

## 第5章 提言と教訓

### 5-1 提言

#### (1)統合的森林火災予防管理ガイドライン

プロジェクト協力期間終了時までには、対象国立公園のケーススタディを含む上記ガイドラインを計画通り作成し、インドネシア政府による公式文書として承認することが必要である。このガイドラインは森林火災予防に活用するのみならず、国立公園における保全管理計画策定に際しても活用されるべきである。

#### (2)衛星画像システム

早期警戒・発見システムで利用している衛星画像処理システムは現在更新中で、情報源としてこれまで使用してきた衛星（NOAA12）のみならず、他の衛星（MODIS、NOAA15、NOAA17、NOAA18）も追加する予定である。2006年内のなるべく早い時期に、更新を完了することが求められる。

#### (3)他組織との協力

将来の上位目標達成のためには、国立公園内のみならずそれ以外の地域での火災対策を強化することが求められる。そのためには、関連政府機関、関連他組織、地域コミュニティとの協力が必要であり、これらとの連携を更に強化することが望ましい。

### 5-2 教訓（実施中、あるいは将来開始される他のプロジェクトの参考になる事柄）

#### (1)教育機関との協力

プロジェクトにおいて教育機関の協力を得ることを検討すべきである。本プロジェクトでは、周辺住民の意識向上・行動変容のためにランブン大学の協力を得た。このような連携は、プロジェクトを契機として教育機関が新たな活動を計画・実施することを促し、プロジェクトの自立発展性にも貢献する。

#### (2)意識向上活動の制度化

森林火災予防管理に係る意識向上活動を教育課程に導入することが望ましい。たとえば、本プロジェクトで見られたように、教育課程のうち地方政府が決定できる部分に環境教育を導入すれば、意識向上活動の持続性はより高まる。

#### (3)地域内の近隣国との協力

プロジェクトの実施においては、地域内の近隣国との、情報交換や研修などについての協力を促進すべきである。

#### (4)利害関係者間の調整

火災は国立公園内や森林内だけではなく、プランテーションや農地でも発生するため、その予防には多様な諸組織の連携が求められる。多様な諸組織を調整する機能をもった組織・制度が重要となる。

#### (5)国立公園管理のための諸活動間の連携調整

森林火災予防のために国立公園内をパトロールする際には、違法伐採・密猟防止のためのパトロールを同時に行えばより効率的・効果的である。



## 附属資料

- 1 協議議事録 (Minutes of meetings)
  - Annex1. PDM
  - Annex2. Plan of Operations
  - Annex3. Inputs
  - Annex4. Table of Achievements
  - Annex5. Evaluation Grid
- 2 投入実績 (和文)
- 3 機材供与実績
- 4 達成グリッド (和文)
- 5 評価グリッド (和文)
- 6 その他参考資料
  - 林業省森林保護・自然保全総局 (PHKA) 組織図
  - 森林火災対策局 (PKH) 組織図
  - インドネシア土地・森林火災消火実行組織図

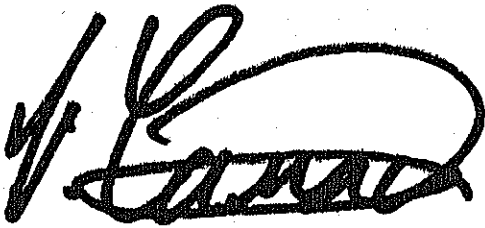


MINUTES OF MEETING FOR JOINT EVALUATION  
ON  
THE JAPANESE TECHNICAL COOPERATION  
FOR  
THE FOREST FIRE PREVENTION MANAGEMENT PROJECT PHASE II  
IN THE REPUBLIC OF INDONESIA

The Japanese Terminal Evaluation Team (hereinafter referred to as "the Japanese Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Yoshiharu Yamada, visited the Republic of Indonesia from 11 to 21 December, 2005 for the purpose of conducting terminal evaluation of the Japanese Technical Cooperation for the Forest Fire Prevention Management Project Phase II in the Republic of Indonesia (hereinafter referred to as "the Project").

This evaluation was conducted by forming the Joint Evaluation Team (hereinafter referred to as "the Team") with the Indonesia Evaluation Team, headed by Dr. Bambang Hero Saharjo. As a result of a series of surveys and discussions, the Team agreed to forward to respective Governments an Evaluation Report, which is referred to in the attached here to.

Jakarta, 21 December, 2005



Mr. Yoshiharu Yamada  
Leader,  
Japanese Final Evaluation Team,  
Japan International Cooperation Agency



Mr. M. Arman Mallolongan  
Director General,  
Directorate General of Forest Protection  
and Nature Conservation,  
Ministry of Forestry,  
The Republic of Indonesia

REPORT ON THE JOINT EVALUATION  
OF  
THE FOREST FIRE PREVENTION MANAGEMENT  
PROJECT PHASE II  
IN  
THE REPUBLIC OF INDONESIA

I. INTRODUCTION

Forest fire is one of the major causes of the deforestation in Indonesia, and is of high priority in the national policy. The Government of Japan decided to assist the Forest Fire Prevention Management Project (Phase I) in response to the request of the Government of Indonesia. The Phase I Project started in 1996.

Following the Phase I Project, the Forest Fire Prevention Management Project Phase II in the Republic of Indonesia (hereinafter referred to as "the Project") has been implemented since April 15, 2001, based on the Record of Discussions (hereinafter referred to as "the R/D"), signed on March 9, 2001, between the Government of Japan and the Government of the Republic of Indonesia.

Based on the R/D, the Government of Japan and the Government of Indonesia have been implementing the Forest Fire Prevention Management Project Phase II in the Republic of Indonesia (hereinafter referred to as "the Project") since April 2001. The Project is scheduled to be implemented for five (5) years and be completed on 14 April, 2006. In order to evaluate the Project, JICA dispatched the Japanese Terminal Evaluation Team from 11 to 22 December, 2005. The Japanese and Indonesian Evaluation Teams have jointly undertaken the evaluation reported here.

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## II. MEMBERS OF THE JOINT EVALUATION TEAM

### 1. JICA Side

- (1) Mr. Yoshiharu YAMADA (Leader)  
Team Director, Forestry and Nature Conservation Team I  
Global Environment Dept., JICA
- (2) Mr. Kazutaka OKAMOTO (Forest Fire Prevention Expert)  
Deputy Director, International Forestry Cooperation Office,  
Forestry Agency, Ministry of Agriculture, Forestry and  
Fisheries.
- (3) Mr. Yoshiyuki MIYAKE (Project Management)  
Project Officer (Forestry),  
Forestry and Nature Conservation Team I  
Global Environment Dept., JICA
- (4) Dr. Jiro Iguchi (Evaluation Analysis)  
Senior Associate, Padeco Co. Ltd.

### 2. Indonesian Side

- (1) Dr. Bambang Hero Sahardjo (Leader)  
Head of Forest Fire Laboratory, Faculty of Forestry  
Bogor Agriculture University (IPB)
- (2) Dr. Lailan Syaufina  
Secretary for Department of Silviculture, Faculty of Forestry  
Bogor Agriculture University (IPB)
- (3) Drs. Purwasto, MSc  
Head of Forest Fire Sector, Ministry of Environment
- (4) Ir. Harjanto Wahyu Sukotjo, MSc  
Sub-Directorate of Program and Evaluation, Directorate for



Forest Fire Control, Ministry of Forestry

- (5) Ir. Mirawati S, MA  
Directorate for Forest Fire Control, Ministry of Forestry
- (6) Dr. Widada.T, M.Si  
Secretariat of Directorate General for Forest Protection and  
Nature Conservation, Ministry of Forestry

### III. OBJECTIVES OF THE EVALUATION

The following is the main objectives of the evaluation;

- (1) to review the Inputs, Activities and Outputs of the Project, and evaluate the achievements against the Project Objectives;
- (2) to conduct a comprehensive evaluation on the achievements of the Project from the viewpoints of the five criteria; and
- (3) to make recommendations for future perspectives of the Project and to draw lessons from the Project activities in order to reflect them on technical cooperation in a similar field.

### IV. METHODOLOGY OF EVALUATION

The evaluation was made in the following procedure.

#### 4.1 Survey

The joint evaluation team conducted a field survey at Project sites, in Bukit Tiga Puluh and government offices in Berbak, and interviewed the Indonesian project counterparts, Japanese experts and others in order to collect information necessary for the evaluation. Before these activities, the preliminary survey of the Japanese team was conducted. The preliminary survey consisted of interviews and field survey by Indonesian consultants with or without a member of the Japanese team at three project sites,

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Berbak, Gunung Palung and Way Kambas.

#### 4.2 Evaluation

The evaluation was conducted referring to the "JICA Guidelines for the Project Evaluation, revised version of February, 2004." JICA Guideline primarily follows "the Principles for Evaluation of Development Assistance, 1991" issued by the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD). This consists of the following three parts:

(1) Verification of the Project performance comparing the actual results of the Project performance with the Project Design Matrix<sup>1</sup> attached to this document as Annex 1. The achievements are rated as:

- a. A: Achieved;
- b. B: Expected to be achieved by the end of the Project; and
- c. C: Expected to be partly achieved by the end of the Project

(2) Value judgment of the Project from the view points of the five evaluation criteria described in the following section of the document. Evaluation result for each criterion was rated as:

- a. A: Excellent
- b. B: Good
- c. C: Fair or
- d. D: Fail

(3) In addition to (1) and (2) above, recommendations and lessons learned was made as follows:

- a. Recommendations: Recommendations were made for better Project management in the future, for the remaining cooperation period and beyond, especially for securing sustainability and positive

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<sup>1</sup>The PDM was originally designed and finalized in March 2001, and was reviewed in December 2003 at the time of mid-term evaluation. The reviewed version attached to the M/M for the Mid-term evaluation was approved as a revised PDM on 8 March, 2004, which is attached as Annex 1 of this M/M.

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b. **Lessons learned:** Lessons learned were made which are learned through the implementation of the Project and useful for better management, including planning and designing, of the projects of similar characteristics.

#### 4.3 Criteria of Evaluation

The following is the description of the five evaluation criteria:

(1) **Relevance:** Relevance of the Project was reviewed as the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Republic of Indonesia as well as the needs of beneficiaries;

(2) **Effectiveness:** Effectiveness was assessed by evaluating the extent to which the Project has achieved and contributed to the beneficiaries;

(3) **Efficiency:** Efficiency of the Project implementation was analyzed focusing on the relationship between outputs and inputs in terms of timing, quality and quantity;

(4) **Impacts:** Impacts of the Project were identified by referring to direct and indirect, positive and negative impacts caused by the Project; and

(5) **Sustainability:** Sustainability of the Project was forecast in organizational, financial and technical aspects by examining the extent to which the achievement of the Project would be sustained or expanded after the Project is completed. In addition to the aspects above, the Indonesian side proposed that social aspect be added since sustainability of the Project depends also on social aspects.

### V. Project Performance and Implementation Process

#### 5.1 Inputs to the Project

Inputs to the Project are indicated in Annex 3. The inputs are made adequately and contributed to the Project activities.

## 5.2 Achievements of the Project Objectives and Activities

The achievements of the Project objectives (the overall goal, project purposes and outputs) and activities are indicated in Annex 4.

## VI. Results of the Evaluation

The results of the evaluation by the five criteria are as follows.

### 6.1 Relevance

Overall evaluation is rated as A. The most of the items in the grid are rated as positive. The Government of Indonesia emphasizes the importance of forest fire prevention and the relevance is rather high. However, relevance may be higher if the Project covers areas surrounding national parks (hereinafter referred to as "NPs"), since forest fire prevention cannot be achieved only in NPs.

### 6.2 Effectiveness

Overall evaluation is rated as A. The most of the items are rated as positive. The Project promoted cooperation among government offices. The Project Objectives are likely to be achieved by the end of the cooperation period. Outputs of the Project are contributing to the Project Objectives.

### 6.3 Efficiency

Overall evaluation is rated as A. All of the items are rated as positive. Most of the inputs were well utilized in the Project activities and contributed to the realization of the most of the expected outputs.

### 6.4 Impacts

Overall evaluation is rated as B. The most of the items in the grid are rated as positive. The Project contributed to the following in one way or another:

- a. Strengthening of the organization of the Ministry of Forestry for

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fire prevention

- b. Public awareness raised by the early detection system
- c. Facilitated establishment of Manggala Agni.
- d. Facilitation of environmental education in formal education since the Project provided some materials to the curriculum.

Based on the facts quoted above, it seems there will be further impacts in various ways in the near future to achieve the overall goal even though, at the time of terminal evaluation, the impacts were not fully observed.

#### 6.5 Sustainability

Overall evaluation is rated as B. All of the items are rated as positive. The allocation of government resources contributes to the sustainability, and establishment of Manggala Agni.

#### 6.6 Overall Evaluation

The Project shows good performance in general. The government policy and its resource allocation contributed to the performance. However, further efforts are required for mobilization of such resources as organizations and budget in order to achieve the overall goal.

### VII. Recommendations and Lessons Learned

#### 7.1 Recommendations

- (1) A Guideline for integrated forest fire management with case study of the target NPs

The guideline should be finalized by the Project by the end of the cooperation period, and authorized as part of official document here by the Indonesian authorities. The guideline will be of much use not only to forest fire prevention but also to drafting National Park (hereinafter referred to as "NP") Conservation Plans since fire prevention is part of the conservation plan.

- (2) Satellite Imagery System

The system for satellite image processing for fire detection is in the process of renovation to add MODIS, NOAA 15, 17 and 18 as information sources to the present NOAA 12. The renovation should be completed at the earliest opportunity in 2006.

### **(3) Cooperation with other organizations**

Further cooperation with relevant government offices and other organizations are recommended for achievement of the overall goal in the future. In order to prevent forest fire, it is essential to strengthen measures against forest fire in and out of NPs. The measures require further cooperation with other organizations and communities.

## **7.2 Lessons Learned**

### **(1) Cooperation with educational institutions**

Involvement of educational institution should be considered. The Project collaborated with Lampung University for awareness raising. This type of collaboration may lead to further involvement of relevant educational institutions. This will also contribute to the sustainability of projects.

### **(2) Formalization of awareness raising**

Incorporation of awareness raising into curriculum should be considered. If awareness raising is incorporated in, for example, environmental education in the form of local contents in the curriculum, the activities for awareness raising can be more sustainable.

### **(3) Cooperation with other countries within the Region**

Cooperation within the region should be promoted in the implementation of projects. The cooperation can be implemented in the following activities:

- a. information exchange among countries within the region; and
- b. training in countries within the region

### **(4) Coordination among parties concerned**

Coordination body/function may play important roles since forest fire prevention requires coordinated activities by various organizations since

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fires occur not only in the forest (not only in National Parks in the cases of the Project) but also in plantations and farm land.

(5) Coordination of activities for NP management

Coordination among patrolling activities, such as those against forest fire, illegal logging and illegal hunting, will improve the efficiency and effectiveness of the patrol for forest conservation including forest fire prevention.

Attachment

Annex 1 PDM

Annex 2 PO

Annex 3 Inputs

Annex 4 Table of Achievements

Annex 5 Evaluation Grid *oh hr*

Annex 1. PDM

Project Name: Forest Fire Prevention Management Project Phase II  
 Period of Cooperation: 5 years (2001/4- 2006/4)  
 Implementing Agency in Beneficiary Country: DG-Forestry Protection and Nature Conservation (PHKA), Ministry of Forestry (MOF)  
 Project Area: Jakarta, Bogor (Main Office), Bukit Tiga Pulu National Park (Jambi), Way Kambas National Park (Lampung) and Gunung Palung National Park (West Kalimantan)

Project Name: Forest Fire Prevention Management Project Phase II  
 Period of Cooperation: 5 years (2001/4- 2006/4)  
 Implementing Agency in Beneficiary Country: DG-Forestry Protection and Nature Conservation (PHKA), Ministry of Forestry (MOF)  
 Project Area: Jakarta, Bogor (Main Office), Bukit Tiga Pulu National Park (Jambi), Way Kambas National Park (Lampung) and Gunung Palung National Park (West Kalimantan)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Overall Goals</b>                      Indonesian forests, especially those in national parks (NPs), are protected from forest fire</p>	<p>Forest fire in the Indonesian national parks controlled and it is confirmed by various data, such as area damaged by forest fire inside and outside of NPs</p>	<p>Official report of MOF</p>	<p>1. Good collaboration will be maintained among all levels of government including central, provincial, district, sub-district and village levels.                      2. There will be no significant reduction in counterpart budget for forest fire prevention and management activities. Also there is no significant government organizational reform in central and local governments.                      3. There are no extreme climate change and environment disruption throughout Indonesia after the completion of the project</p>
<p><b>Project Purpose</b>                      Forest fire prevention management activities (which are sustainable, feasible and replicable with Indonesian resources) to protect NPs are carried out for the four target NPs.</p>	<p>1. A model for integrated forest fire prevention management developed for each target NP                      2. Activities related to early warning and detection, initial suppression, and awareness for the target NPs implemented by PHKA themselves.</p>	<p>Questionnaire to J/E C/P, and the concerned beneficiaries; interview with J/E C/P, the concerned beneficiaries; review of project reports</p>	<p>1. There are neither significant forest policy including forest fire policy reform nor organizational reform in central and local governments involved in forest fire prevention and management activities.</p>
<p><b>Outputs</b>                      1. The capacity of the Indonesian Government to engage in early warning and detection is improved.</p>	<p>1a: Hot spot data transferred from the Directorate of Forest Fire Prevention (PKH) to the target NPs and local governments at least once a day during the dry season.                      1b: Actions corresponding to the transferred hot spot data, such as confirmation of the hot spot site and initial suppression, taken by the target NPs. The rate of the feedback from the target NPs to the PKH stands at more than 80%                      1c: Warning information effectively used in the patrol and announcement to local residents by the staff of the target NPs and local governments.                      1d: Technical manuals prepared.                      1e: A guideline for early warning and detection system prepared.                      2a: A map for initial suppression developed by the Project utilized by the staff of the target NPs.                      2b: All rangers of the target NPs trained every year                      2c: Technical capacity of the rangers increased after the training.                      2d: Training for initial suppression conducted by ex-trainees at least once a year at each target NP by the fifth year of the Project                      2e: A guideline for initial suppression prepared.                      3a: At least one awareness initiative taken by the head of RTs (neighborhood association) self-governing body under sub-village) in the model villages (desa) annually from the third year.                      3b: Model education program implemented by 24 junior high schools in the target NPs.                      3c: An annual campaign organized by the local government in the subsequent years.                      3d: Project leaflets, etc. published periodically.                      3e: A guideline for awareness prepared (ie. community awareness, school education and campaign by local governments)                      4a. An implementation plan for applicable methods for the model village submitted to PHKA.</p>	<p>Questionnaire to J/E and C/P, interview with J/E and C/P, review of project reports and the manuals guidelines developed by the Project</p>	<p>1. Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.</p>
<p>3. The awareness of people of the necessity for forest conservation and forest fire prevention is increased.</p>	<p>2e: A guideline for initial suppression prepared.                      3a: At least one awareness initiative taken by the head of RTs (neighborhood association) self-governing body under sub-village) in the model villages (desa) annually from the third year.                      3b: Model education program implemented by 24 junior high schools in the target NPs.                      3c: An annual campaign organized by the local government in the subsequent years.                      3d: Project leaflets, etc. published periodically.                      3e: A guideline for awareness prepared (ie. community awareness, school education and campaign by local governments)                      4a. An implementation plan for applicable methods for the model village submitted to PHKA.</p>	<p>Questionnaire to J/E and C/P, interview with J/E and C/P, review of project reports and the manuals guidelines developed by the Project</p>	<p>1. Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.</p>
<p>4. Methods and techniques for Integrated Green Belt (IGB) and Sloping Agricultural Land Technology (SALT), developed in Phase I, are examined.</p>	<p>2e: A guideline for initial suppression prepared.                      3a: At least one awareness initiative taken by the head of RTs (neighborhood association) self-governing body under sub-village) in the model villages (desa) annually from the third year.                      3b: Model education program implemented by 24 junior high schools in the target NPs.                      3c: An annual campaign organized by the local government in the subsequent years.                      3d: Project leaflets, etc. published periodically.                      3e: A guideline for awareness prepared (ie. community awareness, school education and campaign by local governments)                      4a. An implementation plan for applicable methods for the model village submitted to PHKA.</p>	<p>Questionnaire to J/E and C/P, interview with J/E and C/P, review of project reports and the manuals guidelines developed by the Project</p>	<p>1. Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.</p>
<p>5. A model for an integrated fire prevention management is developed.</p>	<p>2e: A guideline for initial suppression prepared.                      3a: At least one awareness initiative taken by the head of RTs (neighborhood association) self-governing body under sub-village) in the model villages (desa) annually from the third year.                      3b: Model education program implemented by 24 junior high schools in the target NPs.                      3c: An annual campaign organized by the local government in the subsequent years.                      3d: Project leaflets, etc. published periodically.                      3e: A guideline for awareness prepared (ie. community awareness, school education and campaign by local governments)                      4a. An implementation plan for applicable methods for the model village submitted to PHKA.</p>	<p>Questionnaire to J/E and C/P, interview with J/E and C/P, review of project reports and the manuals guidelines developed by the Project</p>	<p>1. Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.</p>
<p>6. The Project is managed properly.</p>	<p>2e: A guideline for initial suppression prepared.                      3a: At least one awareness initiative taken by the head of RTs (neighborhood association) self-governing body under sub-village) in the model villages (desa) annually from the third year.                      3b: Model education program implemented by 24 junior high schools in the target NPs.                      3c: An annual campaign organized by the local government in the subsequent years.                      3d: Project leaflets, etc. published periodically.                      3e: A guideline for awareness prepared (ie. community awareness, school education and campaign by local governments)                      4a. An implementation plan for applicable methods for the model village submitted to PHKA.</p>	<p>Questionnaire to J/E and C/P, interview with J/E and C/P, review of project reports and the manuals guidelines developed by the Project</p>	<p>1. Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.</p>

1 Forest fire prevention management includes both early warning and detection and initial suppression.



<p><b>Activities</b></p> <p>&lt;1. Early Warning and Detection&gt;</p> <p>1-1 Improve the early warning and detection system using satellite information.</p> <p>1-2 Provide information related to early warning and detection (i.e. processed hot spot data and fire spread risk map), using satellite images to the target NPs and the relevant organizations.</p> <p>1-3 Promote utilization of the provided information at the target NPs and the relevant organizations.</p> <p>1-4 Improve the feedback system from the target NPs, regarding the detected hot spots.</p> <p>1-5 Develop a guideline for early warning and detection system based on analysis of past and current hot spot data.</p> <p>&lt;2. Initial Suppression&gt;</p> <p>2-1 Conduct training for initial suppression for park rangers of the target NPs</p> <p>2-2 Develop a system for initial suppression by rangers for each target NP</p> <p>2-3 Develop local initial suppression activities for people surrounding the target NPs.</p> <p>2-4 Develop a guideline for initial suppression of forest fires affecting the NPs</p> <p>&lt;3. Awareness &gt;</p> <p>3-1 Organize an awareness program for local villages (desa) in collaboration with relevant organizations</p> <p>3-2 Establish an education program for junior high school in collaboration with the relevant organizations</p> <p>3-3 Organize awareness campaigns jointly with the provincial or district governments</p> <p>3-4 Develop a guideline for awareness on forest fires affecting the NPs</p> <p>3-5 Improve national Forest Fire Prevention Campaign organized by MOF</p> <p>3-6 Provide information about forest fire prevention through internet, leaflet, etc.</p> <p>&lt;4. IGB/SALT&gt;</p> <p>4-1 Evaluate the methods developed in the Phase I i.e. IGB at Betbak NP and SALT at Nanga Pinoh.</p> <p>4-2 Study the applicability of the above IGB and SALT methods for a target NP</p> <p>4-3 Propose an implementation plan for the applicable methods for the model village</p> <p>&lt;5 Integrated Model&gt;</p> <p>5-1 Develop an integrated forest fire prevention management model for the NPs</p> <p>&lt;6. Project Management&gt;</p> <p>6-1 Prepare an annual plan of the Project based on the Plan of Operations.</p> <p>6-2 Monitor and evaluate the Project periodically.</p> <p>6-3 Exchange information with other donors, other JICA projects and others.</p>	<p><b>Inputs</b></p> <p><b>Japan:</b></p> <p>1. Experts</p> <p>(1) Long-term experts: 5 persons x 5 years. (Chief Advisor, Project Coordinator, Participatory Forest Fire Management, Promotion and Extension, Initial Forest Fire Suppression, and Early Warning and Detection System)</p> <p>(2) Short-term experts: 3-4 persons per year x 1-2 months.</p> <p>2. Training of counterpart personnel in Japan: Approximately 3 persons per year x 5 years x 1-2 months. 3. Provision of equipment for the project activities.</p> <p>3. Provision of equipment for the Project activities.</p> <p>4. Establish the training field for forest fire management (Bukit Tiga Puluh NP)</p> <p>5. Provision of technical exchange program with JICA team in other neighbouring countries and provision of training to/from neighbouring countries.</p> <p><b>Indonesia:</b></p> <p>1. Government Staff as counterpart personnel and Project staff as needed for the Project</p> <p>(1) The Directorate of Forest Fire Control</p> <p>(2) The Directorate of Nature Conservation Area Development.</p> <p>(3) Betbak National Park Management Offices.</p> <p>(4) Bukit Tiga Puluh National Park Management Offices.</p> <p>(5) Gunung Palung National Park Management Offices.</p> <p>(6) Way Kambas National Park Management Office</p> <p>2. Administrative and operational costs.</p> <p>3. Provision of land, buildings, facilities and equipment for the Project</p>	<p><b>Pre-conditions:</b></p> <p>1. Local communities are not opposed to the Project.</p> <p>2. Community members and local governments participate in the Project.</p> <p>3. Landowners do not stand against establishment of green belts in their land for the Project.</p> <p>4. The NPs do not stand against implementation of social forestry methods and techniques in /surrounding the NP.</p>
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Outputs	Activities	Target	2001				2002				2003				2004				2005				Responsible Persons as of Dec 2003	
			2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1		
1 The capacity of the Indonesian Government to engage in early warning and detection is improved.	Improve the early warning and detection system using satellite information	Satellite data received and provided regularly to the target national parks (NPs) and the relevant organizations	[Gantt chart: Full fledged activity (solid line) from Dec 2001 to Dec 2003; Follow up activity (dashed line) from Jan 2004 to Dec 2005]																				J/E. Halazawa PKH, Johnnie	
	1.1.1	Improve the system of hot spot data processing at PKH	Hot spot data received from NOAA satellite processed daily. Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	a	Collect satellite data daily	Satellite data collected daily	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	b	Process hot spot data	Hot spot data processed daily	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	c	Prepare technical manual for hot spot data processing	Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	1.1.2	Develop haze and cloud monitoring techniques at PKH	Haze and cloud information is provided after GMS5 (Himawari) is abolished. Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	a	Develop image data using the satellite data received under 1.1.1.a	Image data prepared daily.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	b	Prepare technical manual for haze and cloud monitoring	Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	1.1.3	Develop a warning system at PKH, utilizing Fire Spread Risk Map (FSRM)	Warning information about degree of dryness provided to the target NPs and the relevant organizations regularly through forest fire spread risk map. Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	a	Develop FSRM using the satellite data received under 1.1.1.a	FSRM prepared every 10 days.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	b	Prepare technical manual for preparing FSRM	Technical manual prepared.	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				-do-
	1.1.4	Collect weather and climate information relevant to the target NPs	Weather and climate information collected at the central level provided to the target NPs and the relevant provinces regularly. Weather information collected daily at the target NPs	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				J/E. Halazawa PKH, Johnnie NPs, Erwin, Chandra, Faizaluddin, Hertiansyah
		Provide information related to early warning and detection (the hot spot data and FSRM) using satellite images to the NPs and the relevant organizations	Processed for satellites provided regularly and relevant information provided every 10 days to the target NPs and the relevant organizations regularly	[Gantt chart: Full fledged activity from Dec 2001 to Dec 2003]																				J/E. Halazawa PKH, Johnnie

*[Handwritten signature/initials]*

Outputs	Activities	Target	2001			2002			2003			2004			2005			Responsible Persons as of Dec 2003
			2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
	Improve the feedback system from the target NPs regarding the detection of spot fire information stand. (aimed to improve 80%)	The ratio of the number of feedback reports to the number of provided hot spot information stand. (aimed to improve 80%)															J/E Habazawa B/KS Tommie N/B/E Win Gharde Puzaludin Harunabral	
	Promote utilization of the provided information at the target NP and the relevant organizations	It provided hot spot data and FSRM utilized for initial suppression activities in the target NP.																
	1.4.1 Develop utilization methods of the processed hot spot data and FSRM, including the one for announcement to local people	Utilization methods of the processed hot spot data and FSRM developed.															-do	
	1.4.2 Organize training workshops for utilization of the processed hot spot data and FSRM at the target NPs and the relevant organizations.	Training workshop implemented at least once a year at the NP and provincial level.															-do	
	1.5 Develop a guideline for early warning and detection system based on analysis of past and current hot spot data	A guideline prepared.															J/E Habazawa C/P/S binna	
	1.5.1 Analyze hot spot data by the land use and others	An analytical report prepared regularly.															-do	
	1.5.2 Analyze hot spot data by the field surveys.	A report prepared for a field survey.															-do	
	1.5.3 Analyze the behavior of the large-scale forest fire and its causes. (* The Project adopts the definition of large-scale forest fire made by MOF in Indonesia)	An analytical report on the cause of large-scale forest fire prepared.															-do	
	1.5.4 Develop a guideline to facilitate Indonesian government's actions.	A guideline developed.															-do	

*Handwritten signature/initials*

Outputs		Activities		Target	2001				2002				2003				2004				2005				2006		Responsible Persons as of Dec 2003	
					2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3		4
2 The capacity of the Indonesian Government to engage initial suppression of fires in forest areas is improved.		2.1 Conduct training for initial suppression for target NP's of the target NP's		All the target NPs from the target NP's trained every year.																						J/E: Sasaki PKH: Erwin NP's: Isbanu, Andre, Johnny, Marcelinus		
		2.1.1 Develop an annual training program according to the technical levels.		Annual training program developed each year																								
		2.1.2 Develop training materials		Training materials prepared for each training																								
		2.1.3 Implement joint training for the target NP's		Joint training conducted every year.																								
		2.1.4 Implement on-site training, including drills, at each target NP		On site training conducted every year.																								
		2.1.5 Conduct evaluation of the impact of the training for improvement of the program and materials		Evaluation based on questionnaire survey conducted after each training.																								
		2.1.6 Improve the training materials		Materials improved.																								
		2.1.7 Establish the routine training (on-site training and coaching) at each target NP.		Routine training established.																								
		2.1.8 Improve the management of field training facilities at Bukit Tiga Puluh NP		Operation and maintenance manual prepared.																								
		2.2 Develop a system for initial suppression by targets for each target NP		Algorithm supervisor and data base for each target NP. Consistency of patrol and communication plans implemented.																								
		2.2.1 Develop maps for initial suppression for each target NP.		Maps for each target NP (1/100,000) developed																								
		2.2.2 Develop the organizational database for initial suppression in collaboration with the relevant organizations		The database for each target NP developed																								
2.2.3 Develop a ground patrol system for each target NP.		Patrol is implemented based on the patrol plan.																										
a) Develop the draft plan		Draft developed.																										
b) Test the draft through simulation		Simulation conducted.																										
c) Finalize the plan		Plan finalized.																										
d) Implement the plan		Patrol implemented based on the plan																										
e) Refine the plan as necessary		Plan refined, as necessary																										





Annex 2 Modified Plan of Operations based on calendar year

Outputs	Activities	Target	2001				2002				2003				2004				2005				Responsible Persons as of Dec 2003
			2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	d Organize a series of meetings with target schools to incorporate it into the curriculum	The model program incorporated into the curriculum of the target schools																					-do-
	d Conduct teacher's training	2 teachers from a target school trained.																					-do-
	3.2.8 Propose local government and private companies relevant to the target NPs to implement the model education program with their own funds	Proposal made to local governments and private companies in four districts																					-do-
	3.3 Organize awareness campaigns jointly with the provincial or district governments	Awareness campaigns organized jointly with provincial or district governments in target NPs annually																					-do-
	3.3.1 Identify a target province or district annually	Target province or district identified.																					-do-
	3.3.2 Develop a model campaign plan for the target province or district	The campaign planned.																					-do-
	3.3.3 Propose the model plan to the relevant local government.	The planned campaigns are applied by a province or a district government																					-do-
	3.3.4 Conduct pre-evaluation survey on awareness	A pre-evaluation survey conducted																					-do-
	3.3.5 Implement the campaign jointly with the relevant local government	The planned campaign implemented																					-do-
	3.3.6 Conduct post-evaluation on awareness	Pre-and post-evaluation report prepared.																					-do-
	3.3.7 Provide advice for the subsequent annual campaigns organized by the local government	Advice provided to the local governments																					-do-
	3.4 Develop a guideline for awareness on forest fires affecting the NPs	A guideline developed																					-do-
	3.4.1 Develop a guideline for community awareness program	A guideline developed																					-do-
	3.4.2 Develop a guideline for school education program	A guideline developed																					-do-
	3.4.3 Develop a guideline for awareness campaign by local government	A guideline developed																					-do-
	3.4.3 Integrate the above guidelines into a guideline for awareness.	A guideline developed																					-do-
	3.5 Improve national Forest Fire Prevention Campaign organized by MOF	The campaign jointly planned with MOF implement																					JE. Mantsari PKH Datsomp





Outputs	Activities	Target	2001			2002				2003				2004				2005				Responsible Persons as of Dec 2003											
			2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		1	2	3	4							
6 Project is managed properly.	Prepare an annual plan of the Project based on the Plan of Operations	Annual plan prepared in timely manner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	Monitor and evaluate the Project periodically	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	6.2.1 Prepare a semi-annual monitoring report	A semi-annual monitoring report submitted to JICA in timely manner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	6.2.2 Organize a Joint Coordination Committee meetings every year	JCC organized annually	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	6.2.3 Prepare final self-evaluation charts	Final self-evaluation charts prepared.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	6.2.4 Organize the Final Project Workshop	Final Project Workshop organized.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Exchange information with other donors, other JICA projects and others	At least one meeting with each of the relevant project contractors per year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plans, Reports, PD/MC	Source	Method	Results (until December 2005)																		
<p>Japanese side</p> <p>1. Experts</p> <p>(1) Long-term experts: 5 persons x 5 years. (Chief Advisor, Project Coordinator, Participatory Forest Fire Management, Promotion and Extension, Initial Forest Fire Suppression, and Early Warning and Detection System)</p> <p>(2) Short-term experts: 3-4 persons per year x 1-2 months.</p>	Project reports	Review of the reports	<p>1) Long term expert: in total, 11 experts have been dispatched in the following fields: Chief advisor and Participatory Forest Fire Management (3), Coordinator (1), Promotion and Extension (2), Initial Forest Fire Suppression (2) and Early Warning &amp; Detection System (3)</p> <p>2) Short-term experts: In total, 5 experts have been dispatched in the following fields:                      *Early Warning and Detection system (3 persons total 101 days)                      *Participatory Forest Fire Management (3 persons total 119 days)</p> <p>Table 1: Dispatch of short-term experts by the Japanese fiscal year (April-March)</p> <table border="1"> <tr> <td>Year</td> <td>2001</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> </tr> <tr> <td>Persons</td> <td>2</td> <td>1</td> <td>2</td> <td>1</td> <td>0</td> </tr> </table>	Year	2001	2002	2003	2004	2005	Persons	2	1	2	1	0						
Year	2001	2002	2003	2004	2005																
Persons	2	1	2	1	0																
<p>2. Training of counterpart personnel in Japan: Approximately 3 persons per year x 5 years x 1-2 months.</p>	-do-	-do-	<p>Counterpart personnel have been trained in the following scheme;</p> <p>Table 2: C/P training by the Japanese fiscal year (April-March)</p> <table border="1"> <tr> <td>Year</td> <td>2001</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> </tr> <tr> <td>Group</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> <td>7</td> </tr> <tr> <td>long term</td> <td></td> <td></td> <td></td> <td>1</td> <td>2</td> </tr> </table>	Year	2001	2002	2003	2004	2005	Group	3	3	4	4	7	long term				1	2
Year	2001	2002	2003	2004	2005																
Group	3	3	4	4	7																
long term				1	2																
<p>3. Provision of equipment for the Project activities.</p>	-do-	-do-	<p>The machinery and equipment worth approximately US\$591,666 in total have been provided, including satellite receiving system, computer for satellite information capture, fire fighting pump, farm tractor, portable generator and etc.</p> <p>Table 3: Provision of equipment and machinery by the Japanese fiscal year (April-March)</p> <table border="1"> <tr> <td>Year</td> <td>2001</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> </tr> <tr> <td>US\$</td> <td>240,740</td> <td>128,274</td> <td>51,315</td> <td>15,337</td> <td>156,000*</td> </tr> </table> <p>* Plan</p>	Year	2001	2002	2003	2004	2005	US\$	240,740	128,274	51,315	15,337	156,000*						
Year	2001	2002	2003	2004	2005																
US\$	240,740	128,274	51,315	15,337	156,000*																
<p>4. Establish the training field for forest fire management (Built Tiga Puluh NP)</p>	-do-	-do-	<p>*Construction of Forest Fire Fighting Training Center with dormitory, water reservoir, and so on: (US\$91,000) was completed in 15 October 2002, held an opening Ceremony on 30 January 2003.</p> <p>*Construction of Forest Fire Fighting Training Athletic facility (US\$ 25,800)</p> <p>*Maintenance of access road (US\$ 24,000)</p> <p>*Construction of Box Culvert (US\$ 22,680 *Plan)</p>																		

*M. A.*

Plan as per PDMC	Source	Method	Results (as of December 2005)												
5. Provision of technical exchange program with JICA team in other neighboring countries and provision of training to/from neighboring countries.	-do-	-do-	Received four C/Ps and one Japanese Expert from SAFODA, JICA project in Saba, Malaysia in August 2002. Participate for the Technical Exchange Program for Cambodia and Thailand 2004, joint 3 counterparts and 2 experts. Participate the Third Country Training in Thailand in December 2005, Joint 5 counterparts on Early Warning and Detection System. Approximately Rp.10,371,567,808 has been disbursed as local costs.												
6. Others	-do-	-do-	<p>Table 4: Provision of local costs by the Japanese fiscal year (April-March)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>2001</th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> </tr> </thead> <tbody> <tr> <td>Ribu Rupiah</td> <td>924,598</td> <td>2,551,384</td> <td>1,908,122</td> <td>2,332,159</td> <td>2,855,325</td> </tr> </tbody> </table> <p>※ Fiscal year 2006 : Rp.174,160,000(Plan)</p>	Year	2001	2002	2003	2004	2005	Ribu Rupiah	924,598	2,551,384	1,908,122	2,332,159	2,855,325
Year	2001	2002	2003	2004	2005										
Ribu Rupiah	924,598	2,551,384	1,908,122	2,332,159	2,855,325										

<b>Indonesian side</b> <b>Indonesia:</b> 1. Government Staff as counterpart personnel and Project staff as needed for the Project  (1) The Directorate of Forest Fire Control  (2) The Directorate of Nature Conservation Area Development.  (3) Berbak National Park Office.  (4) Bukit Tiga Puluh National Park Office.  (5) Gunung Palung National Park Office.  (6) Way Kambas National Park Office	Project reports	Review of the reports	(1) Project Director ....1 (Directorate of Forest Fire Control) Project Manager ...1 (Sub Directorate of Forest Fire Control) Counterpart personnel ...5 (Coordinator, Participatory Forest Fire Management, Promotion and Extension, Initial Forest Fire Suppression and Early Warning & Detection System)  (2) None  (3) Chief Advisor .....1 (Head of National Park) Coordinator.....1 (Concurrent with Head of National Park) Counterpart personnel ...4 (Staff of National Park) Chief Advisor..... 1 (Head of National Park) Coordinator.....1 (Concurrent with Head of National Park) Counterpart personnel ..4 (Staff of National Park) Chief Advisor .....1 (Head of National Park) Coordinator .....1 (Staff of National Park) Counterpart personnel ..4 (Staff of National Park) Chief Advisor .....1 (Head of National Park) Coordinator.....1 (Concurrent with Head of National Park) Counterpart personnel ...3 (Staff of National Park)
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Plans (PDDM)	Source	Method	Results (up to December 2005)									
			Counter budget	Total budget of PKH	Total budget of NP				Total budget of NP		Note	
year					Berbak	Buka Tigapuluh	Gumung Palang	Way Kambas				
2001	1,111,915	509,303	1,426,153	1,040,785	1,089,919	3,373,174						
2002	621,750	12,470,906	2,460,321	1,432,428	2,112,954	3,947,876						
2003	645,050	4,058,128	2,429,718	2,110,426	2,363,645	4,139,926						
2004	405,600	5,599,348	2,130,470	2,655,618	2,949,820	10,425,621						
2005	258,610	7,538,475	2,401,915	2,262,319	2,173,463	4,500,000						
2006	152,000	12,000,000	3,361,345	3,912,250	3,627,141	6,500,000						

(Ribu Rupiah)

Annual budget for Forest Fire Prevention of Forestry Department and the Project allocated budget approximately as follows;

- \* The Project office in Jakarta and storehouse in Bogor with office facilities such as electricity, telephone and so on..
- \* The satellite receiving and processing room in PKH with office facilities such as electricity, telephone and so on..
- \* A site of the forest fire fighting training center in Bukit Tigapuluh National Park in Riau, Sumatra

2. Administrative and operational costs.

3. Provision of land, buildings, facilities and equipment for Project.

M. A.

Table of Achievements (Objectives)

Level of achievement verified by the indicators : A=Achieved, B=Expected to be achieved by the end of the project, C=Expected to be partly achieved by the end of the project

Narrative Summary	Plan stated in the PDM	Objectively Verifiable Indicators	Means of Verification	Source of the Data	Results	Achievement verified by the Indicators	Remarks	
Overall Goal Indonesian forests, especially those in national parks (NPs), are protected from forest fire	Forest fire in the Indonesian national parks controlled and it is confirmed by various data, such as area damaged by forest fire inside and outside of NPs	Official report of MOF	Record of hot spots in the four target national parks and the whole Indonesia before and after the project started	The ratio of number of hot spots in the four target national parks to that in the whole Indonesia decreased between the periods of phase 1 (0.56%) to phase 2 (0.38%).	C		The statistical significance of the decrease should be examined further. The correlation between the decrease and the project should be examined too.	
								The counterpart in PHKA, JICA experts
Project Purpose Forest fire prevention management activities (which are sustainable, feasible and replicable with Indonesian resources) to protect NPs are carried out for the four target NPs.	1. A model for integrated forest fire prevention management developed for each target NP	Questionnaire to JICA experts, C/P, and the concerned beneficiaries; interview with JICA experts, C/P, the concerned beneficiaries; review of project reports	The counterpart in PHKA and the target national park offices, JICA experts	The study team found that one model for integrated forest fire prevention management is in the process of finalization and it will be prepared by the end of the project. The model would be applicable to all the four target national parks.	B		With a reference to the PDM, a case study of each of the national parks attached with an integrated guideline is considered to be a model. Then it will be achieved by the end of the project.	
	2. Activities related to early warning and detection, initial suppression, and awareness for the target NPs implemented by PHKA themselves.	-do-	The counterpart in PHKA and the national park offices, JICA experts	All of the 10 respondents of PHKA and the four national park offices consider that this indicator has been perceived.	A			
Output 1. The capacity of the Indonesian Government to engage in early warning and detection is improved.	1a: Hot spot data transferred from the Directorate of Forest Fire Prevention (PKH) to the target NPs and local governments at least once a day during the dry season.	Questionnaire to Japanese experts and C/P; interview with JAPANESE EXPERTS and C/P; review of project reports and the manuals and guidelines developed by the Project	Information from the project (Achievement of Activity 1.2 in the following table)	Hot spot information has been published on the internet homepage daily, and given through e-mail to the target NPs and the relevant organizations. When hot spots are detected in the target NPs, directions are given through telephone or fax in addition to the publication through the internet and e-mail. The information of FSRM has been provided to the target NPs every 10 days and also published on the homepage.	A			
	1b: Actions corresponding to the transferred hot spot data, such as confirmation of the hot spot site and initial suppression, taken by the target NPs. The rate of the feedback from the target NPs to the PKH stands at more than 80%	-do-	Information from the project (Achievement of Activity 1.3 in the following table)	The counterpart in the target national park offices	All of the 9 respondents of the four national park offices consider that this indicator has been perceived.	A		
				Mid-term evaluation report	In 2005, hot spots were detected 54 points (18 times) in the target NPs. For 54 hot spots, 46 feedback reports (85%) were collected.	A		
	1c: Warning information effectively used in the patrol and announcement to local residents by the staff of the target NPs and local governments	-do-	Information from the project (Achievement of Activity 1.1 in the following table)	The counterpart in the target national park offices	Most of the respondents in the four national park offices consider that this indicator has been perceived. For patrol, the national park officers usually prioritize the area with high risk of forest fire as detected by hot spots data and FSRM. The local government usually announces hot spot data to the community. National park officers usually utilized such announcement for forest fire prevention and extension activities.	A		
				Information from the project (Achievement of Activity 1.1 in the following table)	Manuals of 1) hot spot detection 2) haze and cloud monitoring techniques and 3) FSRM processing were prepared.	A		
1d: A guideline for early warning and detection system prepared.	-do-	Information from the project (Achievement of Activity 1.5 in the following table)	A draft of guideline was made. The guideline will be discussed in the guideline committee and be completed by January 2006.	B				

Narrative Summary	Plan stated in the PDM Objective/Verifiable Indicator	Means of Verification	Source of the Data	Results	Achievement Verified in the Indicator	Remarks
2. The capacity of the Indonesian Government to engage in initial suppression of fires in forest areas is improved	2a: A map for initial suppression developed by the Project utilized by the staff of the target NPs.	-do-	Information from the project (Achievement of Activity 2.2 in the following table) The counterpart in the target national park offices	Each national park has started to utilize the maps developed for the forest fire management strategy like patrol system and so on. All of the 5 respondents in the national park offices consider that this indicator has been perceived. A patrol and communication system were already operated in each national park by their officers. Each national park has already developed the map in scale 1:100000 and 1:250000 to help them in carrying out their jobs.	A	
	2b: All rangers of the target NPs trained every year	-do-	Information from the project (Achievement of Activity 2.1 in the following table) The counterpart in the target national park offices, JICA experts	The target national parks conducted various training for their rangers. All of the 8 respondents in the four national park offices consider that all rangers have had basic training for forest fire suppression. Training is conducted according to the necessity. Then some of rangers didn't get trained every year.	C	Even though the indicator (training of all rangers every year) is not fully perceived, it is observed the necessary training (including OJT) is conducted and that is enough to achieve the Output 2.
	2c: Technical capacity of the rangers increased after the training.	-do-	The counterpart in the target national park offices, JICA experts	NP staff's ability was increased, so as to be trainers in mobilization training and make and conduct a training program themselves. NP staff trained by project acted at simultaneous frequency land and forest fire. A simple and qualitative evaluation on the result of the training always been done at the end of the training to see the effectiveness and achievement of the target, then the improvement of capacity was observed.	A	
	2d: Training for initial suppression conducted by ex-trainees at least once a year at each target NP by the fifth year of the Project	-do-	Information from the project (Achievement of Activity 2.1 in the following table) The counterpart in the target national park offices, JICA experts	Some of the ex-trainees have already become trainers of the training organized by MOF of each target NP. In 2005, regular training for NP staff and community fire brigade training were conducted more than once a year at each target NP. The ex-trainees conducted training in each national park. Annual training in national park for their staff has been conducted by national park as routine preparation to dry season and no specific accomplishment report made by national park.	A	
	2e: A guideline for initial suppression prepared.	-do-	Information from the project (Achievement of Activity 2.4 in the following table) The counterpart in the target national park offices, JICA experts	Preparation of the guideline for initial suppression is ongoing in consultation with the taskforce committee meetings. A draft of guideline was made. The guideline will be discussed in the guideline committee and be completed by January 2006. The guideline is under preparation by officers in PHKA through series of discussion among counterparts and experts. The draft is available.	B	
3. The awareness of people of the necessity for forest conservation and forest fire prevention is increased.	3a: At least one awareness initiative taken by the head of RTs (neighborhood association; self-governing body under sub-village) in the model villages (Desa) annually from the third year.	-do-	Information from the project (Achievement of Activity 3.1 in the following table)	The indicator is perceived. The detail is as follows: Trial program (2002): 1) Village meetings (235 participants in total) 2) Individual meetings (with 90 villagers) 3) Preparation of equipment for initial suppression (90 participants in total) 4) Dissemination of posters (620 copies) Full-Fledged program (2004-2005) 1) Social-economic survey with PRA 2) Study tour of agricultural technique without using fire 3) Establishing demonstration plot of "Bokashi" and Charcoal Briquette 4) Training of making "Bokashi" and Charcoal Briquette	A	

Narrative Summary	Planned in the PDM Objectively Verifiable Indicators	Means of Verification	Source of the Data	Results	Achievement Verified by the Indicator	Remarks
	3b: Model education program implemented by 24 junior high schools in the target NPs.	-do-	Information from the project (Achievement of Activity 3.2 in the following table)  The counterpart in the target national park offices, officers in charge in the local governments	The program which was developed by Project was applied by 20 junior high schools in 3 districts. Field school in NP area and revise of the textbook to fit regional conditions was conducted as a series of this activity. This program was tried to be sustainable, feasible and replaceable with Indonesian resources by means of utilizing local human resources.  Berkak NP (4 respondents): 8 formal JHSs (from total 22 JHSs) implemented in 2005 and 1 extension (open) JHS in 2006. Gunung Palung (1): 5 schools are projected to be model school in 2006. The short term target is the material will become extracurricular program in each model school and the long term target is the material will become local curriculum. Way Kambas (2): 3 JHSs is planned to school model Bukit Tigapuluh (1): 6 JHSs implemented since 2003 for second grade.	C	Even though the number of targeted schools (20 or 22) is smaller than the indicator (24), it was quite enough to achieve the Output 3.
	3c: An annual campaign organized by the local government in the subsequent years.	-do-	Information from the project (Achievement of Activity 3.3 in the following table)	Annual campaigns were organized in Berbak in 2002, in Way Kambas in 2003, and in Bukit Tigapuluh in 2004. There will be the last one in Gunung Palung in 2005.	B	
	3d: Project leaflets, etc. published periodically.	-do-	Direct observation, information from the project (Achievement of Activity 3.6 in the following table), the counterpart in the target national park offices, JICA experts	Project newsletters were published twice a year. Project leaflet was published properly. Project homepage was renewed properly. There are some extension media which has been conducted, such as 1) leaflet and handbook of religious aspect of forest fire was distributed at the training and extension program in Gunung Palung, 2) education material will be distributed to all junior high school, 3) Radio drama and newspaper spot.	B	
	3e: A guideline for awareness prepared (i.e., community awareness, school education and campaign by local governments)	-do-	Information from the project (Achievement of Activity 3.4 in the following table)  The counterpart in PHKA	The guideline committee has discussed guidelines. Guidelines will be made in 2005.  A draft of guideline was made. The guideline will be discussed in the guideline committee and be completed by January 2006.	B	
4. Methods and techniques for IGB/SALT developed in Phase I are examined.	4a. An implementation plan for applicable methods for the model village submitted to PHKA.	-do-	Document of the implementation plan  JICA experts	Some reports of the examination in the model village by Way kambas national park have been prepared. The final report including the implementation plan will be prepared by the end of the project.  The plan will be made for Way Kambas NP.	B	The Output 4 is not limited to application of IGB/SALT anymore, it includes any methods examined in the model village by Way kambas national park with UNILA for development of applicable methods.
5. A model for an integrated fire prevention management is developed	5a A guideline for integrated forest fire prevention management with case studies of the target NPs prepared	-do-	Information from the project (Achievement of Activity 5.1 in the following table)  The counterpart in PHKA, JICA experts	Establish the task force for integrated guideline as a consultative committee in Director PKH from April 2005.  A draft of guideline for integrated forest fire prevention management with case studies was made. The guideline will be discussed in the guideline committee and be completed by January 2006.	B	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Source of the Data	Results	Achievement verified by the Indicator	Remark
6. The Project is managed properly.	6a Monitoring report prepared regularly	-do-	Monitoring reports  The counterpart in the target national park offices, JICA experts	There were half year reports, quarterly reports and monthly reports in Japanese submitted from the JICA experts to JICA. Half year reports in English were submitted to the MOF and at the JCC meetings.  JICA expert meeting (every week), The counterpart meetings (every month), project meeting attended by the JICA experts and counterpart (every month) and progress meeting (every 6 months) were held. Monthly report, 4 month report and progress report were submitted. MOF conducted project evaluation every year. The annual report made by NP, counterpart. In addition, report for each activities implemented by the counterpart is submitted.	B	
	6b Joint Coordination Committee meets every year.	-do-	Information from the project (Achievement of Activity 6.2 in the following table)  The counterpart in PHKA, JICA experts	Joint Coordinating Committee was constituted in 2001. The meeting was conducted in 13th August 2001, 13th March 2003 and 8th March 2004. In 2005, the meeting was conducted in December 2005, at the same time as the terminal evaluation.  Joint coordinating committee (JCC) was held every year.	B	
	6c. At least one meeting with each of other relevant projects per year.	-do-	Information from the project (Achievement of Activity 6.3 in the following table)  The counterpart in PHKA and the target national park offices, JICA experts	More than one meeting with other relevant projects held per year.  The experts and counterpart joined various workshops and seminars and exchanged information at ASEAN meeting and so on. Meetings were held especially with projects related to community awareness.	B	

M. A



Table of Achievements (Activities under Output 1)

Grade: A =completed, B1=ongoing as planned, B2=ongoing behind the schedule, C=not started yet 2005/12/15

PCM Code	Activities	Target	Responsible Persons as of Dec.2005	Progress		Comments																																				
				as of Dec. 2005	by Apr 2006																																					
<b>Output 1</b>																																										
Activity 1.1	Improve the early warning and detection system using satellite information.	Satellite data received and provided regularly to the target national parks and the relevant organizations.	JE: Noguchi PKH: Johanie	A	A	The main activity under activity 1-1 (i.e. development of system) have been completed. PKH have been to continue the utilization of developed system themselves from hand over to PKH in August 2004. Now, the project processing to renewal a satellite receiving and processing system, and preparation for the bidding of purchase the new system. In addition, PKH has blueprint to add the MODIS (name of sensor on satellite Terra and Aqua) receiving and processing functions by own budget in 2006. PKH has conducted progressive utilization the system basis satellite information. However, can not evaluate the new system at this time, because the offering new system is unfinished (will be finished in February, 2006). Manuals of 1) hot spot detection 2) haze and cloud monitoring techniques and 3) FSRM processing were prepared.																																				
1.2	Provide information related to early warning and detection (i.e. hot spot data and FSRM) using satellite images to the target NPs and the relevant organizations.	Processed hot spot data is provided everyday, and Fire risk index information is provided every 10 days to the target NPs and the relevant organizations.	-do-	A	A	Hot spot information has been published on the internet homepage daily, and given through e-mail to the target NPs and the relevant organizations. When hot spots are detected in the target NPs, directions are given through telephone or fax in addition to internet, e-mail. The information of FSRM has been provided to the target NPs every 10 days and also published on the homepage. There is no telephone network near the office of Way Kambas NP. But Way kambas NP office already set the NEO-N system (like a satellite telephone), so already kept the communication line in case of emergency. However, can not connect internet, e-mail, so, can not send and receive the electronic data in Way Kambas NP office, the NP development a reporting system utilize a map which numbering each 2km×2km on NP and surrounding area.  Target NPs offices located local area, so there are no thick telephone lines, so, not send and receive the big electronic data. For that reason, development a reporting system which the Fire Spread Risk Index (FSRI) information by FAX. Developed the automatically drawing system on the map and at the same time be able to report the detail FSRI information and a change of FSRI on each 5km×5km to target NP offices.  Provincial Forestry office (DINAS Kuhlutan) in Jambi and West Kalimantan has independently established the system of transmitting the provided warning information to the local related organizations. EU (European Union) project utilizes hotspot data from the project provided under activity 1-1-1 BMG (Meteorological and geophysical Agency) also utilizes hotspot data from the project provided under activity 1-1-1, and BMG processing and providing haze and wind monitoring map.																																				
1.3	Improve the feedback system from the target NPs, regarding the detected hot spots.	The ratio of the number of feedback report to the number of provided hot spot information stands at more than 80%.	-do-	A	A	In 2005, hot spots were detected 54 points (18 times) in the target NPs. For 54 hot spots, 46 feedback reports (85%) were collected.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Detected</th> <th colspan="2">Feedback</th> </tr> <tr> <th colspan="2">2005</th> <th>Times</th> <th>Points</th> <th>Times</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>Berbak</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>Bukit</td> <td>2</td> <td>5</td> <td>2</td> <td>5</td> <td>2</td> </tr> <tr> <td>Guntung</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Way Kambas</td> <td>13</td> <td>46</td> <td>11</td> <td>38</td> <td></td> </tr> </tbody> </table>			Detected		Feedback		2005		Times	Points	Times	Points	Berbak	1	1	1	1	1	Bukit	2	5	2	5	2	Guntung	2	2	2	2	2	Way Kambas	13	46	11	38	
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Way Kambas	13	46	11	38																																						
1.4	Promote utilization of the provided information at the target NPs and the relevant organizations	The provided hot spot data and forest spread risk maps utilized for initial suppression activities in the target NPs.	-do-	A	A	All target NPs assign the more than one operator and they are already able to utilize the hot spot image by GIS based on satellite information. On Berbak NP, conduct process early warning and detection system with Provincial Forestry office (DINAS Kuhlutan). Training workshops conducted for the staff of National Resources Conservation Center (KSDA) and Forest Fire Control Brigade office (DAOPS). In addition, all counterparts attend the training as instructor and they are improved their skill. Moreover, all counterparts participate the third country training in Thailand (the project adopt the system based on ANDES project developed in Thailand) for improve their skill for 7 days (5-11 December 2005).																																				
1.5	Develop a guideline for early warning and detection system based on analysis of past and current hot spot data.	Guideline developed.	JE: Noguchi PKH: Johanie	B1	A	The draft of guideline was made, The guideline will be discussed in guideline committee and be completed by January 2006.																																				

46 A

## Table of Achievements (Activities under Output2)

Grade: A =completed, B1=ongoing as planned, B2=ongoing behind the schedule, C=not started yet 2005/12/15

PCM Code	Activities	Target	Responsible Persons as of Dec. 2005	Progress		Comments and Aspect
				as of Dec. 2005	by Apr 2006	
Output 2						
2.1	Conduct training for initial suppression for park rangers of the target NPs	All the rangers from the target NPs trained every year	J/E: Naganawa/Sasaki PKH: Sumantri/Erwani/Adib NPs: Chandra/Isbanu Andri Johnny/Antoni Marcelinus	A	A	Some of the ex-trainees have already become trainers of the training organized by MOF or each target NP. The achievements of target NPs have been appeared as various activities like followings ; 1. Playing instructors (from the ex-trainees of BTNP) of training program for fire-fighting teams of private company on afforestation (in 2004), for fire-fighting team organized by provincial government of Riau at the training center of BTNP 2. Playing instructors (from the ex-trainees of Berbak NP) of training program for fire-fighting teams of local communities. 3. Playing instructors (from the ex-trainees of WKNP) of training program for control forest fire by initiative of Training Center of MOF/Directorate of Forest Fire Control of MOF. 4. Playing instructors (from the ex-trainees of Berbak NP) of training program for fire-fighting teams of Manggala Agni in Ketapang District.
2.2	Develop a system for initial suppression by rangers for each target NP	An initial suppression plan for each target NP, consisting of patrol and communication plans, implemented.	-do-	A	A	1. The initial suppression task has been appointed to some part of rangers through the formal document by the chief of each NP. 2. The initial suppression plan has been developed as the mobilization system in an emergency with relevant institute of each district by the initiative of each NP. Each national park has started to utilize the maps developed for the forest fire management strategy like patrol system and so on.
2.3	Develop local initial suppression activities for people surrounding the NPs	A local initial suppression group organized for a model community for each target NP	-do-	B1	A	1. MOF with the project has supported the progress for building relationship between local communities and each NP in the each district and the strategy plan for developing cooperation system with local communities has been made by initiative of each NP. 2. The approach process for developing cooperation system with local communities has been appeared various depend on the conditions/situations of each relationship between local communities and NP.
2.4	Develop a guideline for initial suppression of forest fires affecting the NPs	A guideline for initial suppression developed.	-do-	B1	A	It is planned that a guideline for initial suppression will be prepared based on the above activities Preparation of the guideline for initial suppression is ongoing in consultation with the taskforce committee meetings.

Table of Achievements (Activities under Output3)

Grade: A =completed, B1=ongoing as planned, B2=ongoing behind the schedule, C=not started yet 2003/12/15

PCM Code	Activities	Target	Responsible Persons	Progress		Comments																				
				as of Dec. 2005	by Apr 2006																					
Output 3																										
3-1	Organize an awareness program for local villages (Desa) in collaboration with relevant organizations	Community awareness program implemented every year from 2002.	JE: Uyarn PKH: Salbiah NP: Rochman, Gunawan, Hanzen	B1	A	<p>Community awareness program has been implemented in the target villages from 2002. In 2001, the preparation of the program was conducted. The preparation activities include making an evaluation format for selecting local NGOs as implementers in the field.</p> <p>Community awareness program has been conducted since 2004 at 3 target villages. In the program, agricultural demonstration plots of utilizing natural fertilizer "Bokashi" and charcoal briquette was planned and conducted. Farmer's initiative was pulled out and tried to promote this program by means of "farmer to farmer". In conducting this program, NP became a facilitator in cooperation with NGO and tried to be sustainable, feasible and replaceable with Indonesian resources.</p> <p>Trial program (2002):</p> <ol style="list-style-type: none"> <li>1) Village meetings (235 participants in total)</li> <li>2) Individual meetings (with 90villagers)</li> <li>3) Preparation of equipment for initial suppression (90 participants in total)</li> <li>4) Dissemination of posters (620 copies)</li> </ol> <p>Full-fledged program (2004-2005)</p> <ol style="list-style-type: none"> <li>1) Social-economic survey with PRA</li> <li>2) Study tour of agricultural technique without using fire</li> <li>3) Establishing demonstration plot of "Bokashi" and Charcoal B</li> <li>4) Training of making "Bokashi" and Charcoal Briquette</li> </ol>																				
3-2	Establish an education program for junior high school in collaboration with the relevant organizations	Model education program implemented at 24 junior high schools in the target NPs.	-do-	B1	A	The program which was developed by Project was applied by 20 junior high schools in 3 districts. Field school in NP area and revise of the textbook to fit regional conditions was conducted as a series of this activity. This program was tried to be sustainable, feasible and replaceable with Indonesian resources by means of utilizing local human resources.																				
3-3	Organize an awareness campaign jointly with provincial or district government for each target NP	An awareness campaign organized jointly with a provincial or district government in a target NP annually.	-do-	B1	A	<p>Land and Forest Fire Prevention Campaigns were conducted as</p> <table border="1"> <thead> <tr> <th>Year</th> <th>NP</th> <th>Province / District</th> <th>Total Population</th> </tr> </thead> <tbody> <tr> <td>2002</td> <td>Berbak</td> <td>Jambi Province</td> <td>1.8M</td> </tr> <tr> <td>2003</td> <td>Way Kambas</td> <td>Lampung Timur District</td> <td>850,000</td> </tr> <tr> <td>2004</td> <td>Bukit Tigapuluh</td> <td>Indragiri Hulu District</td> <td>284,000</td> </tr> <tr> <td>2005</td> <td>Gunung Palung</td> <td>Ketapang District</td> <td>464,000</td> </tr> </tbody> </table>	Year	NP	Province / District	Total Population	2002	Berbak	Jambi Province	1.8M	2003	Way Kambas	Lampung Timur District	850,000	2004	Bukit Tigapuluh	Indragiri Hulu District	284,000	2005	Gunung Palung	Ketapang District	464,000
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2005	Gunung Palung	Ketapang District	464,000																							
3-4	Develop a guideline for awareness on forest fires affecting the national parks	A guideline developed	-do-	C	A	The guideline committee has discussed guidelines. Guidelines will be made in 2005.																				
3-5	Improve national Forest Fire Prevention Campaign organized by MOF	The campaign jointly planned with MOF implemented.	-do-	A	A	<p>Forest Fire Prevention Campaign for 2003 was planned jointly with the relevant section of MOF. The campaign started by the declaration of the MOF. As many as 2,500 slogans and songs for the campaign was sent to the MOF from all over the country for competition.</p> <p>Land and forest fire prevention campaign by MOF has been implemented since 2002. Seminars about cooperation with relevant institutions were implemented in 4 locations collaborating with the campaigns in 2005.</p>																				
3-6	Provide information about forest fire prevention through Internet, leaflet, etc.	Project leaflet published every year and newsletter published twice a year.	-do-	B1	A	Project leaflet was published, Homepage was renewed and News letter was published properly. The next news letter is prepared.																				

M.A.

Table of Achievements (Activities under Output4)

Grade: A =completed, B1=ongoing as planned, B2=ongoing behind the schedule, C=not started yet 2005/12/15

PCM Code	Activities	Target	Responsible Persons as of Dec. 2005	Progress		Comments
				as of Dec. 2005	by Apr 2006	
Output 4						
4.1	Evaluate the methods developed in the phase 1 i.e. IGB at Berback NP and at Nanga Pinoh.	Evaluation reports of IGB and SALT prepared respectively.	J/E: Inoue PKH:  Sumantri	B1	A	<u>SALT</u> : Evaluation was conducted in 2003 <u>IGB</u> : Pre-survey was conducted in 2002 and full-fledged evaluation was conducted in early 2004. Through these evaluation, it become clear that social process development is needed to adapt its technique to different place.
4.2	Study the applicability of the above IGB and SALT for a target NP.	Report of the applicability of the methods developed. Guideline of improved methods	J/E: Inoue PKH:  Sumantri	B2	A	Study of a village inside Bukit Tigapuluh NP was conducted in January 2002. Study of two villages outside Bukit Tigapuluh NP was conducted in 2003. It was acknowledged that there are some problems of adopting the SALT model around Bukit Tigapuluh NP. It has been decided that a study on process development study will be conducted at Burajayakuty Village by TN own selection.
4.3	Propose an implementation plan for the applicable method for the model village.	Implementation plan proposed to PHKA.	-do-	C	A	Final report of contract study will be prepared by march 2006.

Table of Achievements (Activities under Output5&amp;6)

Grade: A =completed, B1=ongoing as planned, B2=ongoing behind the schedule, C=not started yet 2005/12/15

PCM Code	Activities	Target	Responsible Persons as of Dec.2005	Progress		Comments
				as of Dec. 2005	by Apr 2006	
Output 5	<Integrated Model>					
5.1	Develop an integrated forest fire prevention <Project Management>	An integrated guideline with case study	J/E: Ioki PKH: Harry	B1	A	Establish the task force for integrated guideline as a consultative committee in Director PKH from April 2005.
Output 6	<Project Management>					
6.1	Prepare an annual plan of the Project based on the Plan of Operations	An annual plan prepared in timely manner	J/E: Ioki PKH: Harry	B1	A	Make an annual plan with evaluation on project activities for JCC every year. From 2005, the project activities adjusting the PHK's activity and budget plan.
6.2	Monitor and evaluate the Project periodically		J/E: Ioki PKH: Harry	B1	A	Conducted the project meeting. Joint Coordinating Committee was constituted in 2001. The meeting was conducted in 13th August 2001, 13th March 2003 and 8th March 2004. In 2005, the meeting was conducted in December 2005, at the same time as the terminal evaluation.
6.3	Exchange information with other donors, other JICA projects and others	At least one meeting with each of other relevant projects conducted a year.	-do-	B1	A	<p>Either J/E or C/P participated in the following meetings:</p> <ul style="list-style-type: none"> <li>* International conference on "World Land and Forest Fire Hazards" assisted by the Japan-ASEAN Exchange Project, in Kuala Lumpur, Malaysia. (2002.6)</li> <li>*International symposium on "Forest Fire and Its Impact on Biodiversity and Ecosystems in Indonesia" by the Environment Institute of Japan and the Science Institute of Indonesia, in Puncak, Bogor. (2003.1)</li> <li>*Workshop on Human Resource Development for Forest Fire Prevention and Management by ITTO and MOF, in Palembang. (2003.2)</li> <li>*Workshop and Launching on South Sumatra Forest Fire Management Project by EU, in Palembang. (2003.3)</li> <li>*Workshop on IFFM "Forest Fire Management Training" by GTZ, in Samarinda. (2003.7)</li> <li>*Second Meeting of the Asia Forest Partnership (AFP), in Yogyakarta.</li> <li>*ASEAN 13th Meeting of the Working Group for Forest Fire Countermeasures in Sumatra and Borneo, in Jambi. (2003.7)</li> <li>*ASEAN workshop for "Development of Early Warning System", in Jakarta. (2003.9)</li> <li>*NOAA Workshop on South Sumatra Forest Fire Management Project by EU, in Palembang. (2003.10)</li> <li>*National Workshop "Fires in Indonesia: Impacts, key issues and policy responses" by CIFOR, in Jakarta. (2003.12)</li> <li>*Workshop on South Sumatra Forest Fire Management Project by EU, in Palembang. (2004.3)</li> <li>*ASEAN 14th Meeting of the Working Group for Forest Fire Countermeasures in Sumatra and Borneo, in Kuala Lumpur. (2004.4)</li> <li>*ASEAN Workshop on Guidelines for the Implementation of the ASEAN Policy on Zero Burning, in Malaysia. (2004.7)</li> <li>*ASEAN 15th Meeting of the Working Group for Forest Fire Countermeasures in Sumatra and Borneo, in Riau, Indonesia. (2004.7)</li> <li>*Workshop on South Sumatra Forest Fire Management Project by EU, in Palembang. (2004.7)</li> <li>*Workshop for Fire Information system by South Sumatra Forest Fire Management Project,EU, in Palembang. (2004.12)</li> <li>*Workshop for Fire Information system by South Sumatra Forest Fire Management Project,EU, in Palembang. (2004.12)</li> <li>*Workshop for making strategy of environmental education by Fire Information system on South Sumatra Forest Fire Management Project,EU, in Palembang. (2005.1)</li> <li>*ASEAN 16th Meeting of the Working Group for Forest Fire Countermeasures in Sumatra and Borneo, in Singapore (2005.3)</li> <li>*Second Workshop on the ASEAN Peatland Management Initiative (APMI) in Kuala Lumpur (2005.5)</li> </ul>

M.A.

## Evaluation Grid

## 1. Relevance: Rated as A (Excellent)

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment	
1.1	Relevance of Overall Goal				
(1)	Consistence with the relevant Indonesian national policies.	The counterpart in PHKA and the target national parks, JICA experts	The interview survey by the local consultants	The consistency can be observed at least in the following policy of Indonesian government: 1. Government regulation No. 4 year 2001 concerning "Control to the Damage or Environmental Pollution Related with by Forest and Land Fire". 2. Decree of Ministry of Forestry No. 7501/Kpts-II/2002, August 7th 2002, which determined that forest fire control is one of priority activities in forestry sector.	B
		The counterpart in PHKA and the target national parks, JICA experts	Questionnaire and interview, review of document	The Indonesian government established Manggala Agni (an institution for fire prevention management under MOF). Manggala Agni was mobilized at first in the five provinces prioritized for forest fire prevention in 2004. The fire fighting brigades under Manggala Agni need capacity building through training etc. Manggala Agni also needs institutional capacity building for the early warning and detection. Five regional fire prevention offices (DAOPS) under Manggala Agni have been established in the five provinces with priority, and automatic weather stations were installed to the offices for early warning.	A
(2)	Priority in forest conservation in Indonesia	The counterpart in PHKA and the target national parks, JICA experts	Additional questionnaire and interview survey	Ministry of Forestry (MOF) identified the prevention of forest fire as one of the 5 priority issues to be tackled until 2004. In 2005 it is still one of the sub-items under the item "forest conservation" as one of the five priority issues. The budget has been increased.	B
				Forest fire is also a big threat to several conservation area, as well as illegal logging, land use change, and forest encroachment.	B

M.A.

Items	Data source	Data collection method	Survey result	Assessment
(3) Relevance with the needs of the beneficiaries	The counterpart in PHKA and the target national parks, experts	Interview, review of document	Several provincial governments has already established "coordinating centers" for forest fire mitigation and control which usually lead by the Provincial Environmental Impact Control Body (BAPEDALDA). For example, the coordinating center has been established in Jambi through a Decree of Governor no 328 year 2002, as well as in Riau province.	B
1.2 Relevance of Project Purpose				
(1) Consistency with the policy and needs of PHKA?	The counterpart in PHKA and the target national parks, experts	The interview survey by the local consultants	The project purpose is in line with the major goals of PHKA to protect and conserve all conservation area from destruction including forest fire. In this year (2005) PHKA is establishing a model of NP management in 20 NP target. Forest fire prevention is a part of the NP management model.	B
(2) Priority in the Indonesian policy on forest fire prevention management.	The counterpart in PHKA and the target national parks, experts	Additional questionnaire and interview survey	There is a big need to prevent fire outside of the national parks, not only the national parks. The fire is coming to the national park from the outside.	C
(3) Appropriateness of selection of national parks as target.	The counterpart in PHKA and the target national parks, experts	The interview survey by the local consultants	In the national parks valuable natural forest ecosystems with rich biodiversity are conserved. Forest fire is one of the biggest threat to the ecosystems in the parks.	B
(4) Appropriateness of selection of the four among the national parks in Indonesia.	The counterpart in PHKA and the target national parks, experts	The interview survey by the local consultants	Three of the four target national parks were located in the five provinces the Indonesian government prioritized for forest fire prevention. The other target national park (Way kambas) has many forest fire cases every year which are more than the other three target national parks. The 4 targeted national park represent 2 models of national parks, such as; 1) High risk of forest fire : in Way kambas & Berbak NP. 2) Good forest with low risk of forest fire : Gunung Palung and Bukit Tiga Puluh NP.	B

M. A

Items	Data source	Data collection method	Survey result	Assessment
1.3 Consistency of the project with the other donor countries				
(1) Consistency with the policies and activities of the other donors for forest conservation in Indonesia?	JICA experts	Additional questionnaire and interview survey	<p>It is consistent with EU and ASEAN that apply early warning and detection system, and the development of initial suppression. ASEAN is trying to apply no-burning and control burning in collaboration with communities. Suppression by the local residents is consistent with EU's idea.</p> <p>EU cooperates with "South Sumatra Forest Fire Management Project" (SSFFMP) since 2003 for five years, which includes fire control as one of main activities. GTZ assisted "Integrated Forest Fire Management" (IFFM) in East Kalimantan" but they have already completed the assistance for IFFM. The Project has frequently exchanged information with them. In addition, the Project has been providing hot spot information to SSFFMP and "South and Central Kalimantan Production Forest Project" assisted EU and IFFM assisted GTZ..</p>	B
(2) Redundancy with the other donors' activities?	JICA experts, The counterpart in PHKA, the Project Director	Additional questionnaire and interview survey	<p>There is no redundancy. EU is assisting a project in Gunung Palung national park for illegal logging control, but there is no overlapping activities with this project, and EU and the project rather complementing each other to assist the national park. There was no redundancy.</p> <p>The SSFFMP assisted by EU is targeting on one province while the project is targeting other four national parks to develop a model applicable to the whole country.</p>	B

4. A



Items	Data source	Data collection method	Survey result	Assessment
(3) Consistency with the other international efforts for early warning and detection?	JICA experts	Additional questionnaire and interview survey	The project is coordinated with ASEAN Haze Initiatives. There is a similar forest fire detection system developed by ASCOM which is also daily monitoring hot spots. The detection system developed in the project has an advantage in accumulation of data since 1997, which is now utilized to analyze regional forest fire occurrence. It is necessary several organizations have independent detection systems, as there is less risk of all systems stopping.	B
1.3 Utilization of the former JICA's assistance for forest fire prevention management	JICA experts	Additional questionnaire and interview survey	The project aims to examine and improve the outcomes from FFPMP phase 1. The equipment and materials provided by the grant assistance was repaired and utilized for the project. The reforested areas by the grant assistance were used for the examination of fire prevention and initial suppression.	B

*M. A.*

## Evaluation Grid

## 2. Effectiveness: Rated as A (Excellent)

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
2.1 Achievement of the project purpose	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievement	The project purpose is expected to be achieved by the end of the project.	A
2.2 Contribution of the Outputs to achieve the Project Purpose	JICA Chief Advisor Direct observation	Additional questionnaire and interview survey Direct observation	Output 1 (early warning and detection); rated as "A", as It is fully utilized the other activities such as patrolling. Furthermore it is also a basis for Manggala agni system. Output 2 (Initial suppression); rated as "A+", as it developed the organizations in the field for fire prevention. Furthermore, it strengthen the cooperation with the central government, through the collaboration with Manggala agni for mobilization. Output 3 (awareness); rated as "A", as it developed the cooperation with the local organizations and communities. Output 4 (IGB and SALT); rated as "A-", as it is establishing a fire prevention approach with local residents. The institution developed by the Output 4 is being strengthened, being promoted the MOF's policy for cooperation with local residents. Output 5 (integrated fire prevention management model); rated as "B", as it assures impact of the project mainly after the project duration. Output 6 (project management); rated as "B", as it is a regular task of any kind of international projects.	B
2.3 Factors contributing or hindering the achievement of the Project Purpose				
(1) Contributing factors of the implementation of the project.	The counterpart in the target national parks	The interview survey by the local consultants	The assistance and support from JICA experts. The equipment provided. The guidelines.	B
(2) Hindering factors of the implementation of the project.	The counterpart in the target national parks	The interview survey by the local consultants	Planned budget for the national parks could not be disbursed in appropriate timing.	C
(3) Effect of decentralization in Indonesian government to the project organization	The counterpart in the target national parks	The interview survey by the local consultants	There was no significant influence of the decentralization, as the national parks are still fully controlled by the central government. However, the decentralization has brought effect in terms of necessity of coordination with the district governments in any activities.	B
2.4 The Important Assumption from the Outputs to the Project Purpose ("Other project related with (e.g. other JICA projects for the MOF) would not dramatically change.")	JICA experts	Additional questionnaire and interview survey	Other projects didn't change dramatically. Concerning the JICA assistance to other projects, the project in Gunung Halimun started, the mangrove conservation project in Bali finished and is now followed up, and the carbon fix forest management project will soon finish.	B

M. A.

## Evaluation Grid

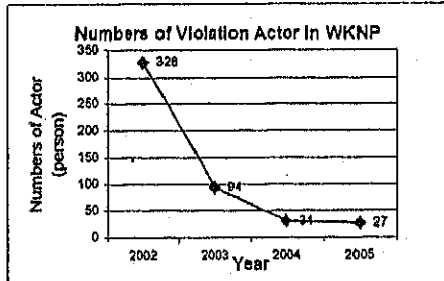
## 3. Efficiency: Rated as A (Excellent)

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
<b>3.1 Achievement of the Outputs</b>				
(1) Achievement of Output 1 ("The capacity of the Indonesian Government to engage in early warning and detection is improved.")	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievements	The Output is expected to be achieved by the end of the project.	B
(2) Achievement of Output 2 ("The capacity of the Indonesian Government to engage in initial suppression of fires in forest areas is improved.")	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievements	The Output is expected to be achieved by the end of the project.	B
(3) Achievement of Output 3 ("The awareness of people of the necessity for forest conservation and forest fire prevention is increased")	Changes of awareness or action of the target groups of the awareness activities	Refer to the Table of Achievements	The Output is expected to be achieved by the end of the project, according to the indicators stated in the PDM.	B
		Interview to the officers of Way kambas national park	In the dry season in 2005, there was no fire observed in the area nearby the model village where fire was observed in every dry season in the past. There was now less pathways from the model village to enter Way kambas national park.	B
		Interview to villagers of the model village around Way kambas.	Much knowledge and high awareness for the forest fire prevention of the villagers participating in the project activities are observed.	B
		Interview to the officers of Bukit Tigapuluh national park	As a result of annual campaign to private companies, Land clearing using fire by private companies decreased.	B
		Interview to the teachers of the model schools for Bukit Tigapuluh national park	The target students gained knowledge about forest fire prevention. However, their change of awareness can be observed only in the long term.	N/A
		Interview to the students	The students get more information and experience on forest conservation especially on forest fire prevention, that they hope they can make awareness on fire will increase through transfer of knowledge to their parents and neighbours.	B
		Interview to the officers of Berbak national park	Three signs of changes were observed. 1st, Sungai rembut established community fire fighting brigade, by their own initiative. 2nd, In Sungai salas village, when they prepare farmland, they now burn the land carefully using fire brake. The 3rd sign is that community in Sungai palas, if there are illegal activities in the park area nearby, the villagers always warn the people. The villagers recommend them not use their village as their entrance.	B

H.A

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
	Changes of awareness or action of residents around the national parks besides the direct target villages.	Annual records of reported illegal activities inside Way kambas national park	Number of reported illegal activities in Way kambas national park decreased during the project period. 	N/A
		Additional questionnaire and interview survey	From the villages surrounding the northern part of Way kambas national park (besides the model village), 1,300 volunteers are proposing to cooperate with the national parks for forest fire prevention in the national park.	B
		Interview to the officers of Bukit Tigapuluh national park	Only five hotspots were observed in 2005 in the plantation area nearby the park, which were caused by accidental fire rather than land clearing.	B
(4) Achievement of Output 4 ("Methods and techniques for Integrated Green Belt (IGB) and Sloping Agricultural Land Technology (SALT), developed in Phase I, are examined")	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievement	The Output is expected to be achieved by the end of the project.	B
(5) Achievement of Output 5 ("A model for an integrated fire prevention management is developed.")	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievement	The Output is expected to be achieved by the end of the project.	B
(6) Achievement of Output 6 ("The Project is managed properly")	The Table of Achievements (ANNEX 4)	Refer to the Table of Achievement	The Output is expected to be achieved by the end of the project.	B
<b>3.2 Appropriateness of the</b>				
(1) Were the long-term and short-term JICA experts dispatched on appropriate time?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B
(2) Were the counterpart training courses held on appropriate time, considering the rainy season etc.?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B
(3) Were the equipment and facilities provided on appropriate time?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
(4) Were the project offices equipped with sufficient facilities for the project activities?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B
(5) Was sufficient number of counterparts who can concentrate on the project activities assigned for the project?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B
(6) Did the Indonesian side allocate necessary financial resources? Did the difference fiscal years of Japan and Indonesia affect the project?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general.	B
(7) Was the assignment of long-term and short-term JICA experts were adequate?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general. However, some counterpart in the national parks consider capability and expertise of the JICA experts are not enough. Their perception of JICA experts' roles should be confirmed.	B
(8) Were the technical content of the counterpart training courses adequate?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general. However, an officer in a national park claimed that training on extension and public relations is not enough.	B
(9) Were the equipment and facility provided to the project fully utilized?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	It was appropriate in general. However, an officer in Gunung Palung national park reported that the speed boat is not utilized optimally, the target national parks claimed difficulties in re-registering the project vehicles, and that some equipment is not common in Indonesia then its spare parts are not easily found.	B
(10) Are the provided equipment and facility matching the technical level of the project staff for maintenance?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	The CP has enough technology to maintain the equipment. However, it is hard to find some spare parts.	B
(11) Do the trainees share what they learned with other staff members?	Project staff members who participated in the training	The interview survey by the local consultants	They share what they learned with other staff members.	B
	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants		

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
(12) What is the most useful technology among what they learned in the training course?	The project staff members who participated in the training	The interview survey by the local consultants	GIS and remote sensing, forest fire handling, community participation, forest rehabilitation, command system of forest fire suppression.	B
	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	Forest fire suppression, isotropy of forest fire management, community participation, PCM, PDM, PRA	B
(13) Do the trainees still keep in touch with other trainees in other countries and share information with them.	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	They do keep in touch with other trainees.	B
3.3 Factors contributing or hindering achievement of the Outputs				
(1) Were the early warning and detection and the initial suppression incorporated efficiently?	The counterpart in the target national parks	The interview survey by the local consultants	The early warning and detection and the initial suppression incorporated efficiently.	B
(2) Did any troubles of early warning and detection system affect the achievement of Outputs?	The counterpart in the target national parks	The interview survey by the local consultants	They didn't affect the achievement of the Outputs.	B
(3) Are the officers in charge aware of cooperation with the neighboring countries for early warning and detection?	The counterpart in PHKA and the target national parks	The interview survey by the local consultants	The officers in charge are aware of cooperation with the neighboring countries for early warning and detection.	B
(4) Are the newly formulated fire brigades motivated well?	The counterpart in the target national parks	The interview survey by the local consultants	They are motivated through direct experience in forest fire suppression, discussion with expert, case study, etc.	B
(5) Efficiency of the cooperation with Lampung University to develop an implementation plan for applicable methods for the model village	the counterpart in the target national parks, Lampung University, JICA experts	Additional questionnaire and interview survey	As the national park has limited capacity of human resource. The project had better result by cooperating with UNILA which is located nearby the national park. The national park plans extent cooperation with UNILA and also plan to revise the management plan of Way kambas NP with UNILA. As UNILA students stationed at the model village, their daily interaction with villagers contributed to the project. UNILA has good relationships with the local government agencies. UNILA has know-how to utilize unique local resources. UNILA has its own long term vision to extend the outcome of the project to broader areas. UNILA's cooperation to the project was based on a contract between them and JICA, and contract fee were paid. Efficiency of the contract fee comparing with other options have not yet been examined.	B

*M. A.*

## Evaluation Grid

## 4. Impacts: Rated as B (Good)

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
4.1 Prospects that the Overall Goal will be achieved				
(1) Record of hot spots in the four target national parks and the whole Indonesia before and after the project started	Refer to the Table of Achievement	Refer to the Table of Achievement	The ratio of number of hot spots in the four target national parks to that in the whole Indonesia decreased between the periods of phase 1 (0.56%) to phase 2 (0.38%).	N/A
(2) Prospects that the Overall Goal will be achieved Prospects that the Overall Goal will be achieved	The counterpart in PHKA, The counterpart in the target national parks	The interview survey by the local consultants	Institutional design of Manggala Agni and its establishment are facilitated by the project. Training for the other national park staff was conducted by PHKA deliberately.	B
4.2 Contribution of the project to the Overall Goal				
(1) Do the project activities in the four national parks directly affect to forest fire prevention management in the whole country?	The counterpart in the target national parks, JICA experts	The interview survey by the local consultants	The project activities contributed to forest fire prevention management in the whole country, in particular the development of the early warning and detection system.	B
(2) Will the technology developed in the project be transferred to other national parks and other relevant organizations?	The counterpart in PHKA, The counterpart in the target national parks	The interview survey by the local consultants	They will be transferred. Staff members of other national parks were trained by the cp of the project.	B
(3) Are the hot spot data and the fire spread risk map published from the project utilized for initial suppression of the areas outside the four target national parks (such as the other 47 national parks, conservation forest, farmland, etc.) ?	The counterpart in PHKA, JICA experts, officers in charge in the local governments	Additional questionnaire and interview survey	In general, hot spot information is widely recognized and used as basic information for detecting forest fire and occurrence of haze. Though in some rural areas they cannot receive the hot spot data well due to the less developed communication infrastructure, all related agencies in the country understand importance of the hot spot information. In Jambi province, the forestry agency under the provincial government (DINAS) and the office of MOF at provincial level (BKSDA) and private companies implementing reforestation register themselves to the mailing group of hot spot data.	A
4.3 Important Assumptions from the Project Purpose to the Overall Goal				
(1) Are there neither significant forest policy including forest fire policy reform nor organizational reform in central and local governments involved in forest fire prevention and management activities (Important Assumption from the Project Purpose to the Overall Goal)?	The counterpart in PHKA, the counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	There is no significant policy reform.	B
	The counterpart in PHKA, JICA experts	Additional questionnaire and interview survey	There were policy reforms promoting the project's contribution to the Overall goal, such as establishment of Manggala Agni, Institutionalization of cooperation with local residents for conservation, forest fire prevention as one of the sub-items of the five priority areas of MOF, and movement to approve ASEAN Haze Initiative.	A

M.A

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assess ment
(2) Will good collaboration be maintained among all levels of government including central, provincial, district, sub-district and village levels (Important Assumption 1 for sustaining the Overall Goal)?	The counterpart in PHKA, The counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	Good collaboration among all levels of government is observed.	B
	The counterpart in PHKA, JICA experts	Additional questionnaire and interview survey	Good collaboration among all levels of government is observed in the projects sites. It is expected they maintain the collaboration even after the project period. Collaboration among all levels depends on budget allocation.	B
(3) Will there be no significant reduction in counterpart budget for forest fire prevention and management activities. Also there is no significant government organizational reform in central and local governments (Important Assumption 2 for sustaining the Overall Goal)?	The counterpart in PHKA, JICA experts	Additional questionnaire and interview survey	The budget for forest fire prevention management has been increasing.	B
(4) Will there be no extreme climate change and environment disruption throughout Indonesia after the completion of the project (Important Assumption 3 for sustaining the Overall Goal)?	The counterpart in PHKA, The counterpart in the target national parks, the officers in charge of local government	The interview survey by the local consultants	Timing and scale of the next El Nino can not be forecasted.	N/A
4.4 Other impacts by the project (either positive or negative)				
(1) Did the project affect capacity or activities of "Manggala Agni" or the fire brigades under the local government?	The counterpart in PHKA, The counterpart in the target national parks, JICA experts, the training center in Bukit Tigapuluh	Additional questionnaire and interview survey	<ul style="list-style-type: none"> <li>- In the 4 provinces where the target national parks are located, the national park offices played a role to lead all related organizations under Manggala Agni, through coordination for mobilization.</li> <li>- In the training center in Bukit Tigapuluh national park, they trained staff of newly established brigades under Manggala Agni in Riau province.</li> <li>- Berbak national park helped establishing cooperation between related local agencies for Manggala Agni in Jambi province, through the annual campaign and the joint simulation of fire suppression under the project.</li> <li>- Gunung Palung national park also helped establishing cooperation between related local agencies for Manggala Agni in the province, through the annual campaign and the joint simulation of fire suppression under the project.</li> <li>- Many officers trained under the project are utilized as trainers of staff under Manggala agni on initial suppression.</li> <li>- The idea of Manggala Agni was inspired by the Japanese experience of "Shobodan", that the director of the Directorate of Forest Fire Control observed during the counterpart training in Japan.</li> </ul>	A

M. A



Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
(2) Did the project affect environmental education by the Ministry of Education or educational agencies under the local government.	The counterpart in PHKA, The counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	The project gave some impacts to educational agencies at the district governments. For example, the districts adopted the textbooks prepared by the project to their curriculum.	B
(3) Who utilizes the hot spot data and the fire spread risk map published on the internet, and how do they utilize them?	The counterpart in PHKA, webmaster, JICA experts	Additional questionnaire and interview survey	The hot spot data and FSRM is available for anybody through the project website and also the mailing list, etc. It is utilized by at least the Indonesian government agencies and institutes related to disaster control, the Minister of Forestry, regional offices of MOF (BKSDA, DAOPS, etc.), provincial and district governments (DINAS, etc.), private estates such as HTH and HTI, donor agencies such as EU, International research organizations such as ICRAF and CIFOR, research institutes in Japan such as Hokkaido University, NGOs such as WWF, etc.	B
(4) Does the publication of the hotspot data contribute not only to initial suppression, but also to increase people's awareness of forest fire prevention?	The counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	The hot spot data are utilized for many public awareness activities for forest fire prevention management. The hot spot data was sometimes published in newspaper.	B
(5) Did the cooperation between the project and Lampung University has any influence on any activities of the university besides the project?	Lampung University, The counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	6 students wrote their thesis on the case. The researchers in UNILA will produce papers. UNILA also plan extension of their own activities to the village even after the contract with JICA, such as a presentation of their activities to the head of the district.	B
(6) Did the organizations and institution established by the project contribute to the relief of the Tsunami disaster in December last year?	The counterpart in PHKA, The counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	Staff members under Manggala Agni dispatched from Riau and Jambi had been trained by the project counterpart and developed there skills on command system. The counterpart of the project was also dispatched to command the relief activities.	B

*M. A.*

## Evaluation Grid

## 5. Sustainability: Rated as B (Good)

Assessment of each item: A= Quite positive fact, B= Positive fact, C= Negative fact, D= Quite negative fact

Items	Data source	Data collection method	Survey result	Assessment
<b>5.1 Organizational sustainability</b>				
(1) Will the decentralization in Indonesian government affect the project organization in future, especially on jurisdictions and staff/budget allocation?	The counterpart in PHKA, the counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	As the national parks are under the central government, they have got relatively small influence of decentralization, and so will they.	B
(2) Will the sufficient number of staff be placed in PHKA and the four national parks to continue the project activities even after the cooperation period?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	The number of national park rangers is adequate keeping minimum standard. MOF decided to assign two new operators with GIS technology for the early warning and detection system and MODIS.	B
(3) Does PHKA have close and favorable relationships with other government agencies, international organizations, and agencies for forest fire prevention in the neighboring countries?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	PHKA has close and favorable relationships with EU, GTZ, Ministry of Environment, etc.	B
(4) Do PHKA and the four target national parks have sufficient administrative capacity to continue the project activities even after the cooperation period?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	They have sufficient capacity as long as enough budget is provided.	B
(5) Are staff members allocated to run the early warning and detection system during weekend?	The counterpart in PHKA, the counterpart in the target national parks, JICA experts	Additional questionnaire and interview survey	When "Slaga 1" (the highest risk of forest fire) is declared by the Indonesian government, they allocate necessary arrangement (including budget) to assign staff for 24 hrs including weekends. MOF decided to assign two new operators with GIS technology for early warning and detection system.	B
<b>5.2 Financial sustainability</b>				
(1) Will the Indonesian government allocate sufficient budget for the project activities in future?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	In the next year, another 12 national parks will be adopt to experience result from the four target NPs on forest fire prevention. Then, there will be three new fire brigades will be established. Finally, there will be twenty-nine regional operations (Manggala Agni). They are all budgeted by the MOF. Operational cost of the early warning and detection system and its upgrading to MODIS system is also fully born by MOF.	A
(2) Has the cost born by the Indonesian side increased since the project started?	Project input	refer to ANNEX3 Inputs	The budget for the four target national parks have been increasing. The "counter budget" from the PKH has been decreasing. But it doesn't mean that their budget for the project was decreasing, because PKH bore the cost related the project not only from the counter budget but also other items of their total budget.	A
<b>5.3 Technological sustainability</b>				
(1) Will the counterpart personnel trained through the project will be continuously assigned to the relevant posts?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	All respondents answered "Yes".	B

Items	Data source	Data collection method	Survey result	Assessment
(2) Will the facilities and equipment provided by the project be effectively utilized after the project?	The counterpart in PHKA, the counterpart in the target national parks	The interview survey by the local consultants	All respondents answered "Yes".	B
(3) Are the facilities and equipment provided by the project maintained?	Project office, offices of the national parks	Direct observation	In general, they are well maintained, though there is a problem to procure spare parts.	
<b>5.4 Political sustainability</b>				
(1) Will the Indonesian policy on forest fire prevention be changed or modified?	The counterpart in the target national parks	The interview survey by the local consultants	There have been positive changes of policies on forest fire prevention during the project period. There will be no change in the policy or any positive change in future.	B
<b>5.5 Social sustainability</b>				
(1) Will the people in the model villages gain the benefit from the activities in the project?	The counterpart in the target national parks	Interview to the counterpart in Bukit Tigapuluh, Way kambas and Berbak national park	For the conservation of Way kambas NP with the villagers, UNILA plans institutionalization for the benefits of the villagers who support fire prevention. For example, the district government would give priority to the villagers who support fire prevention, when they allocate the special budget for buffer zone. Berbak national park also gives priority to villages who support fire prevention when they allocate the budget for community development in buffer zone. Bukit Tigapuluh national park also applies the same idea.	B
(2) Will students targeted by the project raise awareness?	Students	Interview to the student in the model school	The students were interested in the course on conservation education, as they even wanted to have the course not only in the second year but also the first and the third year.	B
(3) Will the local governments assist the model villages to keep their inhabitants empowered?	The counterpart in the target national parks, the officers in charge in the related local government	Interview to Berbak national park.	The district governments have budget for buffer zones of national parks to promote community development.	B

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