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Informe de evaluación intermedia

PP-A/56-340-2

**PREVENCIÓN Y RESPUESTA ANTE INCENDIOS FORESTALES
EN LOS BOSQUES TROPICALES Y PLANTACIONES FORESTALES
DE LA REPÚBLICA DEL PERÚ**

**Preparado para la OIMT
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Junio 2022

LISTA DE SIGLAS Y ABREVIATURAS

ARFFS	Administración Regional Forestal y de Fauna Silvestre
ATFFS	Administración Técnica Forestal y de Fauna Silvestre
CENEPRED	Centro Nacional de Estimación, Prevención y Reducción del Riesgo de Desastres
CARE	Central Ashaninka del Río Ene
CGBVP	Cuerpo General de Bomberos Voluntarios
COEN	Centro de Operaciones de Emergencia Nacional
FDA	Fundación para el Desarrollo Agrario
FEMA	Fiscalía Especializada en Materia Ambiental
FOVIDA	Fomento de la Vida
GIS/SIG	Sistema de información geográfica
GORE	Gobierno Regional
IBI	Instituto del Bien Común
GRFFS	Gerencia Regional Forestal y de Fauna Silvestre - Ucayali
IIAP	Instituto de Investigaciones de la Amazonia Peruana
INDECI	Instituto Nacional de Defensa Civil
ITTC/CIMT	Consejo Internacional de las Maderas Tropicales
ITTO/OIMT	Organización Internacional de las Maderas Tropicales
MINAGRI	Ministerio de Agricultura y Riesgo
NCI	Naturaleza y Cultura Internacional
SERFOR	Servicio Nacional Forestal y de Fauna Silvestre
SERNANP	Servicio Nacional de Áreas Naturales Protegidas por el Estado
SENAMHI	Servicio Nacional de Meteorología e Hidrología
SINARGED	Sistema Nacional de Gestión del Riesgo de Desastres
UFMS	Unidad Funcional de Monitoreo Satelital

RESUMEN ANALÍTICO

Contexto

El Servicio Nacional Forestal y de Fauna Silvestre del Perú (SERFOR) está finalizando la ejecución de un proyecto financiado por la OIMT titulado: "Prevención y respuesta ante incendios forestales en los bosques tropicales y plantaciones forestales de la República del Perú". El proyecto tiene como objetivo contribuir a la conservación de los ecosistemas forestales del Perú y otras formaciones vegetales silvestres mejorando la prevención y el control de incendios forestales, centrándose en cinco departamentos: Cajamarca, Huánuco, Junín, Pasco y Ucayali. El proyecto se diseñó para reducir los incendios forestales y la pérdida de bosques mediante:

- la sensibilización sobre el valor de los bosques y los daños causados por los incendios forestales y el fomento/mejora de la cooperación y la coordinación entre las comunidades locales y las instituciones públicas y privadas para fortalecer la prevención y respuesta ante incendios forestales.
- la implementación de un programa de desarrollo de capacidades/formación dirigido a mejorar las acciones de prevención y respuesta ante incendios forestales para las instituciones/autoridades gubernamentales nacionales y regionales, los cuerpos de bomberos voluntarios, el sector privado y las comunidades locales e indígenas.
- el fortalecimiento de la unidad a cargo de sistemas de información geográfica y teledetección del SERFOR y su trabajo de prevención y respuesta ante los incendios forestales.
- el fomento de la gestión de conocimientos y la difusión para la prevención y respuesta ante los incendios.

Este informe presenta los resultados de una evaluación intermedia solicitada por la OIMT para evaluar el progreso realizado en la ejecución de las actividades programadas y los avances alcanzados en la consecución de los resultados, así como para identificar y agilizar la adopción de las medidas previstas para garantizar la finalización exitosa del proyecto y optimizar las perspectivas de un impacto positivo.

Avance en el proceso de ejecución

El proyecto está bien encaminado para su exitosa finalización, dado que la mayoría de las actividades previstas ya se han ejecutado o están muy cerca de completarse. La OIMT concedió una prórroga de seis meses en el período de ejecución del proyecto con el fin de compensar los retrasos imprevistos, causados principalmente por la pandemia de COVID-19, pero también por las normas y procedimientos operativos del gobierno, que exigen mucho tiempo. La utilización del total de los fondos disponibles para el proyecto sólo será posible si se contrata a una organización no gubernamental para que colabore rápidamente con la compra de bienes de capital/equipos adicionales.

La situación actual, en relación con la prevista tras la finalización del proyecto, es la siguiente:

- Más de 1.100 habitantes y representantes de instituciones públicas y privadas formados y sensibilizados (alrededor del 80% del objetivo),
- Buena coordinación entre las comunidades y las instituciones públicas y privadas y fortalecimiento de la prevención y respuesta ante incendios forestales (100% logrado),
- Reducción de las pérdidas forestales causadas por los incendios forestales: se ha producido una disminución de la superficie forestal afectada por los incendios en cuatro de los cinco departamentos cubiertos por el proyecto; si bien parte de la reducción puede atribuirse al proyecto, también se han producido menos incendios forestales (y menos pérdidas forestales) debido a la reducción de la actividad económica a raíz de la pandemia de COVID-19.

Principales conclusiones y recomendaciones

- El proyecto está bien encaminado para su exitosa finalización, a pesar de las importantes limitaciones causadas en su ejecución por la pandemia de COVID-19 y las engorrosas normas y procedimientos operativos impuestos por el gobierno, que retrasaron el suministro y/o la compra de insumos para el proyecto.

- En 2021 los cinco departamentos cubiertos por el proyecto tenían una menor superficie forestal total afectada por incendios que en 2019 (año previo al proyecto), aunque es demasiado pronto para evaluar si la situación mejoró sólo como consecuencia de las acciones del proyecto, ya que en 2021 la economía peruana (incluidos los sectores agrícola y forestal) se desaceleró debido a la pandemia de COVID-19.
- Es sumamente meritorio que el proyecto, a pesar de la pandemia de COVID-19, consiga completar su importante y ambicioso componente de capacitación y formación. Sin embargo, en su momento, sería útil realizar una encuesta y una evaluación ex-post para conocer mejor la eficacia de este importante componente, que, debido a la pandemia de COVID-19, tuvo una gran parte de sus actividades ejecutadas por vía virtual y no de forma presencial como se había previsto inicialmente en el documento del proyecto. Esta evaluación podría llevarse a cabo en el contexto más amplio de una evaluación general ex-post realizada para evaluar mejor el grado de asimilación de los resultados del proyecto así como sus beneficios e impactos, incluyendo el alcance de la contribución del proyecto a la reducción de los incendios forestales y la pérdida de bosques, tanto en los cinco departamentos directamente cubiertos por la intervención como a nivel nacional.
- Al reforzar el sistema de información geográfica de la Unidad Funcional de Monitoreo Satelital (UFMS) del SERFOR y su labor de teledetección, el proyecto mejoró significativamente la capacidad nacional para vigilar la cubierta forestal y emitir alertas sobre incendios forestales a las partes y agentes pertinentes con interés y/o responsabilidades en el ámbito de la prevención y el control de los incendios forestales. Esto, junto con los resultados del proyecto relacionados con una mayor sensibilización, formación y capacitación, así como una mejor coordinación/cooperación entre los organismos gubernamentales, ha mejorado significativamente la prevención y respuesta ante los incendios forestales, especialmente en los cinco departamentos cubiertos por el proyecto.
- El proyecto ha tenido un importante efecto catalizador, desarrollando/mejorando la capacidad de las instituciones regionales y nacionales peruanas para planificar y ejecutar proyectos de prevención/respuesta ante incendios forestales de mayor envergadura y escala, como el próximo proyecto "Mejora de los servicios de apoyo al uso sostenible de la biodiversidad para la prevención y el control de los incendios forestales" que ejecutará el GGFFS de Ucayali (con un presupuesto de 3 millones de USD) y la propuesta de proyecto "Fortalecimiento de la prevención y atención de incendios forestales intensificados por el cambio climático en el Perú" (con un presupuesto de 10 millones de USD), presentada al Fondo Verde para el Clima por el gobierno nacional.
- Se recomienda que se tomen medidas para evitar una situación posterior al proyecto en la que disminuya el apoyo y la provisión de herramientas e incentivos necesarios para seguir motivando y asegurando el compromiso y la participación de las comunidades locales y las brigadas de bomberos voluntarios en la prevención y respuesta a los incendios forestales. Esto podría hacerse proporcionando rápidamente al SERFOR los recursos financieros mínimos necesarios para prestar este apoyo de forma provisional, hasta que se disponga de medios permanentes para aplicar de forma continuada las actividades mejoradas de prevención y respuesta ante incendios forestales.
- Deben tomarse medidas para seguir prestando los servicios del proyecto en Cajamarca, Huánuco, Junín, Pasco y Ucayali de forma más permanente, así como para ampliarlos con el fin de cubrir otros departamentos peruanos. Esto puede lograrse mediante un aumento sustancial de la asignación presupuestaria regular anual del SERFOR para la prevención y la respuesta ante incendios forestales y la búsqueda/disponibilidad de asistencia financiera internacional para proyectos/programas más prolongados, como se propone/solicita en la Nota Conceptual "Fortalecimiento de la prevención y atención de incendios forestales intensificados por el cambio climático en el Perú" presentada por el Gobierno del Perú al Proceso de Aprobación Simplificado del Fondo Verde para el Clima.
- Se recomienda que, cuando se diseñen proyectos similares para su ejecución por parte de organismos gubernamentales, se preste atención a la previsión y planificación de una mayor duración de los proyectos, ya que las engorrosas y lentas normativas gubernamentales y la inconveniente alta rotación de personal, que suelen afectar a estos organismos, normalmente retrasan la entrega de los insumos de los proyectos y la ejecución de las actividades.

1. INTRODUCTION

1.1 Project background and Objectives

Following a proposal presented by the Government of Peru (GP) and with funding provided by the Government of Japan, the International Tropical Timber Organization (ITTO) financed the implementation of a project entitled Forest Fire Prevention and Response in Tropical Forests and Forest Plantations in Peru (Project PP-A/56-340-2). The project was designed to improve forest fire prevention and control, focusing on 5 departments (Cajamarca, Huanuco, Junin, Pasco and Ucayali).

The development objective of the project is to contribute to the conservation of forest ecosystems and other wild vegetation under threat of forest fires, by strengthening the capacity of the national and local authorities as well as local communities for integrated forest fire management.

The specific objective is to reduce occurrence of and damage by forest fires by improving prevention and control of forest fires by national and regional authorities and local communities. The project's approach is to improve the capacity of these parties in order to enhance their fire prevention and control activities.

The project is consistent with ITTA 2006 and is, in particular, implements actions that fit in with ITTA objectives:

- c) Contributing to sustainable development and poverty alleviation.
- n) Strengthening the capacity of members to improve forest law enforcement and governance
- r) Encouraging members to recognize the role of forest-dependent indigenous and local communities in achieving sustainable forest management and develop strategies to enhance the capacity of these communities to sustainably manage tropical timber producing forests.
- s) Identifying and addressing relevant new and emerging issues.

The project is consistent with ITTO Action Plan 2013-2018 Strategic Priorities 1,2,3 and 4. Moreover, it is also consistent with Strategic Priority 3 included in the most recent ITTO Action Plan (2022-2026): Resilience, Restoration and Conservation - Reduce tropical deforestation and forest degradation, enhance forest landscape restoration and the resilience of forest ecosystems to climate change, and conserve forest biodiversity and ecosystem services.

Finally, the project was funded as an activity of the ITTO Second Programme Line (PL2-Conservation of Biodiversity and Ecosystems Services) and Fourth Programme line (PL4-Emerging Issues and innovation), under ITTO Programmatic Approach of the new financing architecture pilot phase implementation approved under ITTC Decision 8(LV). The project implementation agreement was signed by ITTO and the Peruvian National Forest and Wildlife Service - SERFOR in August 2020 and the first installment of funds transferred to SERFOR in January 2021.

The project implements activities that meet actions recommended in the ITTO Guidelines on Fire Management in Tropical Forests, 1996, in particular, activities related to the Guidelines Recommended Action 4 (An integrated fire management program should be developed...").

1.2 Evaluation Background

The evaluation carried out was a Mid-term evaluation focusing on progress of implementation of planned activities and towards achievement of outputs and on identifying and expediting adoption of measures eventually needed to ensure successful completion of the project and optimize its positive impacts. Above all, priority was to be given to ensure a much faster delivery of project inputs and completion of remaining activities, given that for reasons beyond control of ITTO and implementing agency, the project could not be further extended, with delivery of all project inputs and expenditures required to be completed by the end of June 2022.

1.3 Scope and Approach of the Evaluation

Specifically, the purpose of the Mid-term evaluation was to:

- a) Carry out an in-depth assessment of the project, considering, inter alia, the project contribution to forest fire management goals; current status of implementation and its effectiveness; contribution of specific studies carried out; impacts and benefits of the project training/capacity building activities; other project impacts, including negative ones and reasons for their occurrence; effectiveness of

dissemination of project results and findings; implementation cost efficiency; sustainability to improve uptake of project results; and project achievements, and lessons learned that should be taken into account to successfully complete the project and help with the eventual design and implementation of similar projects.

- b) Assess and/or evaluate the project's role/contribution to the prevention of forest fires in the context of SFM in Peru and in relation to ITTO forest fire work; the project overall impact and relevance for SERFOR, forest conservation and industry sectors and local communities; project implementation effectiveness and overall attainment of project objectives; and appropriateness of cost and cost structure and use of funds in project implementation.
- c) Provide recommendations on/for the successful completion of the project; need and scope of future projects to further contribute to forest fire prevention and control as well as post-fire restoration; additional activities, processes and/or follow-up programmes in the field of prevention of forest fires; and possible components with a potential to improve the ITTO Guidelines on Fire Management in Tropical Forests.

Following a desk review of documents and materials provided by the ITTO Secretariat, a mission to Peru was undertaken between the 5th and 11th of June 2022. The mission work program included meetings in Lima for information sharing/collection and discussions with:

- The Project Director and Project Coordinator, Ing. Erasmo Otorola Acevedo and Ing. Juan Carlos Vasquez, respectively
- The Executive Director of SERFOR, Ing. Hilario Lopez Cordova
- The Director of SERFOR's Office of International Cooperation, Ing. Leoncio Jose Calderon
- The Director of SERFOR's Capacity Building Office, Blga. Sonia Gonzales Molina
- SERFOR's General Manager, Mr. German Alonso Jaimes
- The Satellite Monitoring Unit of SERFOR, monitoring experts Romina Liza and Sheila Gamarra
- Member of the Project Team in the areas of Interculturality; management; training; geographic information system; remote sensing; and communications

The mission to Peru also included a field visit to Ucayali, one of the five departments covered by the Project. In Ucayali meetings were held with:

- the local project team, including the local coordinator (Ing. Renan Shahuano) and the Geographic Information System expert (Carla Limas).
- the Head of Pucallpa's Fire Corps.
- The Ucayali General Forest and Fauna Silvestre Administration GRFFS (ing. Marcial Pezo Armas, General Manager and Ing. Jaime Rodriguez, Forestry Coordinator).
- Farmers and local Community authorities participating in a Project-sponsored workshop on composting, held in a rural area about one hour from Pucallpa.

Finally, a request was made to the Project Coordinator to, to the extent possible, make available the following information and documents to assist the mid-term evaluation:

- name and affiliation of persons that attended workshops and/or training courses and, if available, a quantitative breakdown based on stakeholder type (government, private sector, NGOs, local communities, etc)
- copies of protocols developed
- name of personnel/consultants hired and nature and duration of their contracts
- list of outreach materials produced
- list/copy of materials for dissemination of information on the value of forests
- information on workshops/training courses conducted and reports related to them (over 50 workshops/training courses were planned/specified in the project document)

2. PROJECT FACTS

2.1 Introduction

The project was funded as an activity to be implemented under the ITTO Programmatic Approach pilot phase established under ITTC Decision 8(LV). Table 1 provides information on the project budget, funding sources, duration and agreed extension.

Additional information on the project background, objectives and main problems to be addressed, as well as project rationale as stated in the Annex to the Mid-Term Evaluation Special Services Agreement are transcribed below:

Inadequate and illegal use of fire and the lack of awareness about its negative effects on the environment and human health are causing major forest fires, leading to a loss of large forest areas and disturbances of countless natural processes. In Peru, and particularly in the departments of Cajamarca, Pasco, Junin and Ucayali, this problem is aggravated in communities with an ancestral tradition of burning practices to attract rain or as a technique to clear stubble vegetation left behind by agricultural activities. This results in a high incidence of wildfires in natural forests, other wild vegetation formations and forest plantations, eventually leading to the loss of forest cover and natural wild flora and fauna habitats; damage to the physic integrity, health or property of individuals; greenhouse gas emissions; and loss of economic value of forest lands and wildlife resources fires.

The objective of this project is to contribute to the conservation of forest ecosystems and other types of wild vegetation under threat of forest fires. Its specific objective is to reduce forest fires by strengthening the capacity of national and local and 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 habitat of wild flora and fauna; greater capacity of national and local authorities and local communities in prevention and response to forest fires; reduced emissions of greenhouse gases; and increased awareness of forest fires so as to accelerate the implementation of national and regional forest fire action plans. In addition, the project will support relevant institutions with early-warning and information systems and will disseminate forest-related regulations.

Table 1 - Project Budget and Time Frame

Budget and Funding Sources	
Total Budget	US\$1,324,088.18
ITTO Budget	US\$1,105,263,16
Funding Source	
Government of Japan (MoFA)	US\$1,105,263.16
SERFOR	US\$218,825.00
Starting Date and Duration	January 2021, 12 months, with extension until end of June 2022

2.2 Project Implementation Progress

The project progress reports submitted by SERFOR to ITTO, as well as additional information on project outcomes provided by the project coordination to the evaluation, were verified and provided solid evidence of progress towards achievement of the four project outputs:

Output 1: Best forest and agroforestry management and best agricultural waste practices

- Report on workshops conducted to raise awareness on best practices for forest and agricultural waste management
- Project presentation videos
- Awareness leaflet "How Forest Fires Affect Us"(Como nos afectan los incendios forestales)
- 2023 calendar "Less Fire, More Life" ("Menos Incendios, Mas Vida)

- Folders and bags made from waste were manufactured and distributed
- Reports on 10 workshops conducted to raise community awareness on best agriculture and forest waste management practices to reduce forest fires
- Manual on Management of Agroforestry Residues, prepared by consultant Christina Faura
- A significant number of government, private sector and NGOs and local community and indigenous organizations participated in or contributed to the implementation of the project
- Report on 12 training courses on sustainable forest and agroforestry management techniques conducted for local communities
- Online capacity building platform established to strengthen forest fire prevention through dissemination of information, training and technical assistance
- Initial work with a view to reactivate or establish additional community organizations carried out
- Pruning and waste chopping equipment purchased

Output 2 : Public and private institutions effectively manage forest fire prevention and response protocols

- Five online training courses/workshops were held to enhance fire prevention and response by relevant public and private institutions. Out of 349 persons registered to participate, 185 effectively attended the two capacitation sessions held (see document "Informe de Sistematizacion del Taller de Autoridades")
- Two framework protocols - one in forest fire prevention and the other on forest fire response - were developed
- Workshops organized and held to validate the forest fire prevention and response protocols
- A web fire platform designed and operational
- Consultancy report to prepare/systematize the training for fire brigades (see report entitled "Informe de Sistematizacion del Curso Virtual de Brigadistas Forestales")
- Over 200 volunteers from local communities and Fire Fighting Brigades trained in forest fire prevention and response (see document "Informacion Sobre Cursos a Brigadistas Forestales")
- Fire fighting equipment and vestments purchased and scheduled to be delivered to fire brigades before the end of June 2022
- Five professionals hired and assigned to provide technical assistance in the five departments on non-burning alternatives and other forest fire prevention alternatives
- An expert in communication and outreach engaged for full time dissemination of information and knowledge on forest fire prevention, targeting rural communities (activity/result listed under Output 2 but also related to Output 1 and activity 1.3.1)

Output 3: Efficient Forest Fire system established

- Four experts hired to enhance/strengthen SERFOR's Geographic Information System and Remote Sensing use for forest fire prevention and response; experts on teledetection and geographic information systems were engaged
- Thousands of reports to improve/expedite forest fire prevention and response generated and made available/sent to relevant parties and stakeholders. These included reports on "scars" and "occurrences" of forest fires, daily hot spot reports, and forest fire alerts at the National Level, most of which were/are also accessible in the web platform GEOSERFOR Visor, <https://geo.serfor.gob.pe/visor/>.
- Infographics with 2020 and 2021 data on forest fire produced for the 5 departments covered by the project
- Hardware and software licenses purchased to improve/strengthen GIS and remote sensing work
- number of satellites/systems used for monitoring increased (GOES 16 and Goes 17 added)
- Reports on two subcontracts made to (i) improve the wildfire early warning system and (ii) improve the fire monitoring and evaluation system
- Workshops conducted for the 5 departments on Satellite Technology as an Essential Tool for the Prevention and Response to Forest Fires; 287 participants attended
- continuous updating of directories of persons/institutions involved in forest fire prevention
- more resources allocated for forest fire alerting work
- substantial increase and more rapid production of Forest Fire Surveillance Reports (RVIF) and Forest Fire "Scars"(RIF)
- Collection and collation of forest fire statistical data effected
- GEO SERFOR web platform updated and satellite monitoring and statistical data for the 5 departments made available to local authorities, which are now using the data to further their forest fire prevention and response work
- Overall strengthening of SERFOR's Satellite Monitoring Functional Unit (UFMS) achieved

Output 4: Knowledge management and outreach for forest fire prevention and response

- Support provided to disseminate information and assist planning and implementing activities carried out in other project components, such as training/capacity building courses/workshops and dissemination of information/knowledge on GIS and remote sensing in fire prevention/response and their uses.
- communications experts hired
- significant information and communication material produced, including videos (6, of which 2 in english or with english subtitles); and press notes; leaflets, folders, calendars, information panels and roll screens, infographics, pictograms
- Six information/guidance videos under production, on forest fire prevention (3); forest fire response (1); management of forest and agriculture residues to prevent forest fires (1); and guidance on post forest fire recommended measures (2)
- five audio spots under production, on forest fire prevention (2), immediate actions to respond to forest fire (1), actions to be taken after forest fires (2)
- Six videos produced, presenting the project's results and highlighting its benefits
- Pilot work adopting an intercultural strategy implemented in cooperation with the Ministry of Culture in 3 departments: Cajamarca, where work with NCI led to local community network for forest fire prevention and response; Ucayali, where a program to train "trainers was implemented in collaboration with the project Indigenous Forests; and Junin, where forest brigades were established in a partnership with the Central Ashaninka del Rio Ene

3. FINDINGS: ANALYSIS AND ASSESSMENT

3.1 The project's current state of implementation and its contribution to forest fire management goals

- The project is on track for successful completion, with most of the planned activities already implemented or very near completion. Extension in the project implementation duration granted by the ITTO was needed in order to make up for unforeseen time delays caused by the COVID pandemic
- The project has provided/ is providing a significant contribution to forest fire management in Peru by, inter alia:
 - improving coordination and cooperation between national, regional authorities and local communities in the work to prevent and respond to forest fires.
 - increasing awareness on the value of forests and on 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 did contribute 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
- It is too early to assess how effective the training and capacitation project component has been, given that because of the COVID pandemic a large share of the planned events had to be delivered online and through web platforms, and not in a presencial way. Online training and web training may have been difficult to implement in an effective way, particularly for local and indigenous communities because of lack of or poor internet access, and language and cultural issues which could have negatively affected the learning and capacity building process/results.

- Even though the number of participants registered to attend these non-presencial training and capacitation events often exceeded the (already) ambitious target number of persons the project planned to train/capacitate, in some cases the number of persons that effectively completed the training/capacitation program was significantly lower than expected, and at least in one case, out of the initially registered participants, only about 20% completed the training.
- There is no doubt that the project did contribute 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, presentially
- The training offered to fire brigades was successfully implemented, attracting a large number of 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 successful intervention to support fire corps and brigades was a good initial effort that needs to be followed up by additional actions to further strengthen the fire brigades and enhance their potential to appropriately respond to forest fires in an effective and timely way. A component of future actions to further strengthen the forest fire brigades could focus also on provision of forest fire fighting vestments, tools and equipment/mobility, all of which were addressed under the project, but in a rather limited way.

3.2 Contribution of specific studies carried out

Three specific studies commissioned by the project provided valuable and essential information, materials and tools which were vital for its successful implementation and achievement of its objectives:

- a study carried out to identify and document SERFOR's legal competence and procedures related to forest fires, with a view to define/select appropriate indicators and rationalize/streamline processes and procedures. The study also provided essential information/inputs for the development of the forest fire prevention and response protocols, and its final report included a list of recommendations, most of which were addressed during the project implementation by SERFOR'S Information Technology Office and UFMS
- a preparatory study undertaken to pave the way for SERFOR's UFMS to incorporate additional satellites (GOES 16 and 17) in the forest fire prevention work. The study produced a handbook and practical guides and software tools to facilitate/automate satellite detection and monitoring of hot spots and forest fires, providing a significant contribution to the achievement of project output 3 (Efficient Forest Fire System established)
- a planning/preparatory study carried out to design/implement a pedagogical proposal to organize and conduct virtual training courses and workshops targeting public and private sector, local and indigenous communities, as well as fire brigades. This ex ante study was of utmost importance for the implementation of the project's training and capacitation component, which because of the COVID pandemic had a large share of its activities implemented in a non-presencial way.

3.3 Benefits/Impact of the project training/capacity building component

This project component included an impressive series of training and capacity building events designed to improve capacity/skills of a wide range of parties with responsibilities and stakeholding on forest fire prevention and response, including government authorities/agencies, private sector and local and indigenous communities. Most of the planned training/capacity building activities, which included more than 50 workshops/training events had already been organized/conducted at the time of writing this report, with participation of more than 1,100 people. Remaining training events, to be completed by the end of June, are focusing on reduction/use of forest and agriculture waste to decrease fire risk and improve local producers capacity to prevent fires, with 340 people registered to participate.

The benefits of this sizable training and capacitation program also include:

- increasing/enhancing the motivation and ability of selected organizations and hundreds of people to prevent and respond to forest fires; of particular notice is the strengthening of the (volunteer) fire brigades, which had over 200 members trained and had their capacity enhanced to respond to forest fires
- increased capacity of the SERFOR and other Peruvian state agencies to plan and implement prospective, correctional 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/strengthened capacity contributed to improve forest fire management, which in turn will consequently contribute to lower CO2 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

As the project is nearing completion, it should be noted however that at this point it is too early to pass a final judgment on the 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 project completion (12 months after project completion suggested).

3.4 Effectiveness of dissemination of project results/findings

Dissemination of project results and findings usually scale up near the project's end and this is certainly the case in this project, which included knowledge management and dissemination for forest prevention and response as its fourth and last output. There is evidence that dissemination is and will be effective, as the project has implemented and is dutifully implementing actions to carry out the planned dissemination and communication activities (see Output 4 under Section 2.2), including by taking advantage of SERFOR's experienced Communication Department and by engaging external experts (in communication in general, in preparation of audio-visual materials, and in interculturality).

3.5 Implementation cost efficiency

The project has been efficiently using its financial resources and other inputs to achieve results. The project costs have been low, in relation to produced results and benefits. On the other hand, because of the COVID pandemic, the project inputs/services were often not provided in time and its results and impacts were not achieved within the initially planned time period.

The unexpected COVID pandemic required a major change in the project training and capacity building activities, which had to be conducted mostly through virtual means instead of presentially; this led to considerable budget savings, particularly in DSA and travel costs. While this may have led to a decrease in the training/capacity building effectiveness, savings are allowing for purchase of additional capital goods/equipment and commissioning of specific studies that will contribute to increasing uptake of project results and impact.

Cumbersome and time-consuming government regulations affecting use of project inputs, coupled with politically-motivated undesirable high rotation of personnel, both at project coordination level and SERFOR's management level, clearly demanded more - SERFOR and project coordination - expertise, time and dedication in order to achieve the project results.

SERFOR also pursued optimum project implementation efficiency by seeking cooperation with and/or participation of a large number of relevant national and local agencies and NGOs, as well as local communities and their associations. These include, inter alia:

- The Regional Forest and Wildlife Administration and Regional Technical Forest and Fauna Administration (ARFFS and ATFFS) of each of the five departments covered by the project
- Ucayali's Forest and Wildlife Regional Administration (GRFFS)
- The National Center for Estimation, Prevention and Reduction of Disaster Risks (CENEPRED)
- Regional Governments (GOREs)
- Corps of Volunteer Firefighters of Peru (CGBVP) and regional corps of each of the 5 departments covered by the project
- Peruvian Army
- National Police of Peru
- National Operations Center (COEN)
- Specialized Prosecutor for Environmental Matters (FEMA)
- Peruvian Amazon Research Institute (IIAP)
- National Civil Defense Institute (INDECI)
- National Service for State-protected Areas (SERNANP)
- National Meteorology and Hydrology Service (SENAMHI)
- National System for Disaster Risk Management (SINARGED)
- National Commission for Development and Life Without Drugs (DEVIDA)
- Ministry of Culture (MINCU)
- Agroindustrial and Services Cooperative of Bella Baja-Monzon district
- Bosques Amazonicos
- Emergencies Regional Operations Center - Ucayali
- National Institute for Agrarian Innovation (INIA)
- Nature and Culture International (NCI)
- Foundation for Agrarian Development (FDA)
- Life Fostering (FOVIDA)
- Indigenous People Development Administration - Ucayali
- Regional Environment Administration- Ucayali
- Pimental Ecological Producers Association
- Association of Agricultural Producers of Campo Verde
- Local government offices of Curimana, Nueva Pequena, Masisea, Chontabamba
- Agrarian Agency of Oxapampa
- Common Good Institute (IBC)
- Nagasu Community
- Tsachopen community
- Atahualpa Jerusalem Cooperative
- Project Indigenous Forests
- Rio Ene Central Ashaninka (CARE)
- USAID
- Cima Cordillera Azul
- Regional Conservation Area Niebla Forest
- Concessionaires Association
- Regional Conservation Area Carpish
- Regional Conservation Area Tabaconas Nanballe

3.6 Sustainability to improve uptake of project results

The project design recognized the need for wide and appropriate dissemination of results, including actions to improve sustainability prospects and uptake. In accordance with the project design/plan, a large number of dissemination/communication activities were implemented or are being implemented to promote/facilitate uptake (see list under Output 4 under Session 2.2).

In this initial assessment, it can be concluded that the project delivered on key aspects that are essential for uptake, including appropriate selection/engagement of stakeholders, implementation of communication and dissemination actions taking into account language and other cultural aspects; and capacity building, including uptake-friendly online and web-based training trainings tools/platform as well as a training for "trainers" sub-component in Ucayali. Nevertheless, demonstrating the success of uptake and diffusion and their impact at this point is difficult, given that they will mostly take place at least some months after project completion.

Future actions to improve uptake sustainability prospects could include (1) scaling-up project activities (eg. 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 monitoring and evaluation

3.7 Overall attainment of project objectives and project role/contribution to prevent forest fires in Peru

The project has successfully completed most of the activities that led to the production of its listed expected outcomes, namely:

- Manuals for sustainable management and use of forest and agriculture residues produced and local communities trained and sensitized and adopting appropriate waste management
- Fire response protocol made available and used to train personnel from local public and private institutions to respond to forest fire situations
- An early warning management and implementation manual made available and capacity of regional offices and other public institutions enhanced to coordinate and efficiently use the forest fire monitoring system
- Communication systems made available, allowing knowledge on forest regulations and impacts and consequences of forest fires to be transmitted to local communities and local authorities

Though the project document lists only the above outcomes, several other outcomes emerged from project activities, as listed/assessed under sections 2.2 and 3.1. to 3.3.

In this initial assessment of project objectives attainment, it can be concluded that the situation as far as achieving the stated intended situation after project completion (and hence its objectives) is as follows:

INTENDED SITUATION AFTER PROJECT COMPLETION	CURRENT SITUATION
960 dwellers trained and with increased awareness	70% achieved (100% will be reached with the training of 340 people scheduled for June 2022)
375 representatives of public and private institutions trained and with increased awareness	100% achieved
Sound coordination between the communities and public and private institutions and strengthened forest fire prevention and response	100% achieved
Forest loss caused by forest fire is reduced	There has been a decrease in forest area affected by fire in four of the five departments covered by the project; though part of the reduction can be credited to the project, less forest fires (and forest loss) also occurred because of the reduction in economic activity caused by the covid pandemic

4. LESSONS LEARNED

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-up on 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 taking into account that less

flexible and more time consuming government regulations often lead to delay in contracting personnel and services, as well as in purchase of equipment/capital goods, delaying implementation of planned activities.

Politically-motivated frequent changes in the project management cause unavoidable delay in project implementation as newcomers take time to familiarize with the project, project situation and project implementation rules and procedures. Though not specifically observed in this project, it should be noted that frequent politically-motivated changes often increase the risk of installing managers/project coordinators lacking project management proficiency, thus decreasing the project prospects for timely and successful completion.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

- The project is on track for successful completion, in spite of significant implementation constraints caused by the COVID pandemic and cumbersome time-consuming government-mandated operational rules and procedures that delayed arrangement and/or purchase of project inputs by the implementing agency.
- Ideally, in view of the constraints named above, the project should have been given additional implementation time beyond what was granted, and this was not done because of reasons beyond the control of ITTO and SERFOR. Nevertheless, it can be concluded that because of the tireless efforts and extreme dedication of the Project director, project coordinator and SERFOR's project team, particularly in 2021 and 2022, the project is expected to be successfully concluded by the end of June 2022.
- The use of the total funds available to the project, which would contribute to the sustainability and long term impact of some of its components, will be possible only if a non-government organization is engaged to quickly assist with the purchase of additional capital goods/equipment, as proposed by ITTO.
- In 2021 the 5 departments covered by the project had a lower total forest area affected by fires than in 2019 (pre-project year), though it is too soon to assess whether the improved situation developed only as consequence of project actions, as in 2021 the Peruvian economy (including the agriculture and forest sectors) slowed down due to the COVID Pandemic.
- It is highly commendable that the project, in spite of the COVID pandemic, is managing to complete its important and ambitious capacity building and training component. Given that because of the COVID pandemic most of the training had to be implemented through the web and on online courses, there would be merit in carrying out an ex-post survey and assessment designed to find out more about the effectiveness and usefulness of the capacity building and training tools, methods and events delivered by the project. There is evidence that a share of training and capacity building delivered online has not been as effective as expected, particularly among local community and indigenuous target groups.
- By strengthening SERFOR's UFMS geographical information system and teledetection work the project significantly enhanced the national capability to monitor forest cover and issue alerts on forest fires to relevant parties and stakeholders with interest and/or responsibilities in the area of forest fire prevention and control. This, coupled with the project outcomes related to greater awareness, training and capacitation, as well as improved coordination/cooperation between government agencies has significantly improved forest fire prevention and response in the country, particularly in the 5 departments covered by the project.
- The project has had an important "seed" effect, developing/enhancing capacity of regional and national Peruvian institutions to plan and implement larger, scaled-up and more comprehensive forest fire prevention/response projects, such as the upcoming project "Improving Supporting services for Sustainable Use of Biodiversity to Prevent and Control Forest Fires" to be implemented by Ucalyali's GGFFS (US\$ 3 million budget) and the project proposal "Strengthening the Prevention of and Attention to Forest Fires Intensified by Climate Change In Peru" (US\$ 10 million budget), presented to the Green Climate Fund by the national government.

5.2 Recommendations

- 1) When designing similar projects for future implementation by government agencies, attention should be paid to foreseeing and planning for longer project durations as cumbersome/time consuming government regulations and undesirable high rotation of personnel, often affecting these agencies, usually delay delivery of project inputs and implementation of activities.
- 2) It is recommended that measures be taken to avoid a post-project situation with diminishing support and decreased provision of tools and incentives which are needed to continue to motivate and ensure local communities' and volunteer fire brigades' commitment to and effective participation in forest fire prevention and response. This could be done by rapidly providing SERFOR with the minimum financial resources needed to provide this support in an interim way, until means to continuously implement the enhanced forest fire prevention and response activities are in place (see recommendation 3).
- 3) Continue to deliver the project services in Cajamarca, Huanuco, Junin, Pasco and Ucayali in a more permanent way and scale them up to cover additional Peruvian Departments. This can be achieved both by a substantial increase in SERFOR's annual regular budget allocation to forest fire prevention and response and by seeking/making available international financial assistance for longer projects/programs, as proposed/requested in the Concept Note "Strengthening the Prevention and Attention of Forest Fires Intensified by Climate Change in Peru" submitted by the Government of Peru to the Green Fund Simplified Approval Process.
- 4) At the appropriate time conduct an ex-post evaluation to better assess the state of project results uptake and project benefits and its impacts, including the extent of project contribution to forest fire reduction and forest loss, both in the five departments directly covered by the project and in a national level. This ex-post evaluation is also recommended to find out more on the effectiveness of the project training/capacity building component, which because of the COVID pandemic had a large share of its activities implemented in a virtual way, and not presentially as originally planned in the project document.

ANNEX: EXECUTING AGENCY'S VIEW

Country Management Response to ITTO Mid-term Evaluation	
Project Title:	FOREST FIRE PREVENTION AND RESPONSE IN TROPICAL FORESTS AND FOREST PLANTATIONS IN PERU
Project ID:	PP-A/56-340-2
A) Overall Response to the Evaluation:	
<p>For the ITTO SERFOR Project, the Intermediate Evaluation constitutes an important product to measure the progress of the Project, and to assess qualitatively and quantitatively the results achieved at the time of evaluation. It serves to provide feedback not only to the Project team, but to all of SERFOR, to reaffirm the importance of executing this type of project in Peru, and the need to continue investing in the prevention and rapid response to forest fires.</p> <p>The structure proposed by the Evaluator makes it possible to clearly see that all aspects of the Project have been addressed, considering the goals achieved, the status of implementation at that time (and its effectiveness), the impacts and benefits of the activities (mainly on capacity development), the effectiveness of dissemination of activities, the efficient use of costs in implementation, sustainability to improve results, achievements and lessons learned.</p> <p>In relation to the Methodology, the Evaluator has described in a very direct, simple and technical way at the same time, due to the precisions cited in each part of the structure of the document. The interviews conducted with SERFOR management personnel, members of the Project implementation team, the beneficiaries, and the strategic institutions allied to the project, allow the Evaluator to determine the situational status, and the field visits that were carried out allow him to verify the results. described. At SERFOR, we consider the methodology used extremely appropriate.</p> <p>Finally, regarding the conclusions reported by the Evaluator, we consider that we agree, due to the relevance, since it mentions that the Project contributes significantly to the management of forest fires in Peru, since it allows: improving coordination and cooperation between the authorities to prevent forest fires; raise awareness of the value of forests; strengthen the capacity of local authorities, forestry brigades, and rural producers to prevent forest fires; and strengthen SERFOR's geographic information services and monitoring systems.</p> <p>We consider that we agree with the related conclusions that despite the limitations of the COVID19 pandemic and the short execution time, the proposed objectives were achieved, using the available funds. As well as highlighting the role of the Project team that adapted the implementation strategies, to develop the digital training processes, a challenge that must continue to be adapted and adapted.</p> <p>And finally, it is important to conclude that local capacities must continue to be improved, monitoring systems updated, since a valuable seed has been sown, which must be strengthened so that it grows and becomes stronger. Currently, there is an opportunity and a challenge for SERFOR to replicate this initiative and achieve a multiplier effect in other regions to improve prevention actions and rapid response to forest fires in the country.</p>	

Evaluation Report Recommendations	B) Response to recommendations (e.g. 'accept', 'partially accept' or 'reject' – please provide a brief explanation)
<p>Recommendation 1 <u>When designing similar projects for future implementation by government agencies, attention should be paid to planning for longer duration projects</u></p>	<p>TO ACCEPT In the design of projects, at the time of programming, it is necessary to consider a longer duration. A year of implementation is very little time for what you want to achieve, the execution time of a project not only implies an initial awareness process, then the implementation itself and finally implies a whole time for the final closing process (financial closing). and technical), which goes beyond the programmatic activities themselves.</p>
<p>Recommendation 2 <u>Continue to motivate the commitment and participation of local communities and fire brigades in forest fire prevention and response</u></p>	<p>TO ACCEPT The fact that SERFOR is the implementing entity is a great advantage, since the actions carried out do not end with the very end of the project, but other SERFOR Directorates will take charge of the continuity of carrying out a multiplier effect, and of replication, in actions in the regions covered by the Project (mainly through the ATFFs). In a complementary manner, from the General Directorate of Information and Forestry and Wildlife Management and through the Directorate for Strengthening Capacities, they will continue to influence field work, with rural populations, with producers, with forest brigades, with district municipalities, with communities, among other actors, for the prevention of forest fires.</p>
<p>Recommendation 3 <u>Expand project results to additional Peruvian Departments beyond the 5 target Departments</u></p>	<p>TO ACCEPT The Project has developed a set of tools and products with which a multiplier effect can be perfectly achieved in any part of the national territory (in addition to the area of intervention), in the following topics: 1) Training products (content of training courses for authorities, forestry brigades and rural producers. In addition, manuals and intervention protocols have been prepared. In addition, the Project has updated the digital platform of SERFOR EDUCA, through which they can provide training and workshops virtually, at any time. 2) Forest fire monitoring products: The Project team has prepared reports related to the prevention of forest fires, and it has been possible to update the information that currently serves to transmit valuable information to the regional authorities for the prevention of fires. forest fires. This information is valid for all regions of the country.</p>

	<p>3) Communication products: The Project has designed and produced dissemination material such as videos, photos, infographics, banners, brochures, radio spots, among others, which has allowed various dissemination events to be held at the national, regional and local levels, as well as also in 2 international events. These materials are currently available to SERFOR to be disseminated to any region of the country, at any time.</p>
<p>Recommendation 4 <u>Continue to strengthen SERFOR's GIS and RS unit to monitor forest cover and issue alerts on forest fires</u></p>	<p>TO ACCEPT Through the Project, the GIS and Remote Sensing team has implemented a series of activities, mainly information production: Heat reports, forest fire alerts, surveillance reports, individual reports of forest fire scars and scar elaboration. All this information served to update the existing data in the Directorate of Information and Forest and Wild Fauna Planning. Currently, there is a team of professionals who are trained to continue providing this information to the entire country (not only in the regions covered by the Project). This recommendation is currently being implemented.</p>
<p>Recommendation 5 <u>Conduct SERFOR's internal ex-post evaluation of the project to assess its benefits and impacts</u></p>	<p>TO ACCEPT The evaluation processes will always mean a contribution to the actions developed, in this sense, it will be positive to propose an internal ex-post evaluation of the institution, particularly in the areas where the project has been implemented.</p>

Name, Title and Institution of Respondent:

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Dirección General de Información y Ordenamiento Forestal y de Fauna Silvestre - SERFOR

Date: August 18th, 2022

Signature:



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