

# インドネシア共和国 生物多様性保全計画フェーズ2 実施協議調査団報告書

平成10年6月

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インドネシア共和国  
生物多様性保全計画フェーズ2  
実施協議調査団報告書

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1149883 {9}

## 序 文

地球上には現在同定されているだけでも140万種近い生物が生息している。インドネシア共和国は、地球上の陸地面積の約1.3%を占めるにすぎないが、高温・多湿の熱帯性気候地帯にあり、同定されている生物の約20%に相当する32万5,000種の生物が生息する世界有数の生物多様性の高い国として知られている。しかし、急速な人口増加や産業発展による土地需要の増加により熱帯林の伐採など開発が進み、森林については年間約100万haが消失しており、自然環境の破壊と生物種の減少が懸念されている。

このため、インドネシア国政府は第6次国家開発5か年計画（1991～1999年）の中で、「人的資源の資質の向上、国民生活水準を向上」とともに「環境への配慮及び環境の復元の促進」を重点項目に掲げており、1991年にはインドネシア生物多様性行動計画(The Biodiversity Action Plan for Indonesia; BAPI)を制定し、国家的事業として本格的に生物多様性保全、自然環境保護に取り組んでいる。

また、1992年日米両国政府は、インドネシアを日米環境協力共同事業の最初の対象国として「日米グローバル・パートナーシップ・アクションプラン」を発表し、その後1993年には、地球環境の保全など地球的展望に立った協力のための共通課題に取り組むため「日米コモン・アジェンダ」を打ち出した。

このような状況の下、インドネシア国政府の要請に基づき、我が国は無償資金協力によりインドネシア科学院生物学開発研究センター動物部施設(RDCB-LIPI)等を整備し、1997年10月に引き渡しを行った。また、1995年7月1日から3年間の予定で、プロジェクト方式技術協力「インドネシア生物多様性保全計画」プロジェクトを実施中である。

インドネシア国政府は、このプロジェクトの成果を更に発展させるため、「インドネシア生物多様性保全計画フェーズ2」のプロジェクト方式技術協力を我が国に要請してきた。この要請を受け、国際協力事業団は1998年5月11日から5月21日にわたり、(財)自然環境研究センター上級研究員菊地邦雄氏を団長とする実施協議調査団を現地に派遣した。この調査団は、インドネシア側関係者とプロジェクト実施の基本計画などを協議する予定であったが、5月14日にインドネシアで発生した暴動の影響により同日から協議は中断し、1997年12月に派遣された事前調査団により確認されたプロジェクト・デザイン・マトリックス(PDM)の内容に関しインドネシア側関係者と基本的な合意を得たにとどまった。

その後、1998年6月12日に当事業団インドネシア事務所長とインドネシア国家開発計画庁(BAPPENAS)のDeputy Chairmanとの間で、討議議事録及びミニッツが署名・交換され、同年7月1日から5年間のプロジェクトが開始される予定である。

本報告書は、同調査団の結果を取りまとめたものである。ここに、本調査の任に当られた調査団員の方々及びご協力いただいた外務省、環境庁、(財)自然環境研究センター並びに在インドネシア日本大使館、その他関係者の方々に心から感謝の意を表するとともに、今後のご支援をお願いするものである。

平成10年6月

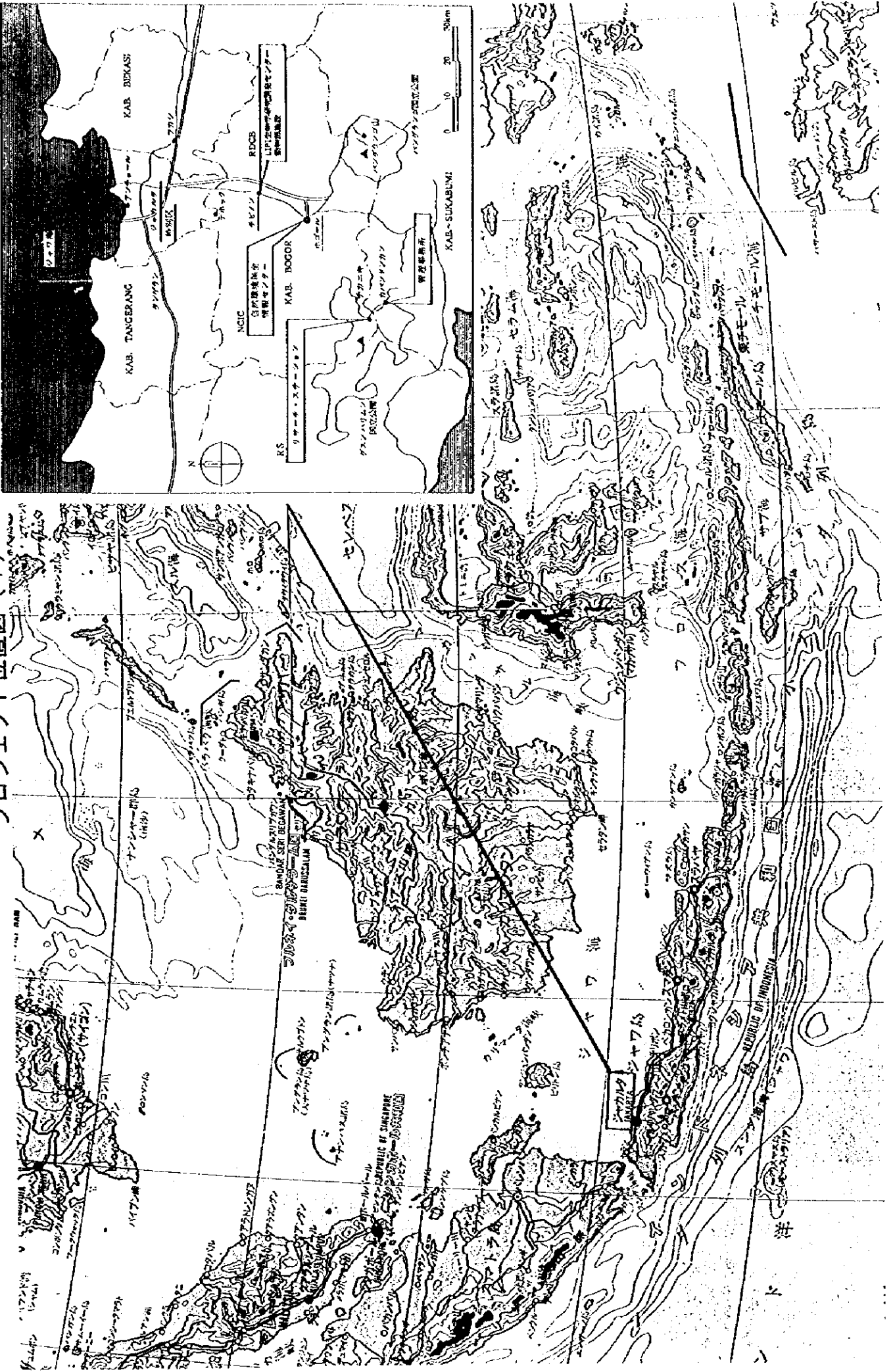
国際協力事業団

理事 佐藤 清



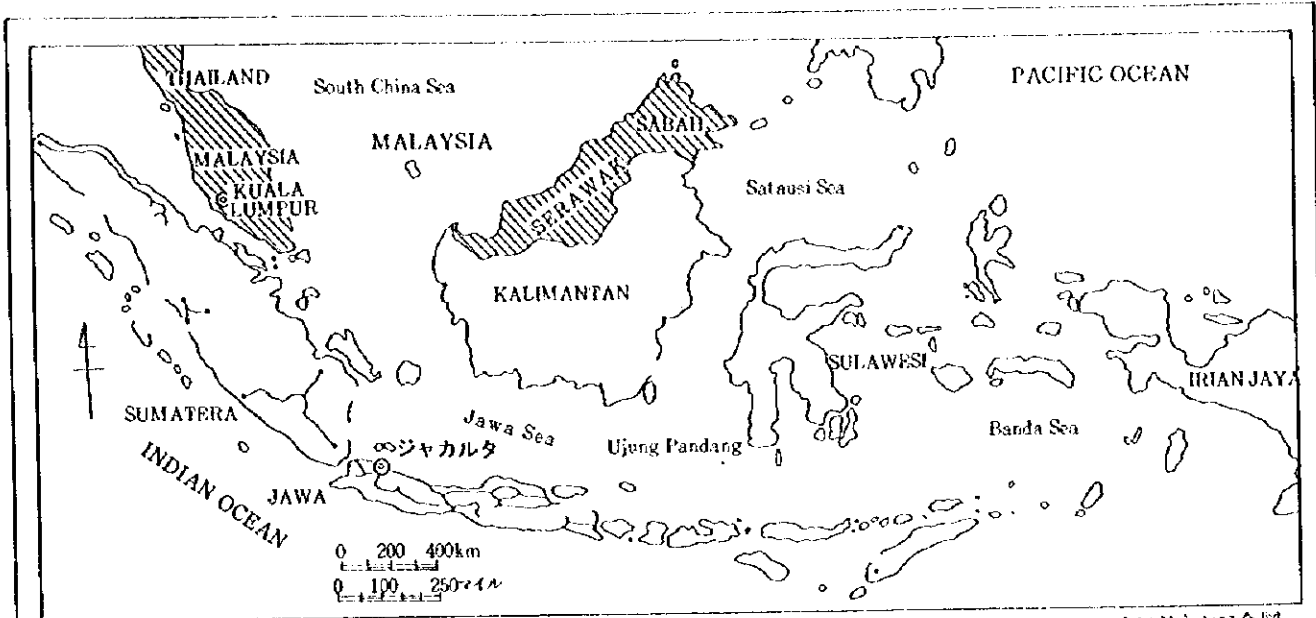


プロジェクト位置図 (1)

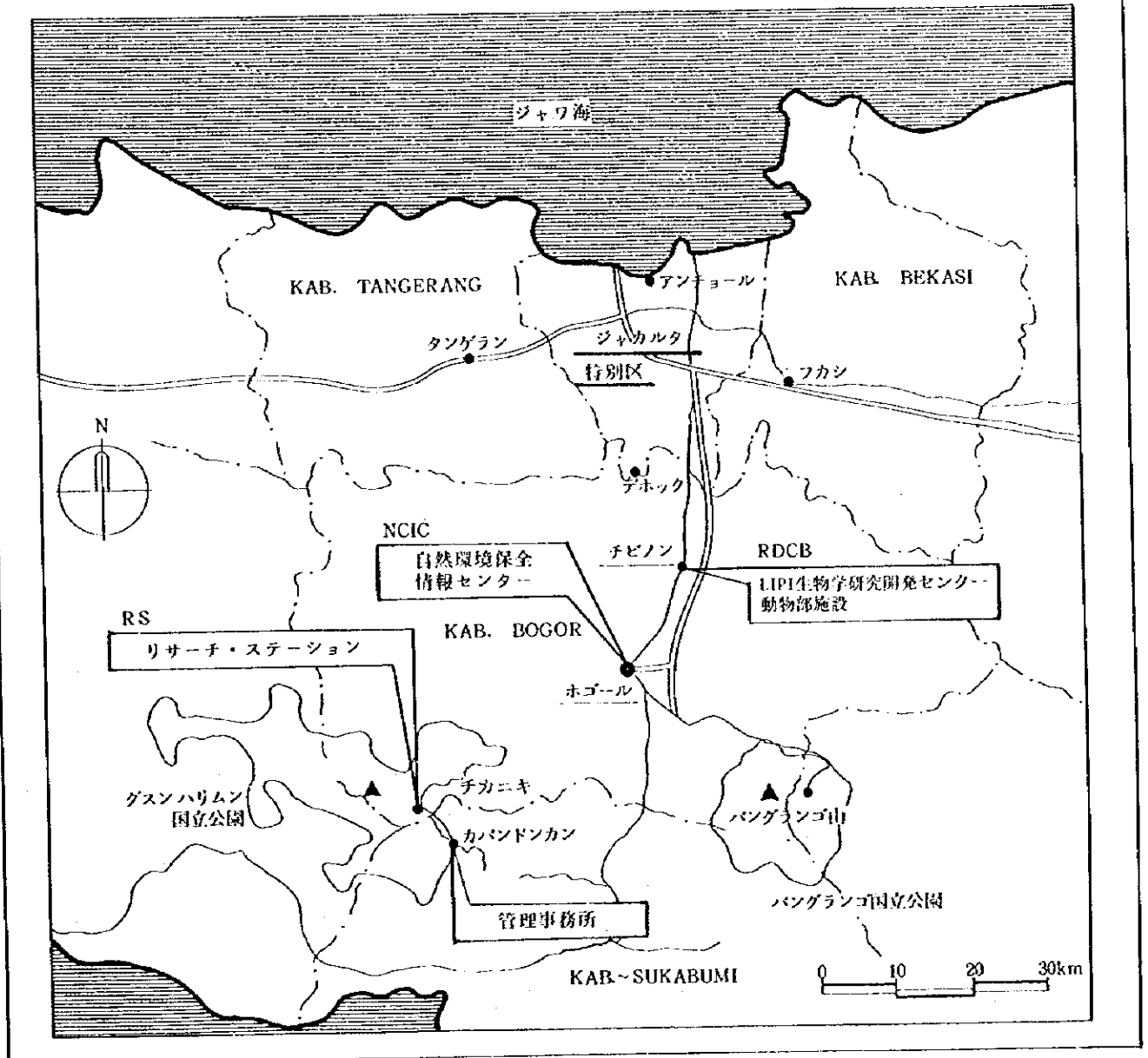




# プロジェクト位置図 (2)



インドネシア全国





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## 1. 実施協議調査団の派遣

### 1-1 要請の背景及び経緯・派遣目的

地球上には現在同定されているだけでも140万種近い生物が生息している。インドネシア共和国は、地球上の陸地面積の約1.3%を占めるにすぎないが、高温・多湿の熱帯性気候地帯にあり、同定されている生物の約20%に相当する32万5,000種の生物が生息する世界有数の生物多様性の高い国として知られている。しかし、急速な人口増加や産業発展による土地需要の増加により熱帯林の伐採など開発が進み、森林については年間約100万haが消失しており、自然環境の破壊と生物種の減少が懸念されている。

このため、インドネシア国政府は第6次国家開発5か年計画（1991～1999年）の中で、「人的資源の資質の向上、国民生活水準を向上」とともに「環境への配慮及び環境の復元の促進」を重点項目に掲げており、1991年にはインドネシア生物多様性行動計画(The Biodiversity Action Plan for Indonesia; BAPI)を制定し、国家的事業として本格的に生物多様性保全、自然環境保護に取り組んでいる。

また、1992年日米両国政府は、インドネシアを日米環境協力共同事業の最初の対象国として「日米グローバル・パートナーシップ・アクションプラン」を発表し、その後1993年には、地球環境の保全など地球的展望に立った協力のための共通課題に取り組むため「日米コモン・アジェンダ」を打ち出した。これを受け、インドネシア国政府は、同国に最適な生物多様性保全を図ることを目的として、我が国に対しプロジェクト方式技術協力及び無償資金協力を要請してきた。

この要請に基づき、国際協力事業団は1994年8月に事前調査、1995年7月に実施協議調査団を派遣して、1995年7月1日から1998年6月30日までの3年間の予定でプロジェクト方式技術協力（フェーズ1）を実施中である。また、我が国は無償資金協力によりチビノンにインドネシア科学院(LIPI)生物学開発研究センター(RDCB-LIPI)動物部施設(標本室、生物多様性情報センター(BIC)など)を、ボゴールに林業省(PHPA)自然環境保全情報センター(NCIC)を、グヌン・ハリムン国立公園(GHNP)に管理事務所及びリサーチステーションをそれぞれ建設した。

インドネシア国政府は、このフェーズ1の協力の成果をもとに、BICを活用した分類学の推進、生物多様性情報の整備とネットワークの確立、生物多様性保全のための資料提供体制の確立、GHNPの自然生態系解明と全国の国立公園への応用、国立公園管理計画に基づく公園管理、特に環境教育、エコツーリズムの発展を目的として、我が国に対し第2フェーズのプロジェクト方式技術協力を要請し、この要請を受け国際協力事業団は1997年12月8日から18日まで事前調査団を派遣した。

本実施協議調査団は以上の経緯を踏まえ、第2フェーズの協力開始にあたって、長期及び短期

専門家の協力分野、活動内容などに関する最終協議を行い、討議議事録（R/D）の署名・交換を行うべく派遣されたものである。

## 1-2 調査団の構成

氏名	分野	所属
菊地 邦輝	総括・団長	(財)自然環境研究センター上級研究員
米田 政明	生物多様性調査研究	(財)自然環境研究センター研究部上席研究員
山瀬 一裕	生物多様性情報管理	(財)自然環境研究センター常務理事
阿部 宗広	公園計画・管理	環境庁自然保護局西北海道地区国立公園・野生生物事務所次長
村上 雄祐	協力企画	国際協力事業団社会開発協力部社会開発協力第一課職員
アムフレッド・ナカタ	連携協力企画	国際協力事業団社会開発協力部社会開発協力第一課 (マンスフィールド研修計画研修生)
山田 幸代	情報連携調査	国際協力事業団社会開発協力部社会開発協力第一課ジュニア専門員



1-3 調査日程

	月 日	行 程	活 動 内 容
1	5/11(月)	東京→ジャカルタ	移動
2	5/12(火)	ジャカルタ ボゴール	グループA (菊地団長、山瀬、村上、カヅマ、山田) AM: LIPI 表敬、PHIPA 表敬 PM: JICA 事務所打合せ、日本大使館表敬 グループB (米田、阿部) 終日: 日本人専門家、LIPI、PHIPA、C/P との打合せ
3	5/13(水)	ボゴール、 チビノン	AM: 日本人専門家との打合せ PM: LIPI、PHIPA、C/P との打合せ
4	5/14(木)	ジャカルタ ボゴール	グループA (菊地団長、村上、カヅマ) AM: BAPPENAS 表敬 PM: 暴動勃発によるホテルでの待機 グループB (山瀬、米田、阿部、山田) AM: LIPI、PHIPA、C/P との打合せ、 山瀬団員のみジャカルタへ移動 PM: 暴動発生によりホテルで待機
5	5/15(金)	ジャカルタ ボゴール	グループA (菊地団長、山瀬、村上、カヅマ) 終日: ホテルでの待機 グループB (米田、阿部、山田) 終日: ホテルでの待機
6	5/16(土)	ジャカルタ	グループB ボゴールからジャカルタへ移動 終日: 全員ホテルでの待機
7	5/17(日)	ジャカルタ	終日: 全員ホテルでの待機
8	5/18(月)		村上団員を除く調査団員インドネシア出国
9	5/19(火)		村上団員を除く調査団員関西空港到着 村上団員インドネシア出国
10	5/20(水)		村上団員帰国 成田着

#### 1-4 主要面談者

##### (1) インドネシア国家開発計画庁 (BAPPENAS)

Dipo Alam	Bereau Chief for Marine, Acrospace, Environment, Science and Technology
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##### (2) インドネシア科学院 (LIPI)

Soefjan Tsauri	Chairman
Suparka	Vice Chairman
Joko Sulistyono	Head of Microbiology
Basuki B Mulyono	Head of Information and Documentation Sub Division
Siti N Prijono	Head of Zoological Museum
Ahamed Jauhar Arief	Coordinator of the Project

##### (3) 林業省森林保全・自然保護総局 (PHPA)

Soemarsono	Director General
Adi Susmianto	Head of GHNP
Wawan	Head of NCIC
Sunaryo	Head of Gunung Gede Pangrango NP

##### (4) 長期個別専門家

岩淵 晴行	LIPI 長期個別専門家
和田 茂樹	LIPI 長期個別専門家
青山 銀三	PHPA 長期個別専門家

##### (5) 在インドネシア日本大使館

嶋崎 郁	参事官
宮澤 俊輔	一等書記官
八山 幸司	二等書記官

##### (6) JICA インドネシア事務所

米田 一弘	次長
花里 信彦	所員

## 2. 要 約

本調査団は、1998年5月11日にインドネシア到着後、LIPI及びPHIPA関係者と1997年12月の事前調査時に合意したPDMの内容につき再度確認を行い、基本的に内容に変更のないことを確認した。また、BAPPENASとも事前調査時に合意したPDMの内容でプロジェクトを実施することで基本的コンセンサスを得た。

その後1998年5月14日に発生したインドネシアでの暴動の影響で協議は中断し、LIPI、PHIPA関係者との細部の打合せは実施できず、R/D及びミニッツの署名も行えない状態となり、本調査団はやむを得ず帰国した。

1998年6月12日にJICAインドネシア事務所長とBAPPENASのDeputy Chairmanとの間でR/D及びミニッツ（付属資料参照）が署名・交換され、同年7月1日から5年間のプロジェクトが開始される予定である。



## 付 属 資 料

- 1 . R/D (Record of Discussions)
- 2 . TSI (Tentative Schedule of Implementation) 及び PDM (Project Design Matrix)
- 3 . M/M (Minutes of Meetings)



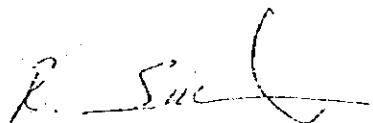
1. R/D (Record of Discussions)

RECORD OF DISCUSSIONS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
AUTHORITIES CONCERNED  
OF  
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
THE BIODIVERSITY CONSERVATION PROJECT (PHASE II)

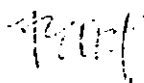
With regard to the minutes of discussions of the Japanese Preliminary Study Team dated December 16, 1997, the Japan International Cooperation Agency (hereinafter referred to as "JICA") had a series of discussions through the Resident Representative of JICA in the Republic of Indonesia, with the Indonesian authorities concerned with respect to the desirable measures to be taken by both Governments for the successful implementation of the Biodiversity Conservation Project (Phase II) in the Republic of Indonesia, which is formulated within the framework of the Indonesian Biodiversity Conservation Program agreed between the Government of the Republic of Indonesia, the Government of Japan, and the Government of the United States of America on August 26, 1994.

As a result of the discussions, JICA and the Indonesian authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Jakarta, June 12, 1998



Ryo SUWA  
Resident Representative,  
JICA Indonesia Office,  
Japan International Cooperation Agency  
Japan



Dr. Ir. H. Hidayat Syarief  
Deputy Chairman for Human Resource  
Development  
BAPPENAS  
The Republic of Indonesia

## ATTACHED DOCUMENT

### I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of the Republic of Indonesia will implement the Biodiversity Conservation Project (Phase II) (hereinafter referred to as "the Project") in cooperation with the Government of Japan.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

### II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

In accordance with the laws and regulations in force in Japan, the Government of Japan will take, at its own expense, the following measures through Japan International Cooperation Agency (hereinafter referred to as "JICA") according to the normal procedures under the technical cooperation scheme of the Colombo Plan for Cooperative Economic and Social Development in Asia and the Pacific (hereinafter referred to as "the Colombo Plan").

#### 1. DISPATCH OF JAPANESE EXPERTS

The Government of Japan will provide the services of the Japanese experts as listed in Annex II.

#### 2. PROVISION OF MACHINERY AND EQUIPMENT

The Government of Japan will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The Equipment will become the property of the Government of the Republic of Indonesia upon being delivered C.I.F. to the Indonesian authorities concerned at the ports and/or airports of disembarkation.

#### 3. TRAINING OF INDONESIAN PERSONNEL IN JAPAN

The Government of Japan will receive Indonesian personnel connected with the Project for technical training in Japan.

### III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE REPUBLIC OF INDONESIA

1. The Government of the Republic of Indonesia will take necessary measures to ensure self-reliant operation of the Project during and after the period of Japanese technical cooperation, through the full and active involvement of all related authorities, beneficiary groups and institutions in the Project.
2. The Government of the Republic of the Indonesia will ensure that the technologies and knowledge acquired by the Indonesian nationals as a result of Japanese technical cooperation will contribute to the economic and social development of the Republic of Indonesia.



3. The Government of the Republic of Indonesia will grant, in the Republic of Indonesia, privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families, which are no less favorable than those accorded to experts of third countries working in the Republic of Indonesia under the Colombo Plan Technical Cooperation Scheme.
4. The Government of the Republic of Indonesia will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.
5. The Government of the Republic of Indonesia will take necessary measures to ensure that the knowledge and experience acquired by the Indonesian personnel through technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take necessary measures to provide at its own expense for the Project:
  - (1) Services of the Indonesian counterpart personnel and administrative personnel as listed in Annex IV;
  - (2) Land, buildings and facilities as listed in Annex V;
  - (3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above;
  - (4) Means of transport and travel allowances for the Japanese experts for official travel within the Republic of Indonesia; and
  - (5) Suitably furnished accommodations for the Japanese experts and their families.
7. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take necessary measures to meet:
  - (1) Expenses necessary for transportation within the Republic of Indonesia of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;
  - (2) Customs duties, internal taxes and any other charges, imposed in the Republic of Indonesia on the Equipment referred to in II-2 above; and
  - (3) Running expenses necessary for the implementation of the Project.

#### IV. ADMINISTRATION OF THE PROJECT

1. Deputy Chairman for Human Resource Development, BAPPENAS, as the Project Coordinator and Chairperson of Joint Steering Committee (JSC), will bear overall responsibility for the administration and implementation of the Project.
2. Head, Research and Development Center for Biology (RDCB), Indonesia Institute of Sciences (LIPI) and Director of Conservation Program, Directorate General of Forest Protection and Nature Conversation (PHPA), Ministry of Forestry, as the Project Director, will be responsible for the managerial and technical matters of the Project.
3. The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Coordinator and the Project Directors on any matters pertaining to the implementation of the Project.
4. The Japanese experts will provide necessary technical guidance and advice to the Indonesian counterpart personnel on technical matters pertaining to the implementation of the Project.
5. For the effective and successful implementation of technical cooperation for the Project, a Joint Steering Committee and a Joint Technical Committee will be established whose functions and composition are described in Annex VI.

#### V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by the two Governments through JICA and the Indonesian authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

#### VI. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Republic of Indonesia shall bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Republic of Indonesia except for those arising from the willful misconduct or gross negligence of the Japanese experts.

#### VII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached document.

**VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT**

For the purpose of promoting support for the Project among the people of the Republic of Indonesia, the Government of the Republic of Indonesia will take appropriate measures to make the Project widely known to the people of the Republic of Indonesia.

**IX. TERM OF COOPERATION**

The duration of technical cooperation for the Project under this Attached Document will be five(5) years from July 1, 1998.

## ANNEX I MASTER PLAN

### 1. Overall Goal

The achievement of the objectives of the National Strategy of Biodiversity Management and Biodiversity Action Plan for Indonesia is supported.

### 2. Project Purpose

Institutional capacity to conserve biodiversity in LIPI and PHPA is strengthened through mutual cooperation:

#### (1) Sub-project A (RDCB-LIPI)

Contribution of research activities at RDCB/LIPI to biodiversity conservation is increased.

#### (2) Sub-project B (BIC-LIPI)

Data management (i.e. collection, provision, and utilization of data) is improved at BIC/LIPI.

#### (3) Sub-project C (NCIC-PHPA)

Data management (i.e. collection, provision, and utilization of data) is improved at NCIC/PHPA.

#### (4) Sub-project D (GHNP-PHPA)

GHNP is managed properly based on the management plan.

#### (5) Sub-project E (Dissemination of the Results-LIPI/PHPA)

Project results are disseminated.

### 3. Outputs of the Project

#### Sub-project A.

(1) Effectiveness of laboratory research (for ex-situ conservation) is increased.

(2) Effectiveness of field research (for in-situ conservation) is increased.

#### Sub-project B.

(1) Improved system to provide biodiversity data is available at BIC.

(2) BIC data is available on internet.

(3) Complete data provided to BIC increases.

(4) Computers are maintained regularly and properly.

#### Sub-project C.

(1) Technical level of NCIC staff is improved.

(2) Application system for databases for all protected areas is available.

(3) Number of conservation data at NCIC is increased.

(4) Awareness on NCIC outputs is raised.

#### Sub-project D.

(1) Eco-tourism activities of PHPA are improved.

(2) Rehabilitation plans of specific endangered species are development.

(3) Utilization of the park as a comprehensive research field is enhanced.

(4) Awareness of local communities in and around GHNP on biodiversity conservation is increased.

#### Sub-project E.

(1) Project reports are published.

(2) Project workshops are held.

(3) Project leaflets are prepared.

(4) Project newsletters are published regularly.

#### 4. Activities of the Project

##### Sub-project A.

- (1)-1 Undertake training for advanced equipment.
- (1)-2 Prepare a procurement plan for additional advanced equipments.
- (1)-3 Conduct a research on genetic and breeding of potential species.
- (1)-4 Conduct a research on ecologically and economically important species in laboratory.
- (2)-1 Conduct inventory, status of important species and ecosystem.
- (2)-2 Conduct monitoring of ecosystem.
- (2)-3 Conduct a research on rehabilitation of disturbed ecosystem.
- (2)-4 Prepare and publish a checklist of flora and fauna.
- (2)-5 Distribute copies of published checklist to National Parks.
- (2)-6 Conduct a research on ecologically and economically important species in field.

##### Sub-project B

- (1)-1 Modify design of the prototype systems (i.e. bibliography, species and specimen)
- (1)-2 Prepare and test programs based on modified design.
- (1)-3 Prepare and undertake technical training courses in system engineers.
- (2)-1 Study a site of web.
- (2)-2 Develop a BIC web site.
- (2)-3 Make BIC data accessible to NCIC.
- (3)-1 Prepare a standard format for data collection.
- (3)-2 Conduct a workshop or a seminar on data format standardization.
- (3)-3 Publish newsletters.
- (4)-1 Undertake regular in-house training on software.
- (4)-2 Prepare a manual for system maintenance.

##### Sub-project C

- (1)-1 Undertake training of advanced GIS.
- (1)-2 Undertake training of database management.
- (1)-3 Undertake training of remote sensing.
- (2)-1 Develop basic and detailed design.
- (2)-2 Prepare programs.
- (2)-3 Test the programs for model area.
- (2)-4 Install the system to computers at NCIC.
- (3)-1 Establish a guideline for data collection using a checklist.
- (3)-2 Collect existing materials on PAs.
- (3)-3 Collected data are entered.
- (3)-4 Undertake training for selected rangers in data collection.
- (3)-5 Establish rules for data exchange.
- (3)-6 Establish an internet home page for data exchange.
- (4)-1 Publish newsletters regularly.
- (4)-2 Publish leaflets/booklets about NCIC

##### Sub-project D

- (1)-1 Develop an action plan for eco-tourism.
- (1)-2 Prepare materials for eco-tourism (leaflets, slide programs, etc.) are developed.
- (1)-3 Prepare a GHP staffs training program for local guide training.
- (2)-1 Conduct a joint study and research with researchers from LIPI and other groups on rehabilitation of specific endangered species.
- (2)-2 Prepare rehabilitation plans.
- (3)-1 Develop a user guideline for the research station and a canopy trail.
- (3)-2 Manage the research station and the canopy trail.

- (3)-3 Conduct PR activities for the research station and the canopy trail.
- (4)-1 Conduct a survey on local communities.
- (4)-2 Prepare a program for environmental education (including materials on alternative ways of living for local people).
- (4)-3 Implement environmental education.

Sub-project E

- (1)-1 Prepare sub-project reports.
- (1)-2 Prepare and publish the project reports.
- (2)-1 Identify purposes and contents of the workshops.
- (2)-2 Prepare materials for the workshops.
- (2)-3 Hold workshops.
- (3)-1 Prepare leaflets.
- (3)-2 Publish and distribute leaflets.

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## ANNEX II JAPANESE EXPERT

### 1. Long-term experts

(1) Chief Advisor

(2) Coordinator

(3) Long-term experts in the following fields:

- i) Natural environment research and survey
- ii) Information system
- iii) National park management
- iv) Environmental education

### 2. Short-term experts

Short-term experts will be dispatched as necessary for smooth implementation of the Project.

Note: Field, number and term of assignment of short-term experts will be decided in consideration of the progress of the Project through mutual consultations in each Japanese fiscal year.

## ANNEX III MACHINERY AND EQUIPMENT

1. Equipment and materials in the following technical fields:

- (1) Natural environment research and survey
- (2) Information system
- (3) National park management
- (4) Environmental education

2. Other materials and equipment mutually agreed upon as necessary.

Note : 1. The above-mentioned equipment is limited to the equipment necessary for the transfer of technology by the Japanese experts.

2. Contents, specifications and quantity of the above-mentioned equipment will be decided through mutual consultations within the allocated budget of the Japanese fiscal year.



**ANNEX IV INDONESIAN COUNTERPART AND ADMINISTRATIVE  
PERSONNEL**

**1. Deputy Chairman for Human Resource Development, BAPPENAS**

**2. Vice chairman, LIPI**  
Directorate General, PHPA  
Head of RDCB, LIPI  
Director of Conservation Program, PHPA

**3. Counterpart Personnel in the fields of:**  
(1) Natural environment research and survey  
(2) Information system  
(3) National park management  
(4) Environmental education

**4. Administrative Personnel**  
(1) Head of Administrative Section  
(2) Secretaries  
(3) Typists  
(4) Drivers  
(5) Field Survey Staff  
(6) Other staff necessary for the implementation of the Project

## ANNEX V LAND, BUILDINGS AND FACILITIES

### 1. Land and Buildings

RDCB-LIPI in Cibinong  
PHPA in Bogor including NCIC  
Headquarter of GHNP in Kabandungan  
Research stations of GHNP in Cikaniki

### 2. Room and space necessary for installation and storage of the Equipment

### 3. Office space and necessary facilities for the Japanese chief advisor, coordinator, other long-term experts and short-term experts

### 4. Other facilities mutually agreed upon as necessary

## ANNEX VI JOINT STEERING COMMITTEE AND JOINT TECHNICAL COMMITTEE

### 1. Joint Steering Committee (JSC)

#### (1) Functions

The JSC will be held at least once a year and whenever the necessary arises. The functions of the JSC are as follows:

- a) To settle on an annual work plan of the Project in line with the tentative implementation schedule formulated under the framework based on the Record of Discussions;
- b) To review the overall progress of the technical cooperation program of the Project based on the annual work plan and to make recommendations and advice for the effective implementation of the Project ; and
- c) To exchange views on major issues arising from or in connection with the Project.

#### (2) Composition

##### i) Chairperson:

Deputy Chairman for Human Resource Development, BAPPENAS

##### ii) Indonesian side

- a) Bureau Chief of Marine, Aerospace, Environment, Science and Technology, BAPPENAS
- b) Vice Chairman, LIPI
- c) Deputy Chairman for Natural Science, LIPI
- d) Head of Research and Development Center for Biology ,LIPI (RDCB-LIPI)
- e) Directorate General, PHPA
- f) Director of Conservation Program, PHPA
- g) Director of Nature Conservation Areas, PHPA

##### iii) Japanese side

- a. Chief Advisor
- b. Representatives of the JICA Indonesia Office

Note: Official(s) of the Embassy of Japan in the Republic of Indonesia may attend the Joint Steering Committee as observer(s).

## 2. Joint Technical Committee (JTC)

### (1) Functions

The JTC will be held whenever the necessary arises. The functions of the JTC are as follows:

- i) To discuss and settle on the managerial and technical matters in an annual work plan of the Project.
- ii) To discuss the matters which are required by JSC requires to deal with and to inform the JSC of the results of discussions.

### (2) Composition

#### i) Chairperson:

Bureau Chief of Marine, Aerospace, Environment, Science and Technology,  
BAPPENAS

#### ii) Indonesian side

- a) Staffs of Bureau of Marine, Aerospace, Environment, Science and Technology, BAPPENAS
- b) Head of Research and Development Center for Biology, LIPI (RDCB-LIPI)
- c) Head of Zoological Museum, LIPI
- d) Head of Herbarium, LIPI
- e) Head of Information Section, LIPI
- f) Coordinator of the Project, LIPI
- g) Director of Conservation Program, PHPA
- h) Head of Division of National Park, PHPA
- i) Head of Division of Foreign Technical Cooperation, PHPA
- j) Head of GHNP Office, PHPA
- k) Head of NCIC, PHPA

#### iii) Japanese side

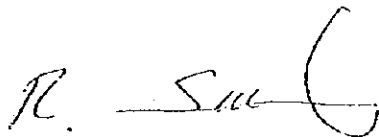
- a) Chief Advisor
- b) Coordinator
- c) Staffs of the JICA Indonesia Office
- d) Experts and officials mutually agreed as necessary

2. TSI (Tentative Schedule of Implementation) 及び PDM (Project Design Matrix)

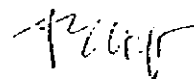
TENTATIVE SCHEDULE OF IMPLEMENTATION  
AND PROJECT DESIGN MATRIX  
ON THE JAPANESE TECHNICAL COOPERATION  
FOR THE BIODIVERSITY CONSERVATION PROJECT (PHASE II)  
IN THE REPUBLIC OF INDONESIA

Mr. Ryo SUWA, Resident Representative of the Japan International Cooperation Agency (hereinafter referred to as "JICA") in the Republic of Indonesia and the Indonesian authorities concerned have jointly formulated the Tentative Schedule of Implementation and the Project Design Matrix of the Biodiversity Conservation Project [Phase II] (hereinafter referred to as "the Project") as annexed hereto. This has been formulated in connection with I-2 of the Attached Document of the Record of Discussions signed between JICA and BAPPENAS for the Project on the conditions that the necessary budget will be allocated for the implementation of the Project by both sides, and that the Schedule is subject to change within the framework of the Record of Discussions when necessity arises in the course of the Project's implementation.

Jakarta, June 12, 1998



Ryo SUWA  
Resident Representative,  
JICA Indonesia Office,  
Japan International Cooperation Agency  
Japan



Dr. Ir. H. Hidayat Syarief  
Deputy Chairman for Human Resource  
Development  
BAPPENAS  
The Republic of Indonesia

Tentative Schedule of Implementation  
Biodiversity Conservation Project (Phase II)

Item	FY98		FY99		FY2000		FY01		FY02		FY03	
	7	10	1	4	7	10	1	4	7	10	1	4
Terms of cooperation												
Project Activities												
1. Natural Environment Research and Survey												
2. Information System (IIP)												
3. Information System (PIPA)												
4. National Park Management												
5. Environmental Education												
Dispatch of Experts												
< Long-Term Experts/Short-Term Experts >												
1. Chief Advisor												
2. Coordinator												
3. Long-Term Experts in the following fields:												
a. Natural Environment Research and Survey												
b. Information System												
c. National Park Management												
d. Environmental Education												
e. Short-Term Experts												
Indonesian Counterparts and Administrative Personnel												
< Counterpart personnel >												
1. Natural Environment Research and Survey												
2. Information System (IIP)												
3. Information System (PIPA)												
4. National Park Management												
5. Environmental Education												
< Administrative Personnel >												
Training of Indonesian Personnel in Japan												
Provision of Machinery and Equipment												
1. Natural Environment Research and Survey												
2. Information System (IIP)												
3. Information System (PIPA)												
4. National Park Management												
5. Environmental Education												
Expenses for the implementation of the Project Indonesian side												
Fields and timing of dispatching short-term experts, training of Indonesian personnel in Japan and provision of machinery and equipment will be decided after the Project starts.												

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## Summary of PDM for Biodiversity Conservation Project (II)

Narrative Summary	Verifiable Indicator*	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> The achievement of the objectives of the National Strategy of Biodiversity Management and Biodiversity Action Plan for Indonesia is supported.</p>	<p>Improvement of biodiversity conservation action and planning in Indonesia</p>		
<p><b>Project Purpose</b> Institutional capacity to conserve biodiversity in LIPI &amp; PHPA is strengthened through mutual cooperation: A. Contribution of research activities at ROCB/LIPI to biodiversity conservation is increased. B. Data management (i.e. collection, provision and utilization of data) is improved at BIC/LIPI. C. Data management (i.e. collection, provision and utilization of data) is improved at NCIC/PHPA. D. GHNP is managed properly based on management plan. E. Project results are disseminated.</p>	<p>A. Number of research on BD conservation B, C. Computer system for data management is prepared and increase data D. Improvement of the park management E. Information publicized</p>	<p>A. Number of publications and collections B, C. Interview LIPI/PHPA staffs D. Number of action implemented E. Number of publications/workshop relating project</p>	<p>Adequate budget will continue to be allocated to LIPI and PHPA.</p>
<p><b>Outputs</b> A1. Effectiveness of laboratory research (for ex-situ conservation) is increased. A2. Effectiveness of field research (for in-situ conservation) is increased.  B1. Improved system to provide biodiversity data is available at BIC. B2. BIC data is available on internet. B3. Complete data provided to BIC increases. B4. Computers are maintained regularly and properly.  C1. Technical level of NCIC staff is improved. C2. Application system for databases for all PAs is available. C3. Number of conservation data at NCIC is increased. C4. Awareness on NCIC outputs is raised.  D1. Eco-tourism activities of PHPA are improved. D2. Rehabilitation plans of damaged ecosystem and specific endangered species are developed. D3. Utilization of the parks as a comprehensive research field is enhanced. D4. Awareness of local communities in and around GHNP on biodiversity conservation is increased.  E1. Project reports are published. E2. Project workshops are held. E3. Project leaflets are prepared. E4. Project newsletters are published regularly.</p>	<p>A1, A2. Number of research supported by the project B1. Improved system is provided B2. D/B for Web page is prepared B3. Standard data format for collection and field study is prepared B4. Number of maintenance times C1. Number of trained staffs is increased C2. Application system is prepared C3. Number of data C4. Information is distributed regularly D1. GHNP staff's training program is prepared D2. Rehabilitation plans are developed D3. Number of researchers and reports D4. A program for environment education is developed</p>	<p>A1, A2. Number of collections, publications and staffs qualified for instruments B1. Interview staffs B2. Number of access B3. Number of data prepared by standard format B4. Portion of available time C1. Number of staff qualified C2. Interview users C3. Increase data supported by project C4. Number of users outside of NCIC D1. GHNP staffs training program. D2. Rehabilitation plans. D3. Records of researchers and publications. D4. A program for environment education</p>	<p>Adequate budget will continue to be allocated to NCIC. Sufficient number of staff will be available at GHNP. Trained C/Ps will continue to work at LIPI and PHPA. Research activities will be coordinated well.</p>
<p><b>Activities</b>  (Please refer to preliminary draft PDM for an each sub-project)</p>	<p><b>Inputs</b>  (Please refer to preliminary draft PDM for an each sub-project)</p>		<p>(Please refer to preliminary draft PDM for an each sub-project) <b>Preconditions</b> - C/P &amp; adm. staff are appointed - C/P budget for the project is in place. - Current government policies will continue.</p>

## PDM for Sub-Project (A) - RDCB/LIPI

Narrative Summary	Verifiable Indicator*	Means of Verification*	Important Assumptions
<b>Overall Goal</b> The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Improvement of biodiversity conservation action and planning in Indonesia		
<b>Sub-Project Purpose</b> Contribution of research activities at RDCB/LIPI to biodiversity conservation is increased.	Number of research on biodiversity conservation	Number of publications and collections	Adequate budget will continue to be allocated to RDCB.
<b>Outputs</b> 1. Effectiveness of laboratory research (for ex-situ conservation) is increased. 2. Effectiveness of field research (for in-situ conservation) is increased.	Number of research supported by the project	Number of collections, publications and staffs qualified for instruments	Research activities will be well coordinated.
<b>Activities</b> 1-1. Undertake training for advanced equipment 1-2. Prepare a procurement plan for additional advanced equipment. 1-3. Conduct a research on genetic and breeding of potential species. 1-4. Conduct a research on ecologically and economically important species in laboratory. 2-1. Conduct inventory, status of important species and ecosystem. 2-2. Conduct monitoring of ecosystem. 2-3. Conduct a research on rehabilitation of disturbed ecosystem. 2-4. Prepare and publish a checklist of flora and fauna. 2-5. Distribute copies of published checklist to National Parks. 2-6. Conduct a research on ecologically and economically important species in field.	<b>Inputs</b> (Japanese side) (1) Chief advisor (2) Coordinator (3) Long-term expert: 1 (Natural environment research and survey) (4) Short-term experts: 5 fields a) Genetics of potential species (fauna, flora and microorganisms) b) Physiology of potential species (fauna, flora and microorganisms) c) Biochemistry of potential species, (fauna, flora and microorganisms) d) Animal ecology/taxonomy e) Plant ecology/taxonomy (5) C/P training (6) Equipment (Indonesian side) (1) Research and BIC coordinator (2) C/P: 41 a) Genetics: 8 (Zoology-4, Botany-2, Microbiology-2) b) Physiology: 7 (Zoology 4, Botany 2, Microbiology-1) c) Biochemistry: 9 (Zoology-2, Botany-4, Microbiology-3) d) Animal ecology/taxonomy: 8 e) Plant ecology/taxonomy: 8 f) Ethnobotany: 1 (3) Administrative staff (4) Office spaces for experts (5) C/P budget		
			<b>Preconditions</b> - C/P & adm. staff are appointed. - C/P budget for the project is in place. - Current government policies will continue.



## PDM for Sub-Project (B) -- BIC/LIPI

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
<b>Overall Goal</b> The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Improvement of biodiversity conservation action and planning in Indonesia		
<b>Sub-Project Purpose</b> Data management (i.e. collection, provision and utilization of data) is improved at BIC/LIPI.	Computer system for data management is prepared and increase data	Interview LIPI staffs	Adequate budget will continue to be allocated to BIC.
<b>Outputs</b> 1. Improved system to provide biodiversity data is available at BIC. 2. BIC data is available on internet. 3. Complete data provided to BIC increases. 4. Computers are maintained regularly and properly.	1. Improved system is provided 2. D/B for Web page is prepared 3. Standard data format for collection and field study is prepared 4. Number of maintenance times	1. Interview staffs 2. Number of access 3. Number of data prepared by standard format 4. Portion of available time	Trained staff will continue to work at BIC.
<b>Activities</b> 1-1. Modify design of the prototype systems (i.e. bibliography, species and specimen) 1-2. Prepare and test programs based on modified design. 1-3. Prepare and undertake technical training courses in system engineers. 2-1. Study a site of web. 2-2. Develop a BIC web site. 2-3. Make BIC data accessible to NCIC. 3-1. Prepare a standard format for data collection. 3-2. Conduct a workshop or a seminar on data format standardization. 3-3. Publish newsletters. 4-1. Undertake regular in-house training on software 4-2. Prepare a manual for system maintenance.	<b>Inputs</b> (Japanese side) (1) Chief advisor (2) Coordinator (3) Long term expert: 1 (Information system A) (4) Short term experts (5) C/P's training (GIS and Environmental information) (6) Equipment: server (s), software (s), etc.  (Indonesian side) (1) Research and BIC coordinator (2) C/P: 3 a) System engineer: 1 b) Programmer: 2 (Database-1 /GIS-1) (3) Operators for data entry (4) Administrative staff (5) Office spaces for experts (6) C/P budget		Sufficient budget for a contract for system maintenance and update will be allocated. Sufficient budget for a contract for internet service will be allocated.
			<b>Preconditions</b> - C/P & adm. staff are appointed - C/P budget for the project is in place. - Current government policies will continue.

## PDM for Sub-Project (C) - NCIC/PHPA

Narrative Summary	Verifiable Indicator*	Means of Verification	Important Assumptions
<b>Overall Goal</b> The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Improvement of biodiversity conservation action and planning in Indonesia		
<b>Sub-Project Purpose</b> Data management (i.e. collection, provision and utilization of data) is improved at NCIC/PHPA.	Computer system for data management is prepared and increase data	Interview PHPA staffs	Adequate budget will continue to be allocated to NCIC.
<b>Outputs</b> 1. Technical level of NCIC staff is improved. 2. Application system for databases for all PAs is available. 3. Number of conservation data at NCIC is increased 4. Awareness on NCIC outputs are raised.	1. Number of trained staffs is increased 2. Application system is prepared 3. Number of data 4. Information is distributed regularly	C1. Number of staff qualified C2. Interview users C3. Increase data supported by project C4. Number of users outside of NCIC	- Trained staff will continue to work at NCIC. - Adequate budget will continue to be allocated to NCIC.
<b>Activities</b> 1-1. Undertake training of advanced GIS. 1-2. Undertake training of database management. 1-3. Undertake training of remote sensing.  2-1. Develop basic and detailed design. 2-2. Prepare programs. 2-3. Test the programs for model area. 2-4. Install the system to computers at NCIC.  3-1. Establish a guideline for data collection using a checklist. 3-2. Collect existing materials on PAs. 3-3. Collected data are entered. 3-4. Undertake training for selected rangers in data collection. 3-5. Establish rules for data exchange. 3-6. Establish an internet home page for data exchange.  4-1. Publish newsletters regularly. 4-2. Publish leaflets/booklets about NCIC	<b>Inputs</b> (Japanese side) (1) Chief advisor (2) Coordinator (3) Long term expert: 1 (Information system B) (4) Short term experts (5) C/P's training (GIS and Environmental information) (6) Equipment: server (s), software (s), etc.  (Indonesian side) (1) Head of NCIC (2) C/P: 7 a) System engineer: 1 b) Programmer: 6 (Database-2/ Remote sensing-2/ GIS-2) (3) Operators for data entry (4) Administrative staff (5) Office spaces for the experts (6) C/P budget		- Sufficient budget for a contract for system maintenance and update will be allocated. - Sufficient budget for a contract for internet service will be allocated. - Coordination with BAKOSURTANAL, INTAG and LAPAN will be good.  <b>Preconditions</b> - C/P & adm. staff are appointed. - C/P budget for the project is in place. - Current government policies will continue.

## PDM for Sub-Project (D) – GHNP/PHPA

Narrative Summary	Verifiable Indicator*	Means of Verification*	Important Assumptions
<b>Overall Goal</b> The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Improvement of biodiversity conservation action and planning in Indonesia		Current government policies will continue.
<b>Sub-Project Purpose</b> GHNP is managed properly based on the management plan.	Improvement of the park management	Number of action implemented	Adequate budget will continue to be allocated to GHNP.
<b>Outputs</b> 1. Eco-tourism activities of PHPA are improved. 2. Rehabilitation plans of specific endangered species are developed. 3. Utilization of the parks as a comprehensive research field enhanced. 4. Awareness of local communities in and around GHNP on biodiversity conservation is increased.	1. GHNP staff's training program is developed. 2. Rehabilitation plans are developed. 3. Number of researchers and reports. 4. A program for environment education is developed.	1. GHNP staff's training program. 2. Rehabilitation plans. 3. Records of researchers and publications. 4. A program for environment education	Sufficient number of staff will be available. Trained staff will continue to work at GHNP
<b>Activities</b> 1-1. Develop an action plan for eco-tourism. 1-2. Prepare materials for eco-tourism (leaflets, slide programs, etc.). 1-3. Prepare a GHNP staff's training program for local guide training.  2-1. Conduct a joint study and research with researchers from LIPI and other groups on rehabilitation of specific endangered species. 2-2. Prepare rehabilitation plans.  3-1. Develop a user guideline for the research station and a canopy trail. 3-2. Manage the research station and the canopy trail. 3-3. Conduct PR activities for the research station and the canopy trail.  4-1. Conduct a survey on local communities. 4-2. Prepare a program for environmental education (including materials on alternative ways of living for local people). 4-3. Implement environmental education.	<b>Inputs</b>  (Japanese side) (1) Chief advisor (2) Coordinator (3) Long-term experts: 2 a) National park management b) Environment Education (4) Short-term experts (5) C/P training (National park management, Wildlife (rehabilitation), Environmental education) (6) Equipment  (Indonesian side) (1) Head of GHNP HQ. (2) C/P: 5 a) National park management-2 b) Wildlife-1 c) Environmental education-1 d) Information-1 (3) Administrative staff (PHPA and GHNP) (4) Office spaces for the experts (5) C/P budget		<b>Preconditions</b> - C/P & adm. staff are appointed. - C/P budget for the project is in place. - Current government policies will continue.

## PDM for Sub-Project (E)

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
<u>Overall Goal</u> The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Improvement of biodiversity conservation action and planning in Indonesia		
<u>Sub-Project Purpose</u> Project results are disseminated.	Information publicized	Number of publications/workshop relating project	
<u>Outputs</u> 1. Project reports are published. 2. Project workshops are held. 3. Project leaflets are prepared. 4. Project newsletters are published regularly.	1. Number of project reports published 2. Number of work-shops held 3. Printing of leaflet 4. Number of newsletter published	1. Contents of reports 2. Number of attendances and contents 3, 4. Contents and number of distribution	
<u>Activities</u> 1-1. Prepare sub-project reports. 1-2. Prepare and publish the project reports.  2-1. Identify purposes and contents of the workshops. 2-2. Prepare materials for the workshops. 2-3. Hold workshops.  3-1. Prepare leaflets. 3-2. Publish and distribute leaflets.  4-1. Identify contents and writers of the newsletters 4-2. Prepare and publish newsletters.	<u>Inputs</u> (Japanese side) - All long-term experts (including Chief advisor and Coordinator)  (Indonesian side) - All C/Ps		<u>Preconditions</u> - C/P & adm. staff are appointed. - C/P budget for the project is in place. - Current government policies will continue.

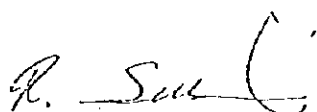
3. M/M (Minutes of Meetings)

MINUTES OF MEETINGS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
AUTHORITIES CONCERNED  
OF  
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
THE BIODIVERSITY CONSERVATION PROJECT (PHASE II)

With regard to the Record of Discussions signed on June 12, 1998, the Japan International Cooperation Agency (hereinafter referred to as "JICA") had a series of discussions through the Resident Representative of JICA in the Republic of Indonesia, with the Indonesian authorities concerned with respect to the desirable measures to be taken by both governments for the successful implementation of the Biodiversity Conservation Project (Phase II) in the Republic of Indonesia.

As a result of the discussions, JICA and the Indonesian authorities concerned agreed to make this Minutes of Meetings in order to confirm the mutual understandings reached through the discussions hereto.

Jakarta, June 30, 1998



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Ryo SUWA  
Resident Representative  
JICA Indonesia Office  
Japan International Cooperation Agency  
Japan



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Dr. Ir. H. Hidayat Syarief  
Deputy Chairman for Human  
Resource Development  
BAPPENAS  
The Republic of Indonesia

1. Local Cost

Considering the difficulty to execute the items III - 6 (4) & III - 6 (5) of the R/D from the aspect of the existing regulation in the Republic of Indonesia, the Japanese side will take necessary measures for the smooth implementation of the Project.

2. Expertise of the Experts

Based on the activities of the Project, the specific fields and the duration of expected short-term experts were discussed.

The specification of short-term experts to be dispatched in each year will be discussed, in principle, every year between Japanese experts and Indonesian counterparts based on the Annual Work Plan within the constraints of the budget and personnel.

3. Promotion of the Project

Both sides realize that promotion and publication of project activities are necessary for success of the Project.

Both sides agreed that beside the items discussed and agreed in PDM, further measures shall be taken to promote and publisize the Project for the public at large.









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