of respondents also indicated that PT Alas Kusuma Group, a timber concession company operating adjacent to the park, has made a positive contribution towards the park.

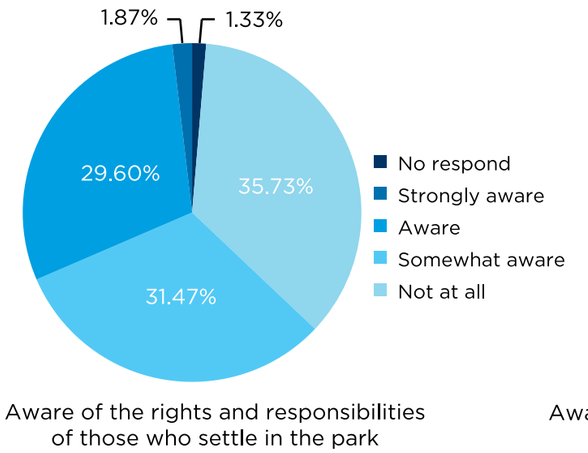
Figure 7-5. Opinions of local people regarding various issues of Bukit Baka-Bukit Raya National Park.



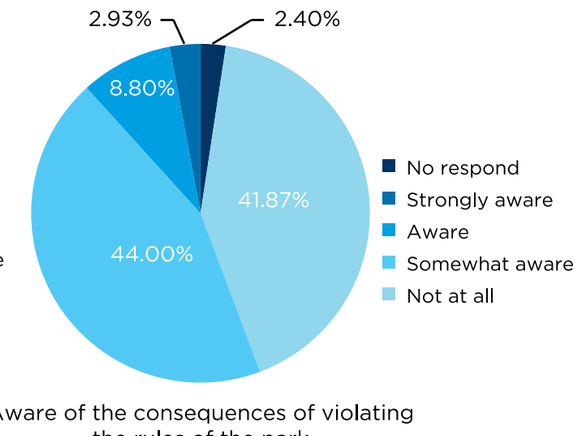
Aware of the park's existence



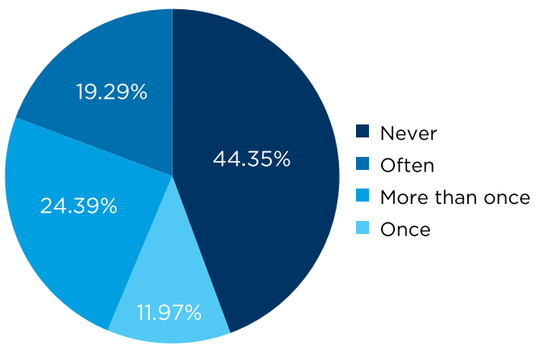
Source of information about the park's existence



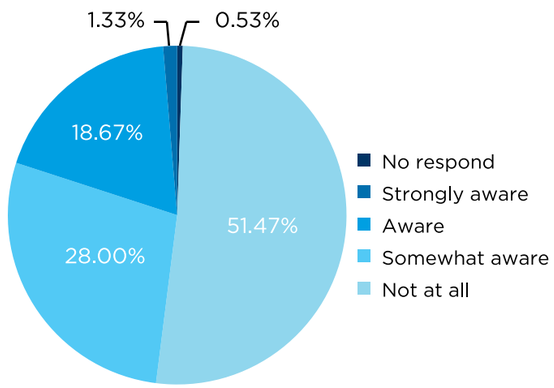
Aware of the rights and responsibilities of those who settle in the park



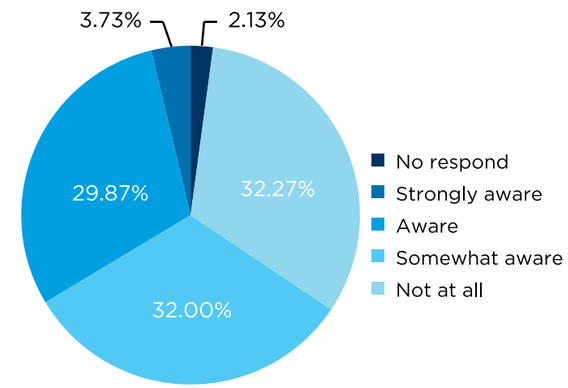
Aware of the consequences of violating the rules of the park



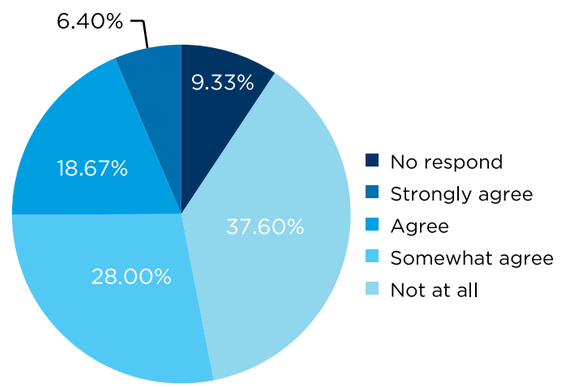
Ever visited the park



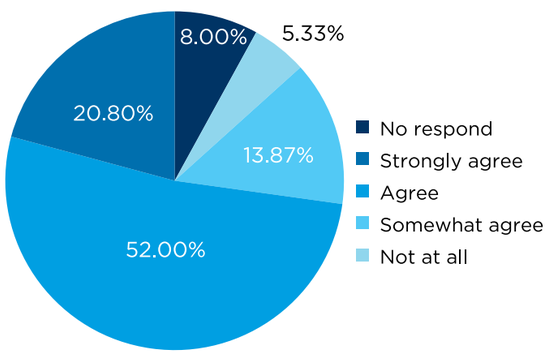
Aware of the park boundaries



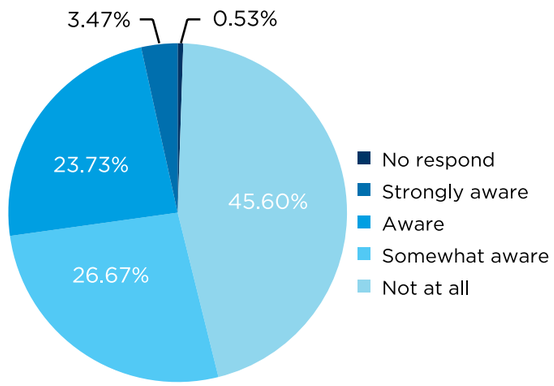
Aware of the existence of park officers



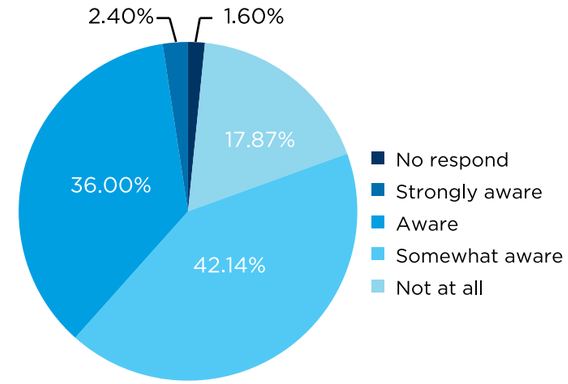
Agree that the park officers manage the park properly



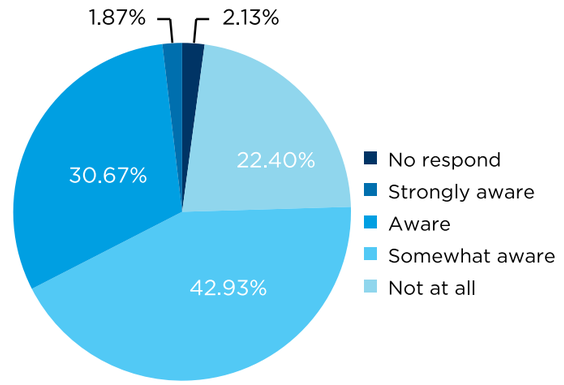
Agree with the establishment of the park



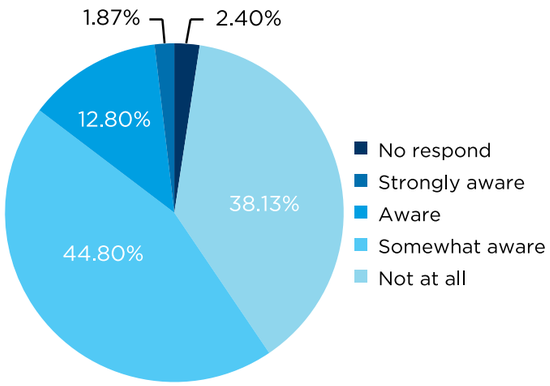
Aware of the park regulations



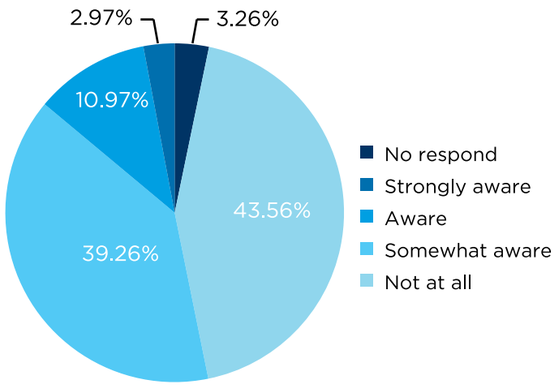
Aware of the protected animals in the park



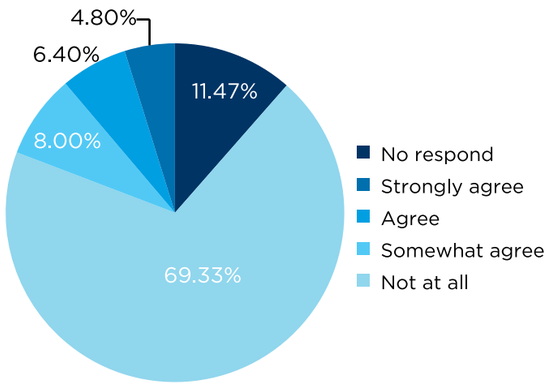
Aware of the protected plants in the park



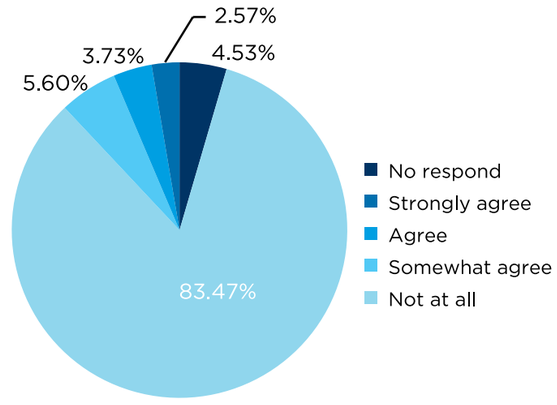
Aware of the habitat of protected animals



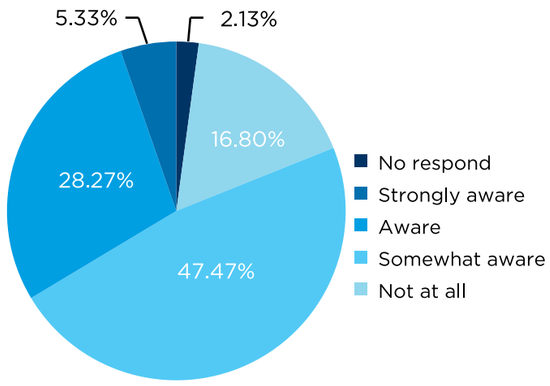
Aware of the habitat of protected plants



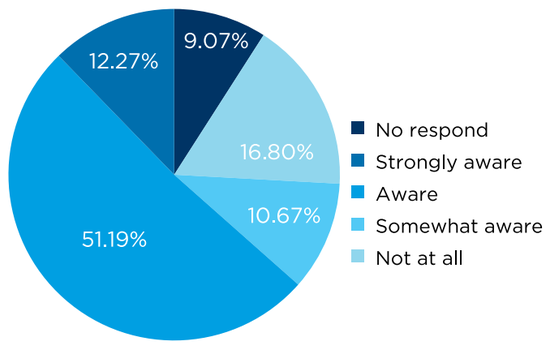
Agree that the status of the park should no longer be a national park or protected area



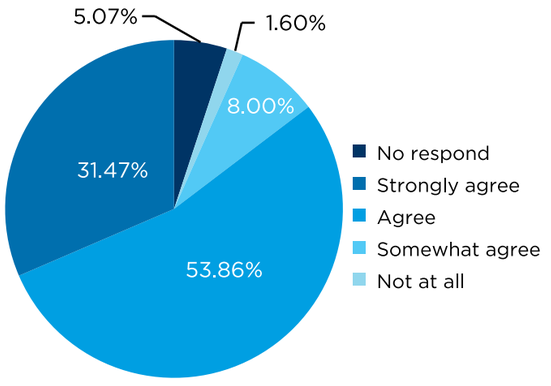
Agree that part of the park should be converted to timber concessions or oil palm plantations



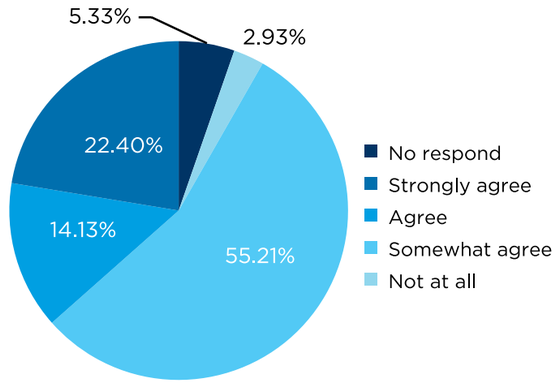
Aware of the reasons for protecting certain species



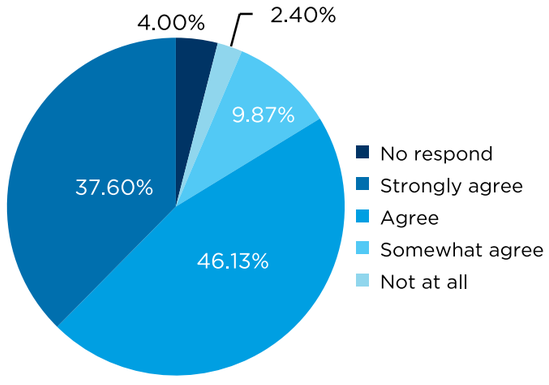
Agree that the park should continue to be managed by the government



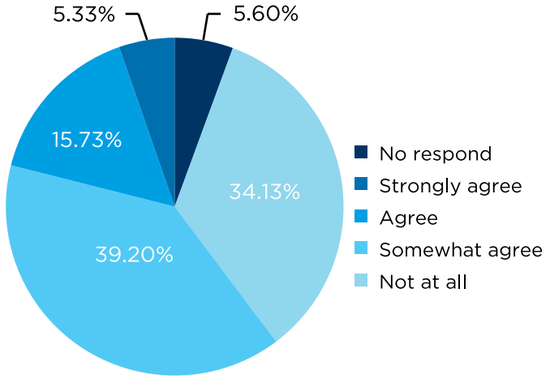
Agree that an ecotourism program should be developed in the park



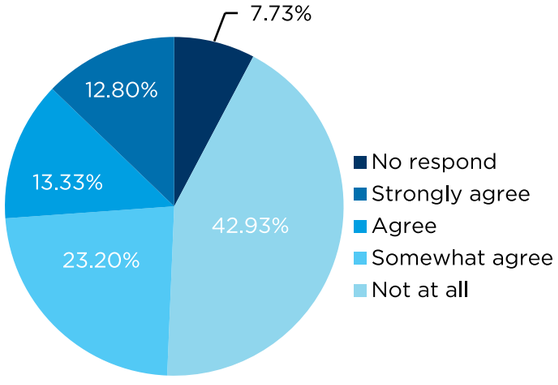
Agree that the community should be allowed to harvest resources from the park



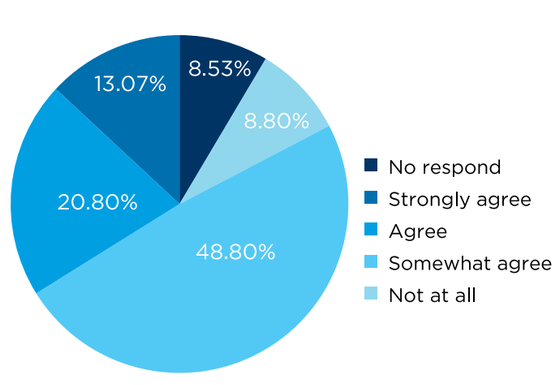
Agree that the park should be managed collaboratively



Agree that the park should be managed by the local community



Agree that the park has provided economic benefits to the community



Agree that the park has provided protection to the livelihoods of the community

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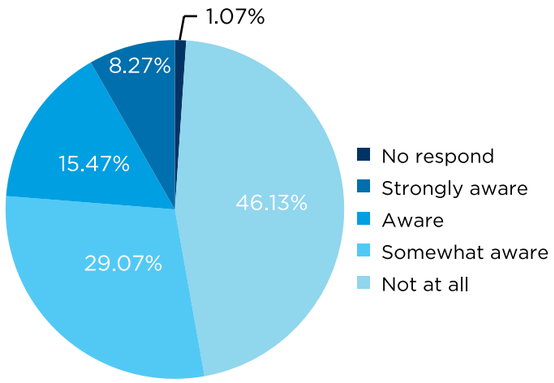
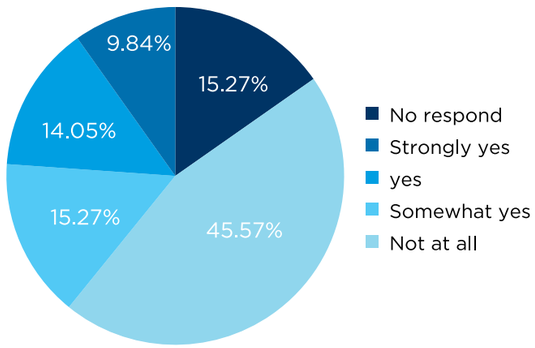
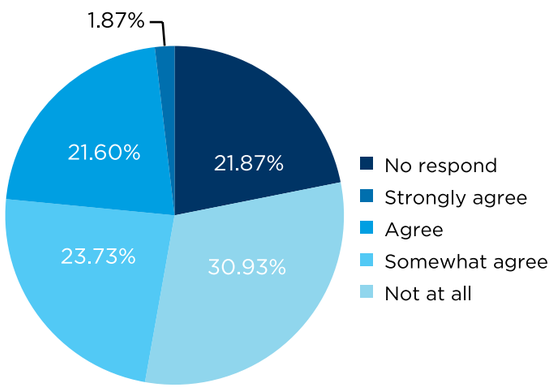
©Nata Samastha Foundation, Bogor



Aware of the presence of WWF and its role



WWF provides benefits to the park



Agree that PT Alas Kusuma Group (a timber concessionaire) contributed to the park's development

Bukit Baka-Bukit Raya National Park

CHAPTER 8

BETUNG KERIHUN:
TRANSBORDER NATIONAL PARK

Betung Kerihun National Park is another paradise of forest biodiversity in Kalimantan. It comprises mountain and lowland ecosystems encompassing 800,000 ha of tropical rainforest. It is in the northeast of West Kalimantan province, bordering Lanjak Entimau Wildlife Sanctuary in Sarawak state, Malaysia. The park is the second largest in Kalimantan after Kayan Mentarang National Park. In 1994 the park and its cultural diversity was proposed as a UNESCO World Heritage Site (the Transborder National Park Heritage of Borneo) and the first ITTO Trans-Boundary Conservation Project in the Asia region (Balai Taman Nasional Betung Kerihun 2000b, Soedjito 1998, Anonymous 2010b).

Administratively, Betung Kerihun National Park lies within the Putussibau and Embaloh districts in Kapuas Hulu regency, West Kalimantan province (Fig. 8-1). The park protects part of the Embaloh catchment, the source of the Kapuas river and Sentarum lake and the source of fresh water for almost the entire province. The park therefore plays a critical role in people's lives, and it is essential that the park's existence and this pivotal function continues to be effectively maintained (Balai Taman Nasional Betung Kerihun 2000a).

Bentuang Karimun originally held the status of a 600,000 ha strict nature reserve, established in 1982 by the Minister of Agriculture. Its area was extended to 800,000 ha in 1992, and in 1995, following an assessment by the Indonesian Institute of Sciences supported by ITTO, the area was declared as Bentuang Karimun National Park through Ministerial Decree No. 467/Kpts-II/ 1995. At the suggestion of Dayak communities in the area, the name was changed to Betung Kerihun National Park in 1999. This name was taken from two mountains in the area: Mount Betung in the west, and Mount Kerihun in the eastern part of the park. Together with Kayan Mentarang National Park and Danau Sentarum National Park, the park is also part of the Heart of Borneo initiative (Balai Taman Nasional Betung Kerihun 2010a, Balai Taman Nasional Betung Kerihun 2010b, Sarre 2005, Susilo 2003, ITTO 2002, Soedjito 1998).

Betung Kerihun National Park

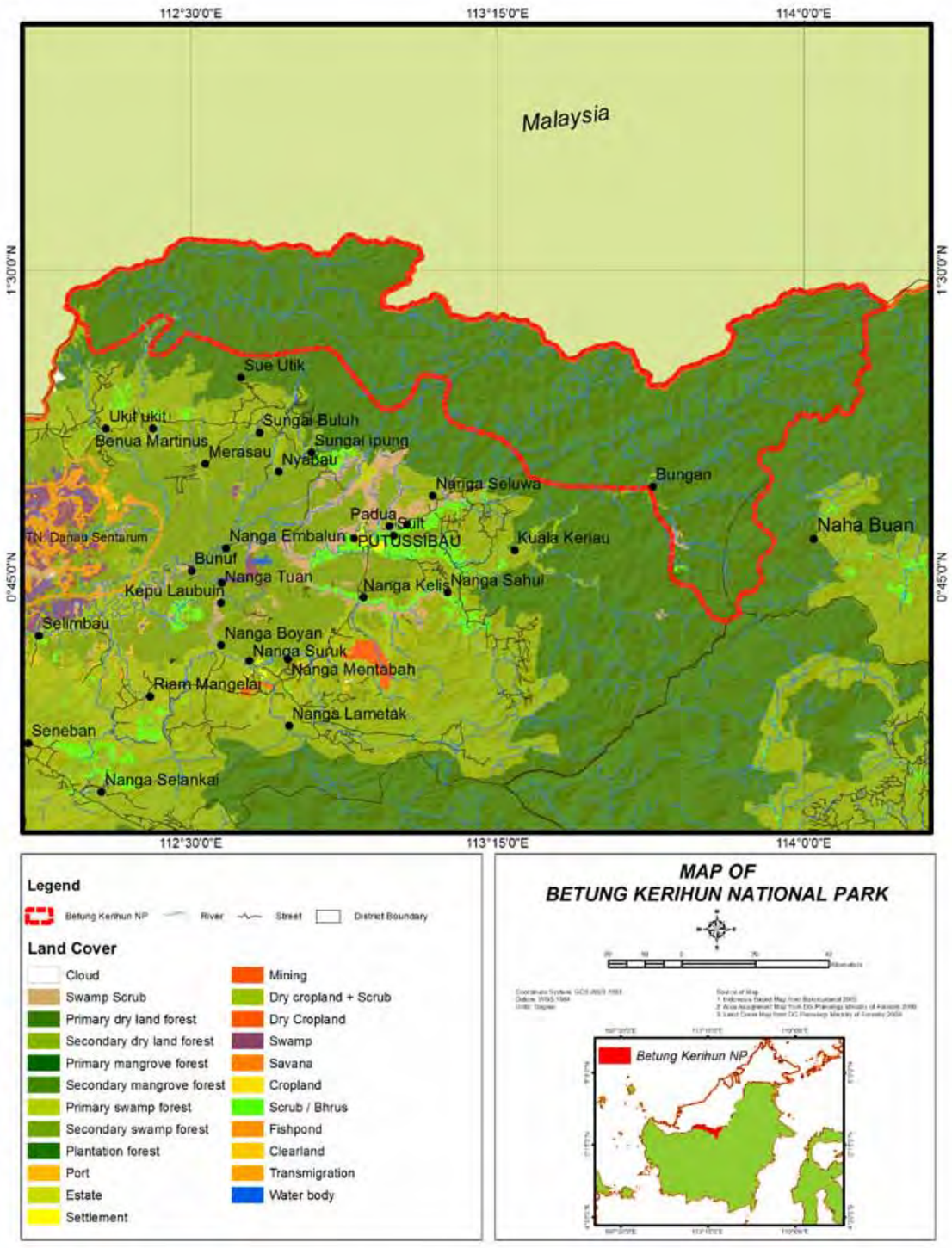


Figure 8-1. Map of Betung Kerihun National Park

Biodiversity

As Betung Kerihun encompasses two mountains, and its ecosystems are mostly mountainous, but there is a wide range of vegetation types, from lowland to lower montane and upper montane tropical rain forests. This unique assemblage of ecosystems contains a rich biodiversity of plants and animals. More than 1,200 tree species have been recorded in the area, including 75 trees endemic to Borneo and 14 potentially new tree species (Chai *et al.* 2003, ITTO 1997).

The lowland forest is dominated by trees of the *Dipterocarpaceae* family, including *Shorea*. Members of the *Palmae* family are also found in the area, such as *Arenga*, *Calamus* and *Bambusa*. Other tree species in the area include *Dyera costulata, Alstonia scholaris* and *Eusideroxylon zwageri*. In the lower montane area, members of the *Dipterocarpaceae* family (*Shorea, Vatica, Dryobalanops*) are dominant, but other tree species easily encountered in this area are *Syzygium, Litsea, Callophylum inophyllum* and *Durio carinatus*. In the montane ecosystem, various species of *Shorea* still occur, and typical montane species such as *Casuarina junghuhniana* and *Syzygium* sp. are also frequently found. The trees are shorter here, and plants such as *Pandanus, Calamus* and various *Nepenthes* are common (Balai Taman Nasional Betung Kerihun 2010a, ITTO 1997, Soedjito 1998).

The park is home to more than 48 species of mammals, including the Bornean orangutan *Pongo pygmaeus*, the Bornean gibbon *Hylobathes muelleri* and the long-tailed macaque *Macaca fascicularis*. Other mammal species commonly found in the area include the Malayan sun bear *Helarctos malayanus*, the sambar deer *Cervus unicolor*, and the greater mouse-deer *Tragulus napu*. At least 301 bird species have been recorded in the park, including 63 protected species, of which 24 are endemic to Borneo. Some 112 freshwater fish species have also been recorded, of which 14 are endemic to Borneo (Soehartono *et al.* 2007, Meijaard *et al.* 2005, Rahmatika 2001, Rijksen & Meijaard 1999).

To further explore the richness of species within the Betung Kerihun National Park, in 1997 the University of Tanjung Pura (Pontianak) and the Lanjak Entimau Wildlife Reserve of Sarawak, Malaysia, with the support of ITTO and in cooperation with scientists from the Indonesian Institute of Sciences, conducted the ITTO Borneo Biodiversity Expedition (Box 8-1). The expedition also covered the Lanjak Entimau Wildlife Reserve in Sarawak (Balai Taman Nasional Betung Kerihun 2000).

Support for Betung Kerihun National Park

The ITTO was the first major supporter of the development and conservation of Betung Kerihun National Park (Box 8-2). Support started in 1994 through an agreement between the Indonesian government and ITTO signed on 12 August 1994. Via its donor members (Japan, Switzerland and Indonesia), the ITTO agreed to provide USD 1,248,500 for Project No. 26/93 Rev. 1 (F) on the Development of Bentuang Karimun as a National Park Phase I. The objective of this project was to develop a model national park system that served the need to conserve species and ecosystems while improving the social economic situation of local communities. The project also indicated the possibility of extending this model to a regional cooperation between Indonesia and Malaysia so that in the future a large, contiguous wildlife sanctuary extending from Indonesia to Malaysian Borneo will be jointly managed.

BOX 8-1

Two Nations, One Conservation Effort

The ITTO Borneo Biodiversity Expedition (IBBE) was an example of successful cooperation in biodiversity conservation between two nations: Indonesia (Betung Kerihun National Park) and Malaysia (Lanjak Entimau Wildlife Reserve of Sarawak). The joint expedition, which covered 890,000 hectares of tropical rainforest of Borneo, was conducted in 1997, and participants were scientists from the Indonesian Institute of Sciences (LIPI), the University of Tanjungpura (Pontianak), the Directorate General of Forest Protection and Conservation Areas (DG PHKA - Ministry of Forestry) and scientists from the University of Malaysia, Sarawak and the Sarawak state forestry department.

The 30-day expedition identified more than 1,000 tree species, including more than 140 species of medicinal plants. The IBBE also observed five potentially new tree species and two new palm species, and collected 120 species of orchids, 168 species of bryophytes and 125 species of fishes, some of which are believed to be new species, and identified 291 bird species and six primate species.

The two conservation areas are believed to contain over 3,000 Bornean orangutans Pongo pygmaeus – a globally threatened species – and more than 50,000 Bornean gibbons Hylobates muelleri. These findings suggest that the two trans-border conservation areas are important sites for primate conservation.

Source: Chai *et al.* (2003), ITTO (1997)

The project was sub-contracted to WWF-Indonesia, and ended in 1998 with substantial achievements for biodiversity conservation and policy development, but very little impact on the local economy, especially on developing options for improving community livelihoods. Policy-wise, the project successfully consolidated a joint task force for trans-boundary cooperation on the conservation of natural resources, which met regularly to resolve relevant issues concerning conservation in the border region. However, as a result of many political considerations, the task force failed to properly address the issue of suppressing on-going illegal logging across the border. Another of the project's outstanding achievements was the implementation of the ITTO Borneo Biodiversity Expedition in 1997 and the production of a 1998-2023 Management Plan for Bentuang Karimun National Park.

Following the completion of ITTO Phase I in Betung Kerihun the ITTO continued supporting Lanjak Entimau on the Malaysian side, and Betung Kerihun through phase II of the project. The second period of support was financed by Japan and Switzerland through Project Agreement ITTO PD 44 Rev. 3 (F) entitled 'Implementation of a Community-Based Trans-Boundary Management Plan for the Betung Kerihun National Park, West Kalimantan, Indonesia - Phase II'. With a budget of USD 764,954, this project was also implemented through WWF Indonesia. The objective of the project was to create a respected, well-managed and well-functioning national park where local communities and other stakeholders were actively involved in the management and received fair benefit. Project activities included establishing the park boundaries and zone management, developing a basic infrastructure, assessing traditional knowledge and its socio-economic aspects, developing a database and information system, and further studies on the park's biodiversity and ecosystems.

Ngurah Pradnyana

Phase II of the project was completed in 2007. Overall the project achieved its goal and was considered successful. It greatly increased the level of government commitment to the park, and succeeded as far as was possible in promoting the interests of local people. The project also established a park management unit in Putussibau town which will maintain the long-term programme. Project outputs included the demarcation of the park boundary, although its legitimacy with local stakeholders, especially the community, was questioned. An added complication was that the international border is marked by the National Topographical Agency. The park office was constructed and furnished, and effective administrative systems put in place. A database and information system was developed, and work began on compiling relevant information on biodiversity and social-economic of Betung Kerihun. The awareness programmes also achieved remarkable levels of recognition for the park throughout almost all the target communities.

Despite these successes, progress on socio-economic development such as agroforestry and eco-tourism was limited. Although the community had been very supportive towards the park's development, villagers gained very few direct benefits from the project and the park. While the park and WWF kept promoting the great economic opportunities which would come from ecotourism in Betung Kerihun, some villagers began to get frustrated by the lack of real benefits, and started to doubt whether the economic opportunities and benefits to the community were really so significant. Despite

these failings, the ITTO has contributed to the park's conservation and development. In particular, it has pioneered and fostered a high level of involvement of local people in developing Betung Kerihun. It has also brought Indonesia and Malaysia together to work closely on conserving the two contiguous large tropical forest ecosystems: Betung Kerihun National Park and Lanjak Entimau Wildlife Reserve.

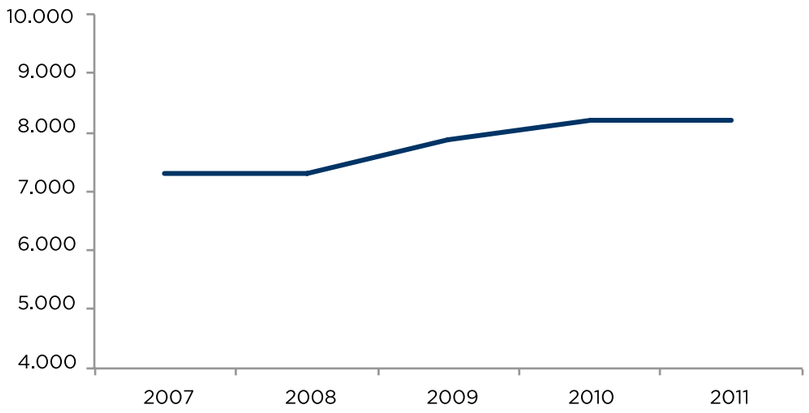


Figure. 8-2.
Population of the villages within Betung Kerihun National Park and in the buffer zone of the park, 2007-2011.

Source: Report from Betung Kerihun National Park (2011)

Socio-Economic Status

Eight Dayak ethnic groups reside in and around Betung Karihun National Park: Dayak Iban, Tamambaloh, Taman Sibau, Kantu, Kayan Mendalam, Bukit Mendalam, Bukat Metelunai, and Punan Hopongan. These groups live in 12 separate villages or sub-villages, of which two – Nanga Bungan and Tanjung Lokang – are inside the national park. Five villages lie in the park's buffer zone: Sadap, Banua Martinus, Ulu Palin, Nanga Potan and Nanga Ovaat (Ngo 1998). The population growth in the region has been relatively high in the last five years, at somewhere around 10.92%, or 2.18% annually (Fig. 8-2).

Most – if not all – of these communities practice traditional shifting cultivation with slash and burn systems. Major sources of protein are from wildlife hunting in the Park and its surroundings. Some of the communities also practice more stable agricultural activities, such as sporadically planting coconut, local coffee and fruiting plants such as snake skin fruit and durians. However, due to the limited scale of production, low quality of products and difficult access to markets, these economic activities are difficult to enhance and growth has been slow (Prihatno, Head of the Park, *pers comm.*, 2011, Balai Taman Nasional Betung Kerihun 2000, Ngo 1998).

With this simple livelihood, people lack opportunities to develop economic options. Educationally, they also lack facilities and support from the Government. Although in general they live in peace and in harmony with the nature, this delicate relationship can be very fragile when it is confronted with the opportunities to make quick cash through providing timber, protected wildlife or other products from the Park to outsiders (Prihatno, Head of the Park, *pers comm.*, 2011, Anonymous 2002, Bennet & Stuebing 1997).

BOX 8-2
ITTO Funds to Betung Kerihun National Park

It was a Friday, some time in September 1992, when Dr. Paul Chai from the Sarawak State Forestry Department visited the office of the West Kalimantan Sub-Balai Konservasi Sumber Daya Alam (KSDA, being the PHKA Directorate General Management Unit). His surprise visit to the office was to discuss possible tourism collaboration between the Sarawak Forestry Department and the West Kalimantan Forestry Office. Apart from his position as a senior manager in the Sarawak Forestry Department, Dr. Chai was also in charge of the ITTO conservation project in Lanjak Entimau Wildlife Reserve (LEWR) on the southern tip of Sarawak, bordering the north-eastern corner of West Kalimantan province.

He came to the Sub-Balai KSDA office because he had identified Danau Sentarum as the first (target) collaboration area, and he knew that the area was under the supervision of Sub-Balai KSDA in West Kalimantan. He was also aware that Danau Sentarum was the subject of a project supported by DFID-UK. He believed that Danau Sentarum could be an interesting attraction for tourists who stayed in the Hilton Batang Ai Longhouse Resort, as the distance between the two places was only a couple of hours by car and half a day on foot.

At the time Danau Sentarum was a wildlife reserve, and so tourism was prohibited by Indonesian law. Paul's initial idea was soon abandoned, but the two parties sought another option for collaboration, and eventually agreed to develop the first trans-boundary cooperation among Bentuang Karimun Strict Nature Reserve, Lanjak Entimau Wildlife Reserve and Batang Ai National Park. The meeting was short because of Friday prayers, but Paul promised to provide the Sub-Balai KSDA with information on the ITTO project by sending the relevant ITTO documents, and to provide a supporting letter to ITTO.

Following the exchange of letters and documents between the two parties (there were no internet or email facilities in the Pontianak Sub-Balai KSDA at the time), Paul agreed that the Indonesian side would be the most eligible institution to submit the proposal to ITTO, because Lanjak Entimau was still under ITTO sponsorship until 1994. In January 1993 the proposal for trans-border cooperation among Bentuang Karimun Strict Nature Reserve, Lanjak Entimau Wildlife Reserve, and Batang Ai National Park was completed in the Sintang Hotel (the city of Sintang is in West Kalimantan) and edited by Fernando Pottes, a USAID-NRM project advisor to Bukit Baka-Bukit Raya National Park. Because of difficulties estimating the budget for the Sarawak side, the proposal contained a budget for the Indonesian side only.

In the early 1993 the proposal was submitted directly to ITTO in Yokohama with a copy to the Directorate General of PHKA. Surprisingly, ITTO Executive Director Dr. Frezaillah responded within two weeks, informing the proponents that with some-fine tuning the proposal was suitable for funding by ITTO's donors, and requesting that it be re-submitted through Indonesia's focal point to ITTO: the Forestry Ministry's Bureau of Foreign Affairs. The ITTO letter was also copied to the Indonesian Forestry Ministry's Bureau of Foreign Affairs.

As requested by ITTO, the bureau and the relevant institutions in the ministry then took over the development of the proposal for the trans-border cooperation. Finally, after a tedious process, the project for developing Bentuang Karimun National Park and trans-border cooperation with Lanjak Entimau Wildlife Reserve (including Batang Ai National Park) commenced in 1994.

The Park has so far made very little contribution to the improvement of local people's incomes and assets. There have been numerous initiatives on eco-tourism business, agroforestry, garden plantations and sustainable harvest of non-timber forest products for the community, either from the local Government, the Park authority or NGOs, but the problems of access to the Park have been hampering these efforts (Fig. 8-3a). For the last 10 years, numerous community empowerments programs supported by WWF-Indonesia also have invested large amounts in some of the communities, yet so far the results have not been significant, raising the question of whether the programs were properly designed (ITTO 2010, ITTO 2002, Ngo 1998).

The Park and its Partners

Since its establishment, Betung Kerihun National Park has enjoyed support from the local government in Kapuas Hulu regency. In 2001 the Bupati (regent) of Kapuas Hulu declared on national television that Kapuas Hulu was the first 'Kabupaten Konservasi' (Conservation Regency) in the nation. He gave an assurance that his government would not touch any of the resources belonging to the park, and to implement his ideas he requested the Ministry of Forestry and the central government to compensate the regency for the protection of Betung Kerihun National Park to the tune of IDR 100,000 per ha annually, or IDR 80 billion (about USD 10,000,000) annually. This handsome sum of money would be dedicated to improving the economic development of villagers who inhabit the area in and adjacent to the park.

This notion immediately sparked nationwide controversy. Many agreed with the idea, though some were very sceptical. The government was not in a position to provide the funds, and so it opposed the idea in general, and in particular it questioned the trustworthiness of the local authority to spend the compensation. Nevertheless, this smart initiative by the Regent snowballed, with some Bupati, including the one in Malinau regency who supervised Kayan Mentarang National Park, following the idea by making similar declarations. During this period seminars and workshops sponsored by universities and NGOs such as WWF Indonesia on the issue of green conservation regencies appeared quite often at the national and provincial levels. However, the bupati who launched the concept did not insist on developing the idea further, and due to funding restraints the central government was quiet. The germ of the idea for Kabupaten Konservasi slowly disappeared.

Betung Kerihun long received support from WWF Indonesia through the ITTO fund. WWF Indonesia has operated in Putussibau and Kapuas Hulu since 1994, and maintained its relationship with the park authority. On 22 May 2010 the German government, through the GTZ (Deutsche Gesellschaft fur Internationale Zusammenarbeit, now GIZ), cooperated with the local government and WWF Indonesia to assist the park with a biodiversity day program in Kapuas Hulu (Fig. 8-3b). The park also works closely with School of Forestry of the University of Tanjungpura (Pontianak) and to some extent with Bogor Agricultural University's Faculty of Forestry in West Java (Anonymous 2010d).

Ngurah Pradnyana (above), Syarif M. Ridwan (below)

Figure 8-3a.
Boating against the rapid current is the best way to explore the interior of Betung Kerihun National Park.

Ngurah Pradnyana

Figure 8-3b.
Wildlife and culture are special attractions at Betung Kerihun National Park.

Park Management and Support

The park is supported by almost 100 officers including the park manager (Fig. 8-4). This number is far from adequate to control and manage the park's 800,000 ha, especially since the park is tasked with improving the prosperity of local communities in the park and surrounding areas.

The park has seen a substantial increase in its budget over time, with an annual increment of approximately 25-30% (Fig. 8-5). In 2010, the park received about IDR 11 billion, which was allocated for salaries, programmes, activities and other routine expenses. The ratio of budget to area is about USD 1.52 per ha annually.

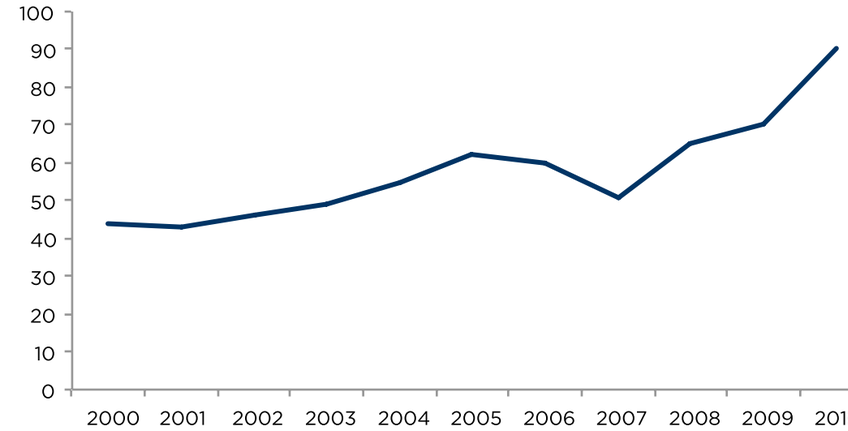


Figure 8-4.
Number of officers in Betung Kerihun National Park, 2000-2010.
Source: Sekretariat Direktorat Jenderal PHKA (2010)

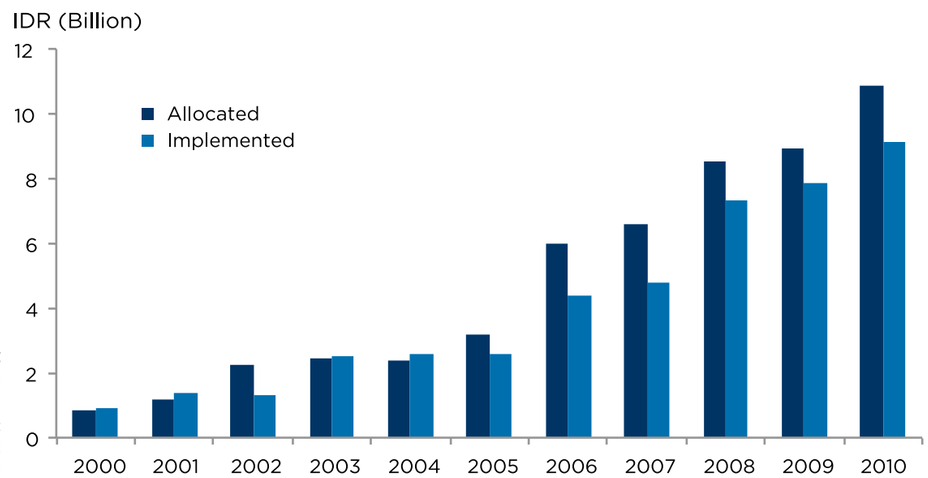


Figure 8-5.
Budget of Betung Kerihun National Park, 2000-2010.
Source: Sekretariat Direktorat Jenderal PHKA (2010)

Local People's Views About Betung Kerihun National Park

In June 2010 750 questionnaires were distributed randomly to members of the communities who live in and adjacent to the Betung Kerihun National Park. The aim of the survey was to discover the views of local people on the national park's role, function and management. Of the 750 questionnaires 318 were filled and returned. The respondents comprised 71% men and 28% women.

Most respondents are farmers (86%), and other occupations include traders (2%), government officers (2%), freelancers (2%) and students (0.3%), with 7% of unidentified status. Their education background ranged from no formal education (14%) to elementary school (41%), junior high school (17%), high school (18%) and bachelor's degree (0.6%), and the rest (9%) refused to give information on their educational background. Their opinions are classified into six categories: (1) familiarity with the park, (2) knowledge of the park boundaries and regulations, (3) knowledge of the park's protected species, (4) knowledge of the park's management, (5) support for the park, and (6) the park's programmes and benefits. Detailed percentages in each category are presented in Fig. 8-6.

1. Familiarity with the Park

Approximately 72% of respondents know that Betung Kerihun holds the status of national park. Of that number, some 30% are living within the park, while the rest learned about the park's status either from friends (24%) or from the media (8%).

2. Park Boundaries and Regulations

About 38% of respondents do not know about the boundaries of Betung Kerihun National Park, and only 3% people were aware or somewhat aware of the park boundaries. About 37% of respondents were aware of the park's regulations, while the remainder either did not know at all (35%) or did not respond. When asked about the rights and responsibilities of people who are settled in or around the park, only 31% of respondents were not aware at all. This is good news for the park, but surprisingly only 33% of the community are somewhat aware or aware of the consequences of violating the rules of the park. Given this low figure, the park management should invest more energy in awareness of the rules and function of the park towards the community.

3. Protected Species

The percentage of the community aware of protected species of fauna (47%) and their habitat (43%) is much higher than those who admitted not knowing at all. Likewise, the percentage of people who are aware of protected flora species (47%) and their habitat in Betung Kerihun National Park (42%) is also higher than those who responded that they are not aware at all. Interestingly, the percentage of people who know about protected fauna and flora is almost identical to the percentage of the knowledge in each habitat.

4. Park Management

The percentage of the community who know of the existence of the park management and its officers (36%) is coincidentally similar to those who admitted not knowing at all, while the percentage of respondents who responded that they are aware of the role and function of the park management in Betung Kerihun is slightly higher (39%) than those who admitted not being aware at all (33%). Given the fact that only 36% of the community know the park management and officers, it is not surprising that only 29% of them rated the park management as good or very good. The remaining respondents answered either not good or very bad (40%).

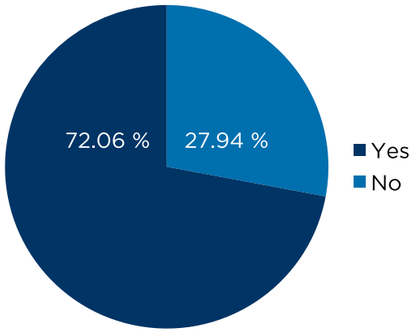
5. Park Support and Management System

Almost 50% of respondents support the establishment of Betung Kerihun as a national park, while only 35% of respondents agree with the current system of management of Betung Kerihun National park whereby the government fully manages the area. Surprisingly, the same percentage of respondents opposed this concept of park management. In contrast, some 62% of respondents wanted Betung Kerihun National Park to be managed by the local community or for it to be managed collaboratively between the local community and the government (61%). More surprisingly, the number who oppose the idea of abandoning the status of Betung Kerihun as a national park (29%) is much lower than the number of respondents (41%) who agree that the status of the area should no longer be a national park.

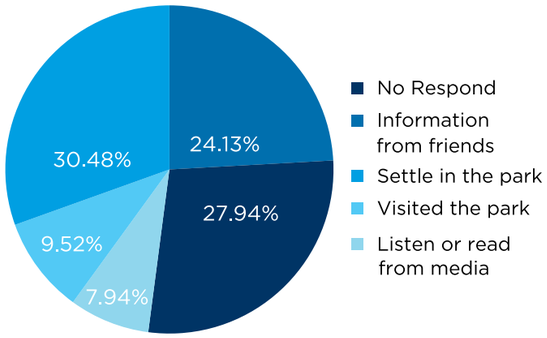
6. Park Programmes and Benefits

Many of the respondents (65%) support the idea of developing ecotourism in Betung Kerihun National Park. However, some (35%) support the idea of converting part of the park area into oil palm or timber concessions. This is quite a substantial percentage, and perhaps a signal to the management that some of the community are economically not too happy with the status of national park. Surprisingly, only 27% of respondents opposed the concept of allowing local communities to harvest resources sustainably from the park area. When asked whether the park has provided economic benefits to local communities, 37% responded that they disagree, and 35% agree. In addition, only 37% of respondents believe that the park has provided protection for their livelihoods.

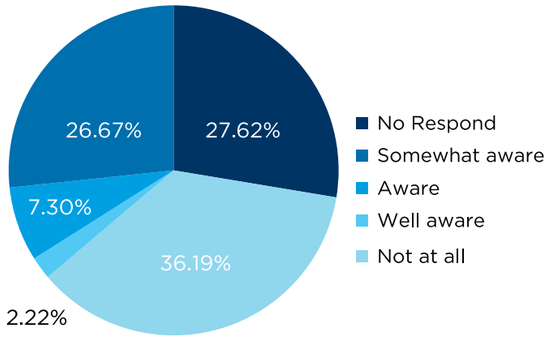
Figure 8-6.
Opinions of local people regarding various issues of Betung Kerihun National Park



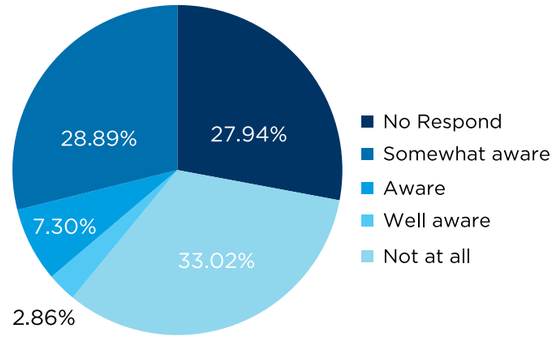
Aware of the park existence



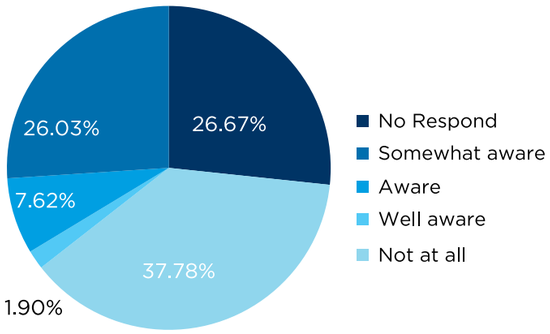
Source of information about the existence of the park



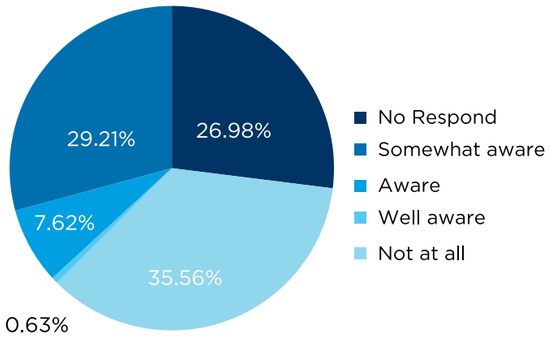
Aware of the existence of the park officers



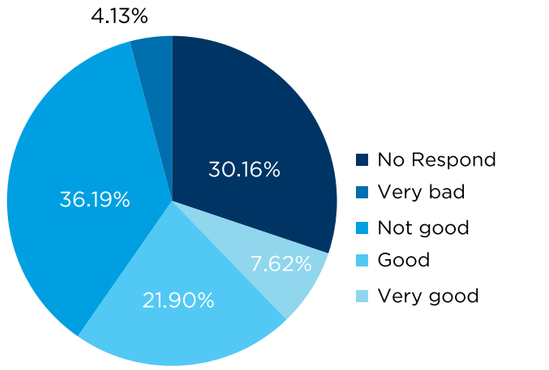
Aware of the tasks and role of the park officers and their management



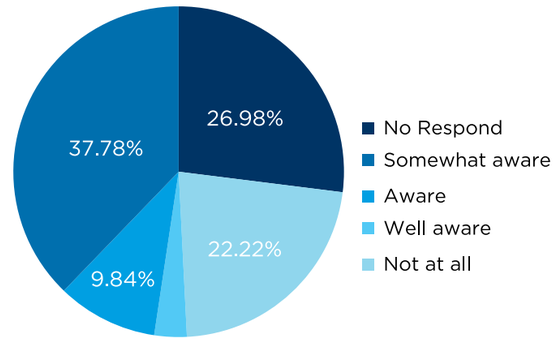
Aware of the park boundary



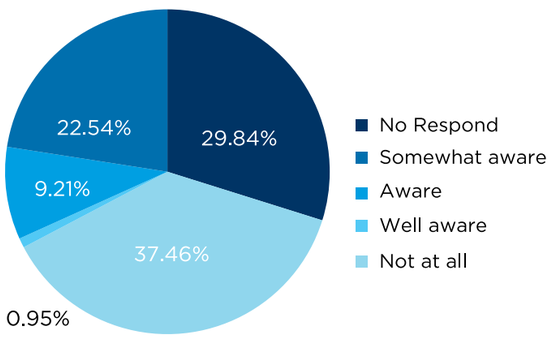
Aware of the park's regulations



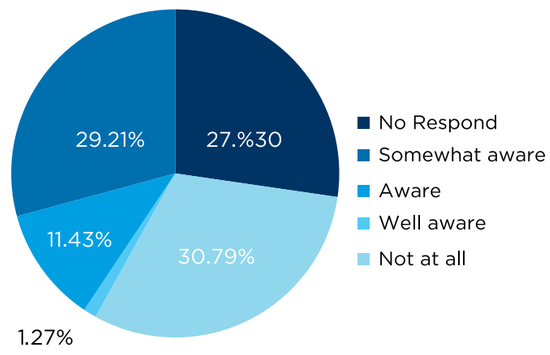
Management quality of National Park



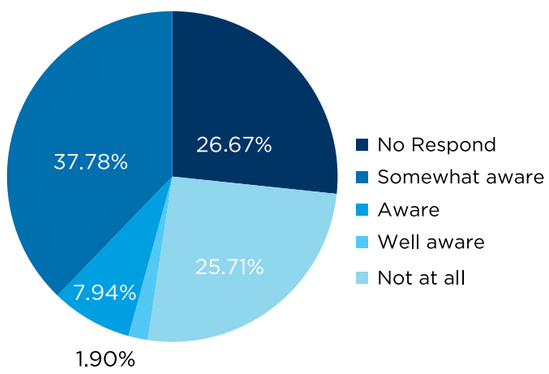
Aware of the importance protecting endangered species and its habitat



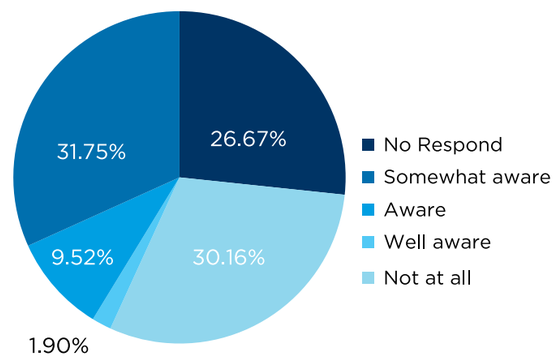
Aware of the consequences of violating the rules of the park



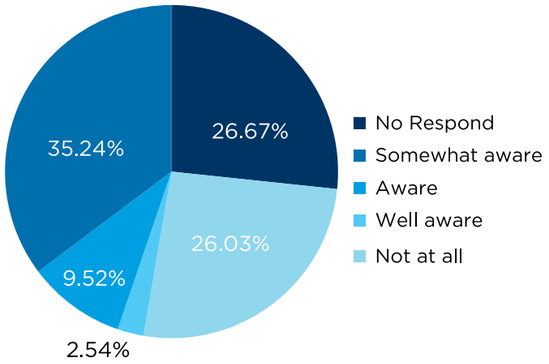
Aware of the rights and responsibilities of people who settle within the park



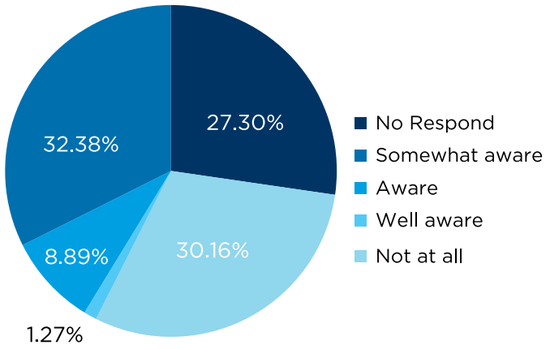
Aware of protected fauna



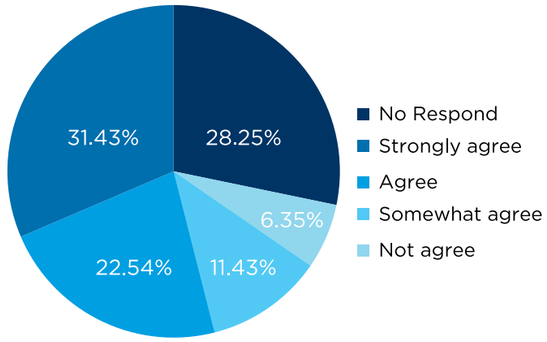
Aware of the habitat protected fauna



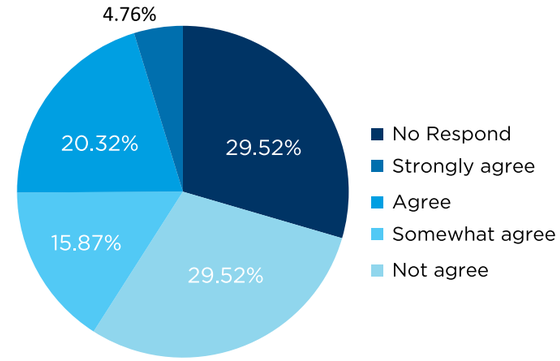
Aware of protected flora



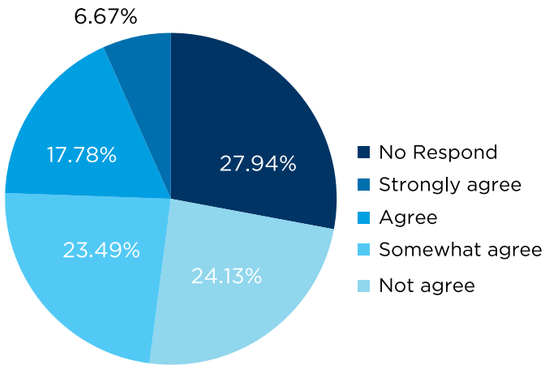
Aware of the habitat of protected flora



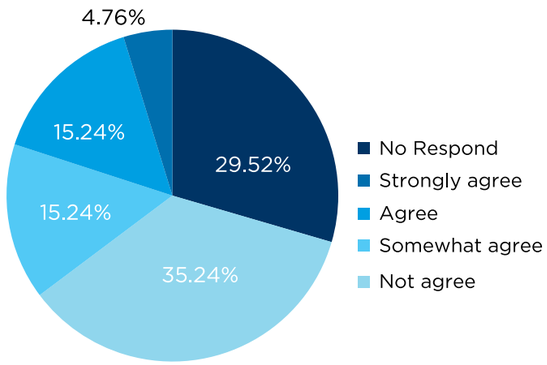
Agree that part of the park should be converted to timber concessions or oil palm plantations



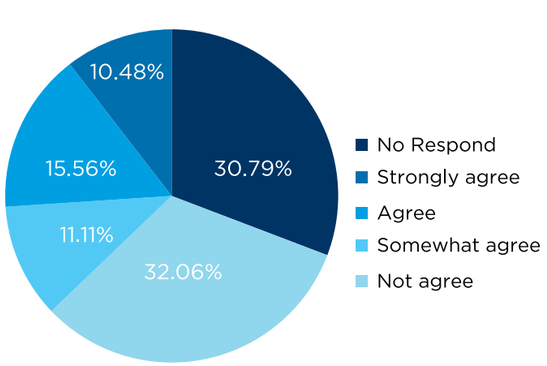
Agree that the Betung Kerihun ecosystem should no longer hold national park status



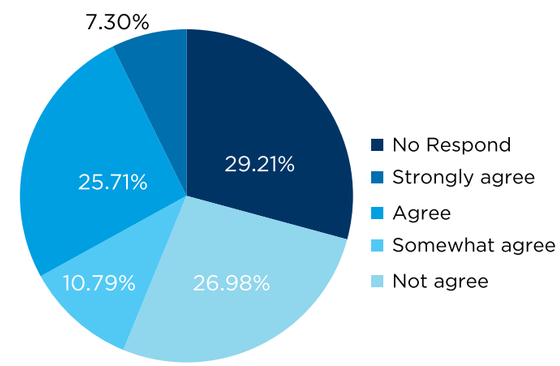
Agree with the establishment of the park



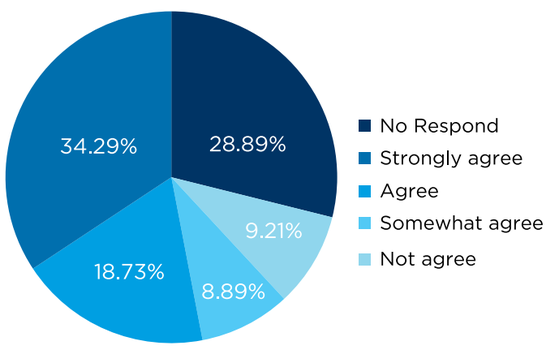
Agree that the government should fully manage the park



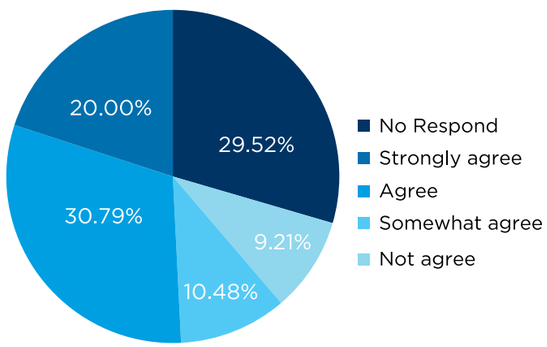
Agree that the park has provided economic benefits to the community



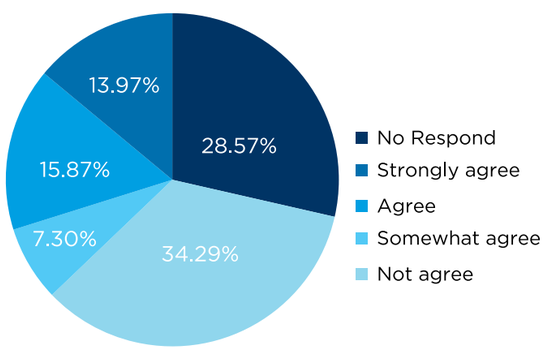
Agree that the community should be allowed to harvest resources from the park



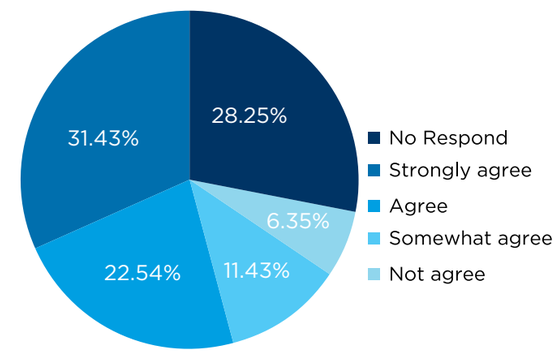
Agree that the park should be managed by the local community



Agree that the park should be managed collaboratively by the local community and the government



Agree that the park has provided protection for the livelihood of the community



Agree that an ecotourism programme should be developed in the park

Kayan Mentarang National Park

CHAPTER 9

THE SHANGRI-LA OF BIODIVERSITY AND CULTURE IN KAYAN MENTARANG

Kayan Mentarang National park is vast, covering 1.34 million ha of splendid montane tropical forest ecosystem stretching from the northeastern tip of Kalimantan at the border with Malaysian Sabah to the north and Sarawak to the west (Fig. 9-1.). The park is the largest conservation area in Borneo, and is home to an extraordinary array of wildlife and flora. Most of the park (60%) lies within Malinau Regency, and the rest in Nunukan Regency. The park's remote location in the distant interior of Borneo island makes it safer from illegal activities and human intervention than other parks on the island (Anonymous 2005, ITTO 2003).

The montane ecosystem of Kayan Mentarang (Fig. 9-2) was first studied and assessed in 1979 by Dr. McKinnon and John Blower, who were under contract to FAO-UNDP to develop the first National Conservation Plan (NCP) for Indonesia for 1981 to 2005. Following the NCP's recommendations, the Indonesian Ministry of Agriculture established the 1,306,500 ha Kayan Mentarang as a strict nature reserve through Ministerial Decree No. 84/Kpts/Um/II/1980 dated 25 November 1980 (Departemen Pertanian 1980).

On 7 October 1996, the Ministry of Forestry changed the status of the area to national park through Ministerial Decree No 631/Kpts-II/1996. However, it was not until February 2007 that the park was equipped with a management unit, staffing and a regular budget, plus an office in Malinau. Between 1980 and 2007 the central government simply requested the East Kalimantan unit of the Natural Resources Conservation Agency in the East Kalimantan provincial capital of Samarinda to supervise Kayan Mentarang with a very limited budget. In practice, before 1990 the area was almost ignored, and received no government intervention (ITTO 2003b, Departemen Kehutanan 1996).

In 1990 the People's Museum Development Programme supported by WWF Indonesia and the Ford Foundation initiated a culture and conservation project in Kayan Mentarang. The project studied tenure systems and the interaction between people and their natural environment. At the same time, the Ministry of Forestry in cooperation with the Indonesian Institute of Sciences and WWF began the first Kayan Mentarang Integrated Conservation Development Project (ICDP), the goal of which was to establish conservation management and integrated economic development in Kayan Mentarang.

This project was followed by the first pilot project on community mapping in Kayan Mentarang in 1992, supported by USAID, WWF, the Danish government (DANIDA) and GTZ. The project focused on and anticipated the much more recent rise in interest among policy-makers for integrating community forest, customary practices and tenure systems into national forest policy. Following this project's recommendations and additional biodiversity and ecosystem assessments by WWF Indonesia, the government changed the status of Kayan Mentarang Nature Reserve to national park (Anonymous 2005, Anonymous 2003a,b,c; Isager undated, Eghenter 2000).

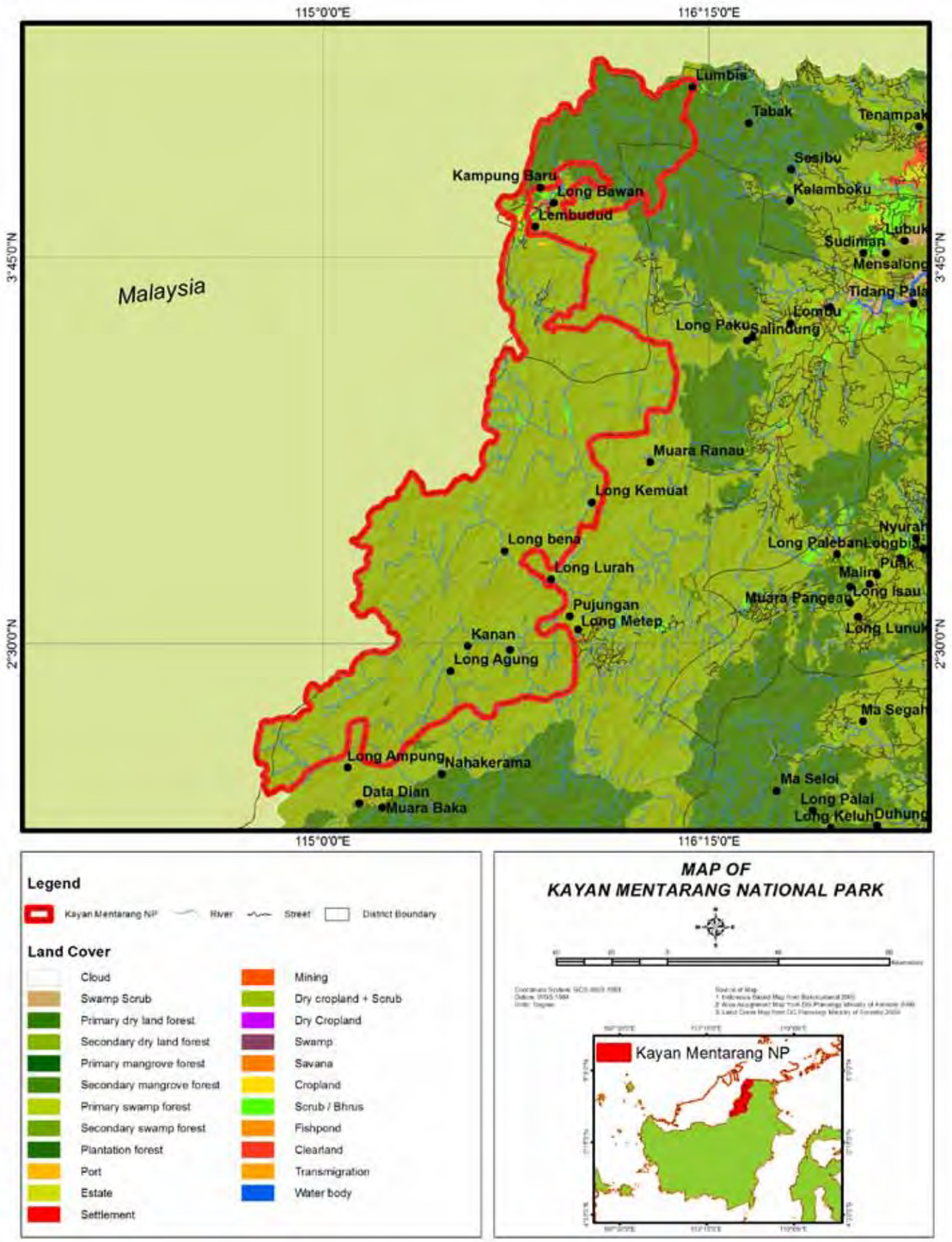


Figure 9-1. Map of Kayan Mentarang National Park

IGN Suteja-WWF Indonesia

Figure 9-2.
The pristine montane forest of Kayan Mentarang National Park

In 1996 the Indonesian government and WWF Indonesia secured financial support for Kayan Mentarang National park for 1996 to 1999 from DANIDA, the Development Agency of the Danish government. The objective of this project was to design the management of the protected area and its buffer zone in collaboration with the local community and the provincial and central governments. The project produced the first Management Plan for Kayan Mentarang National park (Departemen Kehutanan, 2005) (Box 9-1).

Subsequent to the first phase, in 2001 the Indonesian government was able to extend DANIDA's support for a second phase, from 2001 to 2003. Concurrently, ITTO agreed to support the Management of Kayan Mentarang National park to promote trans-boundary conservation along the border of Indonesia and Malaysia (Sarawak and Sabah state) from 2001 to 2003 (Box 9-2). WWF Indonesia was the executor of both projects. While DANIDA's support emphasized developing collaborative park management between the local community and the central government, the ITTO focused on trans-boundary conservation between the two countries, capacity building for the local community and constructing a basic infrastructure for the park. The ITTO project also supported a joint expedition between Indonesia and Malaysia on biodiversity conservation in Kayan Mentarang National Park (ITTO 2003c) (Box 9-3).

Following these two projects, on 4th April 2002 the Ministry of Forestry endorsed the first plan for the collaborative management of Kayan Mentarang between the local community and the central government. Other donors such as GTZ-Germany (Box 9-4) and DFID-UK also supported the park development. Finally, in 2007 the Ministry of Forestry set up the park Management Unit with a main office in Malinau. Since then the park has been supported by regular funds and other relevant facilities from the central government via the Indonesian Ministry of Forestry (Anonymous 2005).

BOX 9-1

Danish Support for Kayan Mentarang National Park

The Danish government began supporting protecting the tropical forests and biological riches of the area in 1996 with the establishment of the Community-Based Development of Kayan Mentarang Phase I project, planned for the period 1996 to 2000. This project was channelled through WWF Indonesia and covered extensive inventory and participatory mapping of the resources within Kayan Mentarang area. It also supported the rights of the Dayak communities living in and around the park to participate in the sustainable management of the park.

In 2000 DANIDA established Phase II of the project, Community-Based Park Management of Kayan Mentarang, to support the completion and implementation of the community-based park management plan over three years. The Phase II project ended with a significant breakthrough for collaborative management in Indonesia: the establishment of Dewan Penentu Kebijakan (the Policy Board) for the Kayan Mentarang National Park. In addition, the concept of community-based management of the park area became the impetus for consensus on the park boundaries between the community and the park authority. The project also managed to produce the park's long-term management plan, which was endorsed by the Ministry of Forestry.

In 2003 DANIDA, WWF-Denmark and WWF-Indonesia agreed to extend their activities again without additional funding until 2006. During this period the project aimed to strengthen the implementation of collaborative management, to improve the capacity of villagers to manage the park resources, and to develop options for community livelihoods which would enhance their economic situation. Within this period the project facilitated an extensive exercise in collaborative park management, identified potential high value commodities, introduced community-based ecotourism and conducted initial training, and enhanced the quality and market opportunities of communities' handicraft products.

However, due to its limited duration neither aim was fully achieved. The collaborative management system faced difficulties due to intractable problems concerning tenure systems and could not be implemented smoothly. At the same time, improvements in livelihoods and local economic conditions also fell below expectations, as happened with many similar projects associated with local communities. The isolation of the park and lack of basic infrastructure such as market access and transportation made generating economic benefits in the area quite challenging. Despite falling below expectations, both efforts planted seeds for the future of Kayan Mentarang.

Source: WWF (2005), Departemen Kehutanan (2002b,c), KMNP-FORCLIME-WWF (undated)

BOX 9-2

ITTO Project on Trans-Boundary Conservation

The ITTO project titled "Management of Kayan Mentarang National Park to Promote Trans-Boundary Conservation between Indonesia and Malaysian States of Sabah and Sarawak (Phase I); ITTO Project PD 38/00 Rev. 1 (F)" was developed after a long process of intensive discussion between a number of stakeholders at all levels, both in Indonesia and Malaysia, on the issue of conservation within trans-boundary areas. Both sides wanted to ensure that this project would benefit the local communities by strengthening collaborative management between the two countries. The project was expected to improve cooperation on trans-boundary conservation areas, contribute to the establishment of sustainable park management in the trans-boundary area, increase stakeholder interaction from both countries, and raise awareness of the conservation value of Kayan Mentarang National Park in Indonesia, and Ulus Padas and Pulong Tau Protected Areas on the Malaysian side.

The project was implemented over two years, and focused on several outputs regarding strengthening the management of Kayan Mentarang National Park, including scaling-up resource capacity and developing community-based sustainable economic activities within selected border areas. A joint task force representing stakeholders in both countries was developed and met regularly to guide and monitor project implementation.

The project was implemented by the Directorate General of Forest Protection and Nature Conservation (PHKA) of the Indonesian Ministry of Forestry. The day-to-day operation was endorsed by ITTO, which contracted WWF Indonesia as the project executor in the field. In terms of achievements, the project managed to construct the Kayan Mentarang head office in Malinau and three ranger posts across the park. The project also successfully facilitated a Kayan Mentarang trans-boundary expedition by more than 130 people including 35 scientists from both countries, and supported ecotourism training for local communities, and regular meetings of the joint task force, bringing local government executives from Malinau and Nunukan regencies in East Kalimantan, including their council members, to visit and learn about national park management in Sarawak, Malaysia and Thailand.

Source: Anonymous (2005), ITTO (2003a,b,c)

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Kayan Mentarang National Park-WWF Indonesia

BOX 9-3

Biodiversity Expedition in Kayan Mentarang National Park

The Indonesian Ministry of Forestry, the ITTO, WWF Indonesia and TOTAL Foundation organised a joint biodiversity expedition to Kayan Mentarang National Park in April 2003.

Thirty-five scientists participated in the expedition from the Indonesian Institute of Sciences (LIPI), Bogor Agricultural University, the University of Mulawarman Indonesia, the Kalimantan Forestry Research Institute, the Sabah Forestry Department, the University of Sabah, the Sarawak Forestry Department and the University of Malaysia in Sarawak. The expedition was also covered by numerous Indonesian media including Kompas, The Jakarta Post, Radar Tarakan, Tribun Kaltim and national TV channel RCTI.

The major objectives of the expedition were to increase scientific cooperation between Indonesia and Malaysia in conducting biodiversity research, and to improve the capacity of local communities and young scientists involved in or planning to work in biodiversity in tropical forests, in particular in Kayan Mentarang National Park. The major discovery of the expedition was Raflesia pricei, a species which is relatively common in Sabah but had not previously been recorded in Indonesia. Potentially new species or possibly new genera discovered included a freshwater crab which was perhaps associated with an endemic species from Tioman Island in Peninsular Malaysia. A potentially new species of freshwater fish was also recorded: the Osteochilus sp., which appears to be closely associated with Osteochilus pleurotaenia. The complete report of the expedition is available in the ITTO library as well as in the WWF Indonesia library in Jakarta.

Sources: ITTO (2003a, b, c), Irawati & Mahyar (2003), Mogea (2003)

BOX 9-4

German Support for Kayan Mentarang National Park

Kayan Mentarang National Park is recognized by many to be a jewel in Borneo. The beauty of the ecosystem and the biodiversity along with the unique Dayak culture never fails to attract support. In 2001 the German Donor Agency GTZ started investing their technical capacity through the integrated Forest Fire Management Project in Kalimantan Phase III. This project aimed to scale up the capacity of local authorities and communities to prevent and manage forest fires and to provide basic organisation and infrastructure to control and deal with the issue of forest fires. This project ended in 2003 with successful achievements both in promoting awareness and providing forest fire trucks for Malinau regency.

The project's success and lessons learned from the forest fire project seems to have convinced GTZ to return and explore other possible cooperation with Kayan Mentarang and its stakeholders. At this stage, the German donor was interested in exploring further the biodiversity of the park, community based boundary demarcation and livelihood options for the villagers who inhabited the park. As endorsed by the Ministry of Forestry, the Kayan Mentarang National Park Management Project was sub-contracted to WWF Indonesia and commenced in December 2005. When the project was complete in November 2010 it had accomplished most of its objectives. Part of the park had been demarcated through a fair, consultative process with local stakeholders, while the new zoning system was still in the process of being communicated to some communities. An information system on biological diversity and natural resources was also established, and an outreach programme was working well. However, on the issues of livelihoods and local economic development the project did less well, with the communities questioning the direct economic benefits of the project to them.

The park authority and the project were fully aware of the problems. The project made numerous efforts to introduce potential economic improvements suitable for the local environment and culture, including community-based ecotourism development, sustainable harvest of non-timber forest products, cultivating medicinal plants and financing mechanisms. However, the remote location, access constraints, transportation problems, lack of capital investment and lack of understanding of local wishes and knowledge made progress difficult, and the sustainability of the programme was problematic. The GTZ project nevertheless made an invaluable contribution in supporting basic and important infrastructure, biodiversity information and an awareness programme for Kayan Mentarang National Park.

Source: Kayan Mentarang National Park (2011), Balai Taman Nasional Kayan Mentarang (2007), Suteja (former Director of Kayan Mentarang National Park, *pers. comm.)*

Kayan Mentarang National Park-WWF Indonesia

Biodiversity

The park comprises a wide range of ecosystems representing montane tropical Bornean forest. Low to high montane tropical ecosystems, tropical heath forest, riparian forest, semi-savannah and secondary forest are all recorded. The tropical forest is rich in vegetation belonging to the *Dipterocarpaceae*, *Burseraceae*, *Fagaceae*, *Myriaceae*, *Polygalaceae* and *Sapoteceae* families. Plant species frequently encountered in the forest include *Alstonia scholaris, Dyera costulata, Gonystylus bancanus, Agathis borneensis, Eusideroxylon zwageri, Gluta wallichii, Aquilaria malaccensis,* various orchid species, palm trees and pitcher plants. Several plants have still not been identified, and may therefore be new plant species to Indonesia.

The pristine forest of the park provides an ideal habitat for many species of Bornean wildlife. It is known to harbour no less than 337 bird species, of which 28 are endemic to the island, including the Bornean peacock-pheasant *Polyplectron schleiermacheri* and the wrinkled Hornbill *Aceros corrugatus*. There are also 100 species of mammals, including the banteng *Bos javanicus*, the clouded leopard *Neofelis nobulosa*, the marbled cat *Felis marmorata*, the bearded pig *Sus barbatus*, the deer *Muntiacus* spp., the Malayan sun bear *Helarctos malayanus*, the flat-headed cat *Prionailurus planiceps* and six species of primates: the white-fronted Langur *Presbytis frontata*, the maroon Langur *Presbytis rubicunda*, the pig-tailed macaque *Macaca nemestrina*, the long-tailed macaque *Macaca fascicularis*, the Bornean gibbon *Hylobates muelleri*, and the Western Tarsius, *Tarsius bancanus*.

There is also evidence that the park was once the habitat of the Bornean orangutan *Pongo pygmaeus* and the Sumatran rhino *Dicerorhinus sumatrensis*. The fragmented remains of a rhino's horn are preserved in house of the head of the Dayak ethnic groupin Paraye village (Wulfraat *et al.* 2005, Dedy 2005, Veith *et al.* 2004, Wulfraat 2003, Irawati & Mahyar 2003, Mogea 2003, ITTO 2003a, b, c, Nijman 2003, Stuebing 2003).

Since 1997, in an effort to ensure Kayan Mentarang National Park's survival as one of Indonesia's most important biological resources, WWF Indonesia in cooperation with TOTAL Foundation, DANIDA, WWF Germany and GTZ has constructed and developed a forest research station in Lalut Birai. The station has attracted and trained many professional biologists who are now working in many countries (Box 9-5).

BOX 9-5
Lalut Birai Research Station

One of the notable achievements and contributions of WWF Indonesia to Kayan Mentarang National Park and its community is the presence of the Lalut Birai Forest Station. The station was established in 1991 by WWF-Indonesia, with initial funding from the Ford Foundation, to serve as a simple base camp for research into biological diversity, natural resources and traditional and cultural facets unique to the communities in the park area. To improve local capacity, the station is managed by local staff originally from the nearest village.

Lalut Birai Research Station is located in the forest interior of the park, in the north-eastern part of Kalimantan. The station is equipped with a dormitory for researchers, students and park staff, a modest herbarium and a dining hall. It is surrounded by approximately 300 ha of natural forest ecosystem where most of the trees have been identified and marked, particularly along the trails which criss-cross the area to give access to this natural laboratory.

Since 1997 the station has received support as a long-term research programme from TOTAL Foundation, DANIDA, WWF Germany and BMZ. The objectives of this programme are to explore the park and obtain the ecological and social information needed for the management of Kayan Mentarang, and to develop sustainable livelihoods for the local community. The station also provides opportunities for visiting Indonesian and international scientists and students who wish to study the tropical forest and its cultural diversity.

For the last 15 years the station has been the centre of a great number of research activities in Kayan Mentarang National Park. Research into trees has included tree phenology, growth, recruitment and mortality, regeneration, forest productivity, forest restoration, and specific plant groups. Research into wild animals has produced a list of mammals, birds, amphibians, fishes, and crustaceans. The research documents are available in the WWF-Indonesia library.

IGN Suteja-WWF Indonesia

Source: Wulfraat *et al.* (2005), Anonymous (2005), Departemen Kehutanan & WWF (undated)

Socio-Economic Status

Seven main Dayak ethnic groups with a total population of almost 21,000 live in and around the national park: Lun Dayeh, Kenyah, Kayan, Punan, Sa'ban, Abai and Tagel. They are very reliant for their livelihoods on forest resources, including rice, which they store in barns (Fig. 9-3). Wild pigs, deer and other mammals are among their main sources of subsistence protein. Hunting in the forest usually peaks during the fruiting and flowering seasons when seeds are very abundant and the pig population migrates through the park area.

The Kayan Mentarang area is famous for gaharu, a type of tree resin used for incense that is taken from the infected wood of *Aquilaria* sp., which is abundant in the park and the surrounding forest. The area also produces damar resin and rattan. The Dayak community has long traded these products commercially with middlemen from all over Indonesia, particularly Samarinda, Tarakan and Balikpapan in East Kalimantan (Sellato 2001, Eghenter 2000).

During the last ten years, as Malinau and Nunukan regencies became more developed, additional sub-districts such as Pujungan, Hulu Bahau, and Krayan Selatan have been created, and some of the villages near the park have also been established as districts, including Pujungan and Long Bawang, which administratively covers the entire park. The park area covers parts of eight sub-districts and ten customary lands. Since the new regencies were established there has been an inflow of people from other regions of East Kalimantan and other provinces of Indonesia. Many government officers, particularly school teachers and regular civil servants, have also been deployed to the area to serve public needs. Many new households have also been formed by traders from other areas who moved to the new district near the park hoping to find employment opportunities (Balai Taman Nasional Kayan Mentarang 2007).

Since there is no infrastructure network connecting the district town and the villages in and around the area, people use rivers to transport everything they need, or occasionally fly on one of the small planes which sporadically serve the area. Three main rivers link most of the area: the Bahau (a tributary of the Kayan River), the Kayan and the Malinau. Areas in which no river passes the village or district are served by a regular subsidised air service provided by Malinau and Nunukan regencies, and for emergencies and charter purposes the Mission Air Fellowship provides a reliable air service which has operated in the area for many years with the aim of helping the needs of Dayak in the Kayan area (Balai Taman Nasional Kayan Mentarang 2007). Despite the access difficulties, the area was not completely free from illegal logging by outsiders. Reports indicated that some loggers were working in the northern part of the park (Obidzinski *et al.* 2006).

The difficulty of access means that goods and services in the area are expensive. During the rainy season when the rivers flood and the weather is often not suitable for flying, the cost of staple goods can triple or even quadruple. Over the past ten years, however, enormous progress has been made in terms of school and health facilities, with schools available in all villages and health centres in all sub-districts.

BOX 9-6

Forum Musyawarah Masyarakat Adat in Kayan Mentarang National Park

The idea to form *Forum Musyawarah Masyarakat Adat* (FoMMA) came from the traditional leaders of the ten customary lands of the national park area, who met in Long Bawan in 1998. The forum was formally founded during a meeting in Malinau in October 1999 facilitated by WWF. The forum is concerned with bridging the discrepancy between the national regulations and *adat* (traditional) regulations, and integrating the two different legal frameworks of national law and customary law into the management and conservation of natural resources in Kayan Mentarang National Park. Their initiative was particularly important because of the level of dependence of communities living in the park on its natural resources.

FoMMA was established two years after a coordinating group was formed consisting of elected members from each customary council in and around the park. The forum facilitates coordination between ethnic groups, and became a focal point in ensuring sustainable economic development and better management of the park. The forum also requested the central government to manage the park.

Members of the forum represent the customary councils of each of the ten *wilayah adat:* Pujungan, Hulu Bahau, Mentarang (and Mentarang Hulu), Lumbis Hulu, Tubu, Krayan Darat, Krayan Hulu, Krayan Hilir, Krayan Tengah and Kayang Hilir. FoMMA's highest decision-making body is the *Badan Musyawarah Adat* (Indigenous Consultative Body), which schedules meetings at least once a year to discuss and resolve issues regarding the communities and the park.

FoMMA's routine activities are managed by a secretariat comprising experts on community empowerment, customary law, and conservation and management of protected areas and national parks. The experts come from government, NGOs and the private sector. Funding for the forum's activities comes from potential partners and donors.

The forum was formally recognized as part of the collaborative management of the national park in 2000 after a recommendation to the Ministry of Forestry that their role as the park management be recognized, and a proposal to the ministry to establish a park *Dewan Penentu Kebijakan* (Policy Board) comprising relevant government officers, experts and members of FoMMA. In April 2002 the Ministry of Forestry officially recognized the policy board and established the first collaborative management of Kayan Mentarang National Park through Ministerial Decree No. 282/II/PIK-I/2002, which was also the first policy for the collaborative management of any protected area in Indonesia.

Source: Balai Taman Nasional Kayan Mentarang (2007), ITTO (2003a), Eghenter (2005), Departemen Kehutanan (2002b, c)

BOX 9-7

Dewan Penentu Kebijakan (Policy Board) of Kayan Mentarang National Park

The policy board of Kayan Mentarang National Park stipulated in Minister of Forestry Decree No. 1215/Kpts-II/2002 in April 2002 was proposed by FoMMA. The board is chaired in rotation by the head of Malinau regency and the head of Nunukan regency, and its members are the head of the East Kalimantan Provincial Planning Board, the head of Malinau and Nunukan Regency Planning Board, four members of FoMMA, the director of conservation areas and the head of the East Kalimantan regional PHKA office.

The tenure of the board is five years, and its terms of reference are to (1) facilitate the rights and aspirations of people in Kayan Mentarang and the local and provincial governments, (2) propose the management and structure of institutions in Kayan Mentarang National Park, and (3) provide regular technical and political advice to the management of the park. The board coordinates with the Director General of Forest Protection and Nature Conservation and is directly responsible to the Minister of Forestry.

Source: Kementerian Kehutanan (2002b, c), Eghenter (2004), Anonymous (2005), Balai Taman Nasional Kayan Mentarang (2007)

IGN Suteja-WWF Indonesia

Figure 9-3.
Lumbung (barn) in Alango Village.

In 2000, with the support of DANIDA Phase I and ITTO Phase I and facilitated by WWF Indonesia, the leaders of the communities in the ten customary lands formed an association called FoMMA *(Forum Musyawarah Masyarakat Adat)*, with the objective of representing their rights and voicing their aspirations regarding their rights to access and their status living in the park area, which is prohibited by law. The forum is also willing to assist the relevant governments in managing the park sustainably (Balai Taman Nasional Kayan Mentarang 2007, Anonymous 2005, Eghenter 2004, ITTO 2003c, Kementerian Kehutanan 2002b, c) (Box 9-6). FoMMA was also represented on the park's original policy board, *Dewan Penentu Kebijakan* (Box 9-7).

Park Management and Support

Even before the Kayan Mentarang management unit was established, the Ministry of Forestry through the PHKA management unit in Samarinda allocated financial support and officers to supervise the Kayan Mentarang National Park. The office in Samarinda also rented a small facility in Malinau to base staff assigned to supervise the park area.

Between 2001 and 2006 the government's financial support for the park was fully managed by the office of PHKA in Samarinda, and the budget was used mainly to support rangers who worked in the field, including travel between areas in the park. During that period fewer than six rangers were assigned to the park (Fig. 9-4). That number was far from adequate, considering that the park covers more than 1.3 million hectares and travelling conditions are extremely difficult.

East Kalimantan experienced severe forest fires between 1998 and 2001due to a long drought which was thought to have been caused by El Nino. To prevent further wild fires in the park, in 2003 the Indonesian government agreed with GTZ (the German International Cooperation Department) to install limited forest fire facilities in Malinau and to provide a package of capacity training for the rangers and local communities. Following this investment, the German government expanded assistance to the park with a number of support activities between 2006 and 2010.

On the funding side, there has been a substantial improvement over time, but there appears to be a problem with funding execution (Fig. 9-5). This is perhaps because of the distance between the Samarinda office and the representative office in Malinau, where there is no treasury office.

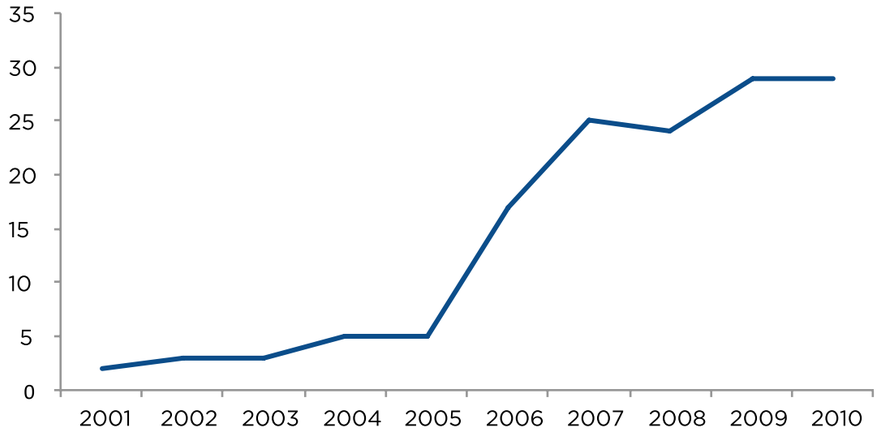


Figure 9-4. Number of officers assigned to Kayan Mentarang National Park, 2001-2010
Source: Statistik Kepegawaian Sekretariat Direktorat Jenderal PHKA (2010)

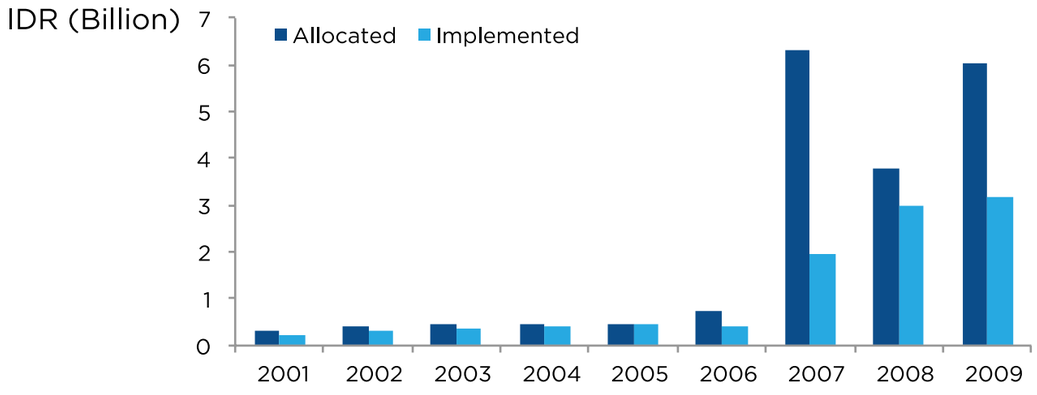


Figure 9-5. Budget for Kayan Mentarang National Park, 2001-2009
Source: Sekretariat Direktorat Jenderal PHKA (2010)

Local People's Views about Kayan Mentarang National Park

To understand the views of the local community who live in and adjacent to the park, 1,200 questionnaires were randomly distributed within the park area. Those who were willing to participate in the survey are representatives of the communities who live in Malinau, Pujungan, Alango, Krayan, Kayan Hulu, Kayan Hilir and other areas around the park (Table 9-1).

The occupations of the respondents range from farmers to traders, civil servants (including school teachers) and students, and some are unemployed or private entrepreneurs, independent labourers and others who did not identify their jobs. To find out whether their opinions of the park are consistent over time, the same questionnaire was distributed randomly to the same number of people in the same communities (but perhaps not the same respondents) in 2004 and 2010 (Table 9-2).

TaBle 9-1
Percentage of respondents by residence and year of assessment in Kayan Mentarang National Park.

Residence of Respondents	Percentage of Respondents	
	2004	2010
Malinau	14.75	11.54
Pujungan	4.80	7.96
Alango	4.92	20.30
Krayan	26.14	26.77
Kayan Hulu	13.19	10.95
Kayan Hilir	8.51	9.55
Others	27.70	12.93

TaBle 9-2
Percentage of respondents by status and year of assessment in Kayan Mentarang National Park.

Occupation of Respondents	Percentage of Respondents	
	2004	2010
Farmers	44.36	56.32
Trader	4.44	11.44
Civil servant and teacher	7.19	3.88
Unemployed	9.23	15.42
Student	7.19	10.05
Others	27.58	2.88

People's views of the park and its management, including those of NGO staff who assist the park management, are described under seven different categories (Figure 9-6):

1. Familiarity with the Park

Over the six-year period, the familiarity of Kayan Mentarang National Park among the communities decreased by almost 5% (from 72% to 77%). This figure is very high and quite unexpected. Most respondents said that they learned about the park from their friends and relatives. The percentage of respondents who knew about the park from the media declined over the observation period, while in the same period the number of people who visited the park increased. Visiting the park is defined as an activity involving going inside the forest area of the park as a tourist. Settlers who regularly go to the forest area for work are not considered visitors.

Despite the decline in familiarity with the park among the communities, the number of respondents who agreed or strongly agreed with the establishment of Kayan Mentarang as a national park increased substantially over the six-year period. This is a positive sign for the park, and the credit should go to the management for the achievement, as support from local stakeholders is growing. However, less than 13% of respondents were aware of the park boundaries, although this percentage increased by approximately 7% over 2004.

2. Park Regulations and Management

Although the picture of awareness of the park's regulations is not particularly encouraging, the percentage of people who were aware of the regulations seems to have increased over time. The increase is not significant, but there was a trend towards a higher percentage of respondents who were interested in or knew about the regulations from 2004 to 2010.

It is also likely that more people became aware of their rights and responsibilities inside the park area during the observation period. A similar trend was noted when people were asked whether they were aware of the park management and its officers who work in Kayan Mentarang.

3. Species and Habitat Protection

More than 16% of respondents were aware of the presence of protected species in Kayan Mentarang National Park in 2010, slightly fewer than in 2004. Surprisingly, the percentage of people who knew about the protected species in the park increased by approximately 8% in 2010. How this trend should be interpreted is unclear.

However, the percentage of respondents who were aware of the habitat of protected species in the park area showed a substantial improvement over the period of assessment. An inconsistency in the responses was also found when people were asked about the benefits of protecting the endangered or protected species in Kayan Mentarang National Park. The number of respondents who admitted that they were well aware of this issue increased in 2010, while the number who responded that they were aware of the benefits declined in the same year.

The same pattern as shown by the figures for awareness of protected species is shown by responses on the consequences of violating the rules on protected species and the protected area. The number of people who were aware was significantly up in 2010, but this increase appears to contradict the proportion of people who said they were well aware.

4. Management Effectiveness

Compared with the 2004 results, the number of people who responded that they strongly agreed or agreed with the current management system of Kayan Mentarang National Park (whereby the central government fully manages the park) increased in 2010. This is strange, considering that in 2010 only 15% of these people stated that they were aware of or acquainted with the park management and its officers.

Conversely, the number of people who agreed with the idea of the local community fully managing the park fell in 2010. Likewise, when asked whether the people in Kayan support the idea that the park be managed collaboratively between government and local community, the response was inconsistent. The number of people who stated that they agreed increased in 2010, while those who responded strongly agree and somewhat agree went down. It is hard to explain this figure. Perhaps the respondents were not aware that the idea of collaborative management includes both benefits and consequences. If that is the case, then the park management should reassess the willingness of the relevant stakeholders to play a role in the future management of the park. However, despite the limited familiarity of the local community with the park officers and management, the respondents gave credit to the current management in 2010. There was no observation of this aspect in 2004.

5. Support for the Park

In 2010 more than 45% of the respondents rejected the idea of converting the status of Kayan Mentarang National Park into a non-conservation area. Compared with 2004, this percentage increased by about 5%. On the other hand, those who agreed or strongly agreed with the idea of conversion showed some increase.

However, in 2010 there was a significant sub-set of people who opposed the idea of converting part of the park's area into oil palm plantation or timber concessionaire. Compared with 2004, the percentage of respondents who supported the idea also increased more than 10% in 2010. Perhaps, this is a warning to the management that there is a growing idea amongst some local people that they should have more benefit from the park.

In 2010 the number of people who strongly agreed that the park has provided economic benefit to the local community increased, while those who responded that they agreed with this proposition decreased. The percentage of people who agreed or strongly agreed that the park plays a role in protecting the livelihoods of local people had decreased in 2010, whilst those who believe that the local community should be allowed to extract the resources from the park's area had increased.

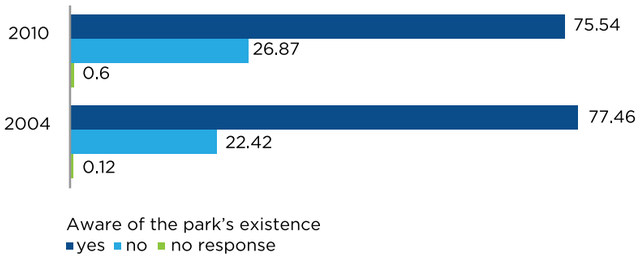
6. Observations on the Park's Stakeholders

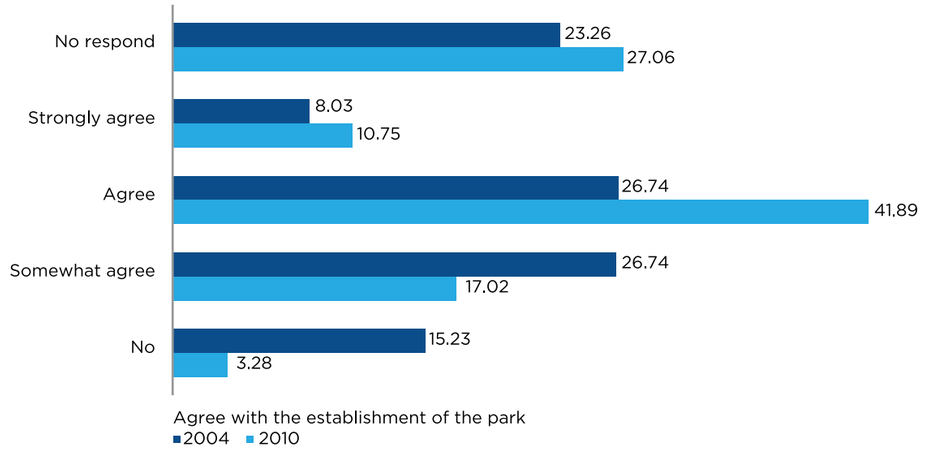
During the observation period only a small number of respondents were aware of the existence of the *Forum Musyawarah Masyarakat Adat* (FoMMA), but this number had increased somewhat by 2010. As the forum is very important to the local community's participation in managing the park, there is an urgent need for the management and relevant stakeholders to intensively communicate the existence of the forum to the community. The percentage of people who were aware of the presence of WWF and its role in Kayan Mentarang was correspondingly low at about 20% in 2010, but this number also showed an increase from 2004.

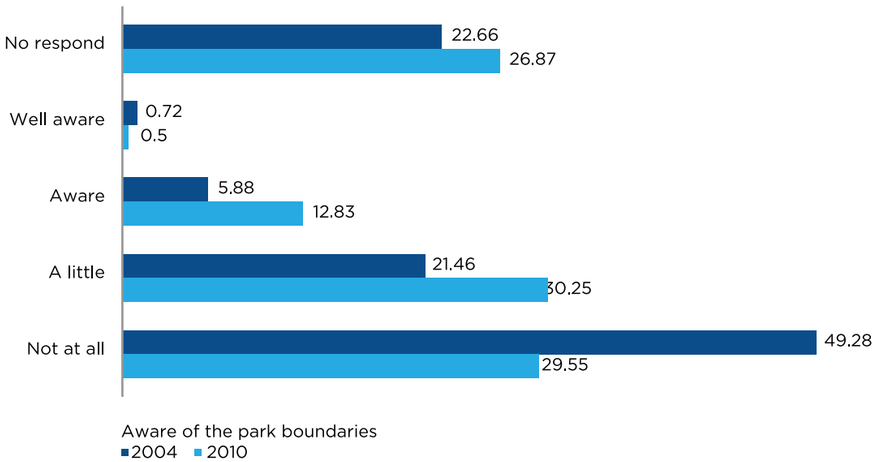
7. Park Programmes and Development

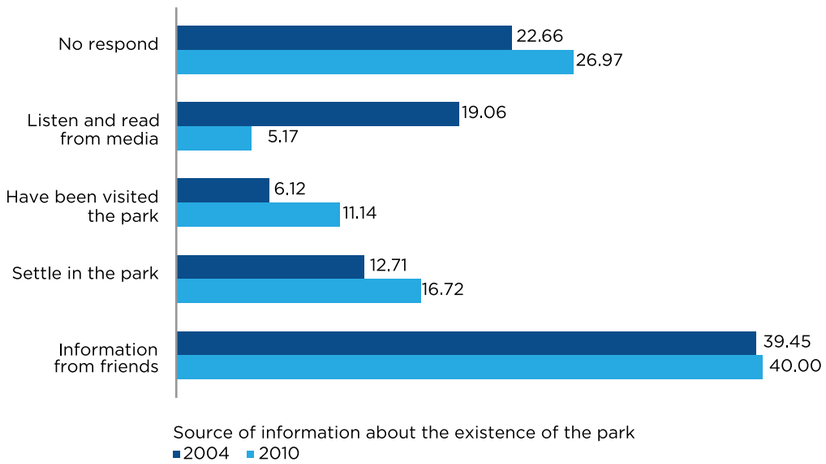
The idea of introducing an ecotourism programme in Kayan Mentarang National Park in general received a positive response. The same response was also received when the people were asked about the possibility of cooperation with the park in the neighbouring country. One interesting response in 2010 was that almost 30% rejected road construction in the park area. The percentage who agree to road development is reducing over time.

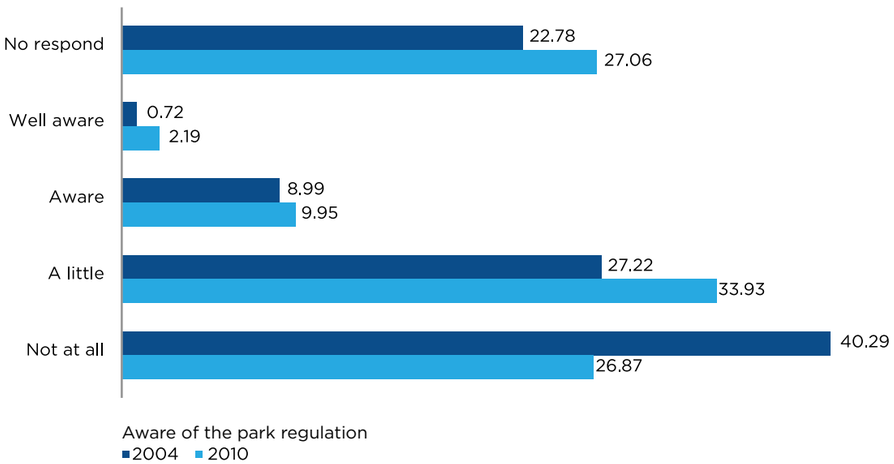
Figure 9-6. Opinions of local people regarding various issues of Kayan Mentarang National Park.

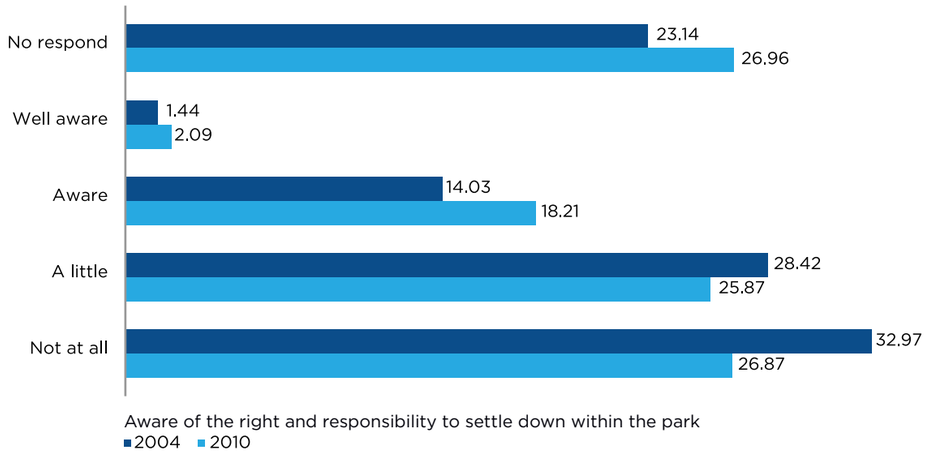


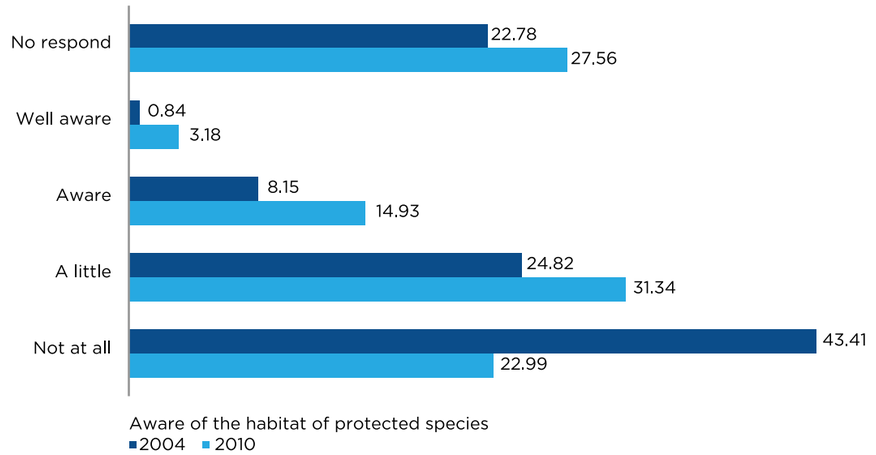


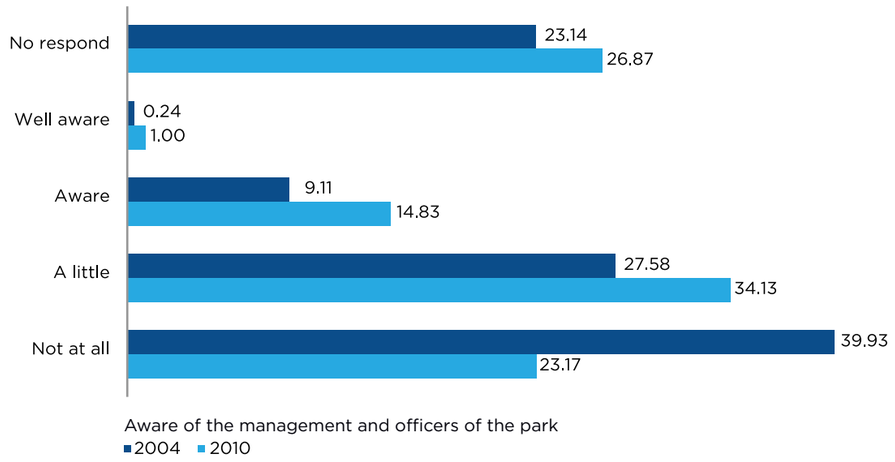


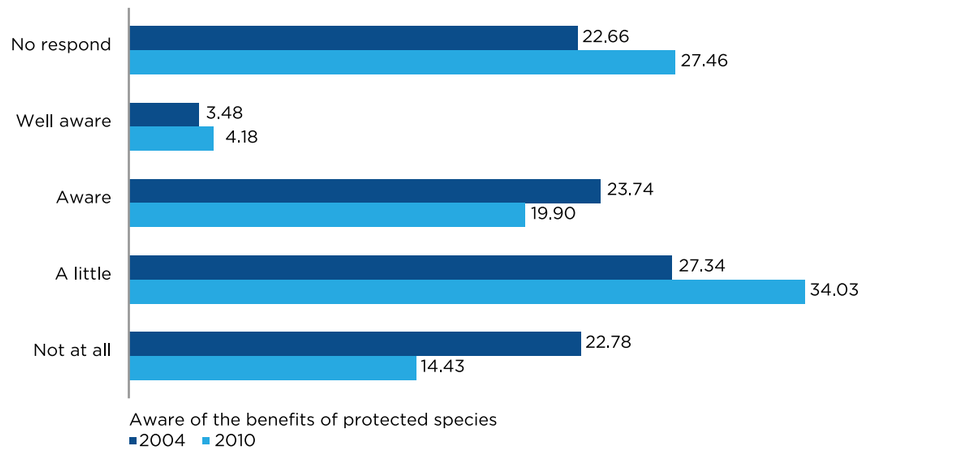


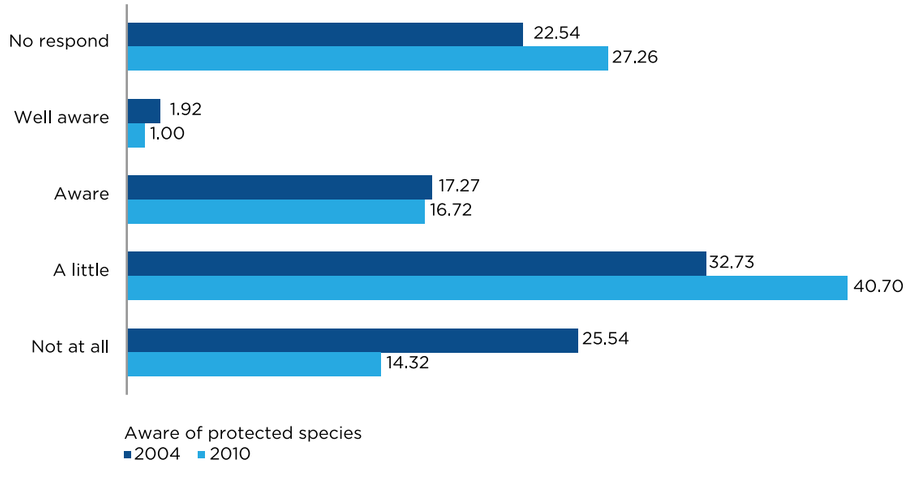


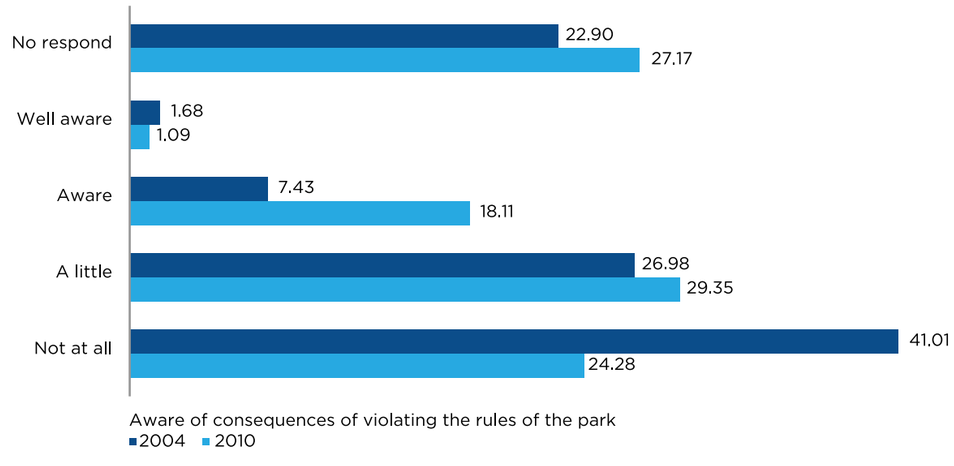


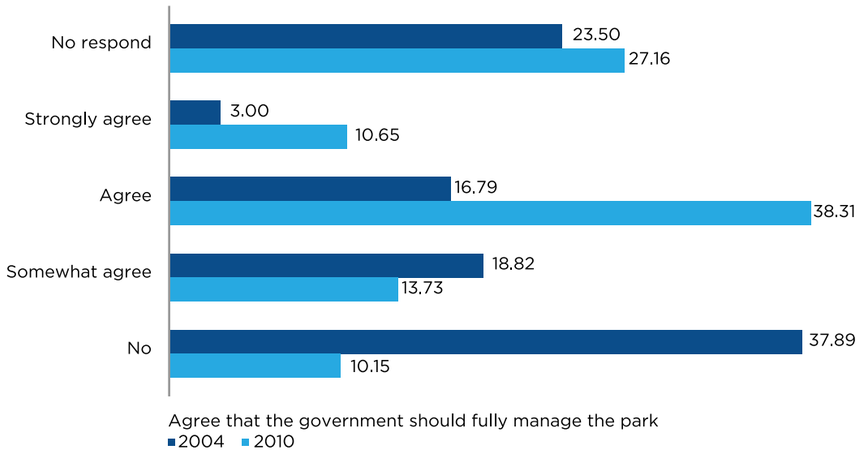


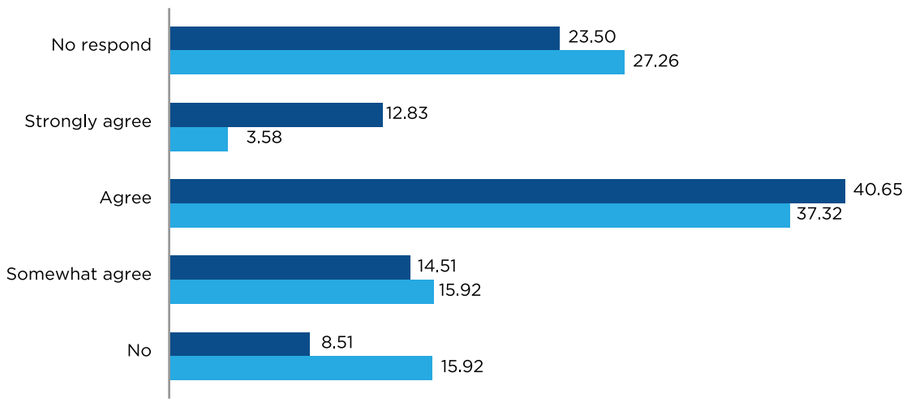


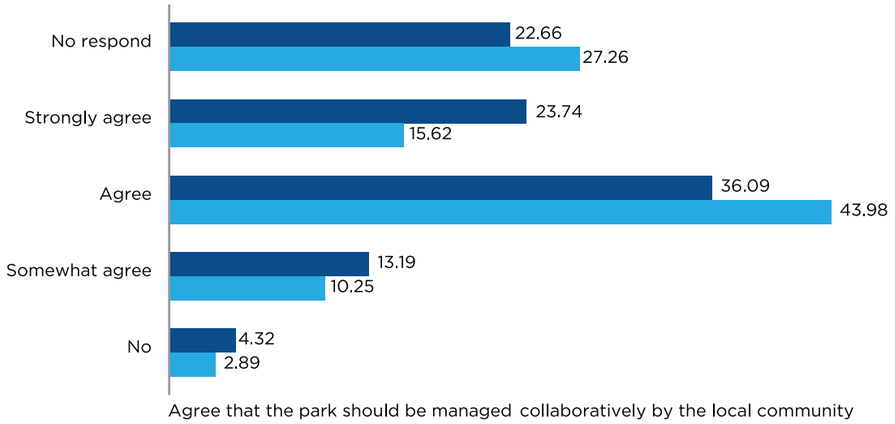


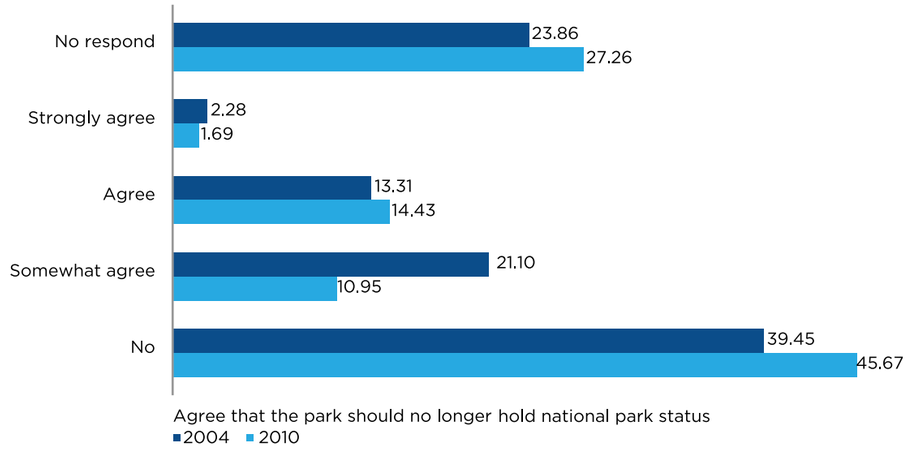


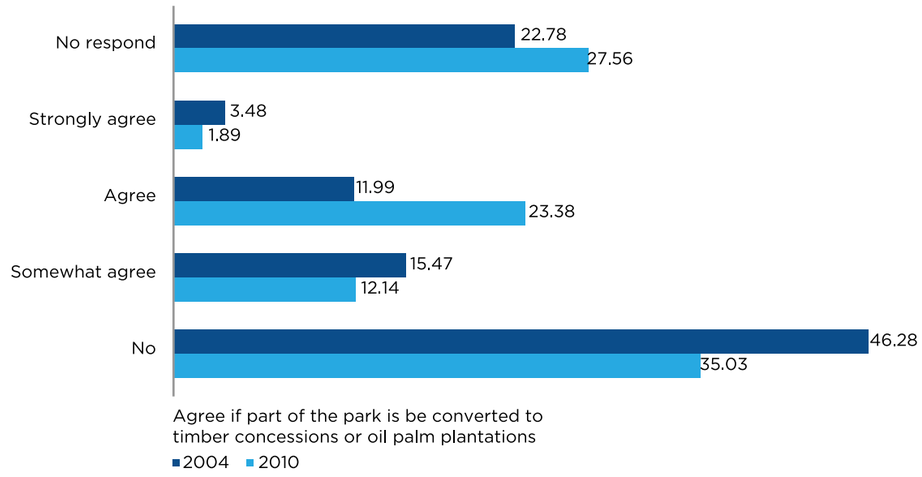


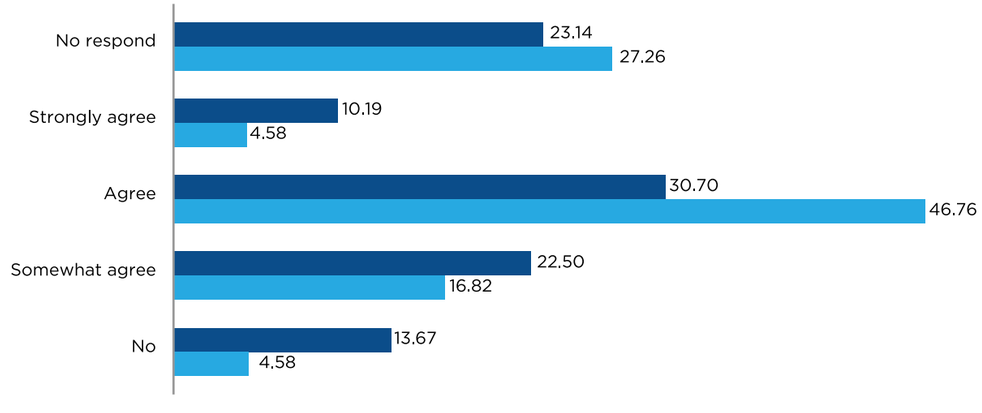


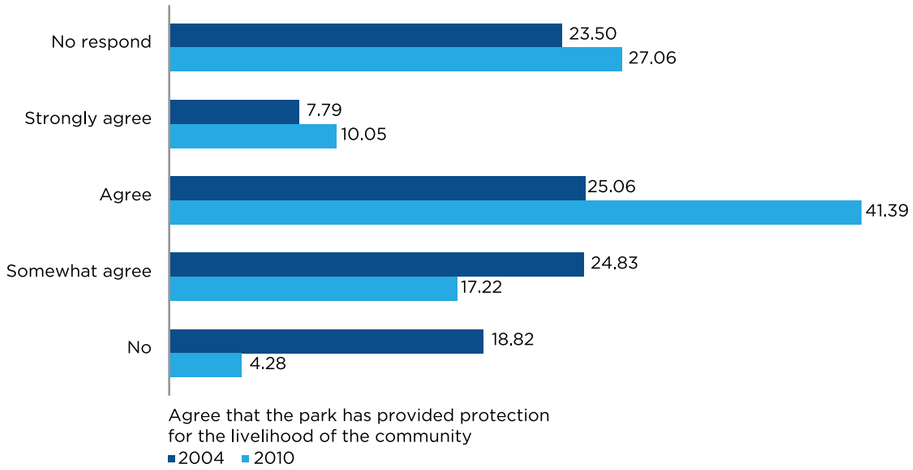


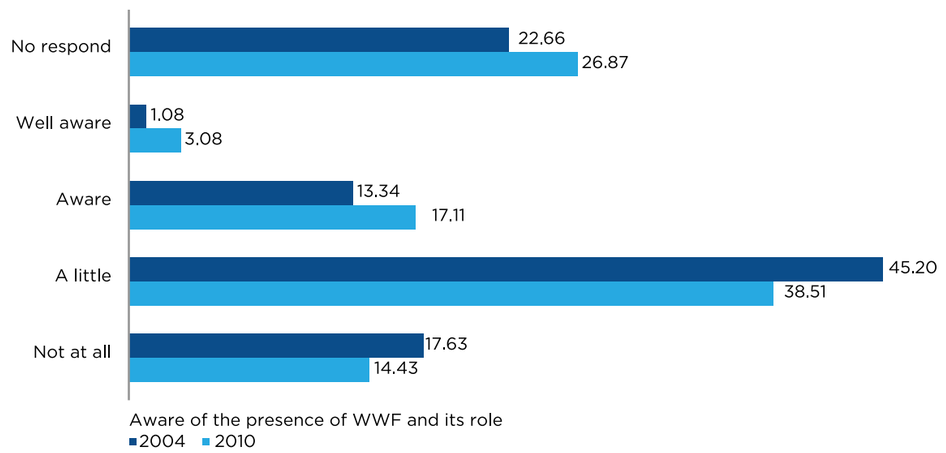


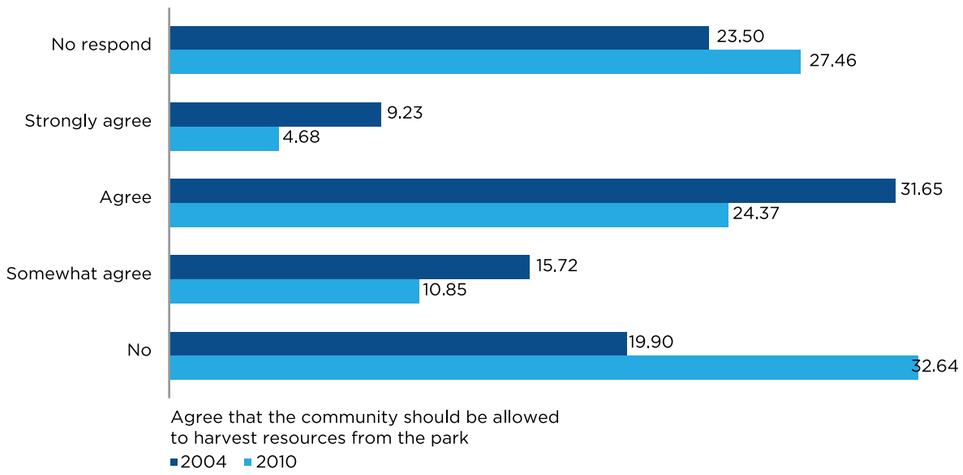


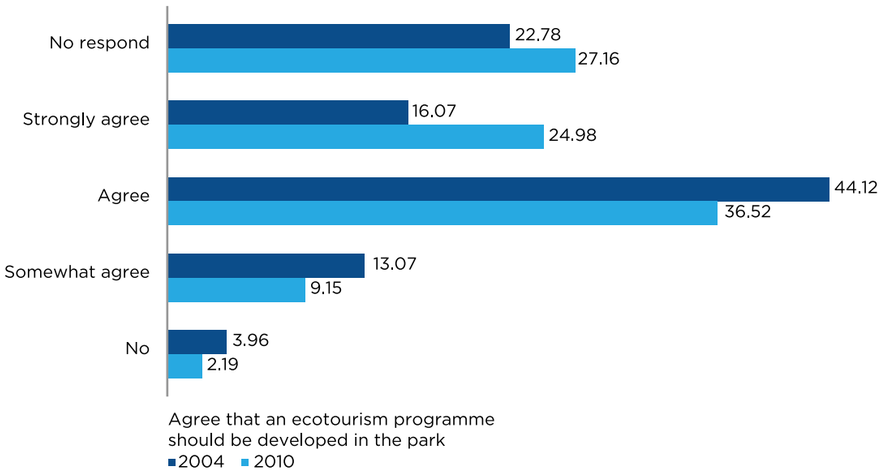


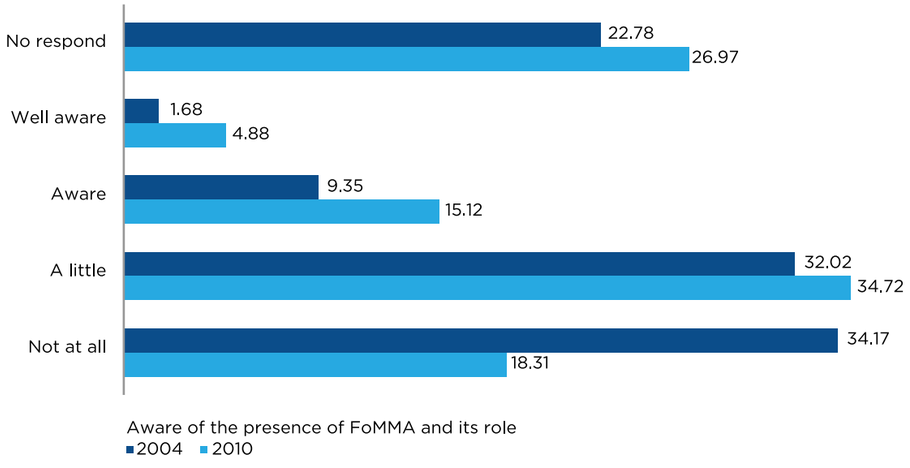


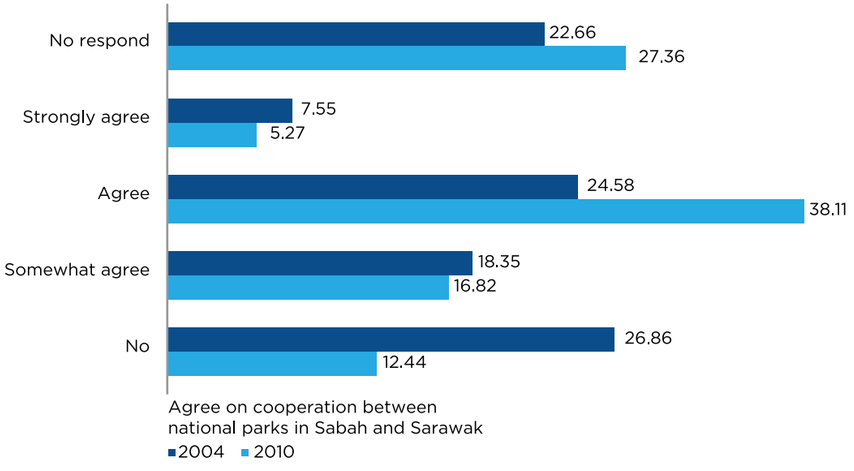


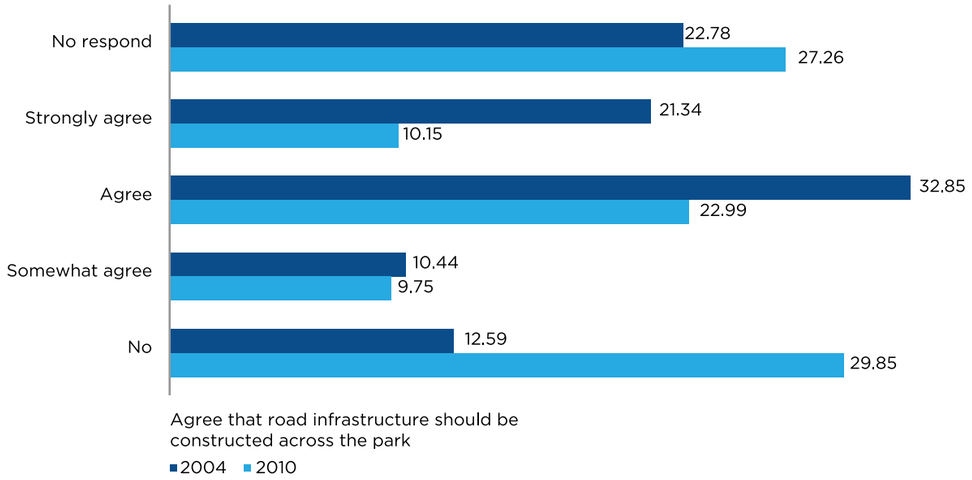












IGN Suteja-WWF Indonesia

Agus Triyanto

CHAPTER 10

THE PRECIOUS WETLANDS OF DANAU SENTARUM NATIONAL PARK

The 132,000 ha Danau (Lake) Sentarum National Park is part of the upper Kapuas watershed, unique because of its tropical swampy ecosystem, and the most extensive area of primary freshwater swamp forest in Kalimantan (Fig. 10-1). The lake is approximately 700 km upstream of the Kapuas delta in the depths of the northeastern part of West Kalimantan. It is surrounded by low mountain ranges with an average elevation of 35-50 m. The Sentarum watershed is dominated by a vast flood plain of seasonal lakes between 6 and 9 m deep, freshwater swamp forest and peat swamp forest (Dennis *et al.* 2000, Giesen 1995, Giesen & Deschamp 1993, Giesen 1987).

As part of the upper catchment area, Danau Sentarum regulates the entire hydrological system in the western part of Kalimantan. During the rainy season, the overflow from Kapuas river is naturally routed to the lake, preventing floods downstream. Most of the lake is usually in flood between October and May (Jeanes 1996, Giesen 1995).

During the dry season the lake discharges water into the Kapuas river, stabilizing the river's water flow throughout the year. Large portions of the lake dry up, and part of it can be crossed on foot (Fig. 10-2). This unique phenomenon has made the lake ecologically important to the province, and consequently the government declared the lake an 80,000 ha strict nature reserve in 1981 through Director General of Forestry Decision No. 2240/DJ/I/1981.

In 1982 area's status was changed to wildlife reserve through Ministry of Agriculture Decree No. 757/Kpts-II/Um/1982 dated 12 October 1982, which decreased its area slightly to 73,906 ha. After a series of assessments supported by Wetland Internationals Indonesia and the United Kingdom DFID (Department for International Development) (see Box 10-1), on 4th February 1999 the area was declared a national park through Ministerial Decree No 34/Kpts-II/1999, covering an area of 132,000 ha along with 65,000 ha of buffer zone. The park was also declared a Ramsar Site in 1994 (Lubis *et al.* 2009, Anonymous 1999, Giesen 1995, Anonymous 1982).

Biodiversity

Apart from its unique and crucial role of freshwater regulation in Kalimantan, Danau Sentarum is a very important biodiversity-rich ecosystem which serves as a habitat for 240 species of freshwater fish (71% of the Bornean freshwater fish), including the commercial Asian bonytongue, or arowana, *Scleropages formosus*; the snake-head fish, or toman, *Channa micropeltes*; the marble sleeper, or betutu, *Oxyeleotris marmorata*; and the pink-tailed barb, or jelawat, *Leptobarbus hoevenii*. Endangered species also found in the area are the Siamese crocodile *Crocodylus siamenses*; the false gharial *Tomistoma schlegelii*; the clouded leopard *Neofelis nebulosa*; and the orangutan *Pongo pygmaeus* (Lubis *et al.* 2009, Russon *et al.* 2000, Dennis *et al.* 2000).

The area is also known to hold at least 250 species of birds, including the great argus *Argusianus argus;* the woolly-necked stork *Ciconia episcopus;* Storm's stork *Ciconia stormi;* the helmeted hornbill *Rhinoplax vigil;* the rhinoceros hornbill *Buceros rhinoceros; the* stork-billed kingfisher *Halcyon capensis;* the blue-eared kingfisher *Alcedo meninting* and the brahminy kite *Haliastur indus* (Anonymous 1999, Giesen 1995).

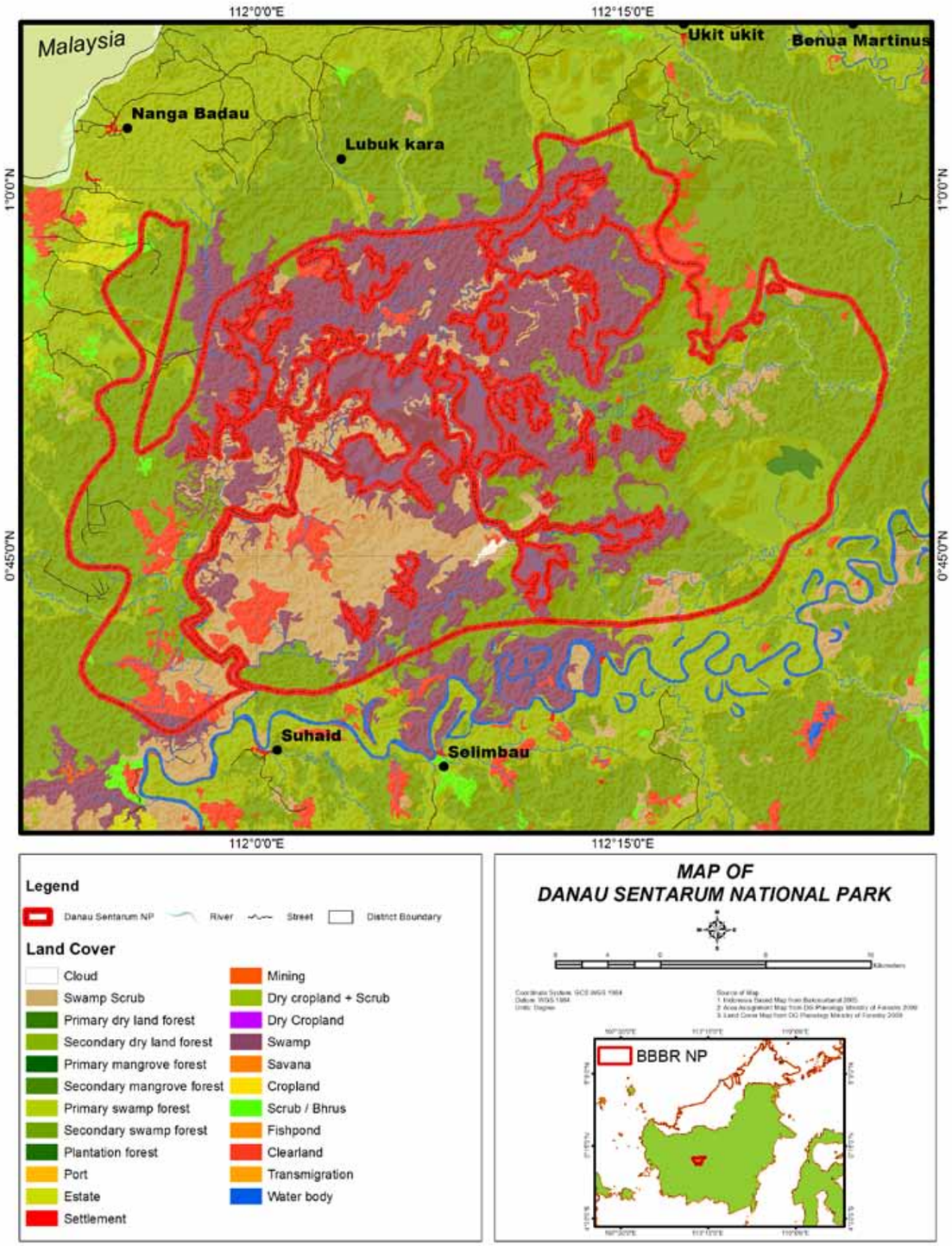


Figure 10-1. Map of Danau Sentarum National Park

The forest area around the lake is also rich with old *Dipterocarpaceae* tree species such as *Shorea beccariana*, and Keruing *Dipterocarpus* sp. Other commercial trees also occur in the area, including the ramin *Gonystylus bancanus,* the ironwood *Eusideroxylon zwageri*, and the jelutung *Dyera costulata* (Giesen 1995). The park is also known to be a source of traditional medicinal plants and herbs from a number of species including *Blumea balsamifera, Ficus* sp.*, Garania* sp.*, Alpinia* sp.*, Aneilema scaberrimun, Zingiber purpureum. Eurycoma longifolia,* and *Pogostemon cablin* (Giesen 1995, Giesen 1987).

BOX 10-1
United Kingdom DFID Supports the Conservation of Danau Sentarum

The Danau Sentarum Conservation Project (DSCP) was initiated in 1992 with support from the British Overseas Development Administration (ODA, now DFID, Department for International Development). The aim of the project was to develop conservation management guidelines for the Danau Sentarum Wildlife Reserve. ODA contracted the Asian Wetland Bureau (AWB) Indonesia (based in Bogor, now Wetlands International - Indonesia Programme) to manage the day to day management and operations in the field.

Richard Dudley and his wife Carol Colfer were assigned as the first field manager/ socio-economic researcher and community empowerment specialist, respectively, of the DSCP in June 1992. Following a series of consultations with local stakeholders, including the field authority, they set up a base office in Pontianak and started constructing field facilities such as Bukit Tekenang Research Centre for freshwater ecology, and other simple facilities such as live-aboard boats which acted as mobile camps, and laboratories to facilitate their work in the lake and with the local communities residing along the lake shore.

Their primary tasks were to introduce the concept of sustainable use of local resources, to explore alternative income-generating and marketing opportunities, and to develop options for sustainably improving the local people's economic capacity as well as protecting and conserving Danau Sentarum, which local people heavily depended on. Given these aims, the project had to work closely with the communities and local authorities, and search for local partners to help enhance the communities' abilities to improve their livelihoods without jeopardizing the resource.

By 1995, the project had produced a management plan for Danau Sentarum Wildlife Reserve and a series of guidelines for sustainable harvesting of local resources. Bukit Tekenang Research Centre was also operational, and had started to attract many students and scientists both from Java and from as far as the United Kingdom to learn not only about the tropical freshwater ecosystem and its biodiversity, but also the communities' behaviour and livelihoods. The project was completed in 1997, and produced among other things recommendations to upgrade the status of Danau Sentarum to national park, to extend its area to 132,000 ha, and to integrate the management of its buffer zone, which covered an additional 65,000 ha.

Sources: Wadley *et al.* 2010, Wadley *et al.* 2000; personal communication with staff of Balai KSDA Kalimantan Barat, October 2010

Budi Suryansyah (above), Agus Triyanto (below)

Figure 10-2.
Dramatic changes in the water volume of Danau Sentarum National Park during the rainy season (top) and the dry season (bottom)

Deni Sofyan

Figure 10-3.
Dusun Semangit, a typical sub-village (dusun) in the buffer zone of Danau Sentarum National Park.

Socio-Economic Status

Although the Park is in an isolated part of West Kalimantan, it has a long history of settlement. For around 200 years the floodplain has been inhabited by various Dayak ethnic groups: Iban, Embaloh and Kantu. The Iban mainly occupied the area to the north and northeast, while the Embaloh and Kantu inhabited the areas east and west of the lake respectively. The majority of Dayak in the area live in the hills and higher ground surrounding the park (Lubis *at al., 2009*). They are associated with the forest, and use its wildlife for their livelihoods. Collecting forest resources, fishing and shifting cultivation for rice and vegetation are among their daily practices (Wadley *et al.* 2010, Yasmi *et al.* 2007, Ardiansyah *et al.* 2007, Erman & Heri 2005).

The Malay community, who originally came as traders from Sumatra and Malaysia, gradually penetrated the area beginning in the early 1800s, extending their influence along the Kapuas river and spreading the Malay culture and language and the Islamic religion. There was a long history of antagonism between the Malays and the Dayak which has only yielded to peace in recent decades (Colfer *et al.*2000).

At the moment there are 39 villages adjacent to the park area, with a total population of almost 7,000 (Fig. 10-3). The two ethnic groups appear to have mutually influenced each other. For example, while many Dayak continue to live in longhouses – a housing form that has a number of practical advantages in terms of shared care of children and the elderly, exchange of work, and ease of meeting for collective action – some have copied the Malays by moving to single family dwellings in the villages outside the forest area (Wadley *et al.*2010, Lubis *et al.*2009, Yasmi *et al.* 2007)

Agus Triyanto

Unlikely sustainable fishing during dry season in Danau Sentarum.

The major sources of income for these communities are fishing, timber, and non-timber forest products such as honey. Fishing continues throughout the year, peaking from June to September when the water in the lake is drying up, making capture much easier. As the fish are concentrated in small areas, this practice seems to be very unsustainable, particularly when the fishers use gill nets, fixed nets, funnel nets or scoop nets which are able to capture the bulk of the fish all at once. Most Malays are involved with fishing as a source of both household protein and income.

The annual catch of fish is between 8,000 and 13,000 tons (Box 10-2). In the past, the lake has been the major source of the highly valuable Asian arowana, but because of regular, excessive and illegal harvesting, it is now almost impossible to find even one specimen of this species (Yasmi *et al.* 2007, Erman & Heri 2005, Dennis *et al.* 2000, Aglionby 1995).

Honey production in the area is recorded as far back as the early 19th century (Box 10-3). The park authority reported that in 2009 at least 300 families harvested honey from the nests of Asian giant bees *Apis dorsata*. Harvesting normally occurs between May and July, at the end of the wet season and early in the dry season, and is done by smoking the beehives with a torch. Annual honey production from the area can reach 26 tons, and the honey is marketed to towns near the park such as Putussibau and Semitau, with the largest portion exported to Pontianak and even Jakarta (Vinanda 2010, Arwinda 2009, Lubis *et al.* 2009)

The community also harvests other non-timber forest products such as rattan, gaharu and damar resins and wild animals, which may include wild pigs, Malayan sun bears, sambar deer and orangutans. While hunting protected species is illegal, the park reports that such practices still take place sporadically. Apart from hunting protected animals, people still also illegally cut timber to some degree, for subsistence and commercial purposes (Lubis *et al.* 2009, Yasmi *et al.* 2007).

BOX 10-2
Fishing in Danau Sentarum National Park

Fishing practices in Danau Sentarum have been long associated with the traditional culture of the Dayak and Malay communities who inhabit the flood plain of Danau Sentarum. A broad range of fishing gear, from fixed nets to gill nets, funnel nets and fishing rods, is associated with the communities, the most notorious being fixed bag nets *(jermal)*, which are able to capture the fish in bulk, regardless of species, commercial value, size, and age.

The targeted commercial fish consumption in the lakes includes *Oxyeleotris marmorata* or *ikan lemas*, *Leptobarbus hoevenii* or *jelawat*, *Chilata lopis* or *belida* and *Channa micropeltes* or *ikan toman*. The latter species is commonly bred by communities using floating cages made of bamboo or wood. The lakes are also famous for ornamental fish such as clown loach and red arowana. Unfortunately, the arowana has virtually disappeared from the area due to unsustainable harvesting, but captive breeding of arowana is expanding in Pontianak and elsewhere in Indonesia, the original fish imported from Danau Sentarum.

The best time for fishing in the area is during the dry season when the basin is drying up. From the point of view of sustainability, this is actually the worst time for fishing for the same reason – it means that all fish populations are cornered in small freshwater areas where fisher folk can set up all kinds of fishing gear. The method is highly productive, netting almost 10,000 tons per year between 1975 and 1985.

To avoid the progressive decline of fish productivity due to corrupt fishing practices such as fish poisoning and excessive use of *jermal*, and to ensure that fishing will provide sustainable economic benefits for the people, each village within the lake recently elected a head of fishermen who is responsible for supervising fishing practices and prohibiting the use of certain fishing gear within their respective villages.

Most fish caught are salted and sun-dried or smoked. Some of them are also processed into fish chips. These products are rarely marketed because they are either low quality or because the distance to market is too great. Unlike sun-dried fish, the community is easily able to trade ornamental fish such as the clown loach. They regularly trade the fish with fish exporters from Pontianak who have connections with the communities.

Budi Suryansyah

Fishing using nets in Danau Sentarum National Park

Source: Lubis *et al.* (2009), Dennis *et al.* 2000, Dennis *et al.* (1998), Budi Suryansyah (Staff of Danau Sentarum National Park in October 2010, *pers. comm.*)

BOX 10-3

Honey Bees of Danau Sentarum National Park

For decades, perhaps centuries, people living around Danau Sentarum, in particular those who settled in the villages of Leboyan and Semangit, have collected honey from the natural forest. The wild bees Apis dorsata normally build their hives in large trees such as *Dipterocarpus validus* or *Gluta rengas*, which occur abundantly in the area. The people commonly harvest the honey during the rainy season when the entire lake is inundated and fishing is not productive.

In the past, people harvested honey for their subsistence use, but since the 1980's some villagers, with the help of some of the DFID project personnel, have managed to find a market for their honey. They use *tikung*, artificial branches made from the tembesu *Fragraea fragrans*, to provide more space for bees to build bigger hives. The number of villages which harvest honey has also increased, and in 1993 production was estimated to have reached between 20 and 25 tons.

Recently, with the help of Riak Bumi NGO and PT Dian Niaga food product wholesaler in Jakarta, the community has learned to process and package its product and market it in Java, and even to Sarawak and Sabah in Malaysia. In 2007 the collectors also formed Asosiasi Periau Danau Sentarum (APDS – the Lake Sentarum Association of Honey Producers) an association, which is a partner of Jaringan Madu Hutan Indonesia (JMHI), the Indonesian Network of Forest Honey Producers. Periau means a group of honey bee collectors.

On 16 July 2007, APDS was granted BIOCert SNI 01-729-2002 by the Indonesian Standardization Board *Badan Standardisasi Nasional* (BSN) for their honey products. The certificate was officially delivered by the Indonesian Ministry of Forestry to APDS, which ensures that honey products from Danau Sentarum National Park are harvested in a sustainable manner, and that the harvest is conducted within the 7378.4 ha supervised area of the park.

In 2010 APDS claimed to have more than 200 members, or bee honey collectors, in 11 *periau*. The price of honey in the last three years has averaged 45,000 IDR (USD 5.0) per kg, or almost double its 2006 price of IDR 28,000, or USD 3.0 per kg.

Source: Vinanda (2010), Arwinda (2009), Lubis *et al.* (2009)

Budi Suryansyah

BOX 10-4

Danau Sentarum National Park and Illegal Logging

In the late 1980's a number of logging concessions were operating around the park. With permission from the forestry authority in Pontianak, these companies were using Danau Sentarum as a corridor to transport their logs to their mills downstream, especially during the rainy season when the water in the lake is high.

There were also rumours that these concessionaires often accidentally or deliberately logged the forest at the periphery of the lake. Furthermore, whilst transporting their logs through the lake they disturbed the forest and wildlife within the Danau Sentarum reserve area. The community was aware of the behaviour of these companies, but because at that time the forestry office was so powerful and its notorious relationship with concessionaires so strong, with most of the loggers supported by the local government, no one would listen to negative reports about forestry companies.

When political reform began in 1998, the Ministry of Forestry eased the complicated bureaucracy associated with forestry businesses by decentralizing the licensing of small scale forest concessions of up to 10,000 ha to the local government (*Bupati*) via Forestry Ministerial Decree No. 05.1/Kpps/II/2000. In response, many *Bupati* suddenly owned or collaborated with timber mafia loggers to manage small scale forest concessions. There was speculation that the *Bupati* of Kapuas Hulu was involved with such a business.

Local communities also became more assertive in voicing their claims to tenure and customary (*adat*) rights over local resources, including timber, which created potential conflicts over resources both between local authorities and local communities, and among local communities, especially on the issue of *adat* boundaries. The atmosphere of uncertainty created by this tension prompted illegal activities, including logging within Danau Sentarum National Park. The park did not have the capacity or authority to deal with local rights, and the situation got out of control.

The loggers were not all originally from the local area: they came from as far away as Sambas District and from other provinces in Kalimantan, and competed with the local people to illegally harvest the wood in the park and its surroundings. The immigrants even introduced bicycle logging to transport the wood from the forest interior. Plenty of members of the 'logging mafia' also organized and funded the trade, particularly from the Sarawak side, using their influence to ensure that the loggers could continue.

Fortunately, the worst of the logging in Danau Sentarum ended in 2005 when the Government consistently enforced its rules against illegal logging in West Kalimantan, and with the strong collaboration with Malaysian timber enforcement in Sarawak state. As for the impact of the rampant logging activities, the northern landscape of the park needs to be carefully restored.

Source: Wadley (2006), Wadley *et al.* (2010), Yuliani (2008)

In the past illegal timber extraction was a serious problem. Between 1998 and 2002, when the central government was decentralizing power to local governments and easing controls on resource management, illegal logging within the forest area – and likely also in the park – sky-rocketed (Box 10-4). Hundreds of thousands of cubic meters of logs were illegally harvested from the area and transported north to Malaysia via Tebedu, a border town between Kalimantan and Sarawak state in Malaysia. The issue was resolved in 2005, partly because the two countries agreed to cooperate under the ASEAN Treaty and FLEGT (Forest Law Enforcement, Governance and Trade) Initiative, but the discontinuation of such practices was most likely due primarily to the exhaustion of resources in the area (Wadley undated, Yuliani *et al.* 2008).

Cooperation with Partners

The United Kingdom's Overseas Development Agency (now DFID) and the Asian Wetland Bureau (now Wetlands International-Indonesia) were the major supporters during the early development of the park. Along with the regional office of the Directorate General of Forest Protection and Nature Conservation in Pontianak (BKSDA Pontianak), they assessed the ecological status of Danau Sentarum and developed a management plan for the area. DFID also cooperated with CIFOR to conduct socio-economic assessments of the communities living near the park.

In order to enhance the popularity of Danau Sentarum, the park manager has cooperated with the Ministry of Tourism and the provincial government to promote the area as a special tourist destination in West Kalimantan. The Park has regularly been included in the tourism agenda of tri-lateral meetings between Indonesia, Malaysia and Brunei Darussalam.

Park Management

In 2010 the park employed 43 officers including the park manager. When the status of the area was wildlife reserve, the government assigned fewer than 20 staff to supervise 80,000 ha. The number of park officers in Danau Sentarum now is comparable with those of other parks in Kalimantan, although issues over the capacity of to manage the park remain (Fig. 10-4).

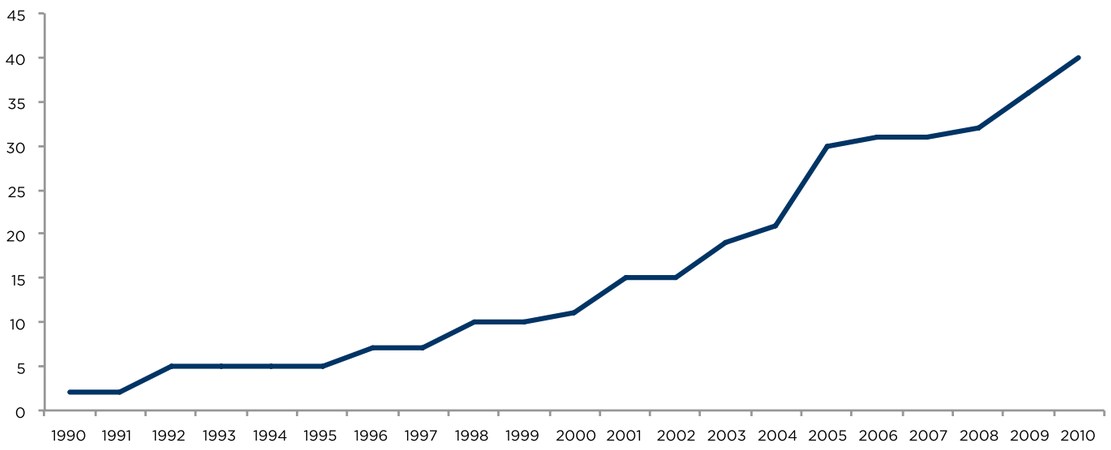


Figure 10-4. Number of officers in Danau Sentarum National Park, 1990-2010
Source: Sekretariat Direktorat Jenderal PHKA (2010)

The park received a relatively low budget until 2004, but beginning when the area was established as a national park in 2007, it began to attract more attention and a larger budget. Between 2007 and 2010 the park received more than IDR 3 billion (over USD 300,000) annually, equivalent to IDR 22,727 (USD 2.27) per ha per year (Fig. 10-5).

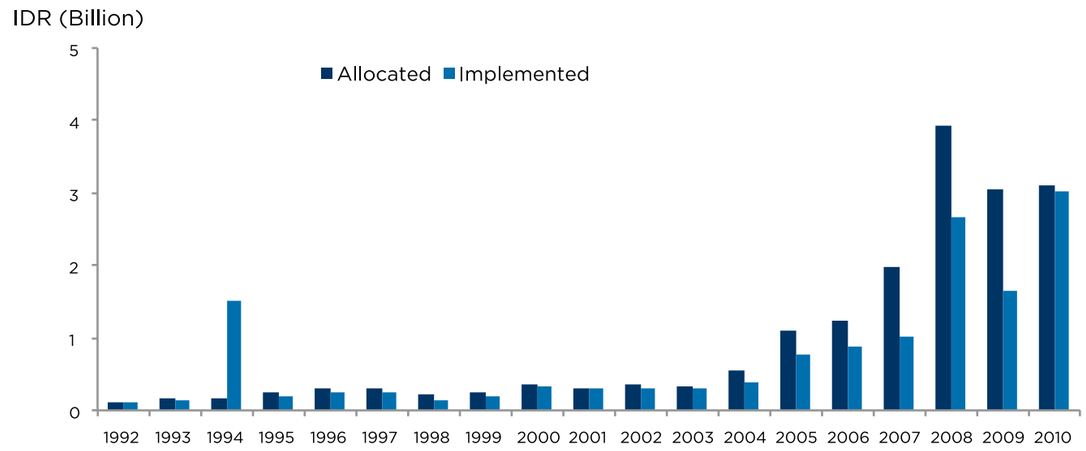


Figure 10-5. Budget of Danau Sentarum National Park, 1992-2010
Source: Sekretariat Direktorat Jenderal PHKA (2010)

Despite its scenic beauty and unique wildlife, the park has so far attracted few visitors, either domestic or foreign. This is perhaps due to the lack of promotion and difficult access either by land or air. Over the last ten years fewer than one hundred people have visited the park (Fig. 10-6).

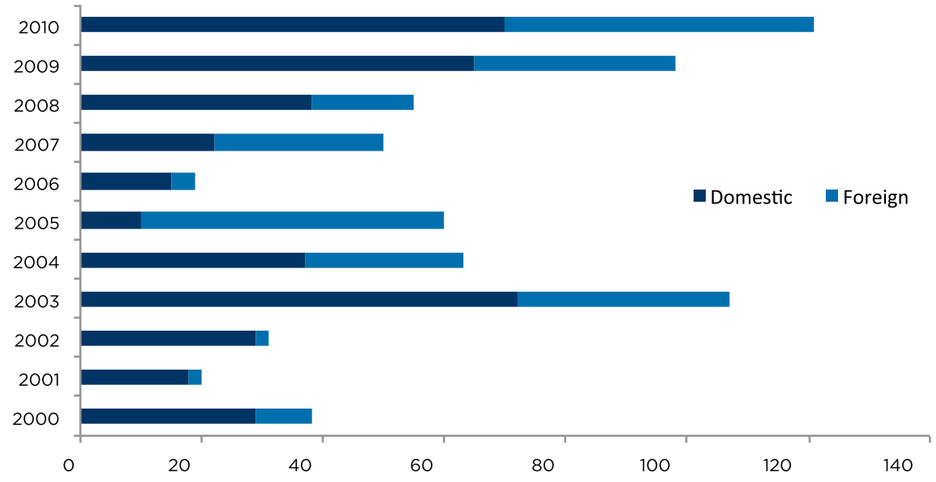


Figure 10-6. Number of domestic and foreign visitors to Danau Sentarum National Park, 2000-2010
Source: Balai Taman Nasional Danau Sentarum (2011)

Budi Suryansyah

Making traditional hand bag.

Local People's Views about Danau Sentarum National Park

In order to investigate the opinions of local people, in particular those who live in and around the park, about 1,200 questionnaires were randomly distributed in May 2010 to the communities who were willing to participate in the Districts of Semitau, Embau, Suhaid, Selimbau, Badau, Bunut Hilir, and Batang Lupar.

Of that number, 1,033 questionnaires (86%) were returned by 624 men, 394 women and 15 people of unspecified gender. Respondents ranged in age from 15 to over 50 years old. Their education level varied from having no formal education (6.29%) to elementary school (13.36%), junior high school (27.69%), high school (38.33%) and first degree (equal to bachelor's) or above (0.29%). They worked as farmers/fishers (10.26%), traders (6.10%), educators or teachers (5.71%), independent labourers or unemployed (19.65%), students (18.97%) and occupation unknown (30.98%).

Their views towards the park and its management have been sorted in to five classifications: (1) popular knowledge of the park, (2) knowledge of the park regulations, (3) their views on protected species, (4) their observation of the management system, and (5) the support and benefits of the park to the local communities. Detailed data on the opinions for each group are presented in Fig. 10-7.

1. Familiarity with the Park

Most respondents knew of the existence of Danau Sentarum National Park, and only 17% did not know its status. Given that the respondents are living within reach of the park, it is surprising that any should not know about it. However, despite this high level of familiarity, only 4% of respondents were aware of the location of the park boundaries. The remainder either had some idea, or in some cases did not know at all.

2. Knowledge of Park Regulations

A small number of respondents (10%) stated that they knew about or were very aware of the park's regulations, while fewer than 18% were aware or strongly aware of their rights and responsibilities as people who have settled in and around the park. About 15% of respondents know or know well the park's officers and its management, and a similar percentage was aware or strongly aware of the management's role and tasks in managing the area.

3. Views on Protected Species and their Habitats

A significant challenge is posed to the park management by the finding that less than 17% of respondents were aware or well aware of the protected species within the park. The number of respondents who knew the habitats of protected species in the park was even smaller (11%). A few respondents revealed that they knew the benefits of protecting endangered and protected species within the park. but fewer than 20% were aware or well aware of the consequences of violating the rules against harming protected species.

4. Park's Management Systems

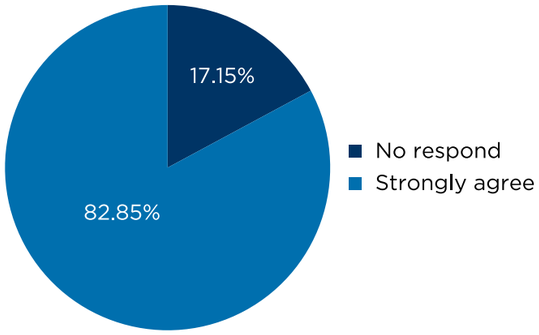
Over 50% of respondents agreed with the establishment of the area as a national park or protected area, whilst almost the same percentage also concurred with the current park's management system, whereby the central government fully manages the area. When asked whether the local community was willing to fully manage the park, fewer than 50% of respondents agreed or strongly agreed with the idea, and over 60% supported the idea of managing the park collectively between the government and the local community.

5. The Support, Benefits and Performance of the Park

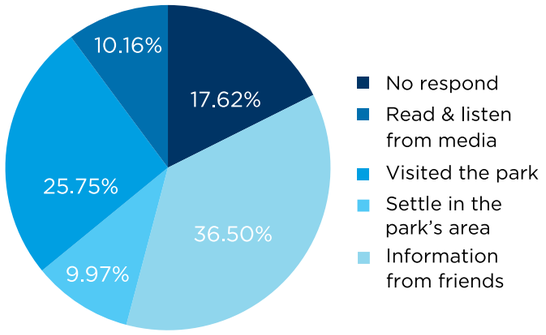
Almost 60% of respondents rejected the idea of converting part of the park's area into an oil palm plantation or timber concession. Almost the same percentage rejected the proposition that the Danau Sentarum should no longer hold the status of a park or protected area. Not surprisingly, given that many local communities are heavily dependent on local resources, we found that more than 60% of respondents agreed or somewhat agreed to the idea of allowing local communities to sustainably harvest resources from the park area.

Only around 41% of local people believed that the park has provided economic benefits and protection for them. The idea of ecotourism development in Danau Sentarum National Park seems widely acceptable to the community. As for their observations on the current management, considering how few respondents knew the park's officers and management, a score of 31% can be considered quite high.

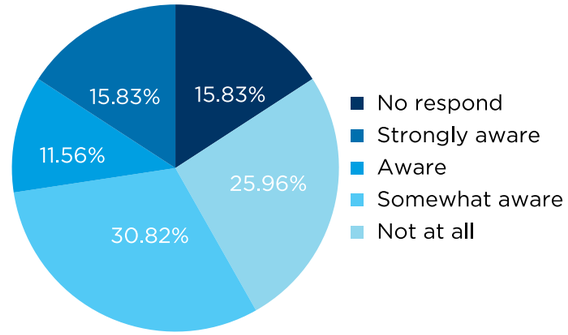
Figure 10-7.
Local people's opinions on various aspects of Danau Sentarum National Park



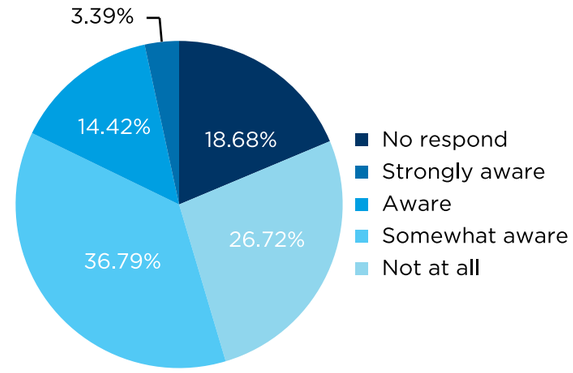
Aware of the park's existence



Source of information about the existence of the park



Aware of the existence of park officers



Aware of the task and role of the park's officers and their management

Aware of the park's boundaries

Aware of the park's regulations

Management quality of national park

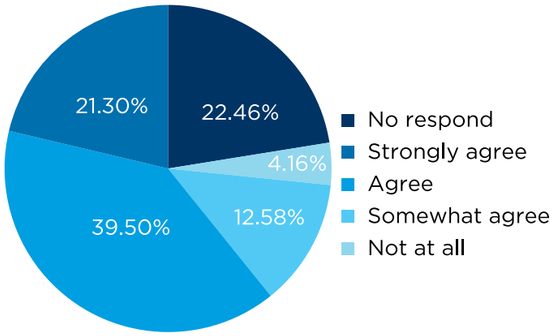
Aware of protected species

Aware of the consequences of violating the rules of the park

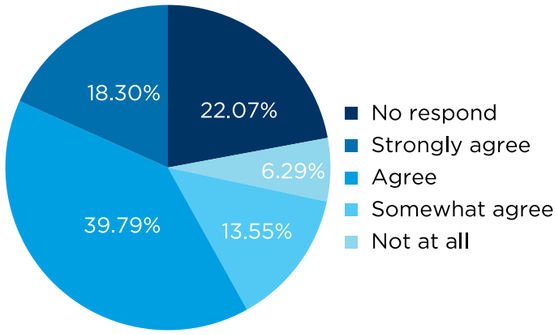
Aware of the rights and responsibilities of people who settle within the park

Awareness of benefits of protecting endangered species

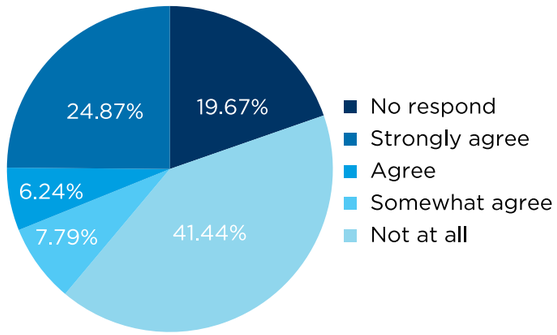
Aware of the habitats of protected species



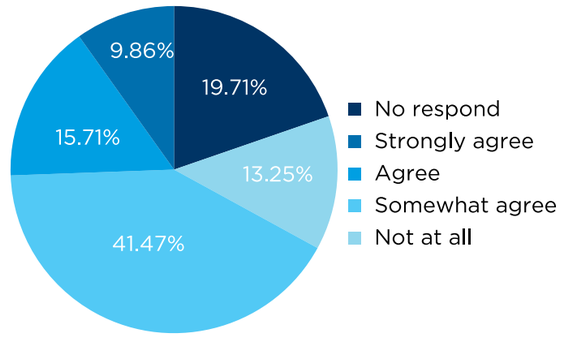
Agree with the establishment of the park



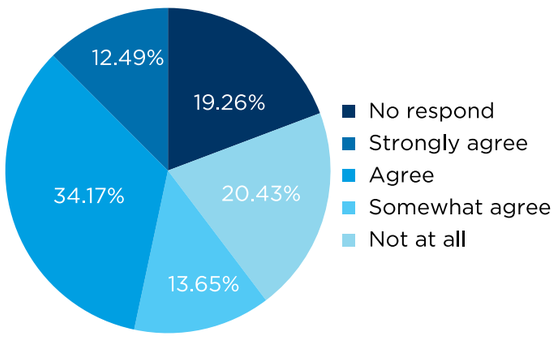
Agree that the government should fully manage the park



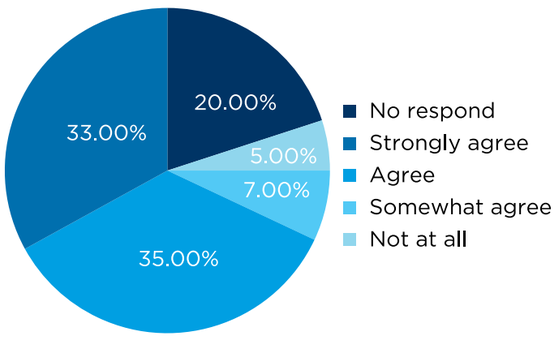
Agree that the park has provided economic benefits to the community



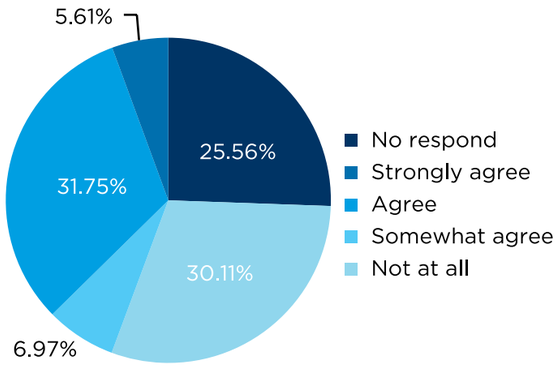
Agree that the community should be allowed to harvest resources from the park



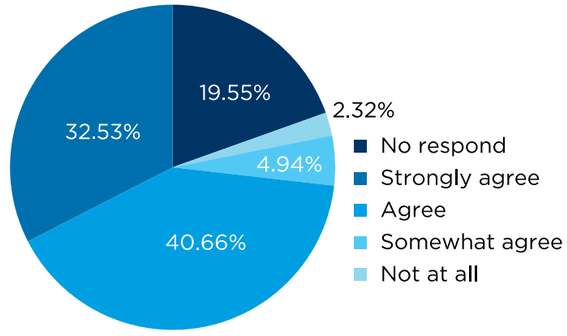
Agree that the park should be managed by the local community



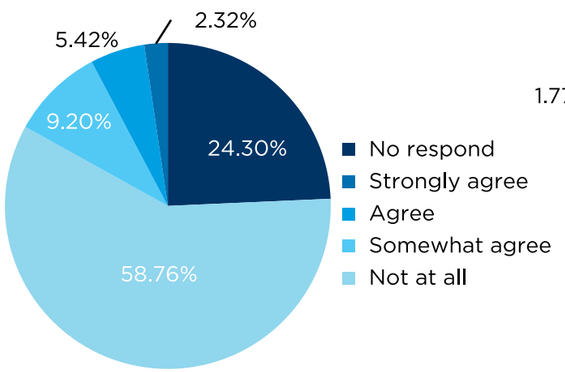
Agree that the park should be managed collaboratively by the local community and the government



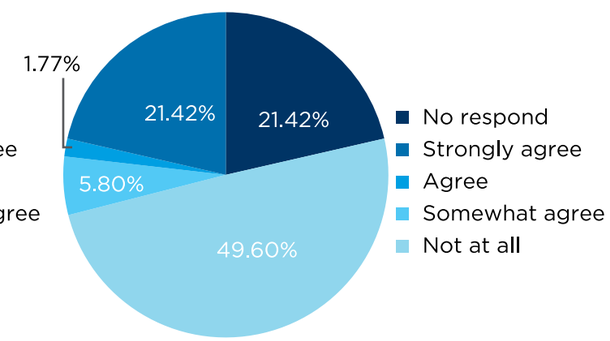
Agree that the park has provided protection for the livelihoods of the community



Agree that an ecotourism programme should be developed in the park



Agree that the status of Danau Sentarum ecosystem should no longer be that of a national park



Agree that part of the park should be converted into timber concessions or oil palm plantations

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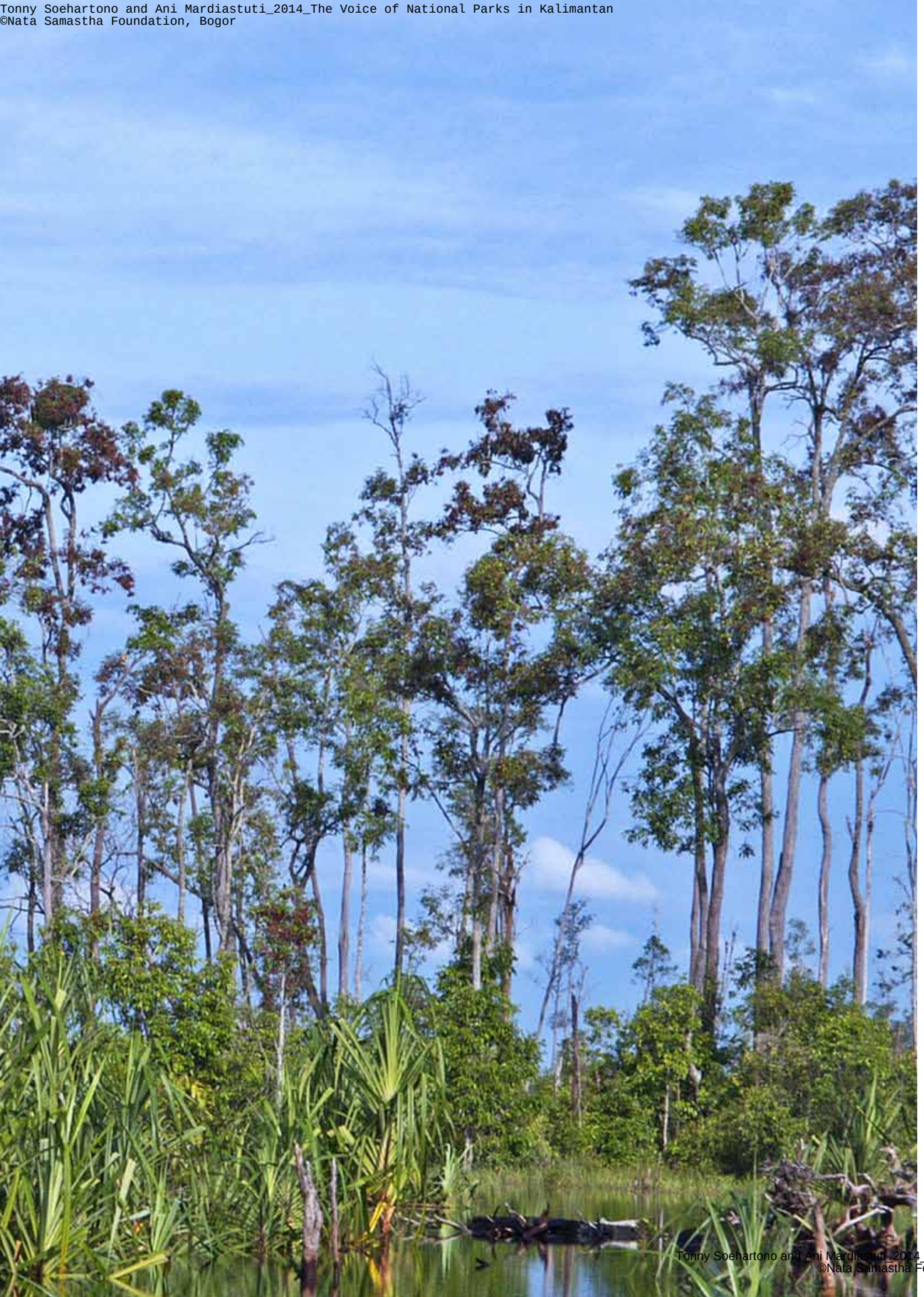

Ani Mardiastuti

CHAPTER 11

THE SHOWCASE PEATLAND ECOSYSTEM IN SEBANGAU NATIONAL PARK

Sebangau National Park covers approximately 600,000 ha and is representative of the vast original peatland ecosystem in Kalimantan. Peat forests are wetlands with a thick layer of decomposing organic matter. Peat soil contains at least 30% organic matter by weight, with cumulative layers of more than 40 cm. When drained, peat turns into a highly combustible material, making it prone to fires in the dry season.

Sebangau National Park (Fig. 11-1) supports three strategic catchment areas (*Daerah Aliran Sungai*, or DAS) in Central Kalimantan: DAS Katingan, DAS Sebangau and DAS Kahayan. Their hydrological functions are crucial for the area and include irrigated agriculture, freshwater fisheries, river transportation and clean water supplies for the communities living in the towns near the park and in the downstream Katingan, Pulang Pisau and Palangkaraya regencies. The peatland ecosystem also prevents carbon emission from the peat (Widiati 2008, Rieley *at al.* 1997, Page *et al.* 1997, WWF 2009).

The area was originally discovered and described by collaborating researchers from the University of Palangkaraya and the University of Nottingham in the UK. In particular these researchers identified the importance of Sebangau to orangutan conservation, which they described to WWF Indonesia in early 2001 (Box 11-1). In mid-2001 WWF-Indonesia, in cooperation with the University of Palangkaraya's Centre for International Cooperation in Sustainable Management of Tropical Peatland (CIMTROP), established a project for orangutan conservation in an area covering the entire 3 million ha of peatland in the three strategic catchment areas. In this project WWF-Indonesia concentrated its orangutan conservation programme in Sebangau, while CIMTROP – supported by the University of Nottingham (UK) – focused on conserving the peatland ecosystem and carbon stocks, and reducing carbon emissions.

The initial grant for the project was approximately three million Euros over four years, divided into two periods between 2001 and 2004. The original target of the project was to protect the entire peatland ecosystem outside the mega-rice paddy area (Box 11-2) to ensure the survival of almost three million ha of orangutan habitat between the Katingan and Kahayan rivers. At that time, the status of the proposed area of protection was production and conversion forest (Drasospolino and Sumantri, former Head of Sebangau National Park, *pers. comm.*, October 2010).

In 2003 the project proposed that the area of Sebangau ecosystem should be a national park. Initially it failed to compromise with the local government, and the latter insisted that the peatland forest was designated for production purposes. In October 2004, following consistent WWF efforts and spurred by the attention on peatland related to climate change, a consensus was finally reached with local government. Both the local and central governments later agreed to adopt and convert part of the peat swamp forest area into a national park covering 578,700 ha. An office and other support systems for the park were constructed in 2005 in the Central Kalimantan provincial capital Palangkaraya (Departemen Kehutanan 2004).

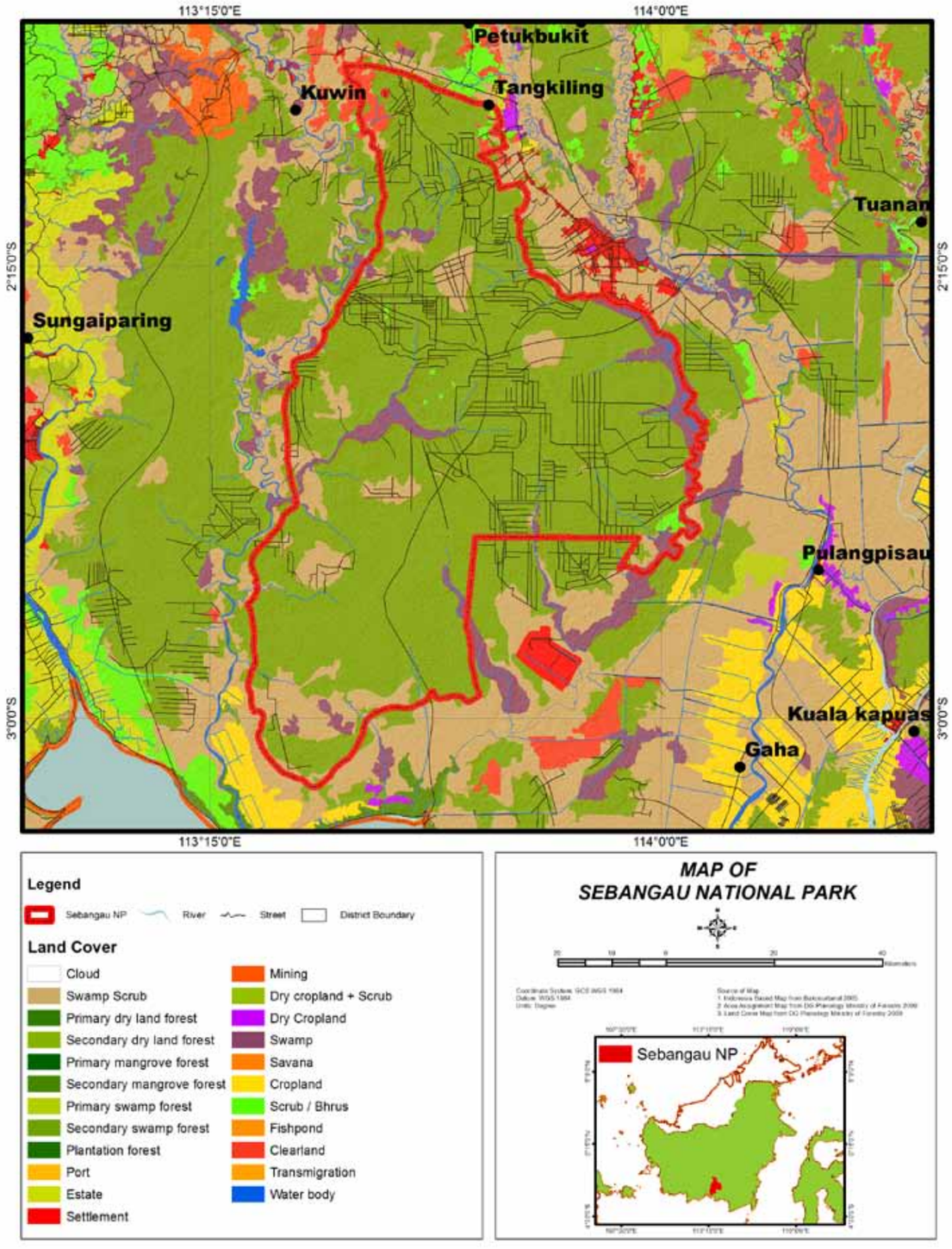

Figure 11-1. Map of Sebangau National Park

BOX 11-1
Initiative to Create Sebangau National Park

In February 2001 the late Dr. Nengah Wirawan (then Director of WWF-Indonesia's Sundaland Programme) and Miriam van Gool of WWF-Netherlands completed a flight survey above the Sebangau peatland ecosystem as part of efforts to establish a new project for orangutan conservation in Kalimantan. Ms van Gool eagerly showed her aerial photos of the Sebangau ecosystem to staff in the WWF office in Balikpapan.

The results were taken to the WWF office in Jakarta for further discussion. The Jakarta meeting endorsed the proposal that the area was a priority for protection as orangutan habitat, given that work on population status of Orangutan in Sebangau peat swamp forest had recently been carried out by H. Morrogh-Bernard et al. (1995). The meeting then proposed that Ms van Gool should raise her findings with WWF-Netherlands and request their support for the conservation of the area.

Soon after Ms van Gool returned to her office in the Netherlands, WWF-Netherlands signalled its interest in exploring the possibility of supporting WWF-Indonesia in securing Sebangau as a protected area for orangutan. In June 2001, WWF-Indonesia, WWF-Netherlands and the University of Nottingham (UK) met in Amsterdam, primarily to design the Sebangau orangutan conservation project. WWF-Netherlands committed to supporting the project for two years, and the University of Nottingham agreed to assist the project on the issue of peatland conservation.

Fortunately, at the same time WWF Indonesia managed to attract the interest of USAID in supporting the project. To ensure substantial support from Central Kalimantan province, CIMTROP (Centre for International Cooperation in Sustainable Management of Tropical Peatland) was also invited to be part of the project. In August 2001 WWF-Indonesia set up an orangutan conservation project in Sebangau ecosystem, based in Palangkaraya, Central Kalimantan.

Ani Mardiastuti

Figure 11-2.
Secondary forest along Koran River, Sebangau National Park. Kahui, or red balau *Shorea balangeran* (inset) is an important timber species in this area, and endemic to Kalimantan. This species grows well in a waterlogged peatland ecosystem.

Biodiversity

The park, created by Ministerial Decree on 19 October 2004, is blessed with endangered wildlife species such as the Bornean orangutan *Pongo pygmaeus* (see Box 11-3 for population estimate), the proboscis monkey *Nasalis larvatus*, the southern Bornean gibbon *Hylobates albibarbis* (Ministry of Forestry 2007, Thompson 2007, Muir 2004, Morrogh-Bernard *et al.* 2003a, Morrogh-Bernard *et al.* 2003b, Rijksen & Meijaard 1999, Groves 1999, Meijaard 1997, Page *et al.* 1997, Rieley *et al.* 1997, van Schaik 1995), the Malayan sun bear *Helarctos malayanus*, the clouded leopard *Neofelis nebulosa,* and many endangered bird species including the rhinoceros hornbill *Buceros rhinoceros* and the helmeted hornbill *Rhinoplax vigil* (Cheyne & MacDonald 2008, Cheyne 2007, Rieley *et al.* 1997).

The principal tree species of the upper canopy are *Gonystylus bancanus, Dactylocladus stenostachys, Calophyllum sclerophyllum, Combretocarpus rotundatus* and *Cratoxylon glaucum*. The tall interior forest which grows on the thickest (10–13 m) peat is dominated by species from the genera *Agathis, Dactylocladus, Gonystylus, Koompassia, Palaquium* and *Shorea*. Species that grow on soils with a permanent high water table are *Pandanus* sp. and *Freycinetia* sp. (Fig. 11-2) (Morrogh-Bernard *et al.* 2006, Departemen Kehutanan 2004, Rieley *et al.* 1997, Page *et al.* 1997). To summarise, WWF Indonesia's surveys indicated that Sebangau National Park is immensely rich in biodiversity, as it has so far recorded 800 plant species, 150 bird species, 34 fish species and 35 mammal species (Anonymous 2009, WWF 2009), and the OuTrop research group has recorded 318 plant species, 221 bird species, 111 fish species, 42 reptile species, 9 amphibian species and 63 mammal species (Husson *et al.,* 2009, 2010a, b, 2011; Dragiewicz *et al.* 2010).

BOX 11-2
Mega Rice Project

Tira Maya Maisesa-WWF Indonesia

The Mega Rice Project (MRP; *Proyek Pengembangan Lahan Gambut*) was initiated by President Soeharto's government in 1996 in Central Kalimantan, adjacent to the area that later became Sebangau National Park. The goal of the project was to turn more than one million ha of unproductive and sparsely populated peat swamp forest into rice paddies in an effort to alleviate Indonesia's growing food shortage. It was planned that within five years the project would be producing more than five million tons of rice each year for up to 200,000 households inhabiting the area.

The main infrastructure was a network of canals criss-crossing the peatland landscape to regulate the water supply and drain the area for human settlement. A total of 5,956 km of primary, secondary, and tertiary canals was planned. Despite initial warnings from the Minister of Environment and conservationists that the project would have a major impact on the ecosystem, a compromise was reached with the excuse that the project completion would be delayed if environmental surveys had to be carried out before work started.

In response to the land clearing work, sawmills to process logs sprang up all over the area. Demand for timber to construct houses for new settlers escalated, and this provided the conditions for illegal logging to flourish. The canals built for the project provided convenient routes for illegal loggers to transport wood out of areas that otherwise would have been inaccessible.

In addition, attempts at land conversion for human settlement by draining peat and irrigating for rice cultivation made the area unusually dry. As a consequence, as many as 1.45 million ha of peatland were damaged by major fires. Political uncertainty and the economic crisis in Indonesia caused the project to be removed from the top of the national agenda. Currently the area is still officially designated for agriculture, although the MRP was terminated in 1998 by the order of President Soeharto's successor, BJ Habibie.

The MRP has caused disastrous damage to the ecosystem and the livelihoods of local people. Various attempts have been made by the Indonesian government and environmentalists to restore the peatland ecosystem to its original function, including by blocking the canals.

Source: Vinanda (2010), Arwinda (2009), Lubis *et al.* (2009)

BOX 11-3

Inventory of Orangutans in Sebangau Peatland Ecosystem

The population status of orangutans in the Sebangau peatland ecosystem was first assessed in 1995-1996 by British scientists Helen Morrogh-Bernard and Simon Husson from the Orangutan Tropical Peatland Project (OuTrop), Susan E. Page of the University of Leicester and J.O. Rieley of the University of Nottingham. The study area of almost 9,200 km2 was in the upper catchment area of Sebangau river, covering part of the large peatland ecosystem between Katingan river to the west and Kahayan river to the east.

Orangutans were surveyed using the standard nest count method along line transects of at least 1 km. Orangutan density was estimated for each habitat sub-type (mixed swamp, low pole, transitional low pole/tall interior and tall interior) using DISTANCE 3.5 software to calculate the transect width. The researchers found that densities were highest in the tall interior and mixed swamp forest sub-type, while low pole sub-type supported the lowest density. The estimated orangutan population within the Sebangau peatland ecosystem in 1996 was between 5,671 and 8,951 individuals, and this figure was revised to 6,900 individuals in the 2004 Orangutan Population and Habitat Viability Analysis.

Habitat destruction caused by logging activities was shown to affect the population density in some areas, especially within the mixed swamp forest sub-type. The study discovered that the Sebangau ecosystem supported the largest non-fragmented population of orangutans in Kalimantan, and strongly recommended that greater protection of this area from forest degradation or conversion to other purposes was crucial.

Source: Morrogh-Bernard *et al.* (2003a), Morrogh-Bernard *et al.* (2003b), Husson *et al.* (2002), Baker *et al.* (2002), Singleton *et al.* (2004)

Socio-Economic Status

Four villages sit on the Sebangau riverbank on the eastern boundary of the national park: Paduran Mulya, Paduran Sebangau, Sebangau Jaya, and Sebangau Mulya. They are home to approximately 60,000 local residents, most of whom are traders who rely upon forest resources. Consequently, the park very often has problems with illegal logging, encroachment and fire. The most difficult issue confronting the park is the continued drainage of the peatland for the purposes of accessing the forest and removing cut timber and other forest products (Anonymous, 2010a, Sylviani 2008, WWF 2006).

Illegal logging between 2002 and 2007, and related fire-events in the area, have degraded the forest and deforested an area of almost 66,000 ha inside the park. In 2006 there a local publication exposed the extent of illegal logging in Sebangau and sparked nationwide protest, attracting the attention of the national parliament. The publication showed that almost 300,000 logs of commercial timber species such as *Dyera* spp. and *Shorea* spp. had been removed from the park area (Anonymous 2010a, Anonymous 2010b, Sylviani 2008, Baker *et al.* 2002). Illegal logging has since decreased dramatically, partly due to an exhausted timber supply and partly due to increased enforcement, and illegal loggers have been forced to find other sources of income, mainly fishing (Box 11-4).

BOX 11-4

The Story of a Community Member and Illegal Logging

Ani Mardiastuti

Ani Mardiastuti

For Badrun, a 30 year old man with two children living near the edge of a lake in Palangkaraya, life is now more relaxing than it used to be. He is able to watch his family and raise his children every day. He earns only IDR 40,000 (four US dollars) per day from fishing and collecting rattan and gemor (Alseodaphne sp.) in Sebangau National Park. Gemor is a kind of wood used as a mosquito repellent, which he sells periodically to a middleman.

Between 2002 and 2006 he was easily able to earn anything from IDR 150,000 to 300,000 a day selling wood taken illegally from the park, but earning more meant he had to spend days and nights in the forest interior searching for ramin wood (Gonystylus bancanus) and meranti (Shorea spp.), cutting and sawing the wood into pieces of timber, and dragging and floating them to the tributary where he sold it to the timber broker. Although he hardly ever saw his family, he is hopeful that illegal logging will begin again in the future.

Kadim is a 50-year-old father of five and grandfather of two living in Katingan. He was a logging boss Sebangau in the early 2000's. Although he supports the establishment of Sebangau as a national park, he passionately believes this should not be at the expense of the livelihoods of the local community. He urges the park authority to be flexible and to allow the community to harvest non-timber forest products in the area. He also believes the park management should continue to promote eco-tourism in the area, as he and his friends frequently take tourists to Sebangau, earning between IDR 200,000 and 250,000 per trip.

Illegal logging activities in Sebangau caused the loss of 15-20% of the park's priceless peatland ecosystem. Loggers constructed canals throughout the area to provide access for timber harvesting and transporting to the logging yards on the banks of the Sebangau and Kahayan rivers. These activities were curbed in 2007, and since then the park authority, in cooperation with the local community and NGOs, including WWF Indonesia, are restoring the damaged area.

Source: Personal observation and interview in June 2010

In cooperation with WWF in Central Kalimantan, the University of Palangkaraya and the Centre for International Cooperation in Sustainable Management of Tropical Peatland (CIMTROP), the national park has made substantial and continuous efforts to increase awareness and conduct community development and peatland rehabilitation by re-wetting peatland ecosystems and replanting the degraded area (Box 11-5).

BOX 11-5

Centre for International Cooperation in Sustainable Management of Tropical Peatland (CIMTROP)

CIMTROP was established in 1997 by Dr Suwido Limin of the University of Palangkaraya and Professor Jack Rieley of the University of Nottingham after a series of cooperative research expeditions and ecological studies in the peatland ecosystem of greater Sebangau conducted by the University of Palangkaraya (Central Kalimantan), the University of Nottingham, and the University of Leicester from the United Kingdom between 1992 and 1996, and also following a 1995 International Workshop on Tropical Peatland in Palangkaraya.

The facility serves as a regional centre for peatland scientists and conservationists to integrate their activities. In 1998 the Indonesian Ministry of Forestry endorsed the initiative by declaring 50,000 ha of the Sebangau peatland ecosystem (formerly a logging concession run by PT Setia Alam Jaya) a natural laboratory for the study of peatland swamp forest, to be managed by CIMTROP.

CIMTROP manages a simple but well-equipped base camp, including three km of railway tracks to access the study area for wildlife observations, a number of accommodation and office facilities, a small, simple laboratory, a herbarium and nursery and a library, all powered by solar cells and a diesel generator. Since its establishment CIMTROP has worked with and been supported by many different national and international organisations, including the International Foundation for Animal Welfare (IFAW), the United States Fish and Wildlife Service, the Wildlife Conservation Society (WCS), WWF-Indonesia, Wetland International Indonesia, Primate Conservation Incorporated, the LSB Leakey Foundation and USAID.

CIMTROP is currently working closely with the Indonesian Institute of Sciences, the University of Indonesia, Bogor Agricultural University, the University of Hokkaido, the Orangutan Tropical Peatland Project, Oxford University, the University of Leicester and the University of Nottingham. Over the years CIMTROP has helped more than 150 students from Indonesia and all over the world to obtain master's and doctoral degrees, and has produced scores of publications and a wealth of scientific information on tropical peatland biodiversity and ecosystems.

CIMTROP runs a community patrol team to prevent illegal logging and forest degradation; runs a fire-fighting unit which is active every year extinguishing dry-season fires; manages projects to improve community livelihoods in Kalampangan and Kereng Bangerai villages; and has built over 250 dams to manage hydrological conditions in the Natural Laboratory and Kalampangan regions.

Source: Cheyne & MacDonald (2008), Cheyne (2007), Morrogh-Bernard (2006), Page *et al.* (1997), Rieley *et al.* (1997)

Ani Mardiastuti

SS Camp Sebangau National Park

Support from Partners

Protecting and developing Sebangau National Park has strong support not only from WWF Indonesia and CIMTROP but also from Wetlands International Indonesia, OuTrop, Borneo Orangutan Survival Foundation (BOSF), Care International and the Central Kalimantan Peatland Project (CKPP), which itself is supported by the Netherlands' Government.

WWF Indonesia, OuTrop and BOSF are assisting the park in protecting orangutans and their ecosystem. CKPP, Wetlands International Indonesia and CIMTROP have focused on rehabilitating the peat ecosystem, whilst Care International concentrates on local community empowerment. Canal blocking (Box 11-6) has been important to restoring the peat ecosystem in Sebangau, and recently Garuda Indonesia through the WWF Indonesia programme has supported peat rehabilitation in Sebangau by restoring 250 ha of degraded peat ecosystem (Box 11-7).

BOX 11-6

SSI Camp and the Construction of Dams to Block Canals in Sebangau National Park

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SSI camp and the canal blocking construction

SSI Camp on the bank of a canal in Sebangau National Park is representative of the condition of the park. Here visitors are able to see peatland degradation, secondary peatland forests, and the current rehabilitation and biodiversity conservation efforts.

SSI stands for Sinatra Sebangau Indah, the company which oversaw the logging concession in the area. Since the logging activities ceased, the SSI Camp has been a place for researchers and visitors to stay and conduct activities related to conservation and reforestation efforts.

Since 2004, in cooperation with WWF Indonesia and local communities, SSI has served as a pilot project for peatland restoration through a canal blocking programme, which aims to prevent continued draining and deterioration of the peatland ecosystem. The canal is 24 km long, 8-10 m wide and 4-6 m deep. Prior to the construction of dams, the park management intensively disseminated information on the project to ensure that the communities who own or regularly use the canal for fishing and collecting non-timber forest products from the forest interior understand the objectives and benefits of canal blocking.

The construction of dams for canal blocking is based on factors such as length, width, height, water discharge, peat depth and slope. Three models of dam were designed: permanent dams made from blocks of wood and galam *Melaleuca cajuputi* wood, a medium design made from galam wood, and a simple design made of bushes of peat material. The project constructed 40 dams along the SSI canal, and 50 piezometers (small-diameter observation wells used to measure the hydraulic head of groundwater in aquifers) were installed on both sides of the dams. The park management and WWF field staff monitor the water table regularly, and results over indicate that the dam is tending to stabilize groundwater fluctuation near the peat surface. The pioneer plants have gradually returned and covered the area where the soil was previously bleak and barren.

Encouraged by these positive results, in 2009 the park management, local communities and WWF Indonesia expanded the initiative by constructing 86 dams in canals along Bangah and Bakung rivers, both tributaries of Sebangau river. Construction has continued, and the park has so far constructed almost 330 canal dams across the peatland area.

Source: Taman Nasional Sebangau (2011), Anonymous (2009), Widiati (2008)

BOX 11-7

Garuda Indonesia Helps Rehabilitate Sebangau National Park

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Tree replanting near SSI camp, Sebangau National Park

In November 2007 the Indonesian Ministry of Forestry signed an agreement with WWF Indonesia and the national airline Garuda Indonesia to rehabilitate a 250 ha logged-over area in Sebangau National Park by planting 100,000 local trees. The initiative was part of Indonesia's commitment to help mitigate global climate change in line with Garuda's program for biodiversity conservation.

The tree planting ceremony was conducted on 15 April 2008 by Garuda Indonesia's President and CEO Emirsyah Satar. Also participating were the Presidential Advisory Council member for Environment and Sustainable Development Prof Dr Emil Salim; Deputy Governor of Central Kalimantan Mr Ahmad Diran; the CEO and board of directors of WWF Indonesia, and other eminent members of the Ministry of Forestry and the Ministry of Culture and Tourism.

As well as restoring Sebangau ecosystem, this cooperation is also expected to create economic improvement opportunities for the local community through the development of ecotourism in Sebangau National Park. The programme would hopefully attract more domestic and international Garuda passengers to Central Kalimantan to experience its cultural diversity and its natural forest, including Sebangau National Park.

Source: Anonymous 2009, Widiati 2008, Sumantri, former Director of Sebangau National Park, *pers. comm.,* June 2010

Park Management

When the park management unit was established the office was staffed by 11 officers including the park manager, and the central government increased this to 31 by 2010. This level of staffing is far from adequate to effectively protect a 600,000 ha park, and the management should instead be actively collaborating with the community who live in and near the park through initiatives like the *Forum Peduli Taman Nasional Sebangau* (the Concern for Sebangau National Park Forum), created by the park to involve the local communities, particularly young people.

Since its establishment the park has received a regular budget from the central government of close to IDR half a billion in 2004 rising to almost IDR 6 billion in 2010, or approximately IDR 10 (USD 0.001) per hectare/year. Most of this budget has been allocated for increasing awareness, restoration and infrastructure development (Fig. 11-3 and 11-4).

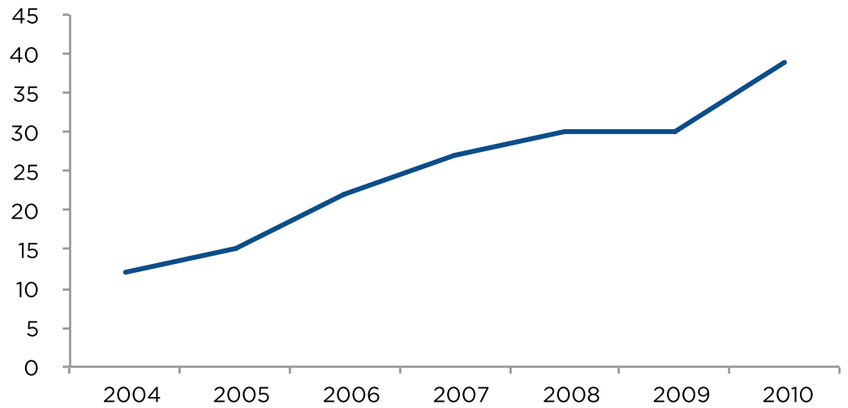

Figure 11-3.
Number of park officers, 2004-2010
Source: Sekretariat Direktorat Jenderal PHKA (2010)

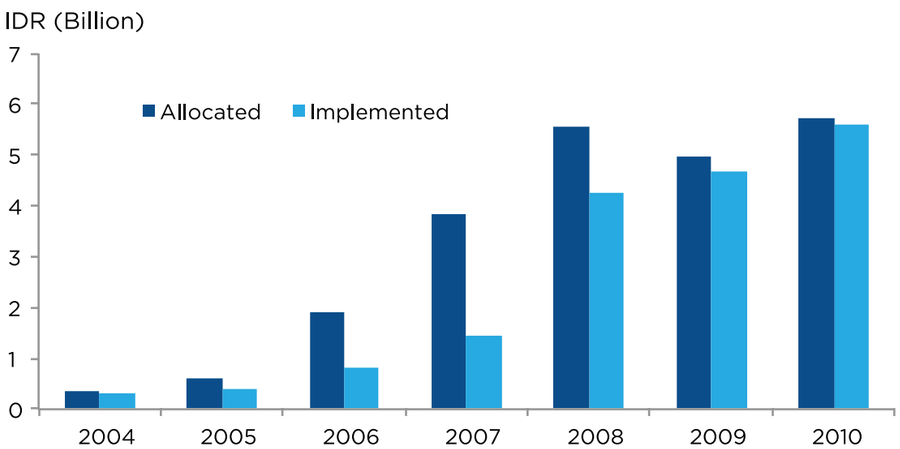

Figure 11-4.
Budget of Sebangau National Park, 2004-2010
Source: Sekretariat Direktorat Jenderal PHKA (2010)

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Researchers and rangers crossing the peatland area of the park.

Local People's Views about Sebangau National Park

To understand the views of the local community, 750 questionnaires were randomly distributed in 2005 to people who live in and close to the park. In order to assess changes in opinions over time the same questionnaire was distributed again in 2010, although not to the same villages. Table 11-1 shows the breakdown of education and occupation of the respondents.

TaBle 11-1
Educational background and occupational status of to Sebangau National Park respondents in 2005 and 2010.

Profile of Respondents	2005	2010
education		
No formal education	9.23%	9.14%
Elementary school	28.46%	26.29%
Junior high school	25.85%	18.29%
High school	14.46%	27.43%
BS degree	1.85%	6.86%
Master's degree	0.62%	0.57%
Unidentified	9.54%	11.43%
Ocupation		
Farmer	44.00%	16.00%
Trader	5.85%	8.00%
Civil servant	5.23%	6.86%
Freelance	8.92%	36.57%
Student	2.15%	5.71%
Others	2.15%	26.85%

Respondents' views of the park and its management, including the NGOs who assist the park management, have been classified into eight categories: (1) familiarity with the park, (2) the park boundaries and regulations, (3) the park's management, (4) views on the park's protected species, (5) park management options, (6) park programmes and support, (7) the park's benefits to local communities, and (8) views on NGOs (Fig. 11-5).

1. Familiarity with the Park

The percentage of respondents who knew about the park in 2010 (85%) was far larger than in 2005 (41%). This figure suggests that the park intensively campaigned to raise awareness among the local community between the two years. The percentage of respondents who had visited the park in 2010 was also higher than in 2005, but the number of respondents who did not express their opinion in 2005 was higher.

Over time the support of respondents for the establishment of Sebangau National Park is rising. In 2010 the percentage of respondents who somewhat agreed or strongly agreed with the establishment of the park reached 83%, while only 28% held that opinion in 2005.

2. Park Boundaries and Regulations

In 2012 about 58% of respondents were aware of the park's boundaries. This number is substantially higher than that in 2005 (12%), indicating that the park has achieved significant improvements in community awareness.

The same pattern occurs on the issue of park regulations. Whereas in 2005 only 12% of respondents were aware of the park regulation, in 2010 the percentage increased to 65%. The percentage of respondents who were aware of their rights and responsibilities as settlers in the park in 2010 also reached 65% compared with only 12% in 2005, and a similar percentage were aware of the consequence of violating the rules of the park (64%). However, there was a slight decline in the percentage of respondents who are well aware of this matter, from 2% in 2005 to 1 % in 2010.

3. Park Management

In 2010 around 67% of respondents were aware of the roles and function of Sebangau National Park management, representing a substantial increase on 2005 (18%). The percentage of respondents who knew about the management and officers of the park also increased significantly in 2010, reaching 70% compared with only 14% in 2005. Despite an increase in the number of respondents who rated the current management and its officers as very good or good in 2010 (48%), 35% still responded negatively.

4. Protected Species

The percentage of respondents who were aware of protected fauna species (72%), protected tree species (67%) and their habitat (65%) in 2010 is relatively promising compared with 2005. Of the three scores, respondents seemed to be most aware of the protected fauna species. In 2005 only 28% of respondents knew that Sebangau National Park is an orangutan habitat, and the same percentage supported protecting peatland in Sebangau National Park.

5. Park Management Options

In 2005 only 28% of respondents supported the current system whereby the government is fully in charge of managing the park. In contrast, 35% of respondents agreed with the idea that the park should be managed by the local community. A similar percentage (35%) of respondents also agreed to the idea of collaborative management by the local community and the government. Surprisingly, in 2010 the percentage of respondents who agreed with the option of the government managing the park substantially increased to 78%, which slightly exceeds the percentages who believed that the park should be managed by the local community (72%) or that management should be collaborative (74%).

6. Park's Programme and Support

Only 32% of the respondents in 2005 agreed that there should be an ecotourism programme in Sebangau National Park. In 2010 the percentage increased dramatically to 84%. Perhaps this was due to the stronger enforcement of laws against illegal logging which used to be the main livelihood of the communities in and around the park. The percentage of respondents who rejected the idea of having oil palm or timber concession companies in part of the park also increased in 2010 (40%) as compared with 2005 (12%). Nevertheless, the percentage of respondents who disagreed with the proposal was still lower than those who supported oil palm or timber concessions (44%).

In 2010, when respondents were asked whether they agreed to revoking the status of Sebangau as a National Park, 37% of them agreed. Surprisingly, only 26% of respondents agreed that illegal logging should be curbed, with the remainder either not responding at all or disagreeing.

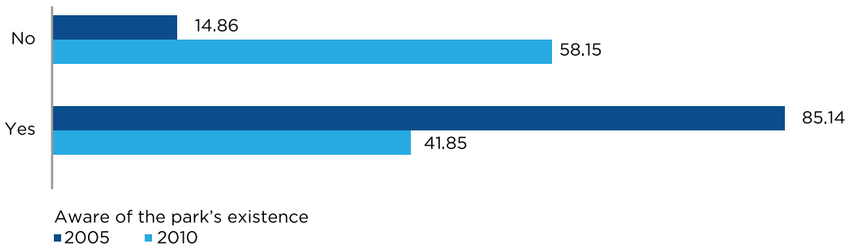
7. Park Benefits

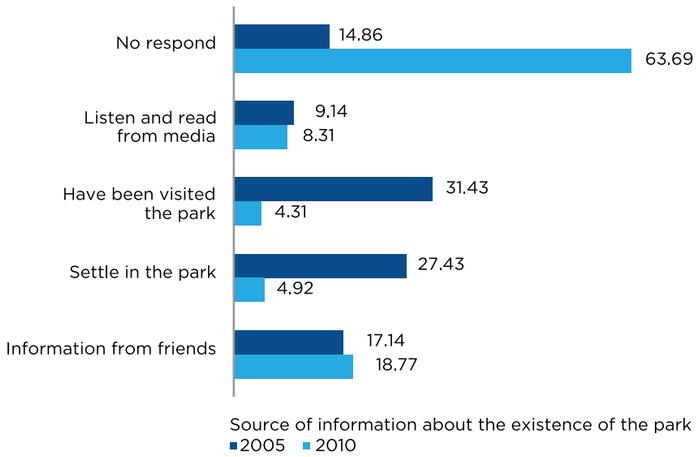
One surprise from the survey was that only 24% of respondents in 2005 supported the idea of allowing the local community to harvest resources sustainably from the park, but this percentage tripled in 2010 (74%). The same trend was seen with the percentage of respondents (42%) who did not believe that the park has provided economic benefits to the local community, which increased from 15% in 2005. Further, about 40% of respondents in 2010 also felt that the park has not provided protection for their lives and their livelihood.

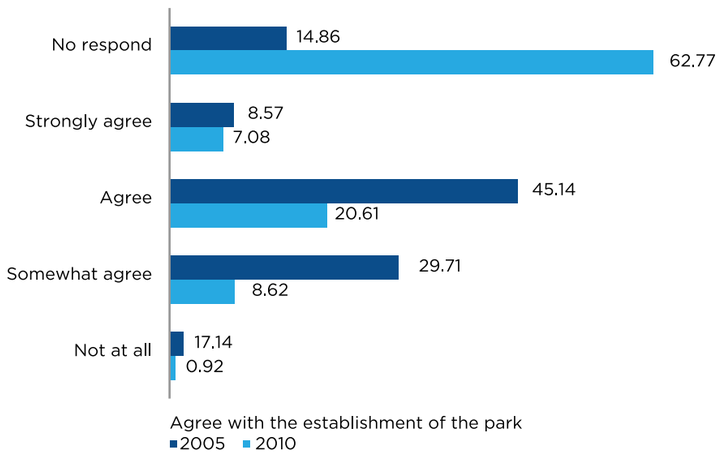
8. Views on NGOs

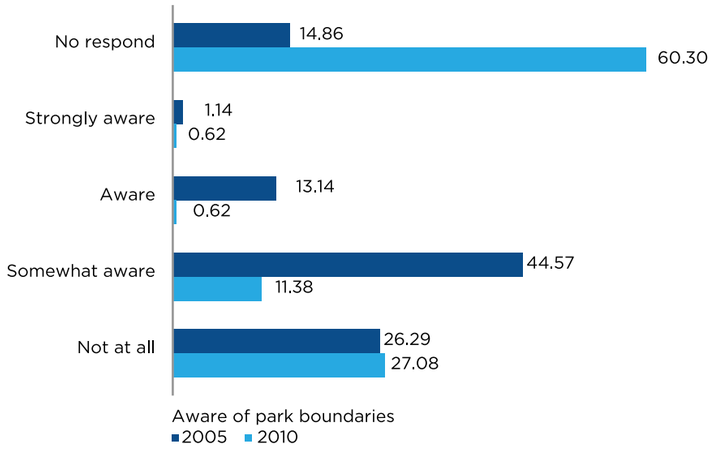
About 64% of respondents in 2010 answered that they knew about WWF and its role in Sebangau National Park – more than double the 2005 figure. Many respondents in 2010 (50%) also said that WWF has done a good or very good job in Sebangau, whereas 33% rated it not good at all. However, when asked whether the presence of WWF and its role is useful to the park and its community, 44% of the respondents responded 'not at all'.

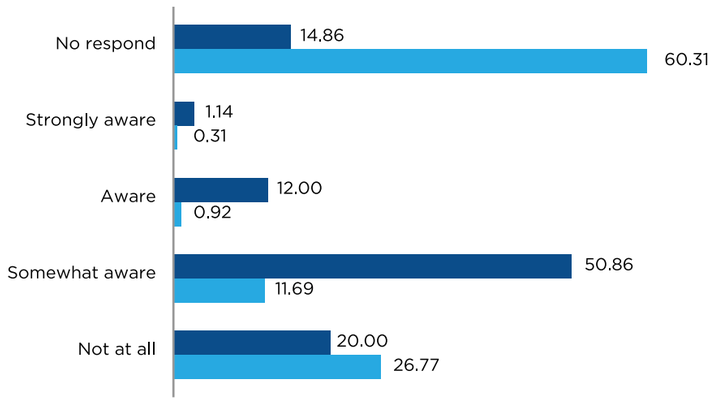
Figure 11-5. Opinions of local people regarding various issues of Sebangau National Park.

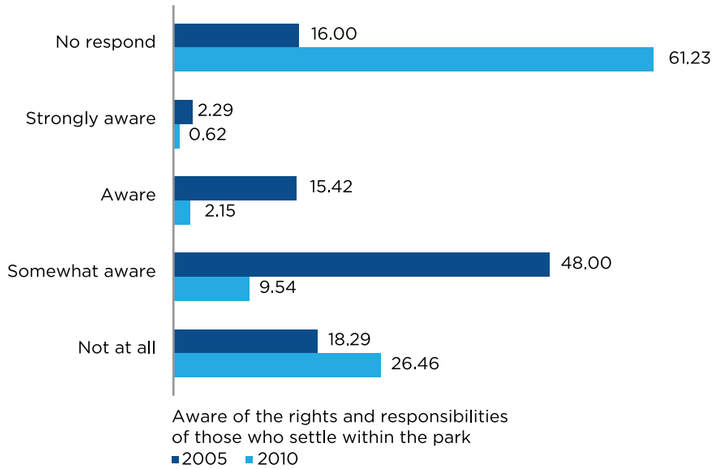


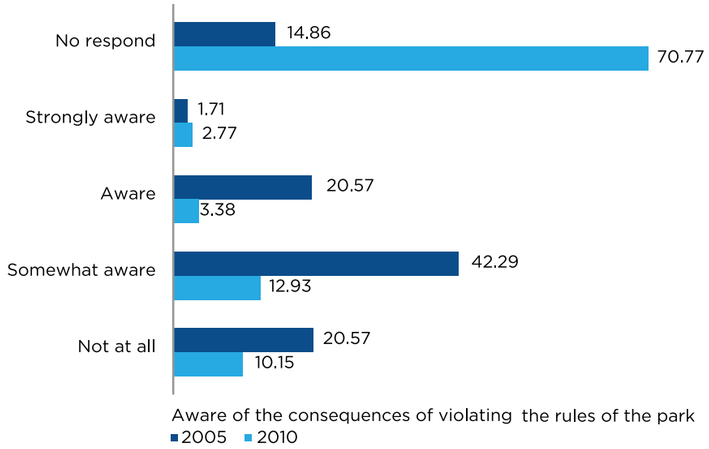


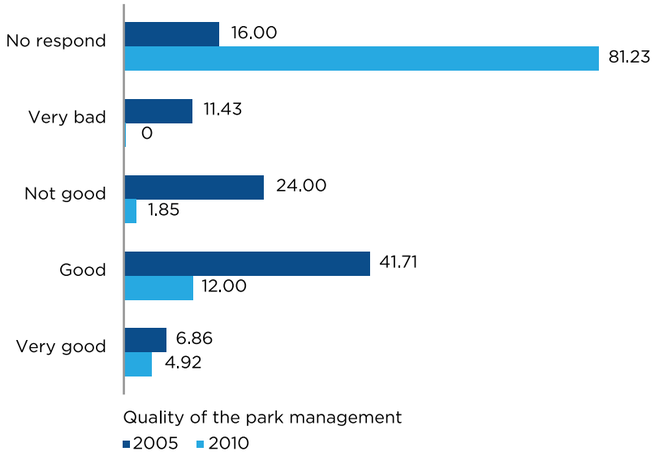


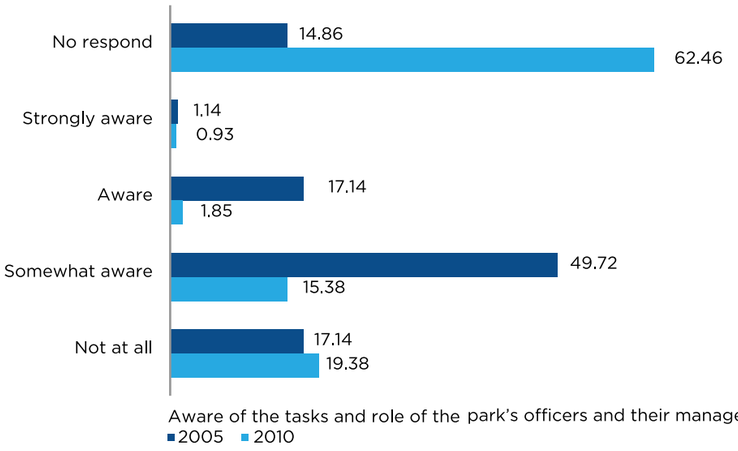


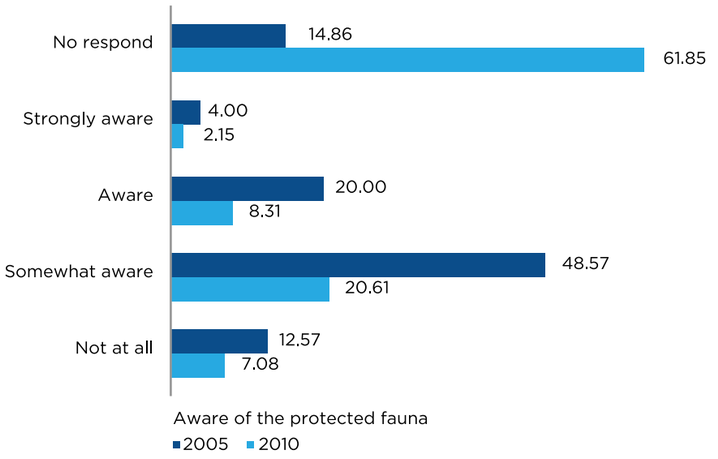


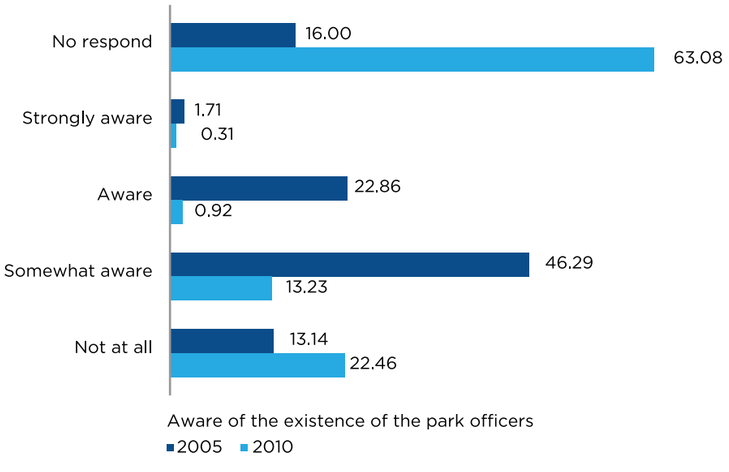


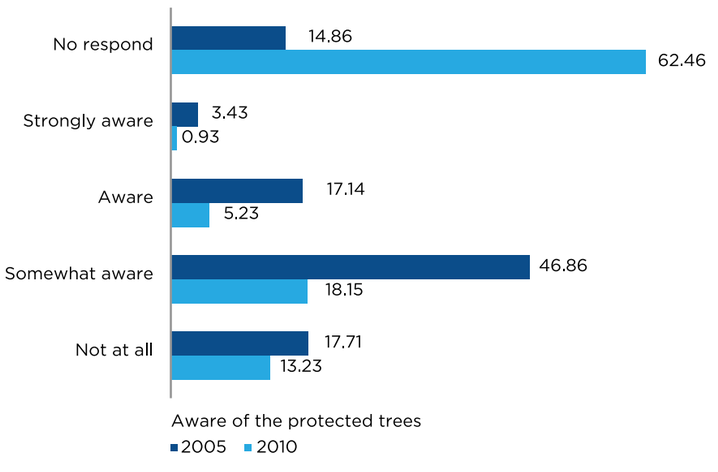












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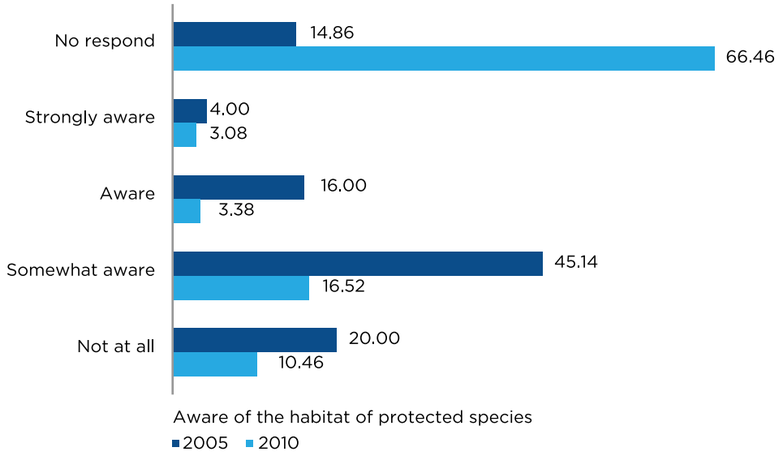

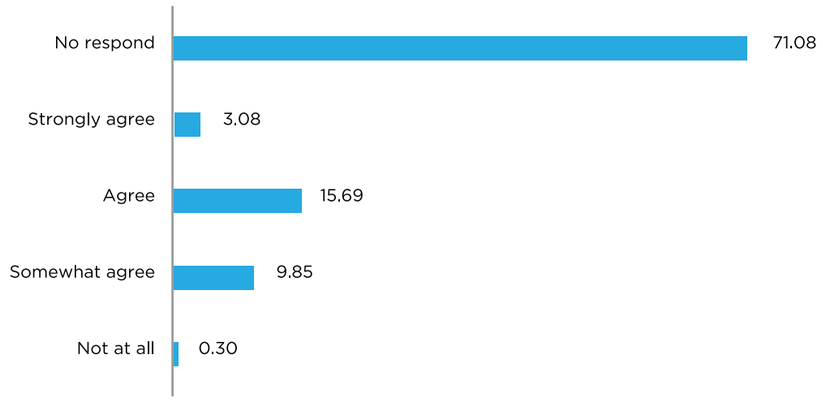

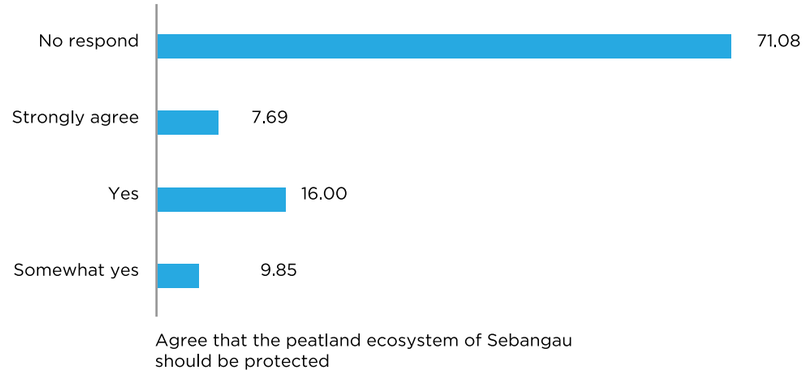

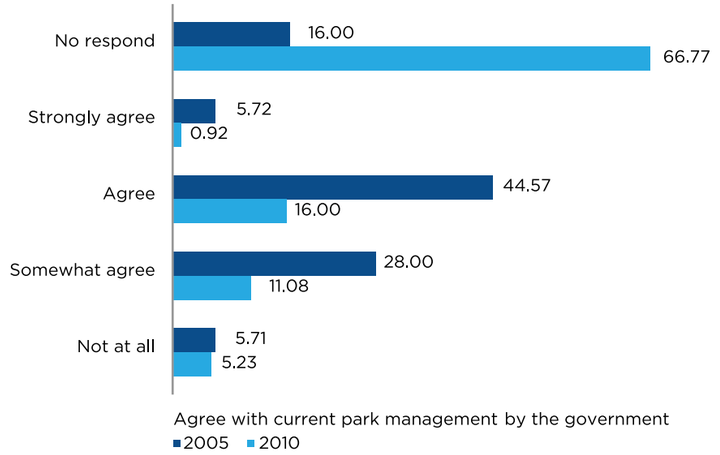

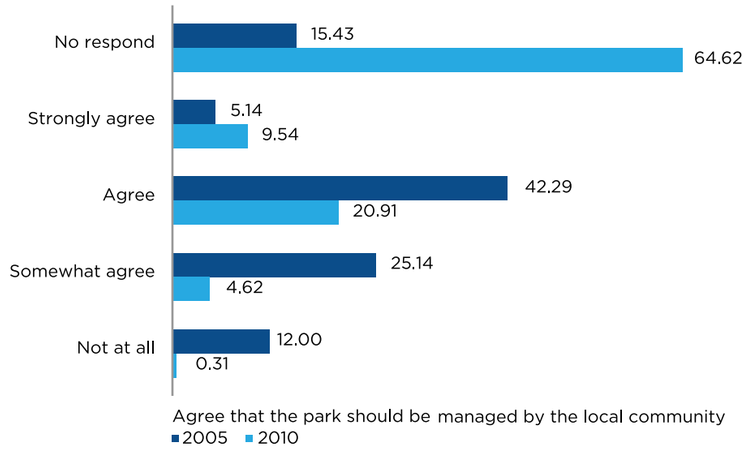

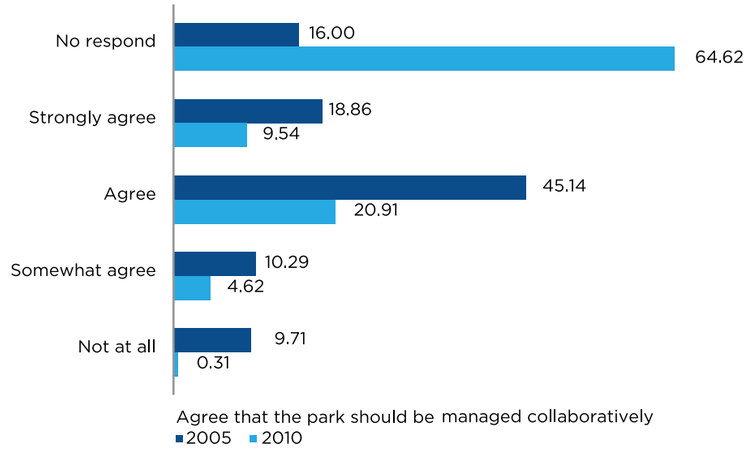

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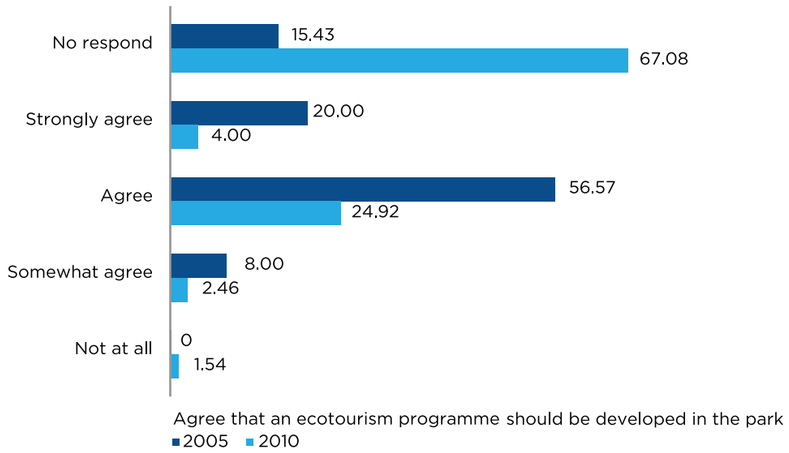

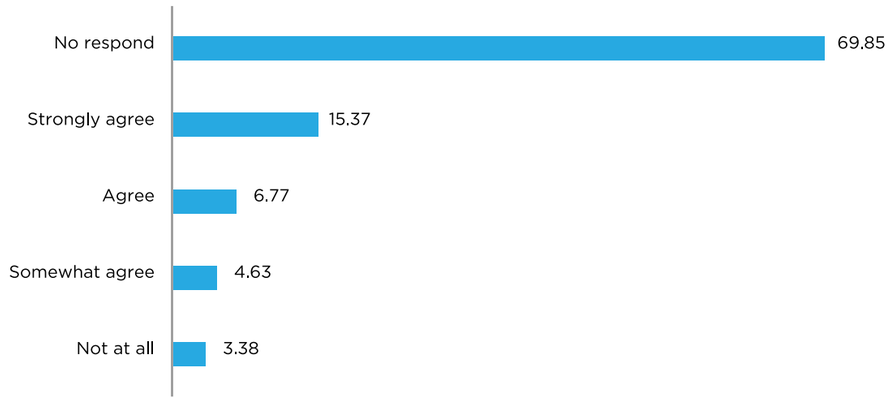

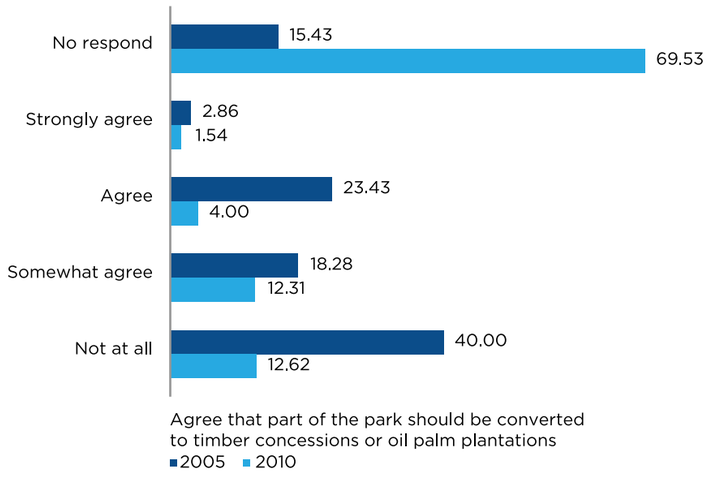

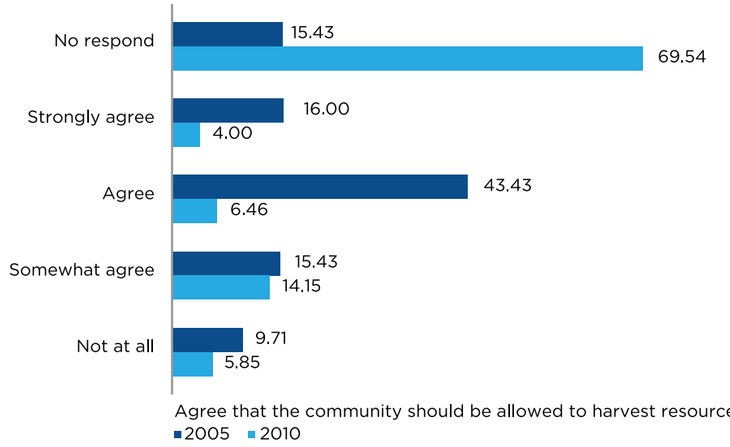

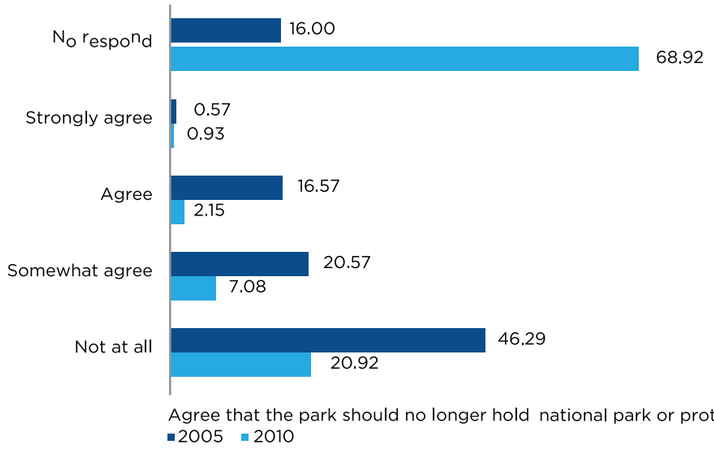

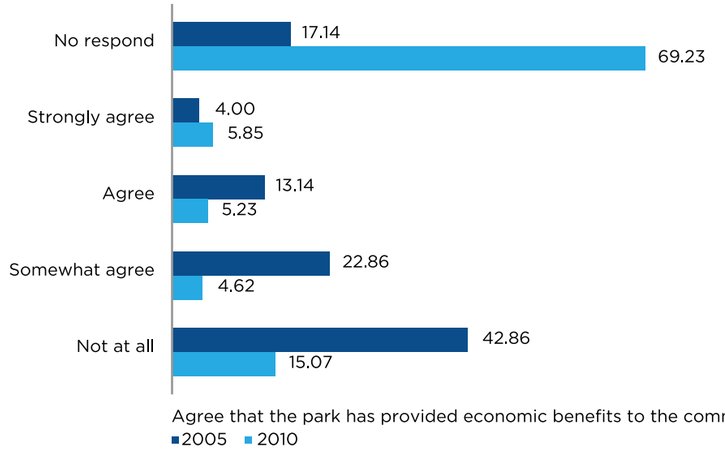

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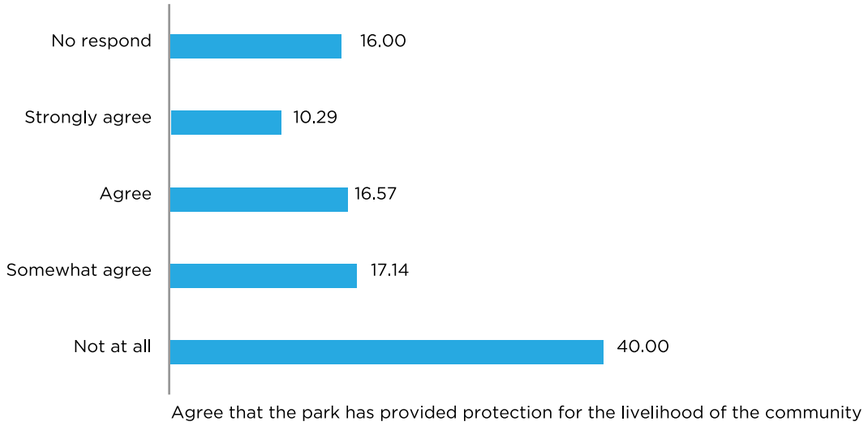
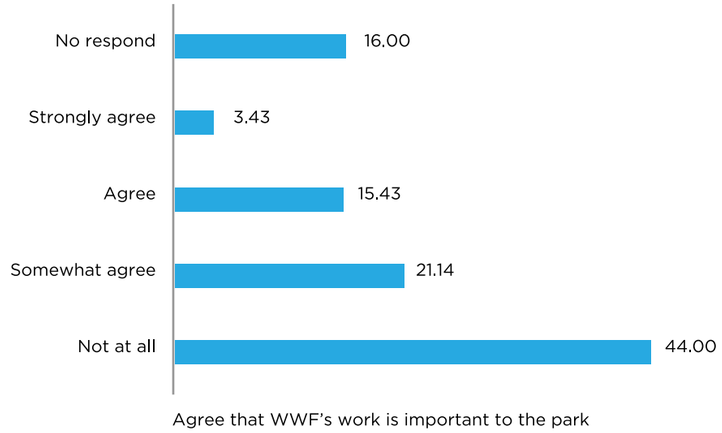
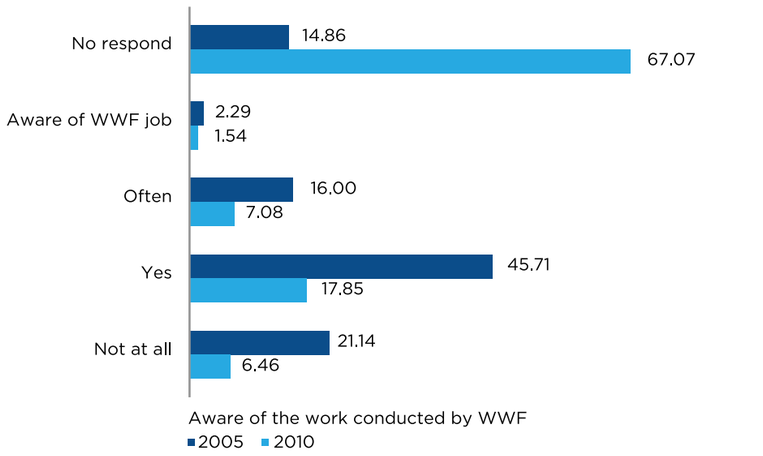


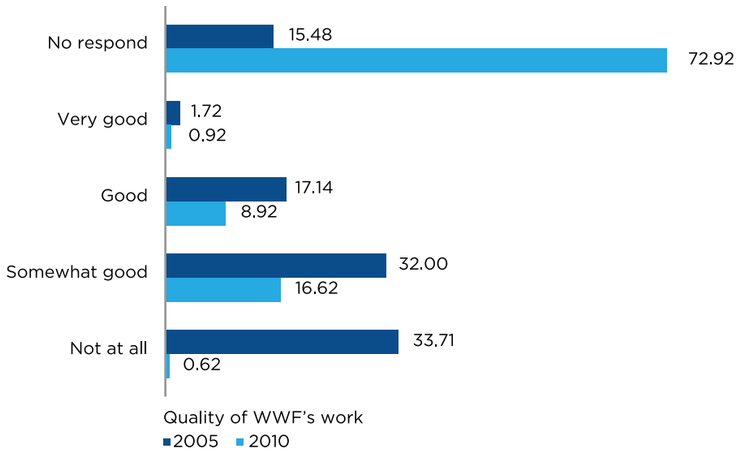
Agree that the park has provided protection for the livelihood of the community



Agree that WWF's work is important to the park



Aware of the work conducted by WWF
2005 2010



Quality of WWF's work
2005 2010

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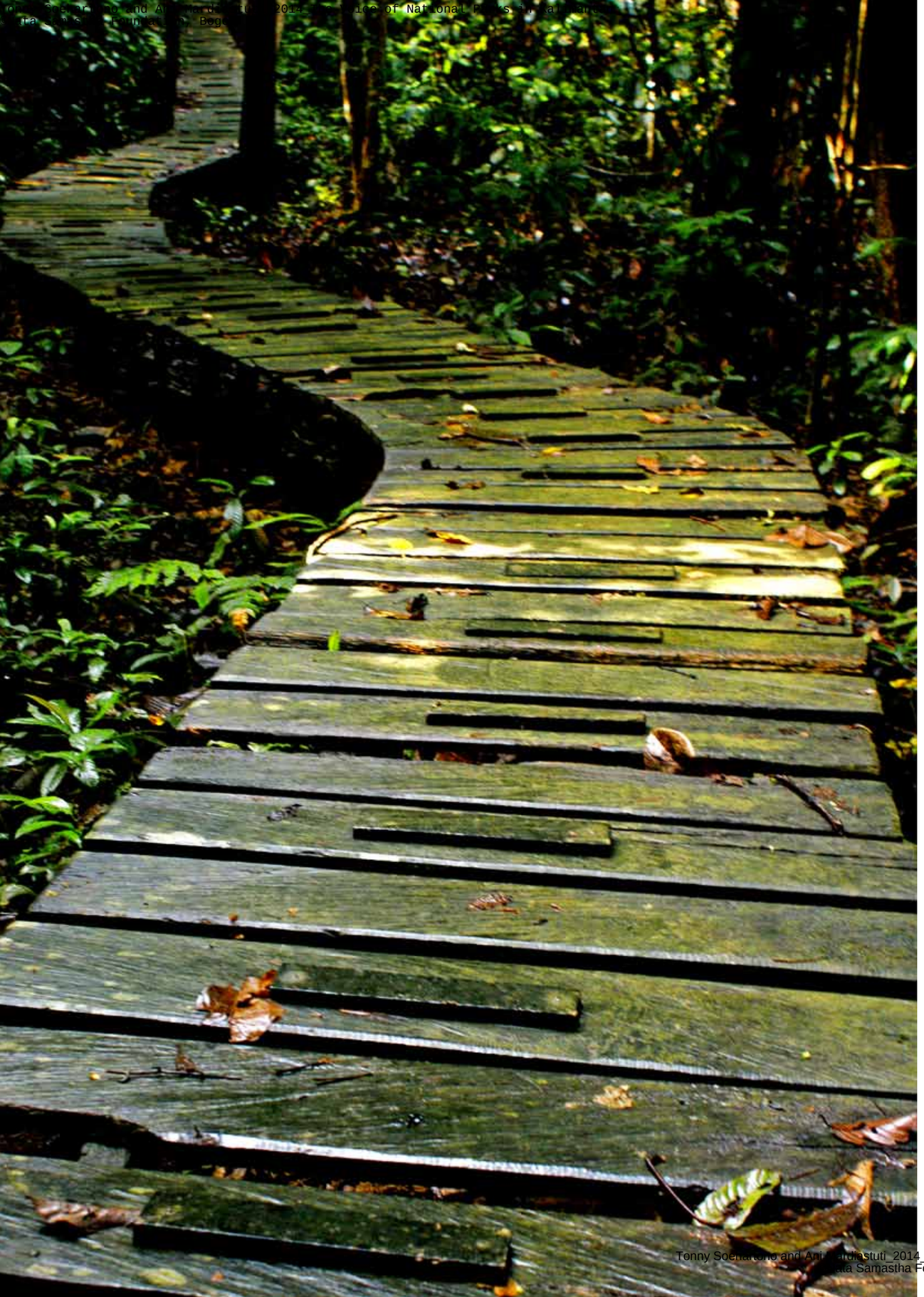

CHAPTER 12

NATIONAL PARKS IN KALIMANTAN: CHALLENGES AND THE WAY FORWARD

In the previous Chapters, an overview of eight national parks has been presented, including information on the opinions of people living in and around each Park. Whilst accepting that the respondents to the questionnaire will have their own biases, and represent only a sample of the community, the results can still be used to identify the key factors which might contribute the defining the future course of national park development in Kalimantan, or even more widely in Indonesia.

Education of the Community

Prosperity of the community who live in and around the conservation area is among the ultimate goals of developing a national park in Indonesia and elsewhere. Nevertheless, the road to achieving this goal is extremely long and challenging. From the surveys around eight National Parks, about 9.29% of the respondents had no formal education while 21.90% had received only Elementary School education. In other words, only some 30% to 50% of the respondents reached Junior High School. This figure is far from ideal for a country which has been independent for more than 60 years. Unfortunately, this study was unable to provide a more detailed picture of the number and condition of schooling facilities and opportunities for communities around each Park, making it difficult to judge if the failure to attain higher standards is a result of community attitudes or lack of opportunity. The educational attainments of the respondents are summarized in Table 12-1.

TaBle 12-1

Education background of the respondents in eight surveyed national parks (in %).

education Background	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
No formal education	5.00	10.83	2.08	-	14.60	17.11	6.29	9.14
Elementary school	5.83	23.55	17.19	25.50	40.95	26.17	13.36	26.29
Junior high school	47.00	16.95	26.30	25.06	17.14	28.66	27.69	18.29
High school	22.50	31.87	37.76	24.17	17.78	18.91	38.33	27.43
BS degree	12.50	4.87	7.03	14.85	0.63	1.29	2.90	7.43
Unidentified	7.17	11.93	9.64	-	8.89	7.86	11.42	11.43

Note: - Data unavailable.

Ani Mardiastuti

Knowledge of the Park

Gunung Palung National Park is the most well known (92.71%) park among respondents of the eight surveyed Parks. This is perhaps because the iconic status of orangutan and the high profile conservation program for the species has made the Park become more visible for the community around Gunung Palung (Table 12-1). Compared with Kutai (84.33%), Tanjung Putting (86.81%) and Sebangau (85.14%) National Park, Gunung Palung National Park is less accessible and much smaller in size. The Park was also well known for damaging activities such as illegal logging and illicit trade of protected species, in particular Orangutan. Thus, in addition to with the attention generated by the Orangutan program, the familiarity of the Park might also be elevated by the high number of cases of enforcement against illegal logging activities within the area surrounding the Park.

Except for Sebangau and Tanjung Puting National Park, few of respondents (<50%) in the Parks admitted to being aware of the location of the Park boundary. However, many respondents (>50%) from five National Parks are aware of the existence of Park regulations. Surprisingly, many respondents in Tanjung Puting, Gunung Palung, Bukit Baka, Danau Sentarum and Sebangau National Parks are aware of the rights and responsibilities associated with being settled inside the Park area. Most of the respondents from these Parks also knew the consequences of violating the rules of the Park. These figures are completely inconsistent with the fact that the five National Parks were notorious for illegal logging during the late 1090's and early 2000s. As for the knowledge of protected fauna, most of the respondents in all surveyed National Parks, except those in Betung Kerihun, indicated that they are aware (Table 12.2).

TaBle 12-2

The knowledge of the respondents in eight surveyed national parks (in %).

Key Issue	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Park familiarity	84.33	86.81	92.71	69.87	72.06	72.54	82.77	85.14
Boundary demarcation	39.17	52.28	48.17	46.67	35.55	43.59	31.85	58.85
Park regulations	50.50	70.02	57.03	51.00	37.46	46.07	48.11	65.15
Aware of the rights and responsibilities associated with being settled in the park	43.00	67.51	52.34	61.07	41.91	46.17	54.98	65.72
Awareness of protected species	69.50	85.87	83.85	80.53	47.62	58.42	62.73	72.57
Awareness of consequence of violation of the rules	49.0	76.61	61.20	55.73	32.70	48.55	51.40	64.57

Note: The percentage for the awareness of protected species is presented from the data on awareness of protected fauna species. Awareness of protected tree species is not included in this Table.

While most of the respondents in the Parks surveyed were aware or somewhat aware of the importance of protecting the Park, it is surprising that 40.63% of the respondents in Gunung Palung National Park responded that they did not know at all about the importance of protecting the Park (Table 12-3). For Gunung Palung, the figure is rather difficult to interpret as the Park's programs and efforts to promote and conserve the area are considered good. It is possible that the respondents were pretending to be unaware in order to avoid discussion of misconduct and problems in the past, or there might have been mistakes or misunderstandings during the interviews with Gunung Palung respondents. However, if the respondents recorded are correct then this poses a serious challenge to the Park's conservation awareness programs.

TaBle 12-3

The percentage of community who were aware and not aware of the importance of protecting the park and its protected species in eight surveyed national parks.

Degree of awareness	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Not at all	10.33	6.28	40.63	16.80	22.22	14.43	17.42	8.00
Somewhat aware	36.66	46.31	32.29	47.47	37.78	34.03	36.78	44.00
Aware	32.16	31.08	11.20	28.27	9.84	19.90	25.55	26.86
Well Aware	4.50	7.69	7.55	5.33	3.17	4.18	2.42	5.71

Note: The percentage of no response is not included in this Table.

The Tenure Issue

Ajang, a Dayak Kenyah and his compatriots who were born and grew up in Kayan Mentarang were surprised to find out how complicated the regulations were when his home was established as part of the Kayan Mentarang National Park. With the permission of the Chief of his Dayak Clan, he and his family and friends used to have free access to the resources of the Kayan Mentarang forest area, including being able to settle within the forest area, clearing certain areas of forest for traditional agriculture, hunting and collecting non-timber forest products for their subsistence.

This is not to say that a member of the Clan is allowed have everything for his or herself. The Clan has traditional rules which control the distribution of resources to the entire members of the Clan. These rules prevented the group members from monopolizing the resources for their own benefit. Whilst it is difficult for an outsider to fully understand the feelings and motivations of the Clan members, it is difficult to avoid the conclusion that life in this community is peaceful and harmonious.

Following the establishment of Kayan Mentarang as a Strict Nature Reserve and later a National Park, things became rather different for the people who live in Krayan, Long Apung, Pujungan, Alango and many other villages within the Park area, including Ajang. The Park imposed rules that people living in the area have to follow, with punishments clearly stipulated.

People are no longer allowed to harvest resources and settle in the Park area without a permit from the Park Authority. In theory, even entering the Park without the

consent of the Park Authority would also create problems, though this rule has never been enforced in the area (Box 12-1). For the villagers and perhaps for others, who have never had the Park regulations and the reasons behind them explained, these rules appear to be irrational or exaggerated. This is a story which can be found not only in Kayan Menatarang National Park, but elsewhere in national parks in Indonesia where people live.

Nevertheless, the majority of the respondents in the eight surveyed National Parks agreed with the establishment of their area as a national park. The percentage of respondents who disagreed with the idea of the establishment of the National Park was only significant in Betung Kerihun (24.13%) (Table 12-4).

When the question was reversed, the response generally appear to be consistent with the finding above. The percentage of respondents who agree with the idea of abandoning the status of national park is high in Betung Kerihun National Park (40.95%), as would be expected. It is surprising, however, that the responses in Tanjung Puting National Park appear to be inconsistent with the finding above, with nearly half agreeing that the status of the area should no longer be a National Park (46.62%) (Table 12-5.).

TaBle 12-4

Percentage of community who agree with the establishment of national park in eight surveyed national parks.

Degree of agreement	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Disagree	3.33	2.67	1.56	5.33	24.13	3.28	4.16	1.71
Somewhat agree	8.00	10.36	10.42	13.87	23.49	17.01	12.58	29.71
Agree	46.83	51.02	44.27	52.00	17.78	41.89	39.50	45.14
Strongly agree	25.16	27.94	35.68	20.80	6.67	10.75	21.29	8.57

Note: percentage of no response is not included in this Table.

The data from Tanjung Putting and Betung Kerihun National Park deserve further exploration. It is possible that the community in these two Parks have not completely accepted the establishment of the National Park. If that is the case, then further dialog with the community in these Parks should be done intensively to reach consensus on the best way forward for the community and the Park.

The data in Table 12-5 also show that respondents in Gunung Palung and Kutai National Park strongly disagree with the idea of abandoning the Park's status. These figures are consistent with those in Table 12-4 where more than 70% of the respondents from the two Parks agree with the Park's establishment. However, the fact that the two Parks have similar notorious reputations for illegal logging and illegal occupation leads to confusions and questions when interpreting these results. The positive point of view would be that these people genuinely want to live there with the condition that they are allowed to harvest the resources. The next question then is how to reach agreement on an arrangement where people are able to live in harmony with the Park? Such question is always difficult to address as the concept of national park management in Indonesia has not yet accommodated the idea of sharing rights or accommodating traditional tenure systems.

BOX 12-1

Article 50 no.3 of the Act No. 41 of 1999 of Basic Forestry

Everybody is prohibited from:

- entering, working, encroaching and occupying of forest areas without a legal permit;
- removing and felling any trees within a forest area within a distance of 500 meters from a lake or dam, 200 meters from a natural spring water or riparian zone, within a swampy area, 100 meters from a riverbank, 50 meters from a creek, and within a distance of 2 times the height of a cliff and 130 times the gap between the highest and lowest tides for a coastal area;
- intentionally burning a forest area;
- felling any trees or harvesting forest products within a forest area without a permit from the relevant Authority;
- receiving, trading or exchanging, storing or owning forest products without consent and permit from the relevant Authority;
- performing a mining assessment, exploration and exploitation of minerals within a forest area without a permit from the Ministry of Forestry;
- transporting, possessing or owning forest products without a legal permit;
- pasturing livestock in a forest area without a legal permit from the relevant Authority;
- carrying any apparatus suitable for harvesting or to transport forest products without a permit from the relevant Authority;
- throwing any item which could potentially endanger the forest area and its ecosystem;
- capturing and transporting non protected wildlife from a forest area without a permit from the relevant authority.

Source: *Undang-Undang Kehutanan No. 41 tahun 1999.*

TaBle 12-5

Percentage of respondents who agree with the idea of abandoning the status of eight national parks.

Degree of agreement	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Disagree	73.33	44.74	83.07	69.33	29.52	45.67	58.76	46.29
Somewhat agree	5.67	40.66	5.47	8.00	15.87	10.95	9.20	20.57
Agree	3.00	4.08	2.60	6.40	20.32	14.43	5.42	16.57
Strongly agree	0.67	1.88	0.52	4.80	4.76	1.69	2.32	0.57

Note: percentage of no responses is not included in this Table.

In response to situation such as those found in these Parks, the Government has encouraged and supported the creation of a working group on Land Tenure in Indonesia. Coincidently, or perhaps to ensure that the group would not threaten the Authority or to ease up the tenure issues, the Chair of the group was selected from officers of the Ministry of Forestry. The group consists of relevant civil society organizations, academic institutions, and Government agencies such as the National Land Bureau, Ministry of Interior and Ministry of Forestry. Funding for the group comes from various donors including International Land Coalition, ASEAN Forest Network, ICRAF and Indonesian Partnership Program.

The main objective of the group is to provide advice to the Government in dealing with partial tenure issues in the field. One of the success stories is the solution of tenure issues at Sungai Utik in East Kalimantan. However the challenge remains that there is no legal support for accommodating traditional tenure systems stipulated in any of Indonesian regulations. Unfortunately, inconsistency in policy and practice from local Authorities, in endorsing legal permits of land for communities, is worsening the situation.

In response to these problems, and rather than working in a case-by-case way, the group was asked to table wider, generic approaches to the problems of the tenure system which would be acceptable nationwide or at least provide a transitional approach for forest land tenure that could be tolerated by the authorities and the community. In 2011 the group finally produced the Land Tenure Road Map for Indonesia, which is now awaiting endorsement from the government (Santoso, Director General of Forestry Commercial, *pers. comm.*, 2011).

The Access to Resources

As mentioned earlier, in response to, among others, the issues of tenure, the Government, in particular the Ministry of Forestry revised the Forestry Act No. 5 of 1967 with the new Forestry Act No. 41 of 1999, accommodating the rights of local communities to have access to forest resources sustainably. Under Articles no. 67 and 68 of the new Act, pertaining to the participation of customary communities, local communities who reside within the forest area have the right to access resources from the forest, the right to understand the Government's planning and initiatives regarding forest area, as well as to receive information concerning any programs and activities in the forest. In addition, the community has the right to give information, advice and opinions regarding the planning and use of their forest area. The community is also responsible to monitor, directly or indirectly, the implementation of development plans, programs and activities within or around the forest area (Republik Indonesia, 1999) (Box 12-2)

BOX 12-2

Article 67 and Article 68 of the Act No. 41 of 1999 of Basic Forestry

Article 67 Customary Law

As long as the customary law still exists, is valid and acknowledged, the community has the right to:

- harvest forest products for daily subsistence;
- manage the forest area based upon the customary law and as long as this is not inconsistent with current laws and regulations;
- receive empowerment programs to improve their prosperity.

Article 68 Community Participation

The community has the right to benefit from the quality of the environment resulting from the forest area.
The community also has the right to:

- utilize the forest area and its products in accordance with the current regulations;
- be informed about plans for forest utilization and receive information regarding forestry activities;
- provide information, advise and opinions regarding forestry development;
- directly and indirectly monitor and control the implementation of forestry development.

Source: Undang-Undang Kehutanan No. 41 tahun 1999.

With this regulation, the Authorities hoped to resolve or at least diffuse any conflict with the community regarding land issues and resources within forest area. Yet from the community point of view, the access policy has not been able to resolve the issue of tenure. This is partly because the Authority, to this point in time, has not developed the implementing regulations needed to operationalize these part of the law. The result has been confusion in implementation in the field. One example is described below.

People who live in Kayan Mentarang or Betung Karihun, for example, are used to logging timber for housing, or shifting cultivation or hunting wildlife and harvesting of non-timber forest products. However, according to the national park regulations, they are prohibited from entering the Park, practicing these activities, or even carrying any kind of tools that might be used to cut trees or harvest resources, e.g. an axe and machete. Without a flexible policy from the manager of each Park such a situation could easily create conflict between the Park and the community.

TaBle 12-6

The percentage of community who agree and disagree that the park's authority should allow local people to harvest the resources from the park's area in eight surveyed national parks.

Degree of agreement	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Disagree	13.83	20.41	34.64	2.93	26.98	32.64	13.25	9.71
Somewhat agree	57.67	12.24	20.31	55.20	10.79	10.85	41.47	15.43
Agree	8.00	41.29	35.42	14.13	25.71	24.38	15.71	43.43
Strongly agree	3.00	17.90	1.82	22.40	7.30	4.68	9.86	16.00

Note: The percentage of no responses is not included in this Table.

Should slash and burn and hunting activities be completely prohibited in the Park area? Then how will the community get their staple foods and the protein? Is the Park Authority willing to set a certain forest area next to the Park or close by their village for growing paddy and vegetables for their subsistence and livelihoods? Or would the Government be ready to provide the daily subsistence for them or train them to do cultivation and raise stock for protein? This list of questions may appear only distantly connected with the main activities of managing the Park, but they are important and lingering issues for some of the community and Park staff. Such questions have not been addressed nor even clearly elaborated in the policy discourse or within the current regulations regarding community and access.

The fact that this study suggested that most, if not all, of the respondents in the eight surveyed National Parks agree to the idea of allowing local community to harvest resources sustainably from the Park area (Table 12-6), suggests strongly that further dialogue, leading to revised policy and regulations on access to the resources in the national park should be considered as a priority for the very near future.

TaBle 12-7

The percentage of the community who know a park officer in the eight surveyed national parks.

How well known	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Not at all	40.00	15.23	37.76	32..27	36.19	23.18	30.00	13.14
Somewhat know	29.50	52.75	35.68	32.00	26.67	34.13	35.62	46.29
Know	12.00	20.72	15.36	29.87	7.30	14.83	13.36	22.86
Know well	1.66	2.04	2.86	3.73	2.22	1.00	2.71	1.71

Note: The percentage of no responses is not included in this Table.

Bukit Baka-Bukit Raya National Park

Because there is a gap in the regulations on access, at the operational level, the Park Authority has never been able to enforce the regulations. The greatest problem is simply constraints on resources. For instance, Kayan Mentarang National Park, with an area of 1.35 million hectares, is only served by 29 officers including the Park Manager. Its Head Office is located in Malinau, about 2 days by foot from the Park, while the most remote ranger posts are located in Pujungan District, about 4 days by foot from Malinau, or 40 minutes by small plane or 2 days by boat. Under these circumstances it is virtually impossible for the Park staff to monitor the day-to-day activities in the area of the Park, and this includes issuing the permits for the communities who live in Apo Kayan District, located approximately an hour by plane from Pujungan Post, who wish to enter the Park area for livelihood activities.

Table 12-7 indicates that less than 30% of the respondents in the eight National Parks know the officers of the National Park in their respective area. The remaining respondents either somewhat know or do not know at all the management of the Park. These scores indicate how infrequent are the interactions between the Park officers and the local community.

Even if the Government had the resources to enforce the rules, there are certain activities that not allowed within the Park area under any circumstances, such as burning forest areas for shifting cultivation or hunting endangered species. In reality, even though people are aware of the regulations, the lack of serious enforcement and the lack of other options for their livelihood activities means that then they continue with business as usual. Regular hunting of wild boar and deer still occurs in Kayan Mentarang, Betung Kerihun and many other National Parks, as does slash and burn practices. Without the simple and practical guidance, the regulations on access of local communities to the forest resources stipulated in the Forestry Act No. 41 of 1999 are, in the end, good on paper but far from being implemented in real life.

The Park's Management System

A number of efforts have been made and policies drafted to resolve the increasing number of conflicts between Parks and local communities. These include different management concept, from centralized management to semi-decentralized systems whereby the local community is allowed to participate in the Park management. Yet the result, as mentioned above, has not been as good as was expected. At this point, the Government appears to be helpless in dealing with conflict problems. Conflicts are not always about tenure and Park management, but it may also occur with wildlife. Meanwhile, civil society organizations make many recommendations, although the applicability of them remains questionable, e.g. the idea of participatory mapping, collective decisions and collaborative management. This study mapped out the opinion of local community in eight National Parks on how the Park management should be done.

With the exception of Betung Kerihun National Park, the majority of respondents in seven National Parks are in favor of the current management, where the Central Government takes the control of the Park. However, again with the exception of Betung Kerihun, the same respondents also concur with the concept of collaborative management whereby the community participate in decision making and program implementation of National Park (Table 12-8).

TaBle 12-8

The percentage of respondents in the community who chose each of three park management options in eight surveyed national parks

Management Options	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Government	78.83	88.70	87.25	51.20	35.24	62.69	71.64	78.28
Community	39.67	41.12	44.01	15.73	61.91	56.81	60.31	72.57
Collaborative	74.84	88.38	78.13	46.13	61.27	69.85	75.31	74.29

The Authors are unable to confirm whether the community picked up the idea of collaborative management as a result of the activities of NGOs and the story of collaborative management effort in Kayan Mentarang National Park, or whether they genuinely wish to participate in managing the Park. The collaborative approach at Kayan Mentarang was first drafted in 2000 by the community, supported by ten Chiefs of the Dayak Ethnic Groups in the area, the Head of the Local Parliament of Malinau regency, backed up by the Bupati of Malinau and facilitated by WWF Indonesia. The proposal was accepted by the Ministry of Forestry in 2002 and declared as the experimental policy on collaborative management of national parks in Kayan Mentarang through the Minister of Forestry Decree No. 1213/Kpts-II/2002 on the collaborative management system in Kayan Mentarang National Park (Departemen Kehutanan 2002a).

The Ministry also issued the first Decree on the Management Board System of Kayan Mentarang No 1215/ Kpts-II/2002 whereby policy and decisions on the park management would be in the hands of the Board, which consisted of 7 Chief of the Dayak Ethnic Groups in Kayan Mentarang, the Heads of the Regencies of Malinau and Nunukan, the Head of the Local Parliament of Malinau Regency, the Head of the Provincial Development Planning Board and the Director General of PHKA – Ministry f Forestry. The Chair of the Board would be elected by the members on a rotational basis (Departemen Kehutanan 2002b). In 2004, the Government finally adopted the concept of collaborative management with using a broader definition which accommodated Corporate Social Responsibility (CSR) of private companies (Keputusan Menteri Kehutanan No 19/Kpts-II/2004).

The Park and Poverty Issues

The current vision of the Ministry of Forestry is 'sustainable forest management and prosperity with equity'. This vision is clearly stipulated in Article 2 of Law No. 41/1999 regarding Basic Forestry in Indonesia. It is also written in the preamble of the Strategic Plan of the Ministry of Forestry for 2009-2014. The vision focuses the programs and activities of forestry in Indonesia on maintaining sustainability and scaling-up the positive impacts of forestry on peoples' prosperity, both for forestry communities - those who live in and near the forest area - as well as the nation in general (Republic of Indonesia 1999, Ministry of Forestry 2010).

According to the recent national census, in 2010 the number of poor people in Indonesia was about 31.02 million. Of this number, approximately 19.9 million people live in villages, including those living nearby or inside forest areas across the nation. The number of poor rural people who reside in Kalimantan is approximately 756,280 people, with the highest number in the villages of the province of West Kalimantan and the lowest number in villages in Central Kalimantan Province (Bureau Statistic Indonesia, 2010).

The comparison of forest area with the number of under-developed villages and the number of poor people in each province in Kalimantan is shown in Fig 12-1. The figure suggests that there is a relationship between the area of forest and the number of under-developed villages. Whilst this inference may not be necessarily true, it does seem likely that most of the villages located in or around the forest area, particularly in Kalimatan, are in remote locations and isolated from basic economic development benefits such as proper health, sanitation, education, access to markets, and roads.

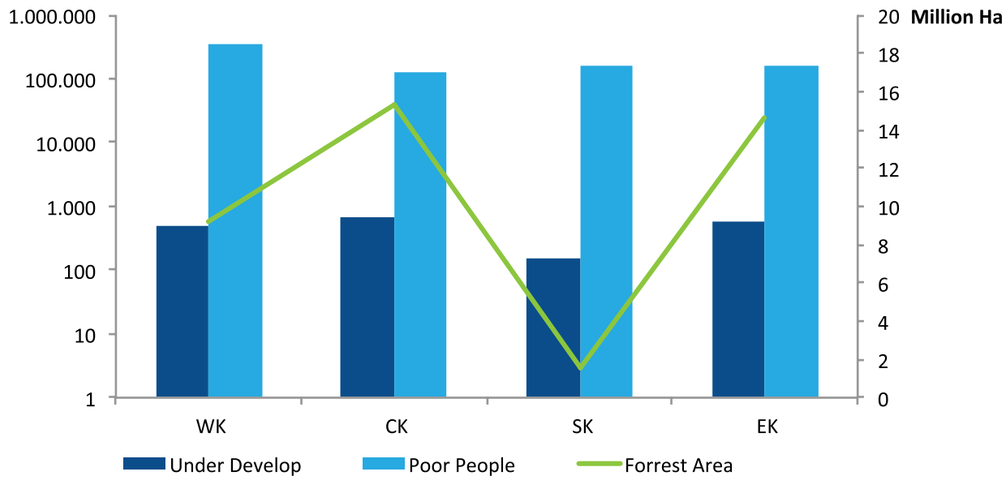

Figure 12-1.
Comparison of forest area (in million hectares) with the number of under-developed villages and the number of poor people in Kalimantan. Provinces: WK (West Kalimantan), CK (Central Kalimantan), SK (South Kalimantan) and EK (East Kalimantan).
Source: Badan Pusat Statistik (2010); Statistik Kementerian Kehutanan (2009).

Table 12-9 shows that the 12 Regencies where the National Parks that are assessed here are located have moderate to high Human Development Index (HDI), whilst the local fiscal capacity per capita (KFD, *Kemampuan Fiskal Daerah*) for all regencies except Ketapang and Kutai Timur is above the average of KFD at national level. These figures indicates that the 12 Regencies fall into the category of 'prosperous area'. However, in reality there are many people who live in or around the Parks who appear to be very poor. It is perhaps true that these communities may not be an absolute poor as they always have access to staple foods and adequate protein for the daily lives as long as they have access to the forest area. Yet, certainly they may be poor of cash, have limited access to economic markets, and face constraints in accessing senior and higher education and medical treatment. The important point for the Park Authority is that if they strictly follow the rules, under which simple livelihood activities such as hunting, shifting cultivation and timber harvesting are prohibited, the community may begin questioning the value of the Park for their future lives.

Accordingly, as early as possible the Park management should embrace the community and work hand-in-hand with them to develop the Park with the aim of improving the prosperity of the community. The Park management should be creative enough to find better economic options that will gradually improve the communities' quality of life. This is not necessarily a simple task, however. It requires trust from the community, transparent and genuine engagement in a program which directly or indirectly benefits the community and the Park in general, and a consistent policy to guide and improve the capacity of community in dealing with sustainable resource management.

TaBle 12-9

Population, Regional Fiscal Capacity (KFD) and Human Development Index (HDI) in regencies where the eight National Parks being assessed in Kalimantan are located.

Regency	Population x1000	KFD (billion IDR)	KFD (IDR) per capita real	HDI
Bontang	134	604	21,112	75.61
Kapuas Hulu	219	415	8,247	69.26
Katingan	137	280	9,881	71.59
Kayong Utara	91	210	11,395	64.19
Ketapang	409	541	653	66.02
Kota Waringin Barat	223	353	7,503	72.14
Kutai Timur	191	1242	2,969	70.46
Malinau	60	825	61,746	71.68
Nunukan	133	686	23,044	72.17
Palangkaraya	190	228	6,058	77.47
Pulau Pisau	120	272	10,704	70.10
Seruyan	112	413	16,823	71.62

Mean KFD per capita real national: IDR 5,678 or equal to USD 630; Mean HDI national in 2008: 70.80.
Sources: Ministry of Finance of the Republic of Indonesia (2010).
HDI < 50 = low; HDI 50-65= moderate; HDI 66-79= moderately high and HDI > 80 = high.
Source: Kementerian Keuangan Republik Indonesia (2010).

The Contribution of National Park to the Local Community

Dehen and Nanjan are two Dayak people aged around 40 years who live in Sebangau National Park on the Katingan side. They were there long before the area was declared a National Park. The two often collected *gemor*, the bark of the tree *Alseodaphne* sp., rattan, honey and fish to support their family. During the interview in 2010, they seemed to be honest and when they said that hopefully the (illegal) logging boom would come back some day in the near future. Their family's lives were a lot better during that era, although they admitted that it was a very tough work.

Now, since the area became the Park, things are much quieter, but they also concede that they had much more time to take care of their own family. They expected that the Park would provide options for their livelihoods, but according to them, since its establishment, the Park has been busy with extension programs, enforcement, rehabilitation and promoting ecotourism, but appears to have forgotten to assist in improving the prosperity of local people.

Similar circumstances apply to Opuy and Udin, the family of Dayak and Malay who live in Danau Sentarum National Park in the Suhaid area. In their view the Park's management, instead of focusing in community empowerment, has been busy with boundary demarcation, extension, enforcement and inventory.

Obviously, the stories above may not be entirely true. The Parks' works are based on programs and priorities, which may have been discussed periodically with local stakeholders and local Government. Certainly, the Park's programs would not be able to address all local issues concurrently and thus satisfy all stakeholders. Nevertheless, it is undeniable that the Park's programs should emphasize activities that gradually demonstrate the contribution and benefit of the Park to the local community. Perhaps, programs on community empowerment, livelihood options and other programs oriented to sustainable economic development should be given greater emphasis to support the community. Failure to obtain the support of local community, who in reality serve as the park's protector, is counter-productive and will result in gradual attrition of the Park and its ecosystems.

Most respondents, except for those in Kayan Mentarang National Park, did not believe that the Park has contributed economically to their lives. Likewise, most respondents, except those in Kayan Mentarang and Bukit Baka-Bukit Raya National Park, were not convinced that the National Park has provided ecological protection to the community (Table 12-10).

TaBle 12-10

The proportion of respondents who agree that the national park contributes to their economic and livelihood well-being and provides protection for their livelihoods in the eight observed national parks (in %).

Contribution	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Economic	44.00	51.65	46.62	49.80	37.15	68.17	38.66	40.00
Protection	42.83	52.30	52.26	82.67	37.14	68.65	44.33	44.00

Danau Sentarum National Park

Ani Mardiastuti

The Government's Commitment

The national park system in Indonesia has been developed since the 1980's and up to this point in time the country is been proud to have 50 national parks representing various ecosystems including aquatic and marine areas. However, despite more than 30 years of experience in dealing with parks and conservation, the Authorities have not been able to develop standards for management or allocation of costs for managing the park. Some of the parks have been enjoying good support both in terms of human and financial resources, whilst other parks appear to be scratching to find better ways to secure the support they need.

The scale of funding allocated to each national park and the number of officers deployed to the park, for instance in the Kalimantan case, is not necessarily proportional to the size or the problems of the park. In some cases, it is very difficult to understand this issue without really comprehending the underlying problems in each national park. For instance, Gunung Palung National Park, with a size of 90,000 ha, is supported by 80 officers and was provided with a budget of IDR 10 billion in 2010. With this figure it could be empirically shown that every officer in Gunung Palung National Park would manage 1250 ha with the cost of IDR 1111.11 or USD 1.18 per hectare annually. On the other hand, Kayan Mentarang National Park which encompasses an area of 1.35 million ha has merely 29 officers and a budget of approximately IDR 9 billion, so that one officer is supervising 46,551 ha with a budget of IDR 6,600 or USD 0.74 per ha annually (Table 12.11).

TaBle 12-11

Comparison of area, number of officers and funding in eight national parks in Kalimantan in 2009/2010.

National Park	a rea (Ha)	Number of Officers	Funding (IDR Billion/yr)	Ratio Officers to a rea	Ratio Funding to a rea (IDR Thousand/ ha/yr)
Kutai	198,629	107	6.4	1,856	32.22
Tanjung Puting	415,000	90	9.8	4,611	23.61
Gunung Palung	90,000	80	10.0	1,250	111.11
Bukit Baka-Bukit Raya	180,500	67	10.8	2,694	59.83
Betung Kerihun	800,000	93	11.0	8,602	13.75
Kayan Mentarang	1,350,000	29	9.0	46,551	6.60
Danau Sentarum	132,000	40	3.3	3,300	25.00
Sebangau	600,000	39	5.8	15,384	9.66

Note : Number officer in Kayan Mentarang, Gunung Palung and Kutai National Park refer to 2009, the remaining data for the officer in other observed national refers to 2010. The funding in Kutai National Park refers to 2009 while the rest of funding of observed national parks refer to 2010.
Sources: Sekertariat Direktorat Jenderal PHKA (2010).

In response to these differences, the Park Authority may state that in dealing with the park management, the Government works based on priority. Gunung Palung National Park is an old Park and has had a long history of illegal logging, hence it needs adequate investment to cope with the problems. Kayan Mentarang, on the other hand, is a new national park and is almost free from the problems of illegal activities. This reasoning would obviously mislead and offend the Kayan People who at the moment supports the Park. These communities, whose numbers are much larger than those in Gunung Palung, are also in need of special attention in terms of capacity building and economic development so that they could be able to live in prosperous and in harmony with the Park.

The consistency of prioritization in national park development is also questionable. Sebangau National Park, for instance, also has a long history of illegal logging, and the size of the Park is much larger than Gunung Palung. However, despite of the bigger size and similar history, in the 2010, the Park had only 39 officers and a budget of about IDR 5.8 billion, much smaller than the Gunung Palung's. Over the whole of Kalimantan, the average ratio of officers to the park is 1 to 10,531 ha, while the ratio of Government investment per ha is IDR 35,222.50 or UDS 3.74 annually.

This investment is far below the financing for parks in the USA, where they set the funding of around USD 80 per ha (Simamora 2011). This investment is of course beyond additional contribution from foreign aid and civil society financing. However, without underestimating the long effort of the Authorities, the above analysis leads inevitably to question the commitment and seriousness of the Authorities to conserve, manage and develop the parks in Kalimantan.

The commitment of the Park management is somewhat controversial with the community. With the exception of the respondents in Kayan Mentarang National Park, where more than 50% rated the Park management good or very good, less than 40% of respondents in the eight National Parks rated the management as good or very good (Table 12.12).

TaBle 12-12

The performance of Park management as rated by the community in eight observed national parks (in%).

Score	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Very good	7.66	16.17	14.84	6.40	7.62	9.85	4.74	6.86
Good	30.83	29.36	30.10	18.70	21.90	45.07	23.84	41.71
Not good	39.50	39.87	42.19	-	36.19	15.32	41.21	24.00
Very bad	1.00	4.24	1.23	37.60	4.13	2.39	2.61	11.43

Note: the percentage of no response is not included in the Table. (-) no answer to this question in Bukit Baka-Bukit Raya National Park.

The Park's Support from Relevant Stakeholders

In accordance with the national rules and regulations on decentralization, Law No. 32/2004, national parks and conservation areas are in the hands of the Central Government. As a consequence, the annual program, activities and funding of national parks and conservation issues would have to be endorsed by the House of Representative. The House members are normally politicians from various political parties may not always understand the terms national park, conservation area and all the complication associated with them. However, they are very smart at evaluating whether a Government program will bring economic benefits to the country or will only be a cost center.

In the light of this, it is a special task of the relevant Authority to elaborate on the annual program and funding before the House periodically or whenever they call for it. To convince the House members, the park and conservation programs should be presented in simple way using language which is appropriate, so that the House members can easily comprehend the nature of conservation issues in Indonesia. Without this, the House could easily reject or cancel the proposed program, claiming that conservation issues are a burden to the national budget. Once they have dismissed the proposal or program, it will need a great deal of energy to convince them to approve funding again.

Members of the House are not only representing their own political party but also the region and constituents where they were elected. This makes the process of endorsing the annual program and funding for park development by the House become even more complicated, tortuous and tricky. The Authority and the park management may to some extent bring the park and conservation issues into the political arena, attempting to ensure that support for park development is linked to relevant the constituents in the region where the park is located and to the House members in Jakarta who have the power to endorse or reject the park's program.

National parks may not always be attractive in the eyes of local Government, as they do not provide substantial economic incentives to the province, regency or district. From their point of view, the park would perhaps be more beneficial had it been dedicated for more productive programs and activities such as oil palm plantation, timber estate or mining. Such a program would not only provide cash returns to the region but also create job opportunities and other livelihood options. This way of thinking means that the park authority is often confronted with challenges, and receives little support from the local Authority, as a result having to work alone. However, surprisingly the majority of the respondents in the eight observed national parks rejected the idea of converting part of the park area into timber, oil palm plantations or mining (Table 12-13).

TaBle 12-13

The percentage of respondents who support converting part of the park into mining, oil palm plantation or timber concessions in eight observed national park.

Option for Conversion	Kutai	Tanjung Puting	Gunung Palung	Bukit Baka-Bukit Raya	Betung Kerihun	Kayan Mentarang	Danau Sentarum	Sebangau
Mining	9.17	-	-	-	-	-	-	-
Timber concession/ oil palm	24.16	18.37	21.35	12.00	34.91	37.41	14.62	44.58

Note: - Data unavailable.

Other Government sectors which have a mission to improve economic development and which are very dependent on the land and forest area are another party that the park Authorities have to deal with. These sectors include the Ministry of Agriculture, Ministry of Mining and Energy, Bureau of National Land Development, Ministry of Transmigration, and Ministry of Fisheries and Marine Affair, as well as Ministry of Interior. To avoid conflict among sectors regarding land utilization, the Government (through the National Planning Board) facilitates the development of a spatial land for each province with is reviewed every 5 years. Because of the high level of interest and the high value of land, national parks are often the target of proposals for releasing land for development during revision of the spatial plan.

Reflecting on the lessons learned outlined above, it is clear that park development will only be able to proceed smoothly if the Authorities, both in Jakarta and in the regions, pay special attention to the need to enlighten members of political parties, local Governments and other sectors and the public in general on the immense value of having national parks, for the nation and for the future of generation of the country.

Ani Mardiastuti

Erick Danzer

CHAPTER 13

OUTLOOK FOR NATIONAL PARK DEVELOPMENT
2014 AND BEYOND

A national park, for some people, represents a dream, a land dedicated for conserving biodiversity and ecosystems for the future of mankind. In Indonesia, most park areas are selected and developed based on the collective decisions of scientists and Government officers. Such decisions are often drafted without the involvement or consent of local communities who live in or near the area chosen to be a park. In theory, and in accordance with the current regulations, the establishment of a national park in Indonesia should be initiated by local government in consultation with the local parliament or council. However in reality it works differently. Most parks were established through a process of discussion between local and Central Government with strong recommendations from the Indonesian Institute of Sciences.

In the past, at a time when the Government was very strong or semi-authoritarian, none of the local communities questioned the importance and benefits of national park for them. There might have been occasional small protests, but these were easily controlled. Nowadays, when Indonesia is exercising democracy, people - not only the local community but also civil society who associate themselves with the local community - have started asking questions about their rights over land and resources that have been declared as national parks. Since in the past the process of establishing a park tended to bypass the local communities who claimed customary rights or use-rights over the land, the status of the parks is increasingly vulnerable to being quesstioned or challenged by the local community. The only way for the Government to address the issues is negotiate a compromise with the community which promising promises prosperity in the near-term resulting from the environmental services of national park.

The question is, given this situation, how long will a park be able to survive? The answer depends entirely on the efforts of the government to closely work with the park's stakeholders, in particular the local community who are reliant on the resources of the park. Failure to secure the trust and cooperation of local stakeholders who in theory would defend the park for their own benefit can easily jeopardize the long term survival of the park.

The following is a predictive outlook for the course of national park development in Kalimantan in the near future. The time frame for the outlook is intentionally set up to 2014 and beyond, as the period of current Government will end then, and the policy can be changed in the next government period. This time frame is justified because the policy and direction of the Government is highly dependent on the incumbent administration. The outlook is composed of (1) regulations, (2) tenure conflict, (3) finance and its sustainability, (4) ecotourism development, and (5) stakeholder support.

Regulations

The current national park regulations, Act No 5 of 1990 regarding Conservation of Living Resources and Their Ecosystems, is considered out of date in several respects. The rules for the management of national parks seem inflexible and tend to favor protection

and conservation regimes, leaving little opportunity for management practices such as sustainable harvest. In addition, there is little room for empowering or recognising the rights of the communities who live within a national park. The development of ecotourism is also limited to a certain zone, the intensive use zone, which is also the zone most likely to be already occupied by local community. On top of that, the current regulations completely excludes the possibility of local stakeholders or other parties taking on the responsibility of managing all or part of the park area, or and gives only very limited options for cooperative efforts to manage a national park.

Realizing these limitations, in 2011 the Government took a more progressive approach through issuing Government Regulation No. 28/2011 regarding management of strict nature reserves and national parks by allowing collaborative arrangements for the management of a national park. This regulation encourages private sector actors, Non Governmental Organization (NGO) and local communities to participate in managing a national park. The spirit of participation does not only allow other parties to engage in decision making processes, but also allows them to contribute to sustainable financing of the national park's development. Thus this regulation allows other parties to take part in empowering local communities and improving their prosperity.

Since then, however, the Government has made no further effort to open the door wider for participation of local communities, private sector or NGOs in overall management of a national park. There is still no article whatsoever within the current regulations that allows for such a policy. Because of that, the Ministry of Forestry - on behalf of the Government - recently negotiated with the House/Parliament to allow an initiative to revise the current act on the conservation of living resources. Surprisingly, the House endorsed the initiative and requested the Ministry of Forestry to submit the draft of the revision in 2012 for further deliberation within the House. If the revision makes it through the house smoothly in 2012, there may be hope for the communities to participate in, contribute to and benefit from the development of national parks in the near future.

Tenure Conflict

The trend of tenure conflict within national park areas seems to be increasing during recent years. For instance, conflict over tenure has occurred for a long time in Kutai National Park, but over the last ten years it has escalated. Similar issues are starting to emerge in Gunung Palung and Tanjung Puting National Park. The causes of conflict vary, and include land tenure and rights issues, disputes over boundary demarcation between the park and the local community, wildlife and local people, disagreements between the park and industrial activities, and illegal extraction of timber or mining.

Land disputes may continue to escalate in the near future as the need for land for alternative economic development - both traditional and industrial scale - increases. Conflicts with industries especially occur with coal and gold mining, as well as with plantation areas such as palm oil. Traditional gold mining has recently shown a tendency to increase in several parks in Kalimantan. This type of mining occurs and continues due to poverty and lack of enforcement from the park side. The high demand for gold is also one of the drivers of this activity. The buffer zone of Tanjung Puting National Park has been ruined by 'hit and run' traditional gold mining. Likewise, the issue of encroachment and occupation in many parks in Kalimantan, e.g. Kutai National Park, may also continue at a faster pace (Fig 13-1).

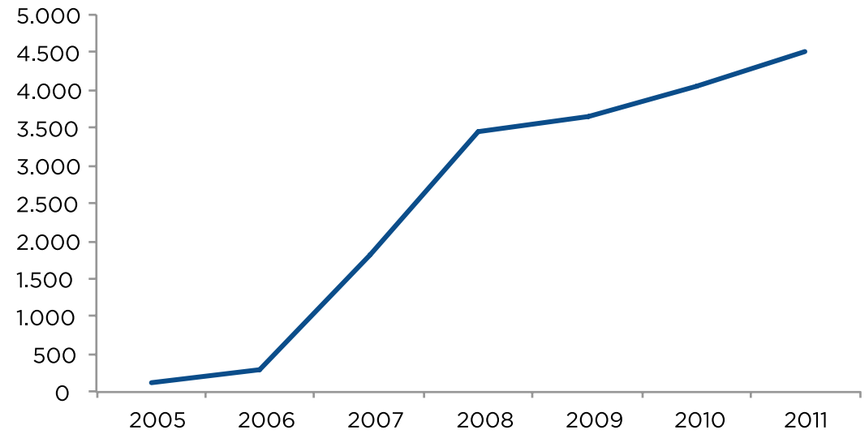

Figure 13-1. Cumulative of encroachment (in ha) in eight national parks in Kalimantan between 2005-2011.
Source: Secretariat DG PHKA (2012).

Problems over boundary demarcation between national park and local community are also worsening. The issue of land is becoming a reason to encroach and occupy onto park land. In the past, due to high levels of enforcement and the semi-military authoritarian style of the park management, there was very little conflict over the boundary of the parks. Now, as the local communities become more aware of their rights and have courage to express their voice, the boundary issue seems to be emerging everywhere. In response to this situation, and with the help of civil society organisations, a participative park boundary model has been developed and tested. However this model requires a long process to achieve consensus on the boundary, and the model is not always completely accepted by the government side, so leaving unresolved conflict hovering over each national park.

The issue of illegal logging may be becoming less of a problem in both Gunung Palung and Sebangau National Park due to consistently high levels of enforcement from the Park's Authority, coupled with depleted timber resources. Nevertheless, this respite may be temporary, as the problem seems to have re-occurred at intervals throughout the period of 2005 and 2011, and particularly within the last three years (Fig. 13-2). Overall, cases of illegal logging in Kalimantan within the last six years seem to have declined (Fig. 13-3). However, when the park fails to provide options for economic improvement, local communities who have settled in and around the park may look for other promising options such as oil palm programs offered by private sector investors which often have the support of local government.

The Government's intention to improve the capacity and welfare of the local people also appears to be insincere. Local communities who live in the national park area are hardly ever provided with adequate education and health facilities. Basic infrastructure such as roads and communication systems are also normally poor, because of the status of national park, where infrastructure development is not allowed. This kind of reason makes the local communities who live in the protected area feel tired and frustrated about being treated as second citizens, and may incite them to demand that the status of protected area is changed to a non-protected area where infrastructure and economic development are allowed.

Without good policies and regulations on tenure issues, the unfortunate circumstances of local communities within the park's area may easily trigger a wave of resistance to all of the national parks in Kalimantan. This issue is particularly vulnerable to exploitation by local politicians seeking popular support, and so may be exptected to heat up during the campaign period before the general election in 2014.

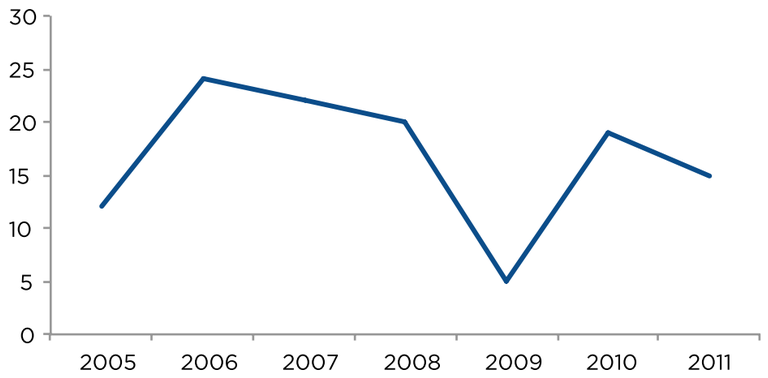

Figure 13-2. Number of cases of illegal logging recorded in the national parks in Kalimantan between 2005 and 2011.

Source: Directorate of Forest Protection and Investigation (2012).

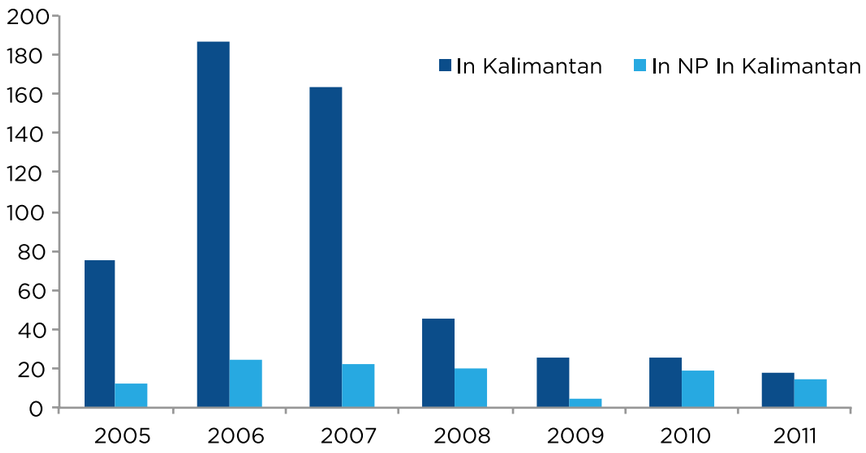

Figure 13-3. Number of cases of illegal logging in Kalimantan and national park in the region between 2005-2011.

Source: Directorate of Forest Protection and Investigation (2012).

Sustainable Finance

As described in previous Chapters, financial issues have been a major handicap for ensuring that routine and development activities are carried out in national parks. At the moment most of the national parks in Indonesia are supported by Central Government through the Ministry of Forestry's annual budget. Many national parks have been also continuously assisted by many donors with both financial and capacity support. However, this financial assistance has never been able to increase the management and resources capacity to the level where national parks are able to maintain sustainable financing (Fig. 13-4).

The Ministry of Forestry has long been trying to develop a self-sustained funding scheme, known as *Badan Layanan Umum* (BLU). Pending approval from the Ministry of Finance, a number of national parks such as Komodo National Park in Nusa Tenggara and Gunung Gede-Pangrango National Park in West Java have been prepared to run such a scheme. This would allow a national park to use their own income directly for reinvestment in activities within the park. In addition, the BLU scheme does not prevent the Government from making an allocation to support the routine budget of the park such as staff salaries and daily operations, but it encourages the park's management to seek various alternative income sources and to fundraise to support the park's development.

Although at this present none of the Indonesian national parks have been granted permission to run under such an arrangement, should this model be approved by the Ministry of Finance, it would provide flexibility for the park to find the best options for maintaining a sustainable funding stream. The parks in Kalimantan with the greatest potential to run a BLU system are Danau Sentarum, Gunung Palung, Sebangau and Tanjung Puting National Park. These Parks, especially Sebangau which is located very near to Palangkaraya (the capital city of Central Kalimantan), have a relatively good access for visitors, have recently resolved conflicts with the local community, enjoy support from local stakeholders, and are blessed with abundant populations of the flagship species for Kalimantan, the Orangutan.

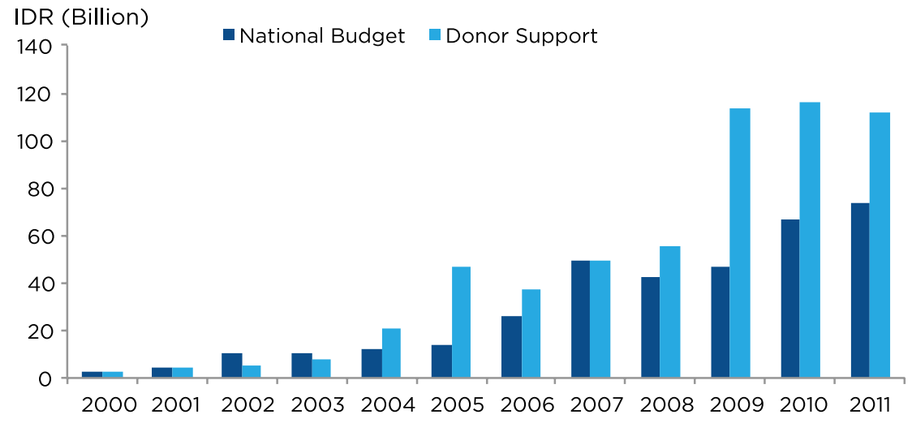

Figure 13-4. Budget allocation for eight national parks in Kalimantan and donor support to conservation programs in Kalimantan between 2000 and 2011 (in IDR).

Source: Ministry of Forestry, WWF Indonesia, ITTO, GiZ and DFID (2011)

Taufik Arifudin

Community empowerment in Kayan Mentarang

Besides the BLU as a new model of financing, there is another potential funding scheme, namely the Trust Fund. This model is a single fund where potential donors can make a contribution to support and sustain certain park programs and developments. Recently, Government has been able to secure support from a number of donors to make sustained contributions to conserving natural resources through development of national parks, e.g. the Debt-for-Nature Swap (DNS) financing model and Tropical Forest Conservation Act (TFCA) program support. These funding models have allocated support to several national parks in Sumatra such as Bukit Barisan Selatan, Kerinci-Seblat and Gunung Leuser National Park.

However, with current reduced ability of the Government to adequately support the development of parks, it should be a priority to avoid dependence on single donor support. Donors tend to favor short-term support with high expectations of positive achievements. In many cases donors dedicate their funds for special themes and issues which might be in line with the policies and interests of donor side, but do not necessarily align with the greatest need of the park. Donors normally favor supporting programs relevant to global trends, where funding is most likely already available. Therefore, if the Government plans to tap the financing opportunity from the donor side, the park's program should be relevant to global interests. Perhaps, though it might difficult to achieve, a compromise between the interests of both donor and recipient country would be fair enough. In summary, it appears that the most realistic model and practical option for sustainability of investment for parks in Indonesia is the creation of a Trust Fund for national parks.

Ecotourism Development

Ecotourism is one of the many options to support national park development. It is also an option for improving the prosperity of local communities and contributing to the economic development of the region and the income of local government. In many national parks outside Kalimantan where access is easy and safe, such as Gunung Gede-Pangrango National Park in West Java, Bromo-Tengger National Park in East Java, and Rinjani National Park in Lombok - West Nusa Tenggara, the number of visitors during the weekends or holiday season is incredibly high, sometimes appear like mass-tourism.

At the present, ecotourism activity and the number of visitors to the national parks in Kalimantan is not as high as those in Java or other regions in Indonesia (Fig. 13-5). Access, limited park infrastructure, lack of communication and promotion are among the major obstacles hampering promotion of the beautiful ecosystems and biodiversity of the national parks in Kalimantan. With the exception the trip to Tanjung Puting, where facilities are excellent, transport to the parks is a challenge. To reach Danau Sentarum, Bukit Baka-Bukit Raya or Betung-Kerihun National Park, there is only one unreliable weekly flight to fly visitors from Pontianak, the capital city of West Kalimantan Province, to the nearest town to the National Park. The only alternative is a long, uncomfortable road trip on bad roads to reach these towns. Even then, reaching the parks requires visitors to spent several more hours in a long boat. The final part of the journey is at least very enjoyable and entertaining as it goes through beautiful scenery along the way.

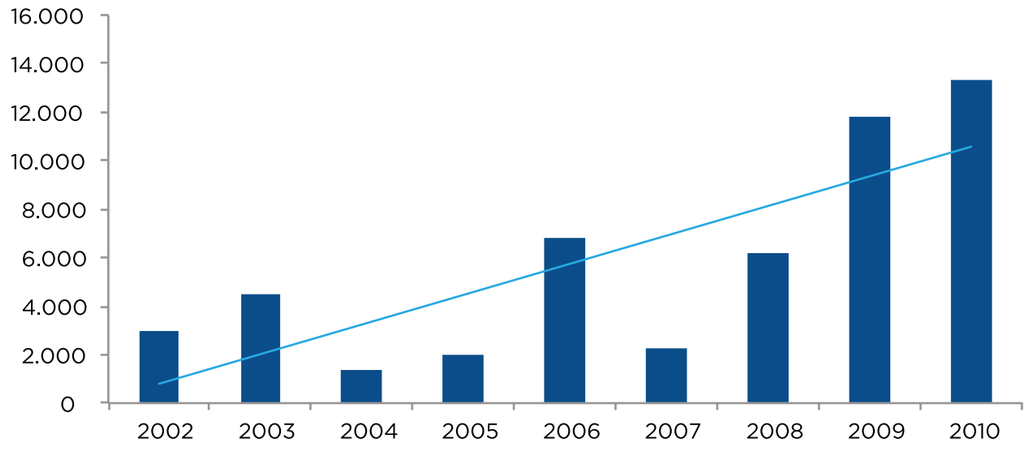

Figure 13-5. The number of tourists (domestic and foreign) visiting eight National Parks in Kalimantan between 2002-2010.
Source: Secretariat DG PHKA (2012).

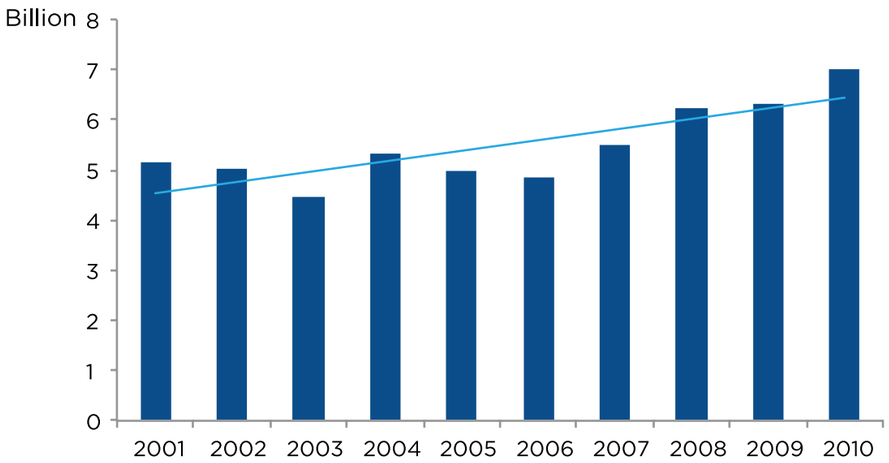

Figure 13-6. The number of foreign tourists visiting Indonesia between 2001 and 2010.
Source: BPS Indonesia (2011).

In the past, Government regulations on investment for ecotourism were not conducive to its development. As a result, between 1994 and 2011 there were only 9 investments in ecotourism in national parks and recreation forests in Indonesia, none of them in Kalimantan. In April 2010, the Government revised the regulations and eased the bureaucratic process for investment in ecotourism in national parks and recreation forests in Indonesia (PP No. 36 of 2010 and Ministerial Forestry Decree No. 48/Kpts-II/2011). With these regulations, the Government is required to issue a permit for the appropriate ecotourism investment within a maximum of 60 days.

With reference to the figures on visitors to the parks in Kalimantan, it appears that the number of tourists to the parks has dramatically increased within the last three years. The mean annual growth of visitor numbers during this period is 94.21%, although the percentage increase between 2009 and 2010 is only 14.02% (Fig 13-5). This is in line with the national figure for annual increases in arrivals of foreign tourists which is above 10% (Fig 13-6). These two statistics are very encouraging as they show an increasing trend. If recent global economic problems, particularly in the Europe and United States, can be resolved soon, and the parks can maintain or even improve their services, along with aggressive promotions and better infrastructure and access, and provided there is political stability at the national and domestic level, then ecotourism in to the parks in Kalimantan in the near future is likely to flourish.

Stakeholder Support

Part of the problem in maintaining the integrity of a national park in Indonesia, particularly in Kalimantan, is the lack of support from local stakeholders. As mentioned, this is understandable as most - if not all – national parks were declared without local stakeholders consent. In response to those problems the Government with the assistance of civil society has been, at least for the last 10 years, opening dialogue and stakeholder meeting as well as exercising participative mapping.

Taufik Arifudin

The rich culture of local community around Kayan Mentarang National Park

The park managers have also become more flexible in dealing with local communities, e.g. unless there is no choice, there are less arrests of those communities who harvest non-timber forest products sustainably in Gunung Palung, Kayan Mentarang, Sebangau and Danau Sentarum. Further, Government has launched a program to support the development of villages within the park area through the *Model Desa Konservasi* (Conservation Village Model) program, where construction of limited infrastructure is allowed. Though these efforts have so far not obtained significant sympathy and support from the local communities and relevant stakeholders, it has at least gradually received sympathy from the local Parliament and local Government as well as civil society.

The reason why local communities appear to be apathetic is a classic one: there is as yet no proof of the park's benefit for them. In fact, they continue to face additional regulations and prohibitions which they never had to deal with before the area was established as a national park. The Government or park Authority may also have failed to deliver their commitment to support the economic development of local community through its program of ecotourism and ecosystem services. As infrastructure development in national park is almost entirely prohibited by law, the communities envy those people who live outside the park area where facilities like roads, education and health centers are available. Without a more flexible policy, consistent open dialogue with local stakeholders, continued improvements of prosperity, and adequate and fair treatment, their support for the future of the park will slowly be lost.

REFERENCES

Aglionby, J. C. 1995. Laporan akhir petugas asosiat professional (ekonomi lingkungan) Volume 1: Perihal ekonomi di Suaka Margasatwa Danau Sentarum. Indonesia-UK Tropical Forest Management Program.

Anonymous. 2010f. Orangutan, makanan dan habitatku di Taman Nasional Tanjung Puting Indonesia. www.berita-iptek.com/index.php?option=com_content&view=article&id=73:orangutam-makanan dan habitat. Downloaded on 2 February 2011.

Anonymous. Undated. Type of TBPA: Two or more contiguous protected across a national boundary. Cross-border protection in Borneo: Sarawak (Malaysia) and Kalimantan (Indonesia). ITTO – IUCN. Yokohama, Japan.

Anonymous. 1980. Keputusan Menteri Pertanian Indonesia No. 84/Kpts/Un/II/1980 tanggal 25 November 1980 tentang Cagar Alam Kayan Mentarang.

Anonymous. 1990. Keputusan Menteri Kehutanan No. 448/Menhut-V/1990 tanggal 6 Maret 1990 tentang Deklarasi Taman Nasional Gunung Palung, Kalimantan Barat.

Anonymous. 1996. Keputusan Menteri Kehutanan Indonesia No. 631/Kpts-II/1996 tanggal 7 October 1996 tentang Taman Nasional Kayan Mentarang.

Anonymous. 1996. Keputusan Menteri Kehutanan Indonesia No. 631/Kpts-II/1996 tanggal 7 October 1996 tentang Taman Nasional Kayan Mentarang.

Anonymous. 1997. Community-based forest management project Gunung Palung National Park Buffer Zone. BCNET. http://www. worldwildlife.org/bsp/bcn/project/kalimantanlogging98. Downloaded on 25 January 2011.

Anonymous. 1998. The politics of extinction: The orangutan crisis and the destruction of Indonesia's forests. In: S. Trent (Ed.). Environmental Investigation Agency. Emmerson Press.

Anonymous. 2002a. Keputusan Menteri Kehutanan Indonesia No.1213/ Kpts-II/2002 tanggal 4 April 2002 tentang Rencana Pengelolaan Taman Nasional Kayan Mentarang.

Anonymous. 2002b. Keputusan Menteri Kehutanan Indonesia No.1214/ Kpts-II/2002 tanggal 4 April 2002 tentang Pengelolaan Kolaborasi Taman Nasional Kayan Mentarang.

Anonymous. 2002c. Keputusan Menteri Kehutanan Indonesia No. 1215/Kpts-II/2002 tanggal 4 April 2002 tentang Dewan Penentu Kebijakan Taman Nasional Kayan Mentarang.

Anonymous. 2003. Illegal exploitation of national park. http://www. unep-wcmc.org/resources/PDFs/LastStand/orangutanreport_18to22.pdf. Downloaded on 1 February 2011.

Anonymous. 2005. Kayan Mentarang National Park, In the Heart of Borneo. L. Topp & C. Eghenter (Eds). WWF Denmark and WWF Indonesia. WYSIWYG, Jakarta.

Anonymous. 2005. The oil for ape scandal: How palm oil is threatening orangutan survival. Friends of the Earth-the Ape Alliance-the Borneo Orangutan Survival Foundation-the Orangutan Foundation (UK)-the Sumatran Orangutan Society.

Anonymous. 2006-2010. Kutai Timur dalam angka. Badan Pusat Statistik, Kabupaten Kutai Timur, Sangata.

Anonymous. 2007. Rencana Pengelolaan Jangka Menengah (RPJM) Taman Nasional Kayan Mentarang 2007-2011. Kabupaten Malinau dan Kabupaten Nunukan, Provinsi Kalimantan Timur.

Anonymous. 2010. National Park Indonesia: Betung Kerihun National Park, West Kalimantan. Downloaded on 3 February 2011 from http:// www. Indonesiatravelling.com/National.

Anonymous. 2010a. Former loggers strive to keep honest jobs. The Jakarta Post. 27 July 2010. http://www.wwf.or.id/en/news_facts/report. Downloaded on 1 February 2011.

Anonymous. 2010b. Hutan Taman Nasional Sebangau 11 persen rusak. Spirit Kalteng. http://media. hariantabengan.com/index/detailspiritkaltengberitatex/id/393/. Downloaded 27 December 2010.

Anonymous. 2010c. Kobar perlu wilayah pertambangan rakyat, 19 Maret 2010 . www. kotawaringinbarat. go.id. Downloaded 3 February 2011.

Anonymous. 2010d. Penambang liar di Tanjung Puting makin banyak. www. metrotvnews.com/index.php/metromain/newsvideo/2010/01/03/97095. Downloaded on 3 January 2010.

Anonymous. 2010e. Orangutans. Aboutjulia.com; Charities and Causes. http://aboutjulia.com/site/about-julia/charities-causes/. Downloaded on 2 February 2011.

Anonymous. 2011. Dr. Birute Mary Galdikas Bio. The Orangutan Foundation International. www. orangutan.org/dr-galdikas-bio. Downloaded on 3 February 2011.

Anonymous. 2011. Kayan Mentarang National Park. http://www. gtz. de/en/prxis/17572.htm. Downloaded on 5th February 2011.

Ardiansyah, F.; A. Tarigan, M.C. Guerrero, A. Zamora-Santos, H. Valentinus & M. Osbeck. 2007. Forest partnerships, enhancing local livelihood and protecting the environment in South East Asia and the Pacific. Pp. 20-23 in M. Osbeck and M. Wojciechowska-Shibuya (Eds.). IUCN. Gland.

Arwida, S. D. 2009. Senandung pemuar madu di kawasan Danau Sentarum. Majalah Salam 26: 16-18.

Badan Pusat Statistik. 2010. Population of Indonesia in 2010. Badan Pusat Statistik Republik Indonesia.

Baker, N., S.J. Husson, H.C. Morrogh-Bernard, C.S. McLardy, L.J. D'Arcy. 2002. Impact of illegal logging extraction methods upon a peat swamp forest ecosystem in Central Kalimantan, Indonesia. Proceeding of the International Symposium on Land Management and Biodiversity in Indonesia, Bali, Indonesia, September 2002. Hidenori T & H. Simbolon (Eds.). Hokaido University, Japan - Indonesian Institute of Sciences. Jakarta.

Balai Taman Nasional Betung Kerihun. 2000a. Balai Taman Nasional Betung Kerihun. 2000. Rencana Pengelolaan Taman Nasional (RPTN) Betung Kerihun Periode 2000-2024 (Buku I). Balai Taman Nasional Betung Kerihun. Putussibau.

Balai Taman Nasional Betung Kerihun. 2000b. Management Plan of Betung Kerihun National Park, West Kalimantan, 2000-2004: Executive summary. Balai Taman Nasional Betung Kerihun. Putussibau.

Balai Taman Nasional Kutai. 2003. Rencana Strategis Taman Nasional Kutai. Balai Taman Nasional Kutai. Bontang.

Bennet, C.P.A. and R. Stuebing. 1997. The trans-border conservation domain of Betung Kerihun National Park and Lanjak Entimau Wildlife Sanctuary: Toward collaborative management through bilateral research in ITTO Borneo Biodiversity Expedition 1997. M. Kuswanda, P.K. Chai and I.N. Surati Jaya (Eds). ITTO, Yokohama.

Blundell, A. G. & D. R. Peart. 2001. Growth strategies of a shade-tolerant tropical trees: The interactive effect of canopy gaps and simulated herbivory. Journal of Ecology 89:608-615.

Boehm, HDV & S. Siegert. 2001. Ecological impact of the one million hectare rice project in Central Kalimantan, Indonesia, using remote sensing and GIS. http://www.crisp.nus.edu.sg/~acrs2001/pdf/126boehm.pdf. Downloaded on 1 August 2011.

BPS. 2011. Tabel hasil sensus penduduk. Badan Pusat Statistik. http://www.bps.go.id/aboutus.php?sp=0. Downloaded on 8 August 2011.

Cannon, C. & M. Leighton. 2004. Tree species distributions across five habitats in Bornean rainforest. Journal of Vegetation Science 5: 257-266.

Chai, P. P.K.; T. Soehartono & P. Mangil. 2003. A case study for Lanjak Entimau Wildlife Sanctuary and Betung Karihun National Park. ITTO/IUCN International Workshop on Increasing the Effectiveness of Transboundary Conservation Areas in Tropical Forest, 17-21 February 2003. Ubon Ratchathani, Thailand.

Cheyne, S.M. & D. Mac Donald. 2008. Sebangau Felid project-scoping study. The Orangutan Peatland Project: Working to protect the Sebangau peat-swamp forest since 1999. http://Outrop.blogspot.com/. Downloaded on 3 February 2011.

Cheyne, S.M. 2007. Orangutan and Gibbons compared: Implications of differences in feeding and behavioral ecology for conservation. Asian apes-protecting the Last great apes refuge of gibbon (Hylobates albibarbis) and orangutan (Pongo pygmaeus wurmbii). Rufford Small Grant for Conservation 26.10.06, Final Report. Wildlife Conservation Research Unit, Department of Zoology, University of Oxford. Oxford, UK.

CIFOR. 2007. Dari desa ke desa: Dinamika gender dan pengelolaan kekayaan alam. Y. Indriatmoko, E. L. Yuliani, Y. Tarigan, F. Gaban, F. Maulana, D. W. Munggoro, D. Lopulalan & H. Adnan (Eds). Center of International Forestry Research (CIFOR). Bogor.

Dedy, K. 2005. Community mapping, tenurial right and conflict resolution in Kalimantan. Pp 89-110 in State, communities and forests in contemporary Borneo, Asia-Pacific Environment - Monograph 1. F. M. Cooke (Ed.). The Australian National University E-Press.

Dennis, R.A., A. Puntodewo & C.J.P. Colfer. 1998. Fishermen, farmers, forest change and fire. GIS Asia Pacific 4(1): 26-30.

Dennis, R.A; A. Erman, F. Stolle, G. Applegate & Yayasan Dian Tama. 2000. The underlaying cause and impact of forest fires in South East Asia. Site 5: Danau Sentarum, West Kalimantan Province, Indonesia. Center for International Forestry Research (CIFOR) - International Center for Research in Agroforestry (ICRAF). Bogor.

Departemen Kehutanan & WWF. Undated. Stasiun Penelitian Hutan Tropis Lalut Birai. Kekayaan akan keanekaragaman hayati yang sejak dahulu dilestarikan oleh masyarakat Long Alango. Booklet Departemen Kehutanan kerjasama dengan Pemerintah Daerah Kabupaten Malinau dan WWF Indonesia Kayan Mentarang Project.

Departemen Kehutanan. 2002a. Keputusan Menteri Kehutanan No. 1213/Kpts-II/2002 tentang Pengelolaan Kolaboratif Taman Nasional Kayan Mentarang, Kalimantan Timur. Jakarta.

Departemen Kehutanan. 2004. Keputusan Menteri Kehutanan No. 19/Kpts-II/2004 tentang Pengelolaan Kolaboratif dalam Kawasan Konservasi.

Departemen Kehutanan. 2004. Keputusan Menteri Kehutanan No. 423/Menhut-II/2004 tanggal 10 October 2004 tentang Penunjukan Taman Nasional Sebangau di Kabupaten Katingan, Pulau Pisau dan Kota Palangkaraya, Kalimantan Tengah. Departemen Kehutanan. Jakarta.

Departemen Kehutanan. 2010. Betung Kerihun National Park. http://www.dephut.go.id/INFORMASI/TN-Indo-English/betung_NP.htm. Downloaded on 3 February 2011.

Departemen Pertanian. 1971. Keputusan Menteri Pertanian No. 30/Kpts/Um/6/1971 tanggal 23 Juli 1971 tentang Suaka Margasatwa Kutai. Departemen Pertanian. Jakarta

Department of Conservation Te Papa Atawbai. 2011. Tongariro National Park. http://www.doc.govt.nz/park-and-recreation/national-park/tongariro. Downloaded on 17 February 2011.

Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam. 2007. Orangutan Indonesia: Conservation Strategies and Action Plan. T. Soehartono, H.D. Susilo, N. Andayani, S.S. Utami, J. Sihite, C. Saleh and A. Sutrisno (Eds.). Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam and OCSP. Jakarta.

Eghenter. C. 2000. Mapping Peoples' Forests: The role of mapping in planning community-based management of conservation areas in Indonesia: People, Forest and Reefs (PeFoR) Program Discussion Paper Series. Biodiversity Support Program, Washington, D.C.

Eghenter. C. 2005. Social, Environmental and legal dimensions of adat as an instrument of conservation in East Kalimantan. F.M. Cooke (Ed.). p 163-180 The Australian National University E Press.

EIA-Telapak Indonesia. 1999. The final cut: Illegal logging in Indonesia's orangutan parks. Environmental Investigation Agency - Telapak Indonesia. Jakarta.

EIA-Telapak Indonesia. Undated. Illegal logging in Tanjung Puting National Park: An update on the final cut report. Environmental Investigation Agency-Telapak Indonesia. Jakarta.

Erman, A. & V. Heri. 2005. Registrasi kawasan kelola rakyat dan identifikasi kebutuhan masyarakat dalam sumberdaya alam di kawasan Taman Nasional Danau Sentarum. Project Report. Riak Bumi. Pontianak.

Galdikas, B. M. F. & G. L. Shapiro. 1994. A guidebook to Tanjung Puting National Park, Kalimantan Tengah (Central Borneo). PT Gramedia Pustaka Utama and the Orangutan Foundation International. Jakarta.

Galdikas, B. M.F. & Brindamour, R. 1975. Orangutans, Indonesia's "people of the forest." National Geographic 148: 444-473.

Galdikas, B.M.F. 1985. Orangutan sociality at Tanjung Puting. American Journal of Primatology 9: 101-119.

Galdikas, B.M.F. 1988. Orangutan diet, range and activity at Tanjung Puting, Central Borneo. International Journal of Primatology 9(1):1-35.

Giesen, W & V. Deschamps. 1993. Preliminary recommendations for modification of boundary of Danau Sentarum Wildlife Reserve, West Kalimantan. Asian Wetland Bureau. Bogor.

Giesen, W. 1987. The Danau Sentarum Wildlife Reserve: Inventory, ecology, and management guidelines. WWF Report to Directorate of Forest Protection and Nature Conservation (PHPA). Bogor.

Giesen, W. 1995. The flood forests and blackwater lake of Danau Sentarum Wildlife Reserve, West Kalimantan, Indonesia. UK-Indonesia Tropical Forest Management Program, Conservation Project. Asia Wetlands Bureau. IPT University of Malaysia.

GPOCP. Undated. Threat to Gunung Palung National Park. Gunung Palung Orangutan Conservation Program. http://www.savegporngutans.org/GOthreats.html. Downloaded on 29 January 2011.

GRASP. 2006a. Pro-poor great apes conservation in action: Progress on the EC-Funded GRASP Project. GRASP Newsletter 6:1.

GRASP. 2006b. Borneo burns, Orangutan perish. GRASP Newsletter 6:1.

Greenpeace International. 2004. Tanjung Puting National Park under siege: Protect life on earth today. Greenpeace International, January 2004.

Groves, C.P. 1999. The taxonomy of Orangutan. C. Yeager (Ed.). Orangutan Action Plan. Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam, Jakarta.

Hiller, M.A.; B.C. Jarvis, H. Lisa, L. Paulson, E.H.B. Pollard & S.A. Stanley. 2002. Illegal logging: Case study from Gunung Palung National Park, Indonesia. http://www.abc.net,au/4corners/content/2002/timber_mafia/viewpoints_pollard.htm. Downloaded on 3 February 2011.

http://sains. kompas.com/read/2009/06/11/habitat.orangutan.di. taman. nasional.gunung.palung. Downloaded on 3 February 2011.

Husson, S.J.; H. Morrogh-Bernard, C. McLardy, R. Driscoll, N.F. Fear & S.E. Page. 2002. The effect of illegal logging on the population of orangutan in the Sebangau tropical peat swamp forest, Central Kalimantan. Proceeding of the International Conference on Peatland for People. August 2001. Jakarta.

Hustai National Park. 2009. Introduction to Hustai National Park. http://hustai.mn/pageID=53&mid=102. Downloaded on 17 February 2011.

Irawati & U.W. Mahyar. 2003. Species management plan for the orchids of Kayan Mentarang National Park: The development of continues inventory and preservation. ITTO Project PD 38/00 Rev. 1 (F). Jakarta.

Irawati and U.W. Mahyar. 2003. Species management plan for the orchids of Kayan Mentarang National Park: The Development of continues inventory and preservation. ITTO Project PD 38/00 Rev. 1 (F).

Isager, L., I. Theilade and L. Thompson. Undated. People's participation in forest conservation: Considerations and Case Studies. http://People's Participation/Forest/Casestudy/ January052010 1230pm. Downloaded 12 December 2010.

ITTO. 1997. ITTO-Borneo biodiversity expedition. In: M. Kuswanda, P.K. Chai and I.N. Surati Jaya (Eds.). Scientific Report International Tropical Timber Organization Publication. Yokohama, Japan.

ITTO. 2002. Executive summary ex-post evaluation report on trans-boundary biodiversity conservation area of ITTO Project PD. 106/90 Rev.1 (F): Development of Lanjak Entimau Wildlife Sanctuary (LEWS) as a totally protected area (Phase I) and Development of Bentuang Karimun Nature Reserve (BKNR) as a National Park (Phase I). International Tropical Timber Council. Yokohama, Japan.

ITTO. 2003b. Joint Biodiversity Expedition in Kayan Mentarang National Park. A. Mardiastuti and T. Soehartono (Eds.). ITTO Project PD 38/00 Rev. 1 (F).

ITTO. 2003c. Completion Report of ITTO Project PD 38/00 Rev. 1 (F) Management of Kayan Mentarang National Park (KMNP) to promote trans-boundary conservation along the border between Indonesia and Malaysian States of Sabah and Sarawak Phase I.

ITTO. 2010. Synthesis report on ex-post evaluation of ITTO Biodiversity Conservation Project in Indonesia, Malaysia, Peru, Bolivia and Panama. International Tropical Timber Council. Yokohama, Japan.

ITTO. 2003a. Biodiversity inventory in Kayan Mentarang National Park: Technical Report. A. Mardiastuti and T. Soehartono (editors). ITTO Project PD 38/00 Rev. 1 (F).

IUCN. 1994. Guidelines for the protected areas management categories. http:/www.unep-wcmc.org/protected_areas/categories/index.html. Downloaded on 16 February 2011.

Jeanes, K. 1996. Danau Sentarum Wildlife Reserve: Catchment development review, reserve boundary review ad buffer zone proposal. Project 5: Conservation, ITFMP. PHPA-Wetlands International-ODA. Jakarta.

Kaplan, G & L. Rogers. 1994. The Orangutan in Borneo. University of New England Press. Armidale, NSW, Australia.

Kementerian Kehutanan. 2009. Statistik Kementrian Kehutanan tahun 2009. Jakarta.

Kementerian Keuangan. 2010. Rekomendasi Menteri Keuangan tentang keseimbangan pendanaan dalam rangka perencanaan dekonsentrasi dan tugas perbantuan tahun anggaran 2011. Kementerian Keuangan Republik Indonesia.

KMNP-FORCLIME-WWF. Undated. Kayan Mentarang Park Participatory Zoning Plan. Briefing paper No.5 Forest and Climate Change. Kayan Mentarang National Park, Forest and Climate Change Program (FORCLIME) and WWF Indonesia Kayan Mentarang National Program.

Lubis. M.S.; N. Handayani & S. Muazir. 2009. Eco and cultural tourism development in Danau Sentarum National Park. Paper presented in the 13th World Lake Conference, 1-6 November 2009, Wuhan, China.

MacKinnon, J. 1981. Guidelines for the development of conservation buffer zones and enclaves. Nature Conservation Workshop PPA-WWF-FAO. Bogor.

MacKinnon, J.1982. National Conservation Plan for Indonesia Vol.1: Introduction, evaluation methods and overview of national nature richness. FAO-PPA. Bogor.

MacKinnon, K; G. Hatta, H. Halim & A. Mangalik. 1996. The Ecology of Kalimantan. Periplus Edition. Singapore.

Meijaard, E. 1997. The importance of swamp forest for the conservation of orangutans (Pongo pygmaeus pygmaeus) in Kalimantan, Indonesia. J.O. Rieley & S.E. Page (Eds.). Biodiversity and Sustainability of Tropical Peatlands. Samara Publishing, Cardigan-UK.

Meijaard, E., D. Sheil, R. Nasi, D. Augeri, B. Rosenbaum, D. Iskandar, T. Setyawati, M. Lammertink, I. Rachmatika, A.Wong, T. Soehartono, S. Stanley & T. O'Brien. 2005. Life after logging: Reconciling wildlife conservation and production forestry in Indonesian Borneo. CIFOR and UNESCO. Bogor.

Meijaard, E; G. Albar, Nardiyono, Y. Rayadin, M. Ancrenaz, S. Sephar. 2010. Unexpected ecological resilience in Bornean Orangutans and implications for pulp and paper plantation management. PLoS ONE 5(9): e12813. doi:10.1371/journal.pone.0012813.

Menteri Pertanian. 1981. Keputusan Menteri Pertanian No. 101 A/Kpts/VIII/12/1981 tanggal 10 Desember 1981 tentang Penunjukan Suaka Margasatwa Gunung Palung, Kalimantan Barat.

Ministry of Forestry. 1982. Keputusan Menteri Pertanian No No. 757/Kpts-II/Um/1982 dated 12 October 1982 Tentang Penunjukan Suaka Margasatwa Danau Sentarum, Kalimantan Barat.

Ministry of Forestry. 1984. Keputusan Menteri Kehutanan No. 096/Kpts-II/1984 tanggal 12 Mei 1984 tentang Penunjukan Taman Nasional Tanjung Puting, Kalimantan Tengah.

Ministry of Forestry. 1996. Keputusan Menteri Kehutanan No. 687/Kpts-II/1996 tanggal 25 October 1996 tentang Perluasan Taman Nasional Tanjung Puting, Kalimantan Tengah.

Ministry of Forestry. 1999. Keputusan Menteri Kehutanan No. 34/Kpts-II/1999 tanggal 4 February 1999 Tentang Penunjukan Taman Nasional Danau Sentarum, Kalimantan Barat.

Ministry of Forestry. 2006. Indonesia's Forestry Long Term Development Plan 2006-2025. Ministry of Forestry of the Republic of Indonesia. Jakarta.

Ministry of Forestry. 2010a. Rencana Stratejik Kementerian Kehutanan 2009-2014. Kementerian Kehutanan Republik Indonesia. Jakarta.

Ministry of Forestry. 2010b. Taman Nasional Tanjung Puting: Pondok damai Abah Pahri. http://gustipahrian.blogspot.com/2009/12/taman-nasional-tanjung-puting.html. Downloaded on 1 February 2011.

Moeliono. M.; G. Limberg, P. Minnigh, A. Mulyana, Y. Indriatmo, N.A. Utomo, Saparuddin, Hamzah, R. Iwan & E. Purwanto. 2010. Meretas kebuntuan: Konsep dan panduan pengembangan zona khusus bagi taman nasional di Indonesia. Center for International Forestry Research (CIFOR). Bogor.

Mogea, J. 2003. Species Management Plan for the Rattans of Kayan Mentarang National Park: Its Prospect for Cultivation. ITTO Project PD 38/00 Rev. 1 (F). Jakarta.

Morrogh-Bernard, H.; S Husson, S.E. Page & J.O. Rieley. 2003. Population status of the Bornean Orangutan (Pongo pygmaeus) in Sebangau peat swamp forest, Central Kalimantan, Indonesia. Biological Conservation 110:141-152.

Morrogh-Bernard, M., M. E. Harrison and E. Shinta. 2006. Important tree species for orangutans in the Sebangau peat swamp forest. Report for the Indonesian Department of Forestry (PHKA). Cheyne RSG Final Report.

Muhamad, N.Z. 2001. Management of tropical peatlands in Indonesia: Mega reclamation project in Central Kalimantan. School of Geography, University of Nottingham. Nottingham, UK. http://www.reocities.com/kopitubruk/Report2.html. Downloaded on 1 August 2011.

Muir, M. 2004. An examination of the orangutan nest-count survey method. University of Glasgow, Department of Geography and Geomatics. Honours Geography Dissertation. CIMTROP and Orangutan Tropical Peatland Project. Glasgow, UK.

National Park Service, US Department of Interior. 2010. Yellowstone National Park. http://www.nps.gov/yell/index.htm. Downloaded on 16 February 2011.

National Parks. 2011. National Parks, Britain's breathing spaces. http://www.nationalparks.gov.uk. Downloaded on 17 February 2011.

Ngo, M. 1998. Profil kelompok-kelompok Dayak dan pengembangan partisipasi di Taman Nasional Bentuang Karimun. Paper presented on Workshop "Rencana Pengelolaan Taman Nasional Bentuang Karimun: Usaha mengintegrasikan konsevasi keanekaragaman hayati dengan pembangunan Propinsi Kalimantan Barat". 30 April 1998. Samarinda.

Nijman, V. 2003. Species Management Plan for the Primates of Kayan Mentarang National Park. ITTO Project PD 38/00 Rev. 1 (F). Jakarta.

Obidzinski, K., A. Andrianto and C. Wijaya. 2006. Timber smuggling in Indonesia, critical or overstated Problem? Forest governance lesson from Kalimantan. Center for International Forestry Research, Bogor.

Page, S.E.; J.O. Rieley, K. Doody, S. Hodgson, S. Husson, P. Jenkins, H. Morrogh-Bernard, S. Otway & S. Wilshaw. 1997. Biodiversity of tropical peat swamp forest: A case study in Central Kalimantan. S.E Page & J.O Rieley (Eds.). Proceedings of the International Symposium on the Biodiversity, Environmental, Importance and Sustainability of Tropical Peat and Peatlands. Midlands Geographer (special edition).

Paoli, G.D.; L.M.Curran & D.R. Zak. 2006. Soil nutrient and beta diversity in the Bornean Dipterocarpaceae: Evidence for niche partitioning by tropical rain forest trees. Journal of Ecology 94:157-170.

Peart, D. R. 1996. Enrichment planting with native species to increase the economic value of selectively - logged rain forest. Dartmouth College - Harvard University - Indonesian Institute of Science (LIPI).

Pemerintah Kota Bontang. 2003. Rencana Tata Ruang Wilayah Kota Bontang 2010. Pemerintah Kota Bontang. Bontang.

Pramono, H.G & H. Suryanto. 2005. Analysis kesesuaian budidaya laut, Kabupaten Kutai Timur, Provinsi Kalimantan Timur. Suwahyuono & W. Ambarwulan (Eds.). Pusat Survey Sumber Daya Alam Laut, BAKOSURTANAL. Cibinong, Bogor.

Purnama, B. 2006. Model relasi antar stakeholder dari perspektif sektor kehutanan. Symposium nasional mencari model pengelolaan konflk di kawasan pertambangan. Lembaga Ilmu Pengetahuan Indonesia, Jakarta 10 Agustus 2006.

Purwanto, A. S. 2005. Taman nasional, hak-hak masyarakat setempat dan pembangunan regional. Simposium Internasional ke- 4 Jurnal Antropologi Indonesia: Indonesia in the changing global context - Building cooperation and partnership? Universitas Indonesia, Depok, 12-15 Juli 2005.

Rachmatika, I. 2001. Biodiversitas ikan di DAS Mendalam, Taman Nasional Betung Kerihun Kalimantan Barat (Freshwater Fishes of Mendalam river system, Betung Kerihun National Park, West Kalimantan). Jurnal Iktiologi Indonesia 1(1): 19-26.

Ravenel, R.M. 2004. Community-based logging and de facto decentralization: Illegal logging in Gunung Palung area of West Kalimantan, Indonesia. Journal of Sustainable Forestry 19(1-3): 213-237.

Republik Indonesia. 1990. Undang-Undang Republik Indonesia No. 5 tahun 1990 tentang Konservasi Sumber Daya Alam Hayati dan Ekosistemnya. Lembaran Negara Republik Indonesia tahun 1990 No. 49.

Republik Indonesia. 1999. Undang-Undang Kehutanan No. 41 tahun 1999. Lembaran Negara Republik Indonesia tahun 1999 No.167.

Rieley, J.O.; S.E. Page, H.L. Suwido & W. Sih. 1997. The peatland resource of Indonesia and the kalimantan peat swamp forest research project. J.O.Rieley and S.E. Page (Eds.). Biodiversity and Sustainability of Tropical Peatlands. Samara Publishing, Cardigan- UK.

Rijksen, H.D. & E. Meijaard. 1999. Our vanishing relative: The status of wild Orangutan at the close of the twentieth century. Kluwer Academic Publisher. Tropenbos. Samarinda.

Rivera, L. 2011. Royal National Park. http://goasutralia.about.com/cs/nswsihgtseeing/a/rnp.htm. Downloaded on 17 February 2011.

Rosenberg, Matt. 2011. Current world population and world population growth since the year one. http://geography.about.com/od/obainpopulationdata/a/worldpopulation.htm. Downloaded on 16 February 2011.

Russon, A. E.; E. Meijaard, & R. Dennis. 2000. Declining orangutan populations in and around the Danau Sentarum National Park, West Kalimantan, Indonesia. Borneo Research Bulletin 31: 372-384.

Sambodo, T. 2006. Analasis regulasi dan implementasi kebijakan Taman Nasional Kutai: Studi kasus di Desa Teluk Pandan dan Desa Sangkima, Kalimantan Timur. Tesis Program Studi Magister Ilmu Lingkungan. Program Pascasarjana Universitas Diponegoro. Semarang.

Sardjono, A.M. 2005. Opportunities for transboundary conservation in Borneo: National perspective. Proceedings Heart of Borneo: Three countries, one conservation vision workshop. Brunei Darussalam, 5-6 April 2005.

Sarre, A. 2005. Opportunities for transboundary conservation in Borneo: Regional perspective. Proceedings Heart of Borneo: Three countries, one conservation vision workshop Brunei Darussalam, 5-6 April 2005.

SA-Venues.com. 2011. Kruger National Park, Mpumalanga. http://www. sa-venues.com/game-reserves/mpl_kruger.htm. Downloaded on 17 February 2011.

Sellato, B. 2001. Forest, Resources and People in Bulungan: Element for a History of Settlement, Trade, and Social Dynamics in Borneo, 1880-2000. Center for International Forestry Research.

Sellato, B. 2001. Forest, resources and people in Bulungan: Element for a history of settlement, trade, and social dynamics in Borneo, 1880-2000. Center for International Forestry Research (CIFOR). Bogor.

Setiadi, Y.; D.R. Peart, C.O. Webb & M. Leighton. 1996. Abundance and spatial distribution of seedling recruitment around adult trees of five Shorea species in the Gunung Palung National Park, Indonesia. Tropical Biodiversity 3(3):169-179.

Simamora, A.P. 2011. Government wants national parks to become profit centers. The Jakarta Post p:4.

Slamet, R. 2007. Analisis lanskap Taman Nasional Gunung Palung dengan pendekatan dimensi sosial masyarakat: Studi di Desa Sedahan Jaya Kabupaten Ketapang. Master's Thesis. Universitas Gajah Mada. Yogyakarta.

Smits, W. T. M.; Heriyanto, & W. Ramono. 1994. A new method of rehabilitation of orangutans in Indonesia: A first overview. Pp. 29-40 in J. J. Ogden, L. A. Perkins, & L. Sheehan (Eds.). Proceedings of the International Conference on 'Orangutans: The Neglected Ape'. Zoological Society of San Diego. San Diego.

Soedjito, H. 1998. Rencana Pengelolaan Taman Nasional Bentuang Karimun: Potensi dan tantangan bagi pembangunan Propinsi Kalimantan Barat. Prosiding Lokakarya Rencana Pengelolaan Taman Nasional Bentuang Karimun: Usaha mengintegrasikan konservasi keanekaragaman hayati dengan pembangunan Propinsi Kalimantan Barat. H. Soejito (Ed.). Pontianak 29 April-1 Mei 1998.

Soehartono, T. & A. Mardiastuti. 2009. Hunian baru untuk Harimau Sumatera; Kisah pemindahan harimau Sumatera dari Aceh ke Lampung. Tambling Wildlife Nature Conservation. Jakarta.

Soehartono, T; H.D. Susilo, N. Andayani, S.S. Utami, J. Sihite, C. Saleh & A. Sutrisno. 2007. Orangutan Indonesia: Conservation strategies and action plan. Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam and OCSP. Jakarta.

Stuebing, R. 2003. Species management plan for the Felidae and Viverridae of Kayan Mentarang National Park. ITTO Project PD 38/00 Rev. 1 (F). Jakarta.

Susilo, H.D. 2003. Transboundary biodiversity conservation areas in Southeast Asia: Lessons learnt from Betung Kerihun National Park, Kalimantan, Indonesia. ARCBC Special Report. January-June 2003. Pp. 16-18.

Sylviani. 2008. Kajian dampak perubahan fungsi kawasan hutan terhadap masyarakat sekitar (Study on the impact of changes in the forest function to the community around the forest). Jurnal Penelitian Sosial dan Ekonomi Kehutanan 5: 155-178.

Taman Nasional Sebangau. 2011. Resort Mangkok Pusat Riset SSI. http://tnsebangau.dephut.go.id/index.php/tentang-tns/37--tentang-taman-nasional-sebangau/20-resort-mangkok-pusat-riset-ssi. Downloaded on 17 August 2012. .

Tanuwijaya, S.M.; R.H. Alimudin, D.R. Peart, C.O. Webb & M. Leighton. 1996. Population structure and regeneration in two potentially valuable leguminous rain forest tree species Sindora coriacea and Dialium platysepalum in Gunung Palung National Park, Indonesia. Tropical Biodiversity 3(3): 157-168.

Tasa. 2011. Six must see national parks of South America. http://www. travel-amazing-southamerica.com/south-america-national-parks. html. Downloaded on 17 February 2011.

Thompson, C. 2007. Ecology of gaps affecting locomotion in Bornean Agile Gibbons (Hylobates albibarbis). Final Report for the Rufford Small Grants for Nature Conservation. Wildlife Research Group, the Anatomy School, University of Cambridge, Cambridge, UK.

van Schaik, C.P., M.S. Azwar & D. Priatna. 1995. Population estimates and habitat preference of the orangutan based on line transects of nests. Pp. 129-146 in The neglected ape. R. D. Nadler, B.F.M. Galdikas. L.K. Sheeran & N. Rosen (Eds.). Plenum Press. New York.

Vayda, A. P. & A. Sahur. 1996. Bugis Settlers in East Kalimantan's Kutai National Park: Their Past and Present and Some Possibilities for their Future. Center of International Forestry Research (CIFOR). Bogor.

Veith, M, S. Wulfraat, J. Kosuch, G. Hallmann, H. W. Henkel, P. Sound, Samsu, L. Rudhimanto and D. Iskandar. 2004. Amphibians of the Kayan Mentarang National Park (East Kalimantan, Indonesia): estimating overall and local species richness.Tropical Zoology 17: 1-13.

Veith, M; S. Wulfraat, J. Kosuch, G. Hallmann, H. W. Henkel, P. Sound, Samsu, L. Rudhimanto & D. Iskandar. 2004. Amphibians of the Kayan Mentarang National Park (East Kalimantan, Indonesia): estimating overall and local species richness. Tropical Zoology 17: 1-13.

Vinanda, M,Y. 2010. Danau Sentarum honey: Reconfirming the traditional honey farming. http://www.wwf.or.id/en/news_fact/highlights/Madu-Danau-Sentarum-produk-organik. Downloaded on 1 February 2011.

Wadley, R.L ; C.J.P. Colfer, R. Dennis, & J. Aglionby. 2010. The social life of conservation: Lessons from Danau Sentarum. Ecology and Society 15 (4): 39. http://www.ecologyandsociety.org/vol15/iss4/art39/. Downloaded on 2 January 2011.

Wadley, R.L. 2006. Community cooperatives, illegal logging and regional autonomy in the borderlands of West Kalimantan. Pp. 111-132 in State, communities and forests in contemporary Borneo. F.M. Cooke (Ed.). http://www.borneowildlife.info/documents/sintangSarawakBorders.pdf. Downloaded on 3 February 2011.

Wadley, R.L; R.A. Dennis, E. Meijaard, A. Erman, H. Valentinus & W. Giesen. 2000. After the conservation project: Danau Sentarum National Park and its vicinity - condition and prospects. Borneo Research Bulletin 31: 385-401.

Wah. 2011. Habitat Orangutan di Taman Nasional Gunung Palung terdesak.

Webb, C.O. & D.R. Peart. 2000. Habitat association of trees and seedlings in Bornean rain forest. Journal of Ecology 80:2006-2017.

Webb, C.O. & L.M. Curran. 1996. A field key to Dipterocarp seedlings of the Gunung Palung National Park, West Kalimantan, Indonesia. Tropical Biodiversity 3(3): 193-225.

Webb, C.O. 1997. Seedling ecology and tree diversity in a Bornean rain forest. PhD Thesis. School of Dartmouth College. Hanover, USA.

Wemmer, C. 1991. Great apes of the world conference: Asian Primates. A Newsletter of the IUCN/SSC Primate Specialist Group 1(2):2.

Widiati S. 2008. Rehabilitation of Sebangau National Park for sustainable living. Garuda, the Magazine of Garuda Indonesia. http://garudamagazine.com/coverstory.php. Downloaded on 30 January 2011.

Wikipedia. 2011a. Hot Springs National Park. http://en.wikipedia.org/wiki/Hot_Spring National_ Park. Downloaded on16 February 2011.

Wikipedia. 2011b. List of national park of the United States. http://en.wikipedia.org/wiki/list_of_National_Parks_of _the United States. Downloaded on 16 February 2011.

Wikipedia. 2011c. Banff National Park. http://en.wikipedia.org/wiki/Banff_National_Park. Downloaded on 17 February 2011.

Wikipedia. 2011d. List of national parks. http://en.wikipedia.org/wiki/List_of_national_parks. Downloaded on 17 February 2011.

Wikipedia. 2011e. Jim Corbett National Park. http://en.wikipedia.org/wiki/Jim_Corbett_National_park. Downloaded on 17 February 2011.

Wikipedia. 2011f. Losiny Ostrov National Park. http://en.wikipedia.org/wiki/Losiny_ostrov_National_Park. Downloaded on 17 February 2011.

Wright, R.G. 2010. National park and protected area: Their role in environmental protection. Blackwell Publishing. http://www. cplbookshop.com/contents/c716.htm. Downloaded on 16 February 2011.

Wulan, Y.C.; Y. Yasmi, C. Purba & E. Wollenberg. 2004. Analisa konflik sektor kehutanan di Indonesia 1997-2003. CIFOR. Bogor.

Wulffraat, S.; P. Tatengkeng & A. Salo. 2005. Lalut Birai: The ecology of a rain forest in the heart of Borneo (Ekologi hutan hujan di jantung Kalimantan). Ministry of Forestry Indonesia - WWF Indonesia. Kayan Mentarang Project. Jakarta.

WWF. 2008. Strategic Plan of Actions: the Heart of Borneo Initiative. WWF Indonesia. Jakarta.

WWF. 2009. Rewetting the peatland in mitigating climate change through peat restoration in Central Kalimantan. http:// assets.wwfid.panda.org/downloads/wwf_id_mitigasisebangau_v3screen.pdf. Downloaded on 11 January 2011.

WWF. 2006. Investment in youth for the future of Sebangau National Park: Safe Sebangau. http://www.wwf.or.id/berita_fakta/highlights/index. Downloaded on 11 January 2011.

WWF. 2010. Betung Kerihun National Park, Indonesia. http://wwf.panda.org/whp_we/wwf_offices/Indonesia. Downloaded on 13 December 2010.

Yasmi, Y.; L. Yuliani, Y. Indriatmoko, V. Heri & C.J.P. Colfer. 2007. Conflict management approaches under unclear boundary of the commons: Experiences from Danau Sentarum National Park, West Kalimantan. International Forestry Review 9(2): 597-609.

Yeager, C.P. 1997. Orangutan rehabilitation in Tanjung Puting National Park, Indonesia. Conservation Biology 11(3): 802-805.

Yuliani, L, Y. Indriatmoko, V. Heri. S. Ernawati, L.B. Prasetyo & M.S. Zulkiflie. 2008. Promoting good governance in managing Danau Sentarum National Park through adaptive collaborative management approach. Center for International Forestry Research (CIFOR). Bogor.

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