

## Ⅱ 運営指導調査団 (R/D修正)

## 第1章 運営指導調査団の派遣

### 1-1 調査団派遣の経緯と目的

#### (1) プロジェクト開始の経緯

インドネシアでは3～5年おきに訪れる異常乾季に、大規模な森林火災が発生し広大な面積の森林が消失している。火災により発生した煙は周辺諸国にまでおよび、国際問題ともなっている。インドネシア政府および日本政府は森林火災問題に対処するため、プロジェクト方式技術協力を1996年4月15日から5年間の計画で開始した。

#### (2) 援助機関の動向

1997年には（東カリマンタン州では1998年前半にも発生した。）エル・ニーニョが発生し、世界各地で異常気象をもたらした。インドネシアでは異常乾燥、干ばつとなって表れ、国内各地で75万ヘクタール以上の森林資源が森林火災によって消失したと推定されている。この際、世界各国が緊急支援を行い、近隣諸国、日本政府および欧米諸国は森林火災消火チームや煙害にたいする医療チームを派遣した。森林火災後の1998年も、世界各国および国際機関が対策検討のため各種の国際会議を開催（4月：インドネシア森林火災ドナー会議（UNEP/OCHA）、5月：アセアンヘイズ行動計画に関する4回の会議、6月：WHO, WMO, 8月：WHO）し、新規援助の検討を始めた。

#### (3) 我が国の対応

JICAは、新規の森林火災対策支援を検討するプロジェクト形成調査団を1998年9月に、続いて同年10月には本プロジェクトの巡回指導調査団（中間評価）を派遣した。その結果、他の援助機関等とプロジェクトの調整及びインドネシア側が実施するプロジェクトの成果波及活動の側面支援のための専門家増員の必要性が提言された。また同年12月にはBAPPENAS, JICA, ITTOとの共催で東南アジア森林火災フォーラムが開催され、その報告として、今後も発生が予想される森林火災対策への日本政府の積極的な関与が求められた。これらの経緯を受け、森林火災予防に関し、先方機関とプロジェクトの具体的対応策を検討するために、運営指導調査団を派遣することとなった。

#### (4) 派遣目的

基礎調査部によるプロジェクト形成調査（森林火災対策）林業水産開発協力部による本プロジェクト巡回指導調査（中間評価）および「東南アジア森林火災フォーラム」等の提言を踏まえ、プロジェクトによる対応策の検討およびこれら活動計画の策定について協議し、その結果をプロジェクト開始時の討議議事録（R/D）の変更として取りまとめ、先方機関と署名することを目的として調査団を派遣した。また、R/D変更に伴い、プロジェクトの活動内容も修正する必要があるので、モニタリング・評価計画書も同時に（署名者を実務者レベルとして）署名をすることとした。

また、平成11年度の新規案件としてインドネシア側から要請されている「持続可能なマングローブ林管理・普及プロジェクト」の現地視察を同時に実施する。

1-2 調査団の構成

1 総括

加藤 鐵夫 農林水産省林野庁計画課 課長

2 協力企画

柴田 晋吾 農林水産省林野庁計画課海外指導班担当 課長補佐

3 計画管理

宮坂 実 国際協力事業団 林業水産開発協力部林業技術協力課 職員

1-3 調査日程

| 日付       |   | 行動   | 宿泊     |
|----------|---|--|--------|
| 1/6 (水)  | 10:40                                   | 成田発 (JL725)<br>ジャカルタ、専門家と打合せ   | ジャカルタ  |
| 1/7 (木)  | 8:00<br>9:00<br>14:00<br>15:00<br>18:30 | 林業農園省海外協力投資局長 (Dr. Untung Iskandar)表敬<br>自然保護総局長との協議、署名<br>JICA事務所長報告<br>大使館報告<br>レセプション | ジャカルタ  |
| 1/8 (金)  | 9:00<br>14:00                           | 森林火災予防計画視察 (ボゴール)<br>CIFOR訪問   | ジャカルタ  |
| 1/9 (土)  | 7:00<br>9:10<br>11:50<br>14:00          | ホテル発<br>ジャカルタ発 (GA404)<br>デンパサール着<br>マングローブ実証調査  | デンパサール |
| 1/10 (日) |   | 資料整理<br>21:00 デンパサール発 (JL726)  | 機中泊    |
| 1/11 (月) | 8:00                                    | 成田着  |        |

1-4 主要面談者（敬称略）

| 所属・氏名  | 職位   |
|--|--|
| 林業農園省海外協力投資局   |  |
| Dr. Ir. Untung Iskandar  | 海外協力投資局長   |
| 林業農園省自然保護総局  |  |
| Ir. Abdul Manan Siregar<br>Ir. Yaman Mulyana<br>Ir. Koes Saparjadi MF<br>Ir. Soedarmo<br>Ir. Danang P. Mardijono<br><br>Ir. Sumantri | 自然保護総局長<br>自然保護総局計画局長<br>自然保護総局森林保護局長<br>自然保護総局森林保護局長森林火災課長<br>自然保護総局森林保護局森林火災課<br>（森林火災予防計画カウンターパート森林火災予防）<br>自然保護総局森林保護局森林火災課<br>（森林火災予防計画カウンターパート住民参加型予防手法） |
| 林業農園省第7森林保全センター  |  |
| Ir. (Ms.) Oliva Suko<br><br>Ir. (Ms.) Oki Hadiyati   | バリ州林政局職員（マングローブ林資源保全開発現地実証調査カウンターパート）<br>バリ州林政局職員（マングローブ林資源保全開発現地実証調査カウンターパート）   |
| 林業農園省個別派遣専門家   |  |
| 佐藤 雄一  | 森林計画専門家  |
| プロジェクト専門家  |  |
| 宮川 秀樹<br>八戸 英喜<br>高井 秀章<br>金 晃弘<br>大塚 雅裕   | プロジェクトリーダー<br>業務調整<br>早期警戒・発見システム<br>森林火災予防<br>住民参加型予防手法   |
| CIFOR  |  |
| Dr. Dennis P. Dykstra<br>小林 繁男   | 国際林業研究センター研究局次長<br>国際林業研究センター研究局研究主任   |
| 日本国大使館   |  |
| 宮澤 俊輔  | 日本国大使館二等書記官  |
| JICA事務所  |  |
| 庵原 宏義<br>米田 一弘<br>大宮 直明  | インドネシア事務所長<br>インドネシア事務所次長<br>インドネシア事務所職員   |

## 第2章 調査結果の要約

### 1 R/Dの変更等についての主な討議内容

インドネシア事務所を通じて事前に検討を進めておいた、「サブリーダー／プロジェクト成果波及」分野専門家の一名の増員についてのR/D変更案は、先方からの異論もなく、円滑な合意がなされた。専門家の増員の記載と同時に、同専門家が実施すべき活動分野として、林業農園省が実施する全国レベルの普及訓練活動等をプロジェクトとして支援する活動を加えた。本件については、着任して1週間しか経っていない自然保護総局長と署名をおこなった。

R/D修正に伴い、全体活動計画（Plan of Operation = PO）とプロジェクトデザインマトリクス（Project Design Matrix = PDM）の変更も必要となる。R/D変更の署名の後、両計画を含んだモニタリング・評価計画書について先方と協議の上、プロジェクトマネージャーである森林火災課長を署名者として、署名をおこなった。

### 2 活動について

全般的に着実な活動を行っている。特に、以下の2分野は先進的かつユニークな取り組みである。

#### (1) 衛星情報による火災の早期警戒・発見システム

リアルタイムにホットスポットの情報を林業農園省に送るシステム。他のドナーとの調整も含めて、今後とも効率的な実施に努めることが重要。

#### (2) グリーンベルトの造成

森林火災の延焼防止と住民の利用の2視点から樹種を選定する等、ユニークな現場レベルの取り組みとして特筆に値する。今後は西カリマンタン州を始めとする他の州において、政府自らも実施することとなっており、その支援を含めて今後とも活動の一層の充実を図ることが重要である。

### 3 その他

本件プロジェクトは、他のドナーやJICA個別専門家等と連携を図りつつ成果を上げており、政府内部やドナー間でも高く評価されている。森林火災分野は、JICA以外に、EU、GTZを始めとした十以上のドナーや国際機関が取り組みを実施ないしは予定している分野であり、今後とも十分な調整を図りつつ我が国のイニシアティブを発揮していくことが重要と思われる。

## 第3章 教訓及び提言等

### 1 森林火災予防計画の実施上の留意事項

#### 1) 他ドナー、国際機関等との調整、連携

森林火災分野は極めて多くのドナー、国際機関が取り組みを実施、又は予定されており、ドナーの援助競争の様相を呈している。例えば、林業農園省に提供しているホットスポット情報についても、その精度、目的、区域等がやや異なるものの、EUおよびGTZが類似した情報の提供を行っている。今後とも活動内容等について、中央政府レベルの援助調整機関と十分な調整を図りつつ、先行ドナーの一つとしてJICAが本分野についての協力のイニシアティブを発揮していくことが望まれる。

## 2) 今後の活動内容等

プロジェクト成果の波及については、一義的にはインドネシア側の責務であるが、その緊急性と重要性に鑑み、中央レベルにおける支援が今回新たに追加された。これまでのプロジェクト活動で得られた技術的知見、参加型普及手法等を効果的に普及させることが重要である。

また、先般の森林火災の教訓として、早期警戒発見と地域住民を対象とした普及訓練の重要性が再認識されたところであり、今後とも早期警戒・発見システムの活用により、タイムリーな対応が可能となることを確保することが必要となる。

本プロジェクトも残すところ2年となっており、プロジェクト終了後の方向性を探ることも必要である。例えば、早期警戒・発見システムのランニングコストは現在の経済情勢下でインドネシア側の負担能力を超えていることから、現行プロジェクト期間終了後の運営体制についても検討を行うことが必要である。

## 3) 治安について

本調査団の滞在中にもジャカルタ市内におけるデモの実施や、郊外での投石騒ぎ等があり、依然、治安に関し不安な状況にあると見受けられた。今後、6月の総選挙が近づくにつれて、一層不安化することが考えられる。JICA本部インドネシア事務所及びプロジェクト現場間の連絡を密にして、専門家の安全確保に努めることが重要である。

## 第4章 今後の計画

増員することとなった専門家については、早急に入選、研修、派遣の手続きを行うこととする。また、当面は早期警戒・発見分野の専門家が兼任する計画である。

先方のカウンターパート配置については、森林火災予防の面的広がり指揮を執れる様なカウンターパートを配属するよう要望した。

## 添付資料

AMENDMENT TO THE RECORD OF DISCUSSIONS  
ON THE JAPANESE TECHNICAL COOPERATION  
FOR THE FOREST FIRE PREVENTION MANAGEMENT PROJECT

Based on the Joint Evaluation Report on the Japanese Technical Cooperation for the Forest Fire Prevention Management Project in the Republic of Indonesia (hereinafter referred to as "the Project") signed on October 22, 1998, the Japanese Management Consultation Team, organized by the Japan International Cooperation Agency and headed by Mr. Tetsuo KATO (hereinafter referred to as "the Team"), visited the Republic of Indonesia and held a series of discussions with authorities concerned of the Republic of Indonesia on desirable measures to be taken by both Governments for the successful implementation of the Project.

As a result of the discussions, the Team and the Indonesian authorities agreed to recommend to their respective Governments that the activities of the Project, the list of Japanese experts, and the list of Indonesian counterpart and administrative personnel (Annex I 3. (3), Annex II 2. and Annex IV 4. (4) of the Attached Document of the Record of Discussions on the Project, signed in Jakarta on March 5, 1996) be amended as the document attached hereto.

Jakarta, January 7, 1999

加藤 鐵 夫

Mr. Tetsuo KATO  
Leader  
Management Consultation Team  
Japan International Cooperation Agency  
Japan



Ir. Abdul Manan Siregar  
Director General of Nature Protection and  
Conservation  
Ministry of Forestry and Estate Crops  
Republic of Indonesia



ATTACHED DOCUMENT

ANNEX I MASTER PLAN

3. Activities of the Project

(Central Government level)

- (1) To observe forest fires by using satellite information.
- (2) To suggest methods of making improvements on the existing system for taking prompt measures against forest fires and to support their implementation.
- (3) To support the Ministry of Forestry and Estate Crops to disseminate outputs of the project.

(Local community level)

- (4)-1) To support public relations for forest fire prevention.
  - 2) To support the forest fire initial suppression system.
- (5)-1) To research and analyze socio-economic aspects including the culture of local residents.
  - 2) To research, analyze, and make trials of forest management techniques which are effective for forest fire prevention.
  - 3) To suggest participatory methods of forest fire prevention applying the forest management techniques above mentioned.

ANNEX II LIST OF JAPANESE EXPERTS

1. Team Leader
2. Assistant team leader/dissemination of project output
3. Coordinator
4. Long-term experts in the following technical fields
  - (1) Early warning / detection system
  - (2) Forest fire prevention and initial suppression
  - (3) Participatory methods for forest fire prevention

ANNEX IV. LIST OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

4. Counterpart Personnel in the following technical fields:
  - (1) Early warning / detection system
  - (2) Forest fire prevention and initial suppression
  - (3) Participatory methods for forest fire prevention
  - (4) Dissemination of project output

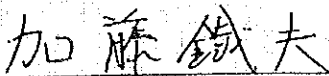
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THE MINUTE OF MEETING  
BETWEEN JICA MANAGEMENT CONSULTATION TEAM  
AND THE AUTHORITIES CONCERNED  
OF THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON MONITORING AND EVALUATION PLAN,  
PROJECT DESIGN MATRIX, AND PLAN OF OPERATION  
OF THE FOREST FIRE PREVENTION MANAGEMENT PROJECT  
IN THE REPUBLIC OF INDONESIA

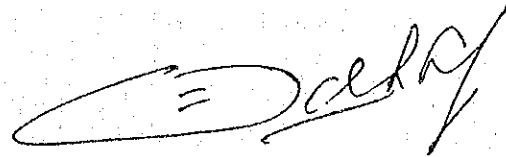
The Japanese Management Consultation Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Tetsuo KATO and authorities concerned of the Republic of Indonesia jointly prepared the Monitoring and Evaluation Plan, Project Design Matrix (hereinafter referred to as "the PDM") and Plan of Operation (hereinafter referred to as "the PO") as shown in the document attached hereto.

These plans were prepared based on the Record of Discussion (hereinafter referred to as "the R/D") signed on March 5, 1996, the Minutes of Meeting signed on October 22, 1998 and the Amendment to the R/D signed on January 7, 1999, between the Government of Japan and the Government of Indonesia. However, these plans prepared by both teams can be modified in the framework of the R/D, if it is required some modification of the plans on the implementation stage.

Jakarta, January 7, 1999



Mr. Tetsuo KATO  
Leader  
Management Consultation Team  
JICA



Ir. Soedarmo  
Sub-Director of Forest Fire  
Directorate of Forest Protection  
Directorate General of Nature Protection  
and Conservation  
Ministry of Forestry and Estate Crops

# Monitoring and Evaluation Plan

Date of Preparation : 7 / January / 1999

|                     |   |
|---------------------|---|
| Name of Project :   | The Forest Fire Prevention Project in the Republic of Indonesia                             |
| Project Period :    | 15/April/1996 - 14/April/2001 (for 5 years)   |
| Name of Mission :   | Management Consultation Team  |
| Leader of Mission : | Tetsuo KATO   |
| Mission Period :    | 6/January/1999 - 11/January/1999  |
| Section in JICA :   | Forestry Cooperation Division,<br>Forestry and Fisheries Development Cooperation Department |
| Officer in charge : | Minoru MIYASAKA   |

## I. Outline of Project

### 1. Project Design Matrix (PDM - see Attachment 1)

Based on the Monitoring and Evaluation Plan signed on October 22, 1998 and according to the result of the International Cross Sectoral Forum on Forest Fire Management in South East Asia and the Record of Discussion amended on January 7, 1999, the PDM were modified by the Project team (both Japanese team and Indonesian counterparts in charge) in consultation with the Management Consultation Team.

### 2. Plan of Operation (PO - see Attachment 2)

Based on the Monitoring and Evaluation Plan signed on October 22, 1998 and according to the result of the International Cross Sectoral Forum on Forest Fire Management in South East Asia and the Record of Discussion amended on January 7, 1999, the PDM were modified by the Project team (both Japanese team and Indonesian counterparts in charge) in consultation with the Management Consultation Team.

## II. Executing Organization for Monitoring and Evaluation

### 1. Monitoring

In accordance with the monitoring schedule in Section III, the Project will open regular meetings chaired by the project manager to monitor the progress of activities. Sufficient data for monitoring should be provided by the responsible persons for each activity. The Project Achievement Chart (Attachment 3) will be prepared under the monitoring works.

The executing organization for monitoring will be composed by the member of the Project, since the main purpose of monitoring is to feed back the results of monitoring into project in order to improve the operation and management of the ongoing project. The members of the executing organization are basically set up as follows :

Japanese side : Team Leader,  
Coordinator, and  
Experts dispatched.

Indonesian side : Project Manager,  
Project Coordinator, and  
Counterparts.

### 2. Evaluation

Intermediate and terminal evaluation will be carried out by the joint evaluation team consisting of the Indonesian evaluation team and the Japanese evaluation team dispatched by JICA.

The members of the Indonesian evaluation team will be selected from those of the Joint Committee.

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### III. Tentative Schedule for Monitoring and Evaluation (M&E) Works

| Schedule of M&E  | Type of M&E                               | Participants of M&E                              | Reporting                                   |
|------------------|---|--|---|
| March in 1996    | Signing of R/D                            |  |   |
| April in 1996    | Starting the cooperation                  |  |   |
| January in 1997  | Formulation of TSI                        | Japanese Consultation Team                       | Minute of Understanding                     |
| December in 1997 | Joint Committee<br>(1st Monitoring)       | 1st Joint Committee                              | Joint Committee Report                      |
| October in 1998  | Interim Evaluation                        | Joint Evaluation Team                            | Minute of Meeting                           |
| January in 1999  | Amendment of R/D                          |  |   |
| April in 1999    | 2nd Monitoring                            | Project Team                                     | Monitoring report                           |
| October in 1999  | 3rd Monitoring /<br>Joint Committee       | Project Team<br>and 3rd Joint Committee          | Monitoring report<br>Joint Committee Report |
| April in 2000    | 4th Monitoring                            | Project Team                                     | Monitoring report                           |
| October in 2000  | Terminate Evaluation /<br>Joint Committee | Joint Evaluation Team<br>and 4th Joint Committee | Minute of Meeting<br>Joint Committee Report |
| April in 2001    | (End of the Project)                      |  |   |

### IV. Monitoring and Evaluation Criteria

#### 1. Monitoring Criteria

[Special matters to be mentioned]

The monitoring criteria is basically same as each topic in the Plan of Operation.

As a basic data, an achievement sheet shall be prepared at the time of monitoring.

The form of the sheet is shown in Attachment-3.

#### 2. Evaluation Criteria

[Special matters to be mentioned]

The outline of the evaluation criteria and its check points are shown in Attachment - 4.

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## Project Design Matrix (Revised) (1/4)

Project Name : Forest Fire Prevention Management Project

1. Period of Cooperation : 5 years (1996.4 - 2001.4)  
 2. Implementation Agency in Beneficiary Country : DG-PHPA, Ministry of Forestry and Estate Crops

3. Target Group : Staff of DG-PHPA, Villagers of Rantau rasau and Nangapino area  
 4. Project Area : Bogor (Main Office), Rantau rasau (Jambi) and Nangapino (West Kalimantan)

| Narrative Summary   |   | Verifiable Indicators  | Means of Verification  | Important Assumption |
|---|---|--|--|----------------------|
| <p><b>Super Goal</b><br/>                     Devastation of forests caused by wild fires will be alleviated.</p> <p>2 Environmental damages by subsequent forest devastation and emission of smoke and haze will be mitigated.</p> | <p>1 Area of forest fires will be reduced by 30,000 ha per year in average. (Decree of Directorate General of Forest Protection and Nature Conservation, Ministry of Forestry, 1994)</p> <p>2 Number of forest fires in year will be reduced.</p> <p>3 Environmental effect caused by smoke or haze will be improved in and around Indonesia.</p> | <p>1 Official statistics released by Ministry of Forestry and Estate Cops.</p> <p>2 Official statistics released by Ministry of Forestry and Estate Crops.</p> <p>3 Official reports of Ministry of Health or Ministry of Forestry and Estate Crops.</p>   | <p>1 There will be no drastic changes in forest protection policies against fire.</p> <p>2 There will be no extreme climatic changes.</p>  |                      |
| <p><b>Overall Goal</b><br/>                     Forest fire prevention activities will be promoted throughout the country, and appropriate countermeasures against forest fires will be taken.</p>                                  | <p>1 Technologies and know-how developed will be disseminated to other provinces.</p> <p>2 Technical capabilities of staff in charge on forest fire management will be improved.</p> <p>3 Participatory forest fire prevention methods will be applied in other provinces.</p>  | <p>1 Annual report of Ministry of Forestry and Estate Crops, Interview survey with staff in charge and forest fire-related studies.</p> <p>2 Annual report of Ministry of Forestry and Estate Crops, Interview survey with staff in charge and forest fire-related studies.</p> <p>3 Annual report of Ministry of Forestry and Estate Crops.</p> | <p>1 There will be no drastic changes in forest protection policies against fire.</p> <p>2 Present collaboration will be maintained among all levels of governments, i.e. central, provincial, district, sub-district and village levels).</p> <p>3 There will be no significant reduction in counterpart budget for fire prevention and management activities.</p> <p>4 There are no extreme climatic changes throughout Indonesia.</p> |                      |
| <p><b>Project Purpose</b><br/>                     Prompt measures against forest fires at the central government level and methods of prevention and initial suppression of forest fires at the local level are improved.</p>      | <p>1 A comprehensive model from fire prevention, early detection and initial suppression will be established.</p> <p>2 Counterparts will obtain the technologies and know-how developed, and be capable to disseminate the project outputs to out of project sites.</p>   | <p>1 Project reports, Interview survey with staff in charge and forest fire-related studies.</p> <p>2 Interview survey with staff in charge and forest fire-related studies.</p>   | <p>1 There will be no drastic damages in forest protection policies against forest fire.</p> <p>2 The counterpart budget for the activities of counterpart personnel will be sufficiently allocated.</p> <p>3 There are no significant changes in appointment of counterparts who acquired the technologies and know-how.</p>  |                      |
| <p><b>Outputs</b><br/>                     Central Level<br/>                     Prompt measures against forest fires are enhanced. (early warning and detection system)</p>   | <p>1 Accuracy of the forest fire detection system by using satellite images, and time for detection of forest fire developed.</p> <p>2 Applicability and utilization situation of the system developed.</p> <p>3 Degree of reinforcement on the communication network system</p>  | <p>Central Level<br/>                     (1) Project reports<br/>                     (2) Project reports<br/>                     (3) Project reports</p>  | <p>1 Sufficient number of counterpart personnel will be assigned for the project.</p> <p>2 The counterpart budget for the activities counterpart personnel will be sufficiently allocated.</p>   |                      |

## Project Design Matrix (Revised) (2/4)

| Narrative Summary   | Verifiable Indicators  | Means of Verification   | Important Assumption |
|---|--|---|----------------------|
| <p>Output (Continued from the front page)</p> <p><i>Local Level</i><br/>A forest fire prevention system and an initial suppression system are strengthened.</p> | <p><i>Local Level</i></p> <p>(1) Contents of the technical manual and extension materials, and situation of their utilization.</p> <p>(2) Contents of the proposed extension system and the results of its field application trial</p> <ul style="list-style-type: none"> <li>- Number of participants (villagers) in extension activities</li> <li>- Degree of improvement in villagers' awareness (understanding of fire; importance of prevention, measures for prevention, etc.)</li> </ul> <p>(3) Effectiveness of STATLAK's activities</p> <ul style="list-style-type: none"> <li>- Level of understanding of staff concerned on the initial suppression system</li> <li>- Level of understanding of the villagers on the initial suppression measures</li> <li>- Contents of training manuals and extension materials</li> <li>- Number of training courses held and their participants</li> <li>- Frequency of patrol</li> </ul> | <p><i>Local Level</i></p> <p>(1) Interview survey with related staff.</p> <p>(2) Project reports, Interview survey with villagers and related staff.</p> <p>(3) Project reports, Interview survey with villagers and related staff.</p>         |                      |
| <p>Participatory forest management system which is effective for forest fire prevention is enhanced.</p>  | <p>(1) Area of pilot plantations with participatory forest management system</p> <p>(2) Level of understanding of villagers on participatory forest management system</p> <p>(3) Number of participants of participatory forest fire prevention program</p> <p>(4) Extent and effects of the green belt plantation established as forest fire prevention tool.</p> <p>(5) Applicability of technical guidelines for participatory forest fire prevention.</p>  | <p>(1) Project reports</p> <p>(2) Interview survey with villagers and related staff</p> <p>(3) Project reports</p> <p>(4) Project reports, interview survey with villagers and related staff</p> <p>(5) Interview survey with related staff</p> |                      |

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# Project Design Matrix (Revised) (3/4)

Attachment - 1

| Narrative Summary  | Inputs   | Indonesia Side   | Important Assumption  |
|--|--|--|---|
| <p><b>Activities</b><br/><b>Central Level</b></p> <p>1 Establish an early warning and detection system.</p> <p>1-1 Develop a forest fire monitoring technique using satellite information.</p> <p>1-2 Provide suggestions and assistance for the improvement and implementation of prompt measures against forest fire.<br/>(1) Develop an early warning system.<br/>(2) Develop a technique for identification of danger areas and periods.<br/>(3) Support implementation of prompt measures.</p> <p>2 Support Ministry of Forestry and Estate Crops to disseminate output of the project.</p> <p>2-1 Strengthen public relations in order to facilitate the dissemination of the project outputs.<br/>(1) Improve the accessibility of the project outputs for related organizations/agencies.<br/>(2) Strengthen collaboration with other projects/agencies.<br/>(3) Coordinate additional supports provided by Japanese government against forest fires.</p> <p>2-2 Support the activities of Ministry of Forestry and Estate Crops to disseminate the output of the project to the to priority regions/provinces. (2-2 will be conducted by all field of counterparts and experts)</p> | <p>1 Japanese experts<br/>Long-term experts : 5 persons x 5 years + 1 person x 2 year<br/>Short-term experts : 2-4 persons / year x 1-2 month</p> <p>2 Training of counterpart personnel in Japan : 2-3 persons / year x 5 years x 1-3 month</p> <p>3 Provision of equipment for the project activities.</p> <p>4 Provision of financial support to Indonesian side to bear a portion of administrative costs and operation costs.</p> | <p>1 Government staff as counterpart personnel and other project staff</p> <p>2 Administrative and operational costs</p> <p>3 Provision of land, buildings and other facilities to the project</p> | <p>1 Counterpart personnel are appointed as the plan.</p> <p>2 Indonesian side allocates sufficient budget according to the plan.</p> <p>3</p> <p><b>Precondition:</b></p> <p>1 Local communities are not opposed to the project.</p> <p>2 Community members participate in the project.</p> <p>3 Land owners do not stand against establishment of green belts in their land for the project</p> |

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Project Design Matrix (Revised) (4/4)

Attachment - 1

| Narrative Summary |   | Activities |  | Japanese Side | Indonesia Side | Indonesia Side |
|-------------------|---|------------|--|---------------|----------------|----------------|
| Activities        | Local Level   |            |  |               |                |                |
| 3-1               | Support public relations on forest fire prevention through development of forest fire prevention techniques and the systems of public relations, extension and education.<br>(1) Survey, make trials and develop forest fire prevention techniques<br>(2) Develop the system of public relations, extension, and education                              |            |  |               |                |                |
| 3-2               | Develop the forest fire initial suppression system, and support the implementation of system<br>(1) Build up institutional capacities<br>(2) Conduct training of initial suppression techniques   |            |  |               |                |                |
| 4-1               | Conduct surveys for analysis of socio-economic condition of communities, including cultural aspects of local people.<br>(1) Analyze socio-economic conditions of participating communities through base line survey / basic diagnostic surveys<br>(2) Comprehend participating communities' awareness of forest fires through monitoring and evaluation |            |  |               |                |                |
| 4-2               | Make analysis and trial of forest management technologies which are effective in forest fire prevention.<br>(1) Analyze information on forest management technologies for fire prevention<br>(2) Create technological models for forest fire prevention<br>(3) Make trials of forest management models proposed   |            |  |               |                |                |
| 4-3               | Propose participatory forest fire prevention methods with application of forest management technologies.<br>(1) Develop participatory methods for forest fire prevention<br>(2) Apply participatory methods for forest fire prevention  |            |  |               |                |                |

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Attachment - 2 Plan of Operation (PO)

(1/8)

| Activities   | Target   | Year |     |     |     |     | Responsible person     | Inputs | Remarks |
|--|--|------|-----|-----|-----|-----|------------------------|--------|---------|
|  |  | 1st  | 2nd | 3rd | 4th | 5th |                        |        |         |
| <b>CENTRAL LEVEL</b>   |  |      |     |     |     |     |                        |        |         |
| 1 Develop a forest fire monitoring technique using satellite information.  |  |      |     |     |     |     |                        |        |         |
| 1-a Improve methods of early detection and observation of forest fire by using NOAA/GMS images                                   | NOAA hot spot detection and Himawari haze monitoring on Sumatra and Kalimantan are continuously operated.                              |      |     |     |     |     | Mr. Johnnie H. Prakoso |        |         |
| 1) Detect hot spots by using NOAA  |  |      |     |     |     |     |                        |        |         |
| 2) Detect smokes by GMS  |  |      |     |     |     |     |                        |        |         |
| 3) Develop base maps   |  |      |     |     |     |     |                        |        |         |
| 2 Provide suggestions and assistance for the improvement and implementation of prompt measures against forest fire.              |  |      |     |     |     |     |                        |        |         |
| 2-a Develop an early warning system.   | Fire danger rating systems are established in Jambi and West Kalimantan.   |      |     |     |     |     | Mr. Johnnie H. Prakoso |        |         |
| 1) Develop forest fire danger indices by using weather information   |  |      |     |     |     |     |                        |        |         |
| 2) Develop forest fire danger potential maps   |  |      |     |     |     |     |                        |        |         |
| 3) Develop methods for predicting forest fire danger areas statistically by using hot-spot / smoke data identified by NOAA / GMS |  |      |     |     |     |     |                        |        |         |
| 4) Develop methods for forest fire data collection and their statistical use   |  |      |     |     |     |     |                        |        |         |
| 2-b Develop a technique for identification of danger areas and periods.  | Fire prevention activities is operated with the fire rating systems in Jambi and West Kalimantan.                                      |      |     |     |     |     | Mr. Johnnie H. Prakoso |        |         |
| 1) Predict forest fire danger periods by using weather indices   |  |      |     |     |     |     |                        |        |         |
| 2) Identify forest fire danger areas by using the early warning methods  |  |      |     |     |     |     |                        |        |         |
| 2-c Support implementation of prompt measures.   | Communication systems are established, and forest fire information are transferred with the systems to/from Jambi and West Kalimantan. |      |     |     |     |     | Mr. Johnnie H. Prakoso |        |         |
| 1) Strengthen communication network (Bogor - Pontianak / Jambi - Nanga Pinoh / Rantau Rasau)                                     |  |      |     |     |     |     |                        |        |         |

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Attachment - 2 Plan of Operation (PO)

(2/8)

| Activities  | Target  | Year |     |     |     |     | Responsible person | Inputs | Remarks |
|---|---|------|-----|-----|-----|-----|--------------------|--------|---------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |                    |        |         |
| <p><b>CONTINUE</b></p> <p>3 Support Ministry of Forestry and Estate Crops to disseminate outputs of the project</p> <p>3-1 Strengthen public relations in order to facilitate the dissemination of the project outputs.</p> <p>3-1-a Improve the accessibility of the project outputs for related organizations/agencies.</p> <p>1) Introduce activities and output of the project in the meetings of forest fire and make the output of the project known well to other donor agencies, Indonesian government and local governmental organization.</p> <p>2) Increase chances in which output of the project is utilized by other organization/ agencies in outside of the project area.</p> <p>3-1-b Strengthen collaboration with other projects/agencies.</p> <p>1) Collect information and result of other implementing organization or supporting agencies for forest fire protection.</p> <p>2) Utilize applicable output or result of other implementing organization or supporting agencies.</p> <p>3) Collaborate to implement necessary counter-measure against forest fire.</p> | <p>Most governmental and non-governmental organizations/agencies are able to access with project outputs and understand them well.</p> <p>Collaborative arrangements with other implementing agencies are realized.</p> |      |     |     |     |     |                    |        |         |

Attachment - 2 Plan of Operation (PO)

(3/8)

| Activities  | Target  | Year |     |     |     |     | Responsible person | Inputs | Remarks |
|---|---|------|-----|-----|-----|-----|--------------------|--------|---------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |                    |        |         |
| <p><b>CONTINUE</b></p> <p>3-1-5 Coordinate additional supports provided by Japanese government against the forest fires.</p> <p>1) Provide information and materials for efficient utilization of additional support.</p> <p>2) Assist the emergency support provided by Japanese government.</p> <p>3-2 Support activities of Ministry of Forestry and Estate Crops to disseminate the project outputs to priority regions/provinces.<br/>(3-2 will be conducted by all field of counterparts and experts)</p> <p>1) Provide guidance to make priority of counter-measures against forest fires based on general information, satellite information and field observation.</p> <p>2) Provide guidance to make dissemination plan of project outputs to priority provinces/ areas.</p> <p>3) Support counterparts/counterpart agency for implementation of the extension/training program in priority provinces.</p> <p>4) Support counterparts/counterpart agency for training on participatory fire prevention methods including reforestation in priority provinces.</p> <p>5) Support counterparts/counterpart agency for trials on participatory fire prevention models in priority provinces.</p> | <p>Effective supports are arranged with accurate information.</p> <p>Effective implementation of countermeasure against forest fire in regional and provincial level.</p> |      |     |     |     |     |                    |        |         |

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Attachment - 2 Plan of Operation (PO)

(4/8)

| Activities  | Target  | Year |     |     |     |     | Responsible person   | Inputs | Remarks |
|---|---|------|-----|-----|-----|-----|--|--------|---------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |  |        |         |
| <b>LOCAL LEVEL</b>  |   |      |     |     |     |     |  |        |         |
| 4-1 Support public relations for forest fire prevention   |   |      |     |     |     |     |  |        |         |
| 4-1-a Survey, make trials and develop forest fire prevention techniques   | Forest fire prevention technologies are established through field trials.   |      |     |     |     |     | Mr. Danang P. Mardijono<br>Ir. Erwin Effendi<br>Ir. Syaharuddin<br>Ir. Hana Sulana<br>Mr. Oman<br>Suparman |        |         |
| 1) Review existing techniques   |   |      |     |     |     |     |  |        |         |
| 2) Select and develop proper techniques through field trial   |   |      |     |     |     |     |  |        |         |
| 3) Make teaching manuals for local staff / leaders  |   |      |     |     |     |     |  |        |         |
| 4-1-b Develop the system of public relations, extension, and education  | Extension system including education and public relations are established, and its manuals for future dissemination are also developed. |      |     |     |     |     | Mr. Danang P. Mardijono<br>Ir. Erwin Effendi<br>Ir. Syaharuddin<br>Ir. Hana Sulana<br>Mr. Oman<br>Suparman |        |         |
| 1) Proposed extension system at the whole country level, including subjects, methods and organizational skills of extension |   |      |     |     |     |     |  |        |         |
| 2) Proposed extension methods at project sites through stimulation of SATLAK  |   |      |     |     |     |     |  |        |         |
| 3) Development extension material   |   |      |     |     |     |     |  |        |         |
| 4) Development extension systems through field trial at project sites   |   |      |     |     |     |     |  |        |         |
| 5) Conceptualize manuals on extension activities out of project experience for local staff                                  |   |      |     |     |     |     |  |        |         |

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Attachment - 2 Plan of Operation (PO)

(5/8)

| Activities   | Target  | Year |     |     |     |     | Responsible person | Inputs | Remarks |
|--|---|------|-----|-----|-----|-----|--------------------|--------|---------|
|  |   | 1st  | 2nd | 3rd | 4th | 5th |                    |        |         |
| <p>4-2 Support the forest fire initial suppression system</p> <p>4-2-a Build up institutional capacities (This item also covers warning activities)</p> <ol style="list-style-type: none"> <li>1) Conduct surveys of geographical information for suppression at project sites</li> <li>2) Make plans for suppression at project sites, including patrolling, warning and suppression activities</li> <li>3) Develop suppression systems and proper techniques through field trial at project sites</li> <li>4) Arrange suppression tools</li> <li>5) Conceptualize manuals on suppression activities out of project experience, including suppression training for local staff / leaders</li> </ol> | <p>Initial suppression units in local level are strengthened in terms of its institutional aspects.</p>                               |      |     |     |     |     |                    |        |         |
| <p>4-2-b Conduct training of initial suppression techniques</p> <ol style="list-style-type: none"> <li>1) Conduct fire training for staff</li> <li>2) Organize suppression teams among communities and hold fire drills</li> <li>3) Make teaching manuals and training material on fire training for local staff / leaders</li> </ol>  | <p>Initial suppression techniques are developed, and teaching manuals and training materials are developed for further extension.</p> |      |     |     |     |     |                    |        |         |

Mr. Danang P. Mardijono  
 Ir. Erwin Effendi  
 Ir. Syaharuddin  
 Ir. Hana Suhana  
 Mr. Oman Suparman

Mr. Danang P. Mardijono  
 Ir. Erwin Effendi  
 Ir. Syaharuddin  
 Ir. Hana Suhana  
 Mr. Oman Suparman

Attachment - 2 Plan of Operation (PO)

(6/8)

| Activities   | Target   | Year |     |     |     |     | Responsible person | Inputs | Remarks |
|--|--|------|-----|-----|-----|-----|--------------------|--------|---------|
|  |  | 1st  | 2nd | 3rd | 4th | 5th |                    |        |         |
| <p>5-1 Research and analyze socio-economic aspects including the culture of local residents</p> <p>5-1-a Analyze socio-economic conditions of participating communities through base line survey / basic diagnostic surveys</p> <p>1) Introduce survey methodologies to counterparts</p> <p>2) Help counterparts understand local communities' conditions for participatory planning including identification of target groups</p> <p>3) Improve community consultation skills</p> | <p>Understandings of socio-economic characteristics of target communities are improved for formulation of participatory forest fire prevention programs.</p> |      |     |     |     |     |                    |        |         |
| <p>5-1-b Comprehend participating communities awareness of forest fires through monitoring and evaluation</p> <p>1) Introduce participatory monitoring and evaluation methods to counterparts and communities</p> <p>2) Help counterparts and communities assess levels of people's awareness of forest fires</p>  | <p>Participatory forest fire prevention programs are elaborated in accordance with levels of participating communities' awareness of forest fires</p>        |      |     |     |     |     |                    |        |         |

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Attachment - 2 Plan of Operation (PO)

(7/8)

| Activities  | Target   | Year |     |     |     |     | Responsible person  | Inputs | Remarks |
|---|--|------|-----|-----|-----|-----|---|--------|---------|
|   |  | 1st  | 2nd | 3rd | 4th | 5th |   |        |         |
| 5-2 Research, analyze and make trials of forest management technologies which are effective for forest fire prevention  |  |      |     |     |     |     |   |        |         |
| 5-2.a Analyze information on forest management technologies for fire prevention<br>1) Make analysis of existing tree plantation models effective for forest fire prevention<br>2) Encourage communities to gain ideas useful for forest fire prevention   | Existing forest management technologies are appraised for fire prevention including green belt development.                                  |      |     |     |     |     | Mr. Sumantri<br>Mr. Atang Setiawan<br>Mr. Kuspriyadi<br>Suristio<br>Mr. Madari<br>Mr. Hapiz<br>Mr. Suraiman                   |        |         |
| 5-2.b Create technological models for forest fire prevention<br>1) Introduce forest management models elaborated to counterparts and communities, including species selection, crop plantation design, and tree growing technologies<br>2) Facilitate farmers' selection of appropriate models by their past experience and knowledge gained from the project | Appropriate technological components are completed for forest fire prevention linking with green belt development based on analysis results. |      |     |     |     |     | Mr. Sumantri<br>Mr. Atang Setiawan<br>Mr. Kuspriyadi<br>Suristio<br>Mr. Madari<br>Mr. Hapiz<br>Mr. Suraiman                   |        |         |
| 5-2.c Make trials of forest management models proposed <1<br>1) Introduce appropriate methods to counterparts and communities for preparation of field demonstration sites<br>2) Help counterparts and communities examine forest management technologies proposed through field trial  | The proposed technological models are fully tried and modified for effective forest fire prevention.   |      |     |     |     |     | Mr. Sumantri<br>Mr. Atang Setiawan<br>Mr. Kuspriyadi<br>Suristio<br>Mr. Madari<br>Mr. Hapiz<br>Mr. Suraiman<br>Mr. P. Harahap |        |         |

Remarks : <1 Activities are carried out only in Jambi province.

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Attachment - 2 Plan of Operation (PO)

(8/8)

| Activities   | Target  | Year |     |     |     |     | Responsible person  | Inputs | Remarks |
|--|---|------|-----|-----|-----|-----|---|--------|---------|
|  |   | 1st  | 2nd | 3rd | 4th | 5th |   |        |         |
| 5-3 Suggest participatory methods of forest fire prevention applying the forest management technologies                    |   |      |     |     |     |     |   |        |         |
| 5-3-a Develop participatory methods for fire prevention <1   | Mechanisms of community participation are finalized in forest fire prevention programs by community consultation and institutional building |      |     |     |     |     | Mr. Sumantri<br>Mr. Atang Setiawan<br>Mr. Kuspriyati<br>Suristio<br>Mr. Madari<br>Mr. Hapiz<br>Mr. Suraiman<br>Mr. P. Harahap |        |         |
| 1) Introduce participatory forest fire prevention models to counterparts and communities                                   |   |      |     |     |     |     |   |        |         |
| 2) Organize community groups based on survey findings  |   |      |     |     |     |     |   |        |         |
| 3) Help community groups select models suitable for field conditions together with counterparts                            |   |      |     |     |     |     |   |        |         |
| 5-3-b Apply participatory methods for fire prevention <1   | Community-based forest fire prevention is fully implemented with authorized forest management technologies and community empowerment.       |      |     |     |     |     | Mr. Sumantri<br>Mr. Atang Setiawan<br>Mr. Kuspriyati<br>Suristio<br>Mr. Madari<br>Mr. Hapiz<br>Mr. Suraiman<br>Mr. P. Harahap |        |         |
| 1) Encourage communities to implement forest fire prevention models selected   |   |      |     |     |     |     |   |        |         |
| 2) Introduce participatory methods to communities and counterparts for joint monitoring and evaluation of field activities |   |      |     |     |     |     |   |        |         |
| 3) Apply participatory monitoring and evaluation of field activities with communities and counterparts                     |   |      |     |     |     |     |   |        |         |
| 4) Develop institutional mechanisms sustaining the participatory forest fire prevention programs                           |   |      |     |     |     |     |   |        |         |
| 5) Develop technical guidelines for community-based forest fire prevention out of project experience                       |   |      |     |     |     |     |   |        |         |

Remarks : <1 Activities are carried out only in Jambi province.



Attachment - 3 Achievement Chart for the Activities

(1/8)

| Activities   | Target   | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|--|--|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|  |  | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <b>CENTRAL LEVEL</b>   |  |      |     |     |     |     |          |                           |                              |
| <b>1 Develop a forest fire monitoring technique using satellite information.</b>   |  |      |     |     |     |     |          |                           |                              |
| <b>1-a Improve methods of early detection and observation of forest fire by using NOAA/GMS images</b>                            | NOAA hot spot detection and Himawari haze monitoring on Sumatra and Kalimantan are continuously operated.                              |      |     |     |     |     |          |                           |                              |
| 1) Detect hot spots by using NOAA  |  |      |     |     |     |     |          |                           |                              |
| 2) Detect smokes by GMS  |  |      |     |     |     |     |          |                           |                              |
| 3) Develop base maps   |  |      |     |     |     |     |          |                           |                              |
| <b>2 Provide suggestions and assistance for the improvement and implementation of prompt measures against forest fire.</b>       |  |      |     |     |     |     |          |                           |                              |
| <b>2-a Develop an early warning system.</b>  |  |      |     |     |     |     |          |                           |                              |
| 1) Develop forest fire danger indices by using weather information   | Fire danger rating systems are established in Jambi and West Kalimantan.   |      |     |     |     |     |          |                           |                              |
| 2) Develop forest fire danger potential maps   |  |      |     |     |     |     |          |                           |                              |
| 3) Develop methods for predicting forest fire danger areas statistically by using hot-spot / smoke data identified by NOAA / GMS |  |      |     |     |     |     |          |                           |                              |
| 4) Develop methods for forest fire data collection and their statistical use   |  |      |     |     |     |     |          |                           |                              |
| <b>2-b Develop a technique for identification of danger areas and periods.</b>   | Fire prevention activities is operated with the fire rating systems in Jambi and West Kalimantan.                                      |      |     |     |     |     |          |                           |                              |
| 1) Predict forest fire danger periods by using weather indices   |  |      |     |     |     |     |          |                           |                              |
| 2) Identify forest fire danger areas by using the early warning methods  |  |      |     |     |     |     |          |                           |                              |
| <b>2-c Support implementation of prompt measures.</b>  | Communication systems are established, and forest fire information are transferred with the systems to/from Jambi and West Kalimantan. |      |     |     |     |     |          |                           |                              |
| 1) Strengthen communication network (Bogor - Pontianak / Jambi - Nanga Pinoh / Rantau Rasau)                                     |  |      |     |     |     |     |          |                           |                              |

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Attachment - 3 Achievement Chart for the Activities

(2/8)

| Activities   | Target  | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|--|---|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|  |   | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <p><b>CONTINUE</b></p> <p>3 Support Ministry of Forestry and Estate Crops to disseminate outputs of the project</p> <p>3-1 Strengthen public relations in order to facilitate the dissemination of the project outputs.</p> <p>3-1-a Improve the accessibility of the project outputs for related organizations/agencies.</p> <p>1) Introduce activities and output of the project in the meetings of forest fire and make the output of the project known well to other donor agencies, Indonesian government and local governmental organization.</p> <p>2) Increase chances in which output of the project is utilized by other organization/ agencies in outside of the project area.</p> <p>3-1-b Strengthen collaboration with other projects/agencies.</p> <p>1) Collect information and result of other implementing organization or supporting agencies for forest fire protection.</p> <p>2) Utilize applicable output or result of other implementing organization or supporting agencies</p> <p>3) Collaborate to implement necessary counter-measure against forest fire.</p> | <p>Most governmental and non-governmental organizations/agencies are able to access with project outputs and understand them well.</p> <p>Collaborative arrangements with other implementing agencies are realized.</p> |      |     |     |     |     |          |                           |                              |

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Attachment - 3 Achievement Chart for the Activities

(3/8)

| Activities   | Target  | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|--|---|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|  |   | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <p><b>CONTINUE</b></p> <p>3-1-e Coordinate additional supports provided by Japanese government against the forest fires.</p> <p>1) Provide information and materials for efficient utilization of additional support.</p> <p>2) Assist the emergency support provided by Japanese government.</p> <p>3-2 Support activities of Ministry of Forestry and Estate Crops to disseminate the project outputs to priority regions/provinces.<br/>( 3-2 will be conducted by all field of counterparts and experts )</p> <p>1) Provide guidance to make priority of counter-measures against forest fires based on general information, satellite information and field observation.</p> <p>2) Provide guidance to make dissemination plan of project output to priority provinces/ areas.</p> <p>3) Support counterparts/counterpart agency for implementation of the extension/training program in priority provinces.</p> <p>4) Support counterparts/counterpart agency for training on participatory fire prevention methods including reforestation in priority provinces.</p> <p>5) Support counterparts/counterpart agency for trials on participatory fire prevention models a in priority provinces.</p> | <p>Effective supports are arranged with accurate information.</p> <p>Effective implementation of countermeasure against forest fire in regional and provincial level.</p> |      |     |     |     |     |          |                           |                              |

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Attachment - 3 Achievement Chart for the Activities

(4/8)

| Activities  | Target  | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|---|---|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <b>LOCAL LEVEL</b>  |   |      |     |     |     |     |          |                           |                              |
| 4-1 Support public relations for forest fire prevention   |   |      |     |     |     |     |          |                           |                              |
| 4-1-a Survey, make trials and develop forest fire prevention techniques   | Forest fire prevention technologies are established through field trials.   |      |     |     |     |     |          |                           |                              |
| 1) Review existing techniques   |   |      |     |     |     |     |          |                           |                              |
| 2) Select and develop proper techniques through field trial   |   |      |     |     |     |     |          |                           |                              |
| 3) Make teaching manuals for local staff / leaders  |   |      |     |     |     |     |          |                           |                              |
| 4-1-b Develop the system of public relations, extension, and education  | Extension system including education and public relations are established, and its manuals for future dissemination are also developed. |      |     |     |     |     |          |                           |                              |
| 1) Proposed extension system at the whole country level, including subjects, methods and organizational skills of extension |   |      |     |     |     |     |          |                           |                              |
| 2) Proposed extension methods at project sites through stimulation of SATLAK  |   |      |     |     |     |     |          |                           |                              |
| 3) Development extension material   |   |      |     |     |     |     |          |                           |                              |
| 4) Development extension systems through field trial at project sites   |   |      |     |     |     |     |          |                           |                              |
| 5) Conceptualize manuals on extension activities out of project experience for local staff                                  |   |      |     |     |     |     |          |                           |                              |

Attachment - 3 Achievement Chart for the Activities

(5/8)

| Activities   | Target   | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|--|--|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|  |  | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| 4-2 Support the forest fire initial suppression system   |  |      |     |     |     |     |          |                           |                              |
| 4-2-a Build up institutional capacities (This item also covers warning activities)   | Initial suppression units in local level are strengthened in terms of its institutional aspects.                               |      |     |     |     |     |          |                           |                              |
| 1) Conduct surveys of geographical information for suppression at project sites  |  |      |     |     |     |     |          |                           |                              |
| 2) Make plans for suppression at project sites, including patrolling, warning and suppression activities                               |  |      |     |     |     |     |          |                           |                              |
| 3) Develop suppression systems and proper techniques through field trial at project sites  |  |      |     |     |     |     |          |                           |                              |
| 4) Arrange suppression tools   |  |      |     |     |     |     |          |                           |                              |
| 5) Conceptualize manuals on suppression activities out of project experience, including suppression training for local staff / leaders |  |      |     |     |     |     |          |                           |                              |
| 4-2-b Conduct training of initial suppression techniques   | Initial suppression techniques are developed, and teaching manuals and training materials are developed for further extension. |      |     |     |     |     |          |                           |                              |
| 1) Conduct fire training for staff   |  |      |     |     |     |     |          |                           |                              |
| 2) Organize suppression teams among communities and hold fire drills   |  |      |     |     |     |     |          |                           |                              |
| 3) Make teaching manuals and training material on fire training for local staff / leaders  |  |      |     |     |     |     |          |                           |                              |

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Attachment - 3 Achievement Chart for the Activities

(6/8)

| Activities  | Target  | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|---|---|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <p>5-1 Research and analyze socio-economic aspects including the culture of local residents</p> <p>5-1-a Analyze socio-economic conditions of participating communities through base line survey / basic diagnostic surveys</p> <p>1) Introduce survey methodologies to counterparts</p> <p>2) Help counterparts understand local communities' conditions for participatory planning including identification of target groups</p> <p>3) Improve community consultation skills</p> <p>5-1-b Comprehend participating communities' awareness of forest fires through monitoring and evaluation</p> <p>1) Introduce participatory monitoring and evaluation methods to counterparts and communities</p> <p>2) Help counterparts and communities assess levels of people's awareness of forest fires</p> | <p>Understandings of socio-economic characteristics of target communities are improved for formulation of participatory forest fire prevention programs</p> |      |     |     |     |     |          |                           |                              |

Attachment - 3 Achievement Chart for the Activities

(7/8)

| Activities   | Target   | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|--|--|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|  |  | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <p>5-2 Research, analyze and make trials of forest management technologies which are effective for forest fire prevention</p> <p>5-2.a Analyze information on forest management technologies for fire prevention</p> <p>1) Make analysis of existing tree plantation models effective for forest fire prevention</p> <p>2) Encourage communities to gain ideas useful for forest fire prevention</p> <p>5-2.b Create technological models for forest fire prevention</p> <p>1) Introduce forest management models elaborated to counterparts and communities, including species selection, crop plantation design, and tree growing technologies</p> <p>2) Facilitate farmers' selection of appropriate models by their past experience and knowledge gained from the project</p> <p>5-2.c Make trials of forest management models proposed &lt;1</p> <p>1) Introduce appropriate methods to counterparts and communities for preparation of field demonstration sites</p> <p>2) Help counterparts and communities examine forest management technologies proposed through field trial</p> | <p>Existing forest management technologies are appraised for fire prevention including green belt development.</p> <p>Appropriate technological components are completed for forest fire prevention linking with green belt development based on analysis results.</p> <p>The proposed technological models are fully tried and modified for effective forest fire prevention.</p> |      |     |     |     |     |          |                           |                              |

Remarks : <1 Activities are carried out only in Jambi province.

Attachment - 3 Achievement Chart for the Activities

(8/8)

| Activities  | Target  | Year |     |     |     |     | Progress | Distinguished Achievement | Problems and Countermeasures |
|---|---|------|-----|-----|-----|-----|----------|---------------------------|------------------------------|
|   |   | 1st  | 2nd | 3rd | 4th | 5th |          |                           |                              |
| <p>5-3 Suggest participatory methods of forest fire prevention applying the forest management technologies</p> <p>5-3-a Develop participatory methods for fire prevention &lt;1</p> <p>1) Introduce participatory forest fire prevention models to counterparts and communities</p> <p>2) Organize community groups based on survey findings</p> <p>3) Help community groups select models suitable for field conditions together with counterparts</p>   | <p>Mechanisms of community participation are finalized in forest fire prevention programs by community consultation and institutional building.</p> |      |     |     |     |     |          |                           |                              |
| <p>5-3-b Apply participatory methods for fire prevention &lt;1</p> <p>1) Encourage communities to implement forest fire prevention models selected</p> <p>2) Introduce participatory methods to communities and counterparts for joint monitoring and evaluation of field activities</p> <p>3) Apply participatory monitoring and evaluation of field activities with communities and counterparts</p> <p>4) Develop institutional mechanisms sustaining the participatory forest fire prevention programs</p> <p>5) Develop technical guidelines for community-based forest fire prevention out of project experience.</p> | <p>Community-based forest fire prevention is fully implemented with authorized forest management technologies and community empowerment.</p>        |      |     |     |     |     |          |                           |                              |

Remarks : <1. Activities are carried out only in Jambi province.

Responsible persons:

MOFC: Mr. Sumantri (counterpart)

Regional MOFC Office: Mr. Atang Setiawan (counterpart)

Berbak National Park Center: Mr. Kuspriyadi Sursitoyo (counterpart), Mr. Madari, Mr. Hapiz, Mr. Suratman



## Attachment 4 Evaluation Criteria

### 1. Accomplishment of the Project

The achievement level of the project activities in terms of inputs, activities, outputs and project purpose, as the accomplishment of the Project, is assessed in comparison with the original plan such as R/D, TSI, PDM and PO.

- (1) Inputs
  - Accomplishment of the inputs from Japanese side in comparison with the plan
  - Accomplishment of the inputs from Indonesian side in comparison with the plan
- (2) Activities
  - Progress of the activities planned on the Plan of Operation
  - Degree of differences between the plan and actual condition
  - Reasons and constraints for the slipping and postponement
- (3) Outputs
  - Achievement level of the outputs planned on the PDM
- (4) Project purpose
  - Achievement level of the project purpose planned on the PDM

### 2. Evaluation Criteria

#### 2.1 Effectiveness

Effectiveness is assessed by analyzing the extent to which the outputs and purpose of the Project have been achieved or/and can be expected to be achieved at the time of evaluation. The evaluation questions to be checked are considered as follows :

##### [Project Purpose]

- To what extent has the project purpose been achieved in comparison with the achievement of the outputs ?
- What factors can be considered for delaying or obstructing the realization of the project purpose ?
- When will the project purpose be attained ?

##### [Outputs]

- To what extent has the outputs been achieved ?
- How much have the activities contributed to the achievement of the outputs ?
- Have the research activities been proceeded on schedule of the plan ?
- Are there any outputs and activities have been changed during the Project ?

##### [Important assumption]

- How did the recent economic crisis influence the research works or outputs ?
- How did the extreme climatic changes influence the outputs ?

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## 2.2 Efficiency

Efficiency of the project implementation is assessed by analyzing the productivity of the implementation process. Practically, it is to evaluate the relationship between outputs and inputs in terms of timing, quality and quantity, and to reconsider availability of alternatives strategy to produce the output more efficiently. The evaluation questions to be checked are considered as follows :

### [Accomplishment of outputs]

- To what extent has the outputs been achieved by the time of evaluation ?

### [Timing of input]

- Has the inputs been delivered on schedule ?
- Is the timing of the inputs (Japanese side : dispatch of experts, provision of equipment, C/P training, Indonesian side : provision of land and facilities, participation of C/P, disbursement of local cost) assumed to have been appropriate in comparison with the outputs obtained ?

### [Content of input]

- Are the quality (member of experts, curriculum of training course, etc.) and quantity (amount of budget, number of experts, equipment provided, etc.) of the inputs assumed to have been appropriate in comparison with the output obtained ?

### [Relations between outputs and inputs]

- Have the outputs been attained on the schedule ?
- Are there any differences between the original plan and the research proceeding ?
- Is the equipment efficiently working ?
- Does C/Ps have an enough technologies developed through the Project ?
- What factors can be considered to delay or obstruct the realization of the outputs ?

## 2.3 Impact

Impact of the project activities will be identified by focusing mainly on positive and negative direct impact of the Project. The realization of the overall goal of the Project is also one of the positive direct impacts. The evaluation questions to be checked are considered as follows :

- Have the research results (project purpose) contributed to the realization of the overall goal ?
- Are any impact from social, economical, institutional and environmental aspects predicted by the continuation of the Project ?
- What are the causes for the impacts which will be occurred ?

## 2.4 Relevance

Relevance is clarified by examining whether the outputs, project purpose and overall goal are still in keeping with the priority needs and concerns of the Indonesian Government and the local villagers at the time of evaluation. In the same time, the rationale of the Project, especially the relationships between each item in the narrative summary, is also reviewed on the PDM. The evaluation questions to be checked are considered as follows :

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[Overall Goal]

- Is the overall goal consistent with the Governmental policy such as "National Development Plan" ?
- Is the overall goal consistent with needs for beneficiaries ?

[Project Purpose]

- Does the project purpose contribute to achievement of the overall goal ?
- Is the project purpose consistent with the action plan of PHPA ?

[Outputs, Inputs]

- Are the outputs, activities as well as inputs adequate for achievement of the project purpose ?

## 2.5 Sustainability

Sustainability of the Project is clarified by examining whether the project activities and benefits are likely to continue after the assistance is completed. In fact, it can be forecasted by examining the institutional and management capacity, financial condition, technical ability, ownership of the implementing organization, etc. The evaluation questions to be checked are considered as follows :

[Overall goal and project purpose]

- Will the overall goal and project purpose be consistent with the governmental policy and be supported by the agencies concerned ?

[Institutional aspect]

- Is the monitoring and extension activities of PHPA expected to be continuously supported by the Ministry of Forest, other agencies concerned, etc.

[Financial aspect]

- Have the implementing organizations secured necessary financial and human resources for continuing the activities ?
- Can the enough budget for the operation and management be kept continuously in future ?

[Technical aspect]

- Will the inputs of the Project such as facilities, equipment, manpower, transferred technology, etc. been fully utilized after the Project ?
- Have the C/Ps fully mastered the developed technologies ?
- Have the Project raised the interest of community members in terms of the fields of forest fire prevention and forest management ?

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