

BIODIVERSITY

ACTION PLAN FOR INDONESIA

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BIODIVERSITY ACTION PLAN FOR INDONESIA

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FOREWORD

Indonesia's national symbol is a mythological GARUDA carrying a shield bearing the inscription "Bhineka Tunggal Ika", which means "Unity in Diversity". When our forefathers established the nation, they recognized that diversity was essential to unity. This principle also guides us to strive for harmony between people and their natural environment.

Biological diversity, or biodiversity, encompasses the variety and abundance of living organisms: plants, animals, and micro-organisms, as well as ecosystems to which they belong. Biodiversity is usually considered at three levels : genetic, species, and ecosystems diversity.

Indonesia is one of the world's mega-biodiversity countries. Although it cover only 1.3 % of the world's total area, it has 10 % of flowering plants, 12 % of mammals, 16% of reptiles and amphibians, 17% of birds and 35 % of fishes of the world. Indonesian species diversity indicates a large variety of ecosystems and ecological processes. Protection of biodiversity is necessary to provide options for further development. Biodiversity conser-vation increases options for sustainable development. Indonesian economic development is people oriented, directed towards improving welfare and dignity of human kind. It is based on sustainable development principles, recognizing the importance of conservation and im-proving capacity of the environment to support future development options.

Conservation of biodiversity is fundamental to sustainable development. To further define biodiversity conservation as it relates to economic development in Indonesia, this national action plan for biodiversity was prepared. This plan must be agreed to and implemented by government, private sectors, communities and individuals to have maximum results. Responsibilities and benefits of biodiversity conservation should be equally distributed among members of the involved communities.

This Biodiversity Action Plan for Indonesia has been prepared as a national consensus to provide guidance in preparing the rational of action and investment in biodiversity conservation. Participation of National Development Planning Agency, Ministry of Forestry, National Institute of Science (LIPI), Ministry of Agriculture, Ministry of Environment, Ministry of Interior, Provincial and Local Governments, Universities, national professional organizations, private sectors, non-goverment organizations (SKEPHI, WALHI, etc), and international organizations (WB, ADB, WWF, IUCN, etc) in preparing this Biodiversity Action Plan provided broad background and acceptability to the plan.

The Steering Committee
Chairman,



Prof. Dr. Herman Haeuruman JS

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ACRONYMS

ADB	: Asian Development Bank
AMPI	: Angkatan Muda Pembaharu Indonesia
AMDAL	: Environmental Impact Assessment
AWB	: Asian Wetland Bureau
BAPPEDA	: Provincial Development Planning Bureau
BAPPENAS	: National Development Planning Bureau
BIOTROP	: Institute of Tropical Biology, Bogor
BIPHUT	: Forest Landuse Planning
DGI	: Dewan Gereja Indonesia (Protestant church)
DGIS	: Directorate General for International Cooperation of the Netherlands
FAO	: Food and Agriculture Organisation (UNDP)
GTZ	: German Technical Assistance
HKTI	: Himpunan Kerukunan Tani Indonesia
HMI	: Himpunan Mahasiswa Islam Indonesia
HTI	: Hutan Tanaman Industri, Industrial Timber Estate
IPB	: Institut Pertanian Bogor
ITTO	: International Tropical Timber Organisation
IWAPI	: Ikatan Wanita Pengusaha Indonesia
JICA	: Japanese International Cooperation Agency
KLH	: Kependudukan dan Lingkungan Hidup
Klompencapir	: Kelompok Pendengar, Pembaca dan Pirsawan
KNPI	: Komite Nasional Pemuda Indonesia
KORPRI	: Korps Pegawai Republik Indonesia
LIPI	: Lembaga Ilmu Pengetahuan Indonesia (Indonesian Institute of Sciences)
LON	: Lembaga Oseanologi Nasional
MAWI	: Majelis Agung Wali gereja Indonesia (Catholic Church)
MUI	: Majelis Ulama Indonesia
MoF	: Ministry of Forestry
NGO	: Non-government organisation
ODA	: Overseas Development Administration (U.K.)
PBI	: Persatuan Bidan Indonesia
Pergizi Pangan	: Persatuan Ahli Gizi dan Pangan
PGRI	: Persatuan Guru Republik Indonesia
PHPA	: Perlindungan Hutan dan Pelestarian Alam
PKK	: Pendidikan Kesejahteraan Keluarga

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PKBSI	: Indonesian Zoo Association
PSL	: Pusat Studi Lingkungan - Environmental Study Centre
PROSEA	: Plant Resources of Southeast Asia
RePPProt	: Regional Physical Planning Programme for Transmigration
SIKLHI	: Studio Informasi dan Komunikasi Lingkungan Hidup Indonesia
SKEPHI	: Indonesian Rainforest Action Group
TFAP	: Tropical Forestry Action Plan
TGHK	: Tata Guna Hutan dan Kesepakatan (Forest Consensus Map)
TPTI	: Indonesian Selective Cutting System
TROPENBOS	: Tropical Forest Research Programme
UNMUL	: Universitas Mulawarman, Samarinda
USAID	: United States Agency for International Development
WALHI	: Wahana Lingkungan Hidup
WWF	: World Wide Fund for Nature
YLK	: Yayasan Lembaga Konsumen, Consumers Association

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EXECUTIVE SUMMARY

Indonesia covers only 1.3 percent of the Earth's surface yet it harbours 10 percent of all flowering plants, 12 percent of the world's mammals, 16 percent of the world's reptiles and amphibians, 17 percent of all birds and more than a quarter of all marine and freshwater fish. It is one of the richest countries for biodiversity in the world.

This richness can be attributed to the fact that Indonesia spans two major biogeographical realms, Indomalaya and Australasia and can be divided into seven distinct biogeographic regions. The 17,000 islands of the archipelago support a wide range and variety of habitats from lowland rain forests and mangroves to savanna grasslands, swamp forests and limestone hills to montane forests, alpine meadows and snow-topped mountains. These varied habitats support a rich flora and fauna.

These habitats and species are now threatened by developments in logging, mining, shifting agriculture and other changing land uses as Indonesia's economy expands to meet the needs of its increasing population. Lowland habitats and wetlands are particularly threatened since these are the areas most accessible for agricultural developments.

Recognizing the need to conserve its rich biological resources, the Government of Indonesia has made a commitment to protect 10 percent of the land area and eventually 20 million hectares of coastal and marine habitats as conservation areas. Although in situ conservation must be the first priority, the protected area network alone will not be sufficient to secure all of Indonesia's biodiversity for future generations.

This Biodiversity Action Plan sets out a strategy for action under four main headings: in situ conservation in terrestrial parks and protected areas; *in-situ* conservation outside the protected area network (production forests, wetlands, agricultural lands; coastal and marine conservation) and *ex-situ* conservation. Much loss of biodiversity in Indonesia, as elsewhere, is due to economic policy distortions that encourage rapid exploitation of biological resources rather than sustainable use. Slowing the rate of biodiversity loss will require policy and institutional reform as well as institutional strengthening for effective action in all four areas. The active participation and support of local communities will also be essential for in-situ conservation for they are the *de facto* managers of forest, wetland and marine resources. The Plan calls for greater collaboration between government agencies and local communities and NGOs to work together as partners in biodiversity conservation.

The Plan provides a framework for biodiversity conservation during Repelita V and VI and for the 25 Year Development Plan. It outlines immediate and attainable priorities for conservation action and suggestions for further studies on policy and funding mechanisms to strengthen Indonesia's biodiversity strategy.

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I

INTRODUCTION

A. *Biological Diversity in Indonesia*

1. Biological diversity is more than just the sum of species numbers, it encompasses the variety, variability and uniqueness of genes, species and the ecosystems where they occur. With its wide range of natural habitats, rich plant and animal resources and high numbers of island endemics, Indonesia is recognized as a major world centre for biodiversity.

2. Although Indonesia covers only 1.3 percent of the Earth's land surface, it includes:

- 10 percent of the world's flowering plant species
- 12 percent of the world's mammal species

- 16 percent of all reptile and amphibian species
- 17 percent of the world's bird species
- 25 percent or more of the world's fish species

3. Indonesia's species-rich forests harbour the world's greatest diversity of palms, more than 400 species of dipterocarps (the most valuable commercial timber trees in Southeast Asia) and an estimated 25,000 flowering plants as well as a rich and diverse fauna. Indonesia ranks first in the world for species richness for mammals (515 species, 36 percent endemic), first for



The role of natural resources of marine product in Indonesia as one of the resources is increasing. About 25 percent of fish species variety of the world can be found in Indonesia

swallowtail butterflies (121 species, 44 percent endemic), third for reptiles (600+ species), fourth for birds (1519 species, 28 percent endemic), fifth for amphibians (270 species) and seventh for flowering plants (Appendix 1).

4. Indonesia's great expanse of territorial waters and the richness of the Indo-West Pacific seas further add to the country's biodiversity. Indonesia supports a rich variety of coastal and marine habitats. The extensive reef systems in the deep clear seas off Sulawesi and Maluku are

among the world's richest in species of corals, fishes and other reef organisms.

5. Many of Indonesia's biological resources are economically important. Several plant species of global and national importance originated in Indonesia, including black pepper, cloves, sugar cane, citrus fruits and many other tropical fruits. More than 6000 species of plants and animals are utilized on a daily basis by Indonesian citizens, either harvested from the wild or cultivated. Seven thousand species of



The number of bird diversities is one of the advantages in Indonesia tourism, which is locally unique or unique in a certain island Pair of endemic red-knobbed hornbills in Sulawesi.

marine and freshwater fish are the major sources of protein for the Indonesian people. Agriculture and fisheries are the mainstay of the nation's subsistence economy. Numerous wild plants and animals are harvested for domestic or commercial consumption as food, handicrafts, medicines, fuel and building materials.

6. An estimated 40 million people are directly dependent on biodiversity for subsistence. Twelve million people live in and around forests and many more are dependent on coastal resources. It is the poorest rural people who are most dependent on biodiversity and natural

habitats for their livelihoods and it is they who suffer first and most when those habitats are simplified, degraded or otherwise impoverished.

7. Indonesia's biodiversity is the country's greatest natural resource. Many sectors of the nation's economy are dependent directly or indirectly on the diversity of natural ecosystems and the environmental functions they protect. Conservation of biodiversity is crucial to the sustainability of sectors as diverse as forestry, agriculture and fisheries; health care; science; industry and tourism.

B. Need for A Biodiversity Action Plan

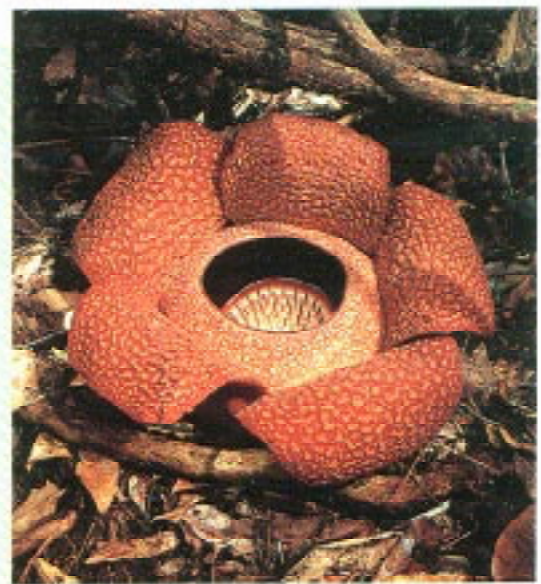
1. As Indonesia's economic development continues to accelerate, natural habitats and biodiversity are being eroded. Existing programmes have identified many conservation needs and constraints but have so far failed to appreciably slow the loss of biodiversity. That loss is causing irreparable damage to the nation's basic biological life systems and its natural capital for development, and to the biological resources upon which the rural poor



Pitcher plants such as *Nepenthes gymnophora* are feature of Indonesian forests. Deriving some of their nourishment from insects that drown inside the pitcher they survive well where nutrients are in short supply

depend. Immediate action is required to slow the rate of biodiversity loss and to develop a strategy which allows sustainable utilisation of natural resources while conserving biodiversity and the resource base. This is a primary goal and basis for development.

2. Indonesia's biological diversity is of global as well as national significance. It is recognized that Indonesia can only effectively conserve its biodiversity with new and additional resources made available by the international community. Increased funding for biodiversity projects are now being made available by international donors. The Action Plan will provide an integrated operational framework to set priorities and guide investments.



Rafflesia the world's largest flower, is confined to Southeast Asia. Parasitic on the roots of certain trees, the foul-smelling flower attracts flies as pollinators. This is *Rafflesia arnoldi* in Sumatera

3. Increased funding and activity for biodiversity conservation will only be effective to the extent that national institutions possess the capacity to act effectively. Current institutional arrangements are too sectoralised, narrow in focus, overlapping and often uncoordinated. Biodiversity is affected by a wide range of activities. Conservation of biodiversity will require the coordinated efforts of a range of government and non-government institutions. Preparation of this Plan has provided an oppor-

tunity for government ministries, sectoral agencies, provincial planners, national NGOs and international conservation organisations to work together as real partners, under the coordination of BAPPENAS, to set a course for conserving biodiversity in Indonesia.

4. The institutions that are currently charged with biodiversity conservation are generally under-funded and lack adequate trained staff. This has been a major constraint to effective



Besides having economic value in the development, forests are also the lung of the world, including various types of life. An illustration of this is a tropical forest in Kalimantan, having extraordinary diversities

conservation. The Plan can serve as a charter for institutional reform and strengthening and as a vehicle for institutional integration and coordination, the keys to making new investment effective.

5. Much loss of biodiversity in Indonesia, as elsewhere, is due to economic policy distortions that encourage rapid, rather than sustainable, exploitation of biological resources. Both international and national economic and development policies (e.g. international trade tariffs, government subsidies for agriculture or planta-

tions) lead to depletion of biodiversity. The Plan emphasises the need for policy reform to develop a policy environment that will support biodiversity conservation and sustainable use.

6. The Biodiversity Action Plan sets priorities for conservation and investment during Repelita V and Repelita VI (1994-1999) and for more long-term action during the next 25 years. The Plan will augment ongoing and proposed conservation programmes in Indonesia and strengthen the conservation orientation of the Tropical Forestry Action Plan.



Land laws provide little security to the Dani tribe of Irian Jaya. Development programmes generally override traditional tribal rights