No.

インドネシア共和国
生物多様性保全計画フェーズ2
終了時評価報告書

平成15年1月
（2003年）

国際協力事業団
森林・自然環境協力部

自然森
JR
03-006

目　　次

序　　文

国際協力事業団は、インドネシア共和国政府から技術協力の要請を受け、平成10年7月1日から同国において、インドネシア生物多様性保全計画フェーズ2を5年間実施してきました。

このたび、当事業団は、本計画の協力実績の把握及び評価を行い、今後、両国が取るべき措置を両国政府に提言することを目的として平成14年10月6日から11月1日まで、当事業団森林・自然環境協力部部長 宮川 秀樹を団長とする評価調査団を同国に派遣しました。

調査団は、インドネシア共和国政府関係者と共同で現地調査を実施し、成果の確認を行い、合同評価リポートについて両国の合意を得ました。また、調査団は帰国後、国内作業を経て調査結果を本報告書に取りまとめました。

この報告書が今後の協力の更なる発展の指針となるとともに、本計画により達成された成果が同国の発展に資することを期待いたします。

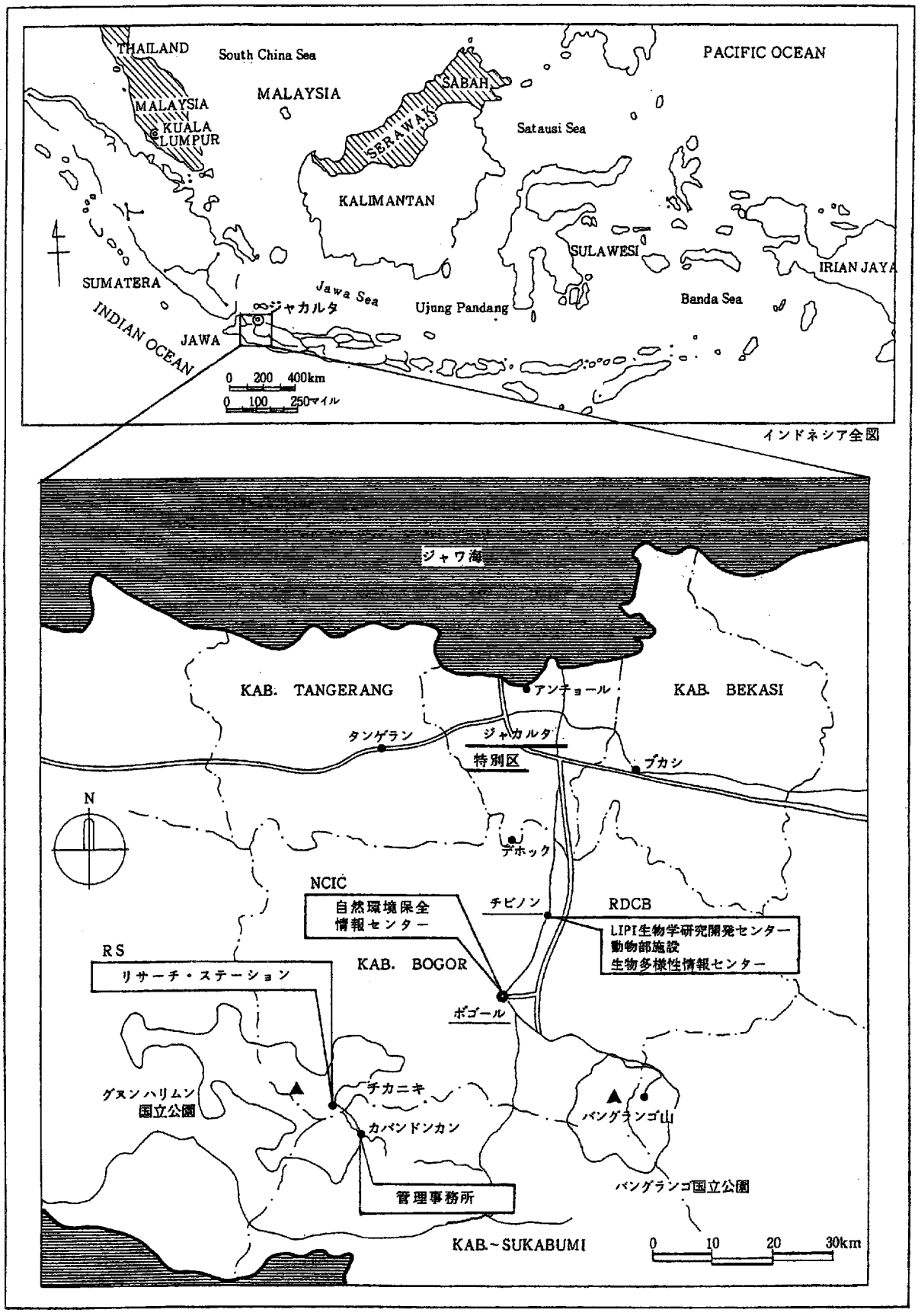
終わりに、プロジェクトの実施にご協力とご支援を賜りました両国関係者の皆様に心から感謝の意を表します。

平成15年 1月

国際協力事業団

理事　鈴木　信毅

プロジェクト位置図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KAB. TANGERANG
アンチョール
KAB. BEKASI
タンゲラン
ジャカルタ特別区
ブカシ
N
デポック
NCIC
自然環境保全情報センター
チビノン
RDCB
LIPI生物学研究開発センター
動物部施設
生物多様性情報センター
RS
リサーチ・ステーション
KAB. BOGOR
ボゴール
グヌン ハリムン国立公園
チカニキ
カバンドンカン
パングランゴ山
管理事務所
パングランゴ国立公園
KAB.~SUKABUMI
0 10 20 30km

写真１：
インドネシア科学院（LIPI）本部での調査

写真２：
グヌン・ハリムン国立公園管理事務所での調査

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略語一覧

ADB	Asian Development Bank	アジア開発銀行
BAPI	Biodiversity Action Plan for Indonesia	インドネシア生物多様性行動計画
BAPPENAS	National Development Planning Agency	国家開発計画庁
BCP	Biodiversity Conservation Project	生物多様性保全計画
BIC	Biology Information Center	生物多様性情報センター
C／P	Counterpart	カウンターパート
GBIF	Global Biodiversity Information Facilities	地球規模生物多様性情報機構
GEF	Global Environment Facilities	地球環境基金
GHNP	Gnung Halimun National Park	グヌン・ハリムン国立公園
GTI	Global Taxonomy Initiatives	世界分類学イニシアティブ
IBSAP	Indonesian Biodiversity Strategy and Action Plan	生物多様性国家戦略
JICA	Japan International Cooperation Agency	国際協力事業団
LAN	Local Area Network	構内情報通信網
LIPI	Indonesian Institute of Science	インドネシア科学院
NBIN	National Biodiversity Information Network	生物多様性情報ネットワーク
NCIC	Nature Conservation Information Center	自然環境保全情報センター
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PHKA	Directorate General for Forest Protection and Nature Conservation	林業省自然保護総局
RDCB	Research and Development Center for Biology	生物学開発研究センター動物部施設
USAID	United States Agency for International Development	米国国際開発庁
YAYASAN -KEHATI	Indonesia Biodiversity Foundation	インドネシア生物多様性基金

評価調査結果要約表

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インドネシア共和国</td><td>案件名：
インドネシア共和国生物多様性保全計画フェーズ2</td></tr>
<tr><td colspan="2">分野：自然環境保全</td><td>援助形態：技術協力プロジェクト</td></tr>
<tr><td colspan="2">所轄部署：
森林・自然環境協力部　森林環境協力課</td><td>協力金額（評価時点）：8億7,800万円</td></tr>
<tr><td rowspan="4">協力期間</td><td>(R／D)　：1998年6月12日
(協力期間)：1998年7月1日～
2003年6月30日</td><td>先方関係機関：インドネシア科学院
林業省自然保護総局</td></tr>
<tr><td>(延長)　：</td><td>日本側協力機関：環境省</td></tr>
<tr><td>(F／U)　：</td><td>他の関連協力：</td></tr>
<tr><td>(E／N)　：（無償）</td><td></td></tr>
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1. 協力の背景と概要

我が国はインドネシア共和国（以下、「インドネシア」と記す）の生物種の保全を図ることを目的として、無償資金協力によりチビノンに生物学開発研究センター動物部施設、ボゴールに自然保護情報センター、グヌン・ハリムン国立公園に管理事務所、リサーチ・ステーションを建設し、1995年から1998年まで生物多様性に関する研究の推進及び生息地管理モデルの基盤整備を目的として、プロジェクト方式技術協力であるインドネシア生物多様性保全計画（フェーズ1）を実施した。フェーズ1で達成された成果を踏まえて、1998年7月より開始された本協力（フェーズ2）は、自然環境調査研究体制の確立、情報管理体制の確立、国立公園の管理計画の実施を目的として活動しており、2002年6月に終了予定である。

2000年11月の中間評価調査では、ほとんどの活動が当初計画どおり進捗していると評価された一方、人材、財政面での自立発展性を図る必要性等、プロジェクト終了時までに達成されるべき課題が多く示された。本調査では、中間評価調査の結果・提言への対応状況も含め、インドネシア側と合同で当初計画に対する目標達成の状況を確認するとともに、JICA事業評価ガイドラインにのっとり、プロジェクトの実施結果を評価する。また、調査結果を取りまとめて合同調整委員会へ報告し、合意結果をミニッツに取りまとめ、インドネシア側と署名を行う。

2. 協力内容

（1）上位目標

生物多様性国家戦略（IBSAP）及びインドネシア生物多様性行動計画（BAPI）の目的達成がサポートされる。

（2）プロジェクト目標

インドネシア科学院（LIPI）及び林業省自然保護総局（PHKA）の組織強化と連携を通じて：

サブA）生物学開発研究センター動物部施設（RDCB）／インドネシア科学院（LIPI）における研究活動の生物多様性保全に対する貢献度が増大する。

サブB）生物多様性情報センター（BIC）／LIPIにおけるデータ管理（データの収集、提供、利用など）が改良される。

サブC）自然環境保全情報センター（NCIC）におけるデータ管理（例：データ収集、提供、利活用）が改善される。

サブD）グヌン・ハリムン国立公園（GHNP）が、管理計画に基づいて適切に管理される。

サブE）プロジェクト活動の成果の効果的な普及が図られる。

（3）成　果

サブA）

①　インドネシアの生物多様性保全（生息域内及び生息域外）に関する情報及び科学

的データが増大する。
② 研究機器が有効に活用される。

サブB）
① 生物多様性データを提供するための改良されたシステムがBICで使えるようになる。
② BICのデータがインターネットで見られるようになる。
③ BICに提供される完全なデータが増加する。
④ システムが定期的、かつ適切にメンテナンスされる。

サブC）
① NCICスタッフの技術レベルの向上
② 保護地域のデータベース管理システムが出来上がり、適切に稼動すること
③ NCICのデータベースに格納され管理されるデータが増えること
④ NCICの生産するものに対しての関心が高まること

サブD）
① PHKAのエコツーリズム活動が改善される。
② 特定の絶滅危惧種の保護計画が策定される。
③ 総合的な調査研究フィールドとしての公園の利用が促進される。
④ GHNP及びその周辺の住民の生物多様性保全に関する意識が向上する。

サブE）
① プロジェクトレポートが出版される。
② プロジェクトレポートが開催される。
③ プロジェクトのリーフレットが用意される。
④ プロジェクトのニュースレターが定期的に刊行される。

（4）投入（評価時点）

1）日本側：

長期専門家派遣	11名（現在7名）	機材供与費	2億5,000万円
短期専門家派遣	37名	ローカルコスト負担	1億 500万円
研修員受入れ	29名		

2）相手国側：
カウンターパート（C/P）配置 55名
機材購入（基礎実験器具、資材等）
土地・施設提供（生物学開発研究センター動物部施設、自然保護情報センター、グヌン・ハリムン国立公園管理事務所・リサーチステーション等）
ローカルコスト負担 現地通貨 26億1,900万ルピア

Ⅱ．評価調査団の概要

調査者	担当分野	氏名	所属
	団長・総括	宮川 秀樹	国際協力事業団森林・自然環境協力部 部長
	調査研究／情報システム	山瀬 一裕	財団法人自然環境研究センター 常務理事
	保護区管理	三村 起一	環境省自然環境局中部地区自然保護事務所 次長
	総合評価手法	齋藤 千尋	国際協力事業団企画評価部評価監理室 職員
	計画評価	浅野 剛史	国際協力事業団森林・自然環境協力部 森林環境協力課 ジュニア専門員
	評価分析	土居 正典	インテムコンサルティング株式会社 コンサルタント
調査期間	2002年10月6日～11月1日		評価種類：終了時評価

Ⅲ．評価結果の概要

1．評価結果の要約

（1）妥当性

LIPI と PHKA は生物多様性保全を優先課題と位置づけておりプロジェクト目標及び各サブプロジェクト目標はLIPI 及びPHKAのニーズに合致している。また生物多様性保全に対して、LIPI は科学的調査研究の責任をもち、PHKA は政策決定任務を有することから、各サブプロジェクトの実施機関は適切に割り当てられたといえる。インドネシア生物多様性行動計画(BAPI)は達成計画及び達成指数が設定されていないため、本プロジェクト結果による BAPI の達成度合いを正確に測ることは難しい。しかし、本プロジェクト傘下の多くの活動は BAPI で設定されたアクションプランに連動して実施されており、評価団はプロジェクトが BAPI の計画に大きく貢献したと判断される。

（2）有効性

プロジェクト目標は各サブプロジェクトの結果を受けて達成された。サブプロジェクトを通してカウンターパートの技術レベルは向上し、実施機関の連携を進めていく重要性についても認識された。結果として、生物多様性保全に対する実施能力は向上し連携協力の土台は築かれた。なお、終了時評価実施時点では完了していない活動が若干残っているものの、プロジェクト終了時までには成果を達成し、プロジェクト目標達成に貢献すると判断される。

（3）効率性

全体的に無償資金協力及び生物多様性保全計画フェーズ 1 の投入はフェーズ 2 の活動の効率的実施に貢献した。また、総じてフェーズ 2 の投入は必要性の高いものに限られ、成果の実現に効率的に貢献した。

（4）インパクト

本プロジェクトはインドネシアにおける生物多様性の科学的研究機関と政策実施機関の協調だけではなく BAPI の推進にも重要なインパクトを与えた。加えて、プロジェクトはインドネシア国内外の他の機関やNGOを活性化させたと高く評価される。

（5）自立発展性

今後もインドネシア政府は生物多様性保全政策を推進していくことが期待される。また今後も LIPI と PHKA が生物多様性保全を推進し、生物多様性保全活動の効果的な実施のために連携することが期待される。人材面では各サブプロジェクトの C／P の技術能力は彼ら自身でプロジェクト活動を運営管理できるのに十分なレベルに達している。しかしながら概して、実施機関の財政的な自立発展性は低いといえ、そのため各実施機関はプロジェクト終了後の予算確保に必要な対策に取り組んでいる。

2．効果発現に貢献した要因

（1）計画内容に関すること

・本協力は、インドネシア科学院（LIPI）と林業省自然保護総局（PHKA）の２つの実施機関において、それぞれ調査研究と保護区管理に係る活動を包括的に実施することを目的としている。この連携システムにより、双方の実施機関で人員の交流が生まれ、成果発現に相乗効果が生まれるとともに LIPI と PHKA の生物多様性保全に対する組織能力は強化された。

（2）実施プロセスに関すること

・活動は PDM の計画どおりに行われた。活動のモニタリングは定期的に実施され、プロジェクト管理は良好に行われた。

・合同調整委員会の開催についてはすべてのメンバーを招集することは困難であったが、総じてプロジェクトはインドネシア政府、日本政府、国内支援委員会から全面的な支援を受け、実施された。

3. 問題点及び問題を惹起した要因

（1）計画内容に関すること

・より効率的な連携協力を実施するためには各サブプロジェクトの PDM に実施機関間の連携にかかわる活動を明確に記載するべきであった。

・本協力は、「日米グローバルパートナーシップ・アクションプラン」のなかで位置づけられ、日米協力を主旨としたが、米国側との連携の枠組みが PDM に盛り込まれなかったことに加え、協力開始後にモニタリングも行われなかったなどにより、連携が十分ではなかった。他援助組織との連携・協調の枠組みは、活動内容に包括されないと発現されにくい。

（2）実施プロセスに関すること

・PDM は中間評価調査団（運営指導）の提言を受けて見直され改訂されたが、インドネシア側及び日本側が改訂版 PDM を正式に承認するまでに時間を要した。

4. 結　論

各サブプロジェクトの評価結果を総合的に判断して、本プロジェクトは効果的に実施され、プロジェクト終了までに期待される成果が得られる見込みであると判断される。プロジェクトは 5 サブプロジェクトから構成されており、対象とする活動範囲は広範であるが、多くの活動がサブプロジェクト間で連携して実施され、お互いの活動の効果を高めることに成功し、結果的にはインドネシアの生物多様性保全に貢献した。特に RCB における各種の調査研究の結果は、GHNP における公園管理に実際に役立てられた。フェーズ 2 で実施された投入は総じてプロジェクト活動の効果的な実施に貢献した。プロジェクト活動を通して、総じて技術的な自立発展性は高められた。他方組織的及び財政的な自立発展性の確保に関しては更なる努力が求められる。C／P の頻繁な配置換えは、自立発展性の妨げになった。また BIC／RCB 及び NCIC／PHKA はより明確な組織的位置づけが必要とされる。インドネシア政府に対しては、今後プロジェクトに関連した活動を引き続き実施するため、組織的及び財政的な自立発展性を高めるための配慮を期待する。

5. 提　言（当該プロジェクトに関する具体的な措置、提案、助言）

・本プロジェクトを通じて、C／P の技術的水準は、彼ら自身で活動を実施できるまで高められた。しかしながら長期的に技術的水準を保つために、各実施機関は、若い研究者やスタッフの雇用や育成に更に力を注ぐべきである。

・インドネシア科学院及び林業省の連携は、お互いの活動の効果を高めるうえで有効であるので、連携の方法と各種の条件等のルールを協議し、文書化してお互いに合意することを提案する。

・プロジェクト活動によって各種の調査研究活動の効果は高められたと判断される。今後は更に保護区周辺住民の環境の保全や収入手段の確保のための調査研究活動を重点的に行うべきである。

・プロジェクトが発展させた地域社会主体の環境教育及びエコツーリズム活動は、他の国立公園にも応用できるような新しいモデルとなることが期待されている。JICA はより効果的な環境教育及びエコツーリズム活動を確立するため、RCB との連携による新たな協力を GHNP に対して行うことが期待される。

6. 教訓（当該プロジェクトから導き出された他の類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄）

・サブプロジェクト A の調査研究活動の成果については、今回使用された定量的な指標（論文や報告書の数等）のみでは適切に計ることが困難であった。そのため、調査研究活動には論文や報告書の質を確認する定性的な指標の設定も望まれる。例えば、学会誌等の掲載実績や、その論文の他の論文における引用実績などが考えられる。

・情報管理やデータベース開発等は世界標準で行われており、インドネシアにおいても既に民間技術者が育っている。サブプロジェクト B 及びCではそれらの技術者を現地コンサルタントとして雇用し成果をあげた実績がある。今後の同様の分野においては、経費やアフターサービス等の継続発展性の確保のため、また、現地のサポート体制を確立し、技術的自立発展性を高める意味において、現地コンサルタントを積極的に有効活用すべきである。

・本プロジェクトは無償資金協力によって供与された資機材を利用して活動が実施されたが、相手国側の一部機材に対する必要性が低くなったなどの理由で、一部が有効に活用されなかった。無償資金協力が前提となって行われる技術協力プロジェクトについては、計画段階から将来を見据えてそれぞれのスキームの関連性を高められるよう、関係者間で協議し、お互いのプロジェクトの有効性や効率性を高める機材が望まれる。

第１章　終了時評価調査の概要

１－１　プロジェクトの経緯

「インドネシア生物多様性保全計画フェーズ 2」は日米援助協調から始まる一連の国際協力事業団（JICA）の協力（無償資金協力、本プロジェクトフェーズ 1 等）を受けて開始された。以下に日米援助協調から始まる一連の協力概要をまとめる。

１－１－１　日本の協力までの経緯

インドネシア共和国（以下、「インドネシア」と記す）政府は、1991 年に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、生物多様性保全のための自然環境保護を提唱している。一方、日米両国政府は 1992 年に「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、そのなかで日米環境共同協力事業として開発途上国における自然資源の管理と保全のための事業が謳われ、インドネシアが対象国に選ばれた。その後 1993 年には、両政府は地球環境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、米国政府は「インドネシア生物多様性基金（Indonesia Biodiversity Foundation：YAYASAN-KEHATI）」を通して NGO 支援を実施し、財団の運営支援を行い、一方日本政府は無償資金協力によるインドネシア科学院（Indonesian Institute of Science：LIPI）生物学開発研究センター動物部施設（Research and Development Center for Biology：RDCB）等の整備、及び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」による技術協力を実施し、政府機関を強化することになった。

１－１－２　無償資金協力

無償資金協力は、1995 年 1 月に生物多様性保全計画（Biodiversity Conservation Project：BCP）基本設計調査団派遣、同年 5 月には生物多様性保全計画基本設計調査の R ／ D 署名を経、10 月には無償資金協力の交換公文が交わされ、1997 年には引き渡しが行われた。主要施設、主要機材の概要は以下のとおりである。

（1）インドネシア科学院（LIPI）生物学開発研究センター動物部施設（RCB）（8,209m^2）

標本の適正な収集、整理、加工、処理、保全を行う施設。動物学及び植物学の分野における生物多様性の情報を本施設内の生物多様性情報センター（Biology Information Center：BIC）において管理運用を行い、その情報を未解明標本の同定、希少種の保存等、様々な目的に利用すること、及び研究者の科学的能力を分類学上、その他の生物学上の特定の研究

分野において高めることを目的としている。

(2) 林業省自然保護総局（Directorate General for Forest Protection and Nature Conservation：PHKA）グヌン・ハリムン国立公園（Gnung Halimun National Park：GHNP）管理事務所（725m^2）

GHNP はジャワ島において広い範囲にわたる熱帯雨林を有し、いくつかの絶滅の危機に瀕した種とジャワ島独特の植物群と動物群を含む高い生物多様性をもつ。同管理事務所は、公園の不法占拠、密猟、金の不法採掘等の問題解決のため、公園管理を強化し、公園管理人の訓練、保全にかかわる機能を有する施設。

(3) 林業省自然保護総局（PHKA）グヌン・ハリムン国立公園（GHNP）リサーチセンター（287m^2）

GHNP 内の生物多様性に関する種の保存、目録等の製作のための研究活動の場としてフィールドワークの拠点としての機能を有する施設。

(4) 林業省自然保護総局（PHKA）自然環境保全情報センター（Nature Conservation Information Center：NCIC）(371m^2)

公園管理・調査へのコンピューター利用の普及と、GHNP をはじめとする国立公園の自然・社会条件に関するデータベース、動植物の保護対象種に関するデータベース野作成、管理、運営を行う。LIPI 及び PHKA との間で生物多様性に関するデータベースを基に効果的な情報の交換及び利用を行う。

1－1－3　生物多様性保全計画プロジェクトフェーズ1

以上を受け、JICA は「インドネシア生物多様性保全計画」の実施に至った。2 段階に分けて協力を行う計画が打ち出され、第 1 段階として 1995 年 7 月から 1998 年 6 月 30 日までの 3 年間、「生物多様性保全計画フェーズ 1」の協力が実施された。協力は、生息域外保全（ex-situ）と生息域内保全（in-situ）で行われ、将来に向けての利用可能な生物多様性情報の基盤整備を行うとともにフィールドにおける生物多様性の調査や保全・利用を実践し、両者の活動の連携と交流が行われることをめざすとされた。終了時評価時点で整理・作成されたプロジェクト・デザイン・マトリックス（PDM）によるプロジェクト要約は以下のとおりである。

(1) 上位目標

生物多様性管理の国家的戦略と BAPI の目的達成を支援する。

(2) プロジェクト目標

LIPI と PHPA の生物多様性保全の組織的能力を、情報ネットワーク、自然環境調査・研究及び国立公園計画・管理の分野において強化する。

(3) 成　果

1) RDCB-LIPI における各分野の生物多様性情報データベース（関係文献、標本、フィールドレコード及び公園管理活動）が整備される。

2) 生物学における分類学及び他の特定分野における RDCB-LIPI の動植物学部門研究者の科学的能力が強化される。

3) GHNP 内及び周辺地域の生物多様性の域内保全、生物多様性の総合的研究フィールドのモデルとして整備される。

4) GHNP 内及び周辺地域の生物多様性保全に関する環境教育が促進される。

5) LIPI と PHPA 間の生物多様性の情報とデータの効果的交換と利用が促進される。

終了時評価調査団は、1997 年 11 月 16 日から 11 月 27 日にわたってインドネシアに派遣された。終了時評価では結論として、それぞれの個別分野において当初予定されていた目標はおおむね達成されており、生物多様性保全のための基礎的な組織・体制能力（施設・機材・技術・経験など）は十分に強化されると判断される、しかし、無償資金協力による施設・機材を本格的に活用した技術移転が可能になるのはフェーズ 1 終了後であり、かつプロジェクトの上位目標を達成していくためにもフェーズ 1 での成果を基礎に更に継続して技術移転を進めていくことが必要である、との提言があげられた。これを受けてフェーズ 2 事前調査団が同年 12 月に派遣され、「生物多様性保全計画フェーズ 2」が翌 1998 年 6 月から開始されることとなった。

1－1－4　日米援助協調評価

日米援助協調を機に開始されたインドネシア生物多様性保全計画関連協力の概要は以上に述べたとおりである。本終了時評価団で一連の JICA 協力に対する評価は実施していないが、2001 年度に JICA 企画・評価部援助協調室によって行われた「JICA －米国国際開発庁（United States Agency for International Development：USAID）援助協調評価」評価調査報告書[1)] によると、インドネシアにおける援助協調の総評は次のとおりである。

インドネシア生物多様性保全プログラム案件群では、日米政策レベルで、同分野での日米協調の実施を決定した際に、双方の実施機関レベルを巻き込みその実現可能性を十分に検討する

1)「JICA-USAID 援助協調評価報告書」ドラフト、平成 14 年 6 月

機会が少なかったため、日米実施機関レベルの具体的な協調の枠組みを設定することができなかった。その結果、JICA と USAID 間の援助協調の接点があまりないまま協調プログラムが終了し、援助協調によるプロジェクト実施の相乗効果を必ずしも十分にあげることはできなかった。

表1－1　年　表

年	月	内　　容
1991 (平成3)	1	インドネシア生物多様性行動計画（BAPI）策定（インドネシア政府） ＊生物多様性保全のための自然環境保護を提唱。BAPI には国家開発計画で実施すべき多様性保全に係る優先プロジェクトリストが含まれている。
1992 (平成4)	1	日米グローバル・パートナーシップ・アクションプラン発表 ＊日米環境協力事業として、開発途上国おける自然資源の管理及び保全のための資源センター設立（生物多様性保全センター構想）への支援の可能性を検討。
	1	日米援助調整会議 ＊生物多様性保護のための環境資源センター設立協力をインドネシア・ブラジル・コスタリカで実施することで合意、その後の協議で、インドネシアに決定。
	6	国連環境開発会議（UNCED）開催（ブラジル）／生物多様性条約署名（日本を含む157か国）
	7	日米合同調査団派遣 ＊日米の協力の基本的考え方及びインドネシア側の受入体制を確認。これまでの合意では日米が共同で環境資源センターを設立することになっていたが、この時点で米側は「センター」の持続性を確保する方策として非営利財団（YAYASAN-KEHATI）に基金を設け、運用益でセンターを支援する形態を打ち出した。
1993 (平成5)	1	日米双方から専門家派遣 ＊協調の全体構想をインドネシア政府とともに検討。〔日本：技術協力（専門家派遣等）、無償資金協力（施設整備等）、アメリカ：インドネシア生物多様性保全財団の基金を拠出の枠組み〕
	3	プロジェクト形成調査団派遣 ＊無償資金協力とプロ技協での日本の協力構想とフレームワークをインドネシア政府と検討。
	5	生物多様性条約受諾（日本政府）
	6	企画調査員派遣 ＊インドネシア側のデータベース構築に向けたハードウェアとソフトウェアの検討状況確認。
	7	日米コモン・アジェンダ構想の発表 ＊日米首脳会談において、日米包括経済協議の一環として「地球的展望に立った協力のための共通課題（日米コモン・アジェンダ）」構想が打ち出された。日米の協力状況を強化し「人口・健康」「環境」等の地球規模の問題に対して新たな日米パートナーシップを構築することを目的としている。
	11	外務省から現地調査団派遣 ＊無償資金協力とプロジェクト方式技術協力による支援の内容、USAID や世銀地球環境基金（GEF）との協力関係の調整について協議。
	11	個別専門家派遣
	12	生物多様性条約発効
1994 (平成6)	1	米国政府、インドネシア生物多様性基金設立／支援開始 ＊20 億円相当を拠出してインドネシア生物多様性基金（YAYASAN-KEHATI）という財団を設立し、その財団を通してインドネシア生物多様性分野の NGO を支援する。
	3～4	基礎調査実施 ＊プロジェクト協力概要を策定。
	8～9	プロジェクト形成調査兼インドネシア生物多様性保全計画事前調査と無償資金協力基本設計調査合同実施

1995 (平成7)	1	無償資金協力「生物多様性保全計画」基礎設計調査団派遣
	4	プロジェクト方式技術協力「生物多様性保全計画」実施協議調査団派遣
	4	プロジェクト方式技術協力「生物多様性保全計画フェーズ1」R/D署名
	5	無償資金協力「生物多様性保全計画」基本設計調査派遣、R/D署名
	7	「生物多様性保全計画プロジェクトフェーズ1」開始（3年間）
	10	生物多様性国家戦略策定（日本） ＊生物多様性保全計画プロジェクトも含まれる。
	10	無償資金協力交換公文交わされる。
1996 (平成8)	7	生物多様性保全計画プロジェクトフェーズ1計画打合せ調査団派遣
1997 (平成9)	2	無償資金協力施設完成（グヌン・ハリムン国立公園管理事務所）
	2	無償資金協力施設完成（グヌン・ハリムン国立公園リサーチ・ステーション）
	7	無償資金協力施設完成（RCB/LIPI 動物部門研究施設標本館）
	10	無償資金協力施設完成（NCIC/PHKA 自然環境情報センター）
	11	生物多様性保全計画プロジェクトフェーズ1終了時評価調査団派遣
	12	生物多様性保全計画プロジェクトフェーズ2事前調査団派遣
1998 (平成10)	5	生物多様性保全計画プロジェクトフェーズ2実施計画協議調査団派遣
	6	生物多様性保全計画プロジェクトフェーズ2R/D署名
	6	生物多様性保全計画プロジェクトフェーズ1終了
	7	生物多様性保全計画プロジェクトフェーズ2開始（5年間）
1999 (平成11)	8	生物多様性保全計画プロジェクトフェーズ2運営指導調査団派遣
2000 (平成12)	11	生物多様性保全計画プロジェクトフェーズ2運営指導（中間評価）調査団派遣
2001 (平成13)		
2002 (平成14)	10	生物多様性保全計画プロジェクトフェーズ2終了時評価調査団派遣
2003 (平成15)	6	生物多様性保全計画プロジェクトフェーズ2終了予定

1－2　調査団派遣の目的

前述したとおり、我が国はインドネシアの生物種の保全を図ることを目的として、無償資金協力によってチビノンにRDCB、ボゴールにNCIC、GHNPに管理事務所、リサーチ・ステーションを建設し、1995年から1998年まで生物多様性に関する研究の推進及び生息地管理モデルの基盤整備を目的として、プロジェクト方式技術協力（フェーズ1）を実施した。フェーズ1で達成された成果を踏まえて、1998年7月より開始された本協力（フェーズ2）は、自然環境調査実施体制の確立、情報提供体制の確立、国立公園の管理計画の実施を目的として活動しており、2003年6月に終了予定である。

2000年11月の中間評価調査では、ほとんどの活動が当初計画どおり進捗していると評価された一方、人材、財政面での自立発展性を図る必要性など、プロジェクト終了時までに達成されるべき課題が多く示された。本調査では終了時評価として、中間評価調査の結果・提言への対応状

況も含め、インドネシア側と合同で当初計画に対する目標達成の状況を確認するとともに、JICA事業評価ガイドラインにのっとり、プロジェクトの実施結果を評価する。また、調査結果を取りまとめて合同調整委員会へ報告し、合意結果をミニッツに取りまとめてインドネシア側と署名を行う。

1－3　調査団の構成

担当分野	氏　　名	所　　属
団長・総括	宮川　秀樹	国際協力事業団森林・自然環境協力部 部長
調査研究／情報システム	山瀬　一裕	財団法人自然環境研究センター 常務理事
保護区管理	三村　起一	環境省自然環境局中部地区自然保護事務所 次長
総合評価手法	齋藤　千尋	国際協力事業団企画評価部評価監理室 職員
計画評価	浅野　剛史	国際協力事業団森林・自然環境協力部 森林環境協力課 ジュニア専門員
評価分析	土居　正典	インテムコンサルティング株式会社 コンサルタント

第2章　終了時評価の方法

2－1　評価の全体フロー

本評価調査ではJICA事業評価ガイドラインにのっとり、プロジェクト・デザイン・マトリクス（PDM）に基づく計画達成度の確認と、評価5項目（妥当性、有効性、効率性、インパクト、自立発展性）による分析・評価を行った。評価調査の全体フローは図2－1に示すとおりである。現地調査については日本とインドネシアの両国から選定された評価メンバーによって合同で実施されたものである。

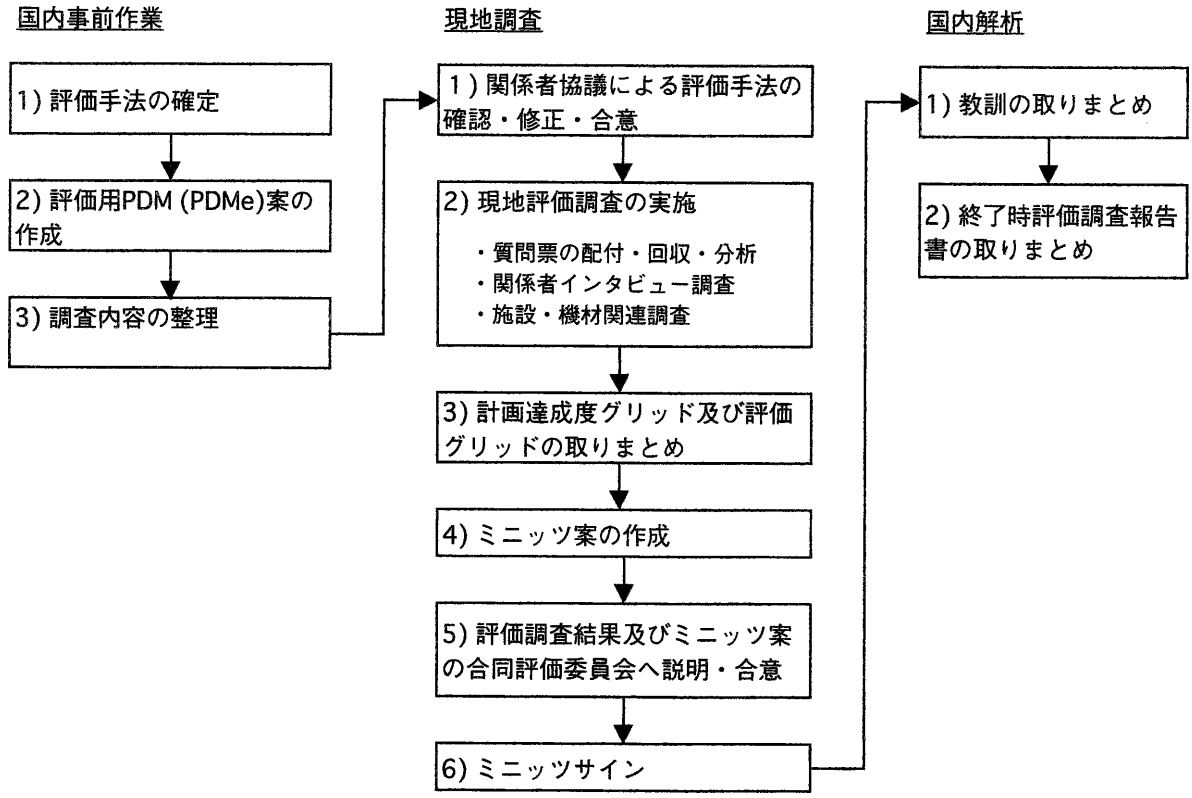

図2－1　評価調査全体フロー

2－2　国内事前準備

(1) 評価手法の確定

本プロジェクトは通常のプロジェクトと異なり、以下のような計6枚のPDMによって運営管理されている。

① 総括PDM

② サブプロジェクトAのPDM

③ サブプロジェクトBのPDM

④　サブプロジェクトCのPDM

⑤　サブプロジェクトDのPDM

⑥　サブプロジェクトEのPDM

本調査ではこれら6枚のPDMすべてについて、それぞれ計画達成度及び評価5項目評価を実施することとした。評価5項目の概要は以下のとおりである。

－妥　当　性：被援助国のニーズとプロジェクトに整合性はあるのか、また日本の援助事業として妥当性があるのか。

－有　効　性：プロジェクトの実施により、期待される効果が得られたのか。

－効　率　性：投入された資源量に見合った成果が達成されたか。

－インパクト：プロジェクト実施により、間接的・波及的効果はあったか（見込めるか）。また、プロジェクトはインパクトを生み出したのか。

－自立発展性：プロジェクトの効果は協力終了後も持続していくことが見込めるか。

(2) 評価用PDM（PDMe）案の作成

既存資料を整理し、評価に使用するPDMすなわちPDMe案を作成した。ここで実施協議時からのPDM修正の経緯を整理して示すと表2－1のようになる。1998年6月の実施協議時から2000年11月の運営指導時まで、PDMの修正は行われていない。その後、運営指導時のアドバイス等を踏まえ、主に指標及び指標入手手段を具体化する方向で修正が加えられ、2002年4月、現行PDMとしてインドネシア側とのミニッツによる合意が得られている。なお、サブプロジェクトAの成果についてはこの時点で研究機材の有効活用についての記述が加えられている。

PDMeにおいて現行PDMから修正した最も大きな点は総括PDMに関するものである。すなわち、現行の総括PDMのプロジェクト目標は、共通目標としての実施機関の連携による組織強化とサブプロジェクトA～Eのプロジェクト目標をすべて併記する形式をとっているが、総括PDMeでは前者（共通目標）のみをプロジェクト目標とし、サブプロジェクトA～Eのプロジェクト目標は、総括PDMeにおける成果として評価分析を行うこととした。

各サブプロジェクトのPDMeは基本的に現行PDMを採用したが、指標については一部追加する方向で修正を加えた。

(3) 調査内容の整理

PDMe案に基づき、計画達成度評価表（達成度グリッド：Accomplishment Grid）及び5項目評価調査表（評価グリッド：Evaluation Grid）の原案、及び質問票案を作成し、調査内容の確認・整理を行った。

表２－１　PDM 修正の経緯

			実施協議時	運営指導時	現行	終了時評価調査時　(PDMe)
			1998年6月12日	2000年11月15日	2002年4月4日	2002年10月8日
すべてのPDM共通	対象地域、ターゲットグループ等、PDM欄外の記載		変更なし（記載なし）			●新たに記載。
	上位目標	プロジェクト要約	変更なし			変更なし。
		指標及び指標入手手段	変更なし（指標入手手段については記載なし）			●修正及び新規記載
総括PDM	プロジェクト目標	プロジェクト要約	共通の目標として、連携による組織強化を掲げ、それに加えてサブプロジェクトA-Eの目標をすべて併記する。			共通目標（変化なし）のみを記載。 ●サブプロジェクト目標は成果の欄に移動。
		指標及び指標入手手段	共通目標の指標は設定されず、サブプロジェクトA-Eの指標を併記する。			●共通目標の指標を設定する。 ●サブプロジェクトA-Eの指標は成果の欄に移動。
		外部条件	変更なし			変更なし。
	成果		変更なし（各サブプロジェクトの成果を列記する）。			●各サブプロジェクトの目標を列記する。
	活動		各サブプロジェクトの活動と同様として、省略。			●各サブプロジェクトの成果・活動と同様として省略。
各サブプロジェクト	サブプロジェクト目標	プロジェクト要約	変更なし			変更なし。
		指標及び指標入手手段	変更なし		●より具体的に修正	●一部追加の方向で修正。
	成果	プロジェクト要約	変更なし		●サブAについて修正、その他は変更なし（サブCについては言い回しの訂正）	現行から変更なし。
		指標及び指標入手手段	変更なし		●より具体的に修正	●一部追加の方向で修正。
	活動		変更なし		●より具体的に修正	現行から変更なし。
	投入		変更なし		●より具体的に修正	現行から変更なし。

注）　●：修正か所

：現行から変更なし

２－３　現地調査

(1) 関係者協議による評価手法の確認・修正・合意

まず、コンサルタント団員がプロジェクト側専門家と協議を行い、評価手法の説明・確認を行うとともに、PDMe 及び質問票について必要な修正を加え、この時点での最終案として、関係者に配付した。また、インドネシア側評価メンバーの内部ミーティングにおいて、同団員から評価手法の説明が行われ、基本的な合意を得た。

(2) 現地評価調査の実施

現地調査の前半ではコンサルタント団員が中心となり、関係者への質問票及びインタビュー調査が実施された。それらの概要は表２－２に示すとおりであり、カウンターパート（C／P）、

専門家及びデータベースユーザーに対しては質問票の配付回収方式で、その他関係者については質問リストに基づくインタビュー方式で情報収集を行った。

表２－２　関係者からの情報収集の方法と回答者数等の内訳

調査方法		質問票の配布回収				質問リストによるインタビュー	
対象者		カウンターパート		専門家	データベースユーザー	各実施機関の代表者	本省代表者
回答者数等の内訳		総数	有効回答数				
	総括	-	-	1	-	-	-
	サブプロジェクトA	46	12	1	-	Dr. Siti N. Prijono (RCB所長代行)	Dr. Siti N. Prijoni (同左)
	サブプロジェクトB	6	2 注1)	1	標本室室長等 計8名	Mr. Roemantyo (BIC代表C/P)	
	サブプロジェクトC	7	4	1	NCIC内スタッフ代表 テーマ別回答 3件	Mr. Agoes Sriyanto (NCIC代表)	Mr. Widodo S. Ramono (PHKA国立公園保護区局長)
	サブプロジェクトD	8	10 注2)	3	-	Mr. Sudarmadji (GHNP所長)	
	サブプロジェクトE	(共通)	(共通)	1 注3)	-	(共通)	(共通)
	計	67	28	8	11	4	2

注1) １件は5名連名での回答であった。
注2) C/Pと実質的に同様の立場にいるスタッフ2名の回答を含む。
注3) 調整員

これらの予備的な結果は、日本側、インドネシア側双方の評価メンバーに提供され、その結果を更に解析するとともに、合同評価調査団として公式なインタビュー調査及び施設・機材関連調査を実施した。

(3) 達成度グリッド及び評価グリッドの取りまとめ

上記調査結果を日本・インドネシア双方の評価メンバーで協議し、達成度グリッド及び評価グリッドの形式で取りまとめた。

両グリッドの各評価項目については、読み手の理解を助ける目的で次のような３段階のグレードを付記した。

A：期待以上の結果が得られている（優れている）

B：期待どおりの結果が得られている（良好）

C：期待された成果が得られていない（劣っている）

最終的に合意された達成度グリッド及び評価グリッドはミニッツのAnnexとして本報告書に添付されている。

(4) ミニッツ案の作成

達成度グリッド及び評価グリッドの内容を要約する形で、ミニッツ本文の作成を進めた。

(5) 評価調査結果及びミニッツ案の合同評価委員会への説明・合意

調査結果及びミニッツ案を日本・インドネシア評価メンバーから合同評価委員会に説明し、内容の合意を得た。

(6) ミニッツサイン

上記で合意された内容に沿って、ミニッツのサインが行われた。

2－4　国内解析

(1) 教訓の取りまとめ

今回の評価調査にかかる日本側から見た教訓を取りまとめた。

(2) 終了時評価調査報告書の取りまとめ

教訓を含む終了時評価調査報告書を取りまとめた。

第３章　調査結果

３－１　総　括

３－１－１　投入の実績

日本側からの投入は、データシステム管理の短期専門家の派遣が困難であったが、ほぼ当初計画どおりに実施された。インドネシア側からの投入は、インドネシア政府の経済危機により一部の投入を日本側が負担したものの、概してプロジェクトを実施するためには十分な投入が行われた。

投入の詳細は、ミニッツ別添資料 ANNEX2 の達成度表（Accomplishment Grid）に示した。

３－１－２　成果（各サブプロジェクト目標）の達成度

まだ完了していない活動も一部あるが、成果（サブプロジェクト目標）はおおむね達成されたと判断される。

それぞれの成果（各サブプロジェクト目標）に関するより詳細な評価は、ミニッツ別添資料 ANNEX2 の達成度表（Accomplishment Grid）に示した。

３－１－３　プロジェクト目標の達成度

数々の連携活動が行われ、インドネシア科学院（Indonesian Institute of Science：LIPI）と林業省自然保護総局（Directorate General for Forest Protection and Nature Conservation：PHKA）での生物多様性保全に対する組織能力は強化された。グヌン・ハリムン国立公園（Gnung Halimun National Park：GHNP）は 20 名以上の生物学開発研究センター動物部施設（Research and Development Center for Biology：RDCB）／ LIPI の研究者に総合的な調査研究の場として活用されている。一方で RDCB ／ LIPI 研究者による調査研究成果は GHNP の公園管理（GHNP 動植物リスト集計、環境教育教材編集、講師として研究者を招聘、エコツーリズムガイドブック編集等）に活用されている。データベースの相互活用については生物多様性情報センター（Biology Information Center：BIC）／ RDCB ／ LIPI データベースを LIPI 研究者が十分に活用するには障害が残っているものの、プロジェクト実施機関間において BIC ／ RDCB ／ LIPI 及び自然環境保全情報センター（Nature Conservation Information Center：NCIC）／ PHKA のデータベース相互利用は推進されている。

３－１－４　上位目標の達成度

インドネシア生物多様性行動計画（Biodiversity Action Plan for Indonesia：BAPI）は達成計画及び達成指数が設定されていないため、本プロジェクト結果による BAPI の達成度合いを

正確に測ることは難しい。しかし、本プロジェクト傘下の多くの活動はBAPIで設定されたアクションプランに連動して実施されており、評価団はプロジェクトがBAPIの計画に大きく貢献したと判断する。

3－1－5　プロジェクトの実施プロセス

プロジェクト管理は、非常に良好に行われた。活動はプロジェクト・デザイン・マトリックス（PDM）に沿って行われ、活動のモニタリングは定期的に実施された。PDMは中間評価調査団（運営指導）の提言を受けて見直され、改訂されたが、インドネシア側及び日本側が改訂版PDMを正式に承認するまでに時間を要した。合同調整委員会の開催については、すべてのメンバーを招集することは困難であったが、総じてプロジェクトはインドネシア政府、日本政府、国内支援委員会から全面的な支援を受けて実施された。また、連携協力を実施するうえでの実施機関の間のコミュニケーション、及び各サブプロジェクトの成果を達成するうえでのLIPIとPHKA内部のコミュニケーションにも際立った問題は無かった。

3－2　サブプロジェクトA

3－2－1　投入の実績

日本側の投入は、ほぼ当初計画どおり実行された。これまで比較的多くの短期専門家（延べ14名）が投入され、研究活動の底上げとともに、一連の先端研究機器操作に関する技術移転が行われた。インドネシア側で投入されたカウンターパート（C／P）はその数、能力とも、本サブプロジェクトを遂行するのに十分であった。インドネシア側のサブプロジェクトA関連予算は、プロジェクト実施期間中、毎年増加され、その規模は、いくつかの活動で支障があったとはいえ、同国の経済状況を考えればおおむね満足できる水準であった。

3－2－2　成果の達成度

当初計画された成果は、いくつかの分野において未達成の部分が残されているものの、ほぼ達成されたと評価できる。2つの成果についての達成度は以下のとおりである。

1）生物多様性保全に関する情報や科学的データは確実に増加しており、当初想定された成果は、ほぼ予定どおり達成されている。プロジェクトが支援した研究は40編以上の研究論文として公表され、うち40％は、国際的な会議の席上で発表されている。学会誌に発表された新種記載は、現在6種に上る。更に、現在未記載ではあるが、プロジェクト期間中に採集された多数の標本のなかには多くの新種があると想定されている。本プロジェクトで実施された様々な研究活動は、インドネシアにおける生物多様性保全に関する科学的知見を増加することに直接貢献している。

2）先端研究機器の適切な使用に係る技術訓練は、当初計画どおり実施されている。その結果、各機器について少なくとも１名の研究スタッフが使用方法をマスターできている。DNA シーケンサ、走査電子顕微鏡、ミクロトーム及び血液分析機器等は、日常的に頻繁に使用されている。

それぞれの成果に関するより詳細な評価は、ミニッツ別添資料 ANNEX2 の達成度表（Accomplishment Grid）に示した。

3－2－3　サブプロジェクト目標の達成度

RDCB ／ LIPI の研究活動の生物多様性保全に関する貢献度は増加していると判断され、サブプロジェクト目標はほぼ達成されたと評価できる。科学的な研究集会は、計画どおり開催され、予定は既に終了している。チェックリスト及びいくつかの研究報告書の出版は遅れているが、プロジェクトの終了時までには達成される予定である。先端研究機器の利用に関するＣ／Ｐの知見は十分向上している。

3－2－4　プロジェクトの実施プロセス

プロジェクトの活動は、ほぼ予定どおりに実施されている。研究結果の出版に若干の遅れはあるが、プロジェクトの終了時までには公表できる予定である。日本側専門家とインドネシア側Ｃ／Ｐとの関係について、インドネシア側から短期専門家の１人はコミュニケーション能力が劣っていたとの指摘があったが、それ以外はアンケート調査等からほぼ良好であることが確認された。

3－3　サブプロジェクトＢ

3－3－1　投入の実績

日本側の投入として、ウェブ関連の技術訓練に係る短期専門家の調達が困難であった。この代替案として、インドネシア国内の技術コンサルタントを調達し、Ｃ／Ｐトレーニングを実施したが、この変更は、トレーニング後のアフターケア体制を確実にするという観点から有効な手段であると評価できる。インドネシア側の投入は、予算以外では当初計画どおり実施されている。予算に関してインドネシア側は増額のための努力を行ったが、サブプロジェクトベースでの対応には限界があった。

3－3－2　成果の達成度

当初計画された成果は、いくつかの分野において未達成の部分が残されているものの、ほぼ

達成されたと評価できる。

1）BIC のデータベースシステムは、改良あるいは新規開発され、プロジェクト開始時と比べ、大きく向上している。ただし、現況の BIC 保有コンピューターの性能は不十分であり、本プロジェクトにおいて植物標本データベース管理システムを開発することは困難である。

2）RDCB の標本データベースのうち、植物及び動物のタイプ標本データは、ウェブサイトに公開されている。また、文献データベースについても既にネット上で公開されている。

3）BIC に提供される完成されたデータは増加している。新規の標本データは継続的にシステムに入力され、フィールド調査データは GHNP における研究活動等によって集められている。

4）BIC データベースのシステム稼働率は 80％以上であった。しかしながら、植物部門のデータベース構築は動物部門に比べると遅れており、安定性に欠けるところがある。RDCB としては植物部門に関しても重点的に対応する必要がある。

それぞれの成果に関するより詳細な評価は、ミニッツ別添資料 ANNEX2 の達成度表（Accomplishment Grid）に示した。

3－3－3　サブプロジェクト目標の達成度

本プロジェクトで改良・開発された 3 つのデータベースシステム、すなわち標本データベース、文献データベース及びフィールド調査データベースは、RDCB 内に構築された LAN 環境下で提供されている。データベースシステムへの入力件数は動物標本 約 19 万件、植物標本 約 25 万 9,000 件、文献データ 約 7,100 件、フィールド調査データ約 2,500 件である。このように BIC における生物多様性に関する情報は増大し、体系化が図られている。しかしながら、RDCB の研究者がこの BIC データベースを十分活用するには至っていない。この主たる原因はコンピューターの性能不足にある。

3－3－4　プロジェクトの実施プロセス

サブプロジェクト B は、ほぼ当初計画どおり実施されている。日本側専門家とインドネシア側 C ／ P の関係は、たまには誤解が生じることはあったが、おおむね良好であった。

3－4　サブプロジェクト C

3－4－1　投入の実績

日本側の投入は、ほぼ当初計画どおり実行された。インドネシア側の投入は、「必要最低限」のものしかなされず、当初負担することになっていた項目（予算）の一部をプロジェクトが頓挫することのないよう、日本側の追加的な支援（サポート）により賄われた。また、技術移転対象

のＣ／Ｐの配置問題（特にフェーズ２前半でのＣ／Ｐの未配置やプロジェクト期間中を通じての度重なる異動や未補充）はプロジェクトの進行を大きく遅らせるものであって問題であった。

３－４－２　成果の達成度

何点かの活動中のものを除き、おおむね満足できる成果が見られた。

1）Ｃ／ＰがGISやウェブページの構築、オラクル、DTPなどのソフトウェアを使いこなしている（空間情報データベース管理システム（GIS）は十分に機能しているが、非空間情報データベース管理システムについては終了時まで引き続き改良等が必要であるが）ことからもNCICのスタッフの技術レベルは進歩していると考えられる。

2）現存するデータの収集と格納（打ち込み）はほぼ終了している（十分な成果が達成されている）。必要なデータそのものが存在していなかったり、NCICにデータを集約するシステムが林業省内に確立されていないなどの技術的な問題点があり必要なデータが集まりにくい状況ではあるが、GHNP以外の国立公園や保護区のためのデータについても蓄積されつつある。特に、首都のジャカルタから離れたボゴールにあるにもかかわらず、NCICにGHNP以外の国立公園や保護区の地図情報（ベースマップ）が集約しつつあることは近い将来の発展を予感させるものである。

3）NCICのウェブサイトは本プロジェクトによる活動の結果十分に機能し始めており、大学研究者・NGOを含めいろいろな機関からのアクセスも増えてきている。また、周辺学校（大学、高校）からの訪問学習なども増えてきている。

4）NCICの活動に関する関心・認識を広めることにつながる刊行物の発行は、ほぼ予定どおり行われている。

それぞれの成果に関するより詳細な評価は、ミニッツ別添資料ANNEX2の達成度表（Accomplishment　Grid）に示した。

３－４－３　サブプロジェクト目標の達成度

データ管理システムは構築され、NCICによる管理運営もできるようになり、また、NCICスタッフのコンピューターシステムへの技術能力も向上するなど、概してサブプロジェクト目標は達成されたと考えられる。

３－４－４　プロジェクトの実施プロセス

プロジェクト開始当初にあってはインドネシア側のデータベースに対するニーズが整理されておらず、また、Ｃ／Ｐが活動の中身を十分に理解していなかったことから、システム設計に多大の労力を要している。しかし、専門家が強い指導力を発揮し、また、Ｃ／Ｐとのコミュニケー

ションの確保に努めていることから両者の関係は大変良い状況になっており、活動が円滑に進みプロジェクト開始当初の遅れを挽回しつつある。

3－5　サブプロジェクトD

3－5－1　投入の実績

日本側の投入は一部器材については投入が遅れ、短期専門家の派遣期間内に器材が間に合わない事態が発生したものの、ほぼ当初の予定どおりなされた。

インドネシア側の投入は、当初負担することになっていたC／Pの旅費などの活動経費が不足していることからプロジェクトの円滑な実施のため、日本側が追加的に支援（サポート）するなど十分なものではなかった。

3－5－2　成果の達成度

何点かの活動中のものを除き、おおむね満足できる成果が見られた。

1）GHNPにおけるエコツーリズムに関する活動については大きな成果があった。過去3回にわたって試行されたエコツアーの成功は、首都ジャカルタ内外の人々にとってGHNPが十分な魅力をもった場所であることを示している。エコツーリズムに関する職員訓練を恒常的に行っていくためには十分な予算と指導可能なインストラクターが必要である。

2）3種類の絶滅のおそれが高い動物（ヒョウ、ジャワギボン、ジャワクマタカ）に関する総合的な報告書が本プロジェクトの終了時までに刊行されることになっている。保護管理計画についてはその大半は既に出来上がっており、2003年3月には完成する予定になっている（以下、活動名を「野生生物調査」と記す）。

3）プロジェクトの活動を通じて、様々なフィールド調査活動がGHNP内で行われるようになってきている。

4）GHNP周辺の小学校150校のうち、39校に既に環境教育のプログラムが行われ、小学校への教育実施に併せて、教員及び地域のリーダーとなることが期待される地域の（集落の）若者に対しても環境教育訓練が行われた。教育活動の参加者の延べ人数は6,000人にのぼっており、未実施地域（小学校）からは実施要請が多数来ているが人員配置・旅費等の問題から完全に対応できていない。これらを総合して、十分な成果が見られたといえる。

それぞれの成果に関するより詳細な評価は、ミニッツ別添資料ANNEX2の達成度表（Accomplishment Grid）に示した。

3－5－3　サブプロジェクト目標の達成度

全体的に見てサブプロジェクト目標は十分に達成されたと評価できる。地域住民はエコツーリズムに関する活動、環境教育プログラム、また、野生生物調査（絶滅のおそれのある動物のモニタリング活動）を通じて地域の自然資源の保全に強い関心をもつようになってきており、その結果としてGHNPでは（金の）違法採掘がプロジェクト期間中に減少し、違法伐採が他の地域に比べ少ないというインドネシアでは極めてまれな、地域住民自らが地域管理へ積極的に参画する状況が見られている。つまり、GHNPは公園管理に地域住民をうまく取り込むことができた公園といえる。また、GHNPでまとめている年次報告に記載されている動植物に関するデータのような、フェーズ2の調査活動により得られた基本的な科学データは膨大なものとなってきており、インドネシアの科学的なデータの蓄積・管理の一翼を担っている。

3－5－4　プロジェクトの実施プロセス

専門家とC／Pとのコミュニケーションが大変良い状況になっており、ほぼすべての活動が当初の計画どおりに進行している。

3－6　サブプロジェクトE

3－6－1　投入の実績

サブプロジェクトEはプロジェクト全体の広報普及を行うものであり、その投入はサブプロジェクトA～Dの全投入を再記載する形となっている。サブプロジェクトA～Dの投入実績で述べたように、ほとんどの投入は良く達成され、予定どおり実施されている。

3－6－2　成果の達成度

以下のように、予定された成果は全般的によく達成されている。

1）プロジェクト活動の成果は定期的にプロジェクト報告書の形式で取りまとめられている。生物多様性保全計画（Biodiversity Conservation Project：BCP）2期間中、これまで計6刊のプロジェクト報告（Vol. III～VIII）が取りまとめられ、プロジェクト終了時までには新たに2刊が公表される予定である。

2）BCP2は、財務的・技術的に、計8回の主要ワークショップの開催を支援し、ワークショップ参加者を通じてプロジェクト成果の普及に努めている。今後、国立公園管理に関するワークショップとプロジェクト終了時の総合ワークショップ（2003年5月）が計画されている。

3）プロジェクト内容を紹介する小冊子は1999年3月に作成され、2001年9月には改訂版が作成されている。

4）情報提供ツールとして当初ニュースレターが考えられていたが、近年のインターネット環

境の普及を勘案して、ウェブサイトに変更された。プロジェクトのウェブサイトは2000年2月に立ち上げられ、引き続きよく管理されている。

それぞれの成果に関するより詳細な評価は、ミニッツ別添資料ANNEX2の達成度表（Accomplishment Grid）に示した。

3－6－3　サブプロジェクト目標の達成度

プロジェクト活動の結果は、プロジェクトが支援する様々な広報ルートを通じてインドネシア国内及び海外の生物多様性研究者、環境保護官、NGOs、更には一般大衆まで知られるようになっている。本サブプロジェクト目標は計画どおり達成されていると評価される。

3－6－4　プロジェクトの実施プロセス

すべての活動は日本人専門家とインドネシア側C／Pの良好な関係により、ほぼ期待どおりに実施されており、実施プロセスは適切であったと評価される。

第４章　評価結果

４－１　総　括

４－１－１　妥当性

上位目標はインドネシア政府の開発計画及び生物多様性保全方針と一致しており、適切に設定されている。また、インドネシア科学院（Indonesian Institute of Science：LIPI）と林業省自然保護総局（Directorate General for Forest Protection and Nature Conservation：PHKA）は生物多様性保全の優先順位を高く位置づけておりプロジェクト目標及び各サブプロジェクト目標はLIPI 及びPHKA のニーズに合致している。また生物多様性保全管理に対して、LIPI は科学的研究の権限をもち、PHKA は政策決定任務を有することから、各サブプロジェクトの実施機関は適切に割り当てられたといえる。

４－１－２　有効性

プロジェクト目標は各サブプロジェクトの結果を受けて達成された。サブプロジェクトを通してカウンターパート（Ｃ／Ｐ）の技術レベルは向上し、実施機関間の連携を進めていく重要性についても十分に認識している。結果として、生物多様性保全に対する実施能力は向上し連携協力の土台は築かれた。なお、終了時評価実施時点では完了していない活動が若干残っているものの、プロジェクト終了時までには成果を達成しプロジェクト目標達成に貢献するとＣ／Ｐは確信している。

４－１－３　効率性

全体的に、無償資金協力及び生物多様性保全計画（Biodiversity Conservation Project：BCP）の投入はフェーズ２の活動の効率的実施に貢献した。その一方で、無償資金協力で供与された設備並びに機材の一部は十分に活用されていないものがある。これは、無償資金協力計画が設計された際に想定した条件と実際の条件との間に相違があったためと考えられる。また、効率的な連携協力を実施するためには各サブプロジェクトのプロジェクト・デザイン・マトリックス（PDM）に実施機関間の連携にかかわる活動を明確に記載するべきであったと考えられる。

４－１－４　インパクト

本プロジェクトはインドネシアにおける生物多様性の科学的研究機関と政策実施機関の協調だけではなくインドネシア生物多様性行動計画（Biodiversity Action Plan for Indonesia：BAPI）の推進にも重要なインパクトを与えた。加えて、プロジェクトはインドネシア国内外の他の機関やNGO を活性化させたと高く評価される。（各サブプロジェクト５項目評価のインパ

クトに詳細を記載）

4－1－5　自立発展性

インドネシア政府はBAPIの見直しを行っており（2002年10月現在)、2002年末には新BAPIとして生物多様性国家戦略（Indonesia Biodiversity Action Plan：IBSAP）が開始される予定である。IBSAPの内容は次国家開発計画に含まれる予定であり、今後もインドネシア政府は生物多様性保全政策を推進していくことが期待される。また今後もLIPIとPHKAが生物多様性保全を推進し、生物多様性保全活動の効果的な実施にはお互いの連携協力が重要であることは、一般的に理解されている。人材面では各サブプロジェクトのC／Pの技術能力は彼ら自身でプロジェクト活動を運営管理できるのに十分なレベルに達している。しかしながら概して、実施機関の財政的な自立発展性は低いといえる。そのため各実施機関は、専門家の指導の下プロジェクト終了後の予算確保に必要な対策に取り組んでいる。

4－2　サブプロジェクトA

4－2－1　妥当性

総括評価において述べられたとおり。

4－2－2　有効性

サブプロジェクトAでは、多くの研究者について、研究の実施やその結果の発表に必要な知識や能力を向上させる機会が与えられた。また、インドネシアの生物多様性保全に活用できる科学的データや情報は大いに増加した。C／Pは研究能力を向上させるとともに、先端研究機器の使用について十分な知識を習得している。とりわけ、DNA解析の分野において、プロジェクトは顕著な成果を収めている。一方、日本の無償資金援助によって導入された一部の先端研究機器は、動物部門の研究者ニーズが低かったこともあり、有効に活用されているとは言い難い。

4－2－3　効率性

本プロジェクトの研究に係る効率性は、何人かの学位取得者及び多くの修士取得者を含むC／P及び日本人専門家の共同作業により、良好に保たれた。一方、日本からの機材調達については、導入時期が遅延するケースが見られた。また、いくつかの分析機器については、インドネシアに正規代理店がないため（あるいは、正規代理店を通じて、調達したものでなかったため）保守管理に支障が出る事態が生じている。

4－2－4　インパクト

生物学開発研究センター動物部施設（Research and Development Center for Biology：RDCB）における研究能力の向上は、プロジェクトの上位目標及びインドネシアの生物多様性に関する情報、科学的データの蓄積において大いに貢献している。現在、RDCB は、生物多様性保全分野における研究の中核施設と位置づけられており、プロジェクト期間中、東南アジア地域レベルでの生物多様性保全トレーニングコースが数コース実施されている。

プロジェクト活動、とりわけ新しく導入された技術は、多くの国内研究施設や NGO の活動を刺激するとともに、インドネシアにおける絶滅危惧種の DNA 解析ネットワークの構築にも寄与した。これらの点はプロジェクトのインパクトとして高く評価されるものである。

4－2－5　自立発展性

生物多様性に関する調査研究は RDCB 内で優先度の高い研究課題として継続的に実施されることが期待される。RDCB は LIPI における確固とした組織であり、研究スタッフの身分は保証されている。これらの点から一定の自立発展性は担保されている。しかしながら、インドネシア政府の公務員定員の抑制政策により、他の研究機関と同様、若い研究スタッフの採用が難しい。

4－3　サブプロジェクト B

4－3－1　妥当性

総括評価において述べられたとおり。

4－3－2　有効性

データベース管理システムは、本プロジェクトによって改善され、現在、3 つのシステム、すなわち標本データベース、文献データベース及びフィールド調査データベースが、プロジェクトで構築された LAN 環境下で RDCB の研究者に提供されている。C／P は、日本人専門家や日本側経費で契約雇用した現地コンサルタントから技術指導を受け、現在では自分自身でデータベースの更新並びに、保守管理ができる水準になっている。

C／P によるとデータベースの利用はそれほど難しくはないとされるが、ユーザーとして想定している多くの RDCB 研究者からは、主に現有コンピューターの処理能力の不十分さから来る操作性の悪さや検索時間の遅さについて指摘があった。現在 RDCB に配置されているコンピューターの性能は、作成されたデータベースを活用するのに十分ではない。一方、RDCB が保有している生物学的な標本は、国際的に見ても貴重な遺産であり、そのデータベースについては世界の多くの生物学者が興味を寄せている。

4－3－3　効率性

生物多様性情報センター（Biology Information Center：BIC）は組織図上明記されていないなど、BIC に係る制度上のステイタスは必ずしも明確でない点があるが、その機能は RDCB 内で十分評価・認知されており、サブプロジェクトの各成果は効率的に達成されていると評価できる。必要な機材はおおむね計画どおりに供与された。ウェブサイト管理に関する日本の短期専門家のリクルートは困難であったが、現地コンサルタントを調達することで対応できており、結果的にその後のシステム管理が効率良くなされている。日本で技術研修を受けたＣ／Ｐは、帰国後も継続して BIC に勤務している。

4－3－4　インパクト

サブプロジェクトＢの実施は、一連のプラスのインパクトをもたらしている。インドネシアにおける生物多様性メタデータの情報ネットワークを確立することを目的に、アジア開発銀行（Asian Development Bank：ADB）は 2001 年より生物多様性情報ネットワーク（National Biodiversity Information Network: NBIN）プロジェクトを開始している。サブプロジェクトＢのＣ／Ｐは現在、この NBIN プロジェクトにおいて重要な役割を果たしており、BIC は、NBIN のハブ施設として機能することが期待されている。また、BIC には、地球規模生物多様性情報機構（Global Biodiversity Information Facility: GBIF）や世界分類学イニシアティブ（Global Taxonomy Initiatives: GTI）などとの国際的なデータリンケージが期待されている。

4－3－5　自立発展性

現在、Ｃ／Ｐはデータベース管理や機器の操作を実施しており、基礎技術的観点からの持続発展性は確保されている。また、ADB の NBIN プロジェクトにより、今後 5 年間は開発予算が確保されている。ただし、総論として、財源及び予算は、限定あるいは不安定な状況にある。これは、先に述べたとおり BIC が組織的にきちんと位置づけられていないことも一因として指摘できる。（BIC は RDCB の Division of Means and Collection に属する組織図には明記されていないデータベース管理機関の俗称である）

4－4　サブプロジェクトＣ

4－4－1　妥当性

総括評価において述べられたとおり。

4－4－2　有効性

Ｃ／Ｐの技術能力の向上や、集められた膨大な有用データの管理運営、また外部の個人や組織

からのデータ要求が増加するなど、活動及び成果はサブプロジェクトの目標達成に有効であった。自然環境保全情報センター（Nature Conservation Information Center：NCIC）は林業省の組織上は「係」扱いではあるが、プロジェクトの活動により重要性が認識され、課長級の所長が配置されるなどNCICの組織的な能力も向上している。

4－4－3　効率性

技術スタッフ（technical staff）の適切な配置が図られなかったことから効率的なプロジェクトの運営は困難であったが、投入実績に対する成果の質・量を勘案するとおおむね妥当なものであったと評価できる（総じて効率性は確保された）。

4－4－4　インパクト

今回のBCPによって設立されたNCICはインドネシアにおける生物多様性保全に関する地域（国立公園や保護区）の国内外への情報発信源となっており、BAPIの実施に多大なインパクトを与えている。

4－4－5　自立発展性

NCICの予算は増えつつあるがコンピューターシステムの管理運営に必要な予算を完全に確保されているものではなく、また、林業省内でのNCICの地位は課長級の所長が配属されているものの「係」の位置づけがなされており、情報センターとして独立した機関になっていない。こうしたことから、NCICの自立発展性を確保していくためには、予算上、制度上の強化が求められ、そのための林業省内での地位の向上を図る様々な取り組みが必要である。

4－5　サブプロジェクトD

4－5－1　妥当性

総括評価において述べられたとおり。

4－5－2　有効性

以下の観点から本サブプロジェクトの目標達成に対し3つの活動は有効であったといえる。①環境教育に関してはプラン作成から実施に至るまでの技術は備わっている。②グヌン・ハムリン国立公園（Gnung Halimun National Park：GHNP）におけるエコツーリズムについては、そのシステムは出来上がってきており、周辺地域コミュニティ（周辺集落）の持続可能な発展に大きく貢献できる可能性があるといえる。③野生生物調査については調査の過程で既に多くの情報が収集され、プロジェクト終了時には保護管理計画が策定される見通しであることから、前

述の3種の保護管理計画は将来更なる技術協力・資金協力を得ることで、GHNPの公園管理に大きく寄与することが期待できるといえる。

4－5－3　効率性

希少野生生物調査の長期専門家の派遣が遅れ、調査活動が一部遅れたものの、おおむね専門家の配置については短期・長期とも妥当なものであった。C／Pは公園管理のための技術と意欲を獲得し、日々の業務に当たっており、日本・インドネシアでの研修は適切なものであったといえる。

4－5－4　インパクト

GHNPの公園管理能力はチカニキ・リサーチ・ステーションの研究活動、様々な野生生物調査や環境教育、エコツーリズムの実施により格段に向上してきている。環境教育やエコツーリズムに関する活動はGHNPがインドネシア内の他の国立公園の良い先進事例となる可能性を示しており、公園内での違法な活動を防止するための集落単位の自衛団が結成されるなど地域の公園管理に関する関心や参画が進んでいる。GHNPでの生物多様性の保護活動、エコツーリズム活動がインドネシア国内のマスコミに取り上げられるようになるなど、インパクトは大きなものがある。

4－5－5　自立発展性

GHNPはインドネシア国内での1つの核になる国立公園として認知されており、他の国立公園の組織改編がなされていくなか、GHNPの大半のレンジャーとC／Pは引き続き勤務することが可能であろうとされているなど制度上は安定している。一方、現在の予算では活動規模を継続することは不可能であることから、予算面での自立発展性についてはより一層のインドネシア側の努力が求められる。

4－6　サブプロジェクトE

4－6－1　妥当性

総括評価において述べられたとおり。

4－6－2　有効性

サブプロジェクトEではプロジェクト活動に関する様々な情報を効果的に取りまとめ、それらを広報した。結果として、本プロジェクトはインドネシアの人々と関係する国際社会において広く知られるようになった。本プロジェクトの目標は計画どおり達成されたと評価できる。

4－6－3　効率性

サブプロジェクトEの効率は、チーフアドバイザー、調整員、専門家及びC／Pとの良好な関係により高められた。とりわけ、日本で研修を受けたC／Pの広報活動への貢献は大きかった。また、導入された事務関連機材は普及活動のために適切に使用された。

4－6－4　インパクト

このサブプロジェクトの成果は、サブプロジェクトA～Dの認知度を高めるという観点から大きなインパクトをもたらしている。現在、多くの大学やNGOからプロジェクトで作成した出版物の提供依頼が寄せられている。更に、プロジェクト活動はしばしば国内のマスメディアによって紹介され、GHNPは将来的なエコツアーサイトとして認知されている。

4－6－5　自立発展性

プロジェクト活動は、統合化されたプロジェクトプログラム、すなわちサブプロジェクトEを通じて広報普及されている。本プロジェクトは計画どおり終了する予定であるが、各実施機関はプロジェクトで整備された機材やプロジェクトを通じて培われたノウハウを活用して、これまでと同様の広報普及活動を継続することが期待される。

第5章　結論及び提言

5－1　総　括

5－1－1　結　論

各サブプロジェクトの評価結果を総合的に判断して、本プロジェクトは効果的に実施され、プロジェクト終了までに期待される成果が得られる見込みであると判断される。プロジェクトは5サブプロジェクトから構成されており、対象とする活動範囲は広範であるが、多くの活動がサブプロジェクト間で連携して実施され、お互いの活動の効果を高めることに成功し、結果的にはインドネシアの生物多様性保全に貢献した。特に生物学開発研究センター動物部施設（Research and Development Center for Biology：RDCB）における各種の調査研究の結果は、グヌン・ハムリン国立公園（Gnung Halimun National Park：GHNP）における公園管理に実際に役立てられた。一部の無償資金協力で導入された機材は有効に活用されたとは言い難いが、フェーズ2で実施された投入は、総じてプロジェクト活動の効果的な実施に貢献したと思われる。プロジェクト活動を通して、総じて技術的な自立発展性は高められた。他方組織的及び財政的な自立発展性の確保に関しては更なる努力が求められる。カウンターパート（C／P）の頻繁な配置換えは、自立発展性の妨げになった。また生物多様性情報センター（Biology Information Center：BIC）／RDCB及び自然環境保全情報センター（Nature Conservation Information Center：NCIC）／林業省自然保護総局（Directorate General for Forest Protection and Nature Conservation：PHKA）はより明確な組織的位置づけが必要とされる。インドネシア政府に対しては、今後プロジェクトに関連した活動を引き続き実施するため、組織的及び財政的な自立発展性を高めるための配慮を期待する。

5－1－2　提　言

1）本プロジェクトを通じて、C／Pの技術的水準は、彼ら自身で活動を実施できるまで高められた。しかしながら長期的に技術的水準を保つために、各実施機関は、若い研究者やスタッフの雇用や育成に更に力を注ぐべきである。

2）インドネシア科学院（Indonesian Institute of Science：LIPI）及び林業省の連携は、お互いの活動の効果を高めるために有効であるので、更に活動の効果を有効にするため、LIPI及び林業省は連携の方法と各種の条件などのルールを協議し、文書化してお互いに合意することを提案する。

3）プロジェクト活動によって各種の調査研究活動の効果は高められたと判断される。今後は更に保護区周辺住民の環境の保全や収入手段の確保のための調査研究活動を重点的に行うべきである。

4）プロジェクトが発展させた地域社会主体の環境教育及びエコツーリズム活動は、他の国立公園にも応用できるような新しいモデルとなることが期待されている。JICA はより効果的な環境教育及びエコツーリズム活動を確立するため、RDCB との協力の下実施する新たな協力を GHNP に対して行うことが期待される。

5－2　サブプロジェクト A

5－2－1　結　論

RDCB におけるサブプロジェクト A の活動により、インドネシアの生物多様性保全のための科学的データや情報は飛躍的に増加した。本プロジェクトの経験を踏まえて、RDCB はインドネシア国内だけでなく、東南アジア地域レベルにおける生物多様性保全において一層重要な役割を果たしつつあることが確認された。プロジェクトを通して、C／P は研究能力の向上とともに、先端研究機器の使用に関する十分な知識を習得した。生物多様性に係る研究は RDCB における優先課題として継続される見通しであり、そのための基本的な活動経費はインドネシア側によって担保されている。したがって、研究活動の規模は多少縮小されたとしても、プロジェクトの持続発展性は本プロジェクト終了後も確保されると思われる。

5－2－2　提　言

1）研究の効率を向上させるために、以下の事項を提言する。

－繁殖学的な研究 ――特にほ乳類及び鳥類について―― を継続するため、建物を含む動物繁殖研究施設をチビノン敷地内で整備する。

－データベース構築だけでなく、通常の研究活動のためにもコンピューターを配置する。

－日本の無償資金協力で供与された機器で、RDCB 動物部門での利用ニーズが低いものについては、植物部門など他の研究部門での利用を促進する。

－先端研究機器を導入する際には十分なニーズ調査や利用計画を検討して注意深く対処すべきである。

2）DNA 解析に係る研究は、絶滅危惧種をはじめとする貴重な生物の生息地を特定するためにも今後ますます重要になってくる。基礎的な技術は既に移転されているので、今後は基礎研究のみでなく応用研究にも優先課題として取り組む必要がある。

3）生物多様性に関して包括的な知識を蓄積するため、植物分野及び微生物分野において一層の研究活動を実施する。

4）RDCB のトレーニングコースに大学生や大学院生を受け入れるなど様々な方策により若い研究者の育成を図る。

5－3　サブプロジェクトB

5－3－1　結　論

RDCBにおけるデータの管理、収集、提供、体系化及び利用について改良あるいは新規開発が行われた。また、RDCBスタッフの知識や経験はプロジェクトの諸活動を通じ、あるいはトレーニングコースへの参加や専門家の技術指導により増大した。BICのデータベースシステムは、プロジェクトにより構築されたLAN環境下のRDCB内で稼働している。サブプロジェクトBのC／Pは、アジア開発銀行（Asian Development Bank：ADB）の融資案件である生物多様性情報ネットワーク（National Biodiversity Information Network：NBIN）プロジェクトにおいて重要な役割を果たしており、BICは、そのプロジェクトのハブ施設として機能することが期待されている。しかしながら、コンピューターの性能、インドネシア側予算、短期専門家のリクルート等において、プロジェクト遂行上若干の問題点や障害も見られた。

5－3－2　提　言

1）現在のデータ管理活動の持続発展性を保持するためには、RDCBはBICの組織制度上の自立を促すための行動を起こすべきである。BICが独立した組織体制を確保できれば、通常予算に加えて外部のファンドに財源を求めることができるなど、財政上の持続発展性は更に向上されることになろう。

2）BICによって開発された新データベースシステムへのアクセスを容易にしたり、BICでの植物標本データベース管理システムを改善するために、現在のPentium Ⅰを搭載しているコンピューターはPentium Ⅳ搭載機種に改良する必要がある。このため、適切なコンピューター関連の予算措置が必要となる。

3）上記に関してRDCBは将来のコンピューター管理・更新システム案を作成し、LIPI本部の承認を求めるべきである。

4）プロジェクト活動を継続させるためには、新規に若い研究者を雇用することが必要である。そのためには、政策的な意思と政府のサポートが必要である。

5）今後、データベースシステムのアップグレードや管理においては、インドネシア国内の技術者を選定し、契約することを勧める。

6）データの質を向上させるためには、他の関連機関、特にNCIC／PHKAとの連携を継続する必要がある。

5－4　サブプロジェクトC

5－4－1　結　論

生物多様性保全計画（Biodiversity Conservation Project：BCP）の下、設立されたNCICは、

内外の組織・研究者に対するインドネシアにおける環境保全に関する情報の国内最大級の発信源としての機能を発揮しつつあり、インドネシアにおける生物多様性の保全に関する情報・技術の分野において多大な貢献をしている。

林業省内では「係」の位置づけでしかないNCICが成果を上げつつある背景は、林業省内の関係機関（特にDirector Generalなどの省内幹部クラス）を主たる情報提供先としており、求められた情報を加工等して提供し政策の企画立案に寄与しているからである。

各国立公園等からの情報収集機能の向上を図るため、NCICと評価課(Division of Evaluation and Reporting）はPHKA次官の名のもと既にメーリングリストの作製等の省内情報コミュニケーション・ツールを立ち上げている。

予算面についてはインドネシア国内の経済状況の悪化にもかかわらず拡大は図られているが、それでもなお、NCICの予算は現在の活動（器材）をすべてカバーするには十分ではない。予算面から見れば活動の規模を小さくする必要がある。

また、技術スタッフが適切に配属されていないことはこれまでどおりの効果的な活動を継続することが困難であることを示している。

5－4－2　提　言

1）プロジェクト終了後に想定される財政面、技術面での不足状況や、データ利用者である林業省幹部の広範囲にわたる様々な要求を勘案すると、（財政的にも技術的にも破綻を来す可能性があることから）活動規模の縮小を図るための、データ収集やデータ更新の優先度の格付けが必要である。

2）林業省本省からの支援を取り付けるためには、NCICはウェブサイトコンテンツや刊行物を利用したり、他の環境保護団体や試験研究機関のデータ参照実績を示すなどの様々な手段を活用して、NCIC活動の重要性を関係者に認識させるよう、努力する必要がある。

3）生物多様性に関する情報を持続可能な状態で構築していくために、NCICは地方行政機関やBIC、教育機関やNGOなどの関係機関間での自然環境保全関係情報のネットワークを統合していくべきである。

4）収集するデータや提供する情報の質・量を充実していくためにはPHKA内の他の部局からの更なる支援が必要である。

5）機器類のメンテナンス費用を確保するためにNCICは林業省本省に対し、経常的経費の確保・充実（増額）を要求すべきである。

6）予算状況に影響されることではあるが、人員不足から成る種々雑多な業務に忙殺されている現状では、管理部門のスタッフ（administrative staff）がNCICでスタッフ個人として、また管理部門の組織としてスキルアップしていくことは大変な困難があることから、NCIC業務

のうち、技術的な部分については外部発注の割合を増やしていく必要がある。

7）技術スタッフ（technical staff）がこれまで以上に身分的に保証され、獲得すべき技術スキルを明確にするために、NCIC は PHKA に対し機能的スタッフ（functional staff）を確保するよう要請すべきである。

5－5　サブプロジェクト D

5－5－1　結　論

BCP 第 2 フェーズの活動を通じ、GHNP は 1992 年に設立された最も新しい国立公園の 1 つであるにもかかわらず、インドネシアで最もユニークで管理のできている国立公園になった。地域（住民）を中心に据えた環境教育とエコツーリズムの活動は、同じような活動を企画・運営している他の国立公園の先進事例となれるよう、職員のスキルアップをめざした新たなる段階に入ることが期待されている。特にエコツーリズム活動については、ジャワ島で唯一まとまった形で 4 万 ha もの熱帯林が地域であって、首都ジャカルタから近い（南方 100km 以下）という恵まれた地理的条件から、GHNP がインドネシアでのエコツーリズム最大級の拠点公園としての役割を将来担うことが予想される。予算の安定的な確保が活動の継続に重要な要素であるが、GHNP への予算配付はこれら様々な活動を継続していくには十分なものではない。また、レンジャーや管理技術者（technicians）はスキルアップを図るために OJT（On-the-Job Trainings）や他の公園への視察研修を続ける必要がある。

5－5－2　提　言

1）調査フィールド（生物多様性に関する調査活動のインドネシアでの拠点）としての GHNP の価値を高めていくためには、チカニキリサーチステーションは LIPI や大学、林業や農業の調査開発部局などの外部の関係機関とのネットワークを構築すべきである。

2）GHNP はモデル国立公園として、国立公園間でのネットワークを構築することが可能であるし、国立公園管理、環境教育、エコツーリズムそして野生生物調査に関するトレーニングのために他の国立公園のレンジャーの研修拠点になり得る。

3）器材のメンテナンスのために GHNP は林業省本省に対し、経常的経費の確保・充実（増額）を要求すべきである。

4）GHNP は調査研究施設の使用料やツーリストへのサービス料などの様々な収入確保のための活動を展開するなどして、財政的に自立できるような仕組みづくりに努力すべきである。

5）過去 4 年間の GHNP に対する予算配付状況を勘案すれば、プロジェクト終了後の財政面での危機的な状況は十分に予想されることから、GHNP 管理事務所は業務の精査を行い、財政規模に見合った形になるよう業務の優先順位付けを行うべきである。

6）GHNP でのエコツーリズム活動を充実していくために、公園管理者、NGO、民間企業や地域住民などの関係者の調整機能をもったシステムを構築すべきである。

5－6　サブプロジェクトE

5－6－1　結　論

サブプロジェクトEはサブプロジェクトA～Dと同時並行的に実施されたプロジェクト全体の情報サービスに係る統合化されたプログラムである。プロジェクト活動はプロジェクト報告書の定期的な刊行・配付、ワークショップの開催、プロジェクト小冊子の配付及びウェブサイトの立ち上げ等を通じてよく広報されている。その結果、生物多様性保全に関する国民意識は確実に向上している。

5－6－2　提　言

1）BCP2 に関する広報普及活動はプロジェクトの終了とともにその役割を終えることになるが、それぞれの実施機関においては本プロジェクトで整備された機材や培われたノウハウを活用して今後とも情報サービス活動を継続することを提案する。

第6章　教　訓

6－1　複数のプロジェクト・デザイン・マトリックス（PDM）によるプロジェクトの運営・監理に係る教訓

複数のPDMをもつ協力案件の運営・監理を行う際に想定される一般的な教訓を以下にまとめる。

1）総括PDMにおける共通目標は、各サブプロジェクト間の連携を主旨としている。これは、関係者のなかで常に意識されそのための活動が実施されていたが、共通目標は各サブプロジェクト目標の達成に直接は関連しておらず、またプロジェクト全体の活動のなかでの位置づけが必ずしも明確でなかった。そのため総括PDMがプロジェクトの「総括」であると十分に認識されておらず、プロジェクト実施中は主にサブプロジェクトPDMに沿ってプロジェクトの運営管理が行われていた。

1つのプロジェクトの運営・監理を複数のPDMで実施する場合、共通の目標が欠如するとPDMごとに活動が進行し、1つのプロジェクトとして運営する意義が薄れるおそれがある。1つのプロジェクトとして運営管理するため、各サブプロジェクト間のつながりについては、①共通の目標を設定すること、及び②各サブPDMにおいて、成果（又はプロジェクト目標）に共通目標の達成に必要な活動及びその指標を書き込んでおくこと、が重要である。

2）本プロジェクトは第1フェーズ開始時より日米コモンアジェンダの枠組みで進めるという経緯があり、相手側機関が複数〔インドネシア科学院（Indonesian Institute of Science：LIPI）及び林業省自然保護総局（Directorate General for Forest Protection and Nature Conservation：PHKA)〕あり、それぞれの活動内容が異なった（調査研究及び保護区管理)。そのためプロジェクト計画の策定時には1つのPDMに納めるのは困難であり、各サブプロジェクトごとに複数のPDMを設定した1つのプロジェクトとして計画された。しかしながら、各サブプロジェクトの活動分野や手法の違いが大きく、モニタリングや終了時評価の枠組みが複雑になり、1つの「プロジェクト」の枠組みでプロジェクト全体像を体系的に把握し運営・監理をすることは困難が伴った。また、複数のPDMを設定したため、PDMごとに実績の確認と5項目評価を行う作業が複雑かつ膨大となった。

相手側機関が複数ありそれぞれの活動内容が異なる協力案件は、各協力分野のニーズに柔軟に対応するためにも、複数の独立したプロジェクトとして整理するのが望ましい。PDMは可能な限り少数（若しくは1つ）で全体の枠組みを整理するか、あるいは共通の上位目標を有するプログラム協力としての枠組みを整理すべきである。

6－2　本プロジェクトの評価調査の実務から見た教訓

本評価作業を通じて調査団が得た、複数のPDMをもつ協力案件の実務に関係する一般的な教訓

を以下にまとめる。

1）本プロジェクトではPDM改訂（主に活動レベルにおける具体性を確保するため、活動及び指標をより明確化した）を、終了時評価の約6か月前（2002年4月4日）に行っており、関係者の間で具体的な到達目標に対する認識に差が生じた。プロジェクト終盤において具体的なPDM指標を再設定するのは、プロジェクト運営・監理上適切ではない。

PDMの指標はプロジェクトの計画段階で具体的に定めることが望ましいが、それが困難な場合は、開始後に現状を踏まえたうえで遅くともプロジェクト期間の中間時点で実現可能な指標を設定し、残りの期間の指標とするのが望ましい。

2）本プロジェクトは、フェーズ1協力の枠組みを引き継ぐ形で活動が実施されている。しかしPDMはフェーズ2にてサブプロジェクトごとに設定されており、PDM作成時点で全体の枠組み、各PDMの関係及び共通の目標とのPDM論理的な整合性について、十分に議論されたとは言い難かった。そのため、総括プロジェクト目標と各サブプロジェクト目標の間に因果関係を認めることは困難であり（各サブプロジェクト目標の達成によって総括プロジェクト目標が達成されるよう設定されていなかった）、終了時評価において共通目標を総括PDMeのプロジェクト目標に据えて5項目評価を行うことは困難であった。

複数のPDMを設定する場合は、プロジェクト計画時点で全体の枠組みや目標を明確にし、各々のサブプロジェクトのPDMを設定することが必要である。加えて、PDMのロジック及び指標の妥当性を確認するために、少なくともプロジェクトの中間段階で論理構成を含めたPDMのチェックをJICA内部で必ず行うべきである。

6－3　技術協力プロジェクトの実施における教訓

本評価作業を通じて調査団が得た、本件と同様の分野の協力案件に関係する一般的な教訓を以下にまとめる。

1）サブプロジェクトAの調査研究活動の成果を図るためには、今回使用された定量的な指標（論文や報告書の数等）のみでは適切に図ることが困難であった。そのため、論文や報告書の質を確認する定性的な指標の設定も望まれる。

今後の同様の分野においては、学会誌等の掲載実績（ただし、学会誌の掲載基準には差があるので、学会誌ごとに実績レートを設定するなどの対応が必要である）や、その論文の他の論文における引用実績等を、プロジェクトの指標として検討すべきである（ただし、そういった指標を使用するには高度な専門性が必要であり、かつ確認作業が繁雑になり得るため、指標採用の現実性を別に検討する必要があるであろう）。

2）情報管理やデータベース開発等は世界標準で行われており、インドネシアにおいても既に民間技術者が育っている。サブプロジェクトB及びCではそれらの技術者を現地コンサルタント

として雇用し成果をあげた実績がある。

今後の同様の分野においては、経費やアフターサービス等の継続発展性の確保のため、また現地のサポート体制を確立し技術的自立発展性を高める意味において、現地コンサルタントを積極的に有効活用すべきである。

3）本プロジェクトは無償資金協力によって供与された資機材を利用して活動が実施されたが、相手国実施機関の当該機材に対するニーズが低くなったなどの理由で一部の機材が有効に活用されなかった。

無償資金協力が前提となって行われる技術協力プロジェクトについては、計画段階からそれぞれのスキームの関連性をもたせるよう関係者間で協議し、長期的な視野の下でお互いのプロジェクトの有効性や効率性を高めるための機材が望まれる。例えば、無償資金協力で行われた資機材の活用を技術協力により図るのであれば、技術協力プロジェクトの計画上で移転する技術に必要なもののみを供与するよう、無償協力時に要請内容・協力内容の精査を行う必要がある。

付　属　資　料

1. 調査日程

2. 主要面談者

3. ミニッツ（Minutes of Meetings）

4. ミニッツ別添資料

Annex 1　PDMe（評価用 PDM）
Annex 2　Accomplishment Grid（達成度グリッド）
Annex 3　Evaluation Grid（評価グリッド）

1. 調査日程

年月日	曜日	調査団本体	コンサルタント団員（評価分析）	宿　泊
2002年10月 6日	日		出国（東京発→ジャカルタ着）	ジャカルタ
10月 7日	月		JICA事務所打合せ 移動（ジャカルタ→チビノン） 専門家との打合せ	ボゴール
10月8日～ 10月19日	火		現地調査	ボゴール
10月20日	日	出国（JAL725 東京発11：20→ジャカルタ着1635） 19：30　夕食・団内打合せ	資料整理	ジャカルタ、 ボゴール（土居）
10月21日	月	午前 9：00　JICA事務所打合せ（評価実施方針の確認） 10：15　日本国大使館表敬（評価実施方針の説明） 午後 12：30　KEHATI財団表敬 14：00　PKA表敬（評価方法の説明、調査方法の摺り合わせ） 15：30　LIPI本部表敬（評価方法の説明、調査方法の摺り合わせ） 移動（ジャカルタ→ボゴール） 18：00　団内打合せ		ボゴール
10月22日	火	午前：（ボゴールにて） 合同評価団内打合せ（評価方法の説明、調査方法の摺り合わせ） 専門家との打合せ（評価方法の説明：全専門家） 午後：成果プレゼンテーション（C／Pによるサブ A～Eの計画達成度、自己評価の発表） 専門家インタビュー（プロジェクト管理に関する評価：チーフアドバイザー、調整員）		ボゴール
10月23日	水	午前：（サブA、B、（E）に関する調査） LIPI表敬・視察（機材利用状況・施設利用状況の確認） 現地調査（専門家、C／Pインタビュー：実績の再確認） 午後：（サブC、（E）に関する調査） 移動（チビノン→ボゴール） LIPI-RDCB所長表敬 NCIC表敬・視察（機材利用状況・施設利用状況の確認） 現地調査（専門家、C／Pインタビュー：実績の再確認）		ボゴール
10月24日	木	午前：調整中：BAPPENAS表敬（評価方法の説明、調査日程の調整、調査先の確定） （サブD、（E）に関する調査） PKAボゴール事務所視察 移動（ボゴール→カバンドンガン） GHNP管理事務所表敬・視察（機材利用状況・施設利用状況の確認） 現地調査（専門家、C／Pインタビュー：実績の再確認） 移動（カバンドンガン→ボゴール）		ボゴール
10月25日	金	午前：合同評価団内打合せ 収集情報の整理、分析、プロセス評価、実績評価の整理（評価5項目除く） 午後：合同評価（実務者レベル）の開催 移動（ボゴール→ジャカルタ）		ジャカルタ
10月26日	土	団内打合せ・資料整理		ジャカルタ
10月27日	日	団内打合せ・資料整理		ジャカルタ
10月28日	月	午前：評価結果の合意（実務者レベル） 午後：合同評価レポートの作成		ジャカルタ
10月29日	火	午前：合同調整委員会（合同評価レポートの説明、プロジェクト終了までの懸案事項の検討、終了後にかかる意見交換） 午後：ミニッツ案の作成、文書に係る先方との調整		ジャカルタ
10月30日	水	午前：ミニッツ署名 午後：（協議予備） レセプション（調査団主催ランチ：ジャカルタプレジデントホテル）		ジャカルタ
10月31日	木	午前： 9：00　JICA事務所報告（調査結果報告、今後の対応に係る意見交換） 10：30　日本国大使館報告（調査結果報告、今後の対応に係る意見交換） 午後：移動（JAL726 ジャカルタ発22：30→）		機内泊
11月 1日	金	帰国（→東京着7：25）		

2. 主要面談者

(1) インドネシア側調査団メンバー

Dr. Arifin Rudiyanto／Leader (Senior Planner, Directorate of Science, Technology and Culture, BAPPENAS)

Mr. Amor Rio Sasongko／Park Management (Head of Sub-Directorate for Water Resource Conservation, Directorate for Forestry and Water Resource Conservation, BAPPENAS)

Ms. Sudhiani Pratiwi／Indonesian Biodiversity Strategy and Action Plan (IBSAP) (HeaD of Natural Resource Management Division, Directorate for Environmental and Natural Resource Management, BAPPENAS)

Dr. Rochadi A. Hadi／Research & Information System (Head of Planning and Finance Bureau, LIPI)

Mr. Suparman Rais／Park Management and Information Management (Head for Division of Evaluation Reporting and Finance Administration, PHKA, Ministry of Forestry)

Dr. Ani Mardiastuti (Biodiversity Conservation Faculty of Forestry, Head of the Department of Forest Resource Conservation, IPB)

(2) 国家開発計画庁 (BAPPENAS)

Ms. Leila Retna Komala (Deputy Chair for Human Resource and Culture)

Mr. Basuki Yusuf Iskandar (Director of Culture, Science and Technology)

Mr. Eddy Efendy Tedjakusuma (Director of Forestry and Water Resources)

Mr. Agus Prabowo (Director of Natural Resource Management and Environment)

Mr. Dedi Masykur (Deputy for Natural Resources and Environment)

(3) インドネシア科学院 (LIPI)

Mr. Suparka (Vice Chairman)

Mr. Endang Sukara (Deputy Chairman for Life Sciences)

Mr. Arie Budiman (Head of Research Center for Biology)

Mr. Siti Nuramaliati Prijono (Head of Zoology Division, RDCB)

Mr. Achmad Jauhar Arief (Project Manager of Biodiversity Conservation Project)

Ms. Dewi M. Prawiradilaga (Division of Zoology, RDCB)

Dr. Irawati (Head of Botany Division, RDCB)

(4) 生物多様性情報センター（BIC）

Roemantyo（BIC Cordinator, Botany Division-RDCB/LIPI）

Bambang Hartoko（Database Specialist, Facilites Division-RDCB/LIPI）

(5) 林業省自然保護総局（PHKA）

Mr. Imade Subadia Gelge（Director General, Forest Protection and Nature Conservation）

Mr. Kristanto（Secretary General, Forest Protection and Nature Conservation）

Mr. Widodo Sukohardi（Director of Area Conservation）

Mr. Hardjono（Division of Techinical Cooperation, Beareu of Foreign Affairs and Investment）

(6) グヌン・ハリムン国立公園（GHNP）

Mr. Sudarmaji（Head of GHNP）

Mr. Rozaq（Staff, GHNP）

Mr. Widada（Staff, GHNP）

Mr. Kuswandono（Staff, GHNP）

(7) 自然環境保全情報センター（NCIC）

Mr. Agoes Sriyanto（Head of Conservation areas Development Division）

Mr. Asep Hermawan（Section Chief of Planning Conservation Area）

Mr. Dadang Suganda（Section Chief of Nature Conservation Information）

(8) Kehati 財団

Mr. Ismid Hadad（Managing Director）

Dr. Anida Haryatmo（Program Director）

(9) プロジェクト専門家

森　康二郎	チーフアドバイザー
堰免　直樹	業務調整
阪口　法明	希少種保護
小沢　晴司	国立公園計画・管理
小林　　浩	環境教育
岡山　俊直	自然環境調査・研究

小野　　茂　　情報処理（GIS ネットワーク）

（10）在インドネシア日本国大使館

神長　健夫　　書記官

（11）国際協力事業団インドネシア事務所

神田　道夫　　所　長

高城　元生　　所　員

内藤　智之　　所　員

3. ミニッツ (Minutes of Meetings)

MINUTES OF THE JOINT EVALUATION
ON
THE JAPANESE TECHNICAL COOPERATION
FOR
THE BIODIVERSITY CONSERVATION PROJECT PHASE II
IN THE REPUBLIC OF INDONESIA

The Japanese Evaluation Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Hideki Miyakawa, visited the Republic of Indonesia from October 20th to October 31st, 2002, and together with the Indonesian Evaluation Team, headed by Dr. Arifin Rudiyanto, formulated the Joint Evaluation Team (hereinafter referred to as "the Team"), for the purpose of evaluating the achievement of the Japanese Technical Cooperation for the Biodiversity Conservation Project Phase II in the Republic of Indonesia (hereinafter referred to as "the Project").

As a result of a series of surveys and discussions, the Team agreed to forward to respective Governments a report of the evaluation, which is referred to in the document attached hereto.

Jakarta, October 30, 2002

Mr. Hideki Miyakawa
Leader of the Japanese Evaluation Team,
Managing Director,
Forestry and Natural Environment
Department, JICA

Dr. Arifin Rudiyanto
Leader of the Indonesian Evaluation Team,
Senior Planner,
Directorate of Science, Technology and
Culture, BAPPENAS

Ms. Leila R. Komala
Deputy for Human Resources and Culture,
BAPPENAS /
Chair of Joint Steering Committee of
Biodiversity Conservation Project Phase II

THE JOINT EVALUATION REPORT
ON THE JAPANESE TECHNICAL COOPERATION
FOR THE BIODIVERSITY CONSERVATION PROJECT PHASE II
IN THE REPUBLIC OF INDONESIA

Table of Contents

THE JOINT EVALUATION REPORT ON THE JAPANESE TECHNICAL COOPERATION FOR THE BIODIVERSITY CONSERVATION PROJECT PHASE II IN THE REPUBLIC OF INDONESIA

1. OUTLINE OF THE PROJECT

1-1 Background of the Project

Based upon the Record of Discussion (hereinafter referred to as "the R/D") signed on June 12, 1998, the Government of Japan and the Government of the Republic of Indonesia have been implementing the Technical Cooperation for the Biodiversity Conservation Project Phase II since July 1, 1998. The Project is scheduled to be implemented for five (5) years to be completed on June 30, 2003.

In response to the suggestions made by the Japanese Management Consultation Team in November 2000, Indonesian and Japanese authorities concerned had a series of meetings on the development of the Project Design Matrix (PDM). As a result, it was agreed to revise the Project design to adopt the situation, and the revised PDM was signed on April 4, 2002 between the National Development Planning Agency (BAPPENAS) and JICA Indonesia Office.

With the remaining Project period of approximately 7 months, JICA dispatched the Project Evaluation Team to the Republic of Indonesia. Indonesian side also formed an Evaluation Team. Both teams joined and formed a joint evaluation team to evaluate the project cooperatively.

1-2 Summary of the Project

The Narrative Summary of the PDM is as follows:

1-2-1 Overall

The Overall Goal

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

The Overall Project Purpose

Institutional capacity to conserve biodiversity in LIPI and PHKA is strengthened through mutual cooperation.

1-2-2 Sub-Project A

The Sub-Project Purpose

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

Outputs

(1) Information / scientific data of Indonesian biodiversity for conservation (in-situ & ex-situ) is increased.

(2) Research equipment is utilized well.

1-2-3 Sub-Project B

The Sub-Project Purpose

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

Outputs

(1) Improved systems to provide biodiversity data are available at BIC.

(2) BIC data is available on Internet.

(3) Complete data provided to BIC increases.

(4) The systems are maintained regularly and properly.

1-2-4 Sub-Project C

The Sub-Project Purpose

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

Outputs

(1) Technical levels of NCIC staff are improved.

(2) Database management systems for protected areas (PAs) become available and work properly.

(3) Volume of data stored and managed by NCIC database systems is increased.

(4) Awareness of NCIC Output is raised.

1-2-5 Sub-Project D

The Sub-Project Purpose

GHNP is managed properly based on the management plan.

Outputs

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

(2) Rehabilitation plans of specific endangered species are developed.
(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 raised.

1-2-6 Sub-Project E

The Sub-Project Purpose E

Results of Project activities are effectively disseminated.

Outputs

(1) Project reports are published.
(2) Project workshops are held.
(3) Project leaflets are prepared.
(4) Project newsletters are published regularly.

2. EVALUATION OF THE PROJECT

2-1 Objectives of Evaluation

(1) To review the degree of achievement of Input, Output, and the Project Purpose, in comparison with the Original Plan described in the Record of Discussions (R/D), Project Design Matrix (PDM) and Plan of Operation (PO).
(2) To evaluate the Project in terms of the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability).
(3) To make recommendations regarding the measures to be taken for improvement of the Project.

2-2 Members of the Joint Evaluation Team

2-2-1 The Japanese Evaluation Team

(1) Mr. Hideki Miyakawa / Leader
Managing Director, Forestry and Natural Environment Department, JICA
(2) Mr. Kazuhiro Yamase / Research & Information System
Executive Director, Japan Wildlife Research Center
(3) Mr. Kiichi Mimura / Protected Area Management
Deputy Director, Nature Conservation Bureau, Chubu Regional Office for Nature Conservation, Ministry of the Environment
(4) Ms. Chihiro Saito / Integrated Evaluation
Evaluation Officer, Office of Evaluation and Post Project Monitoring, Planning

and Evaluation Department, JICA

(5) Mr. Koji ASANO / Planning Analysis
Associate Expert, Forestry and Environment Division, Forestry and Natural Environment Department, JICA

(6) Dr. Masanori Doi / Evaluation Analysis
Consultant, INTEM Consulting, INC

2-2-2 The Indonesian Evaluation Team

(1) Dr. Arifin Rudiyanto / Leader
Senior Planner, Directorate of Science, Technology and Culture, BAPPENAS

(2) Mr. Amor Rio Sasongko / Park Management
Head of Sub-Directorate for Water Resource Conservation, Directorate for Forestry and Water Resource Conservation, BAPPENAS

(3) Ms. Sudhiani Pratiwi / Indonesian Biodiversity Strategy and Action Plan (IBSAP)
Head of Natural Resource Management Division, Directorate for Environmental and Natural Resource Management, BAPPENAS

(4) Dr. Rochadi A. Hadi / Research & Information System
Head of Planning and Finance Bureau, LIPI

(5) Mr. Suparman Rais / Park Management and Information Management
Head for Division of Evaluation Reporting and Finance Administration, PHKA, Ministry of Forestry

(6) Dr. Ani Mardiastuti / Biodiversity Conservation
Faculty of Forestry, IPB

2-3 Preparation of the Project Design Matrix for Evaluation

The Project has been carried out by an overall PDM, which is associated five Sub-Projects, namely Sub-Project A, B, C, D and E. Each Sub-Project has been carried out with different target organizations using respective Project Design Matrix (PDM). The respective target organizations are as follows:

(1) Overall PDM: RCB/LIPI, BIC/RCB/LIPI, NCIC/PHKA, GHNP/PHKA (integration of the five Sub-Projects)
(2) PDM-A: RCB/LIPI (research work)
(3) PDM-B: BIC/RCB/LIPI (development of database)
(4) PDM-C: NCIC/PHKA (development of database)

(5) PDM-D: GHNP/PHKA (park management)

(6) PDM-E: RCB/LIPI, BIC/RCB/LIPI, NCIC/PHKA, GHNP/PHKA (publication and dissemination)

In the evaluation study, analyses are to be made based on all the six PDM.

The objectively Verifiable Indicators of Overall Goal, Project Purpose and Outputs in the current PDM were vague and not suitable for evaluation. In order to conduct the logical evaluation precisely and efficiently, the Joint Evaluation Team formulated the PDM for evaluation (PDMe), revising the on-going PDM, which had been agreed upon on April 4, 2002 between BAPPENAS and JICA Indonesia Office. Series of PDMe are shown in ANNEX 1.

2-4 Methodology of Evaluation

2-4-1 Achievement of the Project

First of all, the achievements of Inputs (Japanese side and Indonesian side) were confirmed and evaluated. Then, the degree of the achievements of Outputs, Project Purpose, and Overall Goal was examined by using indicators shown in PDMe.

2-4-2 Implementing Process of the Project

From the aspect of project management, implementation process was assessed and evaluated.

2-4-3 Results of Evaluation

The Evaluation was conducted from the viewpoints of five evaluation criteria as shown below:

(1) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Republic of Indonesia as well as the needs of beneficiaries.

(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not of external factors).

(3) Efficiency

Efficiency refers to the productivity of the implementation process, examining if the input of the Project was efficiently convert into the Output.

(4) Impact

Impact refers to direct and indirect, positive and negative impacts caused by implementing the Project, including the extent to which the Overall Goal has been attained.

(5) Sustainability

Sustainability refers to the extent to which the recipient country can further develop the Project, and the benefits generated by the Project can be sustained under the recipient country's policies, technology, systems, and financial state.

3. ACHIEVEMENT OF THE PROJECT PLAN

3-1 Overall

3-1-1 Achievements of Inputs

Inputs from Japanese side have been made satisfactorily as planned initially, while it was difficult to find short-term experts for data system management. Inputs from Indonesian side have also been made fairly enough to implement the Project, while some contents of inputs have been supported by Japanese side due to the financial constraints faced by the Indonesian Government.

Details of all inputs and each evaluation for them are shown in Accomplishment Grid (ANNEX 2).

3-1-2 Achievements of Outputs (Sub-Project Purposes)

Overall, all Outputs (Sub-Project Purposes) have been achieved well, although there are a few activities remaining to be completed.

Details of the evaluation for each Output (Sub-Project Purposes) are shown in Accomplishment Grid (ANNEX 2).

3-1-3 Achievements of Project Purpose

Overall, institutional capacities to conserve biodiversity in LIPI and PHKA are strengthened through mutual cooperation. Researchers of RCB/LIPI utilize GHNP as an integrated study and research field, while achievements of the study and researches of RCB/LIPI researchers are used for the park management of GHNP. Although there remains some difficulties for some researchers of LIPI to utilize BIC/RCB/LIPI database. Databases of BIC/RCB/LIPI and NCIC/PHKA are mutually utilized among implementing agencies.

3-1-4 Achievements of Overall Goal

Achievement degree of BAPI is not measurable, since no timetable and no indicators were given. However, the Joint Evaluation Team concludes that the Project supported the BAPI. A lot of activities under the Project are coherent with the action plan specified in the BAPI.

3-1-5 Implementation Process of the Project

The management of the Project is considered to be quite satisfactory. Monitoring of the Project activities was made periodically. Although, PDM was reviewed and revised in response to the recommendations made by Mid-term Evaluation Team, it took time to authorize the revised PDM. In general, the Project has been implemented with full support from Indonesian Government, Japanese Government, and Supporting Committee in Japan, while there were some difficulties to meet all the members at the Joint Steering Committee. There is no significant problem for communication among the implementing agencies to undertake cooperation, and for internal communication within LIPI and PHKA to accomplish the Output of each Sub-Project.

3-2 Sub-Project A

3-2-1 Achievements of Inputs

Japanese input has been carried out almost completely as planned initially. Relatively large number of short-term experts was dispatched for Sub-Project A, by which training of a series of advanced research equipment became possible. Number and capability of C/Ps assigned are satisfactory for implementing the Project. The Indonesian budget for this Sub-Project has been increased year by year during the Project period. The scale of budget is adequate considering the economic situation of Indonesia, however in some activities, the amount is not enough.

3-2-2 Achievements of Outputs

Overall, planned Outputs have been accomplished satisfactory, although there are a few activities remaining to be completed.

1) The expected Outputs have been achieved almost as scheduled. Number of research papers has reached more than 40, and 40% of them were presented at international scientific meetings. Number of new species, which were described

on scientific journals was 6 at present. Furthermore, it is noted that many of new specimens collected are potentially new species. Various research activities that were carried out in this Project contributed directly to increasing scientific information regarding biodiversity conservation in Indonesia.

2) Technical trainings for advanced equipment were going on as scheduled. As a result, there is at least one research staff qualified for their utilization. The equipment such as DNA sequencer, scanning electron microscope, microtome, and blood analysis machine were used very well.

More details of evaluation for each Output are shown in Accomplishment Grid (ANNEX 2).

3-2-3 Achievement of Sub-Project Purpose

Sub-Project Purpose has been achieved well. Holding scientific meetings were finished as scheduled. Some publishing check lists and reports were delayed, but it will be completed until the end of BCP2. Knowledge of C/Ps about utilization of advanced equipment technique is increased.

3-2-4 Implementation Process of the Project

The activities are carried out nearly on schedule. Although publication of research results is a little delayed, expected Output will be published by the end of the Project. Good relation between the Japanese experts and Indonesian C/Ps is confirmed by questionnaires to them, except for one short-term because of lack of communication.

3-3 Sub-Project B

3-3-1 Achievement of Inputs

As for Input of Japanese side, recruit of short-term expert about Web training was difficult. Therefore Web training was conducted by recruiting the technical consultants in Indonesia. This modification was better decision in order to secure support system after training.

Inputs of Indonesian side are achieved well as scheduled, except for budget, although Indonesian side made efforts to increase the Project budget.

3-3-2 Achievement of Outputs

Overall, planned Outputs have been accomplished satisfactory, although there are a few activities remaining to be completed.

1) Database systems in BIC have been improved or newly developed, except for the flora specimen database management system which is difficult to achieve in this Project due to insufficient capacity of existing computers.
2) Flora and fauna type specimen data among internal specimen database of RCB are being publicized on website. Preparation of bibliography data for internet is on-going as scheduled.
3) Complete data provided to BIC is increasing. New specimen data are entered into the system continuously. Field survey data are collected through research activities in GHNP.
4) System availability of the BIC database has been kept over 80%. However, RCB should give more attention regarding database stability of Botany Division.

More details of evaluation for each Output are shown in Accomplishment Grid (ANNEX 2).

3-3-3 Achievement of Sub-Project Purpose

The three systems, namely specimen database, bibliography database and field survey database are now being operated within RCB by using LAN environment. Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system. However, it is noted that there remains some difficulties for researchers using BIC database, mainly due to insufficient capacity of their computers.

3-3-4 Implementation Process of the Project

The implementation of Sub-Project B is almost following the original schedule. Japanese experts and Indonesian C/Ps had a good relationship, although there was misunderstanding in some occasions.

3-4 Sub-Project C

3-4-1 Achievements of Inputs

Inputs from Japanese side have been made satisfactory as planned. Inputs from Indonesian side are considered as fare to implement the Project, while some contents of Inputs have been supported by Japanese side due to the financial constraints faced by the Indonesian government. The problem of Input from Indonesian side was especially in the allocation of C/Ps for technical activities especially during the first half of BCP2.

Details of all Inputs and each evaluation for them are shown in Accomplishment Grid (ANNEX 2).

3-4-2 Achievements of Outputs

Overall, planned Outputs have been accomplished satisfactory, although there are a few activities remaining to be completed.

1) Considering the fact that C/Ps can operate various software including GIS, Web page construction, relational database management (Oracle) and DTP, technical levels of NCIC staff were improved. Although non-spatial information database management system is still being improved, spatial information database was completed.
2) Basically, existing data collection and entry were considered to be achieved well. Volume of data is increasing for other parks and reserves, although it is difficult to collect all the necessary data, due to the unavailability for some technical subjects.
3) The NCIC website was constructed, and is working effectively to disseminate results of the activities.
4) The publication was issued almost as planned, which contributed to raise the awareness for NCIC activities.

More details of evaluation for each Output are shown in Accomplishment Grid (ANNEX 2).

3-4-3 Achievement of Sub-Project Purpose

Overall, Sub-Project Purpose was considered to be achieved by accomplishing various Outputs. Data management systems were constructed and data managed by NCIC increased. Further, technical capability of NCIC staff in computerized systems operation increased.

3-4-4 Implementation Process of the Project

In general, almost all the activities were undertaken as originally planned. The communication between expert and C/Ps were very good helping the smooth implementation of activities.

3-5 Sub-Project D

3-5-1 Achievements of Inputs

Inputs from Japanese side have been made satisfactorily as planned. Inputs from

Indonesian side have also been made fairly enough to implement the Project, while some contents of Inputs have been supported by Japanese side due to the financial constraints faced by the Indonesian Government. The problem of Input from Indonesian side was especially in the allocation of C/P budget for various activities implemented by the Project.

Details of all Inputs and each evaluation for them are shown in Accomplishment Grid (ANNEX 2).

3-5-2 Achievements of Outputs

Overall, planned Outputs have been accomplished satisfactory, although there are a few activities remaining to be completed.

1) Eco-tourism activities in GHNP have been improved largely. The success of the trial eco-tours have proved that GHNP has a high potential value as an eco-tourism site especially for those people living in and near Jakarta. To implement regular training, it needs enough budget and instructors for the training.
2) The comprehensive report on three endangered species (leopards, Javan gibbons and Javan hawk-eagles) is to be published by the end of the Project. Major part of the conservation plan is already available and the conservation plan is scheduled to be completed by March, 2003.
3) Utilization of the park for a variety of field research activities has been considerably enhanced through the Project activities.
4) Environmental education programs were implemented in 39 elementary schools in the surrounding area of GHNP, at the same time, environmental education training for school teachers and young people who are expected to take the leading role in developing environmental education activities in their own villages was carried out. With all these results, Outputs are considered to be achieved well.

More details of evaluation for each Output are shown in Accomplishment Grid (ANNEX 2).

3-5-3 Achievement of Sub-Project Purpose

Overall, the Project Purpose of this Sub-Project is evaluated to be achieved well. It could be concluded that GHNP is managed with good collaboration by local communities. Local people have become more aware of the conservation of natural resource through eco-tourism activities, environmental education programs and

monitoring of endangered species. This also contributes decreasing illegal mining and comparatively small number of illegal cutting/loggings. On the other hand, basic scientific data such as fauna and flora listed in annual park report increased largely with BCP2 research activities. This supports the management of scientific data.

3-5-4 Implementation Process of the Project

Almost all the activities were undertaken as originally planned. The communication between experts and C/Ps were very good.

3-6 Sub-Project E

3-6-1 Achievements of Inputs

The Inputs of Sub-Project E are duplicated with those of Sub-Projects A to D.
Most of the Inputs have been achieved well and on-going as scheduled.

3-6-2 Achievement of Outputs

Overall, planned Outputs have been accomplished satisfactory, although there are a few activities remaining to be completed.

1) The results of the Project activities are compiled periodically into a form of project report. During BCP2, a total of 6 volumes of project reports (Vol III VIII) have been prepared and additional two volumes are going to be published until the end of the Project.
2) BCP2 supported financially and technically a total of 8 major workshops, in which Project results are disseminated to the participants.
3) The Project leaflets are prepared first on March 1999 and revised on September 2001. The Output is evaluated to be achieved well.
4) Information tool was changed from newsletters, which were expected initially to website. The website of the Project was established on February 2000, and maintained well thereafter. The Output is evaluated to be achieved well.

More details of evaluation for each Output are shown in Accomplishment Grid (ANNEX 2).

3-6-3 Achievement of Sub-Project Purpose

The results of the Project activities are disseminated well among researchers undertaking biodiversity study, conservation officers, NGOs and general public not only in Indonesia but also overseas through various channels which are supported by

the Project.

3-6-4 Implementation Process of the Project

Implementation process is evaluated adequate since all the activities are carried out as expected with good relation between Japanese experts and Indonesian C/Ps.

4. RESULTS OF THE EVALUATION WITH FIVE CRITERIA

4-1 Overall

(1) Relevance

Overall-goal was appropriately aimed, since it is coherent with development and conservation policy of Indonesian Government. As both LIPI and PHKA prioritize biodiversity conservation higher, Overall Project Purpose and Sub-Project Purposes meet the demands of implementing agencies. Implementing agencies of the Project were also appropriately assigned, since LIPI has scientific authority and PHKA has legal mandate for the biodiversity conservation management.

(2) Effectiveness

Project Purpose was well achieved as the result of Sub-Projects. C/Ps improved their technical levels, and motivated to strengthen collaborative activities among implementing agencies. Throughout Sub-Projects, institutional capability to conserve biodiversity, and framework for mutual cooperation were developed. While there are a few activities remaining uncompleted, C/Ps showed full confident to achieve the Outputs and contribute to the Project Purpose by the end of the Project.

(3) Efficiency

Overall, Inputs made during Japan's Grant Aid Program and BCP1 contributed largely to the effective implementation of BCP2 activities. On the other hand, some facilities and equipment introduced under Japan's Grant Aid Program are not utilized well, because that some conditional assumptions might have been overlooked when the Program was designed. To realize more efficient mutual cooperation, the PDM of each Sub-Project should have clarified more specific activities, targeting collaboration among the implementing agencies.

(4) Impact

The Project has significant impact on the implementation of BAPI as well as the

integration of science and policy in Indonesia. It is also highly evaluated that the Project stimulated other institutions and NGOs, not only inside but also outside of Indonesia.

(5) Sustainability

It is common understanding that LIPI and PHKA prioritize biodiversity conservation higher, and the mutual collaboration between LIPI and PHKA is recognized as a key issue. Financially in general, the implementing agencies have low sustainability at the moment. However, implementing agencies have taken necessary measures to secure the budgets after termination of the Project. Technical capability of the C/Ps in each Sub-Project is improved enough to be able to conduct activities by themselves.

4-2 Sub-Project A

(1) Relevance

(To be described in overall evaluation)

(2) Effectiveness

Through the Sub-Project A, many researchers have been given opportunities to increase their knowledge, capacity, and ability to conduct research and publish the result. Scientific data and information useful for biodiversity conservation in Indonesia are increased largely. C/Ps have acquired sufficient knowledge on utilization of advanced equipment as well as improvement of research ability. In particular, in the field of DNA analysis, the Project has achieved conspicuous results. However, some equipment provided by Japan's Grant Aid are not used well mainly due to low demand for researchers at Zoology Division.

(3) Efficiency

Research efficiency is kept well by C/Ps including several Ph.D. holders and many MSc. Holders, and Japanese experts. On the other hand, a significant delay was seen in procurement of equipment from Japan. Maintenance of some analytical equipment is somewhat difficult because there is no official agent in Indonesia.

(4) Impact

Improvement of research ability of RCB contributes largely for achievement of the overall goal, and increase of information and scientific data on biodiversity in

Indonesia. RCB is now recognized as a core facility on research of this field. Some inter-regional (Southeast Asia) training courses on biodiversity conservation have been carried out during the Project period.

It is also highly evaluated that the Project, especially newly provided technique, stimulated many domestic institute and NGOs and, established a network for DNA analysis for endangered species in Indonesia.

(5) Sustainability

It is highly expected that the study and research on biodiversity will be continued as priority subject in RCB. RCB has been a stable organization in LIPI, and the research staff has been working continuously. However, number of young staff is limited as in other government research institutions because of zero growth policy for recruiting government officials of Indonesian Government.

4-3 Sub-Project B

(1) Relevance

(To be described in overall evaluation)

(2) Effectiveness

The database management system has been improved by this Project and now three systems, namely specimen database, bibliography database and field survey database are being operated within RCB by using LAN environment. C/Ps have acquired technical skills either from Japanese experts or recruited local consultants. They are now able to update and maintain database by themselves.

The utilization of database is not difficult according to the C/Ps, but many other researchers of RCB, expected to be users, commented that the system is not so easy to operate and searching data takes time, because of insufficiency of computer hardware. Biological specimen collection of RCB is valuable heritage in the world, and many biologists of the world are interested in database of specimen collection.

(3) Efficiency

Although the institutional status of BIC is not clearly defined in the organizational chart, the Project Outputs have been achieved efficiently. In general, necessary equipment was provided on time. Japanese short-term expert regarding website management was difficult to be assigned, but it was substituted by local

consultants, which was evaluated to be better decision considering the system maintenance thereafter. C/Ps who experienced training in Japan work continuously.

(4) Impact

The achievement of Sub-Project B is going to emerge a series of positive impacts. In order to establish information exchange network for metadata on biodiversity in Indonesia, ADB has started the National Biodiversity Information Network (NBIN) project since 2001. C/Ps of Sub-Project B are now playing key roles in the ADB's NBIN project, and BIC is expected to work as a hub of this project. In addition to this, international data linkages with GBIF (Global Biodiversity Information Facility) and GTI (Global Taxonomy Initiative) are expected.

(5) Sustainability

C/Ps are now able to operate and manage the database, meaning that the basic technical sustainability is secured. Financial source and budget are limited and unstable at present. This is partly due to unclear organizational status of BIC. However, through ADB's NBIN project, development budget become more secured in next five years. BIC is considered as unstable organization under Division of Means and Collection.

4-4 Sub-Project C

(1) Relevance

(To be described in overall evaluation)

(2) Effectiveness

The results indicate effectiveness of the Outputs contributing to the achievement of Sub-Project Purpose. The improvement of technical capability of C/Ps, increased useful data managed, and the increasing data demand of outside individuals and organizations, all contribute to improve the data management system of NCIC. Furthermore, institutional capacity of NCIC was enhanced by the Project.

(3) Efficiency

The Input for this Project is evaluated to be reasonable in terms of quantity and quality of the Output. However, lack of proper allocation of technical staff made difficulty to implement activities efficiently.

(4) Impact

Establishment of NCIC under BCP has significant impact on the implementation of BAPI. Now Indonesia has a node of contact for domestic and international individuals and organizations when they need information on biodiversity conservation areas in Indonesia.

(5) Sustainability

Although, the actual budget of NCIC is confirmed to be increasing, the total amount may not be sufficient to cover all the costs necessary for management of computer system. It is evaluated that financial and institutional sustainability need to be more enhanced. Organizational condition should be improved by various measures.

4-5 Sub-Project D

(1) Relevance

(To be described in overall evaluation)

(2) Effectiveness

The results indicate effectiveness of the Outputs contributing to the achievement of Sub-Project Purpose. In environmental education, the capacity to plan and implement programs has been raised. Eco-tourism in GHNP has been promoted, and will potentially contribute to the sustainable development of surrounding communities. In endangered species conservation, a lot of information has been collected from their research. The conservation plan for those species is expected to contribute to the park management in GHNP with making further technical and funding support available.

(3) Efficiency

Inputs of long and short term experts are mostly adequate and appropriate. However the late timing of displacement of long term expert for endangered species conservation made it difficult to conduct adequate researches. C/P trainings in Japan and Indonesia are adequate and appropriate helping C/Ps to obtain more special skills and motivation to the park management.

(4) Impact

The institutional capacity of GHNP has been enhanced through the activities such as, promotion of the utilization of Cikaniki Research Station by researchers, development of various activities for endangered species conservation, environment education and eco-tourism. Activities in eco-tourism and environmental education can be good examples for other national parks in Indonesia. Local awareness is increased, because of establishment of community-based security groups to patrol illegal actions.

(5) Sustainability

GHNP is institutionally stable as one of the core national parks in Indonesia. Even though organizational changes are enacted in National Parks, most of the rangers and some trained C/Ps are expected to be able to work continuously for GHNP. It is evaluated that financial sustainability need to be more enhanced. It is difficult to maintain present scale of activities with anticipated financial constraints.

4-6 Sub-Project E

(1) Relevance

(To be described in overall evaluation)

(2) Effectiveness

Sub-Project E produced effectively various information on the Project activities and distributed them. As the results, the Project has been widely known to Indonesian people and relevant international society. The Project Purpose is achieved as expected.

(3) Efficiency

Efficiency of Sub-Project E was secured by good relations of chief advisor, coordinator, experts and C/Ps. Especially the C/Ps who had been trained in Japan contributed to the promotion activities. Office equipment was used adequately for dissemination work

(4) Impact

The Outputs of this Sub-Project give significant impact from the aspect enhancing the awareness of Sub-Project A to D. Various universities and NGOs are now communicating to the Project and requesting Project publications. The Project

activities are often introduced by domestic mass media, and GHNP is recognized as a potential eco-tourism site.

(5) Sustainability

Project activities are disseminated through this integrated project program. Although the Project is scheduled to be terminated, each implementing organization is expected to continue similar dissemination activities using equipment provided and know-how obtained through the Project.

5. CONCLUSIONS AND RECOMMENDATIONS

5-1 Overall

(1) Conclusions

From the result of the evaluation, the Joint Evaluation Team concludes that the Project has been successfully implemented and will achieve the Project Purpose by the end of the Project period. It is confirmed that biodiversity conservation is prioritized higher in Indonesian national policy and program, and many positive impacts on biodiversity conservation are envisaged by the Project Outputs. Although the Project scope was quite large with 5 Sub-Projects, and each component was independently accomplished, the Project has increased the mutual cooperation between LIPI and PHKA, especially in the park management of GHNP based on scientific data and information of RCB. Many activities among Sub-Projects are collaboratively implemented, contributing to conservation of biodiversity in Indonesia. Overall, all Inputs contributed largely to the effective implementation of the Project activities. Some equipment and facilities procured under Japan's Grant Aid Program are not fully utilized. From the aspect of institutional sustainability, BIC and NCIC do not have official status in their organizational charts. There is sustainability of the Project, in terms of technological aspects, while there are some concerns in finance and human resource development. After the termination of the Project, the Government of Indonesia is expected to prepare sufficient budget to support activities concerning the Project.

(2) Recommendations

1) The technical capability of C/Ps is improved and they are able to conduct activities by themselves. However, it is necessary for those implementing agencies to recruit and train young researchers and staffs in order to assure future human resource development.
2) The mutual collaboration between LIPI and PHKA is now recognized as

important issue. Those agencies are expected to continue the activities for the collaboration. To develop further mutual collaboration, it is recommended that LIPI and PHKA should discuss the terms and conditions of the cooperation to mutually agree by the Minute of Understandings.

3) Research and survey activities are achieved well through the Project. However, research and survey activities, which contribute to local communities in terms of income generation and environmental aspects, need to be more developed.
4) The community-oriented environmental education and eco-tourism, which the Project has developed, has big potential to be a new model applied to other national parks. To establish a better model for community-oriented environmental education and eco-tourism, it is expected that JICA continue technical cooperation, focusing on GHNP and other national parks in collaboration with RCB.

5-2 Sub-Project A

(1) Conclusions

Scientific data and information useful for biodiversity conservation in Indonesia are increased largely by the activities of Sub-Project A at RCB. It is confirmed that RCB becomes playing more vital role on biodiversity conservation not only in Indonesia but also in the South East Asia, through the experience of this Project. Through out the Project, C/Ps have acquired sufficient knowledge on utilization of advanced equipment as well as improvement of research ability. Since the research on biodiversity will be continued as priority subject in RCB and basic operation cost has been allocated by Indonesian side, Project sustainability will be secured after the end of the Project, although the scale of research activity will be reduced.

(2) Recommendations

1) In order to improve research efficiency, following actions are recommended:
   - Improving animal breeding facilities at Cibinong including building to continue reproductive study, especially on mammals and birds
   - Facilitating computers not only for database but also for ordinary research activities
   - Encouraging the utilizations of procured equipment under Japans Grant Aid Program, which have few research demands at the Zoology Division, by the other laboratories such as Botany Division.
   - More careful considerations should be done before provision of advanced

scientific equipment.

2) Research on DNA analysis will be more important in future in order to specify the habitat of valuable species such as endangered ones. Since the basic technology was transferred, more applied researches as well as basic researches are recommended to carry out with high priority.
3) More research work shall be carried out about botany and micro-biology in order to obtain comprehensive knowledge on biodiversity.
4) It is recommendable to encourage young researchers through various alternative measures such as accepting under graduate or graduate students for training courses of RCB.

5-3 Sub-Project B

(1) Conclusions

Data management, collection, provision, system and utilization are improved and newly developed in RCB. Knowledge and experiences of the RCB human resources are also increased through carrying activities, attending training and getting transfer knowledge from the experts. The database system of BIC is now operated within RCB by using LAN environment. C/Ps of Sub-Project B are playing key roles in the NBIN project of ADB, and BIC is expected to work as a hub of that project. However, there were some difficulties or obstacles found such as capacity of computer, counter part budget, and availability of the short-term expert.

(2) Recommendations

1) To keep sustainability of current data management activity of BIC, RCB shall take action to realize institutional independency of BIC. When BIC is given such status, financial sustainability will also be enhanced because it can search external funding sources by itself in addition to routine budget.
2) To easily access the new data system developed by BIC and to improve the flora specimen database management system in BIC, the existing computers which carry Pentium 1 should be improved and replaced with those of Pentium 4. Appropriate counterpart budget needs to be prepared.
3) Regarding the above, RCB shall create improved future computer management and renewal system and propose it to the LIPI headquarters for approval.
4) To continue the Project activities, employment of new and young scientists is required. It needs political will and government support to make it realize.

5) To upgrade and manage the database systems, it is suggested to find/contract local experts.
6) To improve the data quality, collaborative work with other relevant institutions, particularly for NCIC/PHKA shall be continued.

5-4 Sub-Project C

(1) Conclusions

The establishment of NCIC under BCP has a significant contribution to the field of information and technology concerning the conservation of biodiversity in Indonesia. NCIC prioritized their target groups for information provision activities on the related organizations within Ministry of Forestry. This seems to have made a positive impact to the utilization of data by other sections within Ministry of Forestry. NCIC now has a big potential to be a major node of contact for domestic and international individuals and organizations when they need information on conservation in Indonesia. NCIC and the Division of Evaluation and Reporting, Secretariat DG PHKA have already launched to establish communication system (i.e., mailing list) within PHKA. Although, the actual budget of NCIC is confirmed to be increasing, under the current financial difficulty, the total amount may not be sufficient to cover all the costs necessary to sustain equipment. It is evaluated financially that NCIC can be sustained at reduced scale. Furthermore, lack of proper allocation of technical staff made difficulty to implement activities efficiently.

(2) Recommendations

1) Due to the expected financial and technical constraints after the termination of the Project, with taking into account of user needs, more prioritization of data collection and data renewal to resize the activities is necessary.
2) To obtain more attention from Ministry of Forestry, NCIC need to make more efforts to raise the significance of NCIC activities. For example, using website and publications, advertisement to other organizations such as conservation NGOs or research institutions might be effective.
3) To make sustainable information of biodiversity, NCIC should integrate net-working among natural conservation in local institutions, BIC, and other related agencies such as educational institutions, NGOs.
4) To increase quality and quantity of data and information, more supports from other sections within PHKA should be promoted.

5) To support the maintenance of the equipment, NCIC should request the HQ (Ministry of Forestry) to propose/increase routine budget.
6) Although this is totally depending upon the available budget, NCIC need to increase the ratio of outsourcing of technical activities. Under the current status of administrative staff, there is a major difficulty to develop personal and institutional skills within NCIC.
7) NCIC should propose to PHKA to create and allocate functional staff in the field of Information & Technology to NCIC so that the technical staff of NCIC can be more stable and be clear carriers to develop technical skills.

5-5 Sub-Project D

(1) Conclusions

Through the activities of the BCP2, GHNP has succeeded to be one of the most unique and effectively managed national parks (as one of the newest national parks established in 1992) in Indonesia. The activities in community-centered environmental education and eco-tourism are expected to step up to the next stage to further develop their skills to be a good example for similar activities conducted in other national parks in Indonesia. In particular, with its unique geographical strength (40,000 ha of remained tropical forest in Java island, less than 100 km south of the capital city of Jakarta), eco-tourism activities of GHNP is considered to have a significant role to be one of the best national parks in Indonesia in future. However, the budget allocation to GHNP was considered not to be sufficient to support various activities implemented in the park. The financial stability is the key factor to sustain the activities. On the other hand, the rangers and technicians need continuous On-the-Job Trainings and Visit Study to other national parks to increase their skills.

(2) Recommendations

1) To enhance the value of GHNP as a research field, Cikaniki Research Station should integrate net-working with other related institutions such as LIPI, universities, and research and development institutions of forestry and agricultural sectors.
2) As a model national park, GHNP can develop net-working among national parks in Indonesia, and can invite park rangers for trainings for park management, environmental education, eco-tourism and endangered species conservation.

3) To support the maintenance of the equipment, GHNP should request the HQ (Ministry of Forestry) to propose/increase routine budget.
4) The GHNP should make effort to establish a financially self-reliant system. There are many activities which can potentially generate income for GHNP, such as facilities for researchers and tourist services.
5) Considering the actual budget allocation in the past 4 years, after the termination of the Project, a serious financial constraint is anticipated. Considering the whole framework of the duty of GHNP office, GHNP should make prioritization of various activities to resize the activities to adapt the financial capability.
6) To enhance further development of eco-tourism activities in GHNP, a sustainable system which could take the role of coordination among those stakeholders such as park officers, NGOs, private companies and local people, should be established.

5-6 Sub-Project E

(1) Conclusions

The Sub-Project E is an integrated program about information services of the Project activities that are carried out parallel with the program of Sub-Project A to D. The Project activities have been disseminated well by distribution of periodical distribution of the Project reports, holding workshops, distribution of Project leaflets and establishment of website. As a result, public awareness concerning biodiversity conservation is certainly increasing.

(2) Recommendations

1) Although dissemination activities of BCP2 shall be finished at the end of the Project, it is recommended for each implementing organization to carry out continuous information service activities, using equipment provided and know-how obtained through the Project.

4．ミニッツ別添資料

Joint Evaluation Report for Biodiversity Conservation Project Phase II

List of ANNEXES

List of Abbreviations

ADB	Asian Development Bank
ARCBC	ASEAN Regional Center for Biodiveristy Conservation
BAPI	Biodiversity Action Plan for Indonesia
BAPPENAS	National Development Planning Agency
BCP	Biodiversity Conservation Project
BIC	Biology Information Center
BIF	Biodiversity Information Facility
C/P	Counterpart
CITES	Conservation on International Trade for Endangered Species
GBIF	Global Biodiversity Information Facilities
GEF	Global Environment Facilities
GHNP	Gnung Halimun National Park
GTI	Global Taxonomy Initiatives
IBF	Indonesia Biodiversity Foundation
IBSAP	Indonesian Biodiversity Strategy and Action Plan
JICA	Japan International Cooperation Agency
JSC	Joint Steering Committee
LAN	Local Area Network
LIPI	Indonesian Institute of Science
MZB	Bogor Zoological Museum
NBIN	National Biodiversity Information Network
NCIC	Nature Conservation Information Center
NPDB	National Parks Data Base
PDM	Project Design Matrix
PHKA	Directorate General for Forest Protection and Nature Conservation
PNP	Pangurango National Parks
PROPENAS	National Development Program
RCB	Research Center for Biology

ANNEX 1 PDMe

1-1 PDMe for Overall

Date of preparation: October 8, 2002

Target area: All the areas in Indonesia
Target group: 1) Researchers, technicians and staff of implementing agencies
2) Government officers, researchers, NGO and local people who are related to conservation of biodiversity

Implementing agency: RCB/LIPI, NCIC/PHKA and GHNP/PHKA
Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Project Purpose Institutional capacity to conserve biodiversity in LIPI and PHKA is strengthened through mutual cooperation:	[Mutual cooperation is strengthened] 1. GHNP is utilized by researchers of RCB/LIPI as an integrated study and research field. 2. Achievements of the study and researches of RCB/LIPI researchers are used for management of GHNP. 3. Database is mutually utilized among implementing agencies. [Organizational capacity is strengthened] 4. Implementing agencies are recognized as independent and sustainable organizations. 5. Technical level of counterparts is improved.	1.1 List of papers published by the Project. 1.2 Project reports 2.1 Interview to staff of GHNP 3.1 Web contents of BIC and NCIC 3.2 Interview survey 4.1 The organization charts of LIPI and PHKA 5.1 List of paper published and presentations that were conducted by counterparts. 5.2 Interview survey	Adequate budget will continue to be allocated to LIPI and PHKA.
Outputs (Subproject purposes) A. Contribution of research activities at RDCB/LIPI to biodiversity conservation is increased.	1. Latest check lists of Indonesian fauna and flora are published. 2. Reports on the research of specific endangered species (Javan hawk-eagle, leopard and Javan gibbon) are issued. 3. Number of advanced analytical technology useful for biodiversity conservation increases. 4. Number of research meetings held by RCB/LIPI is increased.	1. List of publications of the Project 2. Project reports 3. Analysis manuals 4. Report of RCB/LIPI	Adequate budget will continue to be allocated to RDCB, BIC, NCIC and GHNP.
B. Data management (i.e. collection, provision and utilization of data) is improved in BIC/LIPI.	1. Biodiversity information and their systems are prepared and volume of data stored and managed by BIC is increased. 2. Database system of BIC is used by many researchers of RCB/LIPI	1.1 Interview users. 1.2 Check data sheets. 1.3 Check database. 2.1 User survey	
C. Data management (i.e. collection, provision, and utilization of data) is improved at NCIC.	1. Management information systems for nature protection and conservation are prepared and volume of data stored and managed by NCIC is increased. 2. Data of NCIC are used by PHKA	1.1 User survey. 1.2 Printout of the contents of databases or lists of files stored in databases. 2.1 User survey	
D. GHNP is managed properly based on the management plan.	1. Artificial disturbance was mitigated. 2. Basic data for conservation of fauna and flora are cumulated 3. Local people cooperate or participate in park management	1. Management records of GHNP (illegal logging, illegal mining and poaching, etc.) 2. Management records of GHNP (check list of fauna and flora, record of monitoring endangered species) 3. List of participatory activities	
E. Results of project activities are effectively disseminated.	Information publicized	Number of publications/workshops related to project's activities	

Remark: Activities and Inputs are the same as those described in PDMe for Sub-Project A-E.

ANNEX 1 PDMe

1-2 PDMe for Sub-Project A

Date of preparation: October 8, 2002

Target area: GHNP and all the areas in Indonesia
Target group: Researchers of RCB/LIPI

Implementing agency: RCB/LIPI
Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Sub-project Purpose Contribution of research activities at RCB/LIPI to biodiversity conservation is increased.	1. Latest check lists of Indonesian fauna and flora are published. 2. Reports on the research of specific endangered species (Javan hawk-eagle, leopard and Javan gibbon) are issued. 3. Number of advanced analytical technology useful for biodiversity conservation increases. 4. Number of research meetings held by RCB/LIPI is increased.	1. List of publications of the Project 2. Project reports 3. Analysis manuals 4. Report of RCB/LIPI	Adequate budget will continue to be allocated to RCB.
Outputs 1. Information / scientific data of Indonesian biodiversity for conservation (in-situ & ex-situ) is increased. 2. Research equipment is utilized well.	1.1 At least 40 research reports are published. 1.2 Level of research reports is improved. 1.3 Number of specimen collected by RCB is increased. 1.4 Number of specimen of new species is increased. 2.1 Each equipment in laboratory has at least one research staff qualified for its utilization. 2.2 Utilization frequency of research equipment is increased. 2.3 Research equipment are maintained properly.	1.1 Project reports 1.2 List of presentation at international research meeting 1.3 Record of specimen collection 1.4 Report on new species 2.1 Record of training for equipment utilization 2.2 Interview to researchers 2.3 Same as the above	Research activities will be well coordinated.
Activities 1.1 Conduct researches on genetics and breeding of potential species. 1.2 Conduct researches on ecologically and economically important species in the laboratory. 1.3 Conduct researches on ecologically and economically important, and endangered species in the field. 1.4 Make inventory of important taxa. 1.5 Conduct monitoring of forest ecosystems. 1.6 Publish the results of research works in GHNP and checklists of flora and fauna. 1.7 Distribute publications to their potential users such as national park offices and NGOs. 1.1. Undertake training for advanced equipment. 1.2. Prepare a procurement plan for additional advanced equipment.	Inputs (Japanese side) 1. Chief advisor 2. Coordinator 3. Long-term expert: 1 (Natural environment research & survey) 4. Short-term expert: 3 fields a. Animal ecology/physiology/taxonomy b. Plant ecology/physiology/taxonomy c. Microorganism ecology/physiology/taxonomy 5. C/P training 6. Equipment (Indonesian side) 1. Research coordinator 2. C/P: 46 researchers 3. Administrative staff 4. Office space for experts 5. C/P budget		- Adequate budget to support research activities will be allocated. <u>Preconditions</u> - C/P & adm. staffs are appointed. - C/P budget for the project is in place. - Current government policies will continue.

ANNEX 1 PDMe

1-3 PDMe for Sub-Project B

Date of preparation: October 8, 2002

Target area: All the areas in Indonesia
Target group: Researchers and technician of RCB/LIPI

Implementing agency: BIC/RCB/LIPI
Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Sub-project Purpose Data management (i.e. collection, provision and utilization of data) is improved in BIC/LIPI.	1. Biodiversity information and their systems are prepared and volume of data stored and managed by BIC is increased. 2. Database system of BIC is used by many researchers of RCBLIPI	1.1 Interview users. 1.2 Check data sheets. 1.3 Check database. 2.1 User survey	- Adequate budget for validation, and publication of data will continue to be allocated. - Adequate budget for update of software/hardware and applications will continue to be allocated.
Outputs 1. Improved systems to provide biodiversity data are available at BIC. 2. BIC data is available on Internet. 3. Complete data provided to BIC increases. 4. The systems are maintained regularly and properly.	1.1 Three improved systems (specimen, bibliography and field survey) are provided 2.1. Specimen data of the prioritized taxonomic groups are available on Internet. 2.2. All bibliography data collected by RCB-LIPI library from 1990 to 2000 are available on Internet. 3.1 All field survey data by the RCB-LIPI researchers from GHNP from 1997 to 2002 are provided to BIC. 3.2 New data are installed in the database continuously. 4.1 The system availability is more than 80%. 4.2 Web contents are updated regularly.	1.1 Interview users 2.1 Check web site. 2.2 Same as the above. 3.1 Check data sheets. 3.2 Same as the above 4.1 System trouble records. 4.2 Check the web content	- Trained staff will continue to work at BIC. - Sufficient budget for maintenance and acquiring new hardware will be allocated to BIC.
Activities 1.1. Improve the design of the prototype systems (i.e. bibliography, field survey and specimen). 1.2. Prepare and test programs based on improved design. 1.3. Prepare and undertake technical training courses in database/GIS. 2.1. Conduct studies to establish BIC web sites. 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 seminar on data format standardization. 3.3. Make promotion for data collection. 2.3. Undertake regular in-house training on software. 2.4. Prepare a manual for system maintenance.	**Inputs** (Japanese side) 1. Chief advisor 2. Coordinator 3. Long-term expert: 1 (Information Processing and Network) 4. Short-term expert: 1 (Information Processing and Network) 5. C/P training: GIS & Environmental information 6. Equipment: software, hardware etc. (Indonesian side) 1. BIC coordinator 2. C/P: 6 persons 3. Operators for data entry 4. Administrative staff 5. Office space for expert 6. C/P budget		Sufficient budget to maintain internet service will continue to be allocated. **Preconditions** - C/P & adm. staffs are appointed. - C/P budget for the project is in place. - Current government policies will continue.

1-4 PDMe for Sub-Project C

Date of preparation: October 8, 2002

Target area: All the areas in Indonesia
Target group: Staff of NCIC

Implementing agency: NCIC/PHKA
Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Sub-project Purpose Data management (i.e. collection, provision, and utilization of data) is improved at NCIC.	1. Management information systems for nature protection and conservation are prepared and volume of data stored and managed by NCIC is increased. 2. Data of NCIC are used by PHKA.	1.1 User survey. 1.2 Printout of the contents of databases or lists of files stored in databases. 2.1 User survey	Adequate budget will continue to be allocated to NCIC.
Outputs 1. Technical levels of NCIC staff are improved. 2. Database management systems for Protected Areas (PAs) become available and work properly 3. Volume of data stored and managed by NCIC database systems is increased. 4. Awareness on NCIC outputs is raised.	1. NCIC staff receive proper training in their individual field of responsibility which is as follows: - System maintenance - Database management - Remote sensing software operations 2. Database management systems for the PAs are developed. 3. Data are collected and entered into NCIC database for following PAs: - 10 nature reserves - 10 wildlife reserves - 40 national parks - 20 nature recreation forests - 5 grand forest parks - 5 hunting parks - 5 protection forests 4.1. The following publication is issued annually: - 2 news letters - 5 posters - 2 leaflets - 2 booklets 4.2. NCIC website is constructed.	1. Record of training 2. User survey 3. Check database 4.1 Check publications 4.2 Check website	- Trained staff will continue to work at NCIC. - Adequate budget will continue to be allocated to NCIC.
Activities 1.1 Undertake training of advanced GIS. 1.2 Undertake training of database management. 1.3 Undertake training of remote sensing. 1.4 Undertake training of publicity. 1.5 Undertake training of public relations 1.6 Undertake training of hardware and software maintenance. 2.1. Develop basic and detailed design. 2.2. Prepare programs. 2.3. Test programs for model areas. 2.4. Improve and modify application programs. 2.5. Install systems to computers at NCIC. 3.1. Establish guideline for data collection. 3.2. Collect existing materials from PAs. 3.3. Collected data are entered. 3.4. Undertake pilot study of conservation data collection in GHNP. 3.5. Establish rules for data exchange and sharing. 3.6. Establish an internet home page for data entry. 4.1. Publish NCIC newsletters regularly. 4.2. Publish leaflets/booklets about NCIC. 4.3. Publish posters, leaflets, and booklets about nature protection and conservation management. 4.4. Establish rules and method to distribute and use NCIC outputs for decision-makers and public. 4.5. Construct NCIC website.	**Input** (Japanese side) 1. Chief advisor 2. Coordinator 3. Long-term expert: 1 (Information system B) 4. Short-term experts: 5. C/P training: GIS & Environmental information 6. Equipment: server (s) , software(s), etc (Indonesian side) 1. Head of NCIC 2. C/P: 7 staff 3. Administrative staff 4. Office space for experts 5. 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 INTAG, BAKO, SURTANAL, LAPAN will be good. **Preconditions** - C/P & adm. staffs are appointed. - C/P budget for the project is in place. - Current government policies will continue.

ANNEX 1 PDMe

1-5 PDMe for Sub-Project D

Date of preparation: October 8, 2002

Target area: GHNP and the vicinity
Target group: Staff of GHNP and local people

Implementing agency: GHNP/PHKA
Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Project Purpose GHNP is managed properly based on the management plan.	1. Artificial disturbance was mitigated. 2. Basic data for conservation of fauna and flora are cumulated 3. Local people cooperate or participate in park management.	1. Management records of GHNP (illegal logging, illegal mining and poaching, etc.) 2. Management records of GHNP (check list of fauna and flora, record of monitoring endangered species) 3. List of participatory activities	Adequate budget will be allocated to GHNP.
Outputs 1. Eco-tourism activities of PHKA are improved. 2. Rehabilitation plans of specific endangered species are developed. 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 raised.	1.1. An action plan for eco-tourism is developed. Trial eco-tourism tour implemented at least twice. 1.2. Seven (7) eco-tourism materials are developed. 1.3. Training courses for a staff of GHNP and local people are prepared and implemented. 2.1. Rehabilitation plans for Javan hawk eagle, leopard and Javan gibbon are developed. 2.2. Reports on the research of specific endangered species are issued. 3. A variety of research activities are conducted in GHNP. 4.1. Surveys on utilization of natural resources in local communities are conducted. 4.2. An action plan and programs of environmental education are developed and implemented to local communities. 4.3. Degree of concern for biodiversity conservation by local communities in and around GHNP is raised after the implementation.	1.1 The action plan, number of trials 1.2 Number of materials above 1.3 Training records for eco-tourism guides 2.1. Rehabilitation plan. 2.2. Project reports 3. Visitor book and official records. 4.1. Reports on surveys. 4.2. Action plan, programs and materials for environmental education. Reports on implementations of programs. 4.3. Reports on questionnaire survey on the local people.	- Sufficient number of staff will be available. - Trained staff will continue to work at GHNP.
Activities 1.1. Develop an action plan for eco-tourism. 1.2. Prepare materials for eco-tourism. 1.3. Prepare GHNP staff and local people a training course for guide. 2.1. Conduct activities to prepare rehabilitation plans. 2.2. Conduct joint studies and researches with researchers from LIPI and other groups on rehabilitation of specific endangered species. 3.1. Develop a user guideline for the research station and a canopy trail 3.2. Manage the research station and a canopy trail. 3.3. Conduct PR activities for the research station and a canopy trail. 4.1. Conduct surveys on local communities, utilization of natural resources and potential resources for sustainable utilization. 4.2. Prepare an action plan, programs and materials for environmental education (including developing materials for alternative ways of living for local people). 4.3. Implement environmental education programs for school children and local communities around GHNP.	**Inputs** (Japanese side) 1. Chief advisor 2. Coordinator 3. Long-term expert: 3 (National Park Management endangered species conservation, and Environmental education) 4. Short-term experts 5. C/P training: National park management, wildlife conservation & environmental education 6. Equipment (Indonesian side) 1. Head of GHNP HQ 2. C/P: 8 a) National park management: 2 b) Wildlife conservation: 2 c) Environmental education: 2 d) Information: 2 3. Administrative staff (GHNP) 4. Office space for expert 5. C/P budget		**Preconditions** - C/P & adm. staff is appointed. - C/P budget for the project is in place. - Current government policies will continue.

1-6 PDMe for Sub-Project E

Date of preparation: October 8, 2002

Target area: All the areas in Indonesia

Implementing agencies: RDCB and BIC of LIPI and NCIC and GHNP of PHKA

Target group: Government officers, researchers, NGO and local people who are related to conservation of biodiversity

Implementation period: July 1, 1998 to June 30, 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	
Project Purpose Results of project activities are effectively disseminated.	Information publicized	Number of publications/workshops related to project's activities	
Outputs 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 report published. 2. Number of workshops held. 3. Number of leaflets published. 4. Number of newsletters published.	1. Project reports published. 2. Records of workshops 3. Leaflets printed 4. Newsletters published	
Activities 1. Prepare and Publish project reports. 2. Hold workshops including BCP annual workshop. 3. Publish leaflets. 4. Publish newsletters regularly.	**Inputs** (Japanese side) 1. Chief advisor 2. Coordinator 3. Long-term expert: 6 4. Short-term experts: (Indonesian side) 1. All C/Ps		**Preconditions** - C/P & adm. staff are appointed. - C/P budget for the project is in place. - Current government policies will continue.

2-1 Accomplishment Grid for Overall

1) Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Narrative summary	Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Overall Goal					
The achievement of the objectives of the National Strategy of Biodiversity Management & Biodiversity Action Plan for Indonesia (BAPI) is supported.	Degree of achievement of the Biodiversity Action Plan	Interview survey	It is difficult to measure to how much extent BAPI has been achieved, because no timetable and no indicator was given in BAPI. (No evaluation was made by IBSAP project.)	Although achievement degree of BAPI is not measurable, it is certain that BCP supported the BAPI, with a lot of activities which are coherent with the action plan specified in the BAPI (Chapter 4).	B
Final evaluation	Achievement degree of BAPI is not measurable, since no timetable and no indicators were given. However, the Joint Evaluation Team concludes that the Project supported the BAPI, with a lot of activities, which are coherent with the action plan specified in the BAPI.				
Project Purpose					
Institutional capacity to conserve biodiversity in LIPI and PHKA is strengthened through mutual cooperation:	[Mutual cooperation is strengthened] 1. GHNP is utilized by researchers of RCB/LIPI as an integrated study and research field.	1.1 List of papers published by the Project. 1.2 Project reports	In GHNP, taxonomical, ecological and ethno-botanical researches on mammals, birds, amphibians reptiles, fishes and plants were conducted by more than 20 LIPI-RCB researchers. The results of their works, 37 reports and 4 papers, were published on the Project report and scientific journal (Berita Biology).	Already achieved. Number of publication will be increased by the end of the Project.	A
	2. Achievements of the study and researches of RCB/LIPI researchers are used for management of GHNP.	2.1 Interview to staff of GHNP	The outputs of research activities were utilized for ・Compiling the list of fauna and flora in GHNP ・Environmental education training of park rangers, school teachers and locals (compiling teaching materials, inviting researchers as lectures) ・Compiling a guide book for GHNP, and eco-tourism guide books for specific areas. ・Conducting monitoring of endangered species. ・Promoting sustainable use of natural resources in local communities with the publication of "Medicinal Plants in GHNP".	Mostly achieved.	B
	3. Database is mutually utilized among implementing agencies.	3.1 Web contents of BIC and NCIC 3.2 Interview survey	・Type specimen data of fauna and flora and bibliography in LIPI-RCB are available in LIPI-RCB web site. Data on PHKA's varioous protected areas are also available on NCIC web site. This make LIPI-RCB and NCIC able to partially utilize their data each other. ・The GIS data on protected areas developed by NCIC are partially utilized by BIC to show the distribution of species from specimen and field survey data. ・The field survey application developed by BIC was distributed to all conservation area offices and is expected to be utilized as an effective tool to collect data on fauna and flora in conservation parks. The data stored in each conservation areas are expected to be sent back to BIC. ・GHNP added the activities of data information and trained staffs at NCIC in order to streghen the mutural The activities are under developing.	Not fully completed and not fully utilized.	B

		[Organizational capacity is strengthened] 4. Implementing agencies are recognized as independent and sustainable organizations.	4.1 The organization charts of LIPI and PHKA	・The organizational status of LIPI-RCB is quite stable. ・BIC is the one facilities of sub division. However, current situation of BIC seems to be inconvenient for expected vital database management activities. ・NCIC's is positioned as an information section of the conservation area development division under the directorate of area conservation, PHKA. ・Head quater of GHNP is recognized as "BALAI" office in hierarchy of PHKA and is quite stable.	RCB, BIC, NCIC and GHNP are already stable organization.	B
		5. Technical level of counterparts is improved.	5.1 List of paper published and presentations that were conducted by counterparts. 5.2 Interview survey	・The capacity of researchers in RCB-LIPI has improved with increased number of publications (including 24 papers published on a scientific journal (Berta Biologi) and 8 oral presentations at international reserch workshops) and advanced techniques such as DNA technology. ・The technical staff in BIC-RCB-LIP and NCIC-PHKA has raised their capability to such an extent that BIC-RCB staff can develop and manage database systems basically by themselves and NCIC staff are able to maintain and utilize their systems by using consultants (especially for management of Oracle database systems*). ・The staff of GHNP-PHKA has improved their techniques and know-how for planning and implementation of environmental education programs, eco-tourism activities and endangered species monitoring. Now, they have enough ability to prepare and implement these activities by themselves. GHNP is now recognized as a moderl of national park in Indonesia.	The targets are already achieved. More improvement are expected by the end of the project.	A
	Final evaluation	Overall, institutional capacities to conserve biodiversity in LIPI and PHKA are strengthened through mutual cooperation. Researchers of RCB/LIPI utilize GHNP as an integrated study and research field, while achievements of the study and researches of RCB/LIPI researchers are used for the park management of GHNP. Although there remains some difficulties for some researchers of LIPI to utilize BIC/RCB/LIPI database. Databases of BIC/RCB/LIPI and NCIC/PHKA are mutually utilized among implementing agencies.				
Outputs (= Sub-project purposes for each sub-components)						
	Contribution of research activities at RCB/LIPI to biodiversity conservation is increased.	1. Latest check list of Indonesian fauna and flora are published.	1. List of publications of the project	Check lists of mammals, amphibians, and reptiles for entire Indonesia, and check lists of mammals of GHNP, type specimen of insects in MZB were published.	Delayed, but it will be completed until the project will finish.	B
		2. Research reports on specific endangered species (Javan hawk-eagle, leopard and Javan gibbon) are published.	2. Research reports	Two reports for leopard, 2 reports for Javan hawk-eagle and 1 reports for Javan gibbon were published. Some further reports will be published until the end of the project.	Achieved well. Those are the basis for conservation plan of the endangered species.	A
		3. Number of advanced analysis technique useful for biodiversity conservations increased.	3. Manuals for analysis	CPs acquired techniques to operate 8 advanced equipment. Especially, DNA analysis technique is established in RCB/LIPI.	On-going as scheduled	B
		4. Number of scientific meetings held by RCB/LIPI is increased.	4. Reports of RCB/LIPI	Seven scientific meetings were held by the project, annual meetings of 1999, 2000, 2001 and 2002, and DNA analysis seminar of 2000, 2001 and 2002.	Achieved as scheduled	B
	Final evaluation	Sub-project purpose has been achieved well. Holding scientific meetings were finished as scheduled. Some publishing check lists and reports were delayed, but it will be completed until BCP will finish. Knowledge of CP about utilization of advanced equipment technique are increased.				
	Data management (i.e. collection, provision and utilization of data) is improved in BIC/RCB/LIPI.	1.1Biodiversity information and their systems are prepared and volume of data stored and managed by BIC is increased.	1.1 Interview users. 1.2 Check data sheets. 1.3 Check database.	The three systems are now being operated within RCB/LIPI by using LAN environment. Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system.	Achieved well.	B

	1.2 BIC data is used by many RCB/LIPI researchers.	2.1 User survey	Specimen database systems are connected to each research units by LAN. However RCB/LIPI researchers don't utilize database very much, because there are problems such as the application doesn't run with old computer.	The old computers should be replaced, otherwise it is difficult to achieve the purpose.	C
Final evaluation	The three systems, namely specimen database, bibliography database and field survey database are now being operated within RCB/LIPI by using LAN environment. Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system. However, it is noted that there remains some difficulty for researchers using BIC data base, mainly due to insufficient capacity of their computer.				
Data management (I.e. collection, provision and utilization of data) is improved at NCIC.	1. Management information systems for nature protection and conservation are prepared and volume of data stored and managed by NCIC is increased.	1.1 User survey 1.2 Printout of the contents of databases or lists of files stored in database.	Spatial information database management system was constructed by this Project. This database is the first one which can provide comprehensive data on conservation areas in whole Indonesia. The Sub-project C is now improving the non-spatial information database management system, which will be completed around November 2002.	Achieved. As the result of user survey and also actually seeing the operation of the systems it was judged that the data management systems had been constructed and data volume in them are increasing.	B
	2. NCIC data is used by PHKA.	2.1 User survey	NCIC is now fully using spatial information stored in its database. Now NCIC can provide data for PHKA, especially for Directorate of Area Conservation, efficiently and in timely manner because of the systems and accumulating data.	Achieved. User survey results indicate that NCIC data is being used by PHKA.	B
Final evaluation	Overall, Sub Project purpose was considered to be achieved because data management systems were constructed and data managed by NCIC increased. Further, technical capability of NCIC staff in computerized systems operation increased.				
GHNP is managed properly based on the management plan.	1. Artificial disturbance was mitigated.	1. Management records of GHNP (illegal logging, illegal mining and poaching, etc.)	Number of persons engaged in illegal gold mining decreased from 4,470 in 1997 to 862 in 2001. Number of reported cases of illegal logging varied from 1 to 8 with volume varied from 1,226 to 23,773 m3 during the period from 1998 to 2002.	Achieved partly. Continuous law enforcement measures are required.	B
	2. Basic data for conservation of fauna and flora are cumulated.	2. Management records of GHNP (check list of fauna and flora, record of monitoring endangered species)	The study on fauna and flora was initiated by this project. By 2001, 71 species of mammals, 203 birds, 32 reptile were confirmed as fauna of GHNP, and 73 species of low-plant and 469 higher-plant were enlisted as flora. Larger number of recorded species is expected by the end of the project.	Achieved as scheduled	B
	3. Local people cooperate or participate in park management	3. List of participatory activities	Local people has participated in many park management activities through providing local guides for eco-tour, maintaining and managing guest houses for eco-tourist, and monitoring endangered species. They also cooperated with National Park officers in implementing environment education programs at elementary schools around the national park.	Achieved as scheduled	A
Final evaluation	Overall, the project purpose of this sub-project is evaluated to be achieved well. It could be concluded that GHNP is managed with good collaboration by local communities. Local people have become more aware of the conservation of natural resource thorough ecotourism activities, environment education programs and monitoring of endangered species. This is also contributing decreasing illegal mining and comparatively small number of illegal cutting/loggings. On the other hand, basic scientific data such as fauna and flora listed in annual park report increased largely with BCP research activities.				
Results of project activities are effectively disseminated.	Information publicized	Number of publications/workshops related to project's activities	During the BCPII, publicized information has been increased by various tools, such as distribution of project reports and leaflets, holding workshops and seminars, and establishment of the project home-page.	Achieved well.	B

Final evaluation	The results of project activites are disseminated well among researchers undertaking biodiversity study, conservation officers, NGOs and general public not only in Indonesia but also overseas through various channels which are supported by this project.	
2) Inputs		
[Japanese Side]		
1. Chief advisor	Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630	Achieved as scheduled.
2. Coordinator	Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630	Achieved as scheduled.
3. Long-term expert	RCB/LIPI Mr.Toshinao Okayama 990722-030630 BIC/LIPI Mr.Masao Sakuma (970701)980701-990630, Ms.Yukiyo Yamada 990722-011120 NCIC/PHKA Mr.Tsutomu Suzuki (970701)980701-000630, Mr.Shigeru Ono 000821-030630 GHNP/PHKA Mr.Hiroshi Horiuchi (970701)980701-990630, Mr.Keiji Nakashima 990722-010721, Mr.Seiji Ozawa 010628-030630, Mr.Kazuhiro Harada (970701)980701-001130, Mr.Hiroshi Kobayashi 001201-030630, Mr.Noriaki Sakaguchi 010628-030630	Achieved as scheduled.
4. Short-term experts:	Dispatched 37 total number of short term experts. (For detail, please refer to input of each sub project)	Achieved as scheduled.
5. Counterpart training in Japan	Received a total 29 counterpart training in Japan (For detail, please refer to input of each sub project)	Achieved as scheduled.
6. Equipment	The amount of equipment provided is as follows (exchange rate: 1Rupia = 0.015 Yen): FY 1998/99: 45.0 million Yen or 3000 million Rupia FY 1999/00: 50.0 million Yen or 3333 million Rupia FY 2000/01: 35.0 million Yen or 2333 million Rupia FY 2001/02: 30.0 million Yen or 2000 million Rupia FY 2002/03: 20.0 million Yen or 1500 million Rupia (as of October 2003) Total of 5 years: 180 million Yen or 11,167 million Rupia	Achieved as scheduled.
7. Project cost including assistance to local operation cost	Following local cost is provided by Japanese side. FY 1998/99: 20.9 million Yen or 1393 million Rupia FY 1999/00: 17.2 million Yen or 1145 million Rupia FY 2000/01: 17.2 million Yen or 1144 million Rupia FY 2001/02: 21.7 million Yen or 1449 million Rupia FY 2002/03: 27.7 million Yen or 1846 million Rupia (as of October 2003) Total of 5 years: 105 million Yen or 6,977 million Rupia	Achieved well. The amount is larger than planned in order to compensate deficit of local cost.
[Indonesian Side]		
1. Counterparts	Appointed the number of counterparts as below. RCB/LIPI 34 Persons BIC/LIPI 7 Persons NCIC/PHKA 4 Persons GHNP/PHKA 10 Persons	Achieved as scheduled.
2. Amount of local cost	Amount of local cost (APBN: National Development Budget) is as follows:. FY 1999: 552 million Rupia (RCB 222, NCIC unknown, GHNP 330) FY 2000: 327 million Rupia (RCB 194, NCIC unknown, GHNP 133) FY 2001: 568 million Rupia (RCB 398, NCIC unknown, GHNP 170) FY 2002: 1172 million Rupia (RCB 596, NCIC 397, GHNP 179)	It is noted that the amount of local cost was often insufficient for adequate implementation of the project.
Final evaluation	Inputs from Japanese side have been made satisfactorily as planned initially, while it was difficult to find short-term experts for data system management. Inputs from Indonesian side have also been made fairly enough to implement the Project, while some contents of inputs have been supported by Japanese side due to the financial constraints faced by the Indonesian government. Details of all inputs and each evaluation for them are shown in Accomplishment Gri	

2-2 Accomplishment Grid for Sub-Project A

1) Sub-Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Narrative summary	Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Sub-Project purpose					
Contribution of research activities at RCB/LIPI to biodiversity conservation is increased.	1. Latest check list of Indonesian fauna and flora are published.	1. List of publications of the project	Check lists of mammals, amphibians, and reptiles for entire Indonesia, and check lists of mammals of GHNP, type specimen of insects in MZB were published.	Delayed, but it will be completed until the project will finish.	B
	2. Research reports on specific endangered species (Javan hawk-eagle, leopard and Javan gibbon) are published.	2. Research reports	Two reports for leopard, 2 reports for Javan hawk-eagle and 1 reports for Javan gibbon were published. Some further reports will be published until the end of the project.	Achieved well. Those are the basis for conservation plan of the endangered species.	A
	3. Number of advanced analysis technique useful for biodiversity conservations increased.	3. Manuals for analysis	CPs acquired techniques to operate 8 advanced equipment. Especially, DNA analysis technique is established in RCB/LIPI.	On-going as scheduled	B
	4. Number of scientific meetings held by RCB/LIPI is increased.	4. Reports of RCB/LIPI	Seven scientific meetings were held by the project, annual meetings of 1999, 2000, 2001 and 2002, and DNA analysis seminar of 2000, 2001 and 2002.	Achieved as scheduled	B
Final evaluation	Sub-Project purpose has been achieved well. Holding scientific meetings were finished as scheduled. Some publishing check lists and reports were delayed, but it will be completed until BCP will finish. Knowledge of CP about utilization of advanced equipment technique are increased.				
Outputs					
1. Information / scientific data of Indonesian biodiversity for conservation (in-situ & ex-situ) is increased.	1-1 More than 40 reports are published.	1-1 Project reports	Forty - five research reports were published.	Almost completed.	A
	1-2 Improve the research level on biodiversity conservation in RCB/LIPI.	1-2 List of publications at international scientific meetings	Sixteen papers were published at international scientific meetings.	Achieved well.	B
	1-3 Increase the number of specimens in RCB/LIPI.	1-3 Records of collected specimen	More than 100,000 insect specimens were collected for recent and further ecological study. More than 5,000 animal specimens were collected for taxonomical purposes. More than 100 potential microorganisms were isolated. More than 2,000 animal specimens were collected for DNA analysis. More than 2,000 plant specimens were collected.	Achieved well.	A
	1-4 Increase the number of specimens of new species.	1-4 Description papers	At least 6 species were described as new animal species and more than 40 animal and more than 20 plant species are suspected to be new species. They are still under description.	Achieved well.	A
Final evaluation	The expected outputs have been achieved almost as scheduled. Number of research papers has reached more than 40, and 40% of them were presented at international scientific meeting. Number of new species which were described on scientific journals was 6 at present. Furthermore, It is noted that many of new specimens collected are potentially new species. Various research activities that were carried out in this project contributed directly to increasing scientific information regarding biodiversity conservation in Indonesia.				
2. Research equipment is utilized well.	2-1 Each equipment in laboratories has at least one research staff qualified for its utilization.	2-1 Log book of each equipment and reports of short term experts.	Following equipment had at least 1 research staff qualified for its utilization; Laparoscope, Microtome, DNA sequencer, Blood analysis machine, AAS (Atomic absorption spectrophotometer), HPLC (High performance liquid chromatograph), Scanning electron microscope and Soft X-ray apparatus.	Achieved well.	B

2-2 Frequencies of each equipment utility are increased.	2-2 Interview to researchers	Followings are used in daily analysis frequently. DNA sequencer and Scanning electron microscope Followings are used only for training. Microtome, Laparoscope, Blood analysis machine, AAS (Atomic absorption spectrophotometer), HPLC (High performance liquid chromatograph) and Soft X-ray apparatus	Achieved well. But regarding some equipment, more careful considerations should have done before provide.	B
2-3 Each equipment is maintain properly.	2-3 Interview to researchers	Frequently used equipment like DNA sequencer and Scanning electron microscope are maintained properly. Following equipment could not be repaired, because there are no engineer at official dealer or no official dealer itself in Indonesia; HPLC (High performance liquid chromatograph) and Blood analysis machine	Before equipment provide, equipment should be choosed which can be maintained easily in Indonesia.	B
Final evaluation	Technical trainings for advanced equipment were going on as scheduled. As a result, there are at least one research staff qualified for their utilization. The equipment such as DNA sequencer, Scanning electron microscope, and Microtome Blood analysis machine are used very well. Since the laboratory facilitating with those advance equipment is probably only RCB/LIPI at present in Indonesia, researches using such equipment are certainly contributed to improvement of research activities about biodiversity. On the other hand, there are some equipment that receive no demand to use in Zoology Division of RCB/LIPI. Those shall be transferred to and used by Botany Division. Before equipment are provided, they should be choosen whether can be maintained easily in Indonesia.			

2) Activities

Narrative summary and Inputs	Achievement as of October, 2002	Evaluation
Activities		
1.1 Conduct researches on genetics and breeding of potential species.	Following researches have been implemented or supported by the Project. 1) Development of sex determination method for birds 2) Development of pork detection method from foods 3) Development of species identification method for gibbon 4) Development of species identification method for tiger 5) Development of native place identification for orangutan 6) Development of native place identification for slow loris 7) Population phylogeny of barking deer 8) Sequence variation and genetic diversity of parrots 9) Population phylogeny of hawksbill turtle 10) Population phylogeny of Sumatran elephant 11) Population phylogeny of bat 12) Species phylogeny of lizard 13) Species phylogeny of Lauraceae 14) Species phylogeny of *Thrichosanthes* 15) Species phylogeny of Goodyerinae 16) Species phylogeny of Bamboo	The left subjects from 1) to 8) has already ended with expected results. The other subjects are carried out on-schedule and certain results will be accomplished by the end of the Project, although relevant researches will be continued after the project.
1.2 Conduct researches on ecologically and economically important species in the laboratory.	1) Nutrient analysis for primates in GHNP 2) Isolation and identification of microorganisms in GHNP 3) Explore the medicinal plant in GHNP 4) Microbial assessment and its role in GHNP 5) Scanning electron microscopy of spores of monascus 6) The ornamentation and shapes of mushroom spores 7) Extraction of bio active components of medicinal, aromatic and useful plants in GHNP 8) Development of methods for plantation and tissue culture of rattan and other selected species	The subjects of 1), 5) and 6) has already ended with accomplished results. The 3) and 4) are carried out on-schedule. The 7) and 8) will be continued after the project.

1.3 Conduct researches on ecologically and economically important, and endangered species in the field.	1) Monitoring of leopard in GHNP 2) Monitoring of raptors in GHNP 3) Monitoring of gibbon in GHNP 4) Medicinal plants in GHNP 5) Traded insects in GHNP 6) Ecological study of Asplemium midus in GHNP 7) Ecological study of Apis dorsata in GHNP 8) Preliminary study of mammals and plants in the "corridor" of Cianten GHNP 9) Seed bank of GHNP 10) Ecological study of fresh water insects in GHNP 11) Ecological study of fish in GHNP and adjacent area 12) Habituation study of primates in GHNP	The subjects of 4), 5), 6), 9), 10), 11) and 12) are caring out on schedules and the results will be accomplished by the end of the project. The others progressed on schedules and will be continued after the project.
1.4 Make inventory of important taxa.	1) Inventory survey for mammal 2) Inventory survey for bird 3) Inventory survey for herpetofauna 4) Inventory survey for fresh water fish 5) Inventory survey for mollusk 6) Inventory survey for insect 7) Inventory survey for orchids 8) Inventory survey for mushroom 9) Inventory survey for microorganisms 10) Inventory survey for flowering plants 11) Inventory survey for rattan	Progressed on-schedule, and will be continued after the project.
1.5 Conduct monitoring of forest ecosystems.	1) Monitoring of forest dynamics in GHNP 2) Monitoring of insect fauna in GHNP 3) Monitoring of bird in GHNP 4) Monitoring of leopard in GHNP 5) Monitoring of mountain rat in GHNP 6) Monitoring of raptors in GHNP 7) Monitoring of litter decomposition in GHNP	The subject of 5) and 7) progressed on schedule and will be accomplished by the end of the project. The others progressed on schedule and will continued after the project.
1.6 Publish the results of research works in GHNP and checklists of flora and fauna.	1) Project reports - Vol. 8 - Vol. 9 2) Proceedings 3) Bulletin - Five volume of Berita Biologi (RCB/LIPI) - One volume of Treubia (Zoologi, RCB/LIPI) - *One volume of Fauna Indonesia (Zoologi, RCB/LIPI)* - *One volume of Flori Bunda (Botani, RCB/LIPI)* 4) Books - Lady beetles in Indonesia - Mammals of GHNP (Indonesian version) - Birds of GHNP (Indonesian version) - Javan hawk eagle - *Fishes of GHNP* - *Orchids of GHNP* - *Mushrooms of GHNP* - *Mammals of GHNP (English version)* - *Birds of GHNP (English version)* - *Rattan of Jawa* - *Insect of GHNP* 5) Check list - Mammals in Indonesia - Amphibians in Indonesia - Reptiles in Indonesia - Type specimens of insect in MZB - *Type specimens of birds in MZB* 6) others - *Ecology of the last tropical rain forest of Jawa, GHNP*	A little delayed, but will be accomplished by the end of the project. Italic letters indicate on going.
1.7 Distribute publications to their potential users such as national park offices and NGOs.	All publications above (1.6) were distributed to potential users such as national park offices and NGOs in and outside Indonesia.	Progressed on-schedule, and will be continued after the project, whenever necessary.
2.1 Undertake training for advanced equipment.	The trainings for the following equipment by long-term or short-term experts were completed; Laparoscope, Microtome, DNA sequencer, Blood analysis machine, Atomic absorption spectrophotometer, High performance liquid chromatograph, Scanning electron microscope, Soft X-ray apparatus and Gamma counter (Micro plate reader).	Progressed on-schedule, and will be accomplished by November 2002

2.2 Prepare a procurement plan for additional advanced equipment.	Long-term expert and CP prepare a procurement plan for additional advanced equipment based on the RCB/LIPI's needs as a institutes.	Ended with expected achievement.
Final evaluation	- Publishing (1.6) is little delayed but others are as scheduled. All activities will be completed until the end of the project. - Expected output of each study topic (1.1 - 1.5) until the end of the project are publishing at least 1 reports, papers, articles or presentations. All these study will be still continued after the project. As a project on biodiversity conservation, increasing topics on botanical and microbiological aspect should be considered in the future to get more useful and effective results on biodiversity conservation. - Equipment related activities (2.1 and 2.2) have almost finished	

3) Inputs

Planned input indicated in PDM	Achievement as of October, 2002	Evaluation
[Japanese Side]		
1.Chief advisor	Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630	Achieved as scheduled
2.Coordinator	Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630	Achieved as scheduled
3. Long-term expert: 1 (Natural environment research & survey)	Toshinao Okayama (Natural environment research and survey) 99/7/22 - present	Achieved as scheduled
4. Short-term expert: 3 fields a. Animal ecology/physiology/taxonomy b. Plant ecology/physiology/taxonomy c. Microorganism ecology/physiology/taxonomy	a. Animal ecology/physiology/taxonomy *Hiroshi Makihara (Insect taxonomy) 01/4/10-5/9, 02/3/18-4/30 *Teruhisa Ueno (Animal taxonomy) 98/11/8-99/6/19 *Junichi Kojima (Animal taxonomy) 02/3/1-4/7 *Noriaki Sakaguchi (Animal ecology) 99/3/9-4/2, 99/10/13-11/30 *Kumiko Yoneda (laparoscope) 00/3/1-3/29 *Masatsugu Suzuki (Blood analysis machine) 01/4/3-4/15 *Masatsugu Suzuki (Microtome) 02/3/22-4/4 *Kazuo Jin (Atomic absorption spectrophotometer) 01/4/2-4/28 *Jun Hashimoto (High performance liquid chromatograph) 00/2/6-4/6 *Nobuhiko Okura (Scanning electron microscope) 00/3/1-3/29 *Nobuhiko Okura (Soft X-ray apparatus) 00/10/27-11/26 b. Plant ecology/physiology/taxonomy *Eiji Suzuki (Forest ecology) 98/11/3－11/28, 00/3/20－4/9, 02/3/10－4/7 c. Microorganism *Shinji Miyado (microorganism taxonomy) 03/02 - d. Others *Masaaki Yoneda (Research planning) 99/4/5-4/21	Achieved as scheduled
5. C/P training	*Dwi Astuti (Genetic diversity analysis) 99/2/1-3/31 *Dwi Agustiyanti (Environmental microbiology) 99/2/18-3/19 *Wartika Rosa Farida (Biodiversity conservation) 00/3/27-5/20 *Atik Retnowati (Biodiversity conservation) 01/2/6-3/23 *Novik Nurhidayat (Biodiversity conservation) 02/2/14-3/2	Achieved as scheduled
6. Equipment	Advanced equipment like blood analysis system, γ-counter (micro plate reader) and microtome, laboratory equipment and so on.	Achieved as scheduled
Final evaluation	Japanese input has been carried out almost completely as planned initially. Relatively large number of short-term experts were dispatched for Sub-Project A, by which training of a series of advanced research equipment became possible.	
[Indonesian Side]		
1.Research coordinator	Dr. Sih Kahono	Achieved as scheduled
2. C/P: 46 researchers	A total of 34 C/Ps are assigned presently, which is a little less than planned number, 40.	Achieved as scheduled
3. Administrative staff	Two secretaries (shared among sub A and B)	Achieved as scheduled
4. Office space for experts	Provided	Achieved as scheduled
5. C/P budget	Prease refer to Accomplishment Grid for Overall.	Achieved to some extent
Final evaluation	Number and capability of C/Ps assigned are satisfactory for implementing the Project. The Indonesian budget for this Sub-Project has been increased year by year during the project period. Although the amount is not enough, the scale of budget is adequate considering the economic situation of Indonesia.	

2-3 Accomplishment Grid for Sub-Project B

1) Sub-Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Narrative summary	Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Sub-Project purpose					
Data management (i.e. collection, provision and utilization of data) is improved in BIC/RCB/LIPI.	1.1Biodiversity information and their systems are prepared and volume of data stored and managed by BIC is increased.	1.1 Interview users. 1.2 Check data sheets. 1.3 Check database.	The three systems are now being operated within RCB/LIPI by using LAN environment. Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system.	Achieved well.	B
	1.2 BIC data is used by many RCB/LIPI researchers.	2.1 User survey	Specimen database systems are connected to each research units by LAN. However RCB/LIPI researchers don't utilize database very much, because there are problems such as the application doesn't run with old computer.	The old computers should be replaced, otherwise it is difficult to achieve the purpose.	C
Final evaluation	The three systems, namely specimen database, bibliography database and field survey database are now being operated within RCB/LIPI by using LAN environment. Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system. However, it is noted that there remains some difficulty for researchers using BIC data base, mainly due to insufficient capacity of their computer.				
Outputs					
1. Improved systems to provide biodiversity data are available at BIC.	1.1 Three improved systems (specimen, bibliography and field survey) are provided.	1.1 Interview users.	- Three systems, namely, specimen database, bibliography database and field survey database are being used within RCB/LIPI by using LAN environment. - As for fauna specimen database management system, conversion of prototype ACCESS base application made by GEF to Oracle base application was completed. As for microbiology database management system, it will be newly developed. conversion of flora specimen database from GEF prototype of Oracle base system has not been started yet. - D12Bibliography database and field sure database were newly developed.	To improve the flora specimen database management system is still difficult to achieve since the computer is out of date and work slowly. Others will be achieved until the end of the project.	B
Final evaluation	Data base systems in BIC have been improved or newly developed, except for the flora specimen database management system which is difficult to achieve in this project due to insufficient capacity of existing computers.				
2. BIC data is available on internet.	2.1 Specimen data of the prioritized taxonomic groups are available on internet.	2.1Check Web site.	Flora and fauna type specimen data among internal specimen database of RCB are being publicized on WEB site (Fauna: 2,508 of approximately 5,300; Flora: 3,065 of approximately 13,000. Detail of fauna is as following; Mammalia:59, Aves:0, Herpet:103, Pisces:22, Insect:2,249, Ectoparasite:17, Molusca:18, Endoparasite:40, Crustacea:0).	Little delayed but it will be completed until the end of the project.	B
	2.2 All bibliography data collected by RCB/LIPI library from 1990 to 2000 are available on internet.	2.2 Same as the above.	6,922 of approximately 8,000 data which are subject to be publicized on Web site were already publicized. This work is expected to finish by the end of 2002.	On-going as scheduled and it will be completed until the end of the project.	B
Final evaluation	Flora and fauna type specimen data among internal specimen database of RCB are being publicized on WEB site. Preparation of bibliography data for internet is on-going as scheduled.				
3. Complete data provided to BIC increases.	3.1. All field survey data by the RCB/LIPI researchers from GHNP from 1997 to 2002 are provided to BIC	3.1 Check data sheets.	- Approximately 2,500 data of field survey conducted in GHNP from 1997 through 2000 were submitted to BIC and entered into field survey database. - Approximately 200 data from the period between 2000 and 2002, they will be entered into database by researchers. - It is expected that almost all the results of field survey in GHNP will be entered into the field survey database and also data entry by researchers is also expected.	On-going as scheduled and it will be completed until the end of the project.	B

	3.2. New data are stored in the database continuously.	3.2 Check database	Approximately 190,000 fauna specimens, 259,000 flora specimens, 7,100 bibliography data and 2,500 field survey data were entered into the system.	On-going as scheduled. (Entering data into database is a endless work)	B
Final evaluation	Complete data provided to BIC is increasing. New specimen data are entered into the system continuously. Field survey data are renewed through research activities in GHNP.				
4. The systems are maintained regularly and properly.	4.1 The systems availability is more than 80%.	4.1 System trouble records	- As for the internal system, the rate of operation of fauna specimen database management system at Zoology Division was almost 100% after completing conversion from Access to Oracle. Flora specimen database management system at Botany Division shuts down approximately 4 to 10 times every month from April to September 2002 and rate of operation is approximately 90%. Bibliography database management system at RCB/LIPI library often experience shut down. - As for WEB site, from early part to middle part of 2002, attacks from hacker continued and experienced frequent system shut down. After taking improved security measures, such kind of problems decreased.	Achieved very well about the system at Zoology Division. The rate of operation at Botany Division was 90%, but more attention shall be given regarding upgrade of the database system.	B
	4.2 WEB data is updated regularly.	4.2 Record of web contents update	In principle updated every 3 months.	Achieved well.	B
Final evaluation	System availability of the BIC database has been kept over 80%. However, RCB should give more attention regarding database management of Botany Division.				

2) Activities

	Achievement as of October, 2002	Evaluation
Activities		
1.1. Improve the design of the prototype systems (i.e. bibliography, field survey and specimen).	- The design for improvement of fauna specimen application (conversion from ACCESS to Oracle base) was completed. 01/7 - The design for new development of Bibliography application has been completed. 99/3 - The design for new development of Field survey application has been completed 02/4 - The design for new development of Microbiology specimen application is ongoing. - The design for improvement of flora specimen application (conversion from ACCESS to Oracle base) has not been completed yet.	To improve the flora specimen database management system is difficult to achieve because of insufficient of the budget. To improve the microbiology specimen database management system will be achieved until the end of the project.
1.2. Prepare and test programs based on improved design.	- Improvement of the design of fauna specimen application (conversion from ACCESS to Oracle base) was completed. 01/7 - New development of the design of Bibliography application has been completed. 99/3 - New development of the design of Field survey application has been completed 02/4 - Microbiology specimen application is now under development. - Improvement of flora specimen application (conversion from ACCESS to Oracle base) has not been completed yet.	Same as the above situation.
1.3. Prepare and undertake technical training courses in database/GIS.	The following trainings were conducted. - GIS training: 99/3-5 - Remote sensing training: 99/6-8 - Database (Oracle) training: 2000/2-4	Achieved.
2.1. Conduct studies to establish BIC web sites.	- Studies to establish BIC web site was conducted. 1999/6 - 2000/1	Achieved.
2.2. Develop a BIC web site.	- Web site of RCB/LIPI was constructed 2000/2	Achieved.
2.3. Make BIC data accessible to NCIC.	The following BIC data are accessible from NCIC through Web. - Type specimens data (Fauna 2,508 and flora 3,065) - Bibliography data (6,922) - Profile of RCB/LIPI researchers.	Achieved.
3.1. Prepare a standard format for data collection.	- Standard format was prepared as data entry format for field survey database. 02/4	Achieved.

3.2. Conduct a workshop or seminar on data format standardization.	Internal workshop of RCB/LIPI researchers were held during the period of the development of field survey database application 01/11	Achieved.
3.3. Make promotion for data collection.	- Field survey database application was introduced officially during BCP research seminar of June 2002 to promote the use of the application. 02/6 - The seminar to promote Field survey database application was conducted in the Bromo National Park. 02/10	On-going as scheduled.
4.1. Undertake regular in-house training on software.	- Technical transfer concerning system maintenance and administration was carried out by long term experts from time to time as OJT. - Web Administration training: 2001/9-10	Achieved.
4.2. Prepare a manual for system maintenance.	- Operation manual was made for WEB system and field survey application.	On-going as scheduled.
Final evaluation	Totally, on-going well as scheduled. To improve the flora specimen database management system is difficult to achieve because of insufficiency of the immediate budget to be used due to the budget system in Indonesia.	

3) Inputs

Planned input indicated in PDM	**Achievement as of October, 2002**		**Evaluation**
[Japanese side)			
1. Chief advisor	Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630		Achieved as scheduled
2. Coordinator	Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630		Achieved as scheduled
3. Long-term expert: 1 (Information Processing and Network)	* Sakuma 98/7/1 - 99/6/30 * Yamada 99/7/22 - 01/11/21		Achieved as scheduled
4. Short-term expert: 1 (Information Processing and Network)	* Yamada 99/1/25 - 99/4/25 * Ito 00/1/26 - 00/4/25 * Yamada 02/8/4 - 02/11/2		To find short-term expert for WEB training was difficult.
5. C/P training: GIS & Environmental information	* Soehardjono 99/3/30 - 5/26 * Roemantyo, Widodo 99/10/4 - 12/5 * Pramono 00/9/25 - 11/26 * Yosman 01/9/24 - 11/25		Achieved as scheduled
6. Equipment: software, hardware etc.	Computers	- Sun Workstation: 1 - PC: 12 (PC Server: 3, Desktop: 7, Notebook: 2)	Achieved as scheduled
	Peripheral device	Printer: 4, MO Drive: 4, CD-RW Drive: 2, Scanner: 1, Modem: 3, Digital Camera: 1, Hub: 2 UPS: 13	
	Software	Maintenance Contract for Arc/Info, ErdasImagine, Oracle, ArcView, Oracle for WinNT, MS Office, MS Proxy Server, MS VB, MS SQL Server, MS Exchange Server, MS Proxy Server, etc	
	Others	Offset Printer: 1, Camera: 1, Map Case: 1, Illuminating Magnifier: 2, Cabinet: 3	
Final evaluation	As for input of Japanese side, recruit of short-term expert about WEB training was difficult. Therefore WEB training was conducted by recruiting the technical consultants in Indonesia. This modification was better decision in order to secure support system after training.		
[Indonesian side)			
1. BIC coordinator	1 Person		Achieved as scheduled
2. C/P: 6 persons	6 Persons		Achieved as scheduled
3. Operators for data entry	10 Persons		Achieved as scheduled
4. Administrative staff			Achieved as scheduled
5. Office space for expert	Yes		Achieved as scheduled
6 .C/P budget	Prease refer to Accomplishment Grid for Overall.		Not enough. But Indonesian side make efforts to increase the budget.
Final evaluation	Inputs of Indonesian side are achieved well as scheduled, except for budget, although Indonesian side made efforts to increase the project budget.		

2-4 Accomplishment Grid for Sub-Project C

1) Sub-Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected. B - as good, achieved as expected, and C - as poor, achieved less
2) C/P means counterpart.

Narrative summary		Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Sub-Project purpose						
	Data management (I.e. collection, provision and utilization of data) is improved at NCIC.	1. Management information systems for nature protection and conservation are prepared and volume of data stored and managed by NCIC is increased.	1.1 User survey 1.2 Printout of the contents of databases or lists of files stored in database.	Spatial information database management system was constructed by this Project. This database is the first one which can provide comprehensive data on conservation areas in whole Indonesia. The Sub-Project C is now improving the non-spatial information database management system, which will be completed around November 2002.	Achieved. As the result of user survey and also actually seeing the operation of the systems it was judged that the data management systems had been constructed and data volume in them are increasing.	B
		2. NCIC data is used by PHKA.	2.1 User survey	NCIC is now fully using spatial information stored in its database. Now NCIC can provide data for PHKA, especially for Directorate of Area Conservation, efficiently and in timely manner because of the systems and accumulating data.	Achieved. User survey results indicate that NCIC data is being used by PHKA.	B
	Final evaluation	Overall, Sub Project purpose was considered to be achieved because data management systems were constructed and data managed by NCIC is increasing. Further, technical capability of NCIC staff in computerized systems operation increased.				
Outputs						
	1. Technical levels of NCIC staff are improved.	1. NCIC staff receive proper training in their individual field of responsibility which is as follows: - System maintenance - Database management - Remote sensing software operations	1. Record of training	Through the technical training undertaken during the project, technical level of NCIC staff was substantially improved. As for GIS, NCIC staff can give training for other PHKA office staff. As for Oracle, NCIC staff now can communicate with professional programmers and systems engineers. Remote sensing training was implemented but all the C/P who received the training moved out of NCIC. Therefore, additional training will be done by the end of the project.	Considering the fact that C/Ps can operate various software including GIS, WEB page construction, relational database management (Oracle) and DTP, technical levels of NCIC staff were improved except in the field of remote sensing.	B
	Final evaluation	Considering the fact that C/Ps can operate various software including GIS, WEB page construction, relational database management (Oracle) and DTP, technical levels of NCIC staff were improved. However, in the field of remote sensing, the training was not enough to enhance the technical level of NCIC staff.				
	2. Database management systems for protected areas (PAs) become available and work properly.	2. Database management systems for the PAs are developed.	2. User survey	Data-base management systems for both spatial information and non-spatial information have been constructed by joint work of Japanese experts and counterparts. Non-spatial information database management system is in the improvement process which is expected to be completed by the end of November 2002. Non-spatial information database prototype system is now being improved after repeated review. Because of repeated discussion concerning the function and contents of the database system, the requirements of NCIC and PHKA on the system are well reflected in the system. Therefore the system should function in a way to satisfy the requirements of users.	Almost achieved. Although non-spatial information database management system is still being improved, the process is approaching its final stage. Therefore, the output No.2 could be evaluated as almost achieved.	B
	Final evaluation	Although non-spatial information database management system is still being improved, spatial information database was completed. Overall, the expected output is evaluated as almost achieved.				

	3. Volume of data stored and managed by NCIC database systems is increased.	3. Data are collected and entered into NCIC database for following PAs. - 10 nature reserve - 10 wildlife reserve - 40 national parks - 20 nature recreation forests - 5 grand forest parks - 5 hunting parks - 5 protection forests	3. Check database	As for spatial information, the progress of data collection is as follows: - 0/10 nature reserve (0%) - 5/10 wildlife reserve (50%) - 40/40 national parks (100%) - 5/20 nature recreation forests (25%) - 1/5 grand forest parks (20%) - 3/5 hunting parks (60%) - 0/5 protection forests (0%)	As far as national parks are concerned, input of basic map data has been completed. Volume of data is increasing for other parks and reserves, although it is difficult to collect data for all the areas listed in PDM due to unavailability of data.	B
	Final evaluation	Basically, existing data collection and entry were considered to be achieved well. Volume of data is increasing for other parks and reserves, although it is difficult to collect data for all the areas listed in PDM due to unavailability of data. In order to increase the field data, cooperation of other sections of PHKA shall be promoted.				
	4. Awareness of NCIC output is raised.	4.1 The following publication is issued annually: - 2 news letters - 5 posters - 2 leaflets - 2 booklets	4.1 Check publications	Since 1998 the following publications were issued: 4 newsletters; 14 posters; 3 bulletins; 1 booklet These publications are either distributed to PHKA offices or presented in national meetings of PHKA officers to develop understanding among PHKA community about the activities of NCIC. Some field offices and NGOs started to approach NCIC for possible GIS training for their staff.	Being implemented almost according to the plan. Will be difficult to achieve the goal fully though. However, newly constructed WEB site will substitute paper media to great extent.	B
		4.2 NCIC website is constructed.	4.2 Check website	WEB site was constructed.	Constructed.	B
	Final evaluation	The NCIC website was constructed, and is working effectively to disseminate results of the activities. The publication was issued almost as planed.				

2) Activities

Narrative summary and Inputs	Achievement as of October, 2002	Evaluation
Activities		
1.1 Undertaking training of advanced GIS	Intensive training was conducted for the operation of Arc Info and Arc View. With this training, not only NCIC staff but also some staff of GHNP office could learn the operation. After this training, NCIC staff visited GHNP office for further training of park staff. 99/3-5: Intensive training for two persons. (Sofian & Asep K.)	Implemented.
1.2 Undertaking training of database management	Training of operation of Oracle program was conducted twice. 1) 00/2-4: None. (Joint training with BIC. A staff selected by NCIC attended only one or two days and gave up to receive the training. This C/P does not work for NCIC now. 2) 01/2-4: two persons (Israr & Sutoto) One of the two trainees left for other directorate soon after the completion of this training.	Implemented. Judging from the fact that C/Ps are using local private firms for Oracle programming, C/Ps have acquired technical knowledge and skill for out-sourcing.
1.3 Undertaking training of remote sensing	23 days of training was conducted. 99/6-8: 2 persons.(Ino & Asep K.) Both trainees left NCIC and are not working at NCIC as of end of October 2002.	Implemented. However, trained C/Ps moved out. Therefore, will implement again before the end of the project.
1.4 Undertaking training of publicity	Training in Japan concerning the use of multimedia technologies. 01/7-9: One person (Dadang)	Implemented.
1.5 Undertaking training of public relations	Planning to conduct.	Will be implemented.

1.6 Undertaking training of hardware and software maintenance	Being conducted in a form of OJT.	Being implemented. Will continue till the end of the project.
2.1 Develop basic and detailed design	Conducted. 1) Spatial information: 98/7-99/9 2) Non spatial information: 98/7-99/12	Completed.
2.2 Prepare programs	Prototype application program was developed by using Indonesian programmers. 1) Spatial information: 99/12-00/06 2) Non spatial information: 01/01-00/08	Completed.
2.3 Test programs for model areas	1) As for spatial information database, map data mainly from GHNP was entered and programs were tested. 2) As for non spatial information database, not only data from GHNP but also from other conservation areas were entered and tested.	Test for spatial information was completed. Test for non-spatial information is now being conducted.
2.4 Improve and modify application programs	1) Spatial information database management system: 00/11-01/03 Improvement such as adding printing function and linkage with image data were made. 2) Non spatial information database management system: 01/06-02/11	Completed for spatial information database management system. On going for non-spatial information database management system. The improvement will be completed by the end of November.
2.5 Install systems to computers at NCIC	1) Spatial information database management system was installed already. 2) Non spatial information database management system was and now being improved.	Installed already.
3.1 Establish guideline for data collection	Data collection format was prepared for non spatial information. For spatial information, questionnaire format was prepared to check the data availability of each conservation area office.	Delaying but according to the expert the guidelines will be completed by the end of the project.
3.2 Collect existing materials from PA	1) As for spatial information, topographic and thematic maps of conservation areas were collected as much as possible. They were edited and printed by GIS and sent to conservation area offices for verification and updating. But since 1998 only a limited number of offices (10 regional offices) returned the results. Recovery of these data will be done when NCIC staff visit field offices. 2) As for non-spatial information, data entry format was prepared and distributed to conservation area offices. But response of the offices is not good. Therefore, NCIC turned to existing data stored in headquarters of PHKA and could collect some data.	According to C/Ps collection of field data from PAs seems to be not easy because field offices do not have much data.
3.3 Collected data are entered	1) As for spatial information, most of the collected data were entered into the system. 2) As for non spatial information, since the system is being improved as of the end of October 2002, data are being entered tentatively.	Collected data are being entered into the databases.
3.4 Undertake pilot study of conservation data collection in GHNP	This was conducted when grid maps of GHNP were published in 1999. Further more, in order to make park staff understand the significance of data collection, another pilot study will be conducted by the end of 2002.	Undertaken once. But according to the expert second OJT will be undertaken by the end of the project.
3.5 Establish rules for data exchange and sharing	This has been considered during the course of the database construction work. It is planned to establish the rules by the end of the Project.	Being implemented. According to expert rules will be established by the end of the project.
3.6 Establish an internet home page for data entry	Static web site was completed. As for dynamic home page, it will not be constructed due to internet security reasons.	Static WEB site was completed. Even though dynamic WEB site may not be constructed, it is judged that static web page and e-mail can substitute dynamic web site and fulfill the purpose of smooth data transfer.

4.1 Publish NCIC newsletters regularly	Four newsletters were published.	On-going roughly as scheduled
4.2 Publish leaflets/books about NCIC	Being implemented.	On-going roughly as scheduled
4.3 Publish posters, leaflets and booklets about nature protection and conservation management	Being implemented.	On-going roughly as scheduled
4.4 Establish rules and method to distribute and use NCIC outputs for decision-makers and public	Will be implemented.	Will be completed by the end of the project.
4.5 Construct NCIC website	Being implemented.	Completed.
Final evaluation	I) In general, almost all the planned activities were undertaken.. 2) Issues: * Data collection: Data could not be collected as planned. The reason is that field offices do not have much data. * Publication: It is difficult to catch up with the pre-determined publication schedule because NCIC staff are quite busy in dealing with various types of original jobs assigned to them and could not spare enough time for publication work.	

3) Inputs

Planned input indicated in PDM	**Achievement as of October, 2002**	**Evaluation**
[Japanese Side]		
1. Chief advisor	Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630	Dispatched as planned.
2. Coordinator	Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630	Dispatched as planned.
3. Long term expert: 1 (Information systems B)	1. Long term expert:1 1) Suzuki: 97/7/1-00/8/31 2) Ono: 00/8/15-03/6/30	Dispatched as planned.
4. Short-term experts:	2. Short term expert:1 Shimoyama: 99/3/15-3/27	Dispatched as planned.
5. C/P training: GIS & Environmental information	[Training in Japan]: A total of 8 persons Sutoto: 98/10-12, Asep: 99/3-5, Wawan 99/3-4, Ino 00/3-4, Ramon 00/3-4, Islar 00/9-11, Agoes 00/10, Dadang:01/7-9	Conducted as planned.
	[Training in Indonesia] 1) Advanced GIS: 99/3-5:2 persons 2) Remote Sensing: 99/6-8:2 persons 3) Oracle: a. 00/2-4:0, b. 01/3:2 persons	Conducted as planned.
6. Equipment: server (s) , software(s), etc	Major equipment is as follows: PCs(10); Plotter (1); Digitizer (2); Scanner (1); Printer (3); Copy machine (1); Handy GPS (4) ; LAN; GIS Software; Relational Database Software; Image Processing Software	Sufficient quantity of equipment was supplied.
Final evaluation	Input from the Japanese side is considered to be appropriate.	
[Indonesian Side]		
1. Head of NCIC	Assigned	Expected number was allocated.
2. C/P: 7 staff	5 persons were assigned	Expected number was allocated.
3. Administrative staff	Assigned	Expected number was allocated.
4. Office space for experts	Provided	Fulfilled
5. C/P budget	Prease refer to Accomplishment Grid for Overall.	Insufficient budget was allocated to continue full scale duty of NCIC.

	Final evaluation	Input of C/Ps and budget from the Indonesian side had some problem particularly during the first half of the Phase II. The biggest problem was the frequent change of counterpart staff. After May 2000, three skilled C/Ps moved out of NCIC. Although this loss caused some serious setback to BCP activities particularly to the review and improvement of non-spatial information database management system, organization of NCIC remained to be stable and therefore remaining staff could concentrate on their job.

2-5 Accomplishment Grid for Sub-Project D

1) Sub-Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Narrative summary	Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Sub-Project purpose					
GHNP is managed properly based on the management plan.	1. Artificial disturbance was mitigated.	1. Management records of GHNP (illegal logging, illegal mining and poaching, etc.)	Number of persons engaged in illegal gold mining decreased from 4,470 in 1997 to 862 in 2001. Number of reported cases of illegal logging varied from 1 to 8 with volume varied from 1,226 to 23,773 m3 during the period from 1998 to 2002.	Achieved partly. Continuous law enforcement measures are required.	B
	2. Basic data for conservation of fauna and flora are cumulated.	2. Management records of GHNP (check list of fauna and flora, record of monitoring endangered species)	The study on fauna and flora was initiated by this project. By 2001, 71 species of mammals, 203 birds, 32 reptile were confirmed as fauna of GHNP, and 73 species of low-plant and 469 higher-plant were enlisted as flora. Larger number of recorded species is expected by the end of the project.	Achieved as scheduled	B
	3. Local people cooperate or participate in park management	3. List of participatory activities	Local people has participated in many park management activities through providing local guides for eco-tour, maintaining and managing guest houses for eco-tourist, and monitoring endangered species. They also cooperated with National Park officers in implementing environment education programs at elementary schools around the national park.	Achieved as scheduled	A
Final evaluation	Overall, the project purpose of this sub-project is evaluated to be achieved well. It could be concluded that GHNP is managed with good collaboration by local communities. Local people have become more aware of the conservation of natural resource thorough ecotourism activities, environment education programs and monitoring of endangered species. This is also contributing decreasing illegal mining and comparatively small number of illegal cutting/loggings. On the other hand, basic scientific data such as fauna and flora listed in annual park report increased largely with BCP research activities.				
Outputs					
1. Eco-tourism activities of PHKA are improved.	1.1. An action plan for eco-tourism is developed. Trial eco-tourism tour implemented at least twice.	1.1 The action plan, number of trials	Action plan for eco-tourism was published in August 2001. Trial eco-tours were implemented four times, in November 2001(11 participants), February 2002 (22 participants), May 2002 (22 participants) and August 2002 (15 participants). The numbers of guests stayed at eco-tourism facilities in 2001 were 1952 for Cikaniki Research Station (except researcher) and 484 for Citalahab Guest House. The number has been increased by 713 and 320 respectively, comparing with those in 2000. The increase of guests of these facilities means eco-tourism in GHNP has become more active.	Achieved as scheduled. To enhance further development of eco-tourism activities in GHNP, a sustainable system which could take the role of coordination among those stakeholders such as park officers, NGOs, private companies and local people, is to be established.	A
	1.2. Seven (7) eco-tourism materials are developed.	1.2 Number of materials above	Three eco-tourism maps and three guide books has been published. Another one guide book will be published until the end of the project.	Almost achieved	B
	1.3. Training courses for a staff of GHNP and local people are prepared and implemented.	1.3 Training records for eco-tourism guides	So far, eco-tour interpreter trainings for park officers and local people were implemented three times, in April, 2001 (7 participants), in January, 2002 (28 persons) and in October, 2002 (26 persons). Another training course to improve eco-tourism management skills is scheduled to be carried out in the end of October, 2002.	Achieved as scheduled. To implement regular training, it needs enough budget and instructors for the training.	A
Final evaluation	Eco-tourism activities in GHNP have been improved largely, in light of increased number of visitors, increased number of park officers and local people skilled with interpretation, materials such as maps or guide books developed. The success of the trial eco-tours have provided that GHNP has a high potential value as a eco-tourism site especially for those people living in and near Jakarta. To enhance further development of eco-tourism activities in GHNP, a sustainable system which could take the role of coordination among those stakeholders such as park officers, NGOs, private companies and local people, is to be established. To implement regular training, it needs enough budget and instructors for the training. This output could be evaluated as achieved.				

2. Rehabilitation plans of specific endangered species are developed.	2.1 Rehabilitation plans for Javan hawk eagle, leopard and Javan gibbon are developed.	2.1. Rehabilitation plan.	So far, rehabilitation activities for three endangered species; leopards, Javan gibbons and Javan hawk-eagles, are limited and it seemed to be not adequate to establish a plan only for their rehabilitation. Therefore, the target "rehabilitaition plan" was interpreted to "conservation plan" which could include more actions needed in the park management, for example, data collection, monitoring, poaching, raising public awareness, reducing conflicts caused by depredation of livestock by leopards. Framework and major part of contents for the conservation plan of three endangered species in GHNP has been developed through the discussion of working group meetings and meetings with local comunities. The plan is now under the process of compiling and it will be completed with data on current status of these species until March 2003.	Going as scheduled	B
	2.2. Reports on the research of specific endangered species are issued.	2.2. Project reports	Research reports have been published for leopards (8), Javan hawk-eagles (2) and three target species (1). Comprehensive report on three endangered species; leopards, silvery gibbons and Javan hawk-eagles will be published until the end of the project.	Achieved well.	A
Final evaluation	Major part of the conservation plan is already available and the conservation plan is scheduled to be completed by March, 2003 with participation of many researchers, park officers and NGOs. The comprehensive report on three endangered species (leopards, Javan gibbons and Javan hawk-eagles) is to be published by the end of the project. With these condition, this output is evaluated as almost achieved.				
3. Utilization of the park as a comprehensive research field is enhanced.	A variety of research activities are conducted in GHNP.	3. Visitor book and official records.	In GHNP, taxonomical, ecological and ethnological researches on mammals, birds, amphibians, reptiles, fishes and plants were conducted by more than 20 RCB/LIPI researchers. Number of researchers stayed at Cikaniki Station during 2001, were 171, of which 16 were from overseas. Along with this, GHNP has become known better to the researchers nationally or internationally. As a result, the number of researchers visiting is increasing and now several field survey training are conducted in the park both by domestic universities and international organization such as ARCBC.	Already achieved. There are research activities still going on in GHNP.	B
Final evaluation	Utilization of the park for a variety of field research activities has been considerably enhanced through the project activities. Now, with a comprehensive scientific data accumulated by RCB/LIPI researchers and research facilities like the canopy trail and the research station, more researchers are expected to come to conduct their work in GHNP. Therefore, this output could be evaluated as achieved.				
4. Awareness of local communities in and around GHNP on biodiversity conservation is raised.	4.1. Surveys on utilization of natural resources in local communities are conducted.	4.1. Reports on surveys.	Surveys on local community and traditional utilization of plants have been carried out and the output of the work has been published as the project report (RCBI Vol.VII) and a guide book of medicinal plants. Ethno zoological survey is also being underway. It is expected that a report on utilization of animal resources and a guidebook of useful animal are published by the end of the project.	Almost achieved.	B

	4.2. An action plan and programs of environmental education are developed and implemented to local communities.	4.2. Action plan, programs and materials for environmental education. Reports on implementations of programs.	Basic ideas of the action plan has been given in several publications, I.e., Concept, Activities, Strategy for the futureAction Plan (RCBI Vol.V) in the early stage of the project. Now the contents of these documents are being reviewed with feed back from activities implemented and the draft of revised action plan is already prepared. It will be finalyzed and published by the end of March next year. Program of environmental education for elementary school has been developed and implemented actively. The program has been implemented with one day program at 39 of total 155 elementary schools adjacent to GHNP. The total number of students joined in the program reached up to 6,800 by the end of October 2002. Training of local teachers and young peple who are expected to be local facilitators on environmental education in thier villages, has also been implemented intensively. By October 2002, Total 155 teachers (100 schools) and 154 young people (39 villages) were participated in the training course. Environmental education materials such as BCP calenders and Islamic Newsletters has also been distributed. BCP also	Achieved well.	A
	4.3. Degree of concern for biodiversity conservation by local communities in and around GHNP is raised after the implementation.	4.3. Reports on questionnaire survey on the local people.	Questionnaire surveys for around 400 students (4-6 grade) of six elementary schools around GHNP were conducted before and after the environmental education program was implemented. The results clearly supports that the degree of concern of students on biodiversity conservation has been raised after the EE implementation. The 2nd formal interviews for local people are scheduled to be conducted in the remaining project period.	Achieved enough with supporting data.	B
Final evaluation	Knowledges on traditional and sustainable utilization of natural resources in local communities has been accumulated and published, and sustainable utilization of natural resources has been encouraged through the experimental cultivation of several plant species supported by the Project. Environmental education programs were implemented in 39 elementary schools, of which distribution covers all areas surrounding GHNP, at the same time, environmental education training for school teacheres and young people who are expected to take the leading role in developing environmental education activities in their own villages around GHNP, was carried out. Rising awareness of school children on conservation has been confirmed through the questionare survey. With all these results, this output could be evaluated as achieved as more than expected.				

2) Activities

Narrative summary and Inputs	Achievement as of October, 2002	Evaluation
Activities		
1.1. Develop an action plan for eco-tourism.	Action plan was published in August 2001.	Achieved as scheduled
1.2. Prepare materials for eco-tourism.	Three guide maps and three guide books for eco-tourism were issued.	Achieved as scheduled
1.3. Prepare GHNP staff and local people a training course for guide.	The training course of eco-tourism guide was implemented three times in April, 2001 with 7 participants, January, 2002 with 28 participants and in October, 2002 with 26 participants. Training course of eco-tourism management is implemented in the end of October, 2002 with 22 participants.	Achieved as scheduled
2.1. Conduct activities to prepare rehabilitation plans.	1) To draw up the action plan for endangered species, a working group composed of researcher and NGO member, was organized in October 2001. The working group has discussed the action plan four times. 2) The meeting with local communities to exchange the opinion on wildlife conservation has been conducted eight areas including 37 villages, about 300 people.	Achieved as scheduled
2.2. Conduct joint studies and researches with researchers from LIPI and other groups on rehabilitation of specific endangered species.	Research reports has been published for leopards (8), Javan hawk-eagles (2) and three target species (1). Comprehensive report on endangered species; leopards, Javan gibbons and Javan hawk-eagles will be published until the end of the project.	Achieved as scheduled

3.1. Develop a user guideline for the research station and a canopy trail	The draft of regulation for the management of Cikaniki research station, including its user guideline, and the user guide line of canopy trail was developed in November 1999 and August 2001, respectively.	Achieved as scheduled
3.2. Manage the research station and a canopy trail.	These facilities were managed appropriately according to the regulations. The number of user in 2001 was 2,756 peoples including 804 researchers.	Completed already
3.3. Conduct PR activities for the research station and a canopy trail.	Public relations for the research station and canopy trail has been conducted through the distribution of Visitor Information of Cikaniki Research Station.	Completed already
4.1. Conduct surveys on local communities, utilization of natural resources and potential resources for sustainable utilization.	Surveys on local community and utilization of plants have been carried out and compiled in report (RCBI) and guide book of medicinal plants. Ethno zoological surveys is now carrying out. In the remaining project period, guidebook of useful animal and report on utilization of animal resources are planned to be published.	Achieved as scheduled
4.2. Prepare an action plan, programs and materials for environmental education (including developing materials for alternative ways of living for local people).	The following materials have been produced. For elementary school students: flip chart (2), illustrated book (1), handbook to facilitaters (2), Cards of animals and plants (2 set), poster (2), bag (1), jacket(1). For young generation and general public: calender (4), leaflet(2), sticker (2), GHNP Guide Book (1), Islamic Newsletter on Conservation (16), Biodiversity Conservation Education Series Book (4). Materials for alternative income: Medicinal Plants Book. For elementary school students and general public: Video CD. The following materials are on preparing. For general public: useful animal species in GHNP (Guide Book). For teachers and young generations: a manual for the implementation of training course (on going) .	Achieved more than scheduled
4.3. Implement environmental education programs for school children and local communities around GHNP.	For elementary school students: The model program was implemented at 39 of total 155 elementary schools in GHNP once at a time. The total number of students were about 6,800 students. For teachers and young generations: Seven training courses were totally implemented in Kabandungan, Cikaniki and Citarahab. Total 155 teachers (100 schools) and 154 young people (39 villages) were participated in the course. Activities to get a public awareness from local communities: the distribution of calenders and Islamic Newsletters. Activities to spread alternative resource use: Trial cultivation of rattans, sugar palms and medicinal plants has been supported.	Achieved as scheduled
Final evaluation	Most of activities planned have been completed and their outputs have come out, while some activities are still going on as scheduled. There is no activities planned but not implemented. Therefore, achievement of activities for sub-project D can be evaluated as satisfactory.	

3) Inputs

Planned input indicated in PDM	Achievement as of October, 2002	Evaluation
[Japanese Side]		
1.Chief advisor	Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630	Conducted as planned.
2.Coordinator	Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630	Conducted as planned.
3. Long-term expert: 3 (National Park Management endangered species conservation, and Environmental education)	[Long-term expert/National Park Planning & Management] HORIUCHI Hiroshi 98/7/1 '99/6/30 NAKASHIMA Keiji 99/7/22 '01/7/21 OZAWA Seiji 01/6/28 '03/6/30 [Long-term expert/Endangered Species Conservation] SAKAGUCHI Noriaki 01/6/28 '03/6/30 [Long-term expert/Environmental Education] HARADA Kazuhiro 98/7/1 '00/11/30 KOBAYASHI Hiroshi 00/12/1 '03/6/30	Conducted as planned.
4. Short-term experts	[Short-term expert/Ecotourism] HIDETA Tomohiko 00/2/1 '00/3/3 SHINTANI Masanori 01/4/1 '01/4/30 SHINTANI Masanori 02/1/11 '02/2/6 SHINTANI Masanori 02/10/5 '02/11/20	Sufficient number was supplied.

	[Short-term expert/Endangered Species Conservation] ICHINOSE Hiromichi 99/3/21～99/3/28 KAMEDA Kayoko 99/3/21～99/3/28 MURATE Tatsuyoshi 01/10/8～01/12/7 INOUE Takehiko 02/9/5～02/9/30 MURATE Tatsuyoshi 02/12/10～03/1/7	
	[Short-term expert/Research Station & Canopy Trail] NAKAMURA Koji 99/11/21～99/12/4 NAKAMURA Koji 00/9/9～00/9/29	
	[Short-term expert/Environmental Education] SAYAMA Hiroshi 99/3/5～99/3/20 SAYAMA Hiroshi 00/4/7～00/4/26 YATA Makoto 01/3/29～01/4/27 HARADA Kazuhiro 02/2/19～02/4/20 KAMIDOUZONO Akira 02/12/14～03/1/26	
5. C/P training: National park management, wildlife conservation & environmental education	Adi Susmianto (GHNP) 98/11/09-11/27 National Park Planning & Management Endang Wahyuningsih (PKA) 99/08/17-10/15 National Park Planning & Management (Ecotourism) Widada 99/08/17-10/15 National Park Planning & Management (Environmental Education) Genman S.H (GHNP) 00/08/24-10/01 National Park Planning & Management (Endangerd Species Conservation) Sadrah K (GHNP) 00/08/24-10/01 National Park Planning & Management (Environmental Education) Kristanto (PKA) 00/10/17-10/27 Nature Conservation & National Park Management Sudarmadji (GHNP) 01/06/26-07/20 National Park Planning & Management Desy Ekawati (GHNP) 01/05/16-07/07 National Park Planning & Management (Endangerd Species Conservation) Sri Mulyati (GHNP) 01/08/20-11/18 Preservation of Rare and Useful Plant Life Ardi Risman (GHNP) 01/09/24-11/25 Biodiversity Information System Kuswandono (GHNP) 02/5/24-7/2 National Park Planning & Management (Endangerd Species Conservation) Abdur Rozaq & Pepen Effendi (GHNP) 02/05/24-6/27 National Park Planning & Management	Sufficient number was supplied.
6. Equipment	Most of all equipments such as 4WD vehicles, motorcycles, radio communication systems etc. supported the project activities effectively. Micro hydro power plant in Cikaniki Research Station provides quiet and comfortable surroundings for researchers, eco-tourists and for wildlife around the station.	Sufficient quantity of equipment was supplied.
Final evaluation	Input of Japanese side has been given in line with PDM and achieved well.	

[Indonesian Side]

1. Head of GHNP HQ	Adi Susmianto July 1998 - June 1999 Sudarmadji July 1999 - October 2002	Conducted as planned.
2. C/P: 8 a) National park management: 2 b) Wildlife conservation: 2 c) Environmental education: 2 d) Information: 2	a) Putri Jauhar Manikam (July 1998 - August 2000), Abdur Rozaq (August 2000 - now), Endang Wahyuningsih (July 1998 - July 2001), Genman Hasibuan (December 2000 - now) b) Dadang Wardhana (July - September 1998), Genman Hasibuan (September 1998 - November 2000), Desy Ekawati (April 2000 - now), Kuswandono (July 2000 - now) c) Widada (July 1998 - now), Sri Mulyati (December 2000 - now) Lucky Wahyu Muslihat (July 1998 - now), Ardi Risman (January 1999 - now)	Conducted as planned.
3. Administrative staff (GHNP)	Three administrative staff at GHNP HQ	Conducted as planned.
4. Office space for expert	Office room for experts at PHKA Bogor	Conducted as planned.
5. C/P budget･Head of GHNP HQ	Prease refer to Accomplishment Grid for Overall.	Insufficient budget was allocated to support various activities implemented in GHNP. However the total amount of budget has been steady increasing in the past three years.
Final evaluation	Indonesian input was moderate except for provision of C/P budget.	

2-6 Accomplishment Grid for Sub-Project E

1) Sub-Project purpose and Outputs

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Narrative summary	Indicators	Means of verification	Achievement as of October, 2002	Evaluation	Grade
Sub-Project purpose					
Results of project activities are effectively disseminated.	Information publicized	Number of publications/workshops related to project's	During the BCPII, publicized information has been increased by various tools, such as distribution of project reports and leaflets, holding workshops and seminars, and establishment of the project home-page.	Achieved well.	B
Final evaluation	The results of project activites are disseminated well among researchers undertaking biodiversity study, conservation officers, NGOs and general public not only in Indonesia but also overseas through various channels which are supported by this project.				
Outputs					
1. Project reports are published.	1. Number of project report published.	1. Project reports published.	A total of 6 volume of project reports (Vol III~VIII) have been prepared and distributed among relevant government organizations and NGOs in Indonesia and Japan including universities and research institutions. Additional two volumes of project reports are going to be published until the end of the project.	Achieved as scheduled.	B
Final evaluation	The expected output is achieved. The results of project activities are compiled periodically into a form of project report. During BCP2, a total of 6 volumes of project reports (Vol III~VIII) have been prepared and additional two volumes are going to be published until the end of the project.				
2. Project workshops are held.	2. Number of workshops held.	2. Records of workshops	BCP II supported financially and technically a total of 8 workshops as follows: 1) Workshop on ecotourism development of GHNP (Bogor, 9-11 March 1999), 180 participants 2) Expose and Workshop on The Sustainable Use and Potency of GHNP (Bandung, 26-27 March 1999) 3) Coordination meeting on GHNP management plan (Bogor, 28-29 February 2000) 4) BCP annual meeting 2000 (Cibinong, 5 July 2000) 5) BCP annual workshop (Expose and Workshop on GHNP biodiversity management) (Bogor, 3-5 October 2000), 250 participants 6) BCP annual meeting 2001 - Symposium and Seminar on GHNP biodiversity management (Bogor, 6-7 June 2000), 250 participants 7) Workshop on National Park Management (Bogor, 23-25 October 2001) 8) BCP Seminar for Research Programme (Sub-Project A and B) (Bogor, 26-27 June 2002), 210 participants An additional annual workshop on national park management is being prepared and final BCPII workshop is scheduled in May 2003. In addition to the above major workshops, BCPII co-sponsored a series of small workshops, seminars and symposiums related to the project activities. Those numbers are counted to be 13 as of Octber 2002.	Achieved as scheduled.	B
Final evaluation	The expected output is achieved. BCP2 supported financially and technically a total of 8 major workshops when project results are disseminated to the participants.				
3. Project leaflets are prepared.	3. Number of leaflets published.	3. Leaflets printed	BCPII leaflet (Ver. 1) was printed on March 1999 (total number: 3000), and revised one (Ver. 2) on September 2001 (total number: 3000). They are distributed well for public awareness not only domestically but also internationally such as the World Summit on Sustainable Development (WSSD) in South Africa on August, 2002.	Achieved as scheduled.	B
Final evaluation	The project leaflets are prepared first on March 1999 and revised on September 2001. The output is achieved well.				

	4. Project newsletters are published regularly.	4. Number of newsletters published.	4. Newsletters published	Instead of newsletters, BCPII established its home-page on Feburuary 2000, and maintained well thereafter. A total of about 13,000 accesses was recorded as of October 2002. Web address: http://www.bcpjica.org.	Information tool was changed from newsletters to web site. However, the target was achieved well.	B
	Final evaluation	Information tool was changed from newsletters which were expected initially to web site. The web site of the project was established on February 2000 and maintained well thereafter. The output is evaluated to be achieved well.				

2) Activities

Narrative summary and Inputs		Achievement as of October, 2002	Evaluation
Activities			
1. Prepare and Publish project reports.		Published project report Vol III to Vol VIII as of now.	Achieved as scheduled.
2. Hold Workshops including BCP annual workshop.		Held project workshops 8 times (include BCP annual workshop), suponsored by BCP. Besides it, we hold seminar, symposium related project activities 13times co-sponsored,suported by BCP.	Achieved as scheduled.
3. Publish leaflets.		Printed project leaflets on Mar '99. Printed project leaflets revised version on Sep '01.	Achieved as scheduled.
4. Publish newsletters regularly.		Instead of newsletters, BCP home-page was established on Feb 2000. Renew the home-page properly.	Achieved through publishing BCP Web site.
5. Others.		Published 20 books, 7 seminar proceedings, 5 scientific journals, 6 leaflets, 4 BCP calendars, 1 BCP poster and 2 VCDs.	Achieved.
Final evaluation	Most of activities have been carried out as planned, except for publication of newsletters which was altered to establishment of web site of the project.		

3) Inputs

Planned input indicated in PDM		Achievement as of October, 2002	Evaluation
[Japanese Side]			
1. Chief advisor		Mr.Hiroo Uehara 980710-010709 Mr.Kojiro Mori 010611-030630	Achieved as scheduled.
2. Coordinator		Mr.Syuichi Harima (950814)980701-980730 Mr.Hiroshi Kobayashi 980722-001130 Mr.Naoki Sekimen 001021-030630	Achieved as scheduled.
3. Long-term expert: 6		RCB/LIPI Mr.Toshinao Okayama 990722-030630 BIC/LIPI Mr.Masao Sakuma (970701)980701-990630, Ms.Yukiyo Yamada990722-011120 NCIC/PHKA Mr.Tsutomu Suzuki (970701)980701-000630, Mr.Shigeru Ono 000821-030630 GHNP/PHKA Mr.Hiroshi Horiuchi (970701)980701-990630, Mr.Keiji Nakashima 990722-010721, Mr.Seiji Ozawa 010628-030630, Mr.Kazuhiro Harada (970701)980701-001130, Mr.Hiroshi Kobayashi 001201-030630, Mr.Noriaki Sakaguchi 010628-030630	Achieved as scheduled.
4. Short-term experts:		Dispatched 37 total number of short term experts.	Achieved as scheduled.
Final evaluation	The inputs of sub-project E are dupulicated with those of sub-projects A to D. Most of the inputs have been achieved well and on-going as scheduled.		
[Indonesian Side]			
1. All C/Ps		Appointed the number of counterparts as below. RCB/LIPI 34 Persons BIC/LIPI 7 Persons NCIC/PHKA 4 Persons GHNP/PHKA 10 Persons	Achieved as scheduled.
Final evaluation	The inputs of sub-project E are dupulicated with those of sub-projects A to D. Most of the inputs have been achieved well and on-going as scheduled.		

3-1 Evaluation Grid for Overall

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Results	Evaluation	Grade
Achievement	Please refer to Achievement Grid for overall					
Implementation process	Progress of activities	Please refer to Evaluation Grids of each Sub-project.				
	Monitoring process	Are the project activities amended properly based on significant suggestions like the result of mid-term evaluation.	・Record of Discussion ・Report of mid-term evaluation	・As the result of midterm evaluation, recommendation was made that the indicator for output or activities in PDM should be more clear and more quantitative. According to this, PDM was revised mainly in the outputs and activities in April 2002. ・Monitoring based on PDM were done twice, the end of December 2001 and the end of July 2002.	The activities was carried out following PDM. It took time (more than one year) to formalize the on-going PDM after midterm evaluation was made.	B
	Relation between Japanese experts and Indonesian counterparts	Please refer to Evaluation Grids of each Sub-project.				
	Supporting system of the Project	Suggestions and supports of the project supporting committee in Japan	・Interview to experts and JICA officers	Supporting committee were held 5 times, in 1999, 2000 and 2002, mainly for preparation of missions.	Supports given by committee members has been very useful for smooth implementation of the project activities with their assistance in picking short time experts and arranging adequate training program in Japan.	B
		Suggestions and supports of the Joint Steering Committee (JSC)	・Interview to counterparts, experts and member of JSC.	JSC has been held onece for preparation and three times during implementation.	The composition of members include high level officers from 3 different government bodies, and which made it difficult to arrange the JSC meeting.	B
		Are communication and coordination with JICA done properly.	・Interview to experts and JICA officers	The Project team communicated JICA Indonesia Office and Headquarters frequently in addition to submission of quarterly reports and many other documents.	In general, good relation was maintained.	B
		Are communication and coordination with higher administration of Indonesia done properly.	・Interview to counterparts and experts.	・Project director and manager in RCB/LIPI have not changed till now, therefore there was no difficulty to keep communication with higher administration in RCB/LIPI . ・In PHKA head office, bureau which is related with the project activities is divided into 3 to 4 directorate offices, and who supervise overall project activities was not clear. In result, there was some difficulties in communication with PHKA head office.	There was no problem with RCB/LIPI, but some difficulties with PHKA head quarter.	B
	Final evaluation The management of the project is considered to be adequate. Monitoring of the Project activities was made periodically. Although, PDM was reviewed and revised in response to the recommendations made by Mid-term Evaluation Team, it took time to authorise the revised PDM. In general, the Project has been implemented with full support from Indonesian Government, Japanese Government, and Supporting Committee in Japan, while there were some difficulties to meet all the members at the Joint Steering Committee. There is no big problem for communication among the implementing agencies to undertake cooperation, and for internal communication within LIPI and PHKA to accomplish the output of each Sub-Project.					
		Is the Project Purpose consistent to or in line with the development and conservation policy of Indonesia?	・Record of Discussion ・Interview to relevant government officials	Both of overall goal and project purpose are coherent with the development and conservation policy of Indonesian Government, because overall goal and project purposes are supporting BAPI which was established by Indonesian government.	The overall goal and project purpose are re-confirmed the full consistency to the nature conservation policy of Indonesia. Biodiversity conservation is second highest priority after marine science in LIPI.	A

Relevance		How is the consistency with the need of implementing organizations.	・Interview to relevant government officials	BAPI is under review process and new BAPI, IBSAP (Indonesian Biodiversity Strategy and Action Plan), is expected to be launched by the end of this year.	The common project purpose is institutional capacity building of implementing organizations, which is consistent to the demands of RCB/LIPI and PHKA.	A
		Consistency with the cooperation plan of JICA for Indonesia	・Interview to JICA officers.	Conservation of natural environment is indicated as one of the priority cooperation issues in JICA's cooperation plan for Indonesia.	Cooperation to biodiversity conservation activities is fully consistent to the cooperation plan of JICA for Indonesia.	A
		Relative superiority of Japan regarding technical cooperation of this Project	・Interview to resource persons	Japan has superiority in techniques for taxonomy especially of insect, DNA analysis, information processing and management and national park management.	Technical level of Japan regarding biodiversity is considered to be high enough to carry out this cooperation project.	B
	Relevancy in selection of implementing organizations	Relevancy of implementing organizations of each sub-project.	・Report of preparatory study ・Organization chart ・Interview to relevant government officials	RCB/LIPI and PHKA are considered as the best implementing bodies of the Project, because of as follows; ・RCB/LIPI is the core institute for research and study on biology in Indonesian government. RCB/LIPI is responsible to give scientific recommendation and suggestion to Ministries and Agencies which implement biodiversity conservation and its utilization. The collection in RCB/LIPI is designated as a national collection, ・PHKA is the main body who implements activities for conservation of wildlife and protected areas including national parks.	RCB/LIPI and PHKA are re-confirmed to be adequate to implement the Project. Because RCB/LIPI has scientific authority and PHKA has legal mandate for the biodiversity conservation management.	A
	Final evaluation Overall-goal was appropriately aimed, since it is coherent with development and conservation policy of Indonesian Government. As both LIPI and PHKA prioritize biodiversity conservation higher, Overall Project purpose and Sub Project Purposes meet the demands of implementing agencies. Implementing agencies of the Project were also appropriate assigned, since they have significant mandates on biodiversity conservation in Indonesia.					
Effectiveness	Degree of achievement of the Project Purpose	Whether capacity of respective implementing agency improved or not, through implementation of the project?	・Interview to the chiefs of implementing organization	Collaboration between RCB/LIPI and GHNP was strengthened largely through intensive research activities carried out in GHNP. Institutional capacity of the two organization was also strengthened with many counterparts, who have acquired improved techniques especially between sub-project A and D.	The organizational capacity of both RCB/LIPI and PHKA was assessed to be strengthened through mutual cooperative activities.	B
	Contribution of output (=sub-project purpose) for the achievement of the Project Purpose	How does this sub-project contribute to human resource development, namely capacity building of counterparts?	・Interview to the chiefs of implementing organization	・The capacity of RCB/LIPI researchers has improved noticeably with increased number of publications (papers and oral presentations) on their research activities, new analysis, and technologies transferred, etc. ・Technical level of BIC/RCB-LIPI and NCIC/PHKA staffs for developing and managing database systems has raised remarkably. ・GHNP-PHKA staffs have improved their techniques and know-how for planning and implementing of environmental education programs, eco-tourism activities, and endangered species monitoring. In near future, GHNP will be recognized as a model of national park in Indonesia. ・BIC will be a model of biodiversity information Center in ASEAN in near future.	As described in the left column, the project contributes largely capacity building of Indonesian counterparts. Counterparts are motivated to strengthen collaborative activities among implementing agencies	B
		How does provision of equipment contribute to activities of each implementing organization?	・List of provided equipment ・Questionnaire and interview for experts and counterparts	・Advanced equipments, including those offered under Japanese grant aid, for research and study as well as for information management served as the base of technical transfer by the project. ・Working condition in Cikaniki Research Station has improved with clean electricity, no noise and emission, provided from the microhydro electricity plants. The maintaining cost has also decreased.	Laboratory equipment provided in this particular project (BCP II) were mostly accessories and spare parts of existing main equipment. They were quite supportive for adequate project implementation.	B

		How does the project contribute to budgeting of implementing organizations?	・Questionnaire and interview for experts and counterparts ・Annual budget	The project gave each implementing bodies an opportunity to get additional budge.	The achievement of the project certainly gives good impression to the finance section of each implementing organizations, though budget from Indonesia side was not fully provided according the original plan.	B
		How does the project contribute to collaboration among implementing organizations.	・Questionnaire and interview for experts and counterparts ・Interview to officers of LIPI and PHKA.	The project contributed much to strengthening collaboration between RCB/LIPI and PHKA as follows; ・RCB/LIPI researchers conducted intensive field activities in GHNP with support by GHNP, ・The outputs of researches were utilized for park management, ・The field survey application are partially disseminated to not only GHNP but also the other national park offices in coordination with NCIC. However, there remains some difficulties in mutual cooperation. For example GIS data in NCIC was not fully utilized by BIC.	As described in the left column, the project is evaluated to accelerate collaborative activities between RCB/LIPI and PHKA.	B
	Factors affecting the effectiveness positively or negatively		・Questionnaire and interview for relevant persons			
	Final evaluation Project purpose was well achieved as the result of Sub-Projects. Counterparts are improved their technical levels, and motivated to strengthen collaborative activities among implementing agencies. Throughout Sub-Projects, institutional capability to conserve biodiversity and of framework for mutual cooperation was developed. While there are a few activities remaining uncompleted, counterparts showed full confident to achieve the outputs and contribute to the Project purpose by the end of the Project.					
Efficiency	Inputs	Please refer to Evaluation Grids of each Sub-project				
	Relation between input and output	Please refer to Evaluation Grids of each Sub-project				
	Collaboration with other cooperation schemes	How does the input of the grant aid contribute to the project.	・Table of equipment utilization	although there are some equipment proviced under grant aid program not used frequently, most of the facilities and equipmentsuch as the buildings of zoology research center, NCIC, GHNP head office and research station, advanced equipment for research and study or information management were generally utilized effectively as the basis of project activities.	Some facilities and equipment offered under grant aid program are not used frequently, even though the project tried to utilize them by dispatching short-term experts. Some equipment is not fully utilized because of less demands.	B
		How does the output of the BCP Phase I contribute to the project.	・Reports of the BCP Phase I ・Interview for experts and counterparts	The outputs by Phase 1 project like reports on research activities in GHNP, the draft management plan for GHNP and the prototype type of database system were utilized as the basis of the project activities.	The outputs of the BCP Phase I were the basis of this project. They were revised and developed in this project. There are high level consistency from Phase 1 to 2.	A
	Collaboration with other donor	Are there any collaboration with other donor?	・Questionnaire and interview for experts and counterparts	・Activities in sub component B proceeded in collaboration with GEF biodiversity collection project. After the termination of the project, April 2000, JICA took over the activities carried by GEF project. ・Through there was Common agenda between JICA and USAID, fundation collaboration between BCP and KEHATI Fundation was not effectively achieved	Collaboration with "BCP" by GEF has been useful.	B
	Factors affecting the efficiency positively or negatively		・Questionnaire and interview for relevant persons	The sub project's PDMs should have described the activities targeting collaboration among the implementation agencies, to proceed mutual cooperation efficiently.		
	Final evaluation Overall, inputs made during Japan's Grand Aid Program and BCP1 contributed largely to the effective implementation of BCP2 activities. On the other hand, some facilities and equipment introduced under Japan's Grant Aid Program are not utilized well, for the reason that some assumptions might have been overlooked when the Program was designed. To realize more efficient mutual cooperation, the PDM of each Sub-Project should have contained the activities targeting collaboration among the implementation agencies.					

ANNEX 3 Evaluation Grid

Impact	Contribution to overall Goal	Degree of achievement of the Biodiversity Action Plan in Indonesia (BAPI)	· Project reports · Questionnaire and interview for relevant persons	·BCP has certainly contributed to the achievement of BAPI, with a lot of its activities which are coherent with the action plan specified in the BAPI (Chapter 4).	Strengthening institutional capacity of RCB/LIPI and PHKA which are supported by the project is considered to give significant impact on the achievement of BAPI and its successive plan IBSAP.	B
	Positive impact (intended)	Does the outputs of the Project stimulate activities of other domestic institutions (e.g. new research fields, competition of research, etc)?	- do -	·The possibility of DNA analysis in RCB/LIPI gave a positive impact to many universities, institutes and NGOs. There are many request to analyze DNA and research collaborate. Especially for some well known endangered species in Indonesia, the network to collect samples and analyze genetic diversity had established. ·Several field training programs for university biology students have been launched in GHNP by IPB, ITB and other universities.	The output of research activities in this project gave positive impact gradually to various other research institutions. The impact extends not only on accomration of knowledge but also provision of actual research facilities for the development of university scientist.	A
		Does the outputs of the Project stimulate activities of relevant institutions in Southeast Asia (e.g. new research fields, competition of research, etc)?	- do -	·Regional Training Course on Taxonomy by ARCBC (ASEAN Regional Center for Biodiversity Conservation, supported by EU, head office is in Manila) was carried out at RCB/LIPI and GHNP on July and August in 2002.	The achievement of the project is considered to be a key factor regarding the selection of training site of ARCBC.	B
		Is collaboration with other research institutions promoted?	- do -	·RCB/LIPI have launched a lot of joint cooperation program with universities, NGOs, private companies and other research institutes during BCP. ·National Biodiversity Conservation Network (NBIN) project, with purpose to establish information exchange network for metadata on biodiversity among universities, research institutes, NGOs and other organizations in Indonesia, is being implemented from 2001 to 2005. CPs for sub-component C are involved in the project as core members and BIC is expected to become the hub of NBIN.	The outputs of the project is confirmed to stimulate or initiate a lot of research collaborations, which support institutional capacity building of the implementing organizations.	A
		Are there any impacts on the other sectors such as environment, education, forestry, fishery, etc.?	- do -	·Three research institutes under RCB have been jointly conducting open house program annually. In 2001, more than 6,000 high school students visited. The event contributed to enhancing environmental education for students. ·Specimen database in BIC is highly appreciated by GBIF (Global Biodiversity Information Facility). BIC is expected to be a member of the network in GBIF. ·BIC is expected to become the national focal point for CHM (Clearing House Mechanism) under CBD. ·(Social aspect) The method to detect pork meat from food materials (taboo for Muslim) that RCB/LIPI developed by a request form Indonesian Police Department was a remarkable result to Indonesian society. ·NCIC is contributing to the education of local high school and university students in data processing and environmental education .·BCP environmental education programs for school children's and local people have been introduced to and implemented by some private sectors around GHNP.	A series of positive impacts have been found following the output of the project. Those are evaluated to contribute largely for future biodiversity conservation activities in Indonesia.	B
	Positive impact (unintended)		- do -	·(CITES related) Because RCB/LIPI acquired the technique and facilities to analyze DNA, LIPI decided the policy that DNA analysis should be conducted basically in RCB/LIPI in Indonesia. To export research materials for DNA analysis became very difficult especially the species listed in Appendix of CITES.	This was unintended but significant positive impact. More strict regulation on export of living specimen will help Indonesian scientists to take leading part in DNA related research and conservation activities.	B

	Negative impact	Are there any negative impacts caused by the Project?		No negative impact detected	No negative impact was recognized.	B
	Factors affecting the impact positively or negatively		・Questionnaire and interview for relevant persons	・The scientific meetings held by the project contribute to increase public awareness and to make research networks in Indonesia.		
	Final evaluation The Project has significant impact on the implementation of BAPI. It is also highly evaluated that the Project stimulated other institutions and NGOs, not only inside but also outside of Indonesia.					
Sustainability	Institutional aspect	Is the action towards biodiversity conservation set continuously as an important policy of the central government of Indonesia?	Collection of materials through LIPI and PHKA	BAPI is under review process and new BAPI, IBSAP (Indonesian Biodiversity Action Plan), is expected to be launched by the end of this year. The contents of IBSAP can be reflected in the next 5 years National Development Plan, "PROPPENAS".	Considering the announcement of the successive new program on biodiversity conservation, the conservation policy of the central government is assessed to be consistent.	A
		Does the LIPI play a key role on the biodiversity research in the central government continuously?	・Interview to the LIPI headquarters	It is quite certain that RCB/LIPI will continue to be the core institute for the research on biodiversity in Indonesian government, since biodiversity prioritize secondly in LIPI.	It is common understanding of the central government that RCB/LIPI plays a leading role on the biodiversity research.	B
		Does the PHKA play a key role on nature conservation and park management in the central government continuously?	・Interview to the PHKA headquarters	It is quite certain that PHKA will continue to be the core implementing body for conservation of nature environment and biodiversity in Indonesian government.	It is common understanding of the central government that PHKA plays a leading role on nature conservation and park management.	B
		Are there any regulations or agreement which secure the collaboration between LIPI and PHKA? Or, is there any possibility that new organization is established?	・Interview to LIPI and PHKA	LIPI Pand HKA will set up the quarter for number of specific species under the cites that can be treated internationally.	For the national park management, RCB/LIPI and PHKA act as independent institutions but are expected to continue mutual corporation.	B
	Financial aspect	How about prospect of budget allocation for each implementing agency?	・Interview to LIPI and PHKA	There is no memorandum to support financial aspects as of now.	Financially in general, the implementing agencies have low sustainability at the moment. However, implementing agencies have took necessary measures to secure the budgets after termination of the Project.	B/C
	Technical aspect (Fixing of technology)	**Please refer to Evaluation Grids of each Sub-project.**				
	Social aspect	Are there any problems relating to social issues such as gender, cultural and local customs?	・Questionnaire and interview for relevant persons	- None	No negative impact was recognized.	B
	Factors affecting the sustainability positively or negatively		・Questionnaire and interview for relevant persons	After the midterm, the BCP emphasize on establishing base of mutual cooperation.		
	Final evaluation It is common understanding that LIPI and PHKA prioritize biodiversity conservation higher, and the mutual collaboration between LIPI and PHKA is recognized as key issues. Financially in general, the implementing agencies have low sustainability at the moment. However, implementing agencies have took necessary measures to secure the budgets after termination of the Project. Technical capability of the counterparts in each Sub-Project is improved enough to be able to conduct activities by themselves					

3-2 Evaluation Grid for Sub-Project A

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Result	Evaluation	Grade
Achievement	Please refer to Accomplishment Grid for Sub-Project A					
Implementation process	Progress of activities	Are the activities carried out on schedule?	- do -	Publishing is little delayed but others are as scheduled. All activities will be completed until the end of the project. Expected output of each study topic until the end of the project are publishing at least 1 report, paper, article or presentation. All these studies will be still continued after the project. Equipment related activities have almost finished.	The activities are nearly carried out on schedule.	B
	Monitoring process	To be described in overall evaluation grid				
	Relation between Japanese experts and Indonesian C/Ps	Are they communicate well? Are there any problems about communication?	・Questionnaire and interview for experts and C/Ps	At the first year, there are some communications problems. After that, both expert and C/Ps researcher can communicate very well by frequently meetings and sometimes by e-mail. However, there is a complain about one short term expert who was told that he could not speak English. So, the transfer knowledge could not be achieved.	Good relation between the Japanese experts and Indonesian C/Ps is confirmed by questionnaires to them. Some C/Ps pointed out the necessity of more frequent communication.	B
	Supporting system of the Project	To be described in overall evaluation grid				
	Final evaluation The activities are carried out nearly on schedule. Although publication of research results is a little delayed, expected output will be published by the end of the project. Good relation between the Japanese experts and Indonesian C/Ps is confirmed by questionnaires to them except for one short-term expert who had some language problems.					
Relevance	To be described in overall evaluation grid					
	Degree of achievement of sub-project purpose	Is the contribution of RCB/LIPI toward biodiversity conservation in Indonesia enhanced through implementation of this sub-project?	・Accomplishment grid of the Project ・Interview to the chief of RCB	Considering the following 2 points, contribution of the activities of Sub-Project A at RCB/LIPI to biodiversity conservation in Indonesia is increased. 1) Scientific data and information useful for biodiversity conservation in Indonesia are increased by the activities of Sub-Project A at RCB/LIPI. 2) Scientific meetings held by Sub-Project A contribute to activate biodiversity conservation researches in Indonesia.	It is confirmed that RCB/LIPI becomes playing more vital role on biodiversity conservation in Indonesia and even in the South East Asia, through the experience of this project.	A
	Contribution of output for the achievement of sub-project purpose	How does this sub-project contribute to human resource development, namely capacity building of C/Ps?	・Questionnaire and interview for experts and C/Ps	Five researchers had opportunity to be trained in Japan. One of them continue the study in Japan for her master degree (long term training). To get titles (master or doctor) of researchers contribute greatly to capacity building for RCB/LIPI as research institute. The project held scientific meetings every year to provide the opportunities to publish research results. As a result, more than 200 research papers were published for the last 4 years. These opportunities contributed to increase research levels in RCB/LIPI. The awareness of C/Ps to research activities have changed because of their newly acquired technique. Their confidence to research has increased. As a result, C/Ps could organize training course to outside researchers by themselves.	The project contributed to improve the awareness of C/Ps as well as scientific knowledge. After the economic crisis in 1998, most of the activities (including publish journals and holding meetings) by scientific societies in Indonesia were halted. Therefore, publication of reports and holding of scientific meetings in this project contributed largely for keeping motivations of scientists. Some new scientific technique introduced by the project greatly contributed for capacity building of RCB/LIPI.	B

Effectiveness		How does provision of equipment contribute to research activities of RCB?	・List of provided equipment ・Questionnaire and interview for experts and C/Ps	Many research reports and papers were published using DNA sequencer and Scanning electron microscope of which the project conducted the training course. Following equipment are used sometime and it will have potential to contribute to research activities of RCB; Microtome, Laparoscope and Blood analysis machine. Followings were used only for training and it will be used practically in the future; Atomic absorption spectrophotometer, High performance liquid chromatograph and Soft X-ray apparatus.	Some equipment greatly contributed to research activities of RCB. However, some grant aid equipment which have not appropriate specifications for animal will be transferred to and used by Botany Division More careful considerations should have done before provide scientific equipment.	B
		How does the project contribute to budgeting of RCB?	・Questionnaire and interview for experts and C/Ps ・Annual budget	Individual researchers and some laboratories in RCB/LIPI requested research budget to the government. Some researches using advanced equipment supplied by the project accepted as government projects. The C/Ps requested to increase the project budget to BAPENAS every year. The project budget from Indonesian side increased every year. The total budget of RCB/LIPI was approximately Rp. 31billion in 2002, which was more than double of that in 2001.	It is highly evaluated that researches and projects using technique provided by the project were accepted as government projects. The project also contributed to increase ordinary budget of RCB/LIPI.	A
		Do the research papers and research meetings correspond to the important issues on biodiversity conservation in Indonesia?	・Questionnaire and interview for experts and C/Ps ・Interview to the chief of RCB	Because research activities are declared as one of the important goal of BAPI (Biodiversity Action Plan for Indonesia), the research reports of the project and scientific meetings held by the project, where the results of research were published, correspond to the important subjects in BAPI. RCB/LIPI is main implementation institute of BAPI and B18scientific authorities of CITES in Indonesia. Providing scientific knowledge and data base for natural environment / wildlife conservation policy, and making advice to administrative organizations based on scientific point of view are duties of RCB/LIPI. The research reports of the project and scientific meetings held by the project supported such duties of RCB/LIPI directly.	The research papers published and research meetings conducted in this project correspond to the important issues shown in BAPI, meaning that they are consistent to the biodiversity conservation policy in Indonesia.	A
		How the subproject contribute to collaboration among implementing organizations.	To be described in overall evaluation grid			
	Factors affecting the effectiveness positively or negatively		・Questionnaire and interview for relevant persons	There were not enough discussions for research subjects at activity level when drafting for the project. Also an absence of long-term expert in charge of Sub A for the first year, and strategy for budget allocation of RCB/LIPI became obstacles to input for important subjects intensively. Because number of C/Ps in Sub A were so many and they belonged to 3 separate divisions, zoology, botany and microbiology, responsibility structure of C/P side was not so clear at first. But it was improved at the latter period.		
	Final evaluation 1) Through the sub-project A, many researchers have given opportunities to increase their knowledge, capacity, and ability to conduct reaserch and publish the result. 2) Scientific data and information useful for biodiversity conservation in Indonesia are increased largely. It is confirmed that RCB/LIPI becomes playing more vital role on biodiversity conservation not only in Indonesia but also in the South East Asia. Major achievements have been published as a series of scientific papers and inventories of fauna and flora. 3) C/Ps have acquired sufficient knowledge on utilization of advanced equipment as well as improvement of research ability. In particular, DNA analysis has achieved conspicuous results. However, some equipment provided by grant aid are not used well mainly due to low demand of researchers at Zoology Division. Those equipment shall be transferred to and used by Botany Division.					
	Inputs	Are inputs given as scheduled (quality, quantity and timing)	・Accomplishment grid ・Quarterly reports ・Questionnaire and interview for experts and C/Ps	Because there was no long-term expert for Sub project A at the first year of the project, to settle on the research and survey plan was delayed. This delay affected efficiency of research and survey activities after that. Others are nearly appropriate. For the C/P training of microorganism taxonomy, many institutes of microbiology in Japan were not so positive to receive trainee. It took long time to settle on.	Although there were some inconvenience about input as shown in the left column, they were overcome throughout the project. The input are evaluated to be satisfactory as a whole.	B

Efficiency	Relation between input and output	How are inputs resulted in outputs? Do you think the output quality and quantity are adequate comparing to the inputs?	・Questionnaire and interview for experts and C/Ps	At least 1 publication including international journals and symposium per each researcher were published. More than 100,000 insect specimens and 2,000 animal specimens for DNA analysis were collected. The most of the equipment supplied in the project were accessories and supporters for existing equipment. Most of these equipment were essentials to conduct research works and also research results. Though the training in Japan was not so effective for the total results of Sub project A because it was too short to acquire some technique, input/output performance of long term training was extremely high. The level of C/P as a researcher was relatively high from the beginning of the project. They could understand the functions and effectiveness of advanced equipment enough through training.	In general, the output level is evaluated adequate comparing to the amount of input. In order to improve efficiency of capacity building of C/Ps, their training period in Japan should be longer than implemented.	B
	Collaboration with other cooperation schemes	To be described in overall evaluation grid				
	Collaboration with other donor	To be described in overall evaluation grid				
	Factors affecting the efficiency positively or negatively		・Questionnaire and interview for relevant persons	- There are two animal breeding facilities (including buildings) in Cibinong and Kebun Raya Bogor. One for bird and the other for mamals. However, there is stiil a need to increase and improve the facilities in order to make reproduction researchers are available to work in Cibinong. - Insufficiency (or lack) of personal computer was great hindrance for research and survey activities. Only 2 computers (equipment in 2001) could be used for about 40 C/Ps to data processing and document preparation. All other computers were used only for database. - Because equipment were not arrived before the activities of short-term experts, the short-term experts could not use the equipment for their activities in 1999, 2000 and 2001. - For annual equipment it took very long time from apply to arrival. It is very difficult to make research and survey activities efficient in current supply system. To settle on the research and survey plan after starting project is almost impossible (or extremely inefficient). Therefore, the research and survey plan must be settled before the project start.		
	Final evaluation (Efficiency) C/Ps include several Ph.D. holders and many MSc. holders. Research efficiency is kept well by their adequate allocation and technical cooperation of Japanese experts. On the other hand, a signifinant delay was seen in procurement of equipment from Japan. Some equipment provided by Japan's grant aid are not used. Maintenance of some analytical equipment is somewhat difficult because there is no official agent in Indonesia. More careful considerations should have done before provision of advanced scientific equipment.					
	Contribution to overall goal	To be described in overall evaluation grid				
	Positive impact (intended)	Does the outputs of the Project stimulate activities of other domestic institutions (e.g. new research fields, competition of research, etc)?	・Project reports ・Questionnaire and interview for relevant persons	The possibility of DNA analysis in RCB/LIPI gave a positive impact to many universities, institutes and NGOs. There are many request to analyze DNA and research collaborate. Especially for the following endangered species in Indonesia, the network to collect samples and analyze genetic diversity had established; - Sumatran elephant (with Fauna and Flora International (international NGO)) - Sumatran tiger (with Fauna and Flora International (international NGO)) - Gibbon (with Gibbon Foundation (international NGO)) - Orangutan (with BOS Foundation (international NGO)) - Marine turtle (with PHKA)	It is highly evaluated that the project, especially newly provided technique, stimulated many domestic institute and NGOs and, established the network for DNA analysis for endangered species in Indonesia.	A
		Does the outputs of the Project stimulate activities of relevant institutions in Southeast Asia (e.g. new research fields, competition of research, etc)?	- do -	Two remarkable activities were conducted. 1)Regional Training Course on Taxonomy by ARCBC (ASEAN Regional Center for Biodiversity Conservation, supported by EU, head office is in Manila) was carried out at RCB/LIPI and GHNP on July and August in 2002. 2)The training course on taxonomy and methods of field survey by IBOY (International Biodiversity Observation Year, researcher's group to study biodiversity in Southeast Asia) was carried out at RCB/LIPI and GHNP.	It is highly evaluated that RCB/LIPI and GHNP were involved in the 2 networks, as described the left column, to study and monitor biodiversities in Southeast Asia.	A

Impact		Is collaboration with other research institutions promoted?	- do -	During a project period, many universities, NGOs, private companies and other research institutes request to RCB/LIPI to make a research collaboration. (Japan) - Making picture book of some insect type specimens (with Forest and Forestry Product Research Institute in Japan) - To get doctor degree for PCs (with Ibaragi University and Hokkaido University) - C/Ps became a member of research project supported by Ministry of Education, Culture, Sports, Science and Technology. (Indonesia) - Genetic diversity and conservation of Orangutan (with Orangutan Reintroduction Project by BOS Foundation) - Genetic diversity and conservation of Sumatran tiger (with Sumatran tiger conservation Project by Fauna and Flora International) - Genetic diversity and conservation of Sumatran elephant (with Sumatran elephant conservation Project by Fauna and Flora International) - Genetic diversity and conservation of gibbon (with Orangutan Reintroduction Project by Gibbon Foundation) - Microorganism taxonomy (with Indonesia University) - Genetic diversity and conservation of endangered dear species (with National University) - Genetics of live stocks (Bali cattle) (with Brawijaya University) - There were 2 private company requested to research collaborate. - There were many requests to use advanced equipment in RCB/LIPI.	RCB/LIPI was a central research institute of biology and biodiversity in Indonesia since before the project started. The results and achievements of the project greatly contributed for RCB/LIPI to collaborate with other research institutes.	A
		Are there any impacts on the other sectors such as environment, education, forestry, fishery, etc.?	- do -	- none	No conspicuous impact is seen at present, but it is sure that there will be some indirect positive impact for other sectors.	B
	Positive impact (unintended)		- do -	(Social aspect) The method to detect pork meat from food materials (taboo for Muslim) that RCB/LIPI developed by a request form Indonesian Police Department was a remarkable result to Indonesian society. (CITES related) Because RCB/LIPI acquired the technique and facilities to analyze DNA, LIPI decided the policy that DNA analysis should be conducted basically in RCB/LIPI in Indonesia. To export research materials for DNA analysis became very difficult especially the species listed in Appendix of CITES. (Law enforcement) RCB/LIPI has initiated to conduct methodology of census and monitoring of traded plants and animals and its will be applied for national standard of census and monitoring. (Economical aspect) RCB/LIPI has been revealed many endemic species, new species and new record of distributions, threatened species, potential species to be protected and developed for economic used.	To export biological materials was very easy (sometimes in illegal) before the project. But to export biological materials, especially for DNA analysis, became severe and strict during the project period. It is highly evaluated as a biological resource conservation point of view in Indonesia.	A
	Negative impact	Are there any negative impacts caused by the Project?	- do -	- None	No negative impact.	A
	Factors affecting the impact positively or negatively		· Questionnaire and interview for relevant persons	The most important factor affecting the impact was to provide opportunities to publish the research results. The scientific meetings held by the project contribute to increase public awareness and to make research networks in Indonesia.		

Final evaluation (Impact):

Improvement of research ability of RCB/LIPI contributes largely for achievement of the overall goal or increase of information and scientific data on biodiversity in Indonesia. RCB/LIPI is now recognized as a core facility on research of this field. Some inter-regional (Southeast Asia) training courses about biodiversity conservation have been carried out during the project period.

It is also highly evaluated that the project, especially newly provided technique, stimulated many domestic institute and NGOs and, established a network for DNA analysis for endangered species in Indonesia. Many university students are now encouraged and attracted to do some research. In addition, annual open house by the RCB/LIPI for any educational level of students and ordinary people are also increase the community awareness on the important of biodiversity.

Sustainability	Institutional aspect	Can RCB be considered as a stable organization in LIPI?	Interview to the chief of RCB	The position of RCB in LIPI is very stable as a center of biological research in Indonesia from Dutch era, 1894.	RCB can be considered as a stable organization in LIPI.	A
	Financial aspect	Prospect of budget allocation to RCB after termination of the Project, such as maintenance cost of facility and equipment and project implementing cost.	- do -	Although JICA did not conduct financial aid for maintenance of institution (buildings) during the project period, maintenance of the institution is financially no problem. The ordinary budget of RCB/LIPI was Rp. 31,456,461,000 in 2002, which was more than double of that in 2001. Increase the ordinary budget will be expected from now on. Some research activities in the project have incorporated to the government project in Indonesia.	Indonesian side support all the expense for maintenance of institution (buildings) at the moment. There are no financial problems to maintain the institution.	B
	Technical aspect (Fixing of technology)	Maintenance system of equipment	· Questionnaire and interview for experts and C/Ps	Serious problem for maintenance occurred to some donated equipment that had no official agency in Indonesia and were purchased not from official agency in Indonesia. This will affect sustainability of equipment itself and research activities using these equipment.	Equipment is generally maintained well, however, it is difficult to use some equipment that can not be repaired in Indonesia.A	B
		Will C/Ps work continuously?	- do -	C/Ps acquired the DNA analysis technique hold annual training course to the researchers outside LIPI from 2000. The participants came from all over Indonesia to this DNA training. The C/Ps wish to continue the training course in the future. All C/Ps trained in Japan are continue working in RCB/LIPI.	All the technique transferred were fixed and all the C/Ps acquired new technique are continuing working in RCB/LIPI. DNA analysis training to researchers outside LIPI will be continued after the project.	B
		Is the evaluation system which stimulates incentive of researchers/technicians established and adopted properly?	- do -	RCB/LIPI has a system to certify researchers as technical evaluators in laboratories. RCB/LIPI has a system to evaluate their research achievements. The researchers will promote based on this system.	There is an incentive about promotion of reserchers and technical staff.	B
	Social aspect	Are there any problems relating to social issues such as gender, cultural and local customs?	·Questionnaire and interview for relevant persons	- None	No problem is seen about social aspect.	B
	Factors affecting the sustainability positively or negatively		·Questionnaire and interview for relevant persons	Recently, the numbers of new employment to RCB/LIPI were very few. Now the average age of researchers in RCB/LIPI exceed 40 years old.		

Final evaluation (Sustainability)

It is highly expected that the study and research on biodiversity will be continued as priority subject in RCB/LIPI. RCB has been a stable organization in LIPI, and the research staff has been working continuously. However, number of young staff is limited as in other government research institutions because of the policy of Indonesian government after the economic crisis in 1998. Bring in new (young generation) researchers are necessary for further development. It is recommendable to encourage young researchers through various alternative measures such as accepting under graduate or graduate students across the boundaries of institutions to use research facilities, and community outreach by establishing annual open house and publishing reports.

3-3 Evaluation Grid for Sub-Project B

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Result	Evaluation	Grade
Achievement	Please refer to Accomplishment Grid for Sub-Project B					
Implementation process	Progress of activities	Are the activities carried out on schedule?	・Quarterly reports ・Questionnaire and interview for experts and C/Ps	The implementation of Sub-Project B is almost following the original schedule. Three database systems have been (or is going to be) completed, except for improvement of the flora specimen database system, which is difficult to develop in this Project because of insufficiency of computer capacity which work so slowly.	The activities are confirmed to carry out almost following the original schedule, but some difficulty for achieving a specific subject.	B
	Monitoring process	To be described in overall evaluation grid.				
	Relation between Japanese experts and Indonesian C/Ps	Are they communicate well? Are there any problems about communication?	・Questionnaire and interview for experts and C/Ps	They are frequently communicated, although there was a little problem about language and cultural differences initially.	Initial difficulty about communication is indespensable.	B
	Supporting system of the Project	To be described in overall evaluation grid.				
	Final evaluation The implementation of sub-project B is almost following the original schedule. Japanese experts and Indonesian C/Ps had a good relationship, although there was misunderstanding in some occasion.					
Relevance	To be described in overall evaluation grid.					
	Degree of achievement of sub-project purpose	How is the database management system of BIC improved by implementation of this sub-project?	・Accomplishment Table ・Interview to the chief of BIC	* Before this Project started, RCB/LIPI already had flora specimen database system and fauna specimen database system. Those systems were developed by BIC C/Ps as one activity of GEF project. The systems were developed in MS Access and were used for data entry. As the result of implementation of this Project, the above database systems were improved. For example, the systems were modified so that the latitude and longitude of locality where a specimen was collected could be entered, the application to display a distribution map was added by using GIS software, and a database engine for fauna specimen was changed from MS Access to Oracle to make the system more stable. Furthermore Bibilography database system and Field Survey database system were newly developed and Microbiology specimen database system is being developed. Also the application to publicize speimen data and bibliography data on Web was newly developed. * When this Projcect started, some BIC C/Ps had limitted konwledge of network, database, GIS and Web. As the result of implementation of this Project, the C/Ps learned to manage Network system by themselves, to develope database/GIS system by using professional consultant's advise and to establish and administrate Web site.	It is evaluated that by implementing this sub-project B the database management system of BIC being improved The structure of the database system has already been made.It will take long time to entry the data because the data is over 2 million. When this project started, Web and Network system is not so popular in the world.	B
	Contribution of output for the achievement of sub-project purpose	How does this sub-project contribute to human resource development, namely capacity building of C/Ps?	・Questionnaire and interview for experts and C/Ps	Since the actual system management is conducted by technical staff of BIC, technical training such as development of software and system maintenance was mostly conducted for them. In addition, application progam for microbiology and field survey database management systems were designed and developed by BIC C/P by utilizing professional local consultants.	It is confirmed that necessary technical skills for system development has already been acquired by BIC. Also, as for the system maintenance and operation, techncial level of BIC staff is evaluated to be basically sufficient to undertake them alone.	B

Effectiveness		Are useful data increased?	- do -	The number of data publicized on Web has increased gradually since the Web site was started in February, 2000 (2,508 fauna type specimen, 3,065 flora type specimen and 6,922 bibliography data are available on WEB at present).	Considering that the data on the Web are publicized after checked by RCB researechers, it is evaluated that number of trustable and useful data have been increased by the project.	A
		Is BIC/RCB satisfy about present data management system?	- do -	BIC C/Ps can update and maintain database by themselves, and they answered the improved system is easy to use. However, many other users such as collection managers of RCB commented that the system is not so easy to operate and it takes time for them to obtain necessary data because of insufficiency of computer hardware. The application cannot run by old computers in the collection rooms. Despite the in-house evaluation shown above, the database system of BIC is highly evaluated by other countries, and many donors are interested in collaborating with BIC in Biodivercity Information System.	At present, most of users of RCB are not satified very much about the computer facilities to view information mainly because of the old technology takes access time long. On the other hand, this database itself is evaluated to be significant by international users.	B
		How does the project contritute to budgeting of BIC?	・Questionnaire and interview for experts and C/Ps ・Annual budget	According to the head of BIC, the annual budget tends to increase by 20-30%, because of the importance of the database information system as well as achievement of this project.	The achivement of the project is confirmed to contribute budget allocation for BIC.	B
		How the subproject contribute to collaboration among implementing organizations	To be described in overall evaluation grid			
	Factors affecting the effectiveness positively or negatively		・Questionnaire and interview for relevant persons	The status of BIC is not clear in the organization chart of RCB/LIPI, although researchers and other staff recognize BIC as a center of information belonging to the Research and Collection Facilities Division. Method has not been established yet as to how to collect data entered into the field surey applicaton by non-LIPI-RCB researchers to BIC. (C/P is considering to develop a mechanism within NBIN project.)		
	Final evaluation The database management system has been improved by this project and now three systems, namely specimen database, bibliography database and field survery database are being operated within RCB/LIPI by using LAN environment. C/Ps have aquired technical skills either from Japanese experts or recruited local consultants. They are now able to update and maintain database by themselves. The utilization of database is not difficult according to the C/Ps, but many other users such as collection managers of RCB commented that the system is not so easy to operate and it takes time for them to obtain necessary data because of insufficiency of computer hardware. Biological specimen collection of RCB/LIPI is valuable heritage in the world and also database of specimen collection is expected by many biologists of the world.					
Efficiency	Inputs	Are inputs given as scheduled (quality, quantity and timming)	・Accomplishment grid ・Quartary reports ・Questionnaire and interview for experts and C/Ps	It was difficult to recruit short-term experts on Web administration, instead local professional engineers could be procured in this project. About equipment, the timming of provision was delayed largely, which hindered flexible activities. Core C/Ps received training in Japan at the early stage of the project and therefore their training results were used directly and indirectly in subsequent project activities.	Although there were several inconveniences about input, they are now almost improved.	B
	Relation between input and output	How are inputs resulted in outputs? Do you think the output quality and quantity are adequate comparing to the inputs?	・Questionnaire and interview for experts and C/Ps	C/Ps answered in the questionnaire that the recruit of local engineers was adequate for improvement of their capability as well as accomplishment of the database preparation, because of no language and cultural barrier. Information technology instrument such as PCs provided by JICA are being used. However, because of very rapid changes in specifications in software and hardware some of them are not being used. As for some old instruments, although they are still being used they have problem that they slowly run modern software. C/P who received training in Japan continue to work in BIC or IT related positions within RCB. Therefore, the results of the training are used in the C/P organization.	All input are evaluated to be utilized well in order to achieve the output, although there are unqualified computer equipment which seems unavoidable at the present situation that the speed of hardware improvement is so fast.	B
	Collaboration with other cooperation schemes	To be described in overall evaluation grid				

	Collaboration with other donor		**To be described in overall evaluation grid**		
	Factors affecting the efficiency positively or negatively		·Questionnaire and interview for relevant persons	Since C/P of GEF project (1994/10-2000/10) and BC/P are overlapping, there was a constraint that C/P cannot concentrate on BC/P activities. However the advantage is that overlapping activities between GEF and BC/P can be avoided because C/Ps can work on parallel condition. The assistance policies of JICA is different from that of other donor agencies like GEF, so it gave negative effect on the willingness of C/P to participate in this Project. In 2000 the organizaion of RCB/LIPI was changed, and BIC was transferred from the Service and Information Division to the Research and Collection Facilities Division. Due to this oraganizational change, BIC is now managed by two ways, one is the matter relating to the maintenance of hardware which is controled by the Research and Collection Facility Division, and the others which is controled directly by the head of RCB/LIPI. This prevents efficient activities of BIC.	
	Final evaluation Despite the institutional unstability of BIC, the project outputs have been achieved efficiently. In general necessary equipment were provided on time. Japanese short-term expert regarding WEB site managment was difficult to be assigned, but it was substituted by local consultants, which was evaluated to be better dicision considering the system maintenance thereafter. C/Ps who experienced training in Japan work continuously.				
Impact	**Contribution to overall goal**		**To be described in overall evaluation grid**		
	Positive impact (intended)	Does the outputs of the Project stimulate activities of other domestic institutions (e.g. new research fields, competition of research, etc)?	· Project reports · Questionnaire and interview for relevant persons	Because of the improvement of available data stock in BIC, such organizations are now using such data as relevant government agencies (PHKA, Department of Foresty, Department of Health, etc), NGOs (CI, TNC, Wetland, etc) and universities in Indonesia.	Expected impact regarding the output of sub-project B is evaluated to be emarging gradually.	A
		Does the outputs of the Project stimulate activities of relevant institutions in Southeaset Asia (e.g. new research fields, competition of research, etc)?	- do -	Because of improvement of management of biodiversity information system, BIC C/Ps became the instructor of the Biodiversity Information System subject in the training for the ASEAN countries held by ARCBC(ASEAN Regional Center for Biodivercity Conservation) from June to August 2002.	Indicating the strengthening of competence of BIC/RCB	A
		Is collaboration with other research institutions promoted?	- do -	C/Ps of sub-project B are playing key roles in the National Biodiveristy Information Nework (NBIN) project supported by ADB (starting from 2001 for five years), of which the purpose is to etablish information exchange network for metadata on biodiversity connecting research institutes, universities and other organizations in Indonesia. BIC is expected to work as a node of this project, although instruments such as server machines have not yet been acquired.	It is assessed that the capacity of C/P is improved as to participate in the project of ADB.	A
		Are there any impacts on the other sectors such as environment, education, forestry, fishery, etc.?	- do -	BIC activities don't link directly to other sectors, so there is no visible impact. But it can be indirectly gave impact to other sectors such as education, forestry as well as environment.	No conspicuous impact is seen at present, but it is sure that there will be some indirect positive impact for other sectors.	B
	Positive impact (unintended)		- do -	GBIF (Global Biodiversity Information Facility) which was launched in March 2001 by the financial support from OECD countries including Japan, is aiming at the construction of a system by which data such as of specimens of species all over the world can be retrieved via internet. Although Indonesia has not joined this scheme, BIC C/P is invited for its official meeting for the purpose of information exchange and specimen database of BIC is highly evaluated by the Facility. If Indonesia joins the scheme in future, BIC is assumed to become a focal point of Indonesia for GBIF network. GTI (Global Taxonomy Iniciative); In the meeting held in September 2002 in Malaysia, it was decided that specimen management training and field survey management training would be conducted for Asian countries. BIC is expected to become one of the trainers in those trainings.	Although the description of the left colum is the expected impact near future, it is prausible because the database system improved in this project is the only one available in Indonesia.	B
	Negative impact	Are there any negative impacts caused by the	- do -	No negative impact	No negative impact	B

	Factors affecting the impact positively or negatively		・Questionnaire and interview for relevant persons	BIC database system was frequently introduced at the international conferences concerning biodiversity information system.		
	Final evaluation The achievement of sub-project B is going to emerge a series of positive impacts, namely particicontibutes not only to overall but also to goalIn order to establish information exchange network for metadata on biodiversity in Indonesia, ADB has started the National Biodiveristy Information Nework (NBIN) project since 2001. C/Ps of sub-project B are now playing key roles in the ADB's NBIN project, and BIC is expected to work as a node of this project. In addition to this, following international linkage is going to be emerged at present, namely GBIF (Global Biodiversity Information Facility) and GTI (Global Taxonomy Iniciative).					
Sustainability	Institutional aspect	Can BIC be considered as a stable organization in RCB/LIPI?	Interview to the chief of BIC	BIC is a division under RCB/LIPI that coordinating and facilitating data and inform for three others divions (microbiology, botany and zoology) under RCB/LIPI building and not the name of organization.	Institutional improvement of BIC need to be confirmed.	B
	Financial aspect	Prospect of budget allocation to RCB after termination of this Project, such as maintenace cost of facility and equipment and project implementing cost.	- do -	As of now, NBIN budget can be used. However, financial sources are uncertain in future. It shall be noted that security management of WEB site requires high level of know-how and outsourcing of the security related work is indespensable. In addition, periodical improvement of hardware shall be required in order to maintain quality data management system. These factors indicate necessity of significant budget allocation.	As far as present institutional situation is adopted, BIC is probably difficult to request external budget by itself.	C
	Technical aspect (Fixing of technology)	Maintenance system of equipment	・Questionnaire and interview for experts and C/Ps	It is becoming difficult to get parts for old PCs and peripherals. On the other hand, hardware and software updating are not being carried out smoothly due to the lack of necessary budget. It is possible to procure consumables properly.	The project could not catch-up with the speed of hardware development of computer.	C
		Will C/Ps work continuously?	- do -	Since RCB/LIPI is a research institute and personnel shuffle is minimal unlike NCIC/PHKA, assignment of BIC staff is also stable. All of the staff who received training in Japan are still responsible for information management work in BIC or other sections within RCB.	Most probable C/Ps work continuously.	B
		Is the evaluation system which stimulates incentive of researchers/technicians established and adopted properly?	- do -	In RCB/LIPI, there is an evaluation system for both researchers and technical staff. That system was already functioning before the project started and it's still functioning very well.	There is an incentive about promotion of reserchers and technical staff.	B
	Social aspect	Are there any problems relating to social issues such as gender, cultural and local customs?	・Questionnaire and interview for relevant persons	None	No problem is seen about social aspect.	B
	Factors affecting the sustainability positively or negatively		・Questionnaire and interview for relevant persons	Not special		
	Final evaluation C/Ps are now able to operate and manage the database, meaning that the basic technical sustainability is secured. However, financial source and budget are limited and unstable at present. It is certain that strengthning of information system must be continued as an important principle of RCB/LIPI. In order to coupe with this principle, institutional independency of BIC is required, since current situation of BIC seems to be inconvenient for expected vital database management activities.					

3-4 Evaluation Grid for Sub-Project C

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Result	Evaluation	Grade
Achievement	Please refer to Accomplishment Grid for Sub-Project C					
Implementation process	Progress of activities	Are the activities carried out on schedule?	·Accomplishment grids	1) In general, almost all the planned activities were undertaken. 2) Issues: * Data collection: Data could not be collected as planned. The reason is that field offices do not have much data. * Publication: It is difficult to catch up with the pre-determined publication schedule because NCIC staff are quite busy in dealing with various types of original jobs assigned to them and could not spare enough time for publication work. Final evaluation	According to quarterly reports and interview results, it is judged that the project activities were carried out almost as planned.	B
	Monitoring process	To be described in overall evaluation grid				
	Relation between Japanese experts and Indonesian C/Ps	Are they communicate well? Are there any problems about communication?	·Questionnaire and interview for experts and C/Ps	Because the Japanese long-term expert stationed at NCIC, communication with C/Ps was done every day. C/Ps answered that they can talk freely to Japanese experts, although minor language problem existed for some experts.	Good relation between Japanese experts and C/Ps was confirmed.	A
	Supporting system of the Project	To be described in overall evaluation grid				
	Final evaluation In general, almost all the activities were undertaken as originally planed. The communication between expert and C/Ps were very good.					
Relevance	To be described in overall evaluation grid					
	Degree of achievement of sub-project purpose	How is the database management system of NCIC improved by implementation of this sub-project?	·Accomplishment Table ·Interview to the chief of NCIC	Before the introduction of the management systems, data were scattered around. But now large volume of data are collected and stored in the database and make users (mostly staff of NCIC) easy to find or compile data for their various types of work. Also, since data are basically in digital format, data exchange become easier than before.	It is confirmed that database management systems have been improved and C/Ps at NCIC are using them in their routine job. According to the users (mostly C/Ps), all the three systems developed in the project, namely spatial information database, non-spatial information database and Web site, are evaluated effective, although further improvement of quality and quantity of data is necessary.	A
	Contribution of output for the achievement of sub-project purpose	How does this sub-project contribute to human resource development, namely capacity building of C/Ps?	·Questionnaire and interview for experts and C/Ps	Data administration capability of C/P was improved. In the project, C/Ps intensively involved in computerized system construction work. Through this actual involvement in the work, C/P could understand that construction of databases and their management systems need much resources and time. The fact that C/P could develop understanding about the reality of system construction work is equally important outcome of the BC/P in addition to the improvement in their technical skills in handling computer hardware and software. Also, the attitude of C/P staff at NCIC becomes positive due to some degree of confidence they have gained through the system construction work.	According to the questionnaire survey, C/Ps of NCIC mentioned about improvement of their technical ability and also positive change of their work attitude because of the participation to sub-project C. Those results indicate high effectiveness of the project.	B

Effectiveness		Are useful da increased?	- do -	At the start of BC/P, PHKA did not have any clear and efficient mechanism to store and manage various information for the management of conservation areas. Throughout the project, volume of NCIC data is certainly increasing. However, it is noted that data maintenance is restricted due to the difficulty in getting data from field offices. Since data collection is beyond the capacity and authority of NCIC, understanding and cooperation from all quarters of PHKA is essential to increase the volume of latest data at NCIC.	Usef :! data are confirmed to be increasing. In order to increase the field data, cooperation of other sections of PHKA shall be promoted.	B
		How does this project contribute to the arrangement of equipment of NCIC?	- do -	The Japanese side provided almost all the necessary instruments and equipment including software required for the implementation of NCIC work. The Indonesian side provided office space for the expert, administrative staff for NCIC and electricity. Indonesian side also provided part of consumables such as plotting papers.	It is evaluated that the sub-project C contributes to the improvement of NCIC equipment because almost all the equipment were supplied by the project.	B
		How does the project contribute to budgeting of NCIC?	·Questionnaire and interview for experts and C/Ps ·Annual budget	(1) Expert prepared comprehensive list of necessary operational costs. (2) Until 2001 the amount of local budget was very small such as Rp.300 million. From 2002 it increased to Rp.500 million and expected to increase. Estimation of necessary costs by an expert to some extent contributed to this increase in budget.	With the progress of the project, value of NCIC as a data center started to be recognized by PHKA and this contributed to the increase in the budget NCIC can get.	A
		How the subproject contribute to collaboration among implementing	To be described in overall evaluation grid			
	Factors affecting the effectiveness positively or negatively		·Questionnaire and interview for relevant persons	1) It was difficult to collect data for all the conservation areas listed in PDM because many conservation areas except for national parks do not have much data particularly map data. Usually field offices was not able to answer to the data request such as hand-out questionnaires. 2) Too much expectation on the capability of computer systems. This seems to have contributed to the expansion of specifications of database management systems during the initial stage of the review of proto-type application program. It took much time for NCIC to understand the reality of computer systems and the value of "practicality".		
	Final evaluation The results indicate effectiveness of the outputs contributing the achievement of Sub-Project purpose. The improvement of technical capability of C/Ps, increased useful data managed, and the increasing number of data used by outside individuals and organizations, all contribute to improve the data management system of NCIC. Furthermore, institutional capacity of NCIC was highly enhanced by the Project.					
	Inputs	Are inputs given as scheduled (quality, quantity and timing)	·Accomplishment table ·Quarterly reports ·Questionnaire and interview for experts and C/Ps	Input was implemented almost as planned. Details are as follows. 1) Quantity and quality of provided equipment was generally fine. However, it is observed that the procurement system have some difficulty in catching up with rapidly changing project environment and the progress of hardware and software. 2) Short term experts were not dispatched as expected due to the difficulty in recruiting eligible persons in Japan. Eventually, they were substituted by local engineers. 3) Training in Japan was generally OK. Especially the training of WEB page design contributed to the construction of NCIC webpage. 4) Facility (building) was sufficient for the project activities. 5) As for local budget to cover project costs, the amount was insufficient and affect the procurement or repair work. Instability of NCIC during the first half of Phase II also hampered the smooth implementation of project activities.	Not all the input was made smoothly as anticipated. Some Japanese input was not good timing to carry out the However, the resources which were put into the project were fully utilized. Therefore, it is evaluated that the efficiency of the Input was fare.	B

Efficiency	Relation between input and output	How are inputs resulted in outputs? Do you think the output quality and quantity are adequate comparing to the inputs?	・Questionnaire and interview for experts and C/Ps	Technical assistance of Japanese expert and provision of a series of equipment were essential and fully utilized for development of the database system. C/P training in Japan was also considered to be effective to improve the efficiency particularly for establishment of the Web site. Amount of provided budget was not enough for the construction of comprehensive non-spatial information database management system. But with the efforts of NCIC staff, the system reached the level of practical usage. Budget for the construction of spatial information database management system was sufficient.	Considering the answers on questionnaires and interviews conducted in this evaluation study, the input for this project is evaluated to be reasonable in terms of quantity and quality to yield the output.	B
	Collaboration with other cooperation	To be described in overall evaluation grid				
	Collaboration with other donor	To be described in overall evaluation grid				
	Factors affecting the efficiency positively or negatively		・Questionnaire and interview for relevant persons	Factors affecting efficiency (Negative Effect) 1) Background of C/P: C/P are not technical officers but administrative staff. Therefore, they are busy with their primary job and cannot spare enough time for technical activities such as practicing operation of various software. Also, since the technical background or experience of C/Ps are not in computer field it took long time for them to learn technologies used in NCIC. 2) Working time: In order to learn the operation of computerized systems, large amount of time is required and official office hour is not sufficient. But only a small number of staff spent or could spend time for self learning. 3) Stability: During the first half of the Phase II, organization of NCIC changed frequently. Even in the latter half of the Phase II, three trained C/Ps moved out of NCIC or Ministry of Forestry.		
	Final evaluation The input for this project is evaluated to be reasonable in terms of quantity and quality of the outputs. However, lack of proper allocation of technical staff made difficulty to implement activities efficiently.					
Impact	Contribution to overall goal	To be described in overall evaluation grid				
	Positive impact (intended)	Does the outputs of the Project stimulate activities of other domestic institutions (e.g. new research fields, competition of research, etc)?	・Project reports ・Questionnaire and interview for relevant persons	NCIC is now known as a major data center so that various persons and organizations such as major NGOs and universities started to contact NCIC to seek data. Large size equipment of NCIC such as large plotter and digitizer are also used by staff of NGOs and other PHKA offices.	It is evaluated that the impact of the sub-project C is extending towards activation of domestic nature conservation activities of NGOs and universities.	A
		Does the outputs of the Project stimulate activities of relevant institutions in Southeast Asia (e.g. new research fields, competition of research, etc)?	- do -	NCIC improved the quality of data collected and stored by ASEAN Regional Center for Biodiversity Conservation (ARCBC). This is the proof that NCIC started to function as one of key nodes for of Indonesia for the collection and dissemination of information on biodiversity in Indonesia.	It is evaluated that the databases of NCIC improved by this project contribute to refinement of the data of ARCBC, meaning that the positive impact extends to the ASEAN region or to global level.	A
		Is collaboration with other research institutions promoted?	- do -	NCIC started to cooperate with foreign institutes such as ARCBC, which received one staff from NCIC and one staff from BIC/RCBC/LIPI for its Philippine office to exchange information on the databases and to provide them with learning opportunities of database management. Whereas, ARCBC staff visited NCIC two times to discuss future plan for conducting joint training on database management of natural resources and biodiversity data.	It is confirmed that collaboration between NCIC and ARCBC is started in good partnership.	A
	Positive impact (unintended)	Are there any impacts on the other sectors such as environment, education, forestry, fishery, etc.?	- do -	Now there are significant number of visitors to NCIC including local high school and university students in the field of environmental education and data processing. They intend to learn about environmental conservation policies and the operation of GIS.	The fact shown in the left column indicates that the achievement of this project produces positive impact on environmental education.	A

	Negative impact	Are there any negative impacts caused by the Project?	- do -	Nothing	No negative impact.	B
	Factors affecting the impact positively or negatively		・Questionnaire and interview for relevant persons	NCIC publications and advertisement in various seminars or meetings contributed to the publicity of NCIC and this led to the yield of positive impacts.		
	Final evaluation Establishment of NCIC under BCP has significant impact on the implementation of BAPI. Now Indonesia has a clear node of contact for domestic and international individuals and organizations when they need information on conservation areas in Indonesia.					
Sustainability	Institutional aspect	Can NCIC be considered as a stable organization in PHKA?	Interview to the chief of NCIC.	NCIC was very unstable organization until mid 2000, having been attaching to different Directorates of PHKA. In addition to this institutional confusion, C/P members were changed frequently. During a certain time period, most of C/Ps did not work in the NCIC building in Bogor but in Jakarta. However, after the mid 2000 when it was put under the Directorate of Area Conservation, NCIC acts as more or less stable organization. Thereafter, although some capable C/Ps has resigned from NCIC for NGOs and other Directorate within PHKA, it could recruit another capable staff from other PHKA office.	Organizational history of NCIC explained by C/P shows that NCIC is now regarded as a stable organization in PHKA than before although its status should be clearer and higher than before.	B
	Financial aspect	Prospect of budget allocation to NCIC after termination of this Project, such as maintenance cost of facility and equipment and project implementing cost.	- do -	NCIC obtained new funding source for "Nature Resources and Ecosystem Conservation Project". This enable NCIC to got a budget of Rp.300 million last year and Rp.500 million last year. The amount is expected to increase some more and also it is likely that NCIC can get some budget for this activities until 2007. Since the size and item of budget necessary for the operation of NCIC was repeatedly discussed together with Japanese expert, NCIC is capable of making realistic budget plan.	The total amount may not be sufficient to cover all the costs necessary for management of hardware and software.	C
	Technical aspect (Fixing of technology)	Maintenance system of equipment	・Questionnaire and interview for experts and C/Ps	All the major equipment of NCIC was procured in Indonesia. And NCIC did not encountered any difficulty yet in finding spare parts for them in Indonesia. Consumable can be procured in Indonesia.	Maintenance of the existing equipment is assessed to be technically possible in Indonesia.	B
		Will C/Ps work continuously?	- do -	Under current administrative policy of the PHKA, staff of NCIC is regarded as an administrative staff - not technical staff. This seems to make it difficult for NCIC staff to stay at NCIC for long period.	Transfer of trained C/P is considered to be unavoidable in NCIC.	C
		Is the evaluation system which stimulates incentive of staff established and adopted properly?	- do -	Currently NCIC is categorized as an administrative position. Therefore, even if its staff is involved in technical work, their performance or contribution in technical fields cannot be evaluated properly.	It is afraid that the motivation of young staff cannot be encouraged if NCIC is being categorized as administrative position. From this aspect, there is a little anxiety about the technical sustainability.	C
	Social aspect	Are there any problems relating to social issues such as gender, cultural and local customs?	・Questionnaire and interview for relevant persons	None	No negative impact was recognized.	B
	Factors affecting the sustainability positively or negatively		・Questionnaire and interview for relevant persons	There are various factors affecting negatively the sustainability such as shortage of budget and inappropriate personnel administration system, which have been mentioned in the above. Personal administration issues, however, can be solved if the status of NCIC is reviewed carefully in PHKA and flexible policy is adopted.		

	Final evaluation Although, the actual budget of NCIC is confirmed to be increasing, the total amount may not be sufficient to cover all the costs necessary for management of computer system. It is evaluated that financial and institutional sustainability is low, and need to be more enhanced. Organizational condition should be improved by various measures. Organizational condtion is assumed that to be improved by adopting the following measures: (1) Personnel administration: * PHKA reviews its personnel administration policy to give NCIC clear status as functional staff. * NCIC assign more than one staff for one technical field as backup. * Increase the ratio of outsourcing. Although this is totally depend upon the available budget, use professional private firms instead of raising own engineers. * Use NGO staff who already have certained technical skills by collaboration with NGOs. (2) Budgeting: * Using WEB site and publications, advertise the role and value of NCIC and its data to PHKA and other organizations under the Ministry of Forestry to increase the budget.

3-5 Evaluation Grid for Sub-Project D

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Result	Evaluation	Grade
Achievement	Please refer to Accomplishment Grid for Sub-Project D					
Implementation process	Progress of activities	Are the activities carried out on schedule?	・Questionnaire and interview for experts and C/Ps	Most of activities planned have been completed and their outputs have come out, while some activities are still going on as scheduled. There is no activities planned but not implemented.	The achievement of activities for sub-project D can be evaluated as satisfactory.	B
	Monitoring process	To be described in overall evaluation grid				
	Relation between Japanese experts and Indonesian C/Ps	Are they communicate well? Are there any problems about communication?	・Questionnaire and interview for experts and C/Ps	The main office of the Japanese expert is set at the PHKA Bogor office, which is located about 2.5 hrs by car from GHNP management office at Kabandungan. Japanese experts and C/Ps of GHNP have come and gone to their offices frequently each other. A liaison meeting has been held at the PHKA Bogor office at least once every week. Therefore, a smooth communication has been kept between them. According to questionnaire, they discuss freely about scope of the project activity.	They have kept good relationship.	A
	Supporting system of the Project	To be described in overall evaluation grid				
	Final evaluation In general, almost all the activities were undertaken as originally planed. The communication between expert and C/Ps were very good.					
Relevance	To be described in overall evaluation grid					
	Degree of achievement of sub-project purpose	How is the management system of GHNP improved through implementation of Sub-Project D?	・Accomplishment table of the Project ・Interview to the chief of GHNP	Throughout the BCPII sub-project D, management system is gradually developed, for example, the number of GHNP staff has reached to nearly hundred now and the management system of Cikaniki Research Station has been established.	The organization of GHNP and its capacity has been improved to accomplish the activities.	A
	Contribution of output for the achievement of sub-project purpose	How does this sub-project contribute to human resource development, namely capacity building of C/Ps?	・Questionnaire and interview for experts and C/Ps	1) C/Ps have acquired the skill of planning and implementation of activities; eco-tourism, endangered species conservation and environment education through collaborative work with the Japanese experts and CP training in Japan. Most of the C/Ps commented that their technical ability was improved through the project and impressed by Japanese style of job implementation. 2) One of GHNP staff entered the doctor course of IPB (Bogor Agricultural University) on the supports of the Project. His study is on the economical value and utilization of GHNP for local people.	It is confirmed that this sub-project contributes largely on capacity building of C/Ps in GHNP.	A
		Are the results of research utilized for park management ?	- do -	The results of researches on endangered species and other flora and fauna were applied to Action Plan for the endangered species conservation, the programs and materials of environment education and eco-tourism, and other activities to get public awareness.	The results of research was utilized for park management.	B

Effectiveness		How effective is the participation of local people regarding park management ?	- do -	Following activities were elaborated by the project. Those are all effective as a step of joint park management. Local people have joined in the eco-tourism activities as interpreters to visitors. Local people have taken part in the field surveys to collect the data, understood the importance of endangered species conservation. The income of local people has been enhanced in participating especially in eco-tourism and research activities. Public awareness has been also raised. Trained local people have participated environmental education activities in elementary schools.	It is confirmed that the project try to involve local people for park management. This is highly evaluated from the aspect of people's empowerment as well as enhancing the sustainability of park management.	A
		How does the development of ecotourism contribute to park management ?	- do -	Actually, eco-tourism for GHNP is first introduced by this project. Although the tour is still pilot trial level, it is gathering high interests particularly among Japanese people staying Jakarta as well as Indonesian people. At the eco-tour, the information of GHNP together with some educational materials are distributed for the visitors. In near future, it is expected that the people's awareness about the necessity of park management is improved by development of adequate eco-tourism at GHNP.	Although the activity of eco-tourism is just a starting phase, it is evaluated to be effective for utilization of natural resources in sustainable manor.	A
		How is the conservation plan of endangered species involved in park management?	- do -	The conservation plan of endangered species contributes directly to formulation of overall park management plan particularly on the area and ecosystem management plan in order to prevent illegal hunting and logging. It shall also be used for environment education and eco-tourism activities.	The conservation plan of endangered species is considered to be one of the focal issues in GHNP in order to manage the park properly.	B
		How does the Project contribute to the improvement of equipment of the implementing agency (GHNP)?	·List of provided equipment ·Questionnaire and interview for experts and C/Ps	1) 4WD cars and motor cycles provided in 1999 have contributed to improve mobility for the activities of patrols, surveys and environment education. 2) Radio communication system provided in 1999 has facilitate the communication and transmission between offices in GHNP. 3)Micro-hydro facilities provided in 2000 has improved the convenience of Cikaniki Research Station and contributed to reduce the fuel cost for a generator.	The Project contributed to the improvement of equipment as expected.	A
		How does the project contribute to budgeting of GHNP	·Questionnaire and interview for experts and C/Ps ·Annual budget	The total amount of budget has been steady increasing since 2000 for the project activities.	The project has contribute the budget allocation of GHNP in minor extent.	C
		How the subproject contribute to collaboration among implementing organizations.	To be described in overall evaluation grid.			
	Factors affecting the effectiveness positively or negatively		·Questionnaire and interview for relevant persons	1) A micro-hydro electric power generation was completed and started operation in November, 2000. Although the power supply is not enough in dry seasons, it contributed much to improve the working condition in Cikaniki research station. As the result, the station was used more efficiently. 2) GHNP was declared by the Minister of Forestry as a center for Indonesian biodiversity conservation and ecotourism on 3 May 2001. It was very supportive for the promotion of project activities.		
	Final evaluation The results indicate effectiveness of the outputs contributing the achievement of Sub-Project purpose. 1) In environment education, the capacity to plan and implement their own program has been built up and raised in GHNP. 2) Eco-tourism in GHNP has been promoted, and will potentially contribute to the sustainable development. 3) In endangered species conservation, a lot of information has been collected from their research. The conservation plan for those species is expected to contribute strongly the park management in GHNP with further technical and funding support available. With these achievement, management of GHNP has been improved in accordance with its management plan.					
	Inputs	Are inputs given as scheduled (quality, quantity and timing)	·Accomplishment table ·Quarterly reports ·Questionnaire and interview for experts and C/Ps	Input of Japanese side has been given in line with PDM and achieved well. Indonesian input was well achieved except for provision of C/P budget.	Input of Japanese side has been given in line with PDM and achieved well. Indonesian input was well achieved except for provision of C/P budget.	A

Efficiency	Relation between input and output	How are inputs resulted in outputs? Do you think the output quality and quantity are adequate comparing to the inputs?	・Questionnaire and interview for experts and C/Ps	Collaborative work and knowledge sharing: In general, Japanese experts and C/Ps frequently work together and share the knowledge. Since the C/Ps assigned for the sub-project D are mostly young having basic knowledge on administration with technical background and enthusiasm, technical transfer has been efficiently carried out by the experts. The contents of technical transfer by short term experts were coincident with the needs of all counter-parts for eco-tourism, environment education and endangered species conservation. Yearly dispatch of the same expert for eco-tourism or experts from the same research group for endangered species conservation was very effective in order to accumulate and develop the results of technical transfer.	The quality and quantity of output is evaluated to be adequate comparing to the input. In particular, the output on endangered species conservation is remarkable considering the limited assignment period of long-term expert coupled with delay of equipment arrival.	A
				Equipment supply 1) Delay of equipment provision about investigation of endangered species such as GPS for radio tracking affected significantly the work plan.		B
				C/P Training 1) C/P training provided trainees good opportunities to understand the present situation of the conservation of national parks and wildlife in Japan, and to grasp detail images for the management of protected areas. 2) More specialized C/P training has been implemented to the trainees of endangered species conservation. They have not only acquired the skill of monitoring survey and data analysis, but also enhanced the capacity to solve political issues such as drawing up the action plan for the conservation and coordination between stakeholders.		B
	Collaboration with other cooperation	To be described in overall evaluation grid				
	Collaboration with other donor	To be described in overall evaluation grid				
	Factors affecting the efficiency positively or negatively		・Questionnaire and interview for relevant persons	1) Long term expert on endangered species conservation was absent for the first three years. Enough data from researches for two to three years should be needed before drawing up the plan. It was hard to conduct both research activities and development of the action plan in parallel. 2) The counter-part for eco-tourism hasn't been assigned from the Forest and Nature Tourism Bureau since 2001. The opportunities of technical transfer has been somewhat decreased with this change. 3) As an accompanied equipment for an expert of endangered species conservation arrived about one year later from the dispatch, it couldn't be used effectively. The equipment for 2002 will not be also used by the expert, because it will arrive the end of project.		
	Final evaluation 1) Inputs of long and short term experts are mostly adequate and appropriate. However the timing of displacement of long term expert for endangered species conservation was late and short. Though the conservation plan for endangered species will be completed on schedule, adequate researches couldn't be conducted. 2) C/P trainings are adequate and appropriate. They have got more special skill and motivation to the park management. 3) The inputs of equipment are mostly adequate and appropriate. However the input of equipment for endangered species conservation was postponed, it affected to the implementation of research activities.					
	Contribution to overall goal	To be described in overall evaluation grid				
	Positive impact (intended)	Does the method of park management developed in GHNP apply to other parks?	・Questionnaire and interview for experts and C/Ps	A model environmental education system, which is implemented mainly by park rangers has been developed for elementary school students, teachers and young generations. There is a high possibility that the system becomes to be a model for other national parks in Indonesia. For example, an NGO which acts vigorously about conservation of nature reserves in Southeast Sulawesi has visited GHNP for examination of the environmental education activity applied.	The impacts of the project have been realized gradually.	B
			・do・	As PHKA expects, GHNP has a potential in developing a comprehensive training for eco-tourism including those for interpretation and management for park rangers from other national parks, utilizing existing resources such as facilities, skills and know-how developed during BCP2.		A

			- do -	The field survey technique of endangered species is expected to extend among the staff of other national parks, NGO and local people through the field survey training at the monitoring site in GHNP. It is also expected that results from field survey of endangered species give information to eco-tourism and environmental education.		B
		Is collaboration with other national parks (domestic or overseas) strengthened through this sub-project?	- do -	National park staff and Junior Expert of JICA in Gn. Gede Pangrango National Park took part in the activity of eco-tourism.	Some activities were collaborated with the staff of other national parks.	B
		Is the importance of GHNP as international reserve understood?	- do -	UNESCO Indonesia office is considering to designate GHNP and Gn Gede Pangrango National Park as a MAB.	This is certainly the impact of this project, although it may take time to clear the registration criteria of MAB according to the Director of Nature Conservation, PHKA.	B
		Are facilities utilized well by the third parties?	- do -	Now the Cikaniki Research Station is used frequently not only for research work of RCB/LIPI but also for field training of university students, I.e., the Bogor Agriculture University, Academy of Tourism of Bandung, the Bandung Institute of Technology, the National University and the Jakarta National University. The staff of GHNP often act as a field instructor for those students.	Facilities were utilized well by the third parties.	A
Impact	Positive impact (unintended)	Are there any positive impact (unintended) caused by the Project?	- do -	The environmental education program developed by the project is now used by private companies around GHNP for their employee. The minister of forestry declared that GHNP was as a center for Indonesian biodiversity conservation and ecotourism. Eco-tourism in GHNP has pretty penetrated Japanese society in Jakarta through a Japanese news paper and newsletters. Especially, on the Website of Japanese news paper in Indonesia, we already can see the activities of ecotourism in GHNP as top special news. ; http://www.jakartashimbun.com/index.html	Many positive unidentified impacts has influenced other sectors or activities.	B
	Negative impact	Are there any negative impacts caused by the Project?	- do -	None	No negative impact	B
	Factors affecting the impact positively or negatively		· Questionnaire and interview for relevant persons	Not special		
	Final evaluation ·The management of GHNP has been improved through the promotion of the utilization for researcher and the development of various activities for endangered species conservation, environment education and eco-tourism. The capacity of GHNP as a organization has been also enhanced through those activities. ·Activities in eco-tourism and environmental education are able to be good examples for all national parks in Indonesia. Those activities contributed to the achievement of project purpose; the management of GHNP, and overall goal.					
	Institutional aspect	Can GHNP be considered as a stable organization in PHKA?	Interview to the head of GHNP	Since 31 Mar 1997, the management office of GHNP has been ranked as the category of "Balai" which is higher ranked national park. There was 25 national park offices ranked as Balai among a total of 36 Indonesian NP offices in 2001. The head of the Balai class national park is ranked as "Eselon 3", the same rank as a head of sub-directorate in the head office of the Ministry of Forestry.	GHNP is now able to be evaluated as a core national park in Indonesia, involving high institutional sustainability.	A
	Financial aspect	Prospect of budget allocation to RCB after termination of this Project, such as maintenance cost of facility and equipment and project implementing	- do -	Most of the budget for the activities of research and conservation of endangered species, environment education for elementary school and local communities and trial implementation of eco-tour have been born by JICA. Because of the limit of the budget, the contents and scale of the program will have to be reconsidered after this project.	It is evaluated difficult to maintain present level of park management activities from the financial aspect.	C

Sustainability	Technical aspect	Maintenance system of equipment	・Questionnaire and interview for experts and C/Ps	Since it is technically difficult for GHNP staff to maintain some specific facilities and equipment like the canopy trail and micro hydro, continuous budget allocation for their maintenance is indispensable. As for consumables, it is practically possible to procure them, if budget is available.	It is afraid that the allocation of budget necessary for maintenance of the said specific equipment cannot be realized after the project is terminated.	C
		Will C/Ps work continuously?	- do -	・The staff responsible for conservation of endangered species and research has worked for comparatively long period. ・The activities of environment education has been implemented by local people and rangers who belong to subsections and resorts under the headquarters, and who are seldom transferred. Although the official staff like a head, deputy manager can not be avoided personnel changes, training course has been implemented for wide range of staff, so that it's considered that GHNP can keep and develop the skill got by technical transfer. ・Eco-tourism is taken charge by the staff for the national park management.	C/Ps will work continuously at GHNP unless transfer order is given to them. Even though organizational changes are enacted in NPs, most of the rangers and some trained C/Ps will be able to work continuously for GHNP.	B
		Is the evaluation system which stimulates incentive of staff established and adopted properly?	- do -	Monitoring and evaluation system did not effectively work.	Monitoring and Evaluating system did not stimulated Project activities.	C
	Social aspect	Are there any problems relating to social issues such as gender, cultural and local customs?	・Questionnaire and interview for relevant persons	None, there is no quarrel among people inside and outside the park.	The Project took care of considering the social aspects when they conducted programs such as environmental education or ecotourism which were basically based in local communities.	B
	Factors affecting the sustainability positively or negatively		・Questionnaire and interview for relevant persons	There are various factors affecting sustainability negatively especially in the shortage of budget.		

Final evaluation

1) In an independent development of the project activities, there is no problems in policy but there are several problems in technique and finance.
2) The planning and management of ecotourism are not covered by NP office only. Based on the management plan of GHNP, it should be constructed and developed the sustainable eco-tourism system with coordination between GHNP, NGOs and local communities.
3) Being under the necessity of the conservation of wide ranged ecosystem including surrounding area; Gn. Salak and Gn. Gede Pangrango, the environmental education program should be extended to local communities in surrounding area. Furthermore, the collaboration with eco-tourism activities also should be facilitated to make GHNP be a center of environmental education for visitors from large cities, e.g.; Jakarta.
4) The action plan for the conservation of endangered species has been drawn up in this project. As the research and conservation activities must be implemented and developed after the project, further technical cooperation is needed to follow up those activities.
5) Sustainable implementation of activities by C/Ps after this project is the most important to establish the outputs of technical transfer firmly to them. Securing financial resource is important issue to make it sure.

3-6 Evaluation Grid for Sub-Project E

Remarks 1) Grading was considered as follows; A - as excellent, achieved more than expected, B - as good, achieved as expected, and C - as poor, achieved less than expected.
2) C/P means counterpart.

Criteria	Evaluation aspects	Subjects to be confirmed	Source of information	Result	Evaluation	Grade
Achievement	Please refer to Accomplishment Grid for Sub-Projec E					
Implementation process	Progress of activities	Are the activities carried out on schedule?	- do -	Most of activities have been carried out as planned, except for publication of newsletters which was altered to establishment of web site.	All activities are confirmed to be carried out as expected.	B
	Monitoring process	To be described in overall evaluation grid				
	Relation between Japanese experts and Indonesian C/Ps	Are they communicate well? Are there any problems about communication?	・Questionnaire and interview for experts and C/Ps	1) Mainly oral communications, sometimes by e-mail. 2) Continuing frequently meetings.	It is confirmed that good relation between Japanese experts and Indonesian C/Ps has been kept well in this project.	B
	Supporting system of the	To be described in overall evaluation grid				
	Final evaluation Implementation process is evaluated adequate since all the activities are carried out as expected with good relation between Japanese experts and Indonesian C/Ps.					
Relevance	To be described in overall evaluation grid					
Effectiveness	Degree of achievement of sub-project purpose	Is the results of the project disseminated efficiently through implementation of this sub-project?	・Accomplishment table of the Project ・Interview to the head of Implementation Agency.	The materials showing the activities of sub-project A to D, which were compiled in this sub-project E, are distributed timely and effectively by both Indonesian and Japanese sides.	Project awareness was increased through a series of dissemination activities.	B
	Contribution of output for the achievement of sub-project purpose	How does this sub-project contribute to human resource development, namely capacity building of C/Ps?	・Questionnaire and interview for experts and C/Ps	Capability of C/Ps about compilation of project achievement and arrangement of workshops was improved through collaborative work with Japanese experts.	The work experience of C/Ps with Japanese experts seems to contribute capacity building regarding dissemination of project activity.	B
		How does provision of equipment contribute to the achievement?	・List of provided equipment ・Questionnaire and interview for experts and C/Ps	General office equipment such as computer, printer, scanner and copy machine were provided. They were directly used for the activities of the Sub-Project E.	The provided equipment were used effectively.	B
		How the subproject contribute to collaboration among implementing organizations.	To be described in overall evaluation grid			
	Factors affecting the effectiveness positively or negatively		・Questionnaire and interview for relevant persons	Non.		
	Final evaluation Sub-Project E produced effectively various information on the project activities and distributed them. As the results, project awareness was increased largely among Indonesian people and relevant international society. The project purpose is achieved as expected.					
	Inputs	Are inputs given as scheduled ? (quality, quantity and timing)	・Accomplishment table ・Quarterly reports ・Questionnaire and interview for experts and C/Ps	The inputs of sub-project E are duplicated with those of sub-projects A to D. Most of the inputs have been achieved well and on-going as scheduled.	Most of inputs are given as scheduled.	B

Efficiency	Relation betweer input and output	How are inputs resulted in outputs? Do you think the output quality and quantity are adequate comparing to the inputs?	・Questionnaire and interview for experts and C/Ps	The results of each sub-project were prepared by Japanese experts and C/Ps and submitted to the chief advisor for his comment. Revised results were compiled mainly by coordinator for necessary dissemination materials.	Efficiency of the project accomplishment was increased by good cooperation between experts and coordinator.	B
	Collaboration with other cooperation	To be described in overall evaluation grid				
	Collaboration with other donor	To be described in overall evaluation grid				
	Factors affecting the efficiency positively or negatively		・Questionnaire and interview for relevant persons	It took long time to print publications sometimes, because of insufficient printing technique of the local printing company.		
	Final evaluation Efficiency of sub-project E was secured by good relations of chief advisor, coordinator, experts and C/Ps. Especially the C/Ps who had been trained in Japan contributed to the promotion activities. Office equipment was used adequately for dissemination work.					
Impact	Contribution to overall goal	To be described in overall evaluation grid				
	Positive impact (intended)	Are publishing the results of each Sub-Projects given positive impact to another country or overseas institutions activities of biodiversity conservation.	・Accomplishment grid of Sub-Project A~D. ・Interview for relevant persons	As indicated in the evaluation grids of sub-project A to D, there are sufficient impacts observed for each Sub-Project. Those impacts are supported largely by the information service activities of sub-project E. Various universities and NGOs are now communicating to the project and requesting project publications.	It is evaluated that the outputs of this project affect positively the other biodiversity conservation activity.	B
		Does holding workshops give positive impact to biodiversity conservation activities.	- do -	Participants of the workshops held by BCP are not only LIPI researchers and PHKA officers but also NGO staff who are interested in biodiversity conservation. Hence, the results of workshop together with dissemination of project reports and leaflets must affect positively the activities of NGOs.	Workshops draw impact effectively to researchers from other government institutions or NGOs.	B
	Positive impact (unintended)		- do -	BCP activities have been often reported in newspapers, magazines and on TV in Indonesia. Many study trips by reseracher, sturdents, government officials have been made in the project sites, especially in the zoology research center in Cibinong and GHNP. Further more, the trial eco-tour of GHNP and twinkle mushroom that grows there were introduced on a Japanese newspaper in Jakarta, namely the Jakarta Shimbun, the eco-tour for GHNP gathers interests of Japanese community in Jakarta. A famous Japanese singer, Ms. Tokiko Kato was visited GHNP as a special envoy of the United Nations Environmental Programme.	The left is unintended but considered as an impact of dissemination activity.	A
	Negative impact	Are there any negative impacts caused by the Project?	- do -	Non	No negative impact is seen.	B
	Factors affecting the impact positively or negatively		・Questionnaire and interview for relevant persons	Not special.		
	Final evaluation The outputs of this sub-project give significant impact from the aspect enhancing the awareness of sub-project A to D. Various universities and NGOs are now communicating to the project and requesting project publications. The project activities are often introduced by domestic mas media, and GHNP is recognized as a potential eco-tour site.					
	Institutional aspect	Can each implementing organization considered as a stable organization?	Evaluation grid of sub-project A to D.	Please refer to the evaluation grids of sub-project A-D for sustainability of each implementing organization.	There are sufficient institutional sustainability on each implementing organization.	B