

# REVIEW OF PAST JAPANESE ASSISTANCE IN FORESTRY SECTOR (REVISION)

Volume I:  
MAIN REPORT

*Naha* Foundation



AUGUST 2011

## LIST OF ACRONYMS AND ABBREVIATIONS

ACIAR	Australian Centre for International Agricultural research
A/R	Afforestation/Reforestation
ASEAN	Association of South East Asia Nations
BAPI	Biodiversity Action Plan for Indonesia
BBPBTH	Balai Besar Penelitian Bioteknologi dan Pemuliaan Tanaman Hutan
BPHM	Badan Pengelola Hutan Mangrove
Bappenas	Badan Perencanaan dan Pembangunan Nasional; National Development Planning Agency
BCP	Biodiversity Conservation Project
BIC	Biodiversity Information Center
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CFBTI	Center for Forest Biotechnology and Tree Improvement
CMBRC	Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DG	Directorate General
DPR	Dewan Perwakilan Rakyat, People's Parliament Assembly
FFPMP	Forest Fire Prevention and Management Project
FLEG	Forest Law Enforcement and Governance
FLEGT	Forest Law Enforcement, Governance, and Trade
FMU	Forest Management Unit
FORDA	Forestry Development Agency
GHSNP	Gunung Halimun-Salak National Park
GNP	Gross National Product
GoI	Government of Indonesia
GoJ	Government of Japan
GPS	Global Positioning System
IBF	Indonesian Biodiversity Foundation
IBSAP	Indonesian Biodiversity Strategy and Action Plan
IDR	Indonesian Rupiah
IGB	Integrated Green Belt
IPB	Institut Pertanian Bogor; Bogor Agricultural University
IPGRI	International Plant Genetic Resources Institute
JPY	Japanese Yen
JICA	Japan International Cooperation Agency
KLN	Pusat Kerjasama Luar Negeri
KOFFCO	Komatsu-FORDA Fog Cooling System
LIPI	Lembaga Ilmu Pengetahuan Indonesia; Indonesian Institute of Sciences
MIC	Mangrove Information Center
MoF	Ministry of Forestry

MPA	Masyarakat Peduli Api (People Care for Fire)
NCIC	Nature Conservation Information Center
NGO	Non Governmental Organization
NP	National Park
NTFP	Non Timber Forest Product
NTT	Nusa Tenggara Timur
ODA	Overseas Development Agency
PDM	Project Development Matrix
Ph.D	Doctor of Philosophy
PHKA	Perlindungan Hutan dan Konservasi Alam; Forest Protection and Nature Conservation
PHPL	Pengelolaan Hutan Produksi Lestari; Sustainable Production Forest Management
PKA	Pelestarian dan Konservasi Alam
PO	Plan of Operation
PU	Pekerjaan Umum (Departemen Pekerjaan Umum); Ministry of Public Works
RCB	Research Center for Biology
RLR	Reboisation and Land Rehabilitation
REDD	Reducing Emissions from Deforestation and Forest Degradation
Renstra K-L	Rencana Strategis Kementerian-Lembaga; Strategic Plan for Ministries and Institutions
Renstra	Rencana Strategis; Strategic Plan
REPELITA	Rencana Pembangunan Lima Tahun; Five Year Development Plan
RKP	Rencana Kerja Pemerintah
RPJM	Rencana Pembangunan Jangka Menengah; Medium Term Development Plan
RPJP	Rencana Pembangunan Jangka Panjang; Long Term Development Plan
SFM	Sustainable Forest Management
ToR	Terms of References
UGM	Universitas Gadjah Mada; Gadjah Mada University
UN	United Nations
US	United States
WKNP	Way Kambas National Park

## PREFACE

The report entitled “Review of Past Japanese Assistance in Forestry Sector” consists of 4 volumes as follows:

- Volume I: Main Report
- Volume II: Information Sheets of Past JICA Projects
- Volume III: List of Documents of Past JICA Projects
- Volume IV: Documentation of Field Visit

This Volume contains the main report of the review. The older version of the report was produced in August 2010. Following recommendations and input from Dr. Agus Sarsito (Director of Foreign Cooperation, Ministry of Forestry), we produced a revision version of the report. In addition, the Strategic Plan of the Ministry of Forestry has been revised in December 2010 and, thus, we make some adjustment accordingly.

So many friends and colleagues have been provided us with so much information through interviews, either directly or by phone. Their information was so invaluable and basically served as the backbone of this report. The list of the resource persons is provided in Appendix 3 and 4 of this main volume. We really appreciate the information they shared with us and, more importantly, the trust they give us during the interview.

We would like to extend our sincere appreciation to our JICA colleague: Hiromi Yamauchi, Shigeru Takahara, Irma Imelda, and Oktovina Trisia Windarti, who had helped us in many ways to conduct the study, provide literature, and finished this report. We also would like to thank our colleagues in Pusat Kerjasama Luar Negeri, Ministry of Forestry, especially to Dr. Agus Sarsito, Dr. Teguh Raharjo, and Laksmi Banowati. Our special thanks go to our colleagues and friends who shared the cheerful moment when we visited the field: Hiromi Yamauchi, Shigeru Takahara, Oktovina Trisia Windarti, Tri Meinarthin, Ista Kania W., Ferry Yunus.

We do hope that this report would be useful for all of us, especially for JICA and the Ministry of Forestry.

Jakarta, 29 August 2011  
Nata Samastha (NAHA) Foundation

## LIST OF CONTENTS

	PAGE
Acronyms and Abbreviations	i
Preface	ii
List of Contents	iv
List of Tables	v
List of Figures	vi
List of Boxes	vi
List of Appendices	vi
<b>EXECUTIVE SUMMARY</b>	vii
<b>I. INTRODUCTION</b>	1
<b>II. APPROACH AND METHOD</b>	2
Selection of Project for Reviewed	2
Method	2
Duration of Review	6
Analysis	6
<b>III. STRATEGIC PLAN OF THE MINISTRY OF FORESTRY</b>	7
Overview the National Strategic Plan	7
Strategic Plan of the Ministry of Forestry	7
Other National Plan Related to Forestry Sector	8
<b>IV. OUTPUT AND OUTCOMES OF PAST JAPANESE ASSISTANCE IN FORESTRY SECTOR</b>	17
Evolution of Projects	17
Output of Projects	17
JICA's Project and Biodiversity Conservation	25
Outcome	26
<b>V. THE RELEVANCE OF PAST JAPANESE ASSISTANCE IN FORESTRY POLICY</b>	28
Relevance of JICA Projects to MoF's Policy	28
Relevance of JICA's Project to MoF's Program and Activities	28
<b>VI. THE FUTURE OF JAPANESE ASSISTANCE IN FORESTRY SECTOR</b>	37
Roles of Japanese Assistant	37
Implementation of Past JICA's Project: Fact Finding	38
Niche of JICA Project	41
Future Direction of National Forestry Program	42
JICA's Strategic Future Direction	43
<b>VII. CONCLUDING REMARKS</b>	44
References	45
Appendices	46

## LIST OF TABLES

	Page	
Table 1.	List of past JICA projects visited and the reasons of selection	5
Table 2	Output summary of the past JICA projects	18
Table 3.	Outcome (impact) identified during the field visit to Yogyakarta, Jambi, Sukabumi, and Cibinong	26
Table 4.	Support of JICA's completed projects to MoF's policy	29
Table 5.	The relevance of past JICA projects with Strategic Plan 2001-2005	31
Table 6.	The relevance of past JICA projects with Strategic Plan 2005-2009	32
Table 7.	The possible contribution of the past JICA projects to the on-going Strategic Plan	34
Table 8.	Roles of project assisted by Japanese Government in Indonesia's forestry Sector	37
Table 9.	Different perceptions between Japanese and Indonesians in implementing a JICA project	38
Table 10.	Summary of some fact finding from interviews with resource persons	39
Table 11.	Vision and mission of the Ministry of Forestry as started in the document Indonesia's Forestry Long Term Development Plan 2006-2025	42
Table 12.	Suggestions on future direction of JICA's projects	43

## LIST OF FIGURES

	Page	
Figure 1.	Framework of analysis	6

## LIST OF BOXES

	Page
Box 1. Strategic Plans of Ministry of Forestry since 2001	9
Box 2. Indonesia's Action Plans Related to Biodiversity	15
Box 3. Blending the Project with a National Park Management: Case of Gunung Halimun-Salak National Park	19
Box 4. Center for Forest Biotechnology and Tree Improvement: JICA's Invaluable Investment for Forestry Science	21
Box 5. Camp Granit Training Center: Responding Forest Fire Crisis	24
Box 6. JICA's Role on the Development of the Research Center for Biology	25
Box 7. Forest Fire Green Belt and Local People's Economic Development: Case of Sungai Rambut, Jambi	27

## LIST OF APPENDICES

	Page
Appendix 1. List of past JICA projects in forestry sector included in the review	46
Appendix 2. Summary of JICA's past project, listed based on chronological time	49
Appendix 3. List of respondents interviewed	53
Appendix 4. List of resource persons interviewed during field visit	54

## EXECUTIVE SUMMARY

The assistance of Government of Japan for forestry sector – through JICA- to Government of Indonesia has been going on since 1970s. Until now there were 59 projects had been completed in various locations in Indonesia. The objective of this study was to identify output and outcome of the JICA's completed projects since 1970s in order to clarify roles of Japanese assistance and to utilize the results for the implementation of the current National Forestry Strategic Plan. Information was collected through gathering relevant publications and created a summary from them (in Information Sheets), studying Ministry of Forestry's (MoF) Strategic Plan document, interviewing key persons (total 65 persons staffs in various offices and in the field), and conducting field visits to selected sites (West Java, Yogyakarta, and Jambi Province) in order to assess the impact or outcome of the completed projects.

In term of the type of funding assistance, JICA's projects can be categorized into Technical Cooperation (15 projects), Development Study (12 projects), Grant Aid (10 projects), Development Cooperation (19 projects), and Loan Assistance (3 projects). The Ministry of Forestry has a policy of not accepting Loan Assistance. The 3 Loan Assistance projects actually were given to other Ministry, namely the Ministry of Public Works. These projects were included in the study because they were related to forestry sector.

JICA's earlier projects in Indonesia started with small and specific projects. Later on, the projects became bigger, comprehensive, and integrated. Some later projects took a long period, continued to a next phase or transformed into other more specific projects. Forest Fire project, for example, lasted for 13 years. Compared to other assistance from different countries, assistance from Japan was more widely accepted by the Indonesians. Factors contributed to this are: Asian spirit, provision of grant aid through many projects, and the strong bond of the Japanese and Indonesians counterparts during the process of technology transfer.

The output of these projects varied highly, ranging from human resources development (capacity building, technology transfer, knowledge generation, public awareness), materials (constructions, buildings, infrastructures, equipments, vehicles, other facilities), as well as system and technology (maps, various planting knowledge and technology, early warning forest fire detection system, socio-economic related activities). Many of them have excellent outcome and impact, which can be proven until now. The finding was strengthened by series of visits to the field.

There is no doubt that the Japanese assistance through JICA plays a huge role in the development in forestry sector. Seven roles of Japanese assistance have been discovered, namely provisioning, catalizing, complementing, transferring, triggering, innovating, and enhancing.

To find out whether the Japanese assistance was indeed in line with the Ministry of Forestry's policy, Strategic Plans of the MoF was studied and used as an important reference. MoF's Strategic Plan 2010-2014 (Revision) has formulated 6 priority policies and 18 priority goals, all were arranged in 8 programs and 59 main activities. When JICA's projects were cross-referenced with policies, as well as programs and activities in the Strategic Plan by using simple

matrices, it was clear that JICA's projects and activities were in line with the Strategic Plan of MoF.

JICA's completed projects supported most of the MoF's policies, including policies on conservation, rehabilitation, forest fire, and community development. JICA seemed cannot support project related to MoF's policy on illegal logging and stabilization of forest areas. Furthermore, when nine projects were studied in depth to assess their relevance and support to the MoF's program and activities, the JICA projects were mostly relevance with MoF's program on (a) Program #3 - Protection and conservation of natural resources, (b) Program #4 - Rehabilitation and recovery of natural resource reserves, (c) Program #5 - Enhanced capacity to manage natural resources and environment, (d) Program #7 - Research and development, and (e) Program #8 - Forest training, listed on the Strategic Plan 2005-2009.

Assessing the possibility of the contribution of JICA's previous project to the current (2010-2014) MoF's Strategic Plan, it was obvious that JICA's projects might have a strong contribution to the MoF's program of (a) Program #3 - Biodiversity conservation and forest protection, (b) Program #4 - Enhancement of function and carrying capacity of watersheds based on community development, (c) Program #5 - Research and development in forestry, and (d) Program #6 - Extension program and development of human resources in forestry.

Interviewed with stakeholders, however, revealed that occasionally there was a different perception between Japanese side and Indonesian side during project implementation that could hampered the output and outcome of the project. This perception was related to the philosophy of the project itself and the budgeting system. It is suggested that all personnel involved in the future projects need to have the same perception and opinion before a new project starts, in order to eliminate possible sources of disharmony between both sides.

For the future Japanese assistance, topics are still wide open. Suggested topics include climate change-related topics, human dimension in forestry, conservation and management of conservation area, environmental service, governance, and timber efficiency and production.

## I. INTRODUCTION

The Ministry of Forestry (MoF) has been working hard to manage the 136.88 million ha (Kementerian Kehutanan 2010) of Indonesian tropical rainforest. Realizing the importance of the forest for the global environment, various Overseas Development Agencies (ODAs), including Government of Japan through JICA, have been assisting Indonesia in managing the forest and its biodiversity.

Since 1970s the Government of Japan has been assisting the Government of Indonesia in policy sector. Technology transfer, construction of various buildings and infrastructures, as well as various program related to forestry and biodiversity conservation has been implemented in collaboration with the MoF of the Republic of Indonesia.

In managing the forest, the MoF has already set up policy to focus the development of the forestry sector. Currently the forestry development in Indonesia is formulated in a Long Term Forestry Development Plan (25 year), Strategic Plan (5 year), and Annual Plan. Any foreign assistant surely need to harmonize their theme, program and activities with the MoF's plan.

During the four decades of JICA's assistance in Indonesia, there have been 59 projects related to forestry and biodiversity that has been implementing in Indonesia. Various experience and lessons learned can be drawn from the project and used for the next projects.

This study reviews the completed projects related to the forestry sector in Indonesia since 1970s, funded by the Japanese Government through JICA. In addition, biodiversity conservation (i.e. biodiversity in forest ecosystem) is also reviewed, as the projects and activities of forestry sector is closely link to the biodiversity conservation. On-going projects were not included in the analyses as the results still undetermined.

The specific objectives of this study are:

- (i) to identify outputs and outcomes (impact) of past (completed) forestry projects in Indonesia supported by the Government of Japan;
- (ii) to clarify the roles of Japanese assistance in forestry policy;
- (iii) to identify possibility to utilize the completed project results for the implementation of the National Forestry Strategic Plan;
- (iv) to provide suggestions on the assistant provided by Japanese Government for 2010-2014 and beyond (2015-2020).

The review was done by studying available reports related to the project, producing Information Sheet containing highlight of each past JICA project, interviewing resource persons, visiting field projects, and analyzing all information. Results of this review hopefully will be beneficial for the MoF as the host institution/collaborator of the JICA projects, as well as for JICA.

Report of this review consists of 4 volumes as follows:

- Volume I: Main Report
- Volume II: Information Sheets of Past JICA Projects
- Volume III: List of Documents of Past JICA Projects
- Volume IV: Documentation of Field Visit

## II. APPROACH AND METHOD

### SELECTION OF PROJECTS FOR REVIEWED

Projects being reviewed in this study are completed projects funded by JICA that related to forestry and biodiversity. As mentioned in the previous Chapter, current (on-going) projects are excluded from the study because the results still cannot be determined yet. The total number of the project being reviewed was 59 projects (see Appendix 1 and 2 for the list of the projects). Projects undergone several phases were treated as one project. However, if the project changed its name, it will be listed under different project, although the project might be a continuation of the previous project and could be implemented at the same location.

Based on the funding scheme, the projects were categorized as Technical Cooperation (15 projects), Development Study (12 projects), Grant Aid (10 projects), Loan Assistant (3 projects), and Development Cooperation (19 projects)<sup>1</sup>. Of these projects, 8 (of the 59 projects) were deeply reviewed, as there is high possibility that outputs of these projects may contribute to the implementation of National Forestry Strategic Plan and the future cooperation between JICA and the MoF.

### METHODS

#### 1. Production of Information Sheet

In order to provide information on each JICA past projects, Information Sheets contains important data and information are produced. Data and information needed were gathered from various JICA reports. Other additional sources of information (e.g., non-JICA reports, papers, web pages, interviews) were also added if data from the JICA reports were not sufficient for filling in the Information Sheet. Many JICA reports were written in Japanese language, some with an English summary. Reports with English summary were also used for seeking additional information. The Japanese reports were not used due to language barrier.

The information of each project (59 projects) will be concluded, extracted, and concisely presented in an Information Sheet. Each Information Sheet contains:

---

<sup>1</sup> Technical Cooperation: collaboration with partner countries in joint planning activities); Grant Aid: financial cooperation with no obligation for repayment); Loan Aid: providing a country with the capital necessary for development under long-term and substantially lower interest conditions than commercial rates; Development Study: dispatchment of a study team in order to prepare public development plans that play an important role in social and economic development in developing countries; Development Cooperation: program that contributes to self-sustaining economic and social development in developing countries by providing financial and technical support on a governmental basis for development projects implemented by Japanese private companies in these countries. Starting from October 2008, there are only three schemes of JICA's funding, namely Technical Cooperation, Grant Aid, and Loan Aid. Since early 1990s, the MoF did not accept Loan Aid from any ODAs. Source: JICA (2009).

- General project information: project name, background, type of project, goal and objectives, institution involved, location, geographical coverage, duration, amount of funding, output of the project;
- Standard JICA's five evaluation criteria (relevance, effectiveness, efficiency, impact, sustainability<sup>2</sup>) conducted by past evaluation team (applied only for the Technical Cooperation projects);
- Assessment of outcomes/impact on people, environment, economic development, and organizations/institutions (development, cooperation between the two countries) (applied only for the Technical Cooperation projects);
- Lessons learned and recommendation: mostly taken from the formal past evaluation conducted by JICA. If necessary, results from field visit also will be added to it;
- Other useful information: information that might be related to the implementation of the National Forestry Strategic Plan and the future direction of the JICA program in Indonesia.

The completeness of information in the Information Sheets depends on the availability of the existing reports. Some old project might not have sufficient information due to the lack or absence of report. The compilation of the Information Sheets is presented separately (Volume II: Information Sheets of Past JICA Projects). General analysis of the Information Sheet is presented in this report.

## 2. Document Collection

Documents related to past JICA projects, including all documents for producing the Information Sheets, were also collected. Some other relevant documents collected were reports, papers, books, and other written materials. All documents collected were organized in folders and handed over to the MoF library (Repository Room). The alphabetical list of each project is presented in a separate document (Volume III: List of Documents of Past JICA Projects).

---

<sup>2</sup>Relevance: do the need and validity of project objectives from the context of conformity to benefactor needs, consistency between policy of partner countries and Japan aid policy and suitability in addressing development-related issues and challenges? Effectiveness: do the implementation and achievement of project objectives provides benefits to the target society and other benefactors? Efficiency: do the input resources are being utilized effectively with a focus on the relationship between project input and achievement? Impact: do the top objectives were met, as well as the long-term impact and ripple effect resulting from project implementation? Sustainability: do the affects of the project continue to develop in a sustainable manner after the conclusion of the project?  
Source: JICA (2009).

### 3. Desk Study of Indonesia's Policy

Desk study also was conducted to analyze Indonesian policy related to forestry and biodiversity conservation. The main focus of the desk study was plans of MoF (long-term plan, five year plans/Strategic Plans). Strategic Plan for three periods, namely 2001-2005, 2005-2009 (revised version), and 2010-2014 were studied in detail to assess whether the past JICA project was in line with the MoF's Strategic Plan.

As the past JICA projects were also related to biodiversity conservation, national policy on biodiversity was also studied. The documents related to biodiversity conservation are Biodiversity Action Plan for Indonesia (BAPI) and Indonesian Biodiversity and Strategy Action Plan (IBSAP).

### 4. Interviews with Resource Persons

Interviews with relevant key persons, persons from institution partners, counterparts, beneficiaries including local people, Ministry of Forestry (MoF), and other stakeholders were conducted by a face-to-face conversation or distance telephone call. Points for the interviews depend on the role or position of the person. Some important points for the interviews are: the importance of the project he/she involved in, problems and constraints, room for improvement, future direction of the similar project, new and emerging issues, MoF's strategic plan, information on other ODAs, and the future role of JICA.

Results of the interviews were extracted, analyzed, concluded, and were used in most parts of this reports. The list of resource persons interviewed is presented in Appendix 3. The original written text of the interviews, however, does not include in this report and were treated confidentially.

### 5. Field Visit

Field visits to 9 past JICA project sites were conducted to understand more about the setting and the implementation of the project. In addition, another important aims of the field visit was to find out the impact of the project, several years after the project was ended. The 9 JICA past projects were located in 4 different locations (Table 1). Results of the field visits were presented in box-style information in this report and the lessons learned were used to analyze the project in general.

During the visit, series of interviews were conducted in the field. The knowledge and information gained from the interviews were incorporated in the text and boxes. The list of resource persons interviewed in the field is shown in Appendix 4. Photos taken during field visit are presented in separate volume (Volume IV: Documentation of Field Visit).

Table 1. List of past JICA projects visited and the reasons of selection.

Project Title <i>Location</i>	Reasons of Selection
<ul style="list-style-type: none"> <li>• Gunung Halimun-Salak National Park Management Project <i>Sukabumi</i></li> </ul>	<ul style="list-style-type: none"> <li>• An example on how a research-based project can evolved into a management-based project (this project is a continuation of the Biodiversity Conservation Project)</li> <li>• Served as a model on how JICA can work with a national park, especially a newly established national park</li> <li>• The project connected national park in Indonesia and several national parks in Japan and triggered many other collaborative activities</li> </ul>
<ul style="list-style-type: none"> <li>• Biodiversity Conservation Project</li> <li>• Improvement of Research Facilities for Biodiversity Conservation and Utilization</li> <li>• Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, Indonesian Institute of Sciences in Indonesia <i>Cibinong</i></li> </ul>	<ul style="list-style-type: none"> <li>• A representation of a complex project involving several institutions (LIPI, Gunung Halimun National Park, PHKA, local community); the PDM incorporated many components, each having various activities</li> <li>• Most of the activities were related to scientific filed work, especially as a basis for management of the national park</li> <li>• Involving many counterparts (Indonesian side and Japanese side) from different background; a good example of a project having a combination component of scientific research, local community empowerment, management of a national park, and data collection</li> </ul>
<ul style="list-style-type: none"> <li>• Forest Tree Improvement Center Construction</li> <li>• Forest Tree Improvement Project <i>Yogyakarta</i></li> </ul>	<ul style="list-style-type: none"> <li>• An example of a grant and a collaborative project with a research institution within the MoF (i.e. FORDA)</li> <li>• A project involving provision of a high technology machinery and demanding skillful human capacity</li> <li>• High cost building and equipments from the project provided a good example of sustainability</li> <li>• Heavily related to the development of human capacity and technology, impact may bigger than expected if post project activities were properly managed (by Government of Indonesia)</li> </ul>
<ul style="list-style-type: none"> <li>• Forest Fire Prevention Management Project</li> <li>• Improvement of Forest Fire Equipment</li> <li>• The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project <i>Jambi; Berbak National Park (Jambi)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Long-term project addressing crucial national and international problem at that time</li> <li>• Activities are still in progress although the project was terminated; involving local people and local Government</li> <li>• This project triggering other activities (e.g. Manggala Agni, new unit within MoF)</li> <li>• Involving procurement of many specific fire fighting equipments</li> </ul>

## DURATION OF REVIEW

The review was conducted in 3 months, starting in mid-July and ended in mid-October. Due to the fasting month and Idul Fitri holiday, the field visits were conducted in 2 weeks (third week of September to the first week of October), at the near end of the review period.

## ANALYSIS

All information was analyzed based on and framework of analysis shown in Fig. 1. JICA's existing and future policy regarding forestry sector, however, do not include in this analysis.

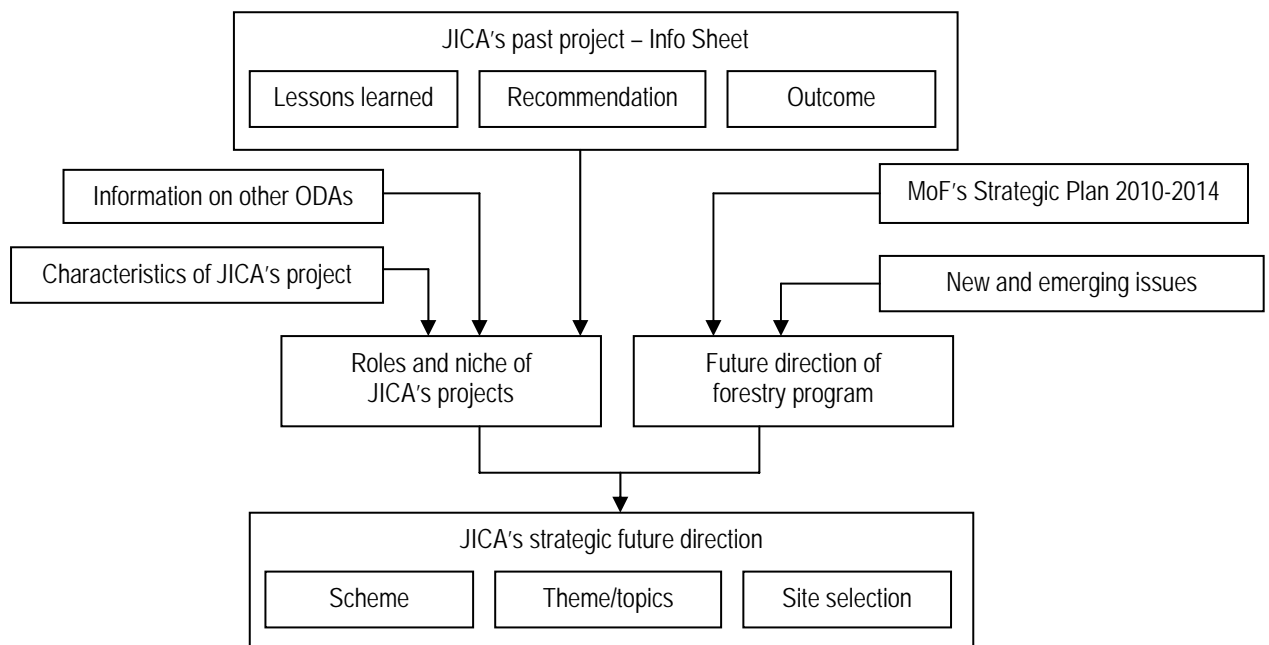


Figure. 1. Framework of analysis

### III. STRATEGIC PLAN OF THE MINISTRY OF FORESTRY

#### OVERVIEW OF THE NATIONAL STRATEGIC PLAN

During the past few decades, the process to set up Strategic Plans in the MoF has been undergone several phases. The Strategic Plan of the Ministry of Forestry was produced since 2001. Prior to 2001, the development plan was documented in the REPELITA (*Rencana Pembangunan Lima Tahun, Five Year Development Plan*) formulated by Bappenas (National Development Planning Agency). In the REPELITA system (I to VI, under Presiden Suharto), forestry was not categorized as a stand-alone sector yet and it was incorporated under Agriculture and Irrigation sector (REPELITA I to V, 1969/70 - 1973/74 to 1989/90 -1994/95) or Agriculture and Forestry sector (REPELITA VI, 1994/95 - 1998/99).

Following the fall of Suharto's era, a new period called Reformation Period was started in 1998. In this period there is no more REPELITA system. Government has changed in three times. The development planning system in Ministeries in Indonesia was changed as well, following the introduction of the strategic plan approach worldwide.

In 2004, the Government of Indonesia announced the National Law (Undang-Undang) No. 25/2004 regarding National Development Planning System (Departemen Kehutanan 2004). According to this new law, the Ministeries (including MoF) need to formulate the Long Term Development Plan (20 year; RPJP, *Rencana Pembangunan Jangka Panjang*) and the Medium Term Development Plan (5 year; RPJM, *Rencana Pembangunan Jangka Menengah*). This Medium Term Development Plan for Ministeries and Institutions was widely known as the Strategic Plan (*Renstra, Rencana Strategis*; also known as *Renstra K-L, Renstra Kementerian/Lembaga, Strategic Plan for Ministeries and Institutions*). Each Echelon I within the MoF produced their own, more detailed Strategic Plans based on the Strategic Plan of the Ministry.

The Strategic Plan document is an important document, as it will be the basis for development of the Annual National Development Plan (*Rencana Pembangunan Tahunan Nasional* or known as RKP, *Rencana Kerja Pemerintah*). Annual budgeting is strictly determined based on the activities in the RKP, after agreed by People's Representative Council (Dewan Perwakilan Rakyat, DPR).

#### STRATEGIC PLAN OF THE MINISTRY OF FORESTRY

As mandated by the Law 25/2004, the MoF has already produced the Forestry Long Term Development Plan 2006-2025 (*Rencana Pembangunan Jangka Panjang Kehutanan tahun 2006-2025*), which outlined the guideline for the five-year development plan.

The first Strategic Plan of the MoF was developed in 2001 (see Box 1). However, the document of the Strategic Plan 2001-2005 did not specify the activities and only listed down to the program level. Following the establishment of Law No. 25/2004, the MoF began set up the Strategic Plan 2005-2009 based on the Law. In 2006, the second year of the implementation of Strategic Plan 2005-2009, the MoF revised the Strategic Plan because at that time the forestry

sector (as well as all other sectors) faced difficulties due to recent global situations, including the sudden increase of oil price, inflation rate, and fluctuation of currency. Furthermore, economic disparity among region and the excess budget due to the natural disaster has affected the target achievement (Ministry of Forestry 2006). The Strategic Plan 2005-2009 used in this document is the Revised edition. Unlike the previous Strategic Plan, the Main Activities (total number 42) were already set up under each Program.

MoF's Strategic Plan for the next period was Strategic Plan 2010-2014, the first version was signed by the Minister of Forestry on 27 January 2010. In this Strategic Plan, there are 8 priority policies, 17 Priority Goals, 7 Programs, and 49 Main Activities. Due the internal organizational changes within the MoF to cope with the latest development in the country, the MoF have made some revision of the Strategic Plan. The new, revised Strategic Plan 2010-2014 was launched on 31 December 2010, among others has a list of 6 priority policies, 18 Priority Goals, 8 Programs, and 59 Main Activities.

The latest version of the Strategic Plan is used to assess the completed JICA projects, in order to (a) analyze the possible use of the impact of the project commencing during the last Strategic Plan to the forestry development and to the next Strategic Plan, and (b) provide suggestions for future JICA project in forestry sector.

#### OTHER NATIONAL PLAN RELATED TO FORESTRY SECTOR

Forestry sector is very closely link to biodiversity, as the forest of Indonesia housed most of the Indonesian mega-biodiversity. In 1993 the Government of Indonesia produced the document of Biodiversity Action Plan for Indonesia (BAPI), coordinated by Bappenas (National Development Planning Agency). The publication of BAPI was a strategic step prior to the ratification of the Convention on Biological Diversity (CBD).

It was hoped that BAPI would be used as a reference to set priorities and investment in biodiversity conservation during the fifth and sixth Five Year Development Plan and beyond. In its implementation, however, the role of BAPI as a reference for decision making has not been optimal. Therefore, in 2003, the Government of Indonesia produced another plan, the Indonesian Biodiversity Strategy and Action Plan 2003-2020 (IBSAP). Box 2 provides the highlight of the action plans for both eras. Note that the logical framework for BAPI and IBSAP is slightly different.

JICA's projects, especially project related to biodiversity conservation was designed to match with the IBSAP or BAPI. Other institution in the Government of Indonesia, namely LIPI (Lembaga Ilmu Pengetahuan Indonesia, Indonesian Science Institute) also has been conducting many projects (some were funded by JICA and includes in this report) related to biodiversity conservation. The management and conservation of forest biodiversity is also fall in the forestry sector and thus includes in this report.

**BOX 1. STRATEGIC PLANS OF MINISTRY OF FORESTRY SINCE 2001.**

<b>STRATEGIC PLAN 2001-2005</b>		
<b>STRATEGIC PLAN 2001-2005</b>	Vision	Sustainable forest for increasing people's welfare
	Mission	<ol style="list-style-type: none"> <li>1. Ensuring forest existence</li> <li>2. Optimalization of forest utilization</li> <li>3. Strengthening forest institution</li> </ol>
	Priority Policies	<ol style="list-style-type: none"> <li>1. Combating illegal logging</li> <li>2. Forest fire control</li> <li>3. Restructuring forestry sector</li> <li>4. Rehabilitation and conservation of forest resources</li> <li>5. Decentralization in forestry sector</li> </ol>
	Program	<ol style="list-style-type: none"> <li>1. Establishment of forest area</li> <li>2. Forest protection and security</li> <li>3. Forest and land rehabilitation, and conservation of forest resources</li> <li>4. Development of sustainable forest management</li> <li>5. Development of forestry institution</li> </ol>
<b>STRATEGIC PLAN 2005-2009 (REVISED)</b>		
<b>STRATEGIC PLAN 2005-2009 (REVISED)</b>	Vision	Realization of forestry governance for securing forests sustainability and promoting people's prosperity
	Mission	<ol style="list-style-type: none"> <li>1. To secure forests existence with adequate extent and distributed proportionally</li> <li>2. To optimize different functions of forests and water ecosystems, which include conservation, protection, wood and non-wood products, and environmental services, to obtain environmental, social, cultural and economic benefits</li> <li>3. To increase the carrying capacity of watersheds</li> <li>4. To promoting people's participation</li> <li>5. To secure equitable and sustainable distribution of forest benefits</li> <li>6. To enhance coordination between national and sub-national governments</li> </ol>
	Priority Policies	<ol style="list-style-type: none"> <li>1. Combating illegal logging within the state forests and its illegal trade</li> <li>2. Revitalization of forestry sector, in particular forest industries</li> <li>3. Protection and conservation of forest resources</li> <li>4. Empowering economic of community within and surrounding of forests area</li> <li>5. Stabilization of forest area for promoting and strengthening of sustainable forest management</li> </ol>

STRATEGIC PLAN 2005-2009 (REVISED)	Priority Goals	<ol style="list-style-type: none"> <li>1. Decentralization on forestry development is achieved and supported by stakeholders for increasing community welfare and supporting forest resources sustainability</li> <li>2. Combating illegal logging and its associated trade</li> <li>3. Implementation of sustainable forest management principles by establishing Forest Management Unit (FMU) at list one's unit for each province</li> <li>4. Development of plantation forests of 5.0 million hectares, and forest land rehabilitation of 5.0 million hectares</li> <li>5. Establishment of 20 National Park models</li> <li>6. Revitalization and development of community forest, especially outside Java</li> <li>7. Revitalization of 282 priority watersheds to optimize forest functions</li> <li>8. Improvement of vary business of Non Timber Forest Products (NTFP) and environmental services commercially</li> <li>9. Improvement of labor absorption of 3-10 %, and increasing community income within and surrounding the forest by 3-4% per capita.</li> <li>10. Gazettement of 12 million hectare of forest area</li> </ol>
	Program	<p><i>Major program:</i></p> <ol style="list-style-type: none"> <li>1. Stabilization of security within the country</li> <li>2. Improved utilization of forest resource potential</li> <li>3. Protection and conservation of natural resources</li> <li>4. Rehabilitation and recovery of natural resource reserves</li> <li>5. Enhanced capacity to manage natural resources and environment</li> <li>6. Improved access to information on natural resources and environment</li> </ol> <p><i>Supporting program:</i></p> <ol style="list-style-type: none"> <li>7. Research and development</li> <li>8. Forest training</li> <li>9. Governance</li> </ol>
	Main Activities*	<ol style="list-style-type: none"> <li><b>1. Stabilization of security within the country</b> <ol style="list-style-type: none"> <li>1.1. Securing forest area (10)**</li> </ol> </li> <li><b>2. Improved utilization of forest resource potential</b> <ol style="list-style-type: none"> <li>2.1. Gazettement of forest area (3)</li> <li>2.2. Preparation and evaluation of forest land use and forest conversion (4)</li> <li>2.3. Utilization of un located production forest (5)</li> <li>2.4. Development of forest plantation (6)</li> <li>2.5. Utilization of natural forest production (7)</li> <li>2.6. Revitalization of primary forestry industries (8)</li> <li>2.7. Re-arrangement of forest product administration (9)</li> <li>2.8. Establishment of forestry planning (16)</li> <li>2.9. Establishment of Forest Management Units (17)</li> <li>2.10. Development of Non-Timber Forest Product (NTFP) (28)</li> <li>2.11. Development of buffer zone conservation area (29)</li> </ol> </li> <li><b>3. Protection and conservation of natural resources</b> <ol style="list-style-type: none"> <li>3.1. Management of national park (12)</li> <li>3.2. Management of conservation area (13)</li> </ol> </li> </ol>

		<p>3.3. Management of forest fire (14)</p> <p>3.4. Management of biodiversity (15)</p> <p>3.5. Management of protection forest (18)</p> <p>3.6. Utilization of wildlife production, and environment service (19)</p> <p><b>4. Rehabilitation and recovery of natural resource reserves</b></p> <p>4.1. Development of seedling orchard (11)</p> <p>4.2. Management of watershed (25)</p> <p>4.3. Rehabilitation of forest and land (26)</p> <p>4.4. Development of private and community plantation forest (27)</p> <p>4.5. Development of forest and land rehabilitations by community (30)</p> <p><b>5. Enhanced capacity to manage natural resources and environment</b></p> <p>5.1. Forest inventory and mapping (1)</p> <p>5.2. Development of community forest (social forestry) (31)</p> <p><b>6. Improved access to information on natural resources and environment</b></p> <p>6.1. Assessment information system of forestry development (2)</p> <p><b>7. Research and development</b></p> <p>7.1. Forestry research and development (20)</p> <p>7.2. Dissemination system of result of forestry research (21)</p> <p><b>8. Forest training</b></p> <p>8.1. Development of forestry training (22)</p> <p><b>9. Governance</b></p> <p>9.1. Development of forestry extension (23)</p> <p>9.2. Standardization of forestry products and services (24)</p> <p>9.3. Development of legal aspect (32)</p> <p>9.4. Decentralization of forestry (33)</p> <p>9.5. Development of planning and budgeting on forestry (34)</p> <p>9.6. Strengthening coordination and synchronization of forestry development among the regions (35)</p> <p>9.7. Development of financial administration (36)</p> <p>9.8. Development of general affair (37)</p> <p>9.9. Development of public relations (38)</p> <p>9.10. Development of institutional forestry (39)</p> <p>9.11. Development of international cooperation (40)</p> <p>9.12. Development of human resources in forestry (41)</p> <p>9.13. Development of controlling officers (42)</p>
--	--	--

<b>STRATEGIC PLAN 2010-2014 (REVISED, DATED 31 DECEMBER 2010)</b>		
	Vision	Sustainable forest for an equal public welfare
	Mission	<ol style="list-style-type: none"> <li>1. To stabilize the certainty of status of forest areas as well as the quality of data and information on forest</li> <li>2. To improve Sustainable Production Forest Management (PHPL) to strengthen the welfare of the people around the forest and business equality</li> <li>3. To stabilize the administration of natural resources protection and conservation</li> <li>4. To maintain and improve the function and supporting capacity of watersheds to improve the optimization of ecology, economic and social function of watersheds</li> <li>5. To improve the availability of basic and applied technology products as well as human resources competence in supporting an optimum forest management</li> <li>6. To stabilize the institution administering forestry management at the Ministry of Forestry</li> <li>7. To promote professional foresters</li> </ol>
STRATEGIC PLAN 2010-2014 (REVISED)	Priority Policies	<ol style="list-style-type: none"> <li>1. Forest area stabilization</li> <li>2. Forest rehabilitation and improvement of carrying capacity of watershed</li> <li>3. Forest safeguarding and forest fire control</li> <li>4. Biodiversity conservation</li> <li>5. Revitalization of forest utilization and forest industry</li> <li>6. Development of community living in the vicinity of forest</li> </ol>
	Priority Goals	<ol style="list-style-type: none"> <li>1. Boundary system of forest area along 25,000 kilometer including external boundary and functional boundary of forest area</li> <li>2. Determination of Forest Management Unit (FMU) in each province and establishment of 20% of FMUs</li> <li>3. Provision of 5 package data and information on forest resources</li> <li>4. Increase in planting area in plantation of 2.65 million ha</li> <li>5. Natural Forest utilization permit – ecosystem restoration in the logged over area of 2.5 million ha</li> <li>6. 50% increase in forest industrial products having timber legality certificate</li> <li>7. 20% annual decrease in total number of forest fire hotspot and decrease in conflict, forest area clearing, illegal logging and wildlife trafficking up to the limit of supporting power of forest resources</li> <li>8. Population of endangered species increase by 3% from the year 2008 in accordance to the availability and suitability</li> <li>9. Management plan for integrated watersheds of 108 priority watersheds</li> <li>10. Rehabilitation plants in critical land within priority watersheds in an area of 2.5 million hectares</li> <li>11. Establishment of community-based forest (Hkm) of 2 million hectares</li> <li>12. Establishment of village forest 500,000 ha</li> <li>13. Provision of basic and applied technology for silviculture, forest product management, natural and socio-economic conservation for supporting sustainable forest management of 25 packages</li> <li>14. Establishment of 50 partnerships through the increase role of main stakeholders in the community empowerment</li> </ol>

		<p>15. Organizing technical and administrative education and training for forestry for 15,000 officials of the Ministry of Forestry</p> <p>16. At least 80% of the verdict on forestry legal cases would in favor to MoF</p> <p>17. Financial audit starting 2011 has a status of Unqualified Opinion ('Wajar Tanpa Pengecualian')</p> <p>18. Administrative weakness and violation of regulation can be decreased to 50%, while the loss of nation's budget can be reduced to 25%</p>
	Program	<p>1. Macro plan in forestry sector and forest area stabilization</p> <p>2. Enhancement the utilization of production forest</p> <p>3. Biodiversity conservation and forest protection</p> <p>4. Enhancement of function and carrying capacity of watersheds based on community development</p> <p>5. Research and development in forestry</p> <p>6. Extension program and development of human resources in forestry</p> <p>7. Control and accountability enhancement of Ministry of Forestry's officials</p> <p>8. Support of management and implementation of other technical jobs of MoF</p>
STRATEGIC PLAN 2010-2014	Main Activities	<p><b>1. Macro plan in forestry sector and forest area stabilization</b></p> <p>1.1. Macro planning development of forest area</p> <p>1.2. Development of Forestry Management Unity (FMU)</p> <p>1.3. Legalization of forest area</p> <p>1.4. Inventory and monitoring of forest resources</p> <p>1.5. Control the use of forest area for non-forestry development</p> <p>1.6. Support of management and implementation of other technical jobs (DG of Planning)</p> <p>1.7. Preparation of the forest area stabilization</p> <p><b>2. Enhancement of the utilization of forest</b></p> <p>2.1. Planning for the utilization of production forest</p> <p>2.2. Enhancement of management in natural production forest</p> <p>2.3. Enhancement of management in plantation forest</p> <p>2.4. Enhancement of trade and fee of forest products</p> <p>2.5. Enhancement of primary forest industries</p> <p>2.6. Enhancement of planning in production forest management</p> <p>2.7. Monitoring the utilization of forest</p> <p><b>3. Biodiversity conservation and forest protection</b></p> <p>3.1. Development of conservation areas and essential ecosystem</p> <p>3.2. Development of species and genetic conservation</p> <p>3.3. Investigation and forest protection</p> <p>3.4. Forest fire control</p> <p>3.5. Development of environmental services and natural recreation</p> <p>3.6. Support of management and implementation of other technical jobs (DG of Forest Protection and Nature Conservation)</p> <p>3.7. Development and management of national parks</p> <p>3.8. Management development of natural resources conservation</p>

		<p><b>4. Enhancement of function and carrying capacity of watersheds based on community development</b></p> <ul style="list-style-type: none"> <li>4.1. Development of social forestry</li> <li>4.2. Development of forest tree nursery</li> <li>4.3. Oversee watershed management implementation</li> <li>4.4. Administer forest and land rehabilitation, and forest reclamation in priority watersheds</li> <li>4.5. Support of management and implementation of other technical jobs (DG of Land Rehabilitation and Social Forestry)</li> <li>4.6. Planning and execution and land-forest rehabilitation; institutional development and evaluation of watersheds</li> <li>4.7. Planning, institutional development, and evaluation of mangrove forest</li> <li>4.8. Nursery development for forest plants</li> <li>4.9. Development of natural silk production</li> </ul> <p><b>5. Research and development in forestry</b></p> <ul style="list-style-type: none"> <li>5.1. Research and development in conservation and rehabilitation</li> <li>5.2. Research and development in forest productivity enhancement</li> <li>5.3. Research and development in forest technology and forest products</li> <li>5.4. Research and development in forest policy and climate change</li> <li>5.5. Support of management and implementation of other technical jobs (DG Forestry Research and Development Agency)</li> </ul> <p><b>6. Extension program and development of human resources in forestry</b></p> <ul style="list-style-type: none"> <li>6.1. Development of extension program</li> <li>6.2. Increase the service of extension</li> <li>6.3. Education and training for staffs of MoF and other human resources in forestry</li> <li>6.4. Support of management and implementation of other technical jobs (DG Extension and Development of Human Resources)</li> </ul> <p><b>7. Control and accountability enhancement of Ministry of Forestry's officials</b></p> <ul style="list-style-type: none"> <li>6.1. Supervision of performance, finance and administration in Inspectorate I working-area</li> <li>6.2. Supervision of performance, finance and administration in Inspectorate II working-area</li> <li>6.3. Supervision of performance, finance and administration in Inspectorate III working-area</li> <li>6.4. Supervision of performance, finance and administration in Inspectorate IV working-area</li> <li>6.5. Supervision of violation cases related to corruption, collusion and nepotism</li> <li>6.6. Support of management and implementation of other technical jobs (Inspectorate General of Ministry of Forestry)</li> </ul> <p><b>8. Support of management and implementation of other technical job of Ministry of Forestry</b></p> <ul style="list-style-type: none"> <li>8.1. Coordination of planning and evaluation</li> </ul>
--	--	---

		<ul style="list-style-type: none"> <li>8.2. Administration and staff management</li> <li>8.3. Implementation of legal aspects and organization</li> <li>8.4. Implementation of financial administration</li> <li>8.5. Implementation of general administration, internal affairs, and management of utilities</li> <li>8.6. Guidance of standardization, environmental management and management of climate change in forestry</li> <li>8.7. Guidance and coordination of foreign cooperation</li> <li>8.8. Dissemination of information in forestry development</li> <li>8.9. Management of finance, disbursement, and repayment of revolving fund for forestry development</li> <li>8.10. Control of forest development in Region I</li> <li>8.11. Control of forest development in Region II</li> <li>8.12. Control of forest development in Region III</li> <li>8.13. Control of forest development in Region IV</li> </ul>
--	--	---

\* The list of main activities was re-organized based on program. The original list in the Strategic Plan document was organized based on objectives.

\*\*Number in parentheses corresponds with the number of activity listed in the document of Strategic Plan. Total number of activities was 42.

Source: Departemen Kehutanan (2001), Ministry of Forestry (2006a), Ministry of Forestry (2006b), Kementerian Kehutanan (2010).

<b>BOX 2. INDONESIA'S ACTION PLANS RELATED TO BIODIVERSITY</b>	
<b>BIODIVERSITY ACTION PLAN FOR INDONESIA (BAPI)</b>	
Goal	To conserve as much as possible of the biodiversity on which the livelihood and prosperity of Indonesia depends
National objectives	<ul style="list-style-type: none"> <li>1. To slow the loss of primary forests, wetlands, coral reefs and other terrestrial and marine habitats of primary importance for biodiversity</li> <li>2. To expand the data and information available on the nation's biodiversity and make it available to policy makers and the public</li> <li>3. To foster the utilization of biological resources in ways that are sustainable and less harmful than current practices</li> </ul>
Strategy for actions	<ul style="list-style-type: none"> <li>1. In-situ conservation in national parks and protected areas</li> <li>2. In-situ conservation outside national parks and reserves</li> <li>3. Coastal and marine conservation</li> <li>4. Ex-situ conservation</li> <li>5. Community participation in conserving biodiversity</li> <li>6. Research and development needs</li> <li>7. Information use and management</li> <li>8. Education, training and extension program</li> </ul>
<b>INDONESIAN BIODIVERSITY STRATEGY AND ACTION PLAN 2003-2020 (IBSAP)</b>	
Vision	an Indonesian society who is concerned, empowered, independent, intelligent in conserving and utilizing biodiversity in optimum, fair, and sustainable manners through responsible management with the ultimate purpose of enhancing its community welfare

Mission	<ol style="list-style-type: none"> <li>1. To encourage changes in attitude and behavior of the Indonesian individuals and society, as well as the existing institutions and legal instruments, to be more concerned with conservation and utilization of biodiversity for the welfare of the community, in harmony with national laws and international conventions</li> <li>2. To apply scientific and technological inputs, and local wisdom</li> <li>3. To implement a balanced conservation and sustainable use of biodiversity</li> <li>4. To strengthen institutions and law enforcement</li> <li>5. To resolve conflicts over natural resources</li> </ol>
Objectives	<ol style="list-style-type: none"> <li>1. To develop the quality of Indonesian individuals and society who are concerned with the conservation and sustainable use of biodiversity</li> <li>2. To strengthen resources for supporting the development of science, technology and the application of local wisdom for the conservation and sustainable use of biodiversity</li> <li>3. To reduce and stop the rate of biodiversity degradation and extinction at the national, regional, and local levels within the 2003-2020 period, along with rehabilitation and sustainable use efforts</li> <li>4. To empower institutional, policy and law enforcement arrangements at the national regional, as well as customary level so as to be effective and conducive for the management a of biodiversity in a synergic, responsible, accountable, fair, balanced, and sustainable manner</li> <li>5. To achieve fair and balance of roles and interests of Indonesian society, as well as to reduce conflict potentials among all relevant sectors in a conducive, synergic, responsible, accountable manner in the sustainable use and conservation of biodiversity</li> </ol>

## IV. OUTPUT AND OUTCOMES OF PAST JAPANESE ASSISTANCE IN FORESTRY SECTOR

### EVOLUTION OF PROJECTS

Records revealed that JICA started to work in Indonesia since 1974 as Development Cooperation or Development Study projects to implement small projects of afforestation and forestry development in several parts of Indonesia. The first Technical Cooperation project was in collaboration with Perum Perhutani, conducted in 1977. Grant Aid was started in 1980 to plantation in Benakat (South Sumatra).

There were some projects that involved different funding scheme. These projects usually were long-term projects required assessment of project (Development Study), followed by construction of building and procurement of machinery/equipment (Grant Aid), and followed by collaboration in implementing a project (Technical Cooperation) by using building and machinery/equipment from the previous project.

Since 2000, Japanese Government did not provide any Grant Aid to Indonesia in forestry sector. Information from resource persons during interviews revealed that this is due to (1) the economic condition of Indonesia has been increased (as reflected in national GNP) and put the country in the least priority for obtaining the grant, (2) the Japanese Government has a priority to provide grant for African country, and (3) the amount of Japanese grant has been decreased, but the fund for Loan Aid has been substantially increased.

As for Loan Aid, since early 1990s the MoF did not accept Loan Aid from any ODA. Although there were 3 projects listed as Loan Aid, the projects were not in collaboration with the MoF. The project collaborator was the Ministry of Public Works (Departemen Pekerjaan Umum).

### OUTPUT OF PROJECTS

Every JICA project has been designed to meet a specific output. Based on the data in the Information Sheets, all past project were able to meet the output as planned. Output for each project is presented in the Information Sheet (Volume II). Output of overall project as an aggregate is shown in Table 2.

Past experiences with JICA project provide a valuable lesson that the high ownership of the JICA project highly contributed to the success of the project. The Gunung-Halimun National Park Management Project is an example on how a JICA project was incorporated to the plan of the national park and the project was became part of the national park's plan (Box 3).

The themes of JICA's past projects were highly varied. Each projects provided many precious output, outcomes, and lessons learned. Box 4 and 5 gave some other examples on the past JICA projects in Indonesia with their specific output.

Table 2. Output summary of the past JICA projects.

OUTPUT	EXAMPLES
Capacity building	Interpreter (trained interpreter for ecotourism in Cikaniki and Bali), nursery specialist (Benakat, KOFCO – FORDA, Bali), fire fighting brigades (Jambi, Riau, West Kalimantan).
Technology transfer	Satellite image processing, GIS based mapping, nursery management, planting methods in grassland, mass seedling production, fire fighting, technology transfer related to wildlife management (transmitter, photo traps), seed tree improvement, biological/specimens collections, microbial purification techniques.
Knowledge generation and enhancement	Exchange of experts and counterparts to and from Japan, provisions of various scientific papers and journals, sponsoring Indonesian counterparts to various international and national meeting.
System	Mountain logging, forest fire management system, hot spot data processing, early warning forest fire detection, forest fire patrol, participatory forest fire prevention and management.
Institutional development and strengthening	Establishment of: Center for Forest Breeding and Tree Improvement, Mangrove Information Center; strengthening: villagers' participatory conservation, Manggala Agni (forest fire brigade).
Curricula and modules	Mangrove plantation and management (curricula and modules), various fire fighting modules, conservation curricula (to be incorporated into the formal school curricula).
Maps	GIS based maps in several locations (e.g. Gunung Halimun-Salak National Park, West Kalimantan, Jambi, Riau), various working maps, many thematic maps (geologic, wildlife distribution).
New forest	Plantations in <i>alang-alang</i> of Benakat, plantation in ex-forest fire sites (Way Kambas), plantation of mangrove species (Bali), fire-resistant belt (Berbak National Park).
Documents	Feasibility studies, planning documents, scientific reports, papers, identification book, policy documents, manuals.
Public awareness materials	Posters, fliers, books, booklets, movie, power point presentation, pins, sign boards.
Ecotourism routes	Interpretative routes for Cikaniki and Bali for ecotourism.
Socio-economic related	Integrated Green Belt, Citalahab home stay (Gunung Halimun-Salak National Park).
Building and its facilities	Benakat Complex, Mulawarman University, Center for Forest Breeding Technology, Mangrove Information Center, Gunung Halimun-Salak Headquarter, Cikaniki Research Station, Nature Conservation Information Center (NCIC), Forest Fire Brigade dormitory, Widiasatwaloka Building (LIPI), Plant Division and Microbiology Building (LIPI), guarding post for forest fire, greenhouses, Camp Granit forest fire training center (Jambi), supporting facilities for ecotourism.
Equipments and vehicles	Forest fires equipments, laboratory equipments, equipments for field research (Cikaniki Research Station), four-wheeled drive cars, passenger cars (minibus), motorcycles, excavators, tractors

### **BOX 3. BLENDING THE PROJECT WITH A NATIONAL PARK MANAGEMENT: CASE OF GUNUNG HALIMUN-SALAK NATIONAL PARK**

#### JICA AND THE DEVELOPMENT OF GUNUNG HALIMUN-SALAK NATIONAL PARK

Under the US-Japan Global Partnership Action Plan announced in 1992, the two nations commenced on a collaborative environmental project to manage and conserve natural resources in a developing country. The developing country proposed was Indonesia. Indonesia requested Japanese Government for technology and grant aid cooperation for the collaborative environment project. In response, grant aid was provided for the Biodiversity Conservation Project (8 years; Phase I: 1995-1998, Phase II: 1998-2003) as well as for the construction of facilities for biodiversity conservation in 1997 in Cibinong (LIPI).

The main site for the **Biodiversity Conservation Project (BCP)** was Gunung Halimun National Park (now changed into Gunung Halimun-Salak National Park), then a newly established national park in West Java (established in 1992). Previously, the park was part of the adjacent national park, Gunung Gede-Pangrango National Park.

BCP was an integrated project, combining research, development of infrastructure, construction of information system, and data collection as a basis for national park management. By the time the project ended in 2003, there was so much data and information regarding the national park (biodiversity, socio-economic, other physical data), ready to be used as a scientific basis for the national park management. Upon request of the Government of Indonesia, JICA provided another project, a technical cooperation project named **The Gunung Halimun-Salak National Park Management Project** (February 2004-2009), which is regarded as an extension phase of BCP.

The aim of the Gunung Halimun-Salak National Park Management Project was to introduce advance collaborative park management in Indonesia. The overall goal of the national park was 'biodiversity conservation and sustainable natural resource utilization are promoted in national parks in Indonesia'. The park management methods and biodiversity conservation technology provided through past cooperation will be built on and applied to the Gunung Halimun-Salak National Park (GHSNP). Using this as a model, the techniques gained will be then spread to other national parks through workshops and training. One of the objectives of the project was to develop and promote ecotourism and environmental education.

GHSNP is located at the southwest of Bogor, West Java. Administratively it located within three districts of West Java and Banten Provinces: Bogor, Sukabumi, and Lebak District. The park was first established as Gunung Halimun National Park in 1992 for its rich biodiversity. The tropical rain forest which remains in GHSNP is the largest in West Java, preserving the natural habitat of endangered species such as the Javan leopard *Panthera pardus melas*, Javan hawk eagle *Spizaetus bartelsi*, and Javan gibbon *Hylobates molloch*. The forest also serves as a source of drinking water for big cities and agriculture in West Java.

Based on the Ministry of Forestry Decree in 2003, the area of the park was expanded from 40,000 ha to 113,357 ha, to include Salak Mountain, and was renamed Gunung Halimun-Salak National Park. The area is divided into three conservation Section Areas (*seksi*): Seksi Lebak, Seksi Sukabumi, and Seksi Bogor. The head office is located in Kabandungan, 72 km from Bogor.

The Kabandungan headquarter complex was built by JICA during BCP Phase I. When the construction of headquarter was finished, the GHSNP headquarter was the best headquarter among

other national park, in term of quality. Currently the Japanese-designed headquarter is fully functioning, although some wooden materials needs to be replaced here and there due to worn out combined with high humidity in that area.

About 18 km from Kabandungan there is a research station built by JICA through BCP, called Cikaniki Research Station. The Cikaniki Research Station was built to support research activities in GHSNP, as well as for ecotourism activities. It was located within the national park, about 2 hour drive (due to bad stony road) from the national park headquarter in Kabandungan.

The Cikaniki Research Station complex consists of main station/office, gazebo, and guest house which is equipped with 5 rooms (4 beds per room), toilets (in-suits or communal) and a small kitchen with all basics. Not far from the Cikaniki Research Station (200m) there is a Canopy Trail, built in 1998. It is one of three canopy trail exists in Indonesia (other canopy trails are located in Bodogol – West Java and Bukit Bangkirai – East Kalimantan). This 100m trail is a series of suspended bridges at about 25-30m from the ground and connects five big trees in the forest. The trail is used as a facility for research and also for nature activities such as birdwatching or nature interpretation.

#### LESSONS LEARNED

Among many JICA projects conducted in Indonesia, this Gunung Halimun-Salak National Park Management Project was the only project related to the management of a national park. The project was evolved from the previous research project related to biodiversity inventory (Biodiversity Conservation Project). During the implementation of the two projects, the newly gazetted GHSNP has well developed and the JICA projects conducted in the park were considered to be very successful.

The keys of success of the project were due to these factors:

a. Correct timing and setting

When the project was initiated, the park was newly established and in a desperate need to take off fast, despite the fact that the budget given to the park was limited. The JICA project was just in the correct time to fill in the gap of various activities need to be immediately executed by the park.

b. Well-planned PDM

When the PDM was formulated, JICA and the national park manager already had sufficient biodiversity data of the park from the BCP and had experienced working with the local people in and around the park. The PDM was built in collaboration with the national park staffs and essentially it was embedded in the national park management plan. Therefore, the JICA project was beautifully became part of the daily duty of the national park, and not an additional liability to the park.

c. Manageable location

The park is located not too far from Jakarta and Bogor. Anybody who wants to visit the park can easily drive to the park. The park is also easy to be controlled and maintained.

d. Support from the local people

There are more than 300 villages located inside the national park. Support of the local people for the conservation of the park is definitely needed to maintain the park. Visit to the Suka Galih Village and discussion with the local people concluded that the park is fully supported by the local people. Some other villages are still not too supportive but with the patience and long-time facilitation, there is a good hope that all local people will support the park.

e. Appropriate exit strategy

As mentioned, the project was part of the daily task of the park. When the JICA project was terminated, the activities were easily continued by the national park.

The success story of the GHSNP is surely combined with constraints. After the JICA project was terminated, the GHSNP had to struggle to maintain the building and facilities built by JICA. The condition of the Cikaniki Research Station is starting to deteriorate due to minimum maintenance. The research station apparently has not been used as often as expected. There were equipments not functioning well due to lack of electricity (e.g. cold storage/refrigerator). The budget from the MoF surely was not sufficient for the high-cost maintenance of the Research Station. The suspended bridge of the Cikaniki Canopy Trail was also 'expired' in 2008, ten years after its construction. Unfortunately, some parts of the platforms of the hanging bridge were stolen and the bridge had to be officially closed by the park manager since last year.

#### **Box 4. CENTER FOR FOREST BIOTECHNOLOGY AND TREE IMPROVEMENT: JICA'S INVALUABLE INVESTMENT FOR FORESTRY SCIENCE**

##### THE ROLE OF JICA IN DEVELOPING CFBTI

The Center for Forest Biotechnology and Tree Improvement (CFBTI; Balai Besar Penelitian Bioteknologi dan Pemuliaan Tanaman Hutan, BBPBPTH) is located in Purwobinangun Village, about 10 km north of Yogyakarta and covering 5.5 ha of land. The organization initially was a small seed production unit under the DG of Reforestation and Land Rehabilitation with the main task to produce tree seedling for land rehabilitation. As its task is more important, in line with the need to produce mass and good quality of tree seedling for mass forest rehabilitation, the GoI requested JICA to enlarge and intensify the unit.

In response to the request of the GoI, the Government of Japan - through JICA - developed a Grant Aid project entitled **Forest Tree Improvement Center Construction**. Through this project (1990-1992), the former small seed production unit was built into a better and bigger unit by constructing buildings and necessary equipments, mainly for good quality mass seed production. Facilities built through the Grant Aid were the main building (for general office, library, workplace, dry cold storage, molecular laboratory, and tissue culture laboratory), greenhouse, nursery, arboretum, and several housing unit.

After finishing the building and its equipments, another project, a Technical Cooperation project was initiated in June 1992. The project, **Forest Tree Improvement Project** was run for ten years (1992-2002) in two phases of five-year period in each phase (1992-2007; 2007-2002). The objective of the project was to support the several on-going re-afforestation programs in Indonesia through the development of techniques of tree improvement and to enhance seed sources establishment by the executors of re-afforestation.

During the implementation of the project, Indonesian and Japanese researchers worked together to execute main activities of the project, namely (1) development of seed sources, (2) development of plant propagation techniques, (3) dissemination of materials and information, and (4) advice to promote tree improvement activities. All activities were conducted in scientific research manners.

Along with the development of the building and its research activities, the institution has undergone several changes as follows:

- 1985 – 1990 : Seed Production Unit under Directorate General of Land Rehabilitation
- 1994 : Tree Improvement Bureau under Forest Research and Development Agency (FORDA)

- 2000 : Center for Forest Biotechnology and Tree Improvement (under FORDA)
- 2005 : Center for Forest Plantation (under FORDA)
- 2006 : Center for Forest Biotechnology and Tree Improvement (under FORDA)

At present, 18 years after the building was built and 8 years after the end of the Technical Cooperation project, the Center is still running very well. The main building has been well preserved and most (90%) equipment has been well maintained. With the existing equipments and skillful human capacity resulting from the past JICA's project, the Center is able to continue conducting research and keep up with the most recent research. Currently the Center has been developed genetic improvement of various tree species, including acacia *Acacia mangium*, eukaliptus *Eucalyptus pellita*, kayu putih *Melaleuca cajuputi*, sengon *Paraserianthes falcataria*, jati/teak *Tectona grandis*, merbau *Intsia bijuga*, cendana *Santalum album*, pulai *Alstonia scholaris*, sukun *Artocarpus communis*, and ulin *Eusyderoxylon zwageri*.

As the global trend of the forestry research in seeds has been slowly moved into genetics and molecular biology, the Center also develops laboratory and human capacity for such research. Currently the Center has 70 researchers and 75 supporting staffs and focusing research on three areas: molecular analysis and biotechnology application for propagation, genetic conservation, and breeding test/tree improvement. Furthermore, the molecular and genetic laboratory has received an ISO standard, enabling the laboratory to perform analysis accepted by international and national scientific community.

Interviewed with several resource persons revealed that CFBTI is considered to be one of the most successful JICA project in Indonesia. The most crucial factor of the project is sustainability and impact of the project. The CFBTI has proven that the past JICA project indeed is sustainable and creates a big impact. When the JICA's Technical Cooperation was terminated in 2002, there was some worry that the Center could not maintain the high cost laboratory, especially the molecular genetics laboratory. Currently the laboratory is the most advanced unit compare to another laboratories owned by the Center.

#### LESSONS LEARNED

Some supporting factors that contribute to the success of the Center are:

- (1) Research resulting from the Center has been used widely by many stakeholders, enable this Center to work consistently. In addition, an excellent design of the CFBTI allowing the Center to develop further to anticipate future scientific development in seed technology;
- (2) Equipments were of the highest quality and the most advanced at that time, and able to be maintained and added by the Center from other source of funding when the project was ended. Surely the equipments are crucial factor in establishing further collaborations with other international research institutions;
- (3) As the Center's Terms of Reference is in line with research, the Center has been fully supported by the MoF and receiving a sufficient funding from the Government (MoF) for maintenance and research activities;
- (4) Through the long term Technical Cooperation, development of human capacity is excellent. Knowledge and technology transfer went very well and some staffs of the Center were able to go to Japan to pursue higher degree. Most of the staff have been stayed in the Center and make carrier as researchers;
- (5) The location of the Center is close to a big city of Yogyakarta, allowing staff to commute easily from Yogyakarta to the Center. The location is also very crucial to ease maintenance and security control (for the equipments and the experimental planting).

Problems and constraints, however, have been arising as follows:

- (1) Although the procurement of the equipments was done carefully, some equipments need to be adjusted to suit with the condition in Indonesia;
- (2) Equipments and samples need a continuous electric supply. Back-up generator is always needed although it cost highly.

Some prominent and significant impacts of the project are:

- (1) Knowledge and products resulting from CFBTI have used for re-forestation and industrial forest plantation, and thus contribute to the forestry development and combating deforestation in Indonesia;
- (2) Local District Governments also collaborate with the Center, for example Government of Yogyakarta in developing the Ngarjoyoso Grand Forest Park, and Government of Ciamis in developing nyamplung *Callophyllum inophyllum*;
- (3) The Center has been conducting various research collaborations with many other institutions, including with ACIAR (Australian Centre for International Agricultural Research), Biodiversity International (formerly IPGRI/ International Plant Genetic Resources Institute), CSIRO (Commonwealth Scientific and Industrial Research Organisation), and Kyushu University;
- (4) Further collaboration triggered the development of human capacity. Up to now, four staffs already got a higher degree (Master's and Ph.D) from Japanese universities and another five staffs obtained degree from Australian universities;
- (5) There is a strong university in Yogyakarta (Gadjah Mada University), in which the Center can establish various research collaborations. Students of Gadjah Mada University (especially majoring in forestry) can also conduct various research by using equipments of the Center, and thus can contribute to the education in Indonesia;
- (6)** The Center has been undergone a substantial Institutional development, starting from as small unit into a modern Center.

#### **Box 5. CAMP GRANIT TRAINING CENTER: RESPONDING FOREST FIRE CRISIS**

In 1997-1998 the climate of Indonesia was extremely dry due to El Nino phenomena. Wildfires in forest and agriculture areas raged in vast areas, especially in the eastern part of Sumatra (Jambi, Riau, South Sumatra) and western side of Kalimantan, impacting human health and air transportation of those areas and even of neighboring countries (Singapore and Malaysia). Most of the wildfires are caused by human activities in and around forests. In response to the crisis, the Government of Japan, through JICA, provided assistance to prevent and control wildfires that happened mostly in and around forest area.

JICA's assistance in forest fire in the most severe fire areas (Jambi, Riau and West Kalimantan Provinces) was commencing through several consecutive projects: **Forest Fire Prevention Management Project** (FFPMP, 1996-2006; Technical Cooperation), **The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project** (2006-2009; Technical Cooperation), and **Improvement of Forest Fire Equipment** (2001; Grant Aid). Jambi, Riau and West Kalimantan were regarded as fire-prone areas and have no field project supported by external donors on forest fire at that time.

One of the important objectives of the project was to conduct the training for fire fighting brigades ('Manggala Agni') and for local people living in and around fire-prone forests, in order to achieve long-term forest fire prevention based on local communities' active participation in planning, implementation and evaluation. Camp Granit was selected as field training site for fire fighting and fire prevention.

The Camp Granit Training Center for Forest Fire Control (Pusat Pelatihan Pengendalian Kebakaran Hutan) is part of Bukit Tigapuluh National Park, Riau. The 5-ha training center is located about 6 hour drive from Jambi or 7 hour drive from Pekanbaru (the capital city of Riau Province). To reach the camp, a good four-wheeled drive is needed to drive on the slippery dirt road, as the camp is situated 12 km away from the main road.

The training center actually was an ex-granite mining camp. In addition to the main camp, there is a dormitory for 36 persons (9 rooms of 4 trainee each), office, class rooms, field training facilities, and various fire fighting equipments for practices. When the FFPMP project was implemented, the camp was intensively used for training of MoF staffs (Manggala Agni/forest fire brigades) as well as for local people who participated in the forest fire prevention and control (MPA, Masyarakat Peduli Api, People Cares for Fire). Hundreds of people have been training in the training center. Currently, the training center is available to be use for various training, education, and other activities (e.g. recreation, ecotourism, research, biodiversity monitoring).

The Government of Japan through JICA projects has been assisting Indonesia in conserving biodiversity. Three JICA past projects were listed in the forestry sector but implemented in collaboration with LIPI. Highlight of the projects and their sustainability is presented in Box 6.

**Box 6. JICA'S ROLE ON THE DEVELOPMENT OF THE RESEARCH CENTER FOR BIOLOGY**

The Government of Japan and the United States went into the tripartite cooperation since 1993 for supporting the Biodiversity Action Plan for Indonesia (BAPI). To conserve the Indonesian biodiversity, the US Government assisted financing and setting up of an NGO named the Indonesia Biodiversity Foundation (IBF, Yayasan KEHATI), while the Japanese Government provided grant aid for Biodiversity Conservation Project (BCP).

Through the BCP (Grant Aid), the Government of Japan established the Center for Zoology of Research Center for Biology (RCB) in Cibinong, Nature Conservation Information Center (NCIC) in Bogor, and management facilities of Gunung Halimun National Park. RCB is part of the Indonesian Institute of Sciences (LIPI, *Lembaga Ilmu Pengetahuan Indonesia*), while the NCIC and Gunung Halimun (later on changed into Gunung Halimun-Salak) National Park was managed under the Ministry of Forestry.

LIPI was formed directly under the Indonesian president with the expectation that its primary role would be to conserve biodiversity in the nation. RCB is part of LIPI that deals with biology and its main role is to formulate a national biological research policy. The RCB plays an extensive role in the overall monitoring and evaluation of biological research activities as well as implementing specimen management and fundamental research. This institution is structurally under the coordination of the Deputy for Life Sciences, Indonesian Institute of Sciences, together with the Research Center for Plant Conservation - Bogor Botanical Garden. The RCB comprises of the Botany Division (Herbarium Bogoriense and Treub Laboratory), the Zoology Division (Museum Zoologicum Bogoriense), and the Microbiology Division. These three divisions are supported by Administration Division, and the Facility and Collection Management Division.

Under the Grant Aid scheme, the Japanese Government supplied the Zoology Division of the RCB with research facilities and a specimen repository during 1995 and 1996. JICA also provided Technical Cooperation to support research for eight years from July 1995 to June 2003 through the **Biodiversity Conservation Project**.

During Phase I (1997-2000) the fund was used to build the Widayatwaloaka Building, which hosts the zoological collection, and install a laboratory with research equipment, and set up a Local Area Network. The purpose was to set up the Biodiversity Information Center (BIC) and the Nature Conservation Information Center (NCIC). Phase II (2000-2003) was devoted to continuing and upgrading integrated IBIS Database on botanical and zoological collections, field surveys, upgrading references and data base on researchers, while microbial collection is still being developed.

With the object of continuing their efforts to rediscover the economic value of these specimens, the Indonesian Government has requested Japanese Government for assistance in creating new facilities. Japanese Government has responded with Grant Aid, the **Improvement of Research Facilities for Biodiversity Conservation and Utilization** (2004-2006). This additional Grant Aid project was to establish research facilities for Botany and Microbiology Division of RCB in Cibinong and to complete the complex of Biodiversity Center (Zoology, Botany and Microbiology). The complex is expected to serve as the core institution for biodiversity both domestically and internationally.

RCB is one of the key institutions in biodiversity conservation and has the largest number of specimens in South East Asia. The RCB's historical animal specimen facility was constructed in 1817 in Bogor by the Dutch, who ruled as a suzerain over Indonesia at the time. Specimens have been stored there since the 1800s and now exceed 1.6 million in number, a magnitude of scale vastly surpassing the specimen repositories of any developing nation including all of the ASEAN countries. Unfortunately, this research institution is facing the aging of facilities and degradation of the condition of academically valuable specimens. To ensure its maintenance and operations are carried out properly, the Government of Japan once again provided a Technical Cooperation project entitled **Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, Indonesian Institute of Sciences in Indonesia**.

The extremely high biological diversity is one of the biggest assets of Indonesia. Indonesia – through LIPI – has already had a massive collection of biodiversity (plants, animals, microbes). Unfortunately, obtaining and maintaining the biodiversity collection requires a lot of funding. Through JICA projects, the biodiversity specimens can be well maintained. Visit to the Center for Biology has proven that the project is able to be sustained by LIPI.

#### OUTCOME

Assessing outcome or impact is always difficult task because the outcome can be reviewed long after the project was terminated. In addition, in many cases the outcomes are not always easily discovered. Some outcomes identified during the field visits were listed in Table 3. As an illustration, Box 7 explains about the impact of JICA project on the income generation of local people.

Table 3. Outcome (impact) identified during the field visit to Yogyakarta, Jambi, Sukabumi, and Cibinong.

Outcome	Project Title				
	CFBTI	FFPMP	GHSNP	RCB	CMBRC
Attitude change		x	x		
Institutional development/establishment	x	x	x		
Collaboration with others	x		x	x	x
Human resources development	x	x	x	x	x
Afforestation and ecosystem restoration	x	x	x		
Increase visitors			x	x	x
Income generation of local people		x	x		x
Scientific research and scientific paper	x			x	x

Note: CFBTI – Center for Forest Biotechnology and Tree Improvement (Yogyakarta)

FFPMP – Forest Fire Prevention and Management Project (Jambi)

GHSNP – Gunung Halimun-Salak National Park (Sukabumi)

RCB – Research Center for Biology (Cibinong)

CMBRC - Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology LIPI

**BOX 7. FOREST FIRE GREEN BELT AND LOCAL PEOPLE'S ECONOMIC DEVELOPMENT: CASE OF SUNGAI RAMBUT, JAMBI**

Sungai Rambut is a small village near Berbak National Park, Jambi Province. This village, along with the neighboring village of Rantau Rasau, has been chosen as one of the site for past JICA's project entitled Forest Fire Prevention and Management Project (FFPMP, Phase I: 1996-2001, Phase II: 2001-2006). FFPMP has initiated participatory program in Jambi and West Kalimantan Provinces. The program aim to achieve long-term forest fire prevention based on local communities' active participation in planning, implementation and evaluation.

Administratively the village of Sungai Rambut is part of the Tanjung Jabung District. It needs a 2 hour drive by car to the nearest small river harbor and about 1.5 hour by small boat to get to the village. The village is situated at the edge of Berbak National Park. This Park is an important park that protects indigenous lowland swamp forests and its wildlife, and was designated as the first Indonesia's Ramsar Site.

Many wild fire incidences were directly link to the activity of the local people. Therefore, if the fire originated from sites adjacent to the national park was not controlled, the fire could easily spread to the national park and destroy the park's ecosystem. Since the early 1980s the Berbak NP has been affected by fires, firstly on the edges of the transmigration sites and land conversion areas.

This JICA Project stresses park-border communities' active participation in long-term prevention of wild fires on their land through establishment of integrated green belts with fire-resistant tree rows along the park boundary, associated with intensification of farmers' land uses. The green belt aimed to safeguard the park forests against wild fires and community land against wild boars.

The green belt consisted of a wire fence (to prevent wild board against the agriculture plantation destruction), a ditch (to store water and to cut ground fires), and fire-resistant tree rows (to control both surface fires and wild boars, and then stimulate farmers' intensive cropping on their land). At the first phase of the project, areca nut *Areca catechu*, albizia *Paraserianthes falcataria*, and lamtoro *Leucaena leucocephala* were planted as green belt. At the second phase, fruit trees and multipurpose trees such as rambutan *Nephelium lappaceum*, durian *Durio zibethinus*, and melinjo *Gnetum gnemon*, were planted as green belt. Target group farmers were participate actively in green belt activities with material assistance from FFPMP.

The tall plantation of areca nuts and other trees were easily spotted from a distance, indicated that the green belt has already well established. Wild fire was greatly reduced, probably not only by the extant of the green belt, but also due to the friendly environment factor (i.e. short drought seasons during the past few years).

The head of the village and several farmers admitted that the past JICA projects had given them a chance to improve their economic condition by selling the areca and other fruit from the green belt trees. The wild boar attack also was reduced, although the reduction was not as high as expected due to the destruction of the fire fence in some areas by the wild boars. The local people actually wished that JICA could be able to assist further, by providing drinking water facility and fish ponds.

## V. THE RELEVANCE OF PAST JAPANESE ASSISTANCE IN FORESTRY POLICY

### RELEVANCE OF JICA PROJECTS TO MOF'S POLICY

Assessment whether JICA's completed projects relevant and in line with the MoF's policy is presented in Table 4. Comparing JICA's project with the MoF's Strategic Plan 2005-2009, JICA's projects highly relevant with 2 (of 5 policies), namely Policy #3: Protection and conservation of forest resources, and Policy #4: Empowering economic of community within and surrounding of forests area.

During this period, MoF struggled a lot with illegal logging, but there was no single project of JICA addressed this issue. This is probably due to the fact that the issue was definitely very sensitive. In addition, at that time there were big projects funded by other ODA that specifically address this issue, e.g. FLEG (Forest Law Enforcement and Governance) and continued with FLEGT (Forest Law Enforcement, Governance, and Trade), funded by European Union.

Policy related to stabilization of forest area ('pemantapan kawasan hutan') also received no support from JICA, both in period 2005-2009 and afterwards (2010-2014). As this matter need to be resolved between the Government of Indonesia and other stakeholders, it is understandable that JICA did not have any project related to stabilization of forest area.

During the period of 2010-2014, JICA was consistently continued their support for the MoF's policy on conservation, rehabilitation, and community development. In addition, JICA also showed a high support for the policy on 'forest safeguarding and forest fire control'. Indonesia at that time was in a battle to combat forest fires, partly due to El Niño phenomena.

### RELEVANCE OF JICA'S PROJECT TO MOF'S PROGRAM AND ACTIVITIES

In order to assess whether the past JICA projects were in line with the Strategic Plan of the Ministry of Forestry and determine the role, matrices were produced to cross check between the activities that have been implemented or planned by the MoF and the JICA project. Table 5 shows the link between JICA projects commenced during 2001-2005 (the first MoF's Strategic Plan). During this period, the strategic plan was not broken down into activities, and listed only up to program level.

Table 6 presents the similar situation, but for different time frame (2005-2009). During this time, the MoF program has already broken down into activities. The next table (Table 7) shows the possible contribution of the past projects to the on-going (2010-2014) Strategic Plan.

In order to assess whether the past JICA projects were in line with the Strategic Plan of the Ministry of Forestry and determine the role, matrices were produced to cross check between the activities that have been implemented or planned by the MoF and the JICA project. Table 5 shows the link between JICA projects commenced during 2001-2005 (the first MoF's Strategic Plan). During this period, the strategic plan was not broken down into activities, and listed only up to program level.

Table 4. Support of JICA's completed projects to MoF's policy.

PRIORITY POLICIES	DEGREE OF SUPPORT OF THE JICA PROJECTS
<b>Strategic Plan 2005-2009</b>	
1. Combating illegal logging within the state forests and its illegal trade	No support. There was no support of the JICA project to the illegal logging issues. Support of this policy came from other ODA assistance.
2. Revitalization of forestry sector, in particular forest industries	No support during this period of Strategic Plan. There was no project specifically address this policy, although in the past (1980s and 1990s) JICA had several projects related to forest industry.
3. Protection and conservation of forest resources	High support. There were many project related to this policy, including projects conducted in several national parks.
4. Empowering economic of community within and surrounding of forests area	High support. Most of JICA's projects related to this policy were embedded in policy no. 3 (protection and conservation of forest resources).
5. Stabilization of forest area for promoting and strengthening of sustainable forest management	Low support. There was a JICA project that related to inventory and monitoring of forest area.
<b>Strategic Plan 2010-2014 (possible use of the outcome/impact of the completed projects)</b>	
1. Forest area stabilization	Low support. Support from JICA project was in the inventory and monitoring of forest area only. Although gave a low support, the inventory and monitoring served as a backbone for other related activities.
2. Forest rehabilitation and improvement of carrying capacity of watershed	High support. Many JICA projects were related to nursery (mass propagation) and rehabilitation. Several project also specifically addressed watershed improvement.
3. Forest safeguarding and forest fire control	High support. JICA had long-term and strong projects on forest fire. Outcomes of those projects have been shown highly useful until now.
4. Biodiversity conservation	High support. JICA projects supported MoF and LIPI in biodiversity conservation. In term of impact, projects related to biodiversity conservation probably had the highest impact/outcome.
5. Revitalization of forest utilization and forest industry	Low support. Some projects had activities related to forest utilization. However, there was no project specifically address this policy.
6. Development of community living in the vicinity of forest	High support. Many projects had a specific target related to this policy. Some projects also support this policy and biodiversity conservation combined.

Table 6 presents the similar situation, but for different time frame (2005-2009). During this time, the MoF program has already broken down into activities. The next table (Table 7) shows the possible contribution of the past projects to the on-going (2010-2014) Strategic Plan.

To ease the analysis, JICA projects in the Table 5, 6 and 7 were lumped together based on the major theme of the project. Projects commencing before the year of 2001 were not included in the analysis, as the MoF's Strategic Plans were only started in 2001.

The matrices concluded that during the three period of Strategic Plan, the Japanese assistance in forestry were indeed relevant with the Strategic Plan for each period. Overall, the JICA projects were mostly relevance with (a) protection and conservation, (b) forest rehabilitation and recovery, (c) biodiversity conservation, (d) training and capacity building, and (e) research and development. Most of the JICA project activities were relevant with protection/conservation, and rehabilitation/recovery activities.

Some of the projects (RCB, CMBRC) were in conducted collaboration with LIPI. The matrices indicated that the projects were also relevance with MoF's Strategic Plan. By using the biodiversity action plan (see Box 2), RCB and CMBRC were relevant to the mission and objective of the biodiversity action plan.

The assessment gave only a general overview on the relevance between a certain JICA project and MoF's Strategic Plan. This assessment, however, did not provide the quality (i.e. the strength) of the relevance.

Table 5. The relevance of selected JICA projects with Strategic Plan 2001-2005.

Program 2001-2005	PROJECT TITLE (KEYWORDS ONLY)								
	CFBTI	KOFFCO	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC
1. Establishment of forest area									
2. Forest protection and security				x	x		x		
3. Forest and land rehabilitation, and conservation of forest resources		x				x	x	x	x
4. Development of sustainable forest management			x		x				
5. Development of forestry institution	x			x	x				

**Note:**

CFBTI – Center for Forest Biotechnology and Tree Improvement (Yogyakarta)

KOFFCO - Komatsu – FORDA Fog Cooling system (Project for the Promotion of Mass Propagation Technique of Native Tree Species for Reforestation)

C Fixing – Carbon Fixing

FFPMP – Forest Fire Prevention and Management Project (Jambi, W. Kalimantan)

MIC – Mangrove Information Center (and its related projects)

WKNP – Way Kambas National Park (rehabilitation)

GHSNP – Gunung Halimun-Salak National Park Management Project (Sukabumi)

RCB – Research Center for Biology (Cibinong)

CMBRC - Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, LIPI

Table 6. The relevance of selected JICA projects with Strategic Plan 2005-2009.

PROGRAMS AND MAIN ACTIVITIES IN STRATEGIC PLAN 2005-2009	PROJECT TITLE (KEYWORDS ONLY)								
	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC	Buffer.Z.	Mangr.
<b>1. Stabilization of security within the country</b>									
1.1. Securing forest area									
<b>2. Improved utilization of forest resource potential</b>									
2.1. Gazettement of forest area									
2.2. Preparation and evaluation of forest land use and forest conversion									
2.3. Utilization of un located production forest									
2.4. Development of forest plantation									
2.5. Utilization of natural forest production									
2.6. Revitalization of primary forestry industries									
2.7. Re-arrangement of forest product admin									
2.8. Establishment of forestry planning									
2.9. Establishment of Forest Management Units									
2.10. Development of NTFP									
2.11. Development of buffer zone cons. area								X	
<b>3. Protection and conservation of natural resources</b>									
3.1. Management of national park					X				
3.2. Management of conservation area		X			X				
3.3. Management of forest fire		X							
3.4. Management of biodiversity						X	X		
3.5. Management of protection forest									
3.6. Utilization of wildlife production, and environment service			X		X				
<b>4. Rehabilitation and recovery of natural resource reserves</b>									
4.1. Development of seedling orchard		X	X	X	X			X	
4.2. Management of watershed					X				
4.3. Rehabilitation of forest and land			X	X	X				
4.4. Development of private and community plantation forest									
4.5. Development of forest and land rehabilitations by community		X	X	X	X				X

PROGRAMS AND MAIN ACTIVITIES IN STRATEGIC PLAN 2005-2009	PROJECT TITLE (KEYWORDS ONLY)								
	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC	Buffer.Z.	Mangr.
<b>5. Enhanced capacity to manage natural resources and environment</b>									
5.1. Forest inventory and mapping	x								
5.2. Development of community forest		x			x				
<b>6. Improved access to information on natural resources and environment</b>									
6.1. Assessment information system of forestry development									
<b>7. Research and development</b>									
7.1. Forestry research and development	x					x			
7.2. Dissemination system of result of research	x					x			
<b>8. Forest training</b>									
8.1. Development of forestry training		x	x						x
<b>9. Governance</b>									
9.1. Development of forestry extension									
9.2. Standardization of forest products&services									
9.3. Development of legal aspect									
9.4. Decentralization of forestry									
9.5. Development of planning and budgeting									
9.6. Strengthening coordination and synchronization of forestry development among the regions									
9.7. Development of financial administration									
9.8. Development of general affair									
9.9. Development of public relations									
9.10. Development of institutional forestry									
9.11. Development of international cooperation									
9.12. Dev't of human resources in forestry									
9.13. Development of controlling officers									

C Fixing – Carbon Fixing

FFPMP – Forest Fire Prevention and Management Project (Jambi, W. Kalimantan)

MIC – Mangrove Information Center (and its related projects)

WKNP – Way Kambas National Park (rehabilitation)

GHSNP – Gunung Halimun-Salak National Park Management Project (Sukabumi)

RCB – Research Center for Biology (Cibinong)

CMBRC - Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology LIPI

Buffer Z: The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project

Mangr : Sub-Sectoral Program of Mangrove

Table 7. The possible contribution of the selected past JICA projects to the on-going Strategic Plan.

PROGRAMS AND MAIN ACTIVITIES IN STRATEGIC PLAN 2010-2014	PROJECT TITLE (KEYWORDS ONLY)								
	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC	Buffer.Z.	Mangr.
<b>1. Macro plan in forestry sector and forest area stabilization</b>									
1.1. Macro planning development of forest area									
1.2. Development of Forestry Management Unit									
1.3. Legalization of forest area									
1.4. Inventory and monitoring of forest resources	+								
1.5. Control the use of forest area for non-forestry development									
1.6. Support of management and implementation of other technical jobs (DG of Planning)									
1.7. Preparation of the forest area stabilization									
<b>2. Enhancement of the utilization production forest</b>									
2.1. Planning for the utilization of production forest									
2.2. Enhancement of management in natural production forest									
2.3. Enhancement of management in plantation forest									
2.4. Enhancement of trade and fee of forest products									
2.5. Enhancement of primary forest industries									
2.6. Enhancement of planning in production forest management									
2.7. Monitoring the utilization of forest									
<b>3. Biodiversity conservation and forest protection</b>									
3.1. Development of conservation areas and essential ecosystem				+	+				
3.2. Development of species and genetic conservation						+	+		
3.3. Investigation and forest protection									
3.4. Forest fire control		+						+	
3.5. Development of environmental services and natural recreation									
3.6. Support of management and implementation of other technical jobs (DG of Forest Protection and Nature Conservation)									
3.7. Development and management of national parks		+		+	+			+	+
3.8. Management development of natural resources conservation			+			+	+		+

PROGRAMS AND MAIN ACTIVITIES IN STRATEGIC PLAN 2010-2014	PROJECT TITLE (KEYWORDS ONLY)								
	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC	Buffer.Z.	Mangr.
<b>4. Enhancement of function and carrying capacity of watersheds based on community development</b>									
4.1. Development of social forestry		+							
4.2. Development of forest tree nursery			+	+					+
4.3. Oversee watershed management implementation									
4.4. Administer forest and land rehabilitation, and forest reclamation in priority watersheds									
4.5. Support of management and implementation of other technical jobs (DG of Land Rehabilitation and Social Forestry)									
4.6. Planning and execution and land-forest rehabilitation; institutional development and evaluation of watersheds									
4.7. Planning, institutional development, and evaluation of mangrove forest			+						+
<b>5. Research and development in forestry</b>									
5.1. Research and development in conservation and rehabilitation	+					+	+		
5.2. Research and development in forest productivity enhancement									
5.3. Research and development in forest technology and forest products									
5.4. Research and development in forest policy and climate change	+								
5.5. Support of management and implementation of other technical jobs (DG Forestry Research and Development Agency)									
<b>6. Extension program and development of human resources in forestry</b>									
6.1. Development of extension program			+		+				+
6.2. Increase the service of extension									
6.3. Education and training for staffs of MoF and other human resources in forestry		+	+		+	+			+
6.4. Support of management and implementation of other technical jobs (DG Extension and Development of Human Resources)									
<b>7. Control and accountability enhancement of Ministry of Forestry's officials</b>									
7.1. Supervision of performance, finance and administration in Inspectorate I working-area									

PROGRAMS AND MAIN ACTIVITIES IN STRATEGIC PLAN 2010-2014	PROJECT TITLE (KEYWORDS ONLY)								
	C Fixing	FFPMP	MIC	WKNP	GHSNP	RCB	CMBRC	Buffer.Z.	Mangr.
7.2. Supervision of performance, finance and administration in Inspectorate II working-area									
7.3. Supervision of performance, finance and administration in Inspectorate III working-area									
7.4. Supervision of performance, finance and administration in Inspectorate IV working-area									
7.5. Supervision of violation cases related to corruption, collusion and nepotism									
7.6. Support of management and implementation of other technical jobs (Inspectorate General of Ministry of Forestry)									
<b>8. Support of management and implementation of other technical job of Ministry of Forestry</b>									
8.1. Coordination of planning and evaluation									
8.2. Administration and staff management									
8.3. Implementation of legal aspects and organization									
8.4. Implementation of financial administration									
8.5. Implementation of general administration, internal affairs, and management of utilities									
8.6. Guidance of standardization, environmental management and management of climate change in forestry									
8.7. Guidance and coordination of foreign cooperation									
8.8. Dissemination of information in forestry development									
8.9. Management of finance, disbursement, and repayment of revolving fund for forestry development									
8.10. Control of forest development in Region I									
8.11. Control of forest development in Region II									
8.12. Control of forest development in Region III									
8.13. Control of forest development in Region IV									

C Fixing – Carbon Fixing

FFPMP – Forest Fire Prevention and Management Project (Jamb, West Kalimantan)

MIC – Mangrove Information Center (and its related projects)

WKNP – Way Kambas National Park (rehabilitation)

GHSNP – Gunung Halimun-Salak National Park Management Project (Sukabumi)

RCB – Research Center for Biology (Cibinong)

CMBRC - Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology LIPI

Buffer Z: The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project

Mangr : Sub-Sectoral Program on Mangrove

## VI. THE FUTURE OF JAPANESE ASSISTANT IN FORESTRY SECTOR

### ROLES OF JAPANESE ASSISTANCE

Projects funded by Japanese Government have played various roles for the persons who involved in the projects, for the collaborating institution, as well as for the forestry development in general. Table 8 summarizes the various roles of JICA projects, identified and extracted from interviewed with resource persons. Considering the various roles of Japanese assistant, all resource persons stated that the Japanese assistant is indeed highly beneficial to Indonesia. All resource persons also hope that the Japanese will continue to provide funding for Indonesia, especially through Grant Aid scheme.

However, resource persons also admitted that during the implementation of the projects, some disharmony (differences), constrains and problems arose. In order to create a better collaboration environment of the on-going and future of JICA project, the constraints and problems need to be identified and resolved. These problems and constraint, along with necessary recommendations, will be presented in the next section.

Table 8. Roles of projects assisted by Japanese Government in Indonesia's forestry sector.

No.	Role	Remarks	Examples
1	Provisioning	Providing various resources to collaborating institutions, including building, facilities, equipments, and vehicles of high quality made	Cibinong Complex, Gunung Halimun-Salak Headquarter, Cikaniki Research Station, Center for Forest Breeding and Tree Improvement (CFBTI)
2	Catalizing	Speeding up program of the collaborating agency (MoF or LIPI) by providing resources needed, including funding. Without project by JICA, the program could be finished longer	Formulation and implementation of Gunung Halimun-Salak Management Plan, relocation of Herbarium Bogoriensis from Bogor to Cibinong
3	Complementing	Providing complementary resources in order to make activities implemented properly	Provision of herbarium facilities for Herbarium Bogoriensis (the specimens were from LIPI, the maintenance facilities were from JICA)
4	Transferring	Transferring working spirit, inter-cultural teamwork, knowledge, skill, and technology (especially in the high tech-knowledge/science e.g. GIS, molecular genetics)	Technology transfer: molecular genetics of CFBTI researchers, landsat image processing of NCIC staffs.
5	Triggering	Triggering or inviting other similar or different projects or activities, following the termination of JICA project	Following the termination of JICA project, CFBTI made a collaboration research with other international institutions (e.g. ACIAR)

No.	Role	Remarks	Examples
6	Innovating	Innovating and creating new knowledge, methods, technology, system, organization units	Innovation of integrated fire-resistant greenbelt, creation of Badan Pengelolaan Hutan Mangrove (Mangrove Management Center), initiation of Manggala Agni (forest fire brigades)
7	Enhancing	Giving a chance for institution or individual to develop professionally and to establish network with other individuals and/or national/international institutions	Some counterpart of Indonesian side were given chances to continue study in Japanese universities, networks of staffs enhanced (mostly with Japanese institutions and individuals)

#### IMPLEMENTATION OF PAST JICA'S PROJECT: FACT FINDINGS

Another important point discovered during the interviews with resource persons was the disharmony (differences), problems, and constraints during the implementation of the project. Basically almost all problems during the implementation of the project were rooted from two basic factors: philosophy of the project and budgeting system (Table 9). Many other problems and constraints were happening (Table 10), but they are considered to be minor. Merely for a systematic writing, project stages follow JICA's procedure of "Plan, Do, Check, Action".

Table 9. Different perceptions between Japanese and Indonesians in implementing a JICA project.

Topic	Perception of Each Party and Recommendations
The 'philosophy' of the project	<u>Japanese:</u> Japanese assistance is merely facilitating Indonesia in aiming specific objectives in the forestry development. Therefore, Indonesia should invest sufficient time, energy, and human resources for their own projects.
	<u>Indonesian:</u> The project is a Japanese project implemented in Indonesia. They (Japanese) have a specific target to be fulfilled. We are merely assisting them in implementing their project and in achieving their goals.
	<u>Recommendations:</u> The disharmony/differences in the philosophy need to be discussed among persons (Japanese and Indonesian sides) prior to the planning and the implementation stage. A common understanding need to be reached before the project starts.

Budgeting system	<p><u>Japanese:</u> JICA is not allowed to provide funding for Indonesian’s honoraria or activities conducted by Indonesian’s side. As this project belongs to Indonesia, MoF need to provide sufficient funding for the project.</p>
	<p><u>Indonesian:</u> By now JICA should understand how difficult to provide funding from MoF for a project. In many cases, funding was late or insufficient and therefore, Indonesia relies on Japanese funding.</p>
	<p><i>Recommendations:</i> As funding is always become a constant topic during the implementation of the project, both parties (Indonesian and Japanese) need to set up a common understanding of other party’s budget. It is recommended that JICA could some degree of flexibility in managing their fund for the project, so - if necessary - part of the funding can be used for activities conducted by Indonesia’s side. Gol also need to provide sufficient funding.</p>

Table 10. Summary of some fact finding from interviews with resource persons.

Planning Stage (“PLAN”)	
Role of Gol	Bappenas and MoF should have a strong position on the selection of donor, project, location, etc. Gol is considered too ‘loose’ in the previous agreement and this need to be made stronger in the future.
Negotiation phase	Some negotiation phases took longer than expected. When conducting negotiation in Indonesia, JICA’s negotiator was not in a position to decide some crucial matters and the negotiator has to consult with Tokyo office.
Joint Coordinating Committee	The members of the Joint Coordinating Committee need to meet more often. Currently they meet once or twice a year. The low frequency of meeting might create problems when a project needs to adjust the Project Development Matrix (PDM).
Selection of title/theme	All title and themes of the project were decided to match with the MoF’s Strategic Plan. So far the projects indeed were in line with the Strategic Plan.
Project goal and MoF’s Strategic Plan	All projects basically already followed the macro Strategic Plan of the MoF. However, MoF had produce Strategic Plan for each Directorate General and thus the JICA projects also need to be checked with them as well.
Production of PDM	As a standard procedure, PDMs were always produced prior to the initiation of a new project. Some PDMs need to be adjusted during the mid-term review. PDMs for the continuing project were usually excellent.
Budgeting plan	Most Indonesian counterpart did not know about the total amount of funding provided for the Japanese side. A for Indonesian side, some big projects were able to provide budget (APBN) as co-funding. Most of Indonesia’s budget was in the form of ‘in kind’ funding.

<b>Implementation Stage (“DO”)</b>	
Coordination between Japanese and Indonesian counterpart	The quality of coordination between Japanese and Indonesian counterpart varied a lot. Some projects had a very good coordination, some still need some improvement.
Co-funding from MoF/Gol	According to the agreement, Gol need to provide some co-funding for JICA project. However, the fiscal year of Gol is different than the fiscal year of GoJ. Although the fiscal year of Gol runs from January to December, in the past projects the funding was available as late as in July or August. This condition might create a constraint in the implementation of the project.
Quality of Japanese experts	Quality of the Japanese expert dispatches to JICA projects in Indonesia varies a lot. Some were highly expert in his/her field (usually for a certain project required a special skill or background), some others still need to learn more.
Training for Indonesian counterpart	Many Indonesian counterparts were given a chance to have training in Japan or even other countries. This training was greatly appreciated by the Indonesian counterpart. However, some training seemed less efficient and need to be more focus on the training subject.
Provision of equipment	Equipments of the projects were provided from Japan. Some instruction manuals were written in Japanese and could not be read by the Indonesian counterpart.
Communication	Constraints in communication still existed, due to language barrier and differences in culture and habit. For projects related to research, the constraints were minimal or even none because the Japanese experts/researchers were fluent in English.
Counterpart – Indonesian side	Almost all Indonesian counterparts were not assigned solely for the JICA project. They were given many other tasks and, therefore, could not dedicate themselves to JICA project.
Counterpart - Japanese	Japanese counterparts were more dedicated to the project, as they worked full time for the JICA project.
Reporting	Most reporting was done by JICA counterparts, as the Indonesian counterparts did not have enough time dedicated to JICA project.
Exit strategy	Long-term and continued projects had good exit strategy. Sustainability of the project could be maintained if the exit strategy was carefully planned.
Publication	Projects related to research, public awareness, and education had published many scientific papers, books, manuals, posters, etc.
Human capacity development	Both Indonesian and Japanese sides gained high development in human capacity throughout the implementation of the project.
Data	Research data were quite numerous and until now most of them still not been published in the national/international journal. For data not related to research, due to the unsystematic work of the Indonesian counterparts, unfortunately some data were no longer available.
Mid-term review, terminal evaluation	The time available for review was too short. In such a short time, it was difficult to understand and evaluate the entire project (especially during terminal evaluation for big projects).

<b>Post Project Stage (“CHECK”)</b>	
Monitoring (ex-post evaluation, ex-post monitoring)	JICA always conducted monitoring in a systematic manner. Most projects had proven to have a big impact on the development of forestry and human resources.
Personal impact	Persons involved in the project admits that the personal impact of the project were great, leading to a personal relationship with the ex-JICA partners. Even when the project was terminated, most of the persons involved in the project still have a good collaborative work with their ex-JICA partners, either in the same/similar theme or extended to other theme(s) or work.
Equipments	After the project terminated, many equipments were managed by the Indonesian side. MoF need to have a special effort to manage the equipments. Equipments need for research were in good shape and well maintained.
<b>Lessons Learned (“ACTION”)</b>	
Uniqueness of JICA projects	Compare to other similar ODAs, Japanese assistance through JICA is rather unique, especially in term of standardized procedures, dispatching the Japanese counterpart, and knowledge transfer.
Planning within MoF	MoF should have produce a grand design to which the JICA projects (as well as other ODA projects) can be harmonized to.
Challenges for GoI	GoI needs to improve the governance, control and monitoring, as well as ways to optimize the funding. GoI needs to be stronger and firmer during the negotiation process in the project initiation.
Project sustainability	Many factors contribute to the sustainability of a project. The site selection and a well-planned exit strategy seemed very crucial in sustainability of the project. Further, post-project maintenance is the most important in determining whether a project is sustainable.

#### NICHE OF JICA PROJECTS

The MoF have received funding from several ODAs, including from EU, GTZ (Germany), KOICA (Korea), DFID (UK), USAID (US), AusAID (Australia), ITTO, and FAO. Each ODA has its own system and scheme. The interview with resource persons concluded that there are 3 main factors that make the JICA project unique and differ with other donor. These factors are:

a. Asian spirit

The Japanese has the same Asian root with Indonesian. These two countries share many cultural backgrounds to ease the collaboration between/among counterparts/experts. In addition, Indonesian counterparts admitted that the Japanese are hard worker, consistent, keen, and focus on their task. As most Indonesian work more ‘flexible’, when working together, Indonesian counterparts had to keep up and balanced with their Japanese partner, and thus creating a better working spirit for the Indonesian counterpart.

b. Providing grant aid

Many other ODAs might provide grant aid to Indonesia. However, JICA’s grant aids are well known for their big amount of funding to produce high quality of building, facilities, equipments, and vehicles.

c. Transfer of technology

The best transfer of technology and knowledge provided from Japanese counterparts and experts are laboratory-type of works, especially those related to high technology that Indonesian do not capable of, for example molecular genetics and GIS/remote sensing.

FUTURE DIRECTION OF NATIONAL FORESTRY PROGRAM

As mentioned in the previous part (Chapter III), the MoF has already set up long term and medium term planning. The vision and mission of the Indonesia’s Forestry Long Term Development Plan 2006-2025 is presented in Table 11.

Table 11. Vision and mission of the Ministry of Forestry as stated in the document ‘Indonesia’s Forestry Long Term Development Plan 2006-2025’.

Vision	Forestry as a pillar for sustainable development by 2025
Mission	a. To create a strong institutional framework for forestry development
	b. To increase the value and sustainable productivity of forest resources
	c. To develop forestry products and services that are environmentally friendly, competitive, and that have a high added value
	d. To develop an enabling forestry investment climate
	e. To increase the level of exports of forestry products and services
	f. To improve social welfare and raise society’s active role in supporting responsible and equitable forest management

Based in information given by resource persons, the future direction of the forestry program will be related to 3 big umbrella themes: (1) climate change, (2) conservation, and (3) environmental services. In order to create an enabling condition for the three themes, internally the MoF needs to improve: (a) governance, and (b) capacity building/human resources development.

The climate change and its related subject (REDD++, carbon trading) is considered as a new and emerging issue. When the long-term development plan was formulated in 2006, the climate change has not emerged as an important topic. Therefore, it is understandable that the issue related to climate change was not explicitly stated in the mission statement. The climate change was one of 8 priority policies in older version of Strategic Plan 2010-2014. In the new version of Strategic Plan, climate change was included in the Research and Development program. Another new issue in conservation is the ecosystem restoration, which might also link to the climate change issue.

## JICA'S STRATEGIC FUTURE DIRECTION

In the future, global program, project, and activities would be related to climate change, one way or another. For example, forest plantation would be perceived as REDD and carbon sequestration; forest inventory can be seen as carbon estimation activities.

Assuming that JICA's future theme would be still in line with past projects, Table 12 provide some suggestions on the future of JICA's projects, based on various considerations analyzed in previous sections. As for site selection or location, many resource persons suggested that it would be better for JICA to work at sites where JICA has been previously worked. If JICA needs to initiate a new project in a new site, a sufficient time for preparation or pre-conditioning need to be allocated.

Table 11. Suggestions on future direction of JICA's projects.

Umbrella Theme	Examples of Topics
Climate change	REDD++ mechanism and governance, carbon accounting, mitigation and adaptation; Measuring, Reporting and Verification system; topics related to carbon leakages (forest fires, illegal forest cutting, land encroachment), many other innovative ideas, mechanism, and techniques under the umbrella of climate changes
Human-related in forestry sector	Agroforestry system, human resources development, income generating activities, buffer zone management, campaign and public awareness, research and development
Conservation	Ecosystem restoration, ecosystem/landscape conservation, conservation of endangered species, land and water conservation
Management of national park and protected areas	Management of national park and other types of conservation areas, new initiative (e.g. Satoyama Initiative), development of a model national park
Environmental service	Payment for environmental service, economic valuation of biodiversity and other forest services, ecotourism
Governance	Strengthening Forest Management Unit, governance related to carbon trade
Timber efficiency and production	Improve Sustainable Forest Management (SFM) practice in management of each forest function; development of non-timber forest product, efficiency of timber use, lesser known timber plantation

## VII. CONCLUDING REMARKS

The Japanese assistance in forestry sector has been implemented in Indonesia since early 1970s. Various projects under five different schemes were executed. Of the projects reviewed in this study, it can be concluded that the output and impact were very significant, and in line with MoF's policy and program/activities.

Assessment showed that JICA's completed projects supported most of the MoF's policies, including policies on conservation, rehabilitation, forest fire, and community development. However, there were certain issues that JICA cannot support, namely issues on illegal logging and stabilization of forest areas.

Based on the assessment of the possibility of the contribution of JICA's previous project to the current (2010-2014) MoF's Strategic Plan, it was obvious that JICA's projects might have a strong contribution to the MoF's program of biodiversity conservation and forest protection, enhancement of function and carrying capacity of watersheds based on community development, research and development in forestry, and extension program and development of human resources in forestry. This review, however, is not intended to mix with political situation. Question whether an ODA (Japanese assistance) might carry specific objectives, for instance, is not a subject of this review.

During the interviews, some facts were revealed. Interviews with many resource persons has proven that the collective knowledge is actually exist, hidden within the resource persons.

The Japanese assistance in Indonesia has been going on for at least four decades. Although some projects experiencing constraints here and there, all JICA projects were able to be executed well. It is now up to the Government of Indonesia to utilize this assistance in the optimum ways, for the development of forestry sector.

## REFERENCES

- Bappenas. 2003. Indonesian Biodiversity Strategy and Action Plan 2003-2020: National Document. Bappenas. Jakarta.
- Bappenas 1993. Biodiversity Action Plan for Indonesia. Bappenas. Jakarta.
- Departemen Kehutanan. 2004. Undang-Undang Republik Indonesia Nomor 25 tahun 2004 tentang Sistem Perencanaan Pembangunan Nasional. Departemen Kehutanan. Jakarta.
- Departemen Kehutanan. 2001. Rencana Strategis 2001-2005. Departemen Kehutanan. Jakarta.
- JICA. 2009. JICA's Annual Report 2009. Downloaded on August 1 from <http://www.jica.go.jp/english/publications/reports/annual/2009/pdf/08.pdf>
- Kementerian Kehutanan. 2010. Rencana Strategis 2010-2014. Kementerian Kehutanan. Jakarta.
- Ministry of Forestry. 2006a. Indonesia's Forestry Long Term Development Plan 2006-2025. Ministry of Forestry. Jakarta.
- Ministry of Forestry. 2006b. Strategic Plan of the Ministry of Forestry 2005-2009 (Revised). Ministry of Forestry. Jakarta.

## APPENDICES

Appendix 1. List of past JICA projects in forestry sector included in the review.

No.	PROJECT NAME	DOCUMENT AVAILABILITY
<b>A. Technical Cooperation</b>		
1	Mountain Logging in Java	Documents available, title slightly different: "Mountain Logging Practice in Java"
2	The Trial Plantation Project in Benakat, South Sumatra	Documents available
3	Tropical Rainforest Research Project	Documents available
4	The Watershed Management Technology Development Project in South Sulawesi	<b>Documents unavailable</b>
5	Forest Tree Improvement Project	Documents available
6	The Development of the Sustainable Mangrove Management Project	Documents available
7	Forest Fire Prevention Management Project	Documents available
8	Carbon Fixing Forest Management Project	Documents available, many supporting reports available from library and from the web
9	The Mangrove Information Center Project	Documents available
10	Project for the Promotion of Mass Propagation Technique of Native Tree Species for Reforestation	Documents available
11	The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project	Documents available
12	Sub-Sectoral Program of Mangrove	Documents available
13	Gunung Halimun-Salak National Park Management Project	Documents available
14	Biodiversity Conservation Project	Documents available
15	Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, Indonesian Institute of Sciences in Indonesia	Documents available
<b>B. Development Study</b>		
1	Study on Forest Resources in Pekalongan Central Jawa	<b>Documents unavailable</b>
2	Development Study on Afforestation in Benakat South Sumatera	Documents available
3	Study on Forest Resources in the Upper Musi South Sumatera	Documents available
4	Marunda Timber Distribution Complex	Document with the exact title unavailable. However, a document with similar title

		available (“Economic Feasibility Study & Detailed Engineering Design Proyek Pusat Perkayuan Marunda”)
5	Utilization of Unused Tree Species	Documents available, title slightly different: “Utilization of Lesser Known Tree Species”
6	The Feasibility Study on Upland Plantation and Land Development Project at Citarik Sub-Watershed in the Republic of Indonesia	Documents available
7	The Development Study on Land Rehabilitation of Semi Arid Zone in East Nusa Tenggara	Documents available
8	Social Forestry Development in the Upper Musi	Document with the exact title unavailable. However, a document with similar title available (“The Feasibility Study on Social Forestry Development Project in the Upper Musi Watershed in Indonesia”)
9	The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia	<b>Documents unavailable</b>
10	Study on Watershed Management in the Upper Musi, South Sumatera	Documents available
11	Industrial Plantation Project	Documents available
12	Soil Erosion Control in South Sulawesi	<b>Documents unavailable</b>
<b>C. Grant Aid</b>		
1	Tropical Rainforest Research Center (Mulawarman University)	Document available
2	Trial Plantation Training Center in Benakat South Sumatera	Document available
3	Project for Afforestation Machinery Provision	<b>Documents unavailable</b>
4	Expansion of Tropical Rainforest Research Center	<b>Document unavailable</b>
5	Project for the Improvement of the Equipment for the Afforestation in East Kalimantan	<b>Documents unavailable</b>
6	Forest Tree Improvement Center Construction	Document with the exact title unavailable. However, a document with similar title available (“Basic Design Study Report on the Project for Establishment of the Forest Tree Improvement Development Center in the Republic of Indonesia”)
7	Rehabilitation of the Degraded National Park by Forest Fire	Document available
8	Rehabilitation of Natural Forest in Way Kambas National Park	Documents available
9	Improvement of Forest Fire Equipment	Document available

10	The Project for Improvement of Research Facilities for Biodiversity Conservation and Utilization	Document available
<b>D. Loan Assistance</b>		
1	Engineering Services for Central Sumatra forest rehabilitation	<b>Documents unavailable</b>
2	Upland Plantation and Land Development Project at Citarik Sub-Watershed	Documents available; implementing agency: Directorate General of Water Resources Development, Ministry of Public Works (Departemen Pekerjaan Umum)
3	The Feasibility Study on the Urgent Bali Beach Conservation Project	Documents available; implementing agency: Directorate General of Water Resources Development, Ministry of Public Works (Departemen Pekerjaan Umum)
<b>E. Development Cooperation</b>		
1	Forestry Development Study in Balikpapan	<b>Documents unavailable</b>
2	Experimental Afforestation in Balikpapan	<b>Documents unavailable</b>
3	Forestry Development Study in Pulau	<b>Documents unavailable</b>
4	Experimental Afforestation in Malino	<b>Documents unavailable</b>
5	Experimental Afforestation in Tarakan	<b>Documents unavailable</b>
6	Experimental Afforestation in Monggali	<b>Documents unavailable</b>
7	Experimental Afforestation in North Sumatera	<b>Documents unavailable</b>
8	Forestry Development Study in Kacingan	<b>Documents unavailable</b>
9	Forestry Development Study in Patigo	<b>Documents unavailable</b>
10	Forestry Development Study in Togean	Documents available
11	Experimental Afforestation in Togean	<b>Documents unavailable</b>
12	Development Study on Unused Tree Species in Togean	<b>Documents unavailable</b>
13	Large-Scale Reforestation Technique	<b>Documents unavailable</b>
14	Experimental Afforestation in East Java Province	<b>Documents unavailable</b>
15	Development Study on Unused Tree Species in Pare	<b>Documents unavailable</b>
16	Development Study on Carbon Fixation in Indonesia	Documents available
17	Forestry Development Study in Probolinggo	<b>Documents unavailable</b>
18	Forestry Development Study in Taliabu	<b>Documents unavailable</b>
19	Forestry Development Study in Sumangus	<b>Documents unavailable</b>

Appendix 2. Summary of JICA's past project, listed based on chronological time.

No.	PROJECT NAME	PROJECT PERIOD	PROJECT SCHEME*	LOCATIONS	MAIN COLLABORATOR
1	Experimental Afforestation in Balikpapan	1974	DC	Balikpapan (East Kalimantan)	Ministry of Forestry
2	Forestry Development Study in Pulau	1974	DC	Data not available	Ministry of Forestry
3	Experimental Afforestation in Malino	1974	DC	Data not available	Ministry of Forestry
4	Experimental Afforestation in Tarakan	1975	DC	Tarakan (East Kalimantan)	Ministry of Forestry
5	Experimental Afforestation in Monggali	1975	DC	Data not available	Ministry of Forestry
6	Experimental Afforestation in North Sumatera	1975	DC	North Sumatera	Ministry of Forestry
7	Forestry Development Study in Kacingan	1976	DC	Data not available	Ministry of Forestry
8	Study on Forest Resources in Pekalongan, Central Jawa	1976-1977	DS	Pekalongan (Central Java)	Ministry of Forestry
9	Soil Erosion Control in South Sulawesi	1977?	DS	Sout Sulawesi	Ministry of Forestry
10	Forestry Development Study in Patigo	1977	DC	Data not available	Ministry of Forestry
11	Forestry Development Study in Balikpapan	1977-1982	DC	Balikpapan (East Kalimantan)	Ministry of Forestry
12	Forestry Development Study in Probolinggo	?	DC	Probolinggo (Central Java)	Ministry of Forestry
13	Forestry Development Study in Taliabu	?	DC	Sulawesi	Ministry of Forestry
14	Forestry Development Study in Sumangus	?	DC	Data not available	Ministry of Forestry
15	Mountain Logging Practice in Java	1977-1982	TC	Central and East Java	Ministry of Forestry
16	Study on Forest Resources in the Upper Musi, South Sumatera	1977-1979	DS	South Sumatra	Ministry of Forestry
17	Study on Watershed Management in the Upper Musi, South Sumatera	1979-1980	DS	South Sumatra	Ministry of Forestry
18	Social Forestry Development in the Upper Musi	1979-1980	DS	South Sumatra	Ministry of Forestry
19	Forestry Development Study in Togean	1978	DC	Togean (Sulawesi)	Ministry of Forestry
20	Experimental Afforestation in Togean	1978	DC	Togean (Sulawesi)	Ministry of Forestry

21	Development Study on Unused Tree Species in Togean	1978	DC	Togean (Sulawesi)	Ministry of Forestry
22	Marunda Timber Distribution Complex	1980	DS	Jakarta	Government of Jakarta
23	Utilization of Unused Tree Species	1980	DS	Data not available	Ministry of Forestry
24	Development Study on Afforestation in Benakat South Sumatera	1977-1979	DS	Benakat (South Sumatera)	Ministry of Forestry
25	The Trial Plantation Project in Benakat, South Sumatera	1979-1995	TC	Benakat (South Sumatera)	Ministry of Forestry
26	Trial Plantation Training Center in Benakat South Sumatera	1980	GA	Benakat (South Sumatera)	Ministry of Forestry
27	Project for Afforestation Machinery Provision	1985-1986	GA	Benakat (South Sumatera)	Ministry of Forestry
28	Industrial Plantation Project	1988-1990	GA	Benakat (South Sumatera)	Ministry of Forestry
29	Large-Scale Reforestation Technique	1989-1992	DC	Data not available	Ministry of Forestry
30	Tropical Rainforest Research Center (Mulawarman University)	1979	GA	Samarinda	Ministry of Forestry
31	Tropical Rainforest Research Project (Phase I, II, III)	1985--1999	TC	Samarinda	Ministry of Forestry, Ministry of Education and Culture
32	Expansion of Tropical Rainforest Research Center	1986	GA	Samarinda	Ministry of Forestry, Ministry of Education and Culture
33	Project for the Improvement of the Equipment for the Afforestation in East Kalimantan	1988-1989	GA	Samarinda	Ministry of Forestry
34	The Watershed Management Technology Development Project in South Sulawesi	1988-2002	TC	South Sulawesi	Ministry of Forestry
35	The Feasibility Study on Upland Plantation and Land Development Project at Citarik Sub-Watershed in the Republic of Indonesia	1991-1993?	DS	Citarik (West Java)	Ministry of Forestry
36	The Development Study on Land Rehabilitation of Semi Arid Zone in East Nusa Tenggara (Phase I, II)	1993-1995, 1995-1996	DS	East Nusa Tenggara	Ministry of Forestry

37	Experimental Afforestation in East Java Province	1994	DC	East Java	Ministry of Forestry
38	Development Study on Unused Tree Species in Pare	1994	DC	Pare (Sulawesi)	Ministry of Forestry
39	The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia	1999-2001	DS	Tondano (Sulawesi)	Ministry of Forestry
40	Forest Tree Improvement Center Construction	1989-1992	GA	Yogyakarta	Ministry of Forestry
41	Forest Tree Improvement Project (Phase I, II)	1992-1997; 1997-2002	TC	Yogyakarta	Ministry of Forestry
42	The Development of the Sustainable Mangrove Management Project	1992--1999	TC	Sanur (Bali)	Ministry of Forestry
43	The Mangrove Information Center Project	2001-2006	TC	Sanur (Bali)	Ministry of Forestry
44	Sub-Sectoral Program of Mangrove	2007-2010	TC	Sanur (Bali)	Ministry of Forestry
45	Carbon Fixing Forest Management Project	2001-2006	TC	Bogor	Ministry of Forestry
46	Development Study on Carbon Fixation in Indonesia	2001	DC	Bogor	Ministry of Forestry
47	Project for the Promotion of Mass Propagation Technique of Native Tree Species for Reforestation	2004-2007	TC	Bogor	Ministry of Forestry
48	Forest Fire Prevention Management Project	1996-2001; 2001--2006	TC	Jambi, Riau, Berbak, West Kalimantan	Ministry of Forestry
49	The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project	2006-2009	TC	Jambi	Ministry of Forestry
50	Rehabilitation of the Degraded National Park by Forest Fire	1999-2002	GA	Way Kambas National Park	Ministry of Forestry
51	Improvement of Forest Fire Equipment	2001	GA	Bukit Tigapuluh NP, Berbak NP, Way Kambas NP, Gunung Palung NP	Ministry of Forestry
52	Rehabilitation of Natural Forest in Way Kambas National Park	1999-2004	GA	Way Kambas National Park (Lampung)	Ministry of Forestry (Way Kambas National Park)
53	Biodiversity Conservation Project	1995-2003	TC	Sukabumi, Bogor, Cibinong	Ministry of Forestry, LIPI

54	Gunung Halimun-Salak National Park Management Project	2003-2008	TC	Sukabumi	Ministry of Forestry (Gunung Halimun-Salak National Park)
55	The Project for Improvement of Research Facilities for Biodiversity Conservation and Utilization	2004, 2005, 2006	GA	Cibinong (West Java)	LIPI
56	Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, Indonesian Institute of Sciences in Indonesia	2007	TC	Cibinong, West Java	
<b>Loan Assistant</b>					
57	Engineering Services for Central Sumatra forest rehabilitation	1992	LA	Central Sumatra	Directorate General of Water Resources Development - Ministry of Public Works
58	Upland Plantation and Land Development Project at Citarik Sub-Watershed	1995	LA	Citarik (West Java)	
59	The Feasibility Study on the Urgent Bali Beach Conservation Project	1996	LA	Bali	

**\*Notes:**

TA: Technical Cooperation

GA: Grant Aid

LA: Loan Assistant

DS: Development Study

DC: Development Cooperation

Appendix 3. List of respondents interviewed.

Role or Project Title	No	Name
Decision Maker	1	Mr. Basah Hernowo (Bappenas)
	2	Prof. Endang Sukara (LIPI)
	3	Dr. Tonny Soehartono (MoF)
	4	Dr. I.B. Putera Parthama (FORDA-MoF)
	5	Mr. Yuyu Rahayu
Persons who involved in other projects (non-JICA)	6	Mr. Tajudin Edy Komar (ITTO)
<ul style="list-style-type: none"> <li>• The Development of the Sustainable Mangrove Management Project</li> <li>• The Mangrove Information Center Project</li> <li>• Sub-Sectoral Program of Mangrove</li> </ul>	7	Mr. Hiroyuki Hatori
	8	Ms. Ni Wayan Wiratini
	9	Ms. Oktovina Trisia Windarti
	10	Mr. Arief Mahmud
	11	Mr. Sasmito
<ul style="list-style-type: none"> <li>• Biodiversity Conservation Project</li> </ul>	12	Dr. Sih Kahono
	13	Dr. Dewi Malia Prawiradilaga
	14	Mr. Hiroshi Kobayashi
	15	Mr. Agoes Sriyanto
<ul style="list-style-type: none"> <li>• Gunung Halimun Salak National Park Management Project</li> </ul>	16	Dr. Bambang Supriyanto
	17	Mr. Kuswandono
	18	Mr. Isamu Kuboki
	19	Mr. Shigeru Ono
	20	Mr. Adi Susmianto
	21	Mr. Sudarmaji
<ul style="list-style-type: none"> <li>• Forest Fire Prevention Management Project</li> </ul>	22	Dr. Bambang Hero Saharjo
	23	Mr. Bambang Sumantri
	24	Mr. Halasan Tulus
	25	Mr. Waladi Isnani
<ul style="list-style-type: none"> <li>• Carbon Fixing Forest Management Project</li> </ul>	26	Prof. Lilik Budi Prasetyo
	27	Dr. Chairil Anwar Siregar
<ul style="list-style-type: none"> <li>• Tree Improvement Project</li> </ul>	28	Dr. Rufi'i
	29	Mr. Didik Purwito
<ul style="list-style-type: none"> <li>• Benakat Projects</li> </ul>	30	Dr. Anto Rimbawanto

Appendix 4. List of resource persons interviewed during field visit.

Project Title	No	Name of Resource Person	Role in the Project
<ul style="list-style-type: none"> <li>Gunung Halimun-Salak National Park Management Project</li> </ul>	1	<ul style="list-style-type: none"> <li>Istanto</li> </ul>	Current Head of the National Park; now implementing plans resulting from the project
	2	<ul style="list-style-type: none"> <li>Desy Ekawati</li> </ul>	Pengendali Ekosistem Hutan
	3	<ul style="list-style-type: none"> <li>Nur Faizin</li> </ul>	Kaur Program Perencanaan
	4	<ul style="list-style-type: none"> <li>Momo Suparmo</li> </ul>	Interpreter at Cikaniki Research Station
	5	<ul style="list-style-type: none"> <li>Cecep</li> </ul>	Field Officer
	6	<ul style="list-style-type: none"> <li>Ibrahim</li> </ul>	Kepala Resort Sukagalih
	7	<ul style="list-style-type: none"> <li>Soma</li> </ul>	Ketua Kelompok Pelestarian Lingkungan Hidup, Kampung Sukagalih
	8	<ul style="list-style-type: none"> <li>Rokib</li> </ul>	Jubir Kelompok Pelestarian Lingkungan Hidup, Kampung Sukagalih
	9	<ul style="list-style-type: none"> <li>Jaja</li> </ul>	Komando Polisi Hutan
	10	<ul style="list-style-type: none"> <li>Apud</li> </ul>	Staf of Cikaniki Research Center
	11	<ul style="list-style-type: none"> <li>Amin</li> </ul>	Staf of Cikaniki Research Center
	12	<ul style="list-style-type: none"> <li>Odi</li> </ul>	Staf of Cikaniki Research Center
<ul style="list-style-type: none"> <li>Biodiversity Conservation Project</li> <li>Improvement of Research Facilities for Biodiversity Conservation and Utilization</li> <li>Project on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology, Indonesian Institute of Sciences in Indonesia</li> </ul>	13	<ul style="list-style-type: none"> <li>M. Jauhar Arif ('Memet')</li> </ul>	Head of Biology Division, RCB - LIPI
	14	<ul style="list-style-type: none"> <li>Dr. Ahmad Dinoto</li> </ul>	Staff of RCB, LIPI
	15	<ul style="list-style-type: none"> <li>Uway Warsita</li> </ul>	Staff of RCB, LIPI
	16	<ul style="list-style-type: none"> <li>Dr. Rullyana Susanti</li> </ul>	Staff of RCB, LIPI
	17	<ul style="list-style-type: none"> <li>Sudaryanti</li> </ul>	Staff of RCB, LIPI
	18	<ul style="list-style-type: none"> <li>Rini</li> </ul>	Staff of RCB, LIPI
	19	<ul style="list-style-type: none"> <li>Eko Baroto Waluyo</li> </ul>	Staff of RCB, LIPI
	20	<ul style="list-style-type: none"> <li>Sudaryono</li> </ul>	Head of Plants Division, LIPI

<ul style="list-style-type: none"> <li>• Forest Tree Improvement Center Construction</li> <li>• Forest Tree Improvement Project</li> </ul>	21	• Dr. Rufi'i	Head of CFBTI
	22	• Dr. Anto Rimbawanto	Researcher of CFBTI
	23	• M. Kharomaini	Researcher of CFBTI
	24	• Tri Pambudi	Researcher of CFBTI
	25	• Riharto	Researcher of CFBTI
<ul style="list-style-type: none"> <li>• Forest Fire Prevention Management Project</li> <li>• Improvement of Forest Fire Equipment</li> <li>• The Forest Fire Prevention by Initiative Forest Area Buffer Zone People Project</li> </ul>	26	• Tri Siswo Raharjo	Head of Balai Konservasi Sumberdaya Alam Jambi
	27	• Halasan Tulus	Head of Bukit Tigapuluh National Park
	28	• Madari	Staff of Balai Konservasi Sumberdaya Alam Jambi
	29	• Seto Sudarmono	Staff of Balai Konservasi Sumberdaya Alam Jambi
	30	• Aziz Sembiring	Staff of Balai Konservasi Sumberdaya Alam Jambi
	31	• Muh. Amin	Kepala Desa Sungai Rambut
	32	• Ibram Edy	Staff of Bukit Tigapuluh National Park
	33	• Sugito	Farmer
	34	• Andi Munandar	Staff of Bukit Tigapuluh National Park
	35	• Putu	Staff of Balai Konservasi Sumberdaya Alam Jambi