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# EXECUTIVE SUMMARY

## Synthesis of the Ex-post Evaluation of the Projects

## PP-A/56-340-1:
## Capacity Building on Forest and Land Fire Management in Indonesia

## PP-A/56-340-2:
## Forest Fire Prevention and Response in Tropical Forests and Forest Plantations in Peru

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**November 2024**

**Abbreviations**

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| FORIG | Forestry Research Institute of Ghana |
| GFMC | Global Fire Monitoring Center |
| GWFN | Global Wildland Fire Network |
| IFM | Integrated Fire Management |
| ITTC | International Tropical Timber Council |
| ITTO | International Tropical Timber Organization |
| IUCN | The World Conservation Union |
| IWPM | International Wildfire Preparedness Mechanism |
| PEDRR | Partnership for Environment and Disaster Risk Reduction |
| SFM | Sustainable Forest Management |
| SPPI | Science-Policy-Practitioners Interface |
| UNDRR | United Nations Office for Disaster Risk Reduction |
| UNFF | United Nations Forum on Forests |
| UNGA | United Nations General Assembly |
| UNISDR | United Nations International Strategy for Disaster Reduction |
| UNEP | United Nations Environment Programme |

# Synthesis of the Ex-Post Evaluation of Indonesia and Peru Forest Fire Projects and Recommendations for ITTO Future Policy addressing Integrated Fire Management in Tropical Forests and Surrounding Landscapes

## 1. Introduction

### 1.1 Project Background and Objectives

The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation and assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects.

ITTO is a core member of the Wildland Fire Advisory Group (WFAG), which was established under the United Nations International Strategy for Disaster Reduction (UNISDR), and is collaborating with the Global Wildland Fire Network (GWFN) and the Global Fire Monitoring Center (GFMC). As an UN-related cooperating institution addressing Integrated Fire Management (IFM), regionally focusing on tropical forests and surrounding landscapes, ITTO is assisting Member Producer Countries to develop governance and institutional capacities in IFM, including involvement of civil society, by promoting efficient techniques and good practices regarding the prevention and management of fire in the tropics.

Two ITTO-sponsored projects have been the subject of an in-depth Ex-post Evaluation, as follows:

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| **PP-A/56-340-1** | **Capacity Building on Forest and Land Fire Management in Indonesia** |
| **PP-A/56-340-2** | **Forest Fire Prevention and Response in Tropical Forests and Forest Plantations in Peru** |

Details of the achievements and lessons of the two projects are presented in Annexes 1 and 2. The ex-post evaluations of the projects are summarized in Section 2. Both projects have made significant contributions to fire prevention and management in Indonesia and Peru. Technical information and knowledge, as well as lessons learned from the above two successfully completed projects, funded through the emergency funds of the Government of Japan, are vital for ITTO forest fire policy and project work.

### 1.2 Purpose and Scope of Evaluation

#### 1.2.1 Purpose of Evaluation

The primary purpose of the evaluation of the Indonesia and Peru forest fire projects is to point out the successful and – if applicable – unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of sustainable forest management, and to draw lessons that can be used to improve similar projects in the future and provide policy recommendations for promoting integrated fire management in the tropics. The policy recommendations include integrated fire management in the tropics. The evaluation should also refer to the appropriate recommendations in the report on the Meta-Evaluation of previously evaluated ITTO projects [ITTC-JC(XLV/2)].

In addition, this evaluation is also to assess the application of the ITTO Guidelines on Fire Management in Tropical Forests (PS-6) in promoting integrated fire management in the tropics, through a review of the outcomes, achievements and lessons learnt of the Indonesia and Peru forest fire projects, with a view towards producing – inter alia – the following:

1. An ex-post evaluation report highlighting the assessment of the Indonesia and Peru fire projects (PP-A/56-340-1 and PP-A/56-340-2) in light of sectoral policies, development priorities and sustainable forest management; results and impacts of the two projects; and the effectiveness of dissemination of project results:

2. A Technical Report compiling the best practices and lessons learnt on the prevention and management of forest fires stemming from the Indonesia and Peru projects, as well as including policy recommendations for future ITTO work on forest fire management, including the application

of ITTO Guidelines on Fire Management in Tropical Forests in promoting integrated fire management in the tropics.

Reference will be made to the Synthesis of the Assessment of the ITTO Completed Projects and the Use of the ITTO Guidelines on Fire Management as a Thematic Group on Forest Fires (CRF(XLIX)/5b).

### 1.2.2 Scope of Evaluation

a) Analyze and assess for the Indonesia and Peru forest fire projects

1. The overall role and contribution of the two projects in light of sectoral policies, development programs, priorities and requirements to promoting the integrated fire management framework in order to support sustainable forest management in Indonesia and Peru.
2. The status of forest fires within the projects' area of influence, the effectiveness of the projects' implementation and their effectiveness in promoting integrated fire management policies and practices.
3. The contributions of the specific studies in various forest fire prevention and management activities prepared by the projects as regards the achievement of establishing demonstration sites and organizing training courses
4. The results and impacts of activities conducted by the projects and their contribution to the overall capacity of target groups in integrated fire management.
5. The effectiveness of dissemination of project results.
6. The overall post-project situation in the project's area of influence.
7. The unexpected effects and impacts, either harmful or beneficial, and the reasons for their occurrences.
8. The cost efficiency in the implementation of the projects, including the technical, financial and managerial aspects.
9. Follow-up actions in order to enhance uptake of project results.
10. The projects' relative success or failure, including a summary of the key lessons learnt; and the identification of any issues or problems that should be taken into account in designing and implementing similar projects in the future.

b) Provide a synthesis to

1. Assess the overall role and meaningful contribution of the projects in achieving integrated fire management in Indonesia and Peru, taking into account ITTO's objectives and Strategic Action Plan 2022-2026
2. Evaluate the overall impact on and relevance of the projects for the Executing Agency, the forest industry and conservation sector and local communities concerned
3. Evaluate the overall attainment of the objectives and assess the overall effectiveness of the projects
4. Evaluate the overall appropriateness of the costs and cost structure and use of resources within the projects

c) Make recommendations on

1. The needs for similar projects in the future
2. The objectives of such future projects
3. Innovative approaches/designs for projects aiming at integrated fire management improvement in promoting Sustainable Forest Management
4. Appropriate target groups, e.g., countries, government, organizations, forestry sector, local communities, etc.
5. The organizational arrangements of similar projects
6. Follow-up and evaluation practices
7. Supplemental, alternative activities, processes, procedures, and/or follow-up programs in the field of integrated fire management and sustainable forest management, if appropriate
8. Elements to improve the ITTO *Guidelines on Fire Management in Tropical Forests* integrating the most recent findings on the prevention and management of fire in tropical forest landscapes, while taking into consideration the recent developments related to climate change mitigation and adaptation, biodiversity conservation in tropical forests, tropical forest landscape degradation and poverty alleviation associated to sustainable livelihood for local communities, including women and inclusion of marginal and otherwise disadvantaged people, in tropical rural areas

### 1.3 Implementation Approach and Budget

#### 1.3.1 Composition of the evaluation team

For the achievement of the abovementioned Purpose, Outputs and Scope, the proposed consultancy work was carried out by a team of consultants led by an international consultant with global expertise and knowledge on fire issues in tropical forest landscapes. Two national consultants from Indonesia and Peru supported the lead international consultant.

#### 1.3.2 Activities and report of the team

Inter-alia, the work required in this evaluation consisted of:

1. Desk review of documents and materials provided by ITTO.
2. Online ex-post evaluation with key stakeholders in Indonesia and Peru. Two national consultants will conduct key field visits to the project's area of influence in order to review field implementation and to evaluate the project results and impacts and should include discussions with project stakeholders and target beneficiaries.
3. Preparation of an ex-post evaluation report for the two projects, PP-A/56-340-1 and PP-A/56-340-2, in English, in accordance with the scope of work, and format and the checklist contained in the ITTO Manual for Project Monitoring, Reviewing, Reporting and Evaluation (Third Edition). The ex-post evaluation report should contain "Country Management Response to ITTO Ex-Post Evaluation" in accordance with the standard format.
4. Preparation of a Policy Report compiling the best practices and lessons learnt on the prevention and management of forest fires stemming from the completed projects as well as including policy recommendations for future ITTO work on forest fires.

## 2. Outcomes of the Ex-post Evaluations – Emphasis on Recommendations

The ex-post evaluation reports of the two projects provide details of findings, lessons learned, conclusions and recommendations. In the following, the recommendations of the project evaluations, which were reviewed and responded by the Executing Agencies, are summarized as follows:

### 2.1 Indonesia

**Needs for and objectives of similar projects in the future: Improvement of capacities in integrated fire management and sustainable forest management**

The project provided a wide range of insights and new experiences fire management, which should be continued as inspiration and innovation as it was observed that awareness and performance of the stakeholders involved obviously improved. The parties involved requested that this activity should be scaled-up to other locations. Training and provision of appropriate equipment and improvement of firefighting methods are considered essential. However, future projects should focus on concepts of wildfire prevention and the replacement of fire use in land cultivation by alternative methods.

**Target groups and organizational arrangements of future similar projects**

In future activities, parties to be included should range from local communities, village, sub-district, district, city and province levels to the central government. Related stakeholders' engagement has been implemented in the project and will be continued in future projects. In Indonesia, the President Instruction No. 3/2020 on Forest and Land Fire Management regulates collaboration and coordination among stakeholders in addressing forest and land fire. This proves that responding to fire and its consequences on the environment and human security is a shared responsibility.

The Forest and Land Fire Brigades (*Manggala Agni*) should continue to be responsible and coordinate future activities in close cooperation with the local Fire Care Communities (*Masyarakat Peduli Api*). This needs to be observed in order to strengthen the foundation of joint responsibility in addressing forest and land fire issues at local level.

**Follow-up and evaluation practices**

Before future activities are planned and carried out, it is necessary to develop criteria and indicators for the implementation of the activities that will be used as a reference. With these criteria and indicators, it is necessary to introduce and socialize the participating partners. This needs to be done so that the activities to be carried out are more focused and clearly regulated right from the beginning. To ensure that the rules are observed, it is necessary to carry out routine and gradual evaluations, so that if improvements need to be made, there is still time for adjusting. The project has identified indicators for the outcomes of the next projects. Future projects should observe experiences of the project activities, especially with regard to the need of conveying transparency and truth of previous experiences and – most importantly – shortfalls.

**Elements to improve the ITTO *Guidelines on Fire Management in Tropical Forests***

By aiming to reduce the occurrence/frequency of forest and land fires especially in the dry season, this project is consistent with ITTO objectives and priorities as well as relevant national policies. Indonesia's national policies related to forest and land fires put priority on the reduction of burnt areas in fire prone provinces focusing on prevention activities. This target is stated in the Strategic Plan of MoEF of Indonesia 2020-2024. The implemented project complied with Principles 1, 16 and 24 of the ITTO Guidelines on Fire Management in Tropical Forests. The findings on this evaluation project could improve the ITTO Guidelines on Fire Management, which emphasize involving local community and enhancing capacity building for fire brigades (*Manggala Agni*). Based on the insight obtained from the activities that have been carried out in the project, several suggestions for improving the ITTO Guidelines of Fire Management in Tropical Forests are given, including:

- The role of the community in forest and land fire prevention activities, especially at the initial level, is very important and key for success of sustainable approaches in Sustainable Forest Management (SFM) and IFM
- Reducing greenhouse gas emissions can be achieved through land cultivation without the use of fire, especially in areas that are vulnerable to site degradation and wildfires when using fire for planting
- The need for continuous training
- Readiness of facilities and infrastructure for controlling forest and land fires
- Strengthening the cooperation of all stakeholders
- Considering and elaborating on improvement and environmentally benign methods of peatland management, especially in the context of peat fire prevention and control

## 2.2 Peru

In recent years, uncontrolled fire use and wildfires have led to a consequent increase in deforestation and the destruction and fragmentation of other forest ecosystems, resulting in a notable increase in wildfires that negatively affect ecosystem services. The recommendations of the Peru project therefore are focusing on strengthening the capacities in Integrated Fire Management of the National Forest and Wildlife Service of Peru (Servicio Nacional Forestal y de Fauna Silvestre – SERFOR). In particular, it is recommended:

**Further development of capabilities in integrated fire management**

Built on the outcomes and experiences of the project, advanced integrated fire management and forest fire prevention programs should be developed as a response to the increased use of fire in land use and forest land-use change.

**Strengthening governance in integrated fire management**

A qualified line director in charge of and specialized in Integrated Fire Management should be assigned at SERFOR who would coordinate related work of all SERFOR directorates. This new position should be authorized to coordinate with other sectoral government administrations and agencies, to develop a harmonized and cohesive cross-sectoral landscape fire management policy and implementation strategy.

**Community-based fire management**

Develop and implement community-based fire management programs actively involving local communities, especially indigenous and rural populations. This will ensure that strategies are culturally appropriate and

sustainable in integrated fire management practices, forest fire prevention, and the management of forest combustible material.

**Use of advanced remote sensing tools and early warning**

Systematic training and application of satellite monitoring systems should be continued: SERFOR's institutional capacity and improvements in the use of spaceborne information have demonstrated significant progress in forest fire management. This should include the development and validation of satellite-sensor derived statistics and early warning systems for forest fires.

**Qualified leadership in fire management projects**

Future forest fire projects should consider hiring forest engineers in all project units, which are specialized in fire management and have experience in optimizing the protection, productivity, and health of forest ecosystems. In addition, their knowledge is essential for the rehabilitation of degraded habitats and mitigation of climate change impacts.

**Equipment for wildfire suppression**

Provision of adequate equipment for wildfire suppression for the decentralized commands of the General Corps of Volunteer Firefighters of Peru (Cuerpo General de Bomberos Voluntarios del Perú – CGBVP), according to the importance of the incidence of forest fires in each region.

### 2.2 Brief summary for follow-up recommendations

Before concluding and recommending ITTO future policy addressing Integrated Fire Management in Tropical Forests and Surrounding Landscapes (cf. chapter 3), key issues identified by the ex-post evaluation include:

**Indonesia**

- Future projects should focus on concepts of wildfire prevention and the replacement of fire use in land cultivation by alternative methods.
- Parties to be included should range from local communities, village, sub-district, district, city and province levels to the central government.
- Based on the insight obtained from the activities that have been carried out in the project, several suggestions for improving the ITTO Guidelines of Fire Management in Tropical Forests are given, including:
  - The role of the community in forest and land fire prevention activities, especially at the initial level, is very important and key for success of sustainable approaches in Sustainable Forest Management (SFM) and IFM
  - Reducing greenhouse gas emissions can be achieved through land cultivation without the use of fire, especially in areas that are vulnerable to site degradation and wildfires when using fire for planting
  - Considering and elaborating on improvement and environmentally benign methods of peatland management, especially in the context of peat fire prevention and control

**Peru**

- Involvement of the General Corps of Volunteer Firefighters of Peru (Cuerpo General de Bomberos Voluntarios del Perú – CGBVP)
- In future forest fire projects, forest engineers should be hired in all project units, which are specialized in fire management and having experience in optimizing the protection, productivity, and health of forest ecosystems. In addition, their knowledge is essential for the rehabilitation of degraded habitats and mitigation of climate change impacts.
- Develop and implement community-based fire management programs actively involving local communities, especially indigenous and rural populations. This will ensure that strategies are culturally appropriate and sustainable in integrated fire management practices, forest fire prevention, and the management of forest combustible material.

## 3. Conclusions and Recommendations for ITTO Future Policy addressing Integrated Fire Management in Tropical Forests and Surrounding Landscapes

The following conclusions and suggestions consider the following aspects:

- Lessons identified by the recently accomplished projects in Indonesia and Peru and by the overall participation and role of ITTO in the international arena of fire management
- Experiences gained and the advancements made in integrated landscape fire management in the tropics and other vegetation zones
- The complexity and nexus of global environmental trends and socio-economic and political developments that are affecting landscape fire regimes and vice-versa, fire regimes affecting the environment and society.

In both projects in Indonesia and Peru, the key problems identified include, inter alia:

- the use of fire in land management
- the need to seek pragmatic and economically feasible alternatives of land cultivation without fire
- need for better professional qualification for fire management personnel
- the need for prioritizing wildfire prevention, and
- changing wildfire regimes as influenced by climate change

These challenges are prompting countries to seek continuing assistance in enhancing fire management capacities from local to national levels.

Similar challenges and demands are encountered in other tropical and non-tropical countries in which donor organizations that have provided assistance through fire management projects similar to those granted by ITTO Consumer Members.

The duration of assistance projects in fire management is usually limited to periods of up to two to three years and focuses on addressing shortcomings by immediate direct response. If donor support discontinues or leaves a time gap, the risk of losing the experiences gained in a previous project is rather high.

In the Meta Evaluation of GFMC *Synthesis of the Assessment of the ITTO Completed Projects and the Use of the ITTO Guidelines on Fire Management as a Thematic Group on Forest Fires* (2015) the following conclusions have been made:

> ***From projects to processes***
> *The evaluation of the ITTO projects and the general experience of the GFMC in handling fire management projects globally revealed that in most cases a single fire management project may not result in satisfying results concerning sustainability, efficiency and effectiveness of individual project approaches.*
>
> *An important lesson identified over the last years is that the traditional approach by international actors to tackle development issues by time- and budget-limited projects, often working with partners in governmental institutions in which a regular turnover of personnel may result in a rather weak institutional memory with regards to project heritage, may need to be replaced by an approach to support a process at medium- to long-term time scales. If traditional structures and mandates of international organizations will not allow to cater and support long-term process approaches it would be worth to seek an active involvement of dedicated (thematic) networks and institutions such as the Global Wildland Fire Network with its 14 Regional Wildland Fire Networks, investigate the utility to establish dedicated regional centers of excellence and liaise with the voluntary arrangements under the International Wildfire Preparedness Mechanism (IWPM).*
>
> ***Development of Regional Fire Management Centers***
> *In other regions of the world the establishment of "Regional Fire Management Resource Centers" has proven to be successful. Such centers serve as*
>
> - *Repository of regional / country data and scientific and technical information on wildland fire, including expertise in past projects and programmes (online and physically in the center)*
> - *Training facility for professionals and volunteers in fire management in individual countries and in collaborative arrangements at regional / multinational level*

- *Distributor of information to the actors in fire management, but also to the public, on wildfire prevention, early warning and real-time information for ongoing wildfires*
- *Facilitator of mutual support between neighboring regions in wildfire emergency situations*

*The exchange of experiences between neighboring countries through Regional Wildland Fire Networks is receiving increasing attention. Among other these networks aim to increase capacity in both the public and private sectors by sharing expertise in fire management and the development of fire management policies. At the end of 2015 three Regional Fire Management Resource Centers have been established in the Southeast Europe/Caucasus region, Eastern Europe and Central Asia and serve as repositories of data, information and knowledge, and facilitate the exchange and sharing of fire management expertise between countries.* ***The utility of such regional centers for tropical Latin America, Africa and Asia should be considered.*** *This could allow ITTO and its member states to move from sponsoring time- and efficiency-restricted project series towards supporting processes that would become sustainable and self-sufficient over time.*

In the years after 2015, the suggestion to develop such regional centers has been followed-up and focused on the tropics – resulting in the establishment of the following four centers:

- 2017: *Regional Fire Management Resource Center – South-East Asia* (RFMRC-SEA) (Bogor, Indonesia). Based at IPB University, Bogor. Sponsor: Germany through the Federal Ministry for Food and Agriculture, with support of GFMC[1]
- 2020: *Fire Management Resource Center – South America Region* (FMRC-SAR) (Gurupí, Brazil). Based at and sponsored by the Centro de Monitoramento Ambiental e Manejo do Fogo (CeMAF), University of Gurupí, with support of GFMC[2]
- 2020: *Regional Eastern Africa Fire Management Resource Center* (REA-FMRC) (Antananarivo, Madagascar). Based at and sponsored by the Laboratoire Terres Paysages et Développement (LLandDev), Université d'Antananarivo, École Supérieure des Sciences Agronomiques, Département des Eaux et Forêts, with support of GFMC[3]
- 2021-2024: *Regional Western Africa Fire Management Resource Center* (RWA-FMRC) (Kumasi, Ghana). Based at Forestry Research Institute of Ghana (FORIG), with support of GFMC and Tropenbos International[4]

The establishment of a fifth Regional Center in the tropics is currently underway – the Regional South Asia Fire Management Resource Center, which will be based in Nepal (establishment in 205, supported by Germany through the Federal Ministry for Food and Agriculture and GFMC; agreement already signed).

These centers are all based at independent academic / research institutions and addressing the theme of fire science and fire management at the Science-Policy-Practitioners Interface (SPPI).

Considering the increasing complexity and nexus between landscape fires, climate & land-use change and socio-economic developments, the Regional Centers have proven to be sustainable in terms of accumulating expertise and professional skills in addressing and supporting the SPPI. All centers are open and successfully working with multiple donors by integrating successive donor contributions and commitments into a process that is building on previous investments, i.e., bringing the multiple facets of experiences and advancements through locally and timely restricted projects to a process. The specialized centers of excellence are capable of supporting countries in designing informed national landscape fire management policies and advising in developing implementation plans.

In addition, the Regional Centers, which are working through the 14 Regional Wildland Fire Networks, are instrumental in supporting cross-boundary cooperation in landscape fire management. An example from an extratropical region is the Landscape Fire Management in the Western Balkans (LFMWB) project financed by the Swiss Agency for Development and Cooperation (SDC) and coordinated by Farmahem from Skopje, North Macedonia, with backstopping support from Helvetas Swiss Intercooperation. The first phase is designed to be implemented in the period from 01.02.2022 until 30.09.2026. The budget for this first phase is CHF 3.7 million.

[1] https://rfmrc-sea.org/
[2] https://cemaf.org/
[3] https://rfmrc-ea.org/
[4] Website under construction

The overall goal of this LFMWB is to increase resilience of Western Balkan forests and landscapes against fires benefit the people who depend on these landscapes for their livelihoods and socioeconomic development. This goal is aligned with the SDC's Framework strategic components: *Climate-resilient develop*ment and *Sustainable management of natural resources*. The Regional Fire Monitoring Center (RFMC), as a regional strategic partner in the project, with a profound expertise in LFM and extensive knowledge of the Western Balkans region, is providing thematic expertise and well-established cooperation and communication channels with national stakeholders across the WB region. RFMC is playing a key role in stimulating exchange between scientific community and policy makers of the WB region and elucidating science-based evidence to define LFM policy priorities of the countries. The project is supported by GFMC.[5]

Staff of the Regional Centers rely on the long-term leadership of academic staff, which – opposite to government institutions with rapid turnover of personnel and often lacking institutional memories – have proven to be sustainable institutions that are able to utilizing earlier investments. These investments include the integration of staff who have benefited from fellowships, academic exchanges and multinational research projects in landscape fire science and related environmental sciences, including technological developments such as the application of remote sensing and weather/climate science in fire monitoring and early warning.

With the rapidly increasing problems related to climate change, fire use and wildfires in the tropics, however, the Regional Centers are in need for further support, notably through the establishment and promotion of partnering centers of excellence at national levels.

Examples of the currently operating Regional Centers show that main advancements are made in the host countries of those centers. In case of the evaluated projects, it is evident that the *Regional Fire Management Resource Center – South-East Asia* in Bogor, Indonesia, constitutes an important partner for the Executing Agency – because of already existing partnership and trust in cooperation. The Regional Center is continuously offering training of personnel of national, sub-national agencies responsible for forestry, land management, the judiciary system and law enforcement as well as local communities and civil society organizations – a constant over of meanwhile almost a decade. The Regional Center is also playing a role in providing scientific-technical advisory support in the design of national fire and land management policies.

In conclusion, it is recommended that future assistance and investments should support establishment or strengthening of independent national and regional centers of excellence in landscape fire management. With this, the long-term goal of reaching national self-reliance, competency and capacities in fire management would be adequately supported, as it would be described in the Policy Report to be published in 2025.

[5] https://www.lfmwb.net/

## Annexes

Annex 1: Summary of the achievements of PP-A/56-340-1-Indonesia
Annex 2: Summary of the achievements of PP-A/56-340-2-Peru

**ANNEX 1**
**Summary of the achievements of PP-A/56-340-1-Indonesia**

**PP-A/56-340-1 Capacity Building on Forest and Land Fire Management in Indonesia**

Budget and Funding Sources:

| | | | | |
|---|---|---|---|---|
| Total Budget: | | | US$ | 1,131,663.16 |
| ITTO Budget: | | | US$ | 1,105,263.16 |
| Government of Japan (MoFA): | US$ | 1,105,263.16 | | |
| Government of Indonesia: | | | US$ | 26,400.00 |

| | |
|---|---|
| Implementing Agency: | Directorate of Forest and Land Fire Management (DFLFM), Directorate General of Climate change, Ministry of Environment and Forestry |
| Starting Date and Duration: | January 2021 / Planned: 12 months Actual: 18 months |
| Approved Revised Date of Project Completion: | Extension until 30 June 2022 (NOLF.21-0091) |

### I. Introduction

This BWP Activity project was funded as an activity of the Second Programme Line (PL2) entitled “Conservation of Biodiversity and Ecosystem Services” and Fourth Programme Line (PL4) entitled “Emerging Issues and Innovation" under the Programmatic Approach of the new financing architecture which is subject to a pilot phase implementation in accordance with Decision 8(LV). The Government of Japan funded this project through its emergency assistance for the effective management of forest fires in the tropics. The project agreement was duly signed in August 2020 and the project started in January 2021 under a one-year timeframe. The project was extended until the end of June 2022 due to the COVID-pandemic. Since the Project Completion Report and Audit Report for 2021 was submitted in August 2022, the project is considered for completion and closure.

### II. Project Objective

In Indonesia, uncontrolled and unmanaged burning practices have become a serious problem because these activities have in the past caused and continue to cause catastrophic fires that disrupt human health, transportation, environment, and other daily activities. These problems should be addressed with integrated measures and approaches. Since human activities have become a main factor in forest and land fire in Indonesia, effective involvement of local community is fundamental and capacity building programmes for the forest and land fire brigades is critical for the prevention and reduction of forest and land fires in the field.

The development objective of this project was to reduce the occurrence of forest and land fires through strengthening capacity building in forest and land fire management to support the sustainable forest management in Indonesia. The specific objective was to improve the prevention of forest and land fires through strengthening the management and technical capacity of stakeholders at the national level and three targeted provinces: South Sumatera, Central Kalimantan and South Kalimantan.

### III. Project Achievements and Outputs

Output 1: Best agricultural practices applied

- Completed eight technical training on zero burning practices for the local community. To address the community’s need for economic empowerment, three additional technical training courses for community economic empowerment were organized. All training sessions were packaged as integrated land preparation with no burning practices.

- Established eight demonstration plots for zero burning practices by the community. The practices did not change the basic process of agricultural practices that farmers used to apply that emphasized the use of biomass waste resulting from land clearing. In addition, three fish ponds were established to improve the income of the communities. Local stakeholders were also included in the training and demonstration plots establishment.

Output 2: Strengthened management capacity to address forest and land fires problems

- Provided four technical trainings on fire management for forest fire brigade (Manggala Agni) as initially targeted. However, considering the importance of this training, seven additional fire management training courses were organized to reach all the local fire stations in the three provinces. In addition, three basic fire management trainings were organized for the new members of Manggala Agni along with the organization of three fire mechanics trainings specifically for all sub-local fire stations in the three provinces.
- Developed a new monitoring and reporting system for fire prevention patrol (SMART Patrol Information System) in collaboration with Mathematics and Natural Science Faculty (FMIPA) IPB University. The SMART Patrol Information System was also equipped with a manual user video and manual for parameter measurement. A launching event for SMART Patrol Information System was held in July 2022 with a National Seminar on Forest and Land Fire Prevention: Policy, Social Approach, and Technological Innovation. The apps have been utilized not only in project's area, but also throughout Indonesia.
- Provided safety clothing and fire equipment to support Manggala Agni in implementing fire control. The items included safety coats, safety shoes, portable fire water pumps, motorcycles, handy talkies, and portable oxygen tubes.

Output 3: Increased forest and land fire prevention actions and strengthened cooperation among local institutions, the private sector and communities for forest fire prevention

- Considering the Covid-19 pandemic protocol on travel and gathering restrictions, instead of physical meetings, the IPB University successfully organized 7 monthly online-webinar series on fire management. In response to positive feedback from the participants of the webinars, five additional fire webinars were organized by MoEF. The fire webinars featured international fire experts and practitioners and were viewed by many participants in the region.
- Strengthened synergy and cooperation among fire stakeholders at the national, regional and site levels to improve the implementation of forest and land fire management.
- Outreach efforts have been promoted by disseminating project work through mass media, online media (including an official website), and also social networks (Facebook, Twitter, Instagram).

Implementing the project during the COVID-19 pandemic, the project team encountered significant challenges in time management and coordination with involved stakeholders to carry out all scheduled project activities. Intense communications and coordination among the Executing Agency, CCFLFM Agency in Sumatra and Kalimantan, local fire stations and Project Management Unit, including strong commitment and full support of the stakeholders, were the important element for the successful project implementation. In general, all planned activities had been fully implemented in accordance with the original project design and to some extent had addressed gender issues to facilitate their participation in fire management, but some of the deviations had also occurred in the form of upward and beyond targets.

## IV. Outcomes and Impacts

The project has been successful in strengthening management and technical capacity of stakeholders at the three targeted provinces: South Sumatera, Central Kalimantan and South Kalimantan, and national level through a series of training courses, workshops and webinars, promotion of zero burning practices and SMART Patrolling systems, as well as the provision of fire prevention and safety equipment. The key outcomes of the project include:

- Fire Care Community (*Masyarakat Peduli Api*) groups become the agent of changes in forest and land fire prevention through best agriculture practices/sustainable agricultural and silvicultural management to their neighborhoods and implementing zero burning practices.
- Improved performance of Forest and Land Fire Brigade (*Manggala Agni*) and government officials in forest and land fire management, and effective response to forest and land fires.
- Participation of all stakeholders in forest and land fire prevention is increased with improved coordination and communications on forest and land fire issues.

The knowledge and skills obtained from the project training and the equipment and systems provided will effectively provide a good supporting system for daily fire control activities in the three targeted provinces: South Sumatera, Central Kalimantan and South Kalimantan. Communities are encouraged to participate in fire prevention more actively. The integrated land preparation without burning approach has become a national policy for forest fire prevention and it will be continuously expanded.

## V. Lessons Learnt and sustainability

The lessons learned from the project identification and design through the completion of its activities can be summarized as follows:

- The project was well formulated and prepared to cope with the improvement of fire prevention through strengthening the management and technical capacity of stakeholders. The flexibility to adjust the scope and the timeframe of the activities was an important factor for successful project implementation during the Covid-19 pandemic situation.
- In terms of facilitating project implementation, good communication, understanding and support among the project stakeholders are very necessary and requires more cooperation, commitment and support. The project implementation should also be supported by a strong project management unit with key project personnel capable of handling administrative, financial and field operations.
- The complex works of fire management require synergy and collaboration from all stakeholders including Government, fire brigades, private sectors, communities, universities, NGOs, and international agencies.
- Community participation in fire prevention should be encouraged, assisted, and facilitated from time to time by the government and other stakeholders.
- Economic empowerment is required to increase the income of the communities as an incentive to participate in fire prevention programs. Agroforestry and sylvo-fishery are recommended farming systems.
- Fire brigades (Manggala Agni) should be trained periodically to maintain and improve their capacities in fire management.
- Fire prevention equipment should be revitalized over time to meet the needed quality and quantity.

The completed activities successfully delivered the defined outputs of the project. It is important to ensure sustainability of the project benefits that have been achieved. The synergy and collaboration of the stakeholders increased during the project implementation, including their resources contribution and support, becoming key elements to continue the project benefits in the framework of forest and fire management. The project's executing agency and its implementation units in the provinces have a crucial role in continuing the activities initiated and benefits delivered from the project. The regional agencies, local fire stations, and Manggala Agni will stand ready to assist and facilitate the communities in implementing integrated land preparation without burning practices.

**ANNEX 2**
**Summary of the achievements of PP-A/56-340-2-Peru**

**PP-A/56-340-2** **Forest Fire Prevention and Response in Tropical Forests and Forest Plantations in Peru**

Budget and Funding Sources:

| | | | | |
|---|---|---|---|---|
| Total Budget: | | | US$ | 1,324,088.16 |
| ITTO Budget: | | | US$ | 1,105,263.16 |
| Government of Japan (MoFA): | US$ | 1,105,263.16 | | |
| SERFOR: | | | US$ | 218,825.00 |

Implementing Agency: The National Forest and Wildlife Service (SERFOR) of Ministry of Agriculture and Irrigation, Peru

Starting Date and Duration: January 2021 / Planned: 12 months & Actual: 28 months

## I. Introduction

This project was funded as an activity of the Second Programme Line (PL2) titled “Conservation of Biodiversity and Ecosystem Services” and Fourth Programme Line (PL4) titled “Emerging Issues and Innovation" under the Programmatic Approach of the new financing architecture which is subject to a pilot phase implementation in conformity with Decision 8(LV). The project agreement was signed between ITTO and SERFOR in August 2020. This project was fully funded thanks to the generous contribution of the Government of Japan Ministry of Foreign Affairs / MOFA), and the disbursement of the first installment of ITTO funds was made in January 2021. As an acceptable version of the completion report was received in August 2022, the operation period had lasted 18 months instead of 12 initially designed by the implementing agency (SERFOR) because of the travel and meeting restrictions linked to the COVID-19 pandemic in Peru.

## II. Project Objective

The objective of this project was to contribute to the conservation of forest ecosystems and other types of wild vegetation under threat of forest fires. Its specific objective was to reduce forest fires by strengthening the capacities of national and local authorities in taking urgent actions for forest fire prevention and response. Positive effects of the project include the reduced loss of forest cover, ecosystems and natural habitats of wild flora and fauna; greater capacity of the national and local authorities and local communities in prevention and response to forest fires; reduced emissions of greenhouse gases; and increased awareness about forest fires so as to accelerate the implementation of national and regional forest fire action plans. In addition, the project supported relevant institutions with early-warning and information systems, while disseminating forest-related regulations.

## III. Project Achievements and Outputs

The BWP Activity was designed to improve the prevention and control of forest fires, with a focus on 5 departments (Cajamarca, Huánuco, Junín, Pasco and Ucayali). Based on the completion report and mid-term evaluation report, the achievements and outputs resulting from the implementation of relevant activities of this BWP Project-based Activity, can be mainly summarized as follows:

- improving coordination and cooperation between national, regional authorities and local communities in the work to prevent and respond to forest fires.
- increasing awareness of the value of forests and the importance of forest fire prevention and response, particularly among rural communities.
- strengthening the capacity of government agencies, fire brigades and local communities to prevent and respond to forest fires.
- elaborating, validating, and making available protocols on forest fire prevention and forest fire response.
- strengthening the volunteer fire brigades in the 5 departments covered by the project, through training focused on forest fire response and provision of appropriate vestments.
- involving local and/or indigenous communities in fire prevention and response networks.

- Strengthening SERFOR'S Geographical Information and Remote Sensing systems and services and enhancing and improving the overall efficiency and effectiveness of the country's forest fire monitoring system.
- A significant number of community organizations/associations contributed to or participate in the project implementation, and this has been and is important to the long-term achievement and sustainability of Output 1 (Best forestry and agroforestry management and best agricultural waste practices) and Output 4 (Knowledge management and outreach for forest fire prevention and response). On the other hand, no evidence of rehabilitation or establishment of additional community organizations was found, an outcome foreseen under Activity 1.3.1.
- Contribution to substantially strengthening SERFOR's Training and Capacitation Department, enhancing its ability to organize and conduct training and capacity building for forest fire prevention and response, in a continuous and more systematic way. To the possible extent, within the project short duration, through SERFOR's digital platform, EDUCA, training materials and courses syllabi and methodology were adapted to reach the 3 target groups - public authorities, fire brigades and rural producers - virtually and, when possible, physically.
- The training offered to fire brigades was successfully implemented, attracting many participants, with 287 people initially registered to attend the virtual and presential training events. Moreover, out of the 287 registered people, 209 attended all 4 training events conducted in this training/capacitation component.

The BWP Activity was subject to a mid-term evaluation carried out by the consultant Manoel SOBRAL FILHO, in June 2022, and the main findings are summarized in the Committee Document CRF(LVI)/4.

## IV. Outcomes and Impacts

The main outcomes and impacts, which were achieved through the implementation of relevant activities, can be summarized as follows:

- increased/enhanced the motivation and ability of selected organizations and hundreds of people to prevent and respond to forest fires; of particular note is the strengthening of the (volunteer) fire brigades, which had over 200 members trained and their capacity enhanced to respond to forest fires
- increased capacity of the SERFOR and other Peruvian state agencies to plan and implement prospective, corrective and response measures to improve their forest fire management work
- local community members reached/trained by the project's awareness-raising and capacity building activities are now agents of change of fire prevention/response attitudes, which in turn should contribute to reduce human-induced forest fire and fire damage
- The increased skills or strengthened capacity contributed to improve forest fire management, which in turn will consequently contribute to lower $CO_2$ emissions caused by forest fires and help forests maintain the provision of ecosystems services
- The training and capacity building may also lead to economic gains to local producers that adopt alternatives to fire to deal with residues, such as using waste for composting/fertilizers, as taught/promoted in the project
- SERFOR's enhanced capacity and the training tools and platforms strengthened/developed will facilitate scaling up of training/capacity building, including for the country departments not covered by the project

The duration of a 12-month project is not enough for a final judgment on the abovementioned effectiveness and impacts of the training/capacity building. An in-depth assessment of effectiveness and impact could be conducted in an ex-post evaluation, which, if deemed desirable, may be planned for some time after the completion of this BWP Activity.

## V. Lessons Learnt and sustainability

Reducing forest fire/forest loss in Peru is a daunting and ambitious objective. The project showed that this can be achieved, even with a relatively low budget and short implementation time, when the project is designed to build upon relevant active/operational national and regional government agencies and services and plan and implement activities in a participatory way, with broad-based consultation and cooperation with non-government organizations and local communities. When designing future similar projects designating government agencies to be responsible for implementation, it would be advisable to estimate and decide on required implementation time considering that less flexible and more time-consuming government regulations

often lead to delay in contracting personnel and services, as well as in the purchase of equipment/capital goods, delaying implementation of planned activities.

It is important to note that the project delivered results on key aspects that could be essential for uptake, including appropriate selection/engagement of stakeholders, implementation of communication and dissemination actions, considering language and other cultural aspects; and capacity building, including uptake-friendly online and web-based training tools/platform as well as the training for "trainers" sub-component in Ucayali. However, demonstrating the success of uptake and diffusion and their impact is difficult within the short duration of this BWP Activity (12 months), given that they will mostly take place at least some months after its completion. Future actions to improve uptake sustainability prospects could include: (1) scaling-up project activities (e.g., by incorporating project activities in the regular operations/budget of SERFOR and also by seeking external funds for an eventual second project phase), and (2) implementing additional actions designed specifically to promote uptake, whose progress should be subject to regular monitoring and evaluation.