KINGDOM OF CAMBODIA
NATION RELIGION KING

INUNDATED FOREST FIRE PREVENTION AND MANAGEMENT PLAN FOR SIEM REAP PROVINCE 2021-2025

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FISHERIES ADMINISTRATION & SIEM REAP ADMINITRATION

PREFACE

The Kingdom of Cambodia is rich in natural resources, especially the Tonle Sap Lake that consists of many freshwater lives such as fishes, turtles, reptiles, water birds, aquatic plants and inundated forest, which are the matters of utmost importance to humanity and to maintain the natural balance. These resources not only play a vital role in supplying fish daily to Cambodians but also to protect and conserve the Tonle Sap basin and grant tourism services.

The Royal Government of Cambodia has taken significant policy measures addressing the sustainable protection, conservation and management of fisheries resources and the aquatic ecosystems on which many Cambodian households, most importantly for those living in rural areas around the Lake, depend for livelihoods, employment, income, food security and nutrition (Nutrient Sources to Tonle Sap Lake, Cambodia (APN Science BulletinIssue 3, March 2013).

The 10-year Strategic Plan for Fisheries Conservation and Management under the pillar 1 of Capture Fisheries and Management of the Strategic Planning Framework for Fisheries covering the years 2015-2024, continues its efforts to pursue a vision of "Cambodia's fisheries resources and ecosystems are restored where depleted, conserved and protected for livelihoods, food security and nutrition for present and future generations". Its overall objective entails that "all stakeholders collaborate to ensure the Cambodia's fisheries are utilized sustainably, conserved and managed in an environmentally non-degrading, ecologically appropriate, economically viable, and socially acceptable manner".

Siem Reap province consists of a part of the floodplain the lake of the Tonle Sap Lake that has high potential for promoting economic development through fishing, agricultural production and ecotourism development. Due to the geographical situation of Siem Reap province, rich in biodiversity and situation of flooded forest fire occurred every year that negatively affect to fisheries habitat and fisheries stock, Fisheries Administration in close collaboration with CAPFISH's FAO Complementary Support project, provincial administration and local authorities, develops the 5-Year Inundated Forest Fire Prevention and Management Plan for Siem Reap province for implementing from 2021-2025.

To meet the above vision, on behalf of the Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries, I fully support the implementation of this an important management plan to ensure sustainable management of inundated forest fire and restoration for the sake of fisheries conservation, fisheries biodiversity and the contribution to local poverty reduction to meet the standard of living for our people.

And on behalf of Siem Reap Administration, I sincerely support and officially declare to launch the 5-Year Inundated Forest Fire Prevention and Management Plan for Siem Reap province from this day forwards. The provincial authorities will fully support the implementation of this management plan to make sure our fisheries resources can support our next generations in years to come.

Phnom Penh, date 17-12- 2021

H.E. Poum Sotha
Delegate of the Royal Government
Director General of Fisheries Administration

Siem Reap, date 21-12- 2021

H.E. Tea Seiha
Governor
Siem Reap province

ACKNOWLEDGE

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The special thanks also referred to the FAO Country Representative, **Mr. Alexandre HUYNH**, the CTA, **Mr. David Brown** and his colleagues in the CAPFISH-Capture project for complementary supporting to develop this plan.

This inundated forest fire prevention and management plan for Siem Reap province has benefited from inputs of those involve in working in the Tonle Sap region such as UNESCO, WCS, AFD and TCO shared details of their work in Tonle Sap.

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Contents

Acronyms and abbreviations

BMC : Banteay Meanchey
BTB : Battambang
CAPFISH : Cambodia Programme for Sustainable and Inclusive Growth in the Fisheries Sector
CBFiM : Community Based Fisheries Management
CFFPT : Community Forest Fire Patrol Team
CFi : Community Fisheries
CFiMC : Community Fisheries Management Committee
DCF : Department of Community Fisheries
DFA : Department of Fisheries Affairs
DFC : Department of Fisheries Conservation
FAO : Food and Agriculture Organization of the United Nations
FiA : Fisheries Administration
FiAC : Fisheries Administration Cantonment
KPC : Kampong Chnang
KPT : Kampong Thom
MAFF : Ministry of Agriculture, Forestry and Fisheries.
MET : Monitoring and Evaluation Team
MoE : Ministry of Environment
PDAFF : Provincial Department of Agriculture, Forestry and Fisheries.
PDE : Provincial Department of Environment
PDoRAM : Provincial Department Water Resources and Meteorology
PS : Pursat
SMS : Short Messaging Service
SR : Siem Reap
TSA : Tonle Sap Authority
UNESCO : United Nations Educational, Scientific and Cultural Organization
WGFFFM : Working Group for Flooded Forest Fire Management
WGFFM : Working Group for Forest Fire Management

1. Introduction

The Tonle Sap Great Lake is described by Cambodians as the heart of their culture and national economy. Globally, it is known as the heart of Cambodia's freshwater fisheries, the largest freshwater lake in Southeast Asia and one of the most productive wetland areas in the world. The flooded forests and floodplains surrounding the lake provide shelters for fish and some of the world's most threatened water birds and access to spawning, breeding as well as feeding areas. According to the Fisheries Administration (FiA), fish, the vast majority of which comes from the Tonle Sap Lake, provide over 60% of protein intake in the Cambodian diet.

As Cambodia's population and economy gradually grow, the Tonle Sap Lake is now under threat from man-made factors, competition over the lake's natural resources has intensified and clearing of flooded forest for cultivating rice and cash crops has negative impact directly on fish and other wildlife.

In the last few years, water levels in the Tonle Sap Lake reached record low levels due to climate change, especially extreme heat and drought. These conditions exacerbated forest fires, which have affected fish conservation areas, fish habitats for breeding, spawning and feeding and Ramsar sites of Steung Sen, Boeung Tonle Chmar and Prek Toal which are home for Southeast Asia's largest water bird colony.

Two key factors are considered to trigger flooded forest fires around the Tonle Sap Lake; the accidental and the intentional. The accidental case includes using smoke to harvest bee honey, discarding lit cigarette butts, leaving cooking fires without putting them out, burning forest for hunting wildlife and recovering domestic cows and buffalos that are freely released for grazing. The second case includes burning flooded forests for converting into rice fields, hunting animals and setting a long path to lay long fishing nets so-called Sach Dai across streams.

The forest fire is the most serious threat to flooded forest. Since the inundated forest is the key breeding and feeding grounds for fish and water birds, the loss of flooded forest will lead to decreases in both fish and water bird species and population. Repeated flooded forest burnings will result in transforming flooded forest to grass species and flooded grasslands.

The consequences of flooded forest fires in the floodplain in of the Tonle Sap Lake in Siem Reap province contribute to gradual decline of fisheries resources, including fish population and species, aquatic plants, reptiles, mammals and wild birds. The FAO's complementary component of the CPAFISH project identifies and works with key stakeholders that are involved in flooded forest fire management at provincial, district, commune and community levels in the province to develop and implement Flooded Forest Fire Management in a manner to deal with and reduce the forest fires. That is why this IFFPMP is developed in a participatory approach with proper, applicable and flexible responses or interventions.

The technical team, consisting of 12 officers from Department of Fisheries Conservation (DFC), FiA and Fisheries Administration Cantonment (FiAC) in Siem Reap province gathered primary and secondary information in the fields for developing IFFPMP at province and district levels.

The first field mission of the working group supporting flooded forest fire management conducted on 12-23 May 2020 to meet local commune and stakeholders in the target districts and communes to collect information and data from relevant stakeholders. The information collected in the meetings include causes of forest fires, responsive actions applied against forest fires, stakeholders involved in forest prevention and intervention, the existing forest fire management mechanism and its effectiveness, restoration approaches for the burnt forest areas, required equipment and infrastructure to support forest fire prevention and intervention. Collecting waypoints and mapping the burnt forest areas were carried out in this field mission.

2. Overview of Geography and Demography of the floodplain

Siem Reap province is one of the 25 municipalities and provinces of the Royal Government of Cambodia which birders Oddar Meanchey in the north, Battambang province and the Tonle Sap Great Lake in the south, Banteay Meanchey province in the west, and Preah Vihear and Kampong Thom provinces in the east. It is located about 314 km from Phnom Penh Capital in the northwest extending in a total area of 10,299.43 km2 and consists of one municipality and 11 districts occupied by a total population of 1,096,248 people (556,072 women) in which 81,52% are farmers dependent on agricultural production,

the major occupation, while 7.96% rely on tourism service.

Regarding the flooded forest management, one municipality and 5 among the 11 districts - namely Krong Siem Reap, Chi Kraeng, Kralanh, Sotr Nikum, Prasat Bakong and Puok - are identified as the target districts for flooded forest fire as the exist flooded forest for conservation in Zone 3. The province consist of flooded forests, 22 community fisheries under the jurisdiction of Fisheries Administration, 2 Biodiversity Protected Areas of Boeung Pea Reang in Krong Siem Reap and Ou Reang Srong in Pouk district under the jurisdiction of Ministry of Environment. Within the six target municipality and districts, there are only 23 out of 67 Sangkats and communes involved in flooded forest management. Regarding sizes of the flooded forest, Pouk district is the first, Chi Kraeng stands the second, Kralanh is the third, Soutr Nikom and Prasat Bakong ranged the fourth and Krong Siem Reap scored the last.

The total area of flooded forests in the 6 municipality and districts is 134,879 hectares (5,940 ha of flooded forest, 92,846 ha of shrubs and 36,093 of grasslands) equal to 18.80% of the total area of 647,406 ha of the flooded forest in the Tonle Sap's floodplain.

2.1 Overview of Geography and Demography of the floodplain in Puok district

Puok district is located in the west about 15km from Siem Reap provincial town. Puok district is one of the 6 target municipality and districts in the province which consists of 5 out of 14 communes – namely Kaev Poar, Lvea, Mukh Paen, Pou Treay and Sasar Sdam communes - that are involved in flooded forest fires management. The district extending in a total area of 150,050 ha borders Angkor Chum and Angkor Thom districts in the north; Tonle Sap Lake in the south; Krong Siem Reap in the east; and Kralanh in the west. Nearly all the communities living in the target communes depend on agricultural production.

The total population of Puok district is 140,633 people (71,743 women) equal to 29,862 families. About 85.90% of the total population engage in the agricultural production sector, the primary occupation, including rainy season rice, dry season rice, corn, cassava, mango, sugar cane, corn and animal husbandry. Around 2.50% of the total population is found involved in fishing for earning a living *(Puok district profile for 2019, PDP Feb 2020)*.

In the agricultural sector, around 81.70% of the total population is involved in rice production being cultivated in a total area of 37,033ha of which 4,956ha is dry season rice fields mostly situated in Zone 1 and Zone 2 while some are in Zone 3. The dry season rice area is no change in the last 3 years from 2017 to 2019 because of having enough water *(Puok district profile for 2019, PDP Feb 2020)*.

2.2 Overview of Geography and Demography of floodplain in Chi Kraeng district

Chi Kraeng district is one of the 6 target municipality and districts in the province which consists of 4 out of 12 communes - namely Anglong Samnar, Sangvaeuy, Lveaeng Ruessei and Spean Tnaot communes - that involve in flooded forest fires management. Chi Kraeng district borders Svay Leu district of Sem Reap province and Kuleaen district of Preah Vihear province in the north; Tonle Sap Lake in the south, Stoung district of Kampong Thom province and Sangkum Thmei of Preah Vihear in the east; and Soutr Nikom district of Siem Reap in the west.

The total population of Chi Kraeng district is 155,085 people (78,464 women) equal to 32,732 families in which 84.80% of the total population engaged in the agricultural production sector, the primary occupation, including rainy and dry season rice, cashew, mango, rubber, cassava, black pepper, corn, mung bean, longan, sesame and animal husbandry. Around 3.60% of the total population is found involved in fishing (Chi Kraeng district profile for 2019, PDP Feb 2020).

In the agricultural sector, around 75.50% of the total population involve in rice production being cultivated in a total area of 43,274ha of which 8,835ha is dry season rice fields mostly situated in Zone 1 and Zone 2 while some are in Zone 3. The dry season rice area was increased from 8,255ha to 8,835ha in the last 3 years from 2017 to 2019 (Chi Kraeng district profile for 2019, PDP Feb 2020).

2.3 Overview of Geography and Demography of the floodplain in Kralanh district

Kralanh district is one of the 6 target municipality and districts in the province which consists of 2 out of 10 communes - namely Sambour and Sranal communes- that are involved in flooded forest fires

management. The total population of Kralanh district is 74,387 people (37,707 women) equal to 51,665 families in which 85.20% of the total population engage in the agricultural production sector, the primary occupation, including rainy and dry season rice, cassava, cashew, corn, mung bean, sweat potato, fish and crocodile aquaculture and animal husbandry. In the agricultural sector, around 79.40% of the total population is involved in rice production that is being cultivated in 25,559 ha of which 1,162 ha is dry season rice fields where are mostly positioned in the Zone 1 and Zone 2 while some in Zone 3. The dry season rice area increases from 911 ha to 1,162 ha in the last 3 years between 2017 and 2019 (Kralanh district profile for 2019, PDP Feb 2020).

2.4 Overview of Geography and Demography of floodplain in Soutr Nikom district

Sotr Nikom district is one of the 6 target municipality and districts in the province which consists of 3 out of 10 communes - namely Kampong Khleang, Dan Run and Kien Sangkae commune - that involve in flooded forest fire management. The total population of Soutr Nikum district is 117,429 people (59,419 women) equal to 25,192 families of which 75.20% of the total population engaged in agricultural production sector, the primary occupation, including rainy and dry season rice, cashew, rubber, cassava, sesame, corn, longan, sugar cane and animal husbandry (Soutr Nikom district profile for 2019, PDP Feb 2020).

In the agricultural sector, around 65.60% of the total population involve in rice production being cultivated in a total area of 25,346ha of which 3,016 ha is dry season rice fields mostly situated in Zone 1 and Zone 2 while some are in Zone 3. The dry season rice area is increased from 2,991ha to 3,016ha in the last 3 years from 2017 to 2019 (Soutr Nikom district profile for 2019, PDP Feb 2020).

2.5 Overview of Geography and Demography of floodplain in Prasat Bakong district

Prasat Bakong district is located in the east about 12 km from Siem Reap provincial town. Prasat Bakong district is one of the 6 target municipality and districts in the province which consists of 3 out of 9 communes - namely Kampong Pluk, Kandaek and Trapeang Thum communes - that involved in flooded forest fire management. The district borders Svay Leu district in the north, Tonle Sap Lake in the south; Soutr Nikum district in the east, and Krong Siem Reap in the west. Nearly all the communities living in the target communes depend on agricultural production except those who are living in Kampong Pluk commune rely on fishing.

The total population of Prasat Bakong district is 83,363 people (42,402 women) equal to 18,975 families. About 73.50% of the total population engaged in the agricultural production sector, the primary occupation, including rainy and dry season rice, cashew, mango, cassava, sugar cane, dragon fruit, corn, black paper, peanut and animal husbandry. Around 3.70% of the total population is found involved in fishing (Prasat Bakong district profile for 2019, PDP Feb 2020).

In the agricultural sector, around 66,80% of the total population is involved in rice production being cultivated in a total area of 15,310 ha of which 2,005 ha is dry season rice fields mostly situated in Zone 1 and Zone 2 while some are in Zone 3. The dry season rice area is no change since 2017 because of having enough water (Prasat Bakong district profile for 2019, PDP Feb 2020).

2.6 Overview of Geography and Demography of floodplain in Siem Reap Municipality

Krong Siem Reap is one of the 6 target municipality and districts in the province which consists of only 4 out of 12 Sangkats - namely Chreav, Siem Reap Krabei Riel and Srangae - involve in flooded forest fire management. Krong Siem Reap extending in a total area of 41,553ha borders Prasat Bakong district in the east, Puok district in the west, Angkor Thom and Banteay Srey districts in the north, and Tonle Sap Lake in the south.

The total population of Krong Siem Reap is 256,679 people (126,761 women) equal to 53,574 families. About 70.80% of the total population implicate in service employments for tourism, private businesses, garment factories, civil servant, and government and non-government institutions. Only about 26.50% of the total population engage in the agricultural production sector, including rainy season rice, dry season rice, corn, sugar cane, fish and crocodile culture and animal husbandry, and 1.50% of the total population is found involved in fishing (Krong Siem Reap profile for 2019, PDP Feb 2020).

In the agricultural sector, around 17.10% of the total population involve in rice production being cultivated in a total area of 10,652 ha in which 4,332 ha is dry season rice fields mostly situated in Zone 2 while some are in Zone 3. The dry season rice area is decreased from 4,492 ha to 4,332 ha in the last 3 years from 2017 to 2019 because of lower benefit if compared to the service employments (Krong Siem Reap profile for 2019, PDP Feb 2020).

Beung Pea Reang located in Sangkat Chreav is the attractive wild bird habitat in Sangkat Chhreav and now become an interesting ecotourism site for national and international visitors after visiting Angkor temples. Biodiversity of Beung Pea Reang includes flooded forest, water year-round, fish conservation and 300 species of wild birds such as Lesser Adjutant, Painted Stork, White-shouldered Ibis, Spot-billed pelican, Grey-headed Fish Eagle, Garganey, which create a very beautiful ecological landscape.

3. Biodiversity in the inundated forest

The northern part of Siem Reap province next to national road N^0 6 covers about 75% of the total area of the province consisting of forests and plateau, rich in natural resources that are very good for biodiversity and water conservation, forest-based income generation, agricultural production and animal husbandry. The southern part of the province below national road N^0 6 covers about 25% of the total area is a floodplain, extending from north to south to Tonle Sap Lake with a gentle slope. This area is good for cultivating rainy and dry season rice, floating rice and receding rice based on deferent elevations and fishing to support the needs for food of communities living in the province and others as well.

The northern part mostly covers by rice fields, farmland, plantations, *Dalbergia cochinchinensis* seed tree forest, *Pterocarpus pedatus* seed tree forest, protected forests, Phnom Kulen National Park, Kulen Prumtep Wildlife Sanctuary, Boeng Pe wildlife sanctuary, Biodiversity Conservation Corridors, community forests, mountains and some waterways where are rich in natural resources and mineral resources. These resources are potential for biodiversity conservation especially the management of the Sieam Reap river watershed management to supply pure water for population living in the famous tourism region. Siem Reap province consists of four watershed: Steung Chi Kreng, Steung Preah Srok, Steun Siem Reap and Steung Sreng. The four take rainwater flowing from north to south into Tonle Sap Basin.

In addition to the hydrological features, Tonle Sap lowland in the province comprises of many fishery resources such as flooded forests, aquatic plants, fishes, water birds, mammals and reptiles. On the other hand, the soil of Tonle Sap's floodplain is Lacustrine Alluvia Soil as a whole is very fertile. Based on their age, these soil have been classified into two types of old and new alluvium soils. These soil contain adequate proportion of Potash, Lime, and Phosphoric acid. Silk, clay, gravel and sand are the main constituents of the soil. It is ideal for growing rice, corn, beans, chili paper and sugarcane that are the high protein food for Cambodians and the income of farmers and fishermen living around Tonle Sap Lake.

The forests and shrublands in the Tonle Sap floodplain of this province contain a number of endemic plant species, e.g. *Samandura harmandii, Terminalia cambodiana, Coccoceras anisopodum, Diospyros bejaudii, Diospyros cambodiana, Garcinia loureiri, Acacia thailandica,* and *Hydnocarpus saigonensis*. Major communities include *Barringtonia acutangula, Elaeocarpus madopetalus* and *Diospyros cambodiana*; floating and emergent herbs including *Brachiaria mutica, Eichornia crassipes, Polygonium barbatum, P. tomentosum* and *Sesbania javanica*. Noteworthy, there are also a number of grass and sedge species i.e. Wild Rice *Oryza rufigpogon* which is very important in terms of the gene pool and genetic biodiversity conservation and the Globally Vulnerable *Cynometra inaequifolia*, which is a species of legumes in the Fabaceae family.

Over 200 species of fish use this habitat as a feeding, breeding, and nursery ground (annex 2). The woody species of this forest is often laden with fruits and seeds at the time of inundation, providing food for the 34 species of fruit-eating fish of the Lower Mekong Basin *(Impacts on the Tonle Sap Ecosystem, June 2010, MRC)*.

Apart, Puok district has the biodiversity community protected area of Ou Reang Srong while Krong Siem Reap comprises of the biodiversity community protected area of Beung Pea Reang. Both of them are under the jurisdiction of Ministry of Environment and is managed directly by the concerned communities.

Beung Pea Reang biodiversity community protected area extend an area of more than 3,000 ha in total where consists of a large pond with water year-round and flooded forest that are favorite for brood fish

and turtle species population and conservation, feeding sources and safe habitats for many kinds of wild birds that is why there are around 176 species of water birds - *including Wooly Neck Stork, Spot-billed pelican, Greater Adjutant and Painted Stork* - come here for breeding and feeding. Due to the diversification of the naturally beautiful biodiversity, Beung Pea Reang has now become one of the famous ecotourism sites in the province. It is also named water bird fortress after Prek Toal's Bird Sanctuary.

To conserve flooded forests and floodplain ecology in the core zone areas of the Great Lake, The Tonle Sap Authority installed 294 concrete poles in 2011 along the borders of Zone 3 following the sub-decree No.197 អនក្រ.បក dated on 29 August 2201, but some of them are now damaged for the pretext of the illegal land claim. The FiAC planned to install 250 triangle tower-like concrete poles along that border in 2021 and 2022 to promote local awareness of the Zone 3 conservation by using the budget of the funded CAPFISH project.

The figure released by the FiA shows that a total area of 182.55 ha of flooded forest was cleared for agricultural purposes in the year 2020 alone and 28 cases of land claim complaints and five suspects were sent to the provincial court for further investigations and sentences.

There are 22 Community Fisheries (CFi) exist in the province covering a total area of 130,273 hectares of fishing ground, including flooded forest provided to CFis for in a sustainable manner through the signed Community Fishing Area Agreement. In addition to that, the province also consists of four Fisheries Conservation Areas (FCA) with a total area of 8,435 hectares in the time of the Deep Fisheries Reform for the former fishing lots and the reserve lots.

4. Flooded Forest Fire Issues

In Siem Reap's floodplain landscape, inundated forest fires are common and there is clear evidence that forest fires have been used for decades as a way to clear areas for rice farming and other cash crops. The FiAC's officers in the province reported that a total number of 322 hectares of inundated forest area was burnt of which 93 hectares was restored by planting tree seedlings, 39.65 hectares have been maintained with assisted natural regeneration approach and the rest (189.35 ha) will be restored by planting in 2021. Based on the data collected on 12-13 May 2020 by the FiA and FiAC working team, an additional area of 1,249 ha of 49 locations were burnt in the period between 2016 and 2020 within 23 communes of the six target districts.

The forest fires that have been happened over decades impact heavily on fisheries resources, including forests and grasses that are the favorite and safe habitats of fish, wildlife and water bird communities for seasonal feeding, spawning and breeding. The most negative impact is the decline of fish species and population that are the main source of local income generation of fishing communities, forcing them to clear flooded forest for agricultural products instead.

4.1 Causes of fires

Based on the report developed by the working group comprised of the officers from Department of Fisheries Conservation (DFC) and Department of Fisheries Affairs, Fisheries Administration (FiA), after the first round consultation at 23 communes, mentioned that the key causes of flooded forest fires in dry season in the province are mainly from:

- Negligent human activities of slashing and burning vegetation in existing plots of agricultural lands located next to grasslands and flooded forests. It is ranked as a highest potential risk of causing flooded forest fires.
- Burning dry grasses and hangover of flooded forest and shrubs that have been cut intentionally for an attempt to expand the existing rice fields and newly claim inundated forest land. This activity is also one of the highest risks as it has commonly occurred across the Tonle Sap Lake region.
- Burning rice straw in rice fields to gain fertilizer (ashes) before plowing, spreading fires across grasslands and flooded forests nearby that were unable to be controlled.

- Discarding lit cigarette butts in dry grass and bushes, and in a pile of dry organic matter. This careless activity triggering flooded forest fires has quite often been seen along the roads.
- Careless cooking without putting out the fire before leaving by fishers, hunters and people who take care of domestic animals is also one of the major reasons of flooded forest fires.
- Using fire to ignite dry grasses and dead branches of trees by hunters to chase and catch wildlife (reptiles and mammals) and collect bee honey. Actually, hunters set fire to hunt wildlife at a meso-scale but later the fire extended at a larger scale to destroy flooded forests and grass lands where are the breeding and feeding refuges of some wildlife and wild birds, especially *Bengal Florican* or *Bengal bustard* (Ksep) that is a bustard species native to the Indian subcontinent, Cambodia, and Vietnam. It is listed as Critically Endangered on the IUCN Red List because fewer than 1,000 individuals were estimated to be alive as of 2017 (BirdLife International 2017).
- There is no information on natural phenomena such as dry thunderstorms and lightning set flooded forest fires in Siem Reap province reported.

Therefore, all the reasons causing the flooded forest fires are triggered from carelessness or negligence of human actions. The information on the roots of every cause were explored deeper to use as the foundation for analyzing and interpreting the proper actions to deal with these problems that have been happened in specific locations within the target communes as mentioned in table 1. And all the identified causes of the flooded forest fires raised by the concerned stakeholders are included into the IFFPMP for Siem Reap province to ensure they will be addressed in the 5-year life period of the plan.

4.2 Locations of burnt forest sites in Siem Reap province

Based on the data collected by the FIA/FIAC team from 13-20 May 2020, in the period between 2016 and 2020, there were 49 flooded forest fire locations documented, damaging a total of 1,249ha of flooded forest area in 23 communes of one municipality and 5 districts (Annex 2). The team collected the waypoints and mapped the burned forest sites as shown in the annex 3.

Puok, Kralanh and Soutr Nikom districts had the highest number of the forest fires recorded in terms of time and area. The table 2 below indicates the fire cases and areas of fire-damaged forests by communes.

Table 2: List of flooded forest areas burnt in the target municipality and districts of Siem Reap province.

No	Names of target districts	Number of target communes	Number of fires recorded	Estimated Total Area burned	Time of forest fires commonly happened	Response to extinguish fire
1	Chi Kraeng	7	7	75 ha	Apr-May (2018-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.
2	Sourt Nikom	4	10	267 ha	Apr-May (2016-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.
3	Prasat Bakong	3	5	67 ha	Apr-May (2016-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.
4	Krong Siem Reap	5	4	133 ha	Apr-May (2016-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.
5	Puok	6	16	624 ha	Mar-May (2016-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.
6	Kralanh	2	7	123 ha	Mar-May (2016-2020)	Having intervention from local authorities but unable to put out the flooded forest fires, letting

						them self-extinguished.
	6 districts	**27**	**49**	**1,289 ha**		Having intervention from local authorities but unable to put out the flooded forest fires, letting them self-extinguished.

Based on the actual geographical and physical situations as well as working conditions for preventing and extinguishing flooded forest fires, and restoring fire-affected flooded forests, Siem Reap province consists of 27 target Sangkat and communes within 1 municipality and 5 districts as shown in table 2 below.

Table 2: Target Sangkat and communes involving in flooded forest fire management

Target districts/municipality		Target Sangkats/communes	
1	Kralanh district (2 communes)	1	Sambuor commune
		2	Sranal commune
2	Puok district (6 communes)	3	Pou Treay commune
		4	Sasar Sdam commune
		5	Lvea commune
		6	Mukh Paen commune
		7	Kaev Poar commune
		8	Prey Chruk commune
3	Siem Reap municipality (5 Sangkats)	9	Sangkat Srangae
		10	Sangkat Krabei Riel
		11	Sangkat Siem Reap
		12	Sangkat Chreav
		13	Sangkat Chong Knies
4	Prasat Bakong district (3 communes)	14	Kandaek commune
		15	Kampong Phluk commune
		16	Trapeang Thum commune
5	Soutr Nikum district (4 communes)	17	Kampong Khleang commune
		18	Kien Sangkae commune
		19	Dar Run commune
		20	Khchas commune
6	Chi Kraeng district (7 communes)	21	Sangvaeuy commune
		22	Anglong Samnar commune
		23	Spean Tnaot commune
		24	Lveaeng Ruessei commune
		25	Chi Kraeng commune
		26	Kouk Thlok Kraom communes
		27	Ruessei Lok commune
6 municipality and districts		**27 Sangkats/communes**	

4.3 Stakeholders Involved in Flooded Forest Fire Management

Flooded forest, floodplains, natural ponds, aquatic plants and the Lake themselves are important for aquatic life and biodiversity as well as human beings for economics (fish, rice and cash crops) and source of protein (fish). Due to these multiple benefits, there are many stakeholders (Table 3) identified and involved in the uses and management of fisheries resources and flooded lands as well as setting and control flooded forest fires in the Great Lake territory as following:

Table 3: Key stakeholders and their Involvements in flooded forest fire management

Stakeholder	Review	Risk Reduction	Readiness	Response	Recovery
Local communities	Extend periods of dry season and late start to raining season.	Reduce access to inundated forest areas.	Disseminate information on the importance of inundated forests and the impacts of	Join interventions during inundated forest fire fighting. Support means for carrying/ pumping	Join cooperation to re-plant inundated forest trees in damaged areas Protection &

			fires	water for fire-fighting.	maintenance of seedlings Maintain signboards in re-planted areas.
Village Security Guards	Study and observe the movement of people into inundated forest areas.	Participate in the dissemination of information on an importance of inundated forests and impacts of inundated fire. Strengthen law enforcement	Prepare fire-fighting equipment Joint patrolling/ monitoring of inundated forest areas.	Join fire-fighting teams in attacking fires Provide support for carrying water and other materials to fire-fighting teams	Participate in re-planting of inundated forests Protection of seedlings Maintain signboards and demarcation poles in recovering areas
Community Fisheries	Record names of people accessing inundated forest areas and their purpose, during the dry season.	Participate in the dissemination of information on an importance of inundated forests and impacts of inundated fire	Participate in digging and restoring ponds or canals for retaining water during dry season, that can be used to support fire-fighting.	Join fire-fighting teams in attacking fires Provide support for carrying water and other materials to fire-fighting teams.	Participate in re-planting of inundated forests and protection of seedlings Maintain signboards and demarcation poles in recovering areas
Commune councils	Study the movement of people and their access into inundated forest areas.	Join patrolling for monitoring inundated forest areas Strengthen law enforcement including prohibiting people from access to zone 3 areas, and punishing offenders Disseminate education materials related to fire management Reserve equipment for fire-fighting.	Reserve equipment for intervention for fire extinguish. Organization of local teams for digging or restoring ponds and canals	Mobilize local people to join intervention for fire-fighting. Join fire-fighting teams in attacking fires Mobilization of support for water and equipment distribution.	Join cooperation to re-plant inundated forest tree in the burnt areas. Design and build signboards for the protection of inundated forest areas.
Civil Society Organizations /NGOs	Studies on inundated forest situation and peoples actions in inundated forest fire issues.	Raise awareness of the importance of inundated forest and impacts of inundated fire.	Training of local fire-fighting teams	Logistical support	Join local community and local authorities in re-planting inundated forest areas. Support the protection and maintenance of re-planted areas.
District and commune Police	Conduct census of cattle owners and families who are farming in inundated forest areas	Strictly prohibit people 's access to zone 3 Join patrolling of inundated forest areas	.	Join fire-fighting teams in attacking fires	Join local community and local authorities in re-planting inundated forest areas.
District Authorities	Collect & maintain data on inundated forests in the Districts. Issues directives related to inundated	Disseminate educational materials on the importance of inundated forest and impacts of fires Strengthening law	Cooperate with fishery authorities and others to conduct training and dissemination on forest fire management	Mobilize forces to participate in inundated forest fire fighting Provide equipment and materials support for fire-	Record information on replanted areas and their recovery.

	forest management.	enforcement.		fighting teams	
Provincial Department of Agriculture, Forestry and Fisheries (PDAFF)	Review report on forest fires submitted by the FiAC.	Support FiAC to promote local awareness on forest fire prevention and strengthen law enforcement.	Further report the forest fire issues to the provincial governor for preparedness and intervention.	Join fire-fighting teams in attacking forest fires.	Support FiAC, CFi and local communities to restore the fire-damaged forests.
Provincial departments	Development of local policies related to fire management	Dissemination of information on forest fire management to involved stakeholders	Provide high risk level warnings when necessary	Designate staff to participate in inundated forest fire fighting Provide material and manpower support for fire fighting	Designate staff to participate in re-planting of inundated areas. Mobilize funds for the restoration of inundated forest areas.
Tonle Sap Authority	Study inundated forest situation and people actions in inundated forest fire issues. Monitor boundaries of inundated forest between zone 2 and 3 and re-erect poles if the demarcation is unclear.	Educate and disseminate information on the importance of inundated forests and impacts of fires on local people and the ecology	Provide fire-fighting equipment to communities.	Designate staff to participate in fire fighting	Designate staff to participate in re-planting of inundated areas.
Fisheries Administration & Fisheries Administration Cantonments	Maintain CFi records of community engagement in fire-fighting Regularly monitor inundated forest situation. Conduct ecological and livelihood surveys of inundated forest areas Collect data on causes of fires, size of damaged areas etc.	Produce and disseminate educational materials on the importance of inundated forest and impacts of fires Strengthening law enforcement.	Maintain and provide equipment for fire fighting	Designate staff to participate in inundated fire fighting Report to line Departments leaders	Join in the organization of re-planting operations in the burnt areas Assist in the coordination of patrolling for monitoring re-planted areas.
Ministry of Environment	Conduct ecological and livelihood surveys in inundated forest areas	Produce and disseminate educational materials on the importance of inundated forest and impacts of fires	Maintain and provide equipment for fire-fighting.	Designate staff to participate in inundated fire fighting Report to line Departments leaders	Participate in the organization of re-planting operations in the damaged areas Assist in the coordination of patrolling for monitoring re-planted areas.

The identification of the stakeholders is indispensable for the planners to think of the target groups and their engagements in the different activities for flooded forest fire management to be mentioned in the 5-year IFFPMP, ranging from for the target groups who assumedly set forest fires to be educated and the groups who are responsible for patrolling and controlling flooded forest fires.

4.4 Challenges for taking measure to respond the forest fires

The historical background of the flooded forest fire control in Siem Reap province shows that neither

action taken on the ground to distinguish flooded forest fires nor any institution responsible for managing the forest fire suppression is sufficiently clear. The challenges are driven from various factors and reasons as shown below:

- **No IFFPMP mechanism in place**: Flooded forest fires have been a common occurrence for a long time with many verbal complaints and reports by members of community fisheries to the concerned agencies -including local authorities (village, commune and district) and Fisheries Administration Cantonment's triage - to seek the intervention for putting out the forest fires but there was limited intervention. That is probably caused by not yet having the right forest fire management mechanism at commune or district levels discussed and developed to manage firefighting group, budget and fire extinguishing tools for precaution, prevention and immediate intervention responding in the forests that are being fired.

- **No IFFPMP plan in place**: Resulted from absence of the IFFPMP mechanism or a coalition team consisting of the key stakeholders set up for putting out flooded forest fires, the applicable and agreeable IFFPMP plan could not be developed and so the forest fires continued freely. This is despite some efforts made by community fisheries to suppress the wildfires that were not fully successful due to having no well-prepared people and appropriate extinguishing tools.

- **Limited knowledge of local communities on Fisheries Law's forest fire management-related articles and effects of flooded forest fires**: Most of local people are mainly aware of illegal fishing control-related articles of the Fisheries Law as there were many extension meetings conducted and educational tools produced and erected for the target fishing communities. They, however, understand less about the inundated forest fire management, which is caused by the lack of extension awareness campaigns on flooded forest fire management and of extension materials distributed and displayed in relevant villages.

  On the other hand, local people who encountered the forest fires that were happening and wished to extinguish the fires have neither phone number to contact for requesting intervention and help

  nor skill and tools to put out the fires.

- **Hard to access the burning areas by geographical situation**: Since the flooded forest floors are always submerged under water during rainy season, no paths or trails comfortable for traveling by motorcycles or cars are built with only a few naturally small, rough trails for walking, ox-carts and powered tillers. So few trails in poor condition are also one of the major obstacles to hamper or elongate the effort to deliver water and extinguishing tools in the early stages of fires to eliminate flooded forest fires happening far away from the water sources and villages. The delay provides opportunity for the forest fires to expand and develop in intensity becoming harder to control.

- **No available water**: Water sources are numerous and vary by agroecological zones and communities in Siem Reap's floodplain. Availability of water from these sources is not perennial, and the quality, particularly for domestic uses, has changed during the years. The natural waterbodies (ponds and streams) are gradually becoming shallower by long-term sediment increment mainly resulting from deforestation and unsustainable land preparation for agricultural purposes in areas around them and in upstream areas.

  In the past ten years, fishermen realized that nearly all the ponds in the floodplain of the Tonle Sap Lake Region in the province dried out completely by a number of reasons, including shallowness by sediment deposit, using brush park for collecting fish and pumping water out of the ponds to catch fish.

  Since water is a critical resource for flooded forest firefighting, lack of water resources nearby the

  sensitive forest sites is the major concern restricting immediate action against flooded forest fires.

- **Lack of budget and extinguishing tools**: Putting out flooded forest fires is a serious task which

needs a joint effort of all relevant stakeholders to implement in a participatory manner under an effective management mechanism consisting of competent institutions, including communities, CFi, FiAC and local authorities at village, commune and district level with the sustainable budget source. However, the major stakeholders, namely FiAC, commune councils and community fisheries have no or less budget earmarked for flooded forest fire management as costs for forest fire extinguishing tools and services are expensive.

Due to the above impediments, the stakeholders have just some ideas on how to try to prevent and eliminate flooded forest fires but no choices for actions and improving practice.

4.5 Offenders and Prosecutions

Many cases of inundated forest fires happening in Siem Reap province appear to be caused by the local people rather than outsiders. However, fishers and farmers often move from upland areas to zone 3 next to the Tonle Sap Lake during the dry season to fish, clear small patches of the forested land for dry season rice and vegetable cultivation and fuel wood collection. Sometimes, fires spreading across the inundated forest were caused by careless extinguishing of camping fires when they left the fishing grounds, farms and fuelwood collection sites.

Land grabbing and land business deals are now very common throughout zones 2 & 3 in the province. Land dealers provide some money and equipment to local people to clear and convert some plots of inundated forest into dry season rice fields for the real purpose of selling further to land speculators. It is quite common that nearly all the concrete poles planted along the boundaries of Zone 3 were removed for the pretext of farmland expansion. The current prices of rice fields in zone 3 is about US$ 2,000/ha while in Zone 2 is around US$ 5,000/ha.

The FiAC conducted investigations into fire cases and documented information on the causes and effects of the fires, chronological histories of offenders who are suspected of setting the fires, and names of people involved in flooded forest land encroachment. It is noted that not all the cases have been fully investigated as some conflicting areas are located far away and there is a lack of resources to reach a conclusion. After investigations and documentation, the FiAC prepared and sent complaint letters to arrest the suspects to the provincial court. However, the process of court intervention remains uncertain and many of the suspects have been released with unclear reasons without punishment under the Fisheries Law.

Since 2015, FIAC has filed complaint letters to the court for about dozens of cases against suspects who are charged with involvement in flooded forest fires and land encroachments, although it may not quite often result in successful prosecution, in which around three third cases are still pending.

5. IFFPMP Process for Siem Reap province

To ensure the implementation of participatory flooded forest fire management is carried out effectively and timely following the 5 R's principle and the 3 stages of Prevention (Risk Reduction), Intervention (Readiness and Response) and Restoration mentioned in the Guidelines for Developing Tonle Sap Inundated Forest Fire Management Plans, the implementation of inundated forest fire management should be by the following process.

5.1 Prevention Step (review, risk reduction and readiness)

5.1.1 Review

Review the latest experiences/information/understanding of fire behaviour probabilities and fire effects in different areas of the province over the past several years. Fire behavior probabilities include meteorological conditions, fuel loads and moisture status and ignition sources (human and natural). Fire effects are the potential damage to socio-economic values (properties, resources, recreational importance, carbon stocks, etc.), environmental condition (soil and vegetation) and landscape value (distinctiveness, conservation status, etc.). The review was made following the actions below:

a) Consultation meetings

A series of consultation meetings with key stakeholders (FiAC, local authorities, NGOs, CFi and local

communities) were conducted to discuss and gather information/data related to forest fire behavior (weather condition, fuel load, moisture status); causes of forest fires and suspected people igniting the fires; effects of forest fires to local properties, health and life of human and animals, environment and landscape management; the prevention and responses to forest fires and the forest-fire restoration approaches have been applied; and stakeholders involved in the process of forest fire management. The information collected and findings found in this stage will be used to determine the effective methodologies for the inundated forest fire management.

b) Field observation

Field observation of the burn forest areas was made after the consultation meetings to collect more information on the ground on physical condition, land use pattern, land cover, vegetative species susceptible to fire, causes of forest fires, temporary camping locations, scope of forest fire damages. Coordinates of the fire-damaged forest areas is to be collected in this field observation for producing map of the fire-affected forests.

5.1.2 Risk reduction

Risk reduction activities aim to reduce the number of unwanted, uncontrolled or escaped fires from starting in the first place. Risk reduction is one of the most important parts of fire management; and they are the most economical way of reducing fire damage and loss. Focusing on the potential causes of fires can help reduce the risks of them occurring.

a) Produce extension materials and assemble signboards

To get meaningful, simple extension materials for promoting local awareness produced, erected and distributed, a series of the below activities should be completed:

- Design draft pictures and messages for producing extension materials.
- Review and finalize pictures and messages for producing extension materials.
- Publish extension materials.
- Conduct meeting with district governor and technical team, commune chiefs, CFi and CFFPTs to identify locations for erecting signboards and target people for distribution of the extension materials, and how to read and use them for promoting local awareness. Some posters and leaflets are dropped at the district and commune offices for helping distribution and dissemination.
- Erect signboards at the identified locations.

b) Promote local awareness and participation in flooded forest fire management

- Identify villages, locations and groups of equal representation of female and male farmers, fisherfolk, bee honey collectors, hunters and domestic cattlemen/boys, which are the target audiences of the extension campaign on participatory forest fire management.
- Collect existing document related to the target groups such as lists of farmers who possess farmlands in Zone 3, tractor owners, fishers, hunters by locations.
- Conduct extension meetings to raise awareness of the target groups by locations on participatory flooded forest fire management and law enforcement against the offenders who are suspected to set forest fires.
- Distribute the leaflets and posters to local people who are living in the target villages.

c) Conduct flooded forest fire patrols

The CFFPTs should do patrol based on the agreed weekly forest fire patrol plan. Members of the patrol team must take along the portable forest fire tools to be ready for fighting forest fires they face during the patrol. In addition to that, the team members must record the harmful activities and events they spot in the given form for reporting. Pictures of those activities are also taken for evidence. The incumbent patrol team leaders have to keep the concerned commune chief informed regularly about status in the field and to get their requests for the support readily prepared.

Chiefs of the concerned commune and FiAC's triage have to stand by, follow up and keep connection with

members of the CFFPTs who are on patrol regularly by phone and/or by walky-talky so that they can manage to take action respond to the emergency requests for intervention from the patrol teams. They further ask for immediate intervention from the WGFFM at district level if their effort to put out forest fires is ineffective.

5.1.3 Readiness

Readiness activities aim to prepare structures, equipment and personnel for possible fire events and activities that aim to quantify and evaluate what is necessary and what will optimize firefighting actions

a) Formation of working groups for IFFPMP at provincial, district and commune levels

- Draft roles and responsibilities of the working groups at different levels.
- Meeting with provincial, district and commune administrations to develop required papers for the legal formation of working groups.
- Meeting with commune council to establish community forest fire patrol teams.

b) Conduct quarterly WGFFM meeting at provincial level

Based on the ToR of the working group at provincial level stated in the Decision Letter issued by the provincial governor, The FiAC should organize quarterly WGFFM meeting at provincial level chaired by the provincial governor regularly. The target participants of the meeting include all members of the WGFFM at district and provincial levels and commune chiefs.

The objectives of the meeting are to report the progress made in the quarterly period; raise challenges related to communication, working cooperation, forest fire-fighting equipment, logistics, law enforcement and so on; and get effective recommendations from the provincial governor to deal with those concerns.

Before the meeting, the FiAC's focal officers appointed by the PDFF's director should develop an official request for organizing the quarterly meeting attached with the meeting agenda and quarterly report on progress of IFFPMP's implementation to be submitted to the provincial governor, and current flooded forest fire maps and other related documents to be distributed to all the participants in the meeting.

After the meeting, the FiAC should develop the report of the quarterly meeting and submit it to the PDAFF's director for review and approval, then to the provincial governor for his review and signature. The report will be then sent to all the relevant institutions at provincial, district and commune levels for taking action.

c) Conduct monthly WGFFM meetings at district level

The FiAC should organized WGFFM meeting at district level to provide opportunity to representatives of the CFFPTs, the WGFFM at district level and FiA (for some cases) to report the result of the IFFPMP has been achieved in the month and place on the table the problems that have not yet been resolved for the recommendations from the members of the WGFFM and district governor. The provincial governor requires to be invited to participate in the meeting,

After the meeting, the FiAC should develop the report of the quarterly meeting and submit this report to the district governor for his review and signature. The report will be then sent to all the relevant institutions at provincial, district and commune levels for information and taking action.

d) Conduct commune meeting to review monthly and weekly forest fire patrol work plan

Monthly or weekly CFFPT meeting chaired by the commune chief should be organized regularly to share lessons learnt among the team members and discuss challenges faced during the patrol and proper solution to deal with. In the previous training on Participatory Flooded Forest Fire Management, the CFFPTs already discussed the weekly and monthly patrol plans, so this meeting is aimed to refresh their knowledge on the roles and responsibilities of the CFFPTs and the monthly and weekly work plans, remind of the conduct of regular weekly CFFPT meeting, arrange rotational patrol teams, and check the form for recording unusual events discovered while patrolling and forest fire-fighting tools to be taken along to get them ready to go the fields for forest fire patrol the days after this meeting. Promote active and meaningful participation of women.

The minutes of the monthly or weekly meeting must be developed at the end of the meeting for reporting to the WGFFM at district level and FiAC's chief for information and take action to help address the challenges.

e) Build physical structures for flooded forest fire prevention

As mentioned above, the necessary physical structures to be built for preventing forest fires include installation

of triangle poles along the border of the Zone 3, construction of guard towers, rehabilitation of natural ponds to retain water for putting out forest fires during dry season and marking fire-damaged forest sites with concrete poles. Due to limited budget, not all the structures will be established at the same year. They will be developed year by year following the priorities set in the previous consultation meetings with the involved stakeholders at district and commune levels. Below is the process of the physical structure development:

- Conduct a first consultation meeting with commune and village heads, CFis and CFFPTs identify sites for building guard towers, natural ponds to be rehabilitated, and fire-damaged forest sites to be marked with poles and/or small signboards.
- Conduct field engineering assessment for pond rehabilitation and estimate costs. The triangle poles and guard tower are not included in the engineering assessment as their designs and costs are already developed.
- Conduct process of procurement (documentation, announcement and selection of engineering firm) for pond rehabilitation and guard tower construction.

f) Improve knowledge and skill of the community forest fire patrol teams

- **Develop training manual on Participatory Flooded Forest Fire Management**: The training is centered on the subjects of role and responsibility of the patrol team, importance of flooded forest and impact of fire on ecology and human beings, effective patrol strategy, recording of events encountered during patrol, use and maintenance of community patrol equipment, use of social medias with smart phone, fisheries law and forest fire-related rules, the way of communication for intervention when encountering forest fires, activity planning and report writing.
- **Conduct training on Participatory Flooded Forest Fire Management** for community forest fire patrol teams. The training should be organized at commune level to provide opportunity for every member of the patrol team to learn forest fire management technique, share their lessons learnt and experiences.
- **Develop monthly and weekly forest fire patrol plan**: allow the local participants to consult on the applicable monthly and weekly patrol work plans to develop ownership as they will apply it in the field after the training. The monthly and quarterly work plans are to be signed by the concerned commune chief.
- **Follow up** and improve the application of the knowledge gained from the training in the fields to ensure satisfactory training quality.

g) Equip the community forest patrol teams with forest fire-fighting tools

The community forest patrol equipment for common use and personal safety - including power tillers with water pumps and firefighting hose, drone, first aid, 20-liter portable water pump sprayer, smart phone Black View, fire-fighter boots, hammock, brim hard hat made from high-density polyethylene, leather groves, goggles, long handle shovel, torches, backpack, walkie talkie and face mask - have to be purchased and distributed to the patrol teams.

Regulation for using the equipment for community forest fire patrol team must be developed and disseminated to all members of the team through a meeting at commune level to ensure proper use, maintenance and durability of the equipment.

Additional training at commune level on proper uses of the forest fire-fighting tools would be delivered to

members of the patrol teams as required to ensure the forest fire-fighting equipment are used effectively and safely.

5.2 Intervention Step (Response)

This intervention step is much focused on forest fire fighting and enforcement of the Law on Fisheries with regular flooded forest patrol led by the CFFPTs under direct support and management of the chiefs of the concerned commune council and FiAC's triage. To capacitate and empower the CFFPTs to undertake the forest fire patrol effectively the FiAC's focal officers should direct them to concentrate on the following points:

In cases the CFFPTs encounter forest fires happening while patrolling, the team members must act promptly against the forest fire with the following instruction:

a) Small forest fire cases

- For the small cases of forest fires that can be manageable the CFFPTs spot while on patrol, the team members can use the available fire extinguishing materials to put out the fires immediately on their own with the following actions:
- Covers the mouth and nose with a mask, scarf or sweatshirt to reduce smoke and dust inhalation.
- Use tree branches to beat the fire.
- Use shovel or hoes to dig soil for covering/burying the fires or to make cleared lines
- Use the portable water pumps container to throw water into the fires.Make sure that the fire is completely put out, called 'blacked out', before leaving the scene to avoid re-ignition of the fire .
- Inform chiefs of the commune and FiAc's triage for information.

b) Meso/massive forest fire cases

If the forest fire appears to be at meso-scale, both the CFFPTs who are doing patrol and the commune chief must take special care for personal safety and act promptly to combat the fire with the following approach:

- The patrol team must promptly cover the mouth and nose with a mask, scarf or sweatshirt to reduce smoke and dust inhalation
- Alert chiefs of the commune and FiAc's triage via phone and/or communication radio about the fire case to get support for fighting the forest fire by transferring the standby power tillers and the fire extinguishing tolls on standby to the scene.
- Used the portable fire extinguishing tools that are taken along to commence fire suppression.
- Mobilize some people who are farming or fishing nearby the scene to help put out the fire with their available tools such as water pumps, power tillers, tractors, water containers, hoses, water cans and so on.
- The commune chief must inform the district governor immediately to send the fire-fighting trucks and the fire-fighting police brigade to the scene to help manage the forest fire suppression.
- The commune also to ask leaders of the villages and the voluntary forest fire-fighting groups of the closest villages to mobilize local people and locally available fire extinguishing tools such as power tillers and/or tractors equipped with water tank and plough, water pumps, watering cans and hoses to help put out the fire. Ask them to cover the mouth and nose with a mask, scarf or sweatshirt for personal health.
- If the fire-fighting vehicles cannot access the burning forest site, those vehicles can be used as a source of water supply to fill the tanks loading on the power tillers that take the water to put out the fire.
- In direct attacks on the ground, power tillers, tractors or bulldozers may be brought in to clear vegetation and dry sediment of organic matter in the grassland to form a control line parallel to the flames to prevent the spread of the fire.

- Make sure the fire is completely extinguished to avoid the reoccurrence of the fire before leaving the scene.
- Develop a report on the forest fire containing the cause of the fire, stakeholders and number of people participated in the fire control, fire extinguishing tools used, scope of damage and recommendations to be considered to apply for the future forest fire suppression.
- The payment for fuel the local participants used for their own power tillers and/or tractors should be considered based on the actual consumption. It is the way to ensure the sustainable participatory forest fire approach.

5.3 Restoration Step (Recovery)

Due to the limited budget for restoration of fire-damaged forests and ecological and physical conditions of the burnt forest areas, the restoration approach here considers two options for the restoration in the floodplain: Assisted Natural Regeneration and Replanting Inundated Seedlings.

5.3.1 Damage assessment

a) Conduct rapid assessment to define technical-sound approach to restore the burnt forest areas

A rapid assessment to the fire-damaged forest areas needs to be conducted to collect information on scope of damage, mapping the restoration sites, physical and ecological aspects, native plant species in the burnt areas to be selected for planting, technical sound restoration and maintenance approach, restoration plan and estimated cost. The assessment would be carried out in early dry season (January) to provide enough time for preparing the restoration.

b) Conduct first meetings at commune level to discuss preparation plan for forest restoration

This is the first meeting among relevant stakeholder including FiAC, local authorities, CFis, CFFPT and involving NGOs to discuss activity plan for restoring the fire-damaged forest sites, which emphasizes site selection for restoration by years, selection of native tree species for planting, tree nursery establishment and seedling production, tree planting ceremony, site preparation, seedling transportation, mobilization of local people to participate in tree planting events, supporting and monitoring tree planting conducted by local people, survival rate monitoring, logistics, formation of local working groups and their responsibilities to support the forest restoration process and reporting of the tree planting result.

c) Demarcation and mapping the burnt forest sites

FiAC's officers working with the CFFPTs demarcate and map the burnt forest sites for better understanding of the burnt forest areas to be restored and number of concrete poles and signboards required to erect along the borders to prevent the local attempt to use those areas for rice cultivation. The maps include spots (waypoints) for erecting concrete poles and signboards.

d) Demarcate the burnt forest area with concrete poles and small signboards

Following demarcation and mapping, FiAC's officers in close collaboration with village and commune authorities erect concrete poles and signboards along the boundaries of the demarcated fire-damaged forest sites with the specific amounts as pointed in the maps for the purposes of protection of the burnt areas from land claim for agricultural activities and forest restoration.

In the meantime, village and commune leaders should disseminate the protection of the burn forest sites for restoration and legal actions against offenders who claimed some plots of the sites through administrative village and commune meetings.

e) Site protection

Prevent the restoration sites from grazing by prohibiting the entrance of domestic animals (buffalos and cows) as the animals will devastate natural seedlings. Erecting small signboards to inform the farmers who take care of domestic animals in the floodplain about the forbiddance is necessary. Leaders of the concerned communes and villages should help circulate information about the

restoration site protection to villagers to generate the local participation in the successful restoration.

f) Regularly patrol the restoration sites

It is very important that the CFFPTs include the monitoring of all the forest restoration sites (replanting and assisted natural regeneration sites) in their weekly and monthly patrol plans to ensure that all the sites are safe from the harmful disturbances such as agricultural cultivation activities, wildfire and grazing. While on patrol, the CFFPTs must report to chief of the concerned FiAC triage about impacts on seedlings such as suppression of grasses or water hyacinth over the seedlings as well as competition between grass community and tree seedlings for sunlight, water, space and nutrients in order to take actions to liberate the seedlings with silviculture operations. Such activities are very helpful to improve the survival and growth rates of natural seedlings.

5.3.2 Restoration with Assisted natural regeneration

If the burnt forest areas are close to the inundated forest where exist many seed trees, those areas are no need to restore with replanting inundated tree seedlings because the seed trees will produce and drop seeds in early rainy season that will then be dispersed across the forest areas by flood for natural regeneration. However, the burnt forest areas need to be maintained with seedling liberation as the following instruction:

The local communities reported that most natural inundated tree seedlings died under the pressures of dense grasses and water hyacinth as well as forest fires after water receded. Therefore, liberation of natural seedlings in the restoration sites by scraping of competing vegetation, particularly grasses, with weeding 1 meter around the seedlings and removal of dense grasses and water hyacinth that suppress the seedlings during the dry season are needed. Such activities not only help save the life of natural seedlings from suppression but also improve the seedling growth. The assisted natural regeneration is needed to operate for at least three years to take care of the natural seedlings to get them mature to overcome the grazing, nutrient competition and suppression.

5.3.3 Restoration by replanting tree seedlings

a) Conduct training on tree nursery management and flooded forest restoration approach for CFiA's focal officers

FiA's focal officers in cooperation with other specialists develop training manual on Tree Nursery Management and Flooded Forest Restoration Approach. The training manual should contain:

- **Tree nursery management**: site selection, formation of tree nursery group (at least 40 percent of the groups should be women), small-scale tree nursery design and construction, construction materials required, soil selection and treatment, seed and seedlings collection, seed treatment, seedling maintenance, seedling delivery and bookkeeping.
- **Flooded forest restoration approach**: Site selection and mapping, physical and ecological rapid assessment of the selected sites, native species suitable for the ecological and physical situation of the restoration sites, safe seedling transportation, spacing between pits, marking spots for pitting, pit size, removing seedlings from polybags, formation and ToR of local working groups to help manage tree planting and spread sheets needed for monitoring tree planting activities.

b) Support local communities to develop tree nursery and produce tree seedlings

After documentation of the agreed training manual, the two teams will organize a training on tree Nursery Management and Flooded Forest Restoration Approach at provincial level for the focal points of the three target FiACs to improve and refresh their skill/knowledge for both technical and managerial approaches. The training would be organized in April or May so that they can manage the forthcoming tree planting on time. The draft plan for the oncoming tree planting to be discussed as the last session of the training to be a reference for further discussion with local authorities and

communities to finalize the plan. Support local communities to establish tree nurseries and produce inundated tree seedlings

Inundated tree seedlings required for the inundated forest restoration should be produced by local communities or CFi because it is part of local capacity development for seedling production and insurance of the forest restoration sustainability. Therefore, after the training the FiAC's focal officers have to go the target commune and villages to work with local authorities, local communities and CFis to support them to produce inundated tree seedlings following the subsequent activities as shown below:

- **Site selection for tree nursery establishment**: Select the most appropriate site for establishing tree nursery following the site selection criteria. Size of the nursery is varied based on the number of seedlings required.
- **Formation of local tree nursery group**: At least 10 people, consisting of minimum 5 women, need to be selected and formed as a tree nursery group to run the seedling production business. Ensure some women-only groups are established as well. The management structure of this local tree nursery - including roles and responsibilities of all the team members and benefit sharing - must be developed in a consultation manner to ensure this business is run well and transparently.
- **Building capacity of the tree nursery group**: The FiAC delivers training on tree nursery management - including nursery installation, seed/seedling collection, seed treatment, soil collection and seedling maintenance - to all members of the tree nursery group to enable them to build a nursery and produce seedlings on their own. Sessions of bookkeeping, activity plan and materials for nursery establishment are included in the training. Due to the limited sources of locally available materials for establishing tree nursery, the project should provide some materials such as shelter net, wooden pillars, plastic sheets, polybags, metal wires, watering cans, small water pump, hoses and some fertilizers, as raised in the training to support the tree nursery construction.
- **Support to the nursery establishment and seedling production**: The FiAC's assigned officers should go to the field regularly to support the tree nursery group to establish nursery and produce flooded tree seedlings successfully and on time.

c) Conduct 2nd commune-level consultation meeting to refresh the forest restoration plan

The second consultation meeting at commune level to review and finalize the forest restoration plan prepared in the first meeting is necessary to be managed for reviewing and finalizing the plan that will be considered the final one for the real implementation in the upcoming month. The most important of the meeting is to review the local working arrangements committed to be formed after the first meeting and to confirm the mobilization of local communities to participate in the upcoming tree planting event. The participants of the meeting comprise of FiAC, local authorities, CFi, CFFPTs and tree nursery group.

d) Organize an event of tree planting ceremony

An event of inundated tree planting ceremony should be organized in each target district to circulate the joint effort of the forest restoration and promote local participation in prevention, protection and maintenance of the restoration sites from any harmful activity/attempt. Every event should be chaired by the district governor or his/her representative. If possible, inviting the FiA's Directorate General and/or district governor to chair the event to make the event more important and interesting because the event is considered as a significant extension campaign for fisheries resource management besides the forest restoration.

FiAC plays an important role to facilitate a discussion with the district and commune authorities to prepare the event, including invitation of honorable guests and chairpersons, venue arrangement for the ceremony, site preparation for tree planting, mobilization of local participants and logistics.

e) Support and monitor tree planting in the burnt forest areas

To guarantee the tree planting event is implemented well following the technical orientation made in the previous training on Tree Nursery Management and Flooded Forest Restoration Approach, the subsequent activities mentioned below should be followed:

- A brief technical orientation of tree planting highlighting seedling delivery without damage to the seedlings, dimension of pit, spacing between pits, pitting and soil removal, removing polybags, planting seedlings upwards, filling pit up, gently compacting soil in the pits and watering the planted seedlings if the soil is too dry.
- Mark spots to be pitted with bamboo sticks and tree branches to avoid seedlings planted too closely together and under trees.
- Safe delivery of tree seedlings from the tree nursery to the planting sites. Recording number by species of seedlings delivered and damaged during the transportation by power tiller/truck.
- Divide the restoration area into sub-blocks for planting seedlings by groups under monitoring of the local working groups. This way the working groups can easily identify the planting group who carelessly planted the seedlings for replanting or completing the incomplete plantings.
- Support and monitor tree planting by local communities to ensure proper pitted size, filling pits

  up with soil and soil compacting.

f) Develop tree planting reports

FiAC plays an important role in developing forest restoration reports after finishing the tree planting. The report should be developed at commune, districts and provincial levels as the reports will be submitted to commune chief, district governor and provincial governor respectively.

The tree planting report must be provided precise figures of forest area was restored, number of seedlings by species were planted and number of participants joined the event as is vital for the project's monitoring and evaluation.

g) Maintain the inundated forest restoration sites

To ensure high survival and growth rate of the planted seedlings the forest restoration sites really need to be maintained. There are a few approaches to be applied to maintain both the planted seedlings and natural regeneration, including protection of the restoration sites, seedling clearance from suppression of water hyacinth and grasses, removal of dry organic matter from the restoration sites and protection from domestic animal entry into the restoration sites. The detailed technique for maintaining the forest restoration sites will be incorporated in the training on Fire-Affected Inundated Forest Restoration Approach for the FiAC's focal officers that may be held in May 2021.

h) Conduct seedling survival rate monitoring

Seedling survival rate monitoring is very essential to conduct survival rate monitoring in early dry season after the seedlings reach two year-old. It provides better insight into percentages of mortality, survival and growth rates of planted and natural seedlings by species and location. It would be carried out every two years on the same sample plots.

The objective of the seedling survival and growth rate monitoring is to find out the real factors driving the seedlings dead and slow growth and provide recommendation on different approaches – including such as protection of the restoration sites from any disturbance activity, firebreak establishment, suppressing weedy vegetation, assisted natural regeneration, enrichment planting and seedling deliberation – to better the growing rate of the existing seedlings in the restoration sites based on the real situation and condition of physical, geography, biology and micro-climate of the restoration sites. It is also important for applying flooded forest restoration to be implemented next years.

6. Commitment to work towards Gender Equality and ending child labor in the IFFPMP

In the implementation of the Inundate Forest Fire Prevention and Management plan (IFFPMP), Gender mainstreaming and child protection will be addressed in all activities, including the planning process, implementation and monitoring of the implementation of the IFFPMP in accordance with the framework on Gender equality of the Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries, in particular the action plan of the Fisheries Administration for the promotion of gender equality and the elimination of child labor in the fisheries sector (2016-2020).

To contribute to the promotion of equal participation between men and women in activities and decisions in the three working groups (commune/sangkat, district/municipality, and province), especially at the commune /sangkat level, which is the direct project implementer. The Department of Fisheries Conservation and the Department of Fisheries Affairs will coordinate with the Gender Working Group of the Fisheries Administration to ensure that the negative effects of gender inequality are addressed in the implementation of IFFFPMP by providing equal opportunities between Men and women in the management structures of working groups at the provincial, district/municipal and commune/sangkat levels, and taking into account the needs and barriers of women in the implementation of this plan.

Some considerations regarding the establishment of clear implementation mechanisms to achieve gender equality through the promotion of services and legal support are as follows:

- Ensuring equal participation of women and men in all FFFM and decision-making processes (planning, implementation, and monitoring), addressing women's work burden to assist;
- Encouraging women to actively and meaningfully participate in provincial, district, and commune working groups and pay attention to their interests;
- Providing equal opportunities to women on capacity training and consider their capacity training needs and interests;
- Encouraging technologies that are appropriate to women's work; and
- Protect children (aged 15 to less than 18 years old) and pregnant women from hazardous work and improve the working conditions and skills of youth by applying the occupational health and safety in the workplace both in-door and out-door trainings and practices.
- Showcasing women's and men's valuable roles in fisheries and conservation in the awareness raising campaign on participatory FFFM management.

7. Inundated Forest Fire Management Plan Framework

At present, FiAC in Siem Reap province does not have a clear forest fire management plan, management framework nor enough resources to respond to flooded forest fires. The information on many cases of flooded forest fires has been shared and reported by community fisheries and local people to relevant stakeholders, especially FiAC and local authorities, but they have no budget or equipment to respond on time to the forest fires reported.

Recently, FiA's Department of Fisheries Conservation provided some tools of fire extinguishers to some FiAC for flooded forest fire intervention. However, the interventions are challenging as inundated forest fires can be happened in the middle of dense forest areas where people and fire fighter trucks cannot access easily.

To support the existing implementation of the inundated forest fire management, the CAPFISH project develop the 5-year inundated forest fires fire prevention and management plan for 2021-2025 with the following framework.

7.1 Period of implementation: 2021-2025

7.2 Goal

The inundated forests in Siem Reap province are well protected, grow and increased under the effective flooded forest management mechanism at provincial, district and commune levels using a participatory

forest fire management approach.

7.3 Objective

To meet the above goal, the achievements of the objectives below will strongly contribute to reach the set goal:

- Awareness and participation on participatory flooded forest fire management of the target communities and stakeholders promoted.
- Flooded forest and grassland area affected by wildfire reduced.
- All the fire-damaged flooded forest areas restored by replanting native tree species to benefit both the ecology and organic food source.

7.4 Outputs

Output 1: Effective review, risk reduction and readiness for forest fire protection

The first output covers the first 3 R's of reviewing the satiation, reduction risks and ensuring that the authorities, partners and communities are best prepared for each fire season.

Activities planned under this Output include stakeholder planning meetings to clarify roles and responsibilities and to establish fire patrol teams. This Output also includes the procurement of firefighting equipment, tools for raising stakeholder awareness, training and field activities to support practical forest fire patrol, forest fire intervention and forest restoration and maintenance.

Output 2: Improved responsive actions to inundated forest fires

Output 2 focuses on coordinating the response of the authorities and communities to forest fires that are threatening the inundated forests and grasslands. It also aims to strengthen law enforcement and increase number of successful prosecutions in the court system against illegal activities in the inundated forest areas.

Output 3: Improved restoration of fire damaged areas of inundated forests

The last output focuses on improving the demarcation of fire-affected forest areas that are under rehabilitation; and restoring forest areas that have been damaged by fire, either through protection of natural regeneration or the replanting and maintenance of seedlings.

7.5 Cost: The total value of the Plan estimated is around USD 1,130,475 over the period of 5 years.

The Flooded Forest Fire Management Plan for Siem Reap province follows the principles as laid out in the FAO-CAPFISH (Capture) Project document: Guidelines for developing Tonle Sap Inundated Forest Fire Management Plans and the 5 R's principle, which focus on Review of fire situation, Risk Reduction, Readiness, Response and Recovery. These are very helpful for writing the IFFPMP to cover enough information on the whole process of forest fire management that directs the implementation of the plan to achieve acceptable results met the three outputs above.

The IFFPMP is also built on the principle of Community-Based Fisheries Management (CBFiM), an integrated approach that includes communities in decision making and implementation of the plan. The community-based fire management plan not only involves local communities in the development of a fire management strategy and training on how to suppress forest fires, but also generates local awareness on impacts of forest fires, forest fire and fire-damaged forest management, and prohibitions for cutting/clearing forest and illegal land mentioned in Article 26, 27 and 28 of chapter 6 of the Fisheries Law. Men, women and vulnerable communities play an important role in practical engagement of the five stages of forest fire management.

In this context, however, protection of women and children from hazardous works associated with firefighting must be guaranteed. Therefore, CBFiM is considered an appropriate approach for Tonle Sap Lake's fisheries resource management, given that local communities have a long term interest in

preserving these areas and because local people are aware of the impacts generated by forest fires in the landscape in which they live and earn a living.

8. Monitoring and Evaluation Framework

To follow-up through the project implementation, the Monitoring and Evaluation Team (MET) will be established by selecting representatives from the key stakeholders which include national and sub-national levels. At national such as FiA, MAFF, TSA, DWC, MOE. At sub-national level such as WGFFM, relevant provincial departments-PDAFF/FiAC, PDoRAM, , commune and district authorities, CFis and relevant NGO partners in Siem Reap province.

The Fisheries Administration needs additional information and data as baseline to be used for monitoring the project implementation of this plan. To access this data and information, the Fisheries Administration needs technical and financial support from development partners.

On-going field monitoring will be conducted by the MET to learn how the objectives are being reached, cost effectiveness of the operations and effects of the activities implemented for flooded forest fire management in the province. Furthermore, data collection of fire frequency to be reported contains information on the area reached by the fire, fire-affected vegetation types, size of burned area, causes of fires, scope of damage, people involved, equipment used, costs etc.

These evaluations will be done internally on a yearly basis and would be supported by external consultants. The external evaluations should be conducted twice, in the middle and at the end of the project. In case of requiring the support from external (national and international) consultants, the DFC and DFA will develop ToR for external evaluation and will process to recruit consultants. The results from the evaluation will be used to generate lessons learnt for future implementation of flooded forest fire management strategic plans in the province. Any weakness/challenges identified will also be taken into account for technical capacity building efforts and future planning.

The drone footage taken during the fieldwork facilitated a detailed look at each area. Local fuel load, traffic and tracks, accessibility and vegetation continuity were examined in each site. This facilitated the identification of potential fire risk, mainly generated by fuel load, and fire management opportunities and access to the area.

FiA leaders/Official, Siem Reap provincial Governor, and relevant MET team members will also conduct occasional monitoring of target communes and districts implementation by using the monitoring framework. This will include spot checks to follow up on plan implementation and accounting.

9. Activity and budget plan of IFFPMP for Siem Reap province at provincial level for 2021-2025

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**690,130**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**26,100**																				
1.1.1	Conduct consultation meetings with stakeholders at commune level to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 27 meetings x 5 years).	135 meetings at commune level. 5 reports at provincial level.	FiA, FiAC and	Involving stakeholders at commune and village levels.	6,075	1,215 27 meetings 1 report H			M	1,215 27meetings 1 report M			M	1,215 27meetings 1 report M			M	1,215 27meetings 1 report M			M	1,215 27meetings 1 report M			M
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 27 communes x 5 years).	30 times at district level 5 reports at provincial level	FiAC	FiA triage, CFi and commune authority.	18,225	3,645 6 times 1 report H			H	3,645 6 times 1 report H			H	3,645 6 times 1 report H			H	3,645 6 times 1 report H		H	H	3,645 6 times 1 report			H
1.1.3	Produce maps of the fire-affected forests by target districts (60$ x 6 maps x 5 years).	30 maps	DFA/FiA	FiAC	1,800	360 6 maps H			H	360 6 updated maps H			H	360 6 updated maps H			H	360 6 updated maps H			H	360 6 updated maps H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**223,020**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 27 communes x 5 years)	13,500 sheets	FiA	FAO	20,250	4,050 2,700 sheets			H	4,050 2,700 sheets H			H	4,050 2,700 sheets H			H	4,050 2,700 sheets H			H	4,050 2,700 sheets H			H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 27 communes).	54 signboards	FiAC	Local authorities	16,200	4,800 16 signboards			H	5,700 19 signboard H			H	5,700 19 Signboards H											
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 27 communes x 5 years).	135 lists	FiA Triage	Commune authority	9,450	1.890 27 lists			H	1.890 27 updated lists			H	1.890 27 updated lists *			H	1.890 27 updated lists			H	1.890 27 updated lists			H
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 27 communes x 5 years).	270 times	FiAC	Local authorities	40,500	8,100 54 times H	H			8,100 54 times H	H			8,100 54 times H	H			8,100 54 times H	H			8,100 54 times	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 27 communes x 1 year).	27 teams	FiAC	Local authorities	1,620	1,620 27 teams		H																	
1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 27 communes x 5 years).	2,700 days	FFPTs and FiA Triage	FFPTs and local authorities	135,000	27,000 540 days H	H			27,000 540 days H	H			27,000 540 days H	H			27,000 540 days H	H			27,000 540 days	H		

1.3	**<u>Readiness</u>: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**441,010**					
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**360,010**					
1.3.1.1	Conduct meeting with provincial and target district administrations to discuss drafts of legal papers required for establishing WGFFMs at provincial and district levels (65$ x 6 meetings).	6 meetings and draft ToRs of WGFFM at provincial and district levels	FiA/FiAC and PDAFF	Provincial and target district administrations	390	390 6 meetings H				
1.3.1.2	Conduct meeting with provincial and target district administrations to set up WGFFMs at provincial and district levels (65$ x 6 meetings).	6 working groups	FiA/FiAC and PDAFF	Provincial and target district administrations	390	390 6 groups H				
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,700$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	8,500	1,700 1 meeting H H	1,700 1 meeting H H	1,700 1 meeting H H	1,700 1 meeting H H	1,700 1 meeting H H
1.3.1.4	Conduct quarterly WGFFM meetings at district level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 6 districts x 5 years).	60 meetings	FiAC and PDAFF	WGFFM at district level	19,200	3,840 12 meetings H H	3,840 12 meetings H H	3,840 12 meetings H H	3,840 12 meetings H H	3,840 12 meetings H H
1.3.1.5	Procure and purchase fire-fighting vehicle (1 unit x 30,000$)	1 unit	FiA	FiAC	30,000		30,000 1 unit H			
1.3.1.6	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 27 power tillers).	27 units	FiA	FiAC	97,200		39,600 11 units H H	57,600 16 units H		
1.3.1.7	Purchase motorcycles for forest fire patrol (2,300$ x 54 motorcycles).	54 units	FiA	FiAC	124,200		41,400 18 units H	41,400 18 units	41,400 18 units	
1.3.1.8	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 27 communes).	54 sets	FiA	FiAC	64,800		32,400 27 sets H	 H	32,400 27 sets	
1.3.1.9	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x27 communes)	54 meetings	FiAC	Commune authority	2,430		1.215 27 meetings H	 H	1.215 27 meetings H	
1.3.1.10	ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (2,160$ x trainings)	3 courses	FiA	WCS	6,480		2,160 1 course H	2,160 1 course H	2,160 1 course H	
1.3.1.11	Conduct district-level trainings on Forest Fire Fighting Techniques for FFPTs (50$ x 7ps x 6 districts x 2 trainings)	12 courses	FiAC	WGFFM at district level	4,200		2,100 6 courses H	 	2,100 6 courses H	

1.3.1.12	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at district level and training materials [(45$ x 3ps) + 50$] x 2 trainings x 6 districts	12 courses	FiAC	WGFFM at district level	2,220		1,110 6 courses H		1,110 6 courses H	
1.3.2	**Build physical infrastructures for forest fire prevention**				**81,000**					
1.3.2.1	Build guard towers for the community patrol teams to observe forest fires (6,000$ x 6 towers).	6 units	FiA	FiAC	36,000		12,000 2 units H H	12,000 2 units H H	12,000 2 units H H	
1.3.2.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 10 ponds).	10 locations	FiA	FiAC	45,000		18,000 4 ponds H H	18,000 4 ponds H H	9,000 2 ponds H H	
2	**Output 2: Improved response actions to fires in inundated forest areas**				**148,495**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 345 cases in 5 years).	345 cases	FiA triage	Local authorities	34,500	10,300 103 cases H H	8,600 86 cases H H	6,900 69 cases H H	5,200 52 cases H H	3,500 35 cases H H
2.2	Attend ToT at national level on Collecting Evidence, Preparing Offence Reports for FiAC's trainers (45$ x 3ps x 4 days).	1 course	FiA	FiAC	540	540 1 course H				
2.3	Conduct training at provincial level on Collecting Evidence, Preparing Offence Reports for FiAC's officers (45$ x 20ps x 3 days).	1 course	FiA	FiAC	2,700		2,700 1 course H			
2.4	Fee for the trainer to conduct training on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 3ps x 3 days) + 50$ for training materials.	1 course	FiAC	FiAC	555		555 1 course H			
2.5	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 210 cases).	210 cases	FiAC	Local authorities	31,500	9,450 63 cases H H	7,950 53 cases H H	6,300 42 cases H H	4,650 31 cases H H	3,150 21 cases H H
2.6	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 27 communes x 5 years).	Lump sump	FiA Triage	Commune authority	67,500	13,500 L.sum H H	13,500 L.sum H H	13,500 L.sum H H	13,500 L.sum H H	13,500 L.sum H H
2.7	Organizing provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (5,600$ x 1 time).	1 workshop	FiA	FiAC and WGFFFM at provincial level	5,600				5,600 1 workshop H	
2.8	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 70 people)	70 people	FiA triage	Commune authority	5,600	1,680 21 persons H H	1,360 17 persons H H	1,120 14 persons H H	800 10 persons H H	640 8 persons H H
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**233,350**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 6 districts x 5 years).	6 reports at district level	FiA/FAO	FiAC	9,000	1,800 1 report H	1,800 1 report H	1,800 1 report H	1,800 1 report H	1,800 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 700 poles).	700 poles	FiAC	Local authorities	42,000	12,600 210 poles H H	10,500 175 poles H H	8,400 140 poles H H	6,300 105 poles H H	4,200 70 poles H H

3.3	Participate in 2 workshops at provincial level on tree nursery management and flooded forest restoration approach for FiAC's focal officers (1,700$ x 2 trainings).	2 trainings	FiA and FAO	FiAC	3,400		1,700 1 course H		1,700 1 course H	
3.4	Conduct consultation meetings at commune level with stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 21 meetings x 5 years).	135 meetings	FiAC	Local authorities	9,180	1,836 27 meetings H	1,836 27 meetings H	1,836 27 meetings H	1,836 27 meetings H	1,836 27 meetings H
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 6 district x 5 years).	30 tree nurseries	FiA Triage	CFis	6,000	1,200 6 nurseries H	1,200 6 nurseries H H H	1,200 6 nurseries H H H	1,200 6 nurseries H H H	1,200 6 nurseries H H H
3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (5,850$).	130 hectares	FiAC	Local authorities	5,850	810 18 ha H H	1,260 28 ha H H	1,260 28 ha H H	1,260 28 ha H H	1,260 28 ha H H
3.7	Cost of tree planting, including seedlings, transportation and planting (1$ x 1,100 seedlings x 130 ha).	143,000 seedlings	FiAC	CFi	143,000	19,800 19,800 seedlings H H	30,800 30,800 seedlings H H	30,800 30,800 seedlings H H	30,800 30,800 seedlings H H	30,800 30,800 seedlings H H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 130 ha).	130 hectares	FiA Triage	CFi	13,000	1,800 18 ha H H	2,800 28 ha H H	2,800 28 ha H H	2,800 28 ha H H	2,800 28 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (1,920$/120ha).	120 ha	FiA/FAO	FiAC	1,920			480 30 H H	480 30 H H	960 60 H H
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**58,500**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 1,200$).	1 time	FiA/FAO	FiAC	1,200	1,200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 6 districts x 5 years).	180 times	FiAC	FiAC	8,100	1,620 36 times H H	1,620 36 times H H	1,620 36 times H H	1,620 36 times H H	1,620 36 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (833$ x 2 times x 6 months x 5 years).	60 times	FiA	FiAC	49,200	10,000 12 times H H	10,000 12 times H H	10,000 12 times H H	10,000 12 times H H	10,000 12 times H H
				Total:	**1,106,875**					

10. Activity plan and budget for IFFPMP at district level for 2021-2025

10.1 Activity plan and budget of IFFPMP for Chi Kraeng district

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**161,147**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**6,600**																				
1.1.1	Conduct consultation meetings with stakeholders at commune level to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 7 meetings x 5 years).	35 meetings at commune level. 5 reports at district level.	FiA and FiAC	Involving stakeholders at commune and village levels.	1,575	315 7 meetings 1 report H			H	315 7 meetings 1 report H				315 7 meetings 1 report			H	315 7 meetings 1 report H			H	315 7 meetings 1 report H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3 days x 7 communes x 5 years).	35 times at commune level 5 reports at district level	FiAC	FiA triage, CFi and commune authority.	4,725	945 7 times 1 report H			H	945 7 times 1 report H				945 7 times 1 report			H	945 7 times 1 report H			H	945 7 times 1 report H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Chi Kraeng district (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map H			H	60 1 updated map H				60 1 updated map			H	60 1 updated map H			H	60 1 updated map H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**57,820**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 7 communes x 5 years)	3,500 poster	FiA	FAO	5,250	1,050 700 posters H			H	1,050 700 posters			H	1,050 700 posters			H	1,050 700 posters H			H	1,050 700 posters			H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 7 communes).	14 signboards	FiAC	Local authorities	4,200				H	3,000 10 signboards H			H	1,200 4 signboards H											
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 7 communes x 5 years).	35 lists	FiA Triage	Commune authority	2,450	490 7 lists				490 7 updated lists				490 7 updated lists				490 7 updated lists				490 7 updated lists			
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 7 communes x 5 years).	70 times	FiAC	Local authorities	10,500	2,100 14 meetings H	H			2,100 14 meetings H	H			2,100 14 meetings H	H			2,100 14 meetings H	H			2,100 14 meetings H	H		

1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 7 communes x 1 year).	7 teams	FiAC	Local authorities	420	420 7 teams H				
1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 7 communes x 5 years).	700 days	FFPTs and FiA Triage	FFPTs and local authorities	35,000	7,000 140 days H H	7,000 140 days H H	7,000 140 days H H	7,000 140 days H H	7,000 140 days H H
1.3	**<u>Readiness</u>: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**96,727**					
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**81,727**					
1.3.1.1	Conduct meeting with the district administration to discuss draft of legal papers required for establishing the WGFFM at district level and FFPTs at commune level (65$ x 1 meeting).	1 meeting Draft ToR at district level	PDAFF and FiAC	District administration	65	65 1 meeting H				
1.3.1.2	Conduct meeting with the target district administration to set up WGFFM at district level (65$ x 1 meeting).	1 working group	PDAFF and FiAC	District administration	65	65 1 group H				
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H
1.3.1.4	Conduct quarterly WGFFM meetings at district level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 5 years).	10 meetings	FiAC and PDAFF	WGFFM at district level	3,200	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H
1.3.1.5	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 7 power tillers).	7 units	FiA	FiAC	25,200	H	14,400 4 units H H	10,800 3 units H H		
1.3.1.6	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 7 communes).	14 units	FiA	FiAC	32,200		18,400 8 units H H	13,800 6 units H H		
1.3.1.7	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 7 communes).	14 sets	FiA	FiAC	16,800		8,400 7 sets H		8,400 7 sets H	
1.3.1.8	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x7 communes)	14 meetings	FiAC	Commune authority	630		315 7 meetings H		315 7 meetings H	
1.3.1.9	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080		360 1 course H	360 1 course H	360 1 course H	

1.3.1.10	Conduct district-level trainings on Forest Fire Fighting Techniques for FFPTs (50$ x 7ps x 2 trainings)	2 courses	FiAC	WGFFM at district level	700		350 1 course H		350 1 course H	
1.3.1.11	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at district level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at district level	370		185 1 course H		185 1 course H	
1.3.2	**Build physical infrastructures for forest fire prevention**				**15,000**					
1.3.1	Build watch towers for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000			6,000 1 unit H H		
1.3.2	Rehabilitate natural ponds to retain water for putting out forest fires and fish conservation (4,500$ x 2 pond2).	2 locations	FiA	FiAC	9,000		4,500 1 pond H H	4,500 1 pond H H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**36,844**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 89 cases).	89 cases	FiA triage	Local authorities	8,900	2,700 27 cases H H	1,500 22 cases H H	1,200 18 cases H H	900 13 cases H H	600 9 cases H H
2.2	Attend training at provincial level on Collecting Evidence, Preparing Offence Reports for FiAC's officers (450$).	1 course	FiA	FiAC	405		450 1 course H			
2.3	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 54 cases).	54 cases	FiAC	Local authorities	8,100	2,400 16 cases H H	2,100 14 cases H H	1,650 11 cases H H	1,200 8 cases H H	750 5 cases H H
2.4	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 7 communes x 5 years).	Lum sump	FiA Triage	Commune authority	17,500	3,500 L.sum H H	3,500 L.sum H H	3,500 L.sum H H	3,500 L.sum H H	3,500 L.sum H H
2.5	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (933$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFFM at provincial level	933				933 1 workshop H	
2.6	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 12 people)	12 people	FiA triage	Commune authority	960	240 3 persons H H	240 3 persons H H	160 2 persons H H	160 2 persons H H	160 2 persons H H
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**41,932**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 reports	FiA/FAO	FiAC	1,500	300 1 report H	300 1 report H	300 1 report H	300 1 report H	300 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 167 poles).	167 poles	FiAC	Local authorities	10,020	2,700 45 poles H H	1,920 32 poles H H	1,860 31 poles H H	1,800 30 poles H H	1,740 29 poles H H
3.3	Participate in workshops at provincial level on tree nursery management and flooded forest restoration approach (284$ x 2 trainings).	2 trainings	FiA and FAO	FiAC	567	H	284 1 training H	H	283 1 training H	
3.4	Conduct consultation meetings at commune level with	35 meetings	FiAC	Local	2,380	476	476	476	476	476

	stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 7 meetings x 5 years).			authorities		7 meetings H	7 meetings H	7 meetings H	7 meetings H	7 meetings H
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200 1 nursery H H H	200 1 nursery H H	200 1 nursery H	200 1 nursery H H H	200 1 nursery H H
3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (945$).	21 hectares	FiAC	Local authorities	945	135 3 ha H H	225 5 ha H H	225 5 ha H H	180 4 ha H H	180 4 ha H H
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 21 ha).	23,100 seedlings	FiAC	CFi	23,100	3,300 3,300 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H	4,400 4,400 seedlings H	4,400 4,400 seedlings H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 21 ha).	21 hectares	FiA Triage	CFi	2,100	300 3 ha H H	500 5 ha H H	500 5 ha H H	400 4 ha H H	400 4 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320			80 5 ha M	80 5 ha M	160 10 ha M
4	**ackstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9,750**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA/FAO	FiAC	200	200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC	1,350	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FiAC	8,200	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H
				Total :	**249,673**					

10.2 Activity and budget plan of inundated forest fire management for Sotr Nikum district

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**101,597**																				
1.1	**Review forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				3,900																				
1.1.1	Conduct consultation meetings with stakeholders at commune level to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 4 communes x 5 years).	20 meetings at commune level. 5 reports at district level.	FiA and FiAC	Involving stakeholders at commune and village levels.	900	180 4 meetings 1 report H			H	180 4 meetings 1 report H				180 4 meetings 1 report			H	180 4 meetings 1 report H			H	180 4 meetings 1 report H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3days x 4 communes x 5 years).	20 times at commune level. 5 reports at district level.	FiAC	FiA triage, CFi and commune authority.	2,700	540 4 times 1 report H			H	540 4 times 1 report H				540 4 times 1 report			H	540 4 times 1 report H			H	540 4 times 1 report H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Sotr Nikum district (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map H			H	60 1 updated map H				60 1 updated map			H	60 1 updated map H			H	60 1 updated map H			H
1.2	**Risk Reduction: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**33,040**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 4 communes x 5 years)	2,000 poster	FiA	FAO	3,000	600 400 sheets H			H	600 400 sheets			H	600 400 sheets			H	600 400 sheets			H	600 400 sheets			H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 4 communes).	8 signboards	FiAC	Local authorities	2,400				H	440 4 units H			H	440 4 units H											
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 4 communes x 5 years).	20 lists	FiA Triage	Commune authority	1,400	280 4 lists			H	280 4 updated lists			H	280 4 updated lists			H	280 4 updated lists			H	280 4 updated lists			H
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 4 communes x 5 years).	40 meetings	FiAC	Local authorities	6,000	1,200 8 meetings H	H			1,200 8 meetings H	H			1,200 8 meetings H	H			1,200 8 meetings H	H			1,200 8 meetings H	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 4 communes x 1 year).	4 teams	FiAC	Local authorities	240	240 4 teams H																			
1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 4 communes x 5 years).	400 days	FFPTs and FiA Triage	FFPTs and local authorities	20,000	5,000 80 days H	H			5,000 80 days H	H			5,000 80 days H	H			5,000 80 days H	H			5,000 80 days H	H		

1.3	**<u>Readiness</u>: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**64,657**						
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**49,657**						
1.3.1.1	Conduct meeting with the district administration to discuss draft of legal papers required for establishing the WGFFM at district level (65$ x 1 meeting).	1 meeting Draft ToR at district level	PDAFF and FiAC	District administration	65	65 1 meeting H					
1.3.1.2	Conduct meeting with the target district administration to set up WGFFM at district level (65$ x 1 meeting).	1 group	PDAFF and FiAC	District administration	65	65 1 group H					
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	
1.3.1.4	Conduct quarterly WGFFM meetings at district level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 5 years).	10 meetings	FiAC and PDAFF	WGFFM at district level	3,200	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	
1.3.1.5	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 4 power tillers).	4 units	FiA	FiAC	14,400		7,200 2 unit H H	3,600 1 unit H			
1.3.1.6	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 4 communes).	8 units	FiA	FiAC	18,400		9,200 4 units H H	9,200 4 units H H			
1.3.1.7	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 4 communes).	8 sets	FiA	FiAC	9,600		4,800 4 sets H		4,800 4 sets H		
1.3.1.8	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x 4 communes).	8 meetings	FiAC	Commune authority	360		180 4 meetings H		180 4 meetings H		
1.3.1.9	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080		360 1 course	360 1 course H	360 1 course H		
1.3.1.10	Conduct district-level trainings on Forest Fire Fighting Techniques for FFPTs (50$ x 7ps x 2 trainings)	2 courses	FiAC	WGFFM at district level	700		350 1 course H		350 1 course H		
1.3.1.11	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at district level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at district level	370		185 1 course H		185 1 course H		
1.3.2	**Build physical infrastructures for forest fire prevention**				**15,000**						
1.3.1	Build watch tower for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000			6,000 1 unit H H			

1.3.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 2 ponds).	2 location	FiA	FiAC	9,000		4,500 1 pond H H	4,500 1 pond H H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**22,457**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 51 cases).	51 cases	FiA triage	Local authorities	5,100	1,500 15 cases H H	1,300 13 cases H H	1,000 10 cases H H	800 8 cases H H	500 5 cases H H
2.2	Join ToT at national level on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 1ps x 4 days).	1 course	FiA	FiAC	179	179 1 course H				
2.3	Conduct training at provincial level on Collecting Evidence, Preparing Offence Reports for FiAC's officers (450$).	1 course	FiA	FiAC	450		450 1 course H			
2.4	Facilitation fee for FiAC's trainers facilitate the training on Collecting Evidence and Preparing Offence Reports	1 course	FiAC	FiAC	185		185 1 course H			
2.5	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 31 cases).	31 cases	FiAC	Local authorities	4,650	1,350 9 cases H H	1,200 8 cases H H	900 6 cases H H	750 5 cases H H	450 3 cases H H
2.6	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 4 communes x 5 years).	Lum sump	FiA Triage	Commune authority	10,000	2,000 L.sum H H	2,000 L.sum H H	2,000 L.sum H H	2,000 L.sum H H	2,000 L.sum H H
2.7	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (933$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFFM at provincial level	933				933 1 workshop H	
2.8	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 12 people)	12 people	FiA triage	Commune authority	960	240 3 persons H H	240 2 persons H H	160 2 persons H H	160 1 persons H H	160 1 persons H H
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**38,137**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 report	FiA/FAO	FiAC	1,500	300 1 report H	300 1 report H	300 1 report H	900 1 report H	300 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 100 poles).	100 poles	FiAC	Local authorities	6,000	1,800 30 poles H H	1,500 25 poles H H	1,200 20 poles H H	900 15 poles H H	600 10 poles H H
3.3	Participate in workshops at provincial level on tree nursery management and flooded forest restoration approach (283$ x 2 trainings).	2 trainings	FiA and FAO	FiAC	567		284 1 training H H		283 1 training H	
3.4	Conduct consultation meetings at commune level with stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 4 meetings x 5 years).	20 meetings	FiAC	Local authorities	1,360	272 4 meetings H	272 4 meetings H	272 4 meetings H	272 4 meetings H	272 4 meetings H
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200 1 nursery H H H	200 1 nursery H H	200 1 nursery H	200 1 nursery H H H	200 1 nursery H H

3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (945$).	22 hectares	FiAC	Local authorities	990	135 3 ha H H	225 5 ha H H	180 5 ha H H	225 5 ha H H	225 4 ha H H
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 22ha).	24,200 seedlings	FiAC	CFi	24,200	3,300 3,300 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H	4,400 4,400 seedlings H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 22ha).	22 hectares	FiA Triage	CFi	2,200	300 3 ha H H	500 5 ha H H	500 5 ha H H	500 5 ha H H	400 4 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320			80 5 ha M	80 5 ha M	160 10 ha M
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9.750**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA/FAO	FiAC	200	200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC	1,350	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FiAC	8,200	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H
				Total :	**171,941**					

10.3 Activity and budget plan of inundated forest fire management for Prasat Bakong district

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**77,246**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**3,000**																				
1.1.1	Conduct consultation meetings with stakeholders at commune level to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 3 communes x 5 years).	15 meetings at commune level. 5 reports at district level.	FiA and FiAC	Involving stakeholders at commune and village levels.	675	135 3 meetings 1 report H			H	135 3 meetings 1 report H				135 3 meetings 1 report			H	135 3 meetings 1 report H			H	135 3 meetings 1 report H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3days x 3 communes x 5 years).	15 times at commune level. 5 reports at district level.	FiAC	FiA triage, CFi and commune authority.	2,025	405 3 times 1 report H			H	405 3 times 1 report H				405 3 times 1 report			H	405 3 times 1 report H			H	405 3 times 1 report H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Prasat Bakong district (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map H			H	60 1 updated map H				60 1 updated map			H	60 1 updated map H			H	60 1 updated map H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**24,780**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 3 communes x 5 years)	1,500 poster	FiA	FAO	2,250	450 300 sheets H			H	450 300 sheets			H	450 300 sheets			H	450 300 sheets H			H	450 300 sheets			H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 3 communes).	6 signboards	FiAC	Local authorities	1,800					600 2 signboard H	H			600 2 signboard H	H			600 2 signboard H	H						
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 3 communes x 5 years).	15 lists	FiA Triage	Commune authority	1,050	210 3 lists			H	210 3 updated lists			H	210 3 updated lists			H	210 3 updated lists H			H	210 3 updated lists			H
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 3 communes x 5 years).	30 times	FiAC	Local authorities	4,500	900 6 meetings H	H			900 6 meetings H	H			900 6 meetings H	H			900 6 meetings H	H			900 6 meetings H	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 3 communes x 1 year).	3 teams	FiAC	Local authorities	180	180 3 teams H																			

1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 3 communes x 5 years).	300 times	FFPTs and FiA Triage	FFPTs and local authorities	15,000	3,000				3,000				3,000				3,000				3,000			
						60 times				60 times				60 times				60 times				60 times			
						H	H			H	H			H	H			H	H			H	H		
1.3	**<u>Readiness</u>: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**49,467**																				
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**38,967**																				
1.3.1.1	Conduct meeting with the district administration to discuss draft of legal papers required for establishing the WGFFM at district level (65$ x 1 meeting).	1 meeting Draft ToR at district level	PDAFF and FiAC	The district administration	65	65																			
						1 meeting																			
						H																			
1.3.1.2	Conduct meeting with the target district administration to set up WGFFM at district level (65$ x 1 meeting).	1 group	PDAFF and FiAC	District administration	65	65																			
						1 group																			
						H																			
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	242				242				246				242				242			
						1 meeting				1 meeting				1 meeting				1 meeting				1 meeting			
						H	H			H	H			H	H			H	H			H	H		
1.3.1.4	Conduct quarterly WGFFM meetings at district level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 5 years).	10 meetings	FiAC and PDAFF	WGFFM at district level	3,200	640				640				640				640				640			
						2 meetings				2 meetings				2 meetings				2 meetings				2 meetings			
						H	H			H	H			H	H			H	H			H	H		
1.3.1.5	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 3 power tillers).	3 units	FiA	FiAC	10,800					7,200				3,600											
										2 unit				1 unit											
									H	H			H	H											
1.3.1.6	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 3 communes).	6 units	FiA	FiAC	13,800					7,200				7,200											
										3 units				3 units											
									H	H			H	H			H								
1.3.1.7	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 3 communes).	6 sets	FiA	FiAC	7,200					3,600								3,600							
										3 sets								3 sets							
										H								H							
1.3.1.8	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x3 communes)	6 meetings	FiAC	Commune authority	270					135								135							
										3 meetings								3 meetings							
										H								H							
1.3.1.9	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080					360				360				360							
										1 course				1 course				1 course							
													H				H				H				
1.3.1.10	Conduct district-level trainings on Forest Fire Fighting Techniques for FFPTs (50$ x 7ps x 2 trainings)	2 courses	FiAC	WGFFM at district level	700					350								350							
										1 course								1 course							
										H								H							
1.3.1.11	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at district level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at district level	370					185								185							
										1 course								1 course							
										H								H							

1.3.2	**Build physical infrastructures for forest fire prevention**				**10,500**					
1.3.1	Build watch towers for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000			6,000 1 unit H H		
1.3.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 1 pond).	1 location	FiA	FiAC	4,500			4,500 1 pond H H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**17,093**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$x38 cases)	38 cases	FiA triage	Local authorities	3,800	1,100 11 cases H H	900 9 cases H H	800 8 cases H H	600 6 cases H H	400 4 cases H H
2.2	Join training at provincial level on Collecting Evidence, Preparing Offence Reports for FiAC's officers (450$).	1 course	FiA	FiAC	450		450 1 course H			
2.3	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 23 cases).	23 cases	FiAC	Local authorities	3,450	1,050 7 cases H H	900 6 cases H H	750 5 cases H H	450 3 cases H H	300 2 cases H H
2.4	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 3 communes x 5 years).	Lum sump	FiA Triage	Commune authority	7,500	1,500 L.sum H H	1,500 L.sum H H	1,500 L.sum H H	1,500 L.sum H H	1,500 L.sum H H
2.5	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (933$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFM at provincial level	933				933 1 workshop H	
2.6	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 12 people)	12 people	FiA triage	Commune authority	960	240 3 persons H H	240 3 persons H H	160 2 persons H H	160 2 persons H H	160 2 persons H H
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**36,552**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 report	FiA/FAO	FiAC	1,500	300 1 report H	300 1 report H	300 1 report H	900 1 report H	300 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 100 poles).	100 poles	FiAC	Local authorities	6,000	1,800 30 poles H H	1,500 25 poles H H	1,200 20 poles H H	900 15 poles H H	600 10 poles H H
3.3	Participate in workshops at provincial level on tree nursery management and flooded forest restoration approach (283$ x 2 trainings).	2 trainings	FiA and FAO	FiAC	567		283 1 training H		284 1 training H	
3.4	Conduct consultation meetings at commune level with stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 3 meetings x 5 years).	15 meetings	FiAC	Local authorities	1,020	204 3 meetings H	204 3 meetings H	204 3 meetings H	204 3 meetings H	204 3 meetings H
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200 1 nursery H H H	200 1 nursery H H	200 1 nursery H	200 1 nursery H H H	200 1 nursery H H

3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (945$).	21 hectares	FiAC	Local authorities	945	135 3 ha H H	225 5 ha H H	225 5 ha H H	180 4 ha H H	180 4 ha H H
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 21ha).	23,100 seedlings	FiAC	CFi	23,100	3,300 3,300 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H	4,400 4,400 seedlings H	4,400 4,400 seedlings H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 21ha).	21 hectares	FiA Triage	CFi	2,100	300 3 ha H H	500 5 ha H H	500 5 ha H H	400 4 ha H H	400 4 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320			80 5 ha M	80 5 ha M	160 10 ha M
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9.750**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA/FAO	FiAC	200	200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC	1,350	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FiAC	8,200	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H
				Total :	**140,642**					

10.4 Activity and budget plan of inundated forest fire management for Krong Siem Reap

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**146,947**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**4,800**																				
1.1.1	Conduct consultation meetings with stakeholders at Sangkat level to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 5 Sangkats x 5 years)	25 meetings at Sangkat level. 5 reports at Krong level.	FiA and FiAC	Involving stakeholders at Sangkat and village levels.	1,125	225 5 meetings 1 report				225 5 meetings 1 report				225 5 meetings 1 report				225 5 meetings 1 report				225 5 meetings 1 report			
						H			H	H							H	H			H	H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3days x 5 Sangkats x 5 years).	25 times at Sangkat level 5 reports at Krong level	FiAC	FiA triage, CFi and Sangkats authority.	3,375	675 5 times 1 report				675 5 times 1 report				675 5 times 1 report				675 5 times 1 report				675 5 times 1 report			
						H			H	H							H	H			H	H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Krong Siem Reap (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map				60 1 updated map				60 1 updated map				60 1 updated map				60 1 updated map			
						H			H	H							H	H			H	H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**41,300**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 5 Sangkats x 5 years)	3,500 poster	FiA	FAO	3,750	750 500 sheets				750 500 sheets				750 500 sheets				750 500 sheets				750 500 sheets			
						H			H				H				H				H				H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 5 Sangkats).	10 signboards	FiAC	Local authorities	3,000					1,500 5 signboards				900 3 signboards				600 2 signboards							
									H	H			H	H											
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 5 Sangkats x 5 years).	25 lists	FiA Triage	Sangkat authority	1,750	280 5 lists				280 5 updated lists				280 5 updated lists				280 5 updated lists				280 5 updated lists			
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 5 Sangkats x 5 years).	50 times	FiAC	Local authorities	7,500	1,500 10 meetings				1,500 10 meetings				1,500 10 meetings				1,500 10 meetings				1,500 10 meetings			
						H	H			H	H			H	H			H	H			H	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at Sangkat level and develop forest fire patrol plans (60$ x 5 Sangkats x 1 year).	5 teams	FiAC	Local authorities	300	300 5 teams																			
						H																			

1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 5 Sangkats x 5 years).	500 days	FFPTs and FiA Triage	FFPTs & local authorities	25,000	5,000 100 days H H	5,000 100 days H H	5,000 100 days H H	5,000 100 days H H	5,000 100 days H H
1.3	**Readiness: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and Krong levels and prepare equipment for flooded forest fire prevention and intervention.**				**100,847**					
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and Krong levels and FFPT at Sangkat level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**90,347**					
1.3.1.1	Conduct meeting with the Krong administration to discuss draft of legal papers required for establishing the WGFFM at municipality level (65$ x 1 meeting).	1 meeting Draft ToR at Krong level	PDAFF and FiAC	Krong administration	65	65 1 meeting H				
1.3.1.2	Conduct meeting with the target Krong administration to set up WGFFM at municipality level (65$ x 1 meeting).	1 working group	PDAFF and FiAC	Krong administration	65	65 1 group H				
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	10 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H
1.3.1.4	Conduct quarterly WGFFM meetings at municipality level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at Sangkats level (320$ x 2 meetings x 5 years).	30 meetings	FiAC and PDAFF	WGFFM at Krong level	3,200	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H
1.3.1.5	Procure and purchase fire-fighting vehicle (1 unit x 30,000$)	1 unit	FiA	FiAC	30,000			30,000 1 unit		
1.3.1.6	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 5 power tillers).	5 units	FiA	FiAC	18,000		10,800 3 unit H H	7,200 2 unit H		
1.3.1.7	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 5 Sangkats).	10 units	FiA	FiAC	23,000		11,500 5 units H H	11,500 5 units H		
1.3.1.8	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 5 Sangkats).	10 sets	FiA	FiAC	12,000		6,000 5 sets H		6,000 5 sets H	
1.3.1.9	Conduct meeting with FFPTs at Sangkat level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x 5 Sangkats)	10 meetings	FiAC	Sangkat authority	450		225 5 meetings H		225 5 meetings H	
1.3.1.10	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080		360 1 course H	360 1 course H	360 1 course	
1.3.	Conduct Krong-level trainings on Forest Fire Fighting	2 courses	FiAC	WGFFM at	700		350		350	

1.11	Techniques for FFPTs (50$ x 7ps x 2 trainings)			Sangkat level			1 course H		1 course H	
1.3.1.12	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at Krong level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at Sangkat level	370		185 1 course H		185 1 course H	
1.3.2	**Build physical infrastructures for forest fire prevention**				**10,500**					
1.3.1	Build watch towers for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000			6,000 1 unit H H		
1.3.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 1 pond).	1 location	FiA	FiAC	4,500			4,500 1 pond H H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**27,163**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 64 cases)	64 cases	FiA triage	Local authorities	6,400	2,000 20 cases H H	1,600 16 cases H H	1,300 13 cases H H	900 9 cases H H	600 6 cases H H
2.2	Join training at provincial level on Collecting Evidence, Preparing Offence Reports for FiAC's officers (450$).	1 course	FiA	FiAC	450		450 1 course H			
2.3	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 40 cases).	40 cases	FiAC	Local authorities	6,000	1,800 12 cases H H	1,500 10 cases H H	1,200 8 cases H H	900 6 cases H H	600 4 cases H H
2.4	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 5 Sangkats x 5 years).	Lum sump	FiA Triage	Sangkat authority	12,500	2,500 L.sum H H	2,500 L.sum H H	2,500 L.sum H H	2,500 L.sum H H	2,500 L.sum H H
2.5	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (933$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFM at provincial level	933				933 1 workshop H	
2.6	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 12 people)	11 people	FiA triage	Sangkat authority	880	240 3 persons H H	240 3 persons H H	160 2 persons H H	160 2 persons H H	80 2 person H H
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**40,457**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 report	FiA/FAO	FiAC	1,500	300 1 report H	300 1 report H	300 1 report H	300 1 report H	300 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 130 poles).	133 poles	FiAC	Local authorities	7,980	2,400 40 poles H H	1,980 33 poles H H	1,620 27 poles H H	1,200 20 poles H H	780 13 poles H H
3.3	Participate in workshops at provincial level on tree nursery management and flooded forest restoration approach (283$ x 2 trainings).	2 workshops	FiA and FAO	FiAC	567		284 1 event H H		283 1 event H	
3.4	Conduct consultation meetings at Sangkat level with	25 meetings	FiAC	Local	1,700	340 5 meetings	340 5 meetings	340 5 meetings	340 5 meetings	340 5 meetings

	stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 5 meetings x 5 years).			authorities			H				H				H				H				H		
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200				200				200				200				200			
						1 nursery				1 nursery				1 nursery				1 nursery				1 nursery			
						H	H		H	H	H						H	H	H		H	H	H		
3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (990$).	22 hectares	FiAC	Local authorities	990	135				225				225				225				180			
						3 ha				5 ha				5 ha				5 ha				4 ha			
							H	H			H	H			H	H			H	H			H	H	
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 22ha).	24,200 seedlings	FiAC	CFi	24,200	3,300				5,500				5,500				5,500				4,400			
						3,300 seedlings				5,500 seedlings				5,500 seedlings				5,500 seedlings				4,400 seedlings			
								H				H				H				H				H	
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 22ha).	22 hectares	FiA Triage	CFi	2,200	300				500				500				500				400			
						3 ha				5 ha				5 ha				5 ha				4 ha			
						H	H			H	H			H	H			H	H			H	H		
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320									80				80				160			
														5 ha				5 ha				10 ha			
														M				M				M			
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9,750**																				
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA and FAO	FiAC, WGFFM	200	200																			
						1 time																			
								H																	
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC, WGFFM	1,350	270				270				270				270				270			
						6 times				6 times				6 times				6 times				6 times			
						H	H			H	H			H	H			H	H			H	H		
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FIAC and WGFFM	8,200	1,640				1,640				1,640				1,640				1,640			
						6 times				6 times				6 times				6 times				6 times			
						H	H			H	H			H	H			H	H			H	H		
				Total :	**224,316**																				

10.5 Activity and budget plan of inundated forest fire management for Puok district

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**141,297**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**5,700**																				
1.1.1	Conduct consultation meetings with stakeholders at commune levels to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 6 communes x 5 years).	30 meetings at commune level. 5 reports at district level.	FiA and FiAC	Involving stakeholders at commune and village levels.	1,350	270 6 meetings 1 report H			H	270 6 meetings 1 report H				270 6 meetings 1 report			H	270 6 meetings 1 report H			H	270 6 meetings 1 report H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3days x 6 communes x 5 years).	30 times at commune level 5 reports at district level	FiAC	FiA triage, CFi and commune authority.	4,050	810 6 times 1 report H			H	810 6 times 1 report H				810 6 times 1 report			H	810 6 times 1 report H			H	810 6 times 1 report H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Pouk district (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map H			H	60 1 updated map H				60 1 updated map			H	60 1 updated map H			H	60 1 updated map H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**49,560**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 6 communes x 5 years)	3,000 poster	FiA	FAO	4,500	900 600 posters H				900 600 posters H				900 600 posters H				900 600 posters H				900 600 posters H			
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 6 communes).	12 signboards	FiAC	Local authorities	3,600	 H				1,800 6 units H			H	1,200 4 units H			H	600 2 units H							
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x6 communes x 5 years).	30 lists	FiA Triage	Commune authority	2,100	420 6 lists H				420 6 updated lists H				420 6 updated lists H				420 6 updated lists H				420 6 updated lists H			
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 6 communes x 5 years).	60 times	FiAC	Local authorities	9,000	1,800 12 times H	H			1,800 12 times H	H			1,800 12 times H	H			1,800 12 times H	H			1,800 12 times H	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 6 communes x 1 year).	6 teams	FiAC	Local authorities	360	360 6 teams H																			

1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 6 communes x 5 years).	600 times	FFPTs and FiA Triage	FFPTs and local authorities	30,000	6,000				6,000				6,000				6,000				6,000			
						120 times				120 times				120 times				120 times				120 times			
						H	H			H	H			H	H			H	H			H	H		
1.3	**Readiness: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**86,037**																
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**71,037**																
1.3.1.1	Conduct meeting with the municipality administration to discuss draft of legal papers required for establishing the WGFFM at district level (65$ x 1 meeting).	1 meeting Draft ToR at Krong level.	PDAFF and FiAC	Municipality administration	65	65															
						1 meeting															
						H															
1.3.1.2	Conduct meeting with the target municipality administration to set up WGFFM at Krong level (65$ x 1 meeting).	1 working group	PDAFF and FiAC	Municipality administration	65	65															
						1 group															
						H															
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	283				283				283				283				283			
						1 meeting				1 meeting				1 meeting				1 meeting				1 meeting			
						H	H			H	H			H	H			H	H			H	H		
1.3.1.4	Conduct quarterly WGFFM meetings at municipality level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 5 years).	10 meetings	FiAC and PDAFF	WGFFM at municipality level	3,200	640				640				640				640				640			
						2 meetings				2 meetings				2 meetings				2 meetings				2 meetings			
						H	H			H	H			H	H			H	H			H	H		
1.3.1.5	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 6 power tillers).	6 units	FiA	FiAC	21,600					10,800				10,800											
										3 units				3 units											
									H	H			H	H											
1.3.1.6	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 6 communes).	12 units	FiA	FiAC	27,600					9,200				9,200				9,200							
										4 units				4 units				4 units							
									H	H			H	H			H	H							
1.3.1.7	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 3 communes).	12 sets	FiA	FiAC	14,400					7,200								7,200							
										6 sets								6 sets							
										H								H							
1.3.1.8	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x 6 communes)	12 meetings	FiAC	Commune authority	540					270								270							
										6 meetings								6 meetings							
										H								H							
1.3.1.9	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080					360				360				360							
										1 course				1 course				1 course							
													H				H				H				
1.3.	Conduct district-level trainings on Forest Fire Fighting	2 courses	FiAC	WGFFM at	700					350								350							
										1 course								1 course							

1.10	Techniques for FFPTs (50$ x 7ps x 2 trainings)			district level		H		H		
1.3.1.11	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques atmunicipality level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at municipality level	370		185 1 course H		185 1 course H	
1.3.2	**Build physical infrastructures for forest fire prevention**				**15,000**					
1.3.1	Build guard towers for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000		6,000 1 unit H H			
1.3.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 2 ponds).	2 locations	FiA	FiAC	9,000		4,500 1 pond H H	4,500 1 pond H H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**32,309**					
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 77 cases)	77 cases	FiAC's triage	Local authorities	7,700	2,200 22 cases H H	2,000 20 cases H H	1,500 15 cases H H	1,200 12 cases H H	800 8 cases H H
2.2	Attend ToT at national level on Collecting Evidence and Preparing Offence Reports for FiAC's trainers (45$ x 1ps x 4 days).	1 course	FiA	FiAC	180	180 1 course H				
2.3	Conduct training at provincial level on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 3ps x 3 days).	1 course	FiA	FiAC	450		450 1 course H			
2.4	Fee for trainer to conduct training on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 1ps x 3 days) + 50$ for training materials.	1 course	FiAC	FiAC	185		185 1 course H			
2.5	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 46 cases).	46 cases	FiAC	Local authorities	6,900	2,100 14 cases H H	1,650 11 cases H H	1,350 9 cases H H	1,050 7 cases H H	750 5 cases H H
2.6	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 6 communes x 5 years).	Lum sump	FiA Triage	Commune authority	15,000	3,000 L.sum H H	3,000 L.sum H H	3,000 L.sum H H	3,000 L.sum H H	3,000 L.sum H H
2.7	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (934$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFM at provincial level	934				934 1 workshop H	
2.8	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 12 people)	12 people	FiA triage	Commune authority	960	320 4 persons H H	240 3 persons H H	160 2 persons H H	160 2 persons H H	80 1 person H H
	Output 3: Improved restoration of fire damaged areas of inundated forests.				**40,979**					
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 reports	FiA/FAO	FiAC	1,500	300 1 report H	300 1 report H	300 1 report H	300 1 report H	300 1 report H
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 133 poles).	133 poles	FiAC	Local authorities	7,980	2,400 40 poles H H	1,980 33 poles H H	1,620 27 poles H H	1,200 20 poles H H	780 13 poles H H
3.3	Participate in workshops at provincial level on tree nursery	2 trainings	FiA and	FiAC	567		283 1 training		284 1 training	

						Year 1	Year 2	Year 3	Year 4	Year 5
	management and flooded forest restoration approach (283$ x 2 trainings).		FAO			H	H	H	H	
3.4	Conduct consultation meetings at commune level with stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 6 meetings x 5 years).	30 meetings	FiAC	Local authorities	2,040	408 6 meetings H	408 6 meetings H	408 6 meetings H	408 6 meetings H	408 6 meetings H
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200 1 nursery H H H	200 1 nursery H H	200 1 nursery H	200 1 nursery H H H	200 1 nursery H H
3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (990$).	22 hectares	FiAC	Local authorities	990	135 3 ha H H	180 4 ha H H	225 5 ha H H	225 5 ha H H	225 5 ha H H
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 22ha).	24,200 seedlings	FiAC	CFi	24,200	3,300 3,300 seedlings H	4,400 4,400 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 22ha).	22 hectares	FiA Triage	CFi	2,200	300 3 ha H H	500 5 ha H H	500 5 ha H H	500 5 ha H H	400 4 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320			80 5 ha M	80 5 ha M	160 10 ha M
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9,750**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA/FAO	FiAC	200	200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC	1,350	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FiAC	8,200	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H
				Total :	**224,152**					

10.6 Activity and budget plan of inundated forest fire management for Kralanh district

No	Activities	Indicators (5 years)	Responsible		Budget (2021-2025)	2021 (by quarter)				2022 (by quarter)				2023 (by quarter)				2024 (by quarter)				2025 (by quarter)			
			Lead	Support		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	**4**
1	**Output 1: Effective review, risk reduction and readiness for forest fire prevention and intervention.**				**61,897**																				
1.1	**<u>Review</u> forest fire issues, experiences and lessons learnt on flooded forest fire prevention, intervention and restoration approaches have been applied.**				**2,100**																				
1.1.1	Conduct consultation meetings with stakeholders at commune levels to collect information on issues of flooded forest fire management and restoration approaches have been applied (45$ x 2 communes x 5 years).	30 meetings at commune level. 5 reports at district level.	FiA and FiAC	Involving stakeholders at commune and village levels.	450	90 2 meetings 1 report H			H	90 2 meetings 1 report H				90 2 meetings 1 report			H	90 2 meetings 1 report H			H	90 2 meetings 1 report H			H
1.1.2	Conduct site observation at the fire-affected forests to gather coordinates of and information on physical, geographical and topographical situation, scope of damage, land use pattern and land cover in the burnt forest areas for the pre and post periods of flooded forest fire (45$ x 3days x 6 communes x 5 years).	30 times at commune level 5 reports at district level	FiAC	FiA triage, CFi and commune authority.	1,350	270 2 time 1 report H			H	270 2 time 1 report H				270 2 time 1 report			H	270 2 time 1 report H			H	270 2 time 1 report H			H
1.1.3	Produce maps of the fire-affected flooded forest areas of Kralanh district (60$ x 1 map x 5 years).	5 maps	DFA/FiA	FiAC	300	60 1 map H			H	60 1 updated map H				60 1 updated map			H	60 1 updated map H			H	60 1 updated map H			H
1.2	**<u>Risk Reduction</u>: Reduce risks of forest fires by promoting local awareness on and participation in flooded forest fire prevention and intervention.**				**16,520**																				
1.2.1	Produce posters for promoting awareness of local communities and involved stakeholders on participatory flooded forest fire prevention (1.5$ x 100 posters x 2 communes x 5 years)	1,000 poster	FiA	FAO	1,500	300 200 posters H			H	300 200 posters H			H	300 200 posters H			H	300 200 posters H			H	300 200 posters H			H
1.2.2	Erect educational signboards for promoting awareness of local communities and involved stakeholders (300$ x 2 signboards x 2 communes).	4 units	FiAC	Local authorities	1,200	 H			H	600 2 units H			H	600 2 units H				 				 			
1.2.3	Develop and update lists of stakeholders involving in using fisheries resources in Zone 2 and Zone 3 (70$ x 2 communes x 5 years).	10 lists	FiA Triage	Commune authority	700	140 2 lists				140 2 updated lists				140 2 updated lists				140 2 updated lists				140 2 updated lists			
1.2.4	Conduct extension meetings to promote awareness of the target communities on participatory forest fire management, Fisheries Law, forest fire-related sub-decree, norms, policies and regulations (150$ x 2 meetings x 2 communes x 5 years).	20 meetings	FiAC	Local authorities	3,000	600 4 meetings H	H			600 4 meetings H	H			600 4 meetings H	H			600 4 meetings H	H			600 4 meetings H	H		
1.2.5	Set up structure of Forest Fire Patrol Teams (FFPTs) at commune level and develop forest fire patrol plans (60$ x 2 communes x 1 year).	2 teams	FiAC	Local authorities	120	120 2 teams H																			
1.2.6	Conduct flooded forest fire patrol regularly by the FFPTs: 5 days/month (250$ x 4 months x 2 communes x 5 years).	200 days	FFPTs and FiA Triage	FFPTs and local authorities	1,000	2,000 40 days H	H			2,000 40 days H	H			2,000 40 days H	H			2,000 40 days H	H			2,000 40 days H	H		

1.3	**<u>Readiness</u>: Establish Working Groups for Forest Fire Management (WGFFM) at provincial and district levels and prepare equipment for flooded forest fire prevention and intervention.**				**43,277**					
1.3.1	**Establish and strengthen coordination among WGFFM at provincial and district levels and FFPT at commune level for forest fire intervention and equip the FFPTs with forest fire extinguishing tools.**				**28,277**					
1.3.1.1	Conduct meeting with the district administration to discuss draft of legal papers required for establishing the WGFFM at district level (65$ x 1 meeting).	1 meeting Draft ToR at district level.	PDAFF and FiAC	District administration	65	65 1 meeting H				
1.3.1.2	Conduct meeting with the target district administration to set up WGFFM at district level (65$ x 1 meeting).	1 working group	PDAFF and FiAC	District administration	65	65 1 group H				
1.3.1.3	Conduct WGFFM meeting at provincial level to discuss challenges faced in forest fire interventions and find solutions to solve the challenges (1,417$ x 1 meeting x 5 years).	5 meetings	FiA/FiAC and PDAFF	WGFFM at provincial level	1,417	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H	283 1 meeting H H
1.3.1.4	Conduct quarterly WGFFM meetings at district level to discuss challenges faced in forest fire interventions, find solutions to solve the challenges and develop action plan to support the flooded forest patrol at commune level (320$ x 2 meetings x 5 years).	10 meetings	FiAC and PDAFF	WGFFM at district level	3,200	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H	640 2 meetings H H
1.3.1.5	Purchase power tillers equipped with 2 motorized pumps, 1,000-liter water tank, 2 rolls of hose and 2 high water pressure guns for the patrol teams (3,600$ x 6 power tillers).	2 units	FiA	FiAC	7,200	H	3,600 1 unit H H	3,600 1 unit H		
1.3.1.6	Purchase motorcycles for forest fire patrol (2,300$ x 2 motorcycles x 2 communes).	4 units	FiA	FiAC	9,200	H	4,600 2 units H H	4,600 2 units H		
1.3.1.7	Purchase portable forest fire extinguishing tools (first aid, camping tents, 20L knapsack power sprayer with pump, goggle, drone, GPS, walkie talkie, boot, binocular,..) for the patrol teams (1,200$ x 2 sets x 2 communes).	4 sets	FiA	FiAC	4,800		2,400 2 sets H		2,400 2 sets H	
1.3.1.8	Conduct meeting with FFPTs at commune level to guide the teams the conditional uses of and distribute forest fire extinguishing tools to them (45$ x 2 meetings x 2 communes)	4 meetings	FiAC	Commune authority	180		90 2 meetings H		90 2 meetings H	
1.3.1.9	Attend ToT at provincial level on Forest Fire Techniques for FiAC officers and WGFFM's members (360$ x 3 trainings).	3 courses	FiA	WCS	1,080	360 1 course H	360 1 course H	360 1 course H		
1.3.1.10	Conduct district-level trainings on Forest Fire Fighting Techniques for FFPTs (50$ x 7ps x 2 trainings)	2 courses	FiAC	WGFFM at district level	700		350 1 course H		350 1 course H	
1.3.1.11	Fee for FiAC's trainers to conduct trainings on Forest Fire Fighting Techniques at district level and training materials [(45$ x 3ps) + 50$] x 2 trainings.	2 courses	FiAC	WGFFM at district level	370		185 1 course H		185 1 course H	
1.3.2	**Build physical infrastructures for forest fire prevention**				**15,000**					
1.3.1	Build guard towers for the community patrol teams to observe forest fires (6,000$ x 1 tower).	1 unit	FiA	FiAC	6,000		6,000 1 unit H H			

1.3.2	Rehabilitate natural ponds to retain water for putting forest fires and fish conservation (4,500$ x 2 ponds).	2 locations	FiA	FiAC	9,000					4,500 1 pond					4,500 1 pond					
										H	H							H	H		
2	**Output 2: Improved response actions to fires in inundated forest areas**				**12,628**															
2.1	Follow up daily report and stand by for urgent forest fire intervention as required by the patrol teams (100$ x 26 cases)	26 cases	FiAC's triage	Local authorities	2,600	800 8 cases				600 6 cases				500 5 cases				400 4 cases				300 3 cases			
						H	H			H	H			H	H			H	H			H	H		
2.2	Attend ToT at national level on Collecting Evidence and Preparing Offence Reports for FiAC's trainers (45$ x 1ps x 4 days).	1 course	FiA	FiAC	180	180 1 course																			
									H																
2.3	Conduct training at provincial level on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 3ps x 3 days).	1 course	FiA	FiAC	450					450 1 course															
										H															
2.4	Fee for trainer to conduct training on Collecting Evidence and Preparing Offence Reports for FiAC's officers (45$ x 1ps x 3 days) + 50$ for training materials.	1 course	FiAC	FiAC	185					185 1 course															
										H															
2.5	Strengthen law enforcement against offenders who set forest fires and/or encroached/grabbed inundated forest lands illegally (150$ x 16 cases).	16 cases	FiAC	Local authorities	2,400	750 5 cases				600 4 cases				450 3 cases				300 2 cases				300 2 cases			
						H	H			H	H			H	H			H	H			H	H		
2.6	Fee for maintaining forest fire extinguishing equipment and buy additional required forest fire extinguishing tools (100$ x 5 months x 6 communes x 5 years).	Lump sump	FiA Triage	Commune authority	5,000	1,000 L.sum				1,000 L.sum				1,000 L.sum				1,000 L.sum				1,000 L.sum			
						H	H			H	H			H	H			H	H			H	H		
2.7	Participate in provincial workshop to exchange lessons learnt and experiences on flooded forest fire prevention and intervention (934$ x 1 workshop).	1 workshop	FiA	FiAC and WGFFM at provincial level	933													933 1 workshop							
																				H					
2.8	Give some incentive awards to individuals who participated actively or injured in forest fire prevention and intervention (80$ x 11 people)	11 people	FiA triage	Commune authority	880	240 3 persons				240 3 persons				160 2 persons				160 2 persons				80 1 person			
						H	H			H	H			H	H			H	H			H	H		
3	**Output 3: Improved restoration of fire damaged areas of inundated forests.**				**35,477**																				
3.1	Conduct rapid assessment to identify reasonably technical-sound approach for restoration of the burnt flooded forest areas (100$ x 3 days x 5 years).	5 times 5 report	FiA/FAO	FiAC	1,500	300 1 report				300 1 report				300 1 report				300 1 report				300 1 report			
						H				H				H				H				H			
3.2	Mark boundaries of the burnt flooded forest sites by concrete poles with small signboards (60$ x 67 poles).	67 poles	FiAC	Local authorities	4,020	1,200 20 poles				1.020 17 poles				780 13 poles				600 10 poles				420 7 poles			
						H	H			H	H			H	H			H	H			H	H		
3.3	Participate in workshops at provincial level on tree nursery management and flooded forest restoration approach (283$ x 2 trainings).	2 trainings	FiA and FAO	FiAC	566					283 1 training								283 1 training							
									H	H							H	H							
3.4	Conduct consultation meetings at commune level with stakeholders to discuss plan for restoration of fire-damaged flooded forest areas (68$ x 2 meetings x 5 years).	10 meetings	FiAC	Local authorities	680	136 2 meetings				136 2 meetings				136 2 meetings				136 2 meetings				136 2 meetings			
							H				H				H				H				H		
3.5	Support local communities to establish tree nursery and produce flooded forest seedlings for planting in the burnt flooded forest areas (200$ x 1 nursery x 5 years).	5 tree nurseries	FiA Triage	CFi	1,000	200 1 nursery				200 1 nursery				200 1 nursery				200 1 nursery				200 1 nursery			
						H	H		H	H	H						H	H	H		H	H			

3.6	Support and monitor tree planting carried out by local communities in the fire-damaged forest areas (990$).	22 hectares	FiAC	Local authorities	990	135 3 ha H H	225 5 ha H H	180 4 ha H H	225 5 ha H H	225 5 ha H H
3.7	Expense for tree planting, including costs of seedlings, transportation and planting (1$ x 1,100 seedlings x 22ha).	24,200 seedlings	FiAC	CFi	24,200	3,300 3,300 seedlings H	5,500 5,500 seedlings H	4,400 4,400 seedlings H	5,500 5,500 seedlings H	5,500 5,500 seedlings H
3.8	Fee for maintaining tree seedlings planted in the forest restoration sites by local communities (100$ x 22ha).	22 hectares	FiA Triage	CFi	2,200	300 3 ha H H	500 5 ha H H	500 5 ha H H	500 5 ha H H	400 4 ha H H
3.9	Conduct seedling survival rate monitoring in the flooded forest restoration sites (lump sum: 320$).	20 hectares	FiA/FAO	FiAC	320			80 5 ha M	80 5 ha M	160 10 ha M
4	**Backstopping, monitoring and evaluation of the implementation of the IFFPMP.**				**9.750**					
4.1	Participate in baseline survey at provincial level to be conducted by the working teams of FiA and FAO-CAPFISH project (lump sum: 200$).	1 time	FiA/FAO	FiAC	200	200 1 time H				
4.2	Participate in monthly backstopping missions of the FiA's officers to support and direct the IFFPMP's implementation (45$ x 1 time x 6 months x 5 years).	30 times	FiAC	FiAC	1,350	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H	270 6 times H H
4.3	Fee for the FiA's officers to conduct monthly backstopping, monitoring and evaluation missions to support the IFFPMP's implementation (273$ x 1 times x 6 months x 5 years).	30 times	FiA	FiAC	8,200	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H	1,640 6 times H H
				Total :	**119,752**					

11. Annexes

Annex 1: List of FiA's officers involved in developing the IFFPMP

No	Name	Position	Institution
1	Mr. Kim Sokha (leader)	Chief	Fisheries Conservation Office (FCO), Department of Fisheries Conservation (DFC), FiA.
2	Mr. Ly Sothea	Chief	Crocodile Conservation Office, DFC, FiA.
3	Mr. Say Dara	Deputy chief	Mapping and Geography Information Office, DFA, FiA.
4	Mr. Oun Veing	Chief	Community Livelihood Development Office, DCF, FiA
5	Ms. Va Sok Tepy	Officer	Department of Community Fisheries (DCF), FiA
6	Ms. Ly Sok Ta	Officer	Department of Fisheries Conservation, FiA
7	Mr. Oun Ang	Officer	Fisheries Administration Cantonment, SR province
8	Mr. Kheiv Peng Leap	Officer	Fisheries Administration Cantonment, SR province
9	Mr. Som Phanna	Officer	Fisheries Administration Cantonment, SR province
10	Mr. Port Vandeth	Officer	Fisheries Administration Cantonment, SR province
11	Mr. Sor Mab	Officer	Fisheries Administration Cantonment, SR province

Annex 2: List of existing biodiversity in Sime Reap's floodplain

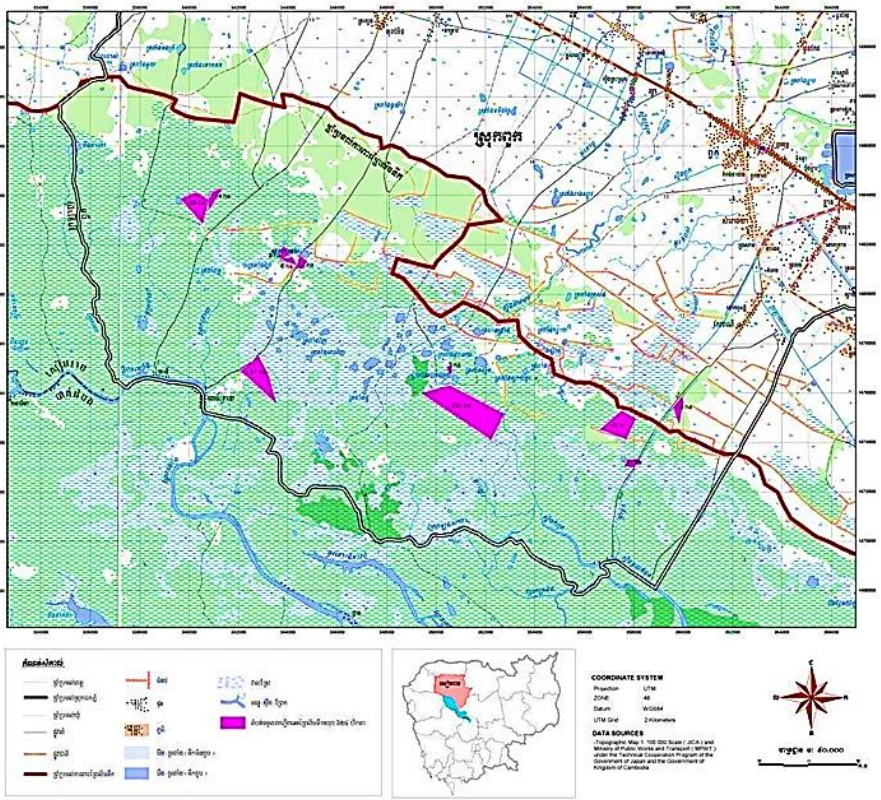
English Name	Scientific Name	Local name	Remark
Fish			
Marble goby	Oxyeleotris marmorata	ត្រីដំរី	
Wallago	Wallago attu	ត្រីសណ្តាយ	
Striped Snakehead	Channa striata	ត្រីរ៉ស់	
Asian redtail catfish	Hemibagrus nemarus	ត្រីឆ្លាំង	
Siamese mud carp	Cirrhinus siamensis	ត្រីរៀល	
Spotted hampala barb	Hampala dispar	ត្រីខ្នាន់	
Gourami	Trichogaster Microlepis	ត្រីកំភ្លាញ	
Giant snakehead	Cyclocheilichthys enoplos	ត្រីឆ្តោ	
Climbing perch	*Anabas testudineus*	ត្រីក្រាញ់	
Peacock eel	*Macrognathus facus*	ត្រីឆ្លួញ	
Mekong silver barb	*Hypsibarbus pierrei*	ត្រីឆ្ពិន	
Walking catfish	*Clarias batrachus*	ត្រីអណ្តែង	
Lesser bighead carb	*Thynnichthys Thynnoides*	ត្រីលិញ	
Dusky face carp	*Osteochilus lini*	ត្រីក្រុស	
Snail eating barb	*Puntioplites proctozysron*	ត្រីច្រកែង	
Trey Taoun	*Ompok eugeneiatus*	ត្រីតាអោន	
White-line catfish	*Mystus albolineatus*	ត្រីកញ្ឆុះ	
Bronze featherback	*Notopterus notopterus*	ត្រីស្លាត	
Turtle			
Rice field Turtle	*Malayemys subtrijuga*	អណ្តើកស្រែ	
Yellow-headed temple turtle	*Heosemys annandalii*	អណ្តើកសកល	
Asiatic soft-shell turtle	*Amyda cartilaginea*	កន្ធាយ	
Black marsh turtle	*Siebenrockiella crassicollis*	អណ្តើកព្រិច	
Bird			
Purple heron	*Ardea purpurea*	ក្រសាប្រផេះ	
Sarus Crane	*Grus antigone*	គ្រាល	
Eurasian woodcock	Scolopax rusticola	ខ្វែក	
White-breasted waterhen	*Amaurornis phoenicurus*	មាន់ទឹក	
Indian Cormorant	*Phalacrocorax fuscicollis*	ក្អែក	
Kong			
Toung	*Spot-billed pelican*	ទុង	
Oriental Darter	*Anhinga melanogaster*	ស្មោញ	
Dom Dor			
Ktoum			
Black-backed Swamp hen	Porphyrio indicus	តូម	
Greater Adjutant	Leptoptilos dubius	ត្រដក់ធំ	
Painted Stork	Mycteria leucocephala	រនាលពណ៌	

Wood duck	Aix sponsa	ទាព្រៃ	
Lesser whistling duck	Dendrocygna javanica	ប្រវឹក	
Snake			
Posh Trey	Homalopsis buccata		
Posh Trey Rosh			
Posh Prolet	Enhydris		
Bocouti Posh Kachan			
Posh Pha Ok			
Bocouti (Posh Channa Mom)			
Python	Papuan python	ពស់ថ្លាន់	
Tentacled snake	Erpeton tentaculatus		
Cobra		ពស់វែក	
Others			
White Monkey		ស្វាស	
Blake Monkey		ស្វាខ្មៅ	
Fox		កញ្ជ្រោង	
Otter		កេ	

Annex 3: Maps of fire-damaged flooded forest areas in Siem Reap province

Annex 3.1: Map of fire-damaged flooded forest areas in Puok district

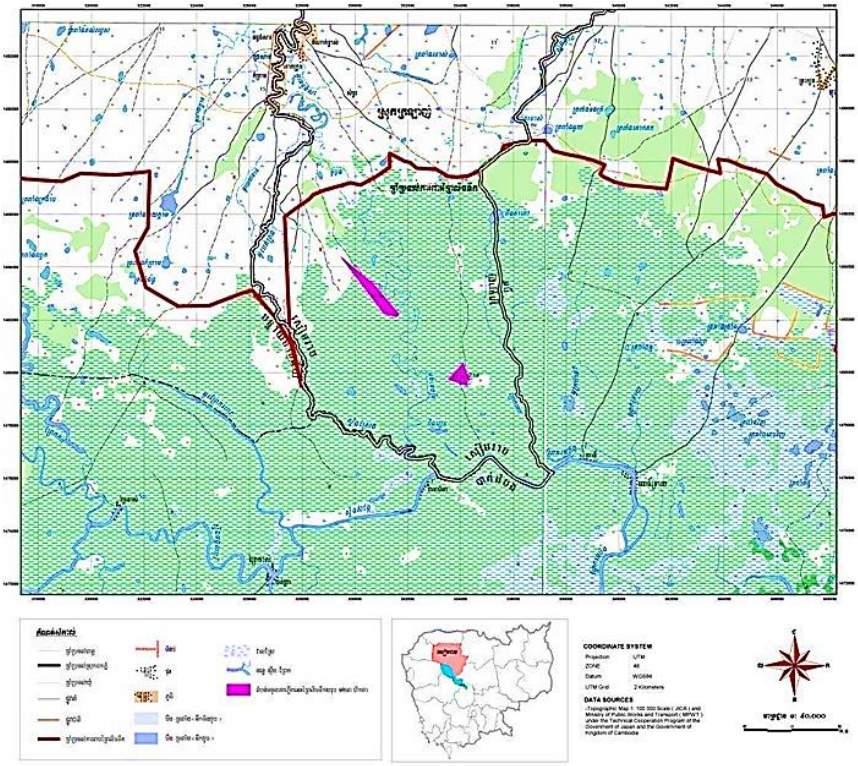
Map of fire-damaged flooded forest areas in Puok district, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

Annex 3.2: Map of fire-damaged flooded forest areas in Kralanh district

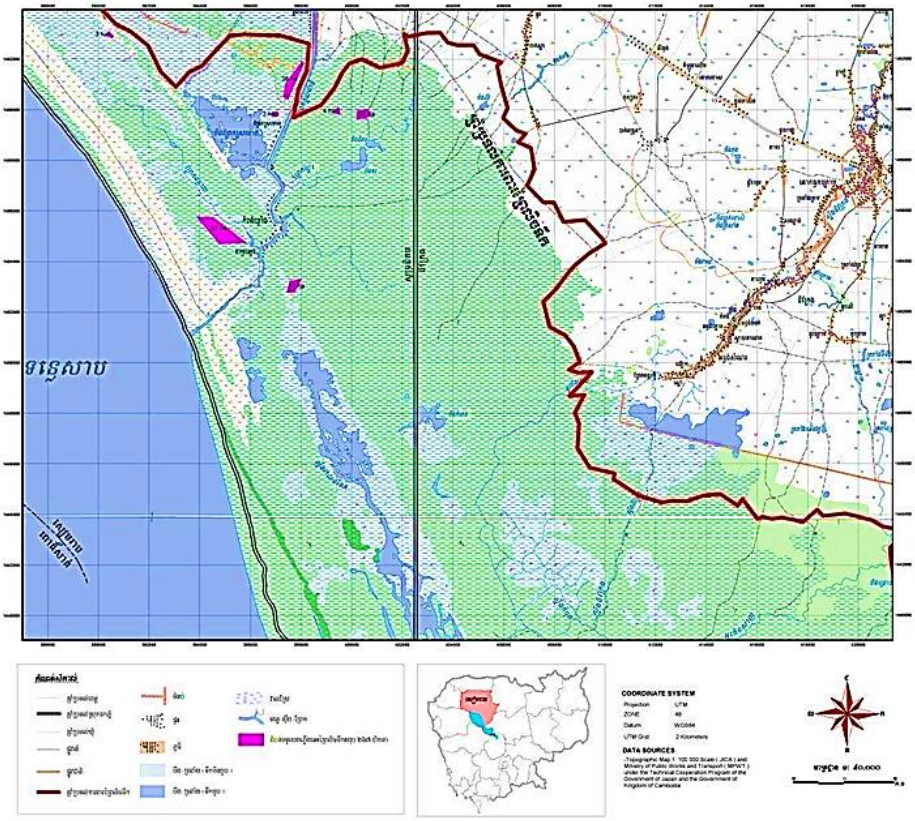
Map of fire-damaged flooded forest areas in Kralanh district, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

Annex 3.3: Map of fire-damaged flooded forest areas in Soutr Nikum district

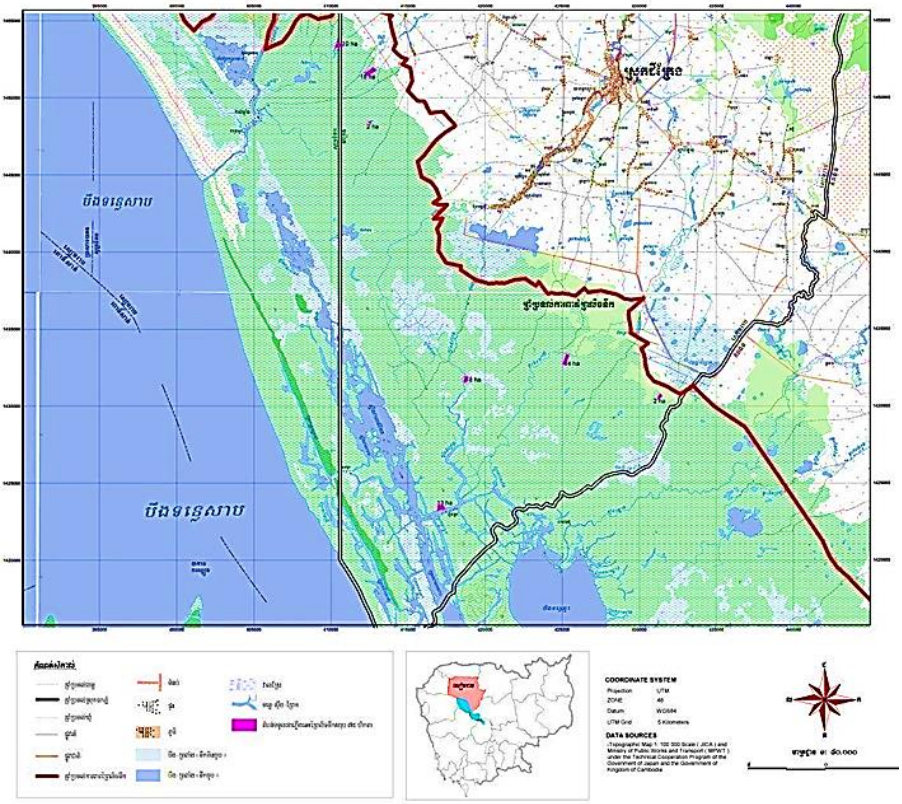
Map of fire-damaged flooded forest areas in Soutr Nikum district, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

Annex 3.4: Map of fire-damaged flooded forest areas in Chi Kraeng district

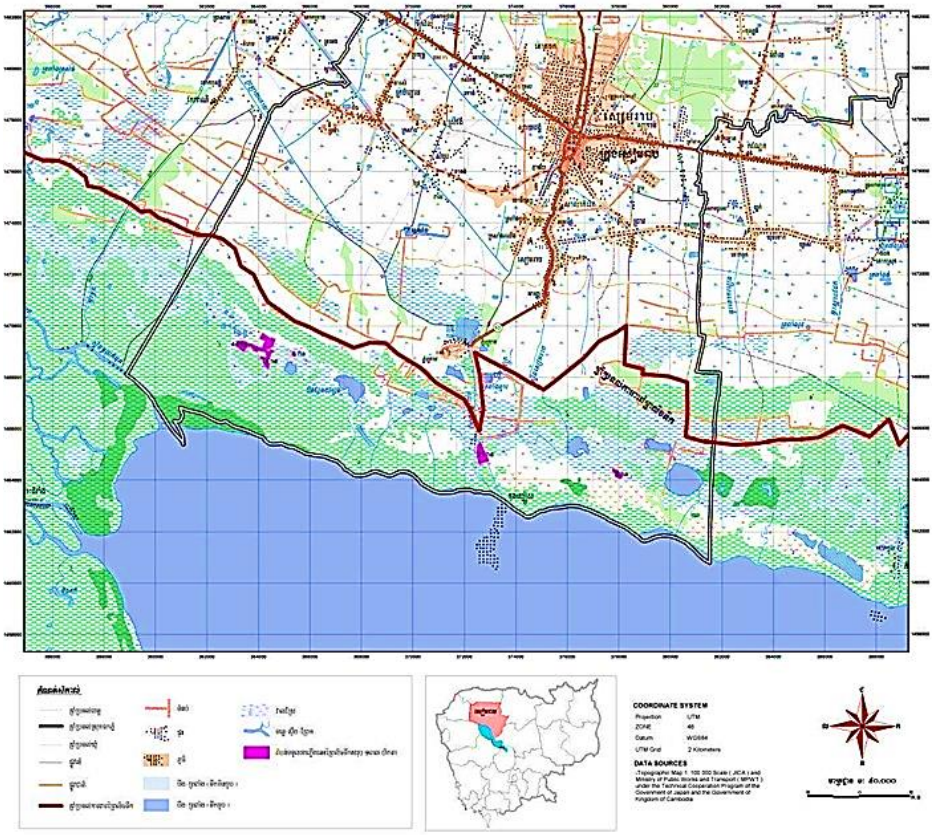
Map of fire-damaged flooded forest areas in Chi Kraeng district, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

Annex 3.5: Map of fire-damaged flooded forest areas in Krong Siem Reap

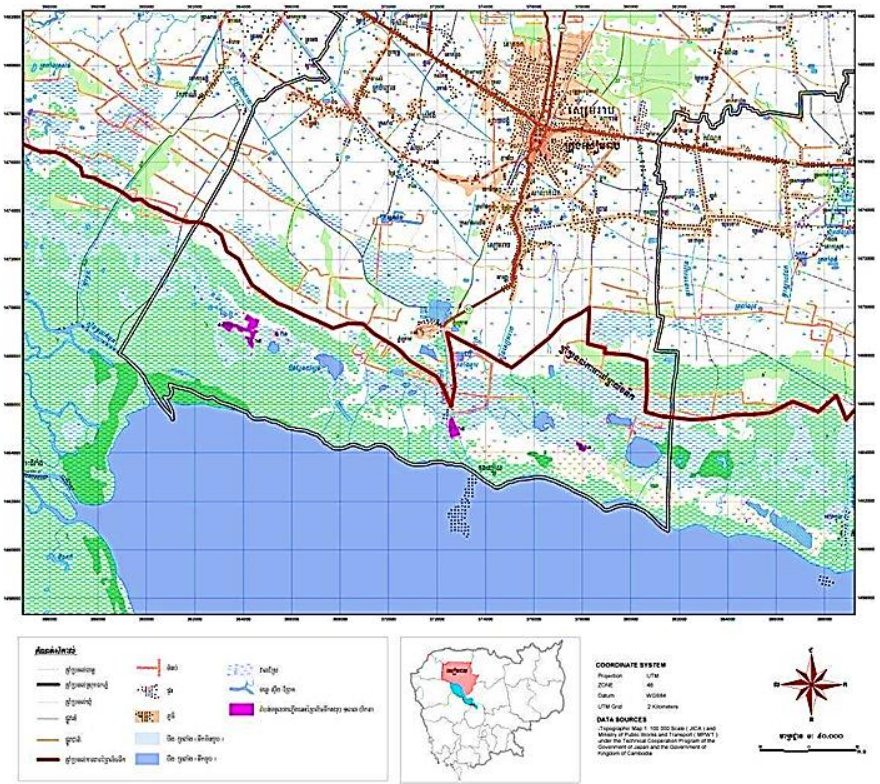
Map of fire-damaged flooded forest areas in Krong Siem Reap, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

Annex 3.6: Map of fire-damaged flooded forest areas in Prasat Bakong district

Map of fire-damaged flooded forest areas in Prasat Bakong district, Siem Reap province



Source: Department of Fisheries Affair, Fisheries Administration, 2019, Phnom Penh Cambodia.

កម្មវិធីជំរុញកំណើនវិស័យជលផលប្រកបដោយចីរភាព និងបរិយាប័ន្ន (ផ្នែកនេសាទ)

Cambodia Programme for Sustainable and Inclusive Growth in the Fisheries Sector: Capture Component

(ខាបហ្វីស-ខាបឆឺ) (CAPFISH-Capture)

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