



KOMUNITAS
KONSERVASI
INDONESIA
WARSI



2024

ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP)

Enhancing Sumatran Tiger Conservation Efforts in
Berbak-Sembilang Landscape through
National Park - Community - Private
Co-management

ENVIRONMENTAL AND SOCIAL
MANAGEMENT SYSTEM
(ESMS)

Project Title

Enhancing Sumatran Tiger conservation efforts
in Berbak Sembilang Landscape through
National Park-Community Private
Co-Management

Application code

CN-224

Project Proponent

Komunitas Konservasi Indonesia Warsi

Date of first draft: 16.01.2025

Last updated: 30.11..2025

Version Control

Project title	Project t Enhancing Sumatran Tiger conservation efforts in Berbak Sembilang Landscape through National Park-Community Private Co-Management
Document title	Environmental and Social Management Plan (ESMP)
Version	V4.0
Status	Working Draft
Date of first draft	16.01.2024
Date last updated	30.11.2025
Lead author	Adhi Rachmat Hariyadi
Co-author(s)	Putri Mushandri Pratami
Requirement for tracking changes	Once a final version of the ESMP has been approved by IUCN, please make all further modifications to the ESMP visible by either tracking changes or putting the modifications in a different colour in order to aid any subsequent review.

Executive Summary

Project Title: Enhancing Sumatran Tiger Conservation Efforts in Berbak Sembilang Landscape through National Park-Community Private Co-Management

Project Proponent: Komunitas Konservasi Indonesia Warsi (KKI WARSI)

Purpose of the ESMP

The Environmental and Social Management Plan (ESMP) aims to ensure that the project minimizes negative environmental and social impacts while enhancing positive outcomes. It provides a structured approach to identify, assess, and manage potential risks and impacts associated with project activities, ensuring compliance with environmental and social standards.

Project Background

KKI WARSI, established in 1991, focuses on community-based conservation efforts across Sumatra, Kalimantan, and Papua. The project, in collaboration with Wahana Mitra Mandiri (WMM), aims to secure the Sumatran Tiger population in the Berbak Sembilang landscape by increasing habitat, monitoring wildlife, improving community and private sector participation, and enhancing community livelihoods.

Project Description & Objectives

The project addresses key threats to the Sumatran tiger, such as habitat fragmentation, illegal logging, and human-wildlife conflict. It includes activities like habitat restoration, anti-poaching measures, and community-based conservation programs. The project also emphasizes community development and economic growth through sustainable income generation activities.

Key Objectives:

- **R1:** Preserve 402,129 hectares of Sumatran tiger habitats through effective co-management.
- **R2:** Protect Sumatran tiger species through anti-poaching and conflict mitigation.
- **R3:** Achieve inclusive economic growth and community development in 12 villages.

Institutional and Legal Framework

The project aligns with national and international standards, including IUCN ESMS policies and Indonesian regulations on forest management, social forestry, and indigenous peoples' rights.

Risk Management

The ESMP identifies potential risks and categorizes them based on their likelihood and impact. Key risks include habitat damage, human-wildlife conflict, and safety issues for patrol teams. Mitigation measures include fire prevention, community engagement, and capacity building.

The **Risk Management Strategy** for the project focuses on identifying, assessing, and mitigating potential risks to ensure the project's success while minimizing negative impacts. Here are the key components:

Identified Potential Risks and Risk Categorization

The assessment of risks associated with the Project's activities shows that the overall risk level ranges from Moderate to High. The highest risks are related to biodiversity impacts, community health and safety, labor and working conditions, stakeholder engagement, and potential access restrictions. Key potential risks include biodiversity loss, human - wildlife conflict, health and safety for workers, inadequate participation of marginalized groups, and reduced access to land for local communities.

Impact Assessment

Severity and Likelihood: Risks are assessed based on their severity and likelihood, helping prioritize which risks need more immediate and stringent management measures. Detailed impacts from project activities are categorized, including loss of biodiversity, human-wildlife conflicts, and health risks.

Key environmental and social risks include:

1. **Biodiversity and Natural Resources:** Habitat disturbance, forest fire, introduction of invasive species, and potential loss of biodiversity due to patrol, survey, reforestation, and community forestry activities.
2. **Community Health, Safety, and Security:** Human-wildlife conflicts, safety risks for patrol teams, and potential human rights violations. **Labor and Working Conditions:** Exposure to fire, risk of injuries or fatalities during fieldwork and monitoring activities.
3. **Stakeholder Engagement and Indigenous Peoples:** Underrepresentation of marginalized groups and women, and risks related to social forestry activities without free, prior, and informed consent. I
4. **Involuntary Resettlement and Access Restrictions:** Limited land availability for agriculture or residential use due to restoration and rehabilitation activities.

Impacts are categorized according to severity: Severe and Major, reflecting the potential consequences on biodiversity, communities, and project operations.

Institutional Arrangement, Budget, and Resources

1. **Coordination:** Collaboration between various stakeholders, including government agencies, NGOs, and local communities.
2. **Budget:** Estimated cost for implementing the ESMP is around \$100,000, covering activities such as environmental monitoring, community engagement, and capacity building.

Monitoring and Supervision

A robust monitoring plan is in place to track the progress and effectiveness of the ESMP. This includes regular assessments, community feedback mechanisms, and adaptive management strategies to ensure continuous improvement.

Budget and Resources

The estimated cost for implementing the ESMP is around \$100,000, covering activities such as environmental monitoring, community engagement, and capacity building. Funding will be sourced from IUCN grants (ITHCP IV T2) and project partners.

Table of Contents

Executive Summary	i
List of Tables	vii
List of Figures	vii
1. INTRODUCTION	1
1.1 Purpose of the ESMP	1
1.2 Project Background	2
2. PROJECT DESCRIPTION & SOCIAL CONTEXT	3
1.1 Project Summary	3
1.2 Project Location	4
1.2.1 Land Cover Analysis	5
1.2.2 Land Status	6
1.2.3 Private Land and Community Land in Berbak Sembilang Landscape	10
1.3 Project Objectives	11
1.4 Project Time Frame	13
1.5 Project Partners	13
1.5.1 The Consortium	13
1.5.2 Implementing Partners	13
1.5.3 Collaborating Partners	13
1.6 Executing Entities and Their Roles	14
1.6.1 Project Implementation	14
1.6.2 ESMS Responsibilities	15
1.7 Social context	15
1.7.1 Project Affected People	16
1.7.2 Village Level	17
3. INSTITUTIONAL AND LEGAL FRAMEWORK	20
2.1 Project's Host Country Requirements	20
2.2 IUCN ESMS policy framework (International Standards)	20
2.3 Grantees E&S Management Capacities	21
2.4 Other Actors / Entities Operating in Project Landscape	22

2.5	Existing Environmental and Social Risk Management	24
2.5.1	Government Agencies	24
2.5.2	Private Sectors	25
2.5.3	Non-Government Organizations	25
2.6	Gap Analysis	27
3	RISK MANAGEMENT STRATEGY	31
3.1	IDENTIFIED POTENTIAL RISKS AND RISK CATEGORIZATION	31
3.2	IMPACT ASSESSMENT	32
3.3	ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT AND MITIGATION MEASURES	34
3.3.1	Biodiversity and Natural Resources	34
3.3.2	Pollution & Resource Efficiency – Precautionary principles	37
3.3.3	Ensuring an inclusive approach to activity planning	39
3.1.1	Ensuring Community Health, Safety and Security	39
3.1.2	Ensuring proper labor and working conditions	42
3.1.3	Addressing the Risk of Access Restriction	46
3.1.4	Grievance and Redress Mechanism (GRM)	47
3.2	INSTITUTIONAL ARRANGEMENT, BUDGET, AND RESOURCES	47
4.	ESMP MONITORING AND SUPERVISION	52
4.1	Monitoring Plan	52
4.2	Indicators and Methods for Monitoring	52
4.2.1	Selection of Indicators	53
4.2.2	Methods for Monitoring	55
4.3	Regular Assessments	56
4.3.1	Impact Assessments	56
4.3.2	Community Feedback	57
4.3.3	Monitoring and Reporting by ITHCP	57
4.4	Adaptive Management	58
5.	REFERENCES	59
6.	APPENDICES	60
	Appendix 1: Project LogFrame	61
	Appendix 2: Review of Regulatory Frameworks	81
	Appendix 3: Risk Rating Assessment	88

Appendix 4: List of issues and risks based on IUCN principles	98
Appendix 5: ESMP Implementation Matrix	100
Appendix 6: Example of Inclusive Land use Planning	104
3.4 Inclusive Land Use Planning	104
3.5 Village Land Use Planning	104
3.6 Forest Programme II (FP II) in Jambi	105
Appendix 7: Community Engagement and Planning Framework (CEPF), Including Free, Prior, and Informed Consent (FPIC)	107
3.7 Meaningful Consultation	107
3.7.1 Clear Communication and Training – Social Forestry	107
3.7.2 Inclusive Strategies	108
3.7.3 Respecting the Potential Cultural Heritage	109
3.7.4 Development of Village Action Plan	110
3.8 Free and Prior Informed Consent	110
Appendix 8: Environmental Baseline	118
Description of the environmental context	118
Baseline data collection methods	119
Analysis of physical and biological features	119
4.1.1 Biodiversity-Sumatran Tiger (<i>Panthera tigris sumatrae</i>)	119
4.1.2 Berbak Sembilang National Park	121
4.1.3 Grand Forest Park (<i>Taman Hutan Raya</i>) Datuk Rangkayo Hitam	122
Analysis on Existing Conservation Activities in the Landscape	123
Appendix 9: Serious Incident Reporting	125
Reports on Accidents	125
Reporting Mechanism for Domestic Violence	125
Reports on wildlife and forest crimes	126
Monitoring and Incident Response Confidentiality	126
Basic structure for a serious incident report:	127

List of Tables

Table 1	Land cover composition in Berbak Sembilang Landscape.	5
Table 2	Land cover status in the proposed Project area.	6
Table 3	Entities and indicative roles in the Project.	15
Table 4	List of villages in the proposed Project area in Berbak Sembilang landscape.	18
Table 5	Summary of gap analysis	28
Table 6	List of impacts from Project activities	32
Table 7	Arrangements for ESMP implementation (with cost estimation).	48
Table 8	Summary of ESMP indicators (if the risks are not properly anticipated or mitigated)..	53

List of Figures

Figure 1	Berbak Sembilang Landscape proposed as Project area.	5
----------	------------------------------------------------------	---

1. INTRODUCTION

The International Union for Conservation of Nature (IUCN) Environmental and Social Management System (ESMS) was formalized in 2014. It was designed to be an intrinsic part of IUCN's project cycle, ensuring that environmental and social risks are systematically managed. The objective of the IUCN ESMS is to ensure that IUCN projects avoid or minimize negative environmental and social impacts while promoting positive outcomes. ESMS provides a systematic procedure to assess potential adverse impacts and implement measures to mitigate them. This helps ensure that IUCN's conservation efforts are both effective and sustainable. The ESIA report defines the project boundary (geographic, administrative, and socio-culture) to provide the basis for subsequent Environmental and Social Management Plan (ESMP). The ESIA report relies on the ESMS Screening and Clearance Report as a starting point, scoping report, and on the field data to verify risks. The output of the ESIA is a list of risks associated with the activities in the proposed Project and their respective categories.

1.1 Purpose of the ESMP

The purpose of an Environmental and Social Management Plan (ESMP) is to ensure that projects are implemented in a manner that minimizes negative environmental and social impacts while enhancing positive outcomes. The ESMP provides a structured approach to identify, assess, and manage potential risks and impacts associated with project activities. It aims to ensure compliance with environmental and social standards, promote sustainable development, and protect the rights and well-being of affected communities. By systematically addressing these aspects, the ESMP helps in achieving the overall goals of conservation and sustainable use of natural resources. The ESMP includes the following key items or objectives:

- **Identification of potential environmental and social impacts:** Assessing the possible adverse effects of project activities on the environment and local communities. This is mostly done in the Scoping and ESIA documents.
- **Mitigation measures:** Developing strategies to avoid, minimize, or compensate for negative impacts. The ESMP document shall revisit and elaborate those indicatively stated in the ESIA document.
- **Monitoring and evaluation:** Establishing procedures to track the effectiveness of mitigation measures and overall project performance.
- **Stakeholder engagement:** Ensuring active participation and consultation with affected communities and other stakeholders. This is to be detailed further in the Stakeholder Engagement Plan.
- **Grievance mechanism:** Providing a process for addressing concerns and complaints from stakeholders.
- **Capacity building:** Enhancing the skills and knowledge of project staff and stakeholders to effectively implement the ESMP.

1.2 Project Background

The Indonesian Conservation Community KKI WARSI (WARSI) is a non-governmental organization established on December 27, 1991. Initially formed as the WARSI (*Warung Informasi Konservasi*) Foundation by 12 NGOs across West Sumatra, Jambi, Bengkulu, and South Sumatra, WARSI focuses on community-based conservation efforts. Their mission is to support and empower local communities in and around forest areas, promoting sustainable natural resource management. WARSI's activities span across Sumatra, Kalimantan, and Papua, where they work on various projects including agroforestry, indigenous people's business models, and training for smallholder farmers.

In Jambi, WARSI has been particularly active in advocating for the rights of indigenous communities and protecting the Kerinci Seblat National Park (TNKS). They have been instrumental in opposing government plans that threaten the displacement of local communities. Through their efforts, WARSI aims to balance conservation with community welfare, ensuring that environmental protection goes hand-in-hand with the socio-economic development of the people living in these regions.

Wahana Mitra Mandiri (WMM) is a non-governmental organization based in Jambi, Indonesia, dedicated to addressing human-wildlife conflicts and promoting sustainable community development. One of their key initiatives involves forming conflict mitigation groups to prevent and manage conflicts between humans and wildlife, particularly tigers, in areas like Sadu Sub-District. These groups, composed of local community members, are trained to collect data and respond to wildlife encounters, ensuring that both human and animal safety are prioritized.

In addition to conflict mitigation, WMM actively engages in educational activities to raise awareness about wildlife conservation. For instance, they organized events to commemorate Global Tiger Day, educating children and the broader community about the importance of protecting tigers and their habitats. By fostering a deeper understanding of wildlife conservation, WMM aims to create a harmonious coexistence between humans and wildlife, ensuring the long-term sustainability of both the environment and local communities.

Forum Harimau Kita (FHK), established in 2008, is an independent civil society organization dedicated to the conservation of the Sumatran tiger. With over 100 professional members from 26 organizations, the forum works tirelessly to ensure the survival and harmonious coexistence of Sumatran tigers with humans. Their mission involves supporting government efforts, collaborating with local communities, private sectors, and NGOs to protect and preserve the natural habitat of these endangered tigers. Through various conservation initiatives and public awareness campaigns, Forum Harimau Kita plays a crucial role in safeguarding the future of the Sumatran tiger.

WARSI, WMM, and FHK collaborated to propose a project titled: "Enhancing Sumatran Tiger conservation efforts in Berbak Sembilang Landscape through National Park-Community Private Co-Management" (Project). The overall objective is to secure the Sumatran Tiger population in Berbak Sembilang landscape through increasing Sumatran Tiger Habitat, monitoring wildlife management system, improving community and private sector participation in landscape management, and increasing community economic and livelihood.

2. PROJECT DESCRIPTION & SOCIAL CONTEXT

This section defines the 'Project', including the project area, key project components, social context, activities, and partners/ responsibilities.

1.1 Project Summary

The project addresses several key threats to the Sumatran tiger, such as habitat fragmentation, illegal logging, and human-wildlife conflict. It includes activities like habitat restoration, anti-poaching measures, and community-based conservation programs. The project also aims to improve the capacity of local communities and stakeholders in wildlife conservation and sustainable management practices. By fostering collaboration among various stakeholders, the project seeks to create a sustainable and inclusive approach to conservation that benefits both the tigers and the local communities.

In addition to conservation efforts, the project emphasizes the importance of community development and economic growth. It aims to improve local livelihoods through sustainable income generation activities such as non-timber forest products and Payment for Ecosystem Services (PES) programs. The project also incorporates gender equality, diversity, and social inclusion considerations to ensure that all community members benefit equitably. Overall, the project aims to create a balanced coexistence between humans and wildlife, contributing to the long-term sustainability of the Berbak Sembilang Landscape. The concept note of the Project outlines the following parameters:

1. **Designated Programme Area (DPA) Targeted:** Berbak Sembilang Landscape in Eastern Sumatra, which includes Berbak Sembilang National Park (BSNP), Protected Forest, Production Forest, Conservation Production Forest, Limited Production Forest, Social Forestry, and other areas.
2. **Target Species Population Status:** The Sumatran Tiger (*Panthera tigris sumatrae*) is critically endangered, with an estimated population of 30-40 individuals in the Berbak Sembilang landscape as of 2019.
3. **Prey Status:** High prey availability, including species such as Wild Boar (*Sus scrofa*), Bearded Pig (*Sus barbatus*), Southern Red Muntjac (*Muntiacus muntjak*), Sambar Deer (*Rusa unicolor*), Greater Oriental Chevrotain (*Tragulus napu*), Lesser Oriental Chevrotain (*Tragulus kanchil*), and Southern Pig-tailed Macaque (*Macaca nemestrina*).
4. **Habitat Connectivity:** The habitat is increasingly fragmented, with significant habitat loss and decreased connectivity due to human activities and forest fires. Approximately 2,467 hectares of forest were lost between 2019 and 2023.
5. **Main Threats Present in the Project Area:**
 - Forest fires, expansion of small -scale oil palm plantations, illegal logging, encroachment, wildlife poaching, and trade;

- Damage to the peatland areas such as increased carbon emissions, habitat loss, recurrent fires, and adverse health effects due to logging, drainage, and conversion to plantations; and
- Limited collaboration between stakeholders in wildlife conservation and limited income opportunities for local communities.

Appendix 8 provides more details on the environmental baseline.

1.2 Project Location

The proposed Project will be implemented in Berbak Sembilang landscape. This landscape, located on the southeast coast of Sumatra, Indonesia, is a unique and ecologically rich area that encompasses both Berbak and Sembilang National Parks. This biosphere reserve is renowned for its diverse ecosystems, including undisturbed swamp forest peat ecosystems, freshwater swamp forests, mangroves, and lowland forests. The landscape is characterized by its extensive wetlands, which reach depths of up to 10 meters, and serve as critical habitats for a wide variety of flora and fauna. Notably, the area supports significant populations of endangered species such as the Sumatran tiger, Malayan tapir, and the Malayan sun bear, as well as numerous bird species, including the world's largest breeding colony of milky storks.

In addition to its ecological significance, the Berbak Sembilang landscape plays a vital role in the livelihoods of local communities. The region is home to various ethnic groups, including the Melayu, Java, Batak, and Anak Dalam tribes, who rely on the natural resources for fishing and farming. The mangrove forests, in particular, are essential for sustaining local fisheries and protecting coastal areas from erosion. Conservation efforts in the area are focused on maintaining the delicate balance between human activities and environmental preservation, ensuring that the unique biodiversity of Berbak Sembilang is protected for future generations.

The Berbak Sembilang landscape is a crucial habitat for the endangered Sumatran tiger, one of the rarest tiger subspecies in the world. This region's dense peat swamp forests and mangroves provide an ideal environment for these elusive predators, offering ample cover and a rich prey base. Conservation efforts in Berbak Sembilang are vital for the survival of the Sumatran tiger, as the landscape supports one of the few remaining viable populations. Protecting this habitat not only helps preserve the tigers but also maintains the ecological balance of the area, benefiting a wide range of other species and the local communities who depend on these ecosystems. The proposed Project intervention covers an area of 158,218 ha, and is described in Figure 1. Appendix 8 provides the detailed environmental baseline data.

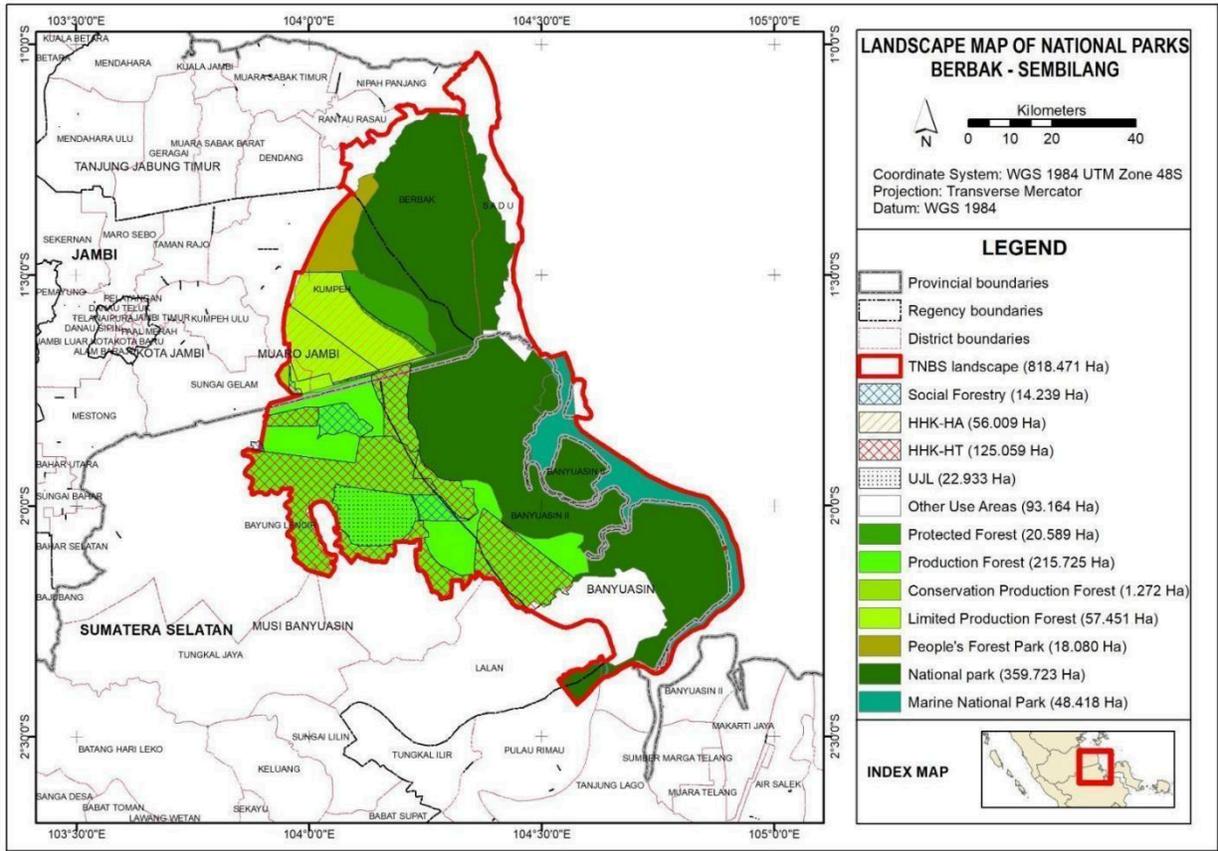


Figure 1 Berbak Sembilang Landscape proposed as Project area.

1.2.1 Land Cover Analysis

The Berbak Sembilang landscape in Sumatra features a diverse landcover that includes extensive mangrove forests, peat swamp forests, freshwater swamp forests, and lowland forests. The area is characterized by its unique estuarine environment, with mangroves forming the largest contiguous area in the Indo-Malayan region. Peat swamp forests, which cover about 30% of the landscape, are crucial for carbon storage. Additionally, the landscape supports a variety of habitats such as mudflats, freshwater herbaceous swamps, and water bodies, making it a vital area for biodiversity, including numerous bird species and other wildlife. Table 1 summarizes land cover in Berbak Sembilang landscape.

Table 1 Land cover composition in Berbak Sembilang Landscape.

Landcover Type	Area Size (hectares)	Percentage of Total (%)
Mangrove Forests	150,000	38.96
Peat Swamp Forests	100,000	25.97
Freshwater Swamp Forests	50,000	12.99

Lowland Forests	30,000	7.79
Mudflats	20,000	5.19
Freshwater Herbaceous Swamps	10,000	2.60
Water Bodies	5,000	1.30
Forested area outside NP	20,000	5.19
Total	385,000	100

Of the total 385,000 hectares in the Berbak Sembilang landscape, 158,220 hectares have been designated as the village-based intervention area for the Project (based on village boundaries). This intervention area is carefully delineated based on the boundaries of villages and the respective land status within the landscape. This approach ensures that the project targets specific regions that are crucial for conservation and sustainable management, taking into account the socio-economic and ecological contexts of the local communities. By focusing on these defined areas, the project aims to effectively address environmental challenges while supporting the livelihoods of the people living within these boundaries.

1.2.2 Land Status

The villages in this region have various land use functions that reflect the diversity of land use and the importance of environmental conservation. This diversity of land use highlights the importance of sustainable land management to support a healthy and productive ecosystem. Land cover designation (land status) in the proposed Project area of intervention is presented in Table 2.

Table 2 Land cover status in the proposed Project area.

No.	Village	Status	Size (Ha)
1	Muara Medak	Other Use Area (APL)	92
		Production Forest (HP)	27,436
2	Muara Merang	Other Use Area (APL)	357
		Production Forest (HP)	30,027
3	Air Hitam Laut	Other Use Area (APL)	6,733
		National Park (TN)	4,060
4	Gedong Karya	Protected Forest (HL)	5,594
		Production Forest (HP)	1,256

		Limited Production Forest (HPT)	7,214
		Grand Forest Park (THR)	4,368
		National Park (TN)	50
5	Jebus	Protected Forest (HL)	9,207
		Production Forest (HP)	205
		Limited Production Forest (HPT)	2,300
		Grand Forest Park (THR)	3,779
		National Park (TN)	4,376
6	Remau Baku Tuo	Other Use Area (APL)	3,125
		National Park (TN)	2,792
7	Seponjen	Production Forest (HP)	400
		Limited Production Forest (HPT)	7,760
		Grand Forest Park (THR)	307
8	Sogo	Production Forest (HP)	491
		Limited Production Forest (HPT)	8,256
		Grand Forest Park (THR)	739
9	Sungai Cemara	Other Use Area (APL)	2,953
		National Park (TN)	6,590
10	Tanjung	Protected Forest (HL)	1,077
		Production Forest (HP)	1,132
		Limited Production Forest (HPT)	12,784
		Grand Forest Park (THR)	2,760
11	Sungai Rambut	Production Forest (HP)	2,000
12	Rantau Rasau	Other Use Area (APL)	1,500

TOTAL			161,720
-------	--	--	---------

This table differentiates between national forest areas consisting of:

- **Non-Forest Area (*Area Penggunaan Lain – APL*)** refers to land designated for uses other than forestry. These areas are managed under the administration of the National Land Agency (BPN) and can include state lands as well as privately owned lands. APL covers approximately one-third of Indonesia’s landmass and is often utilized for agriculture, settlements, infrastructure development, and other non-forestry purposes. Unlike forest zones, APL areas are not subject to the same stringent conservation and management regulations, making them more susceptible to conversion for various land uses.
- **Production Forest (*Hutan Produksi*)** refers to forest areas designated for the production of forest products, primarily timber. These forests are managed to ensure sustainable yield and can be further classified into:
 - **Permanent Production Forest (*Hutan Produksi Tetap*)** refers to forest areas designated for sustainable timber production. These forests are characterized by less steep slopes, less sensitive soil types, and lower precipitation intensity compared to other forest types. As a result, they can be managed with standard logging practices, including selective logging and clear-cutting, while ensuring the long-term sustainability of the forest ecosystem. The management of these forests aims to balance economic benefits with environmental conservation, allowing for continuous timber production without compromising the health of the forest.
 - **Limited Production Forest (*Hutan Produksi Terbatas*)** refers to forest areas designated for timber production but with specific environmental constraints. These forests are characterized by steep slopes, sensitive soil types, and high precipitation intensity, which necessitate more restrictive logging practices compared to Permanent Production Forests. The management of these areas aims to minimize environmental impact while allowing for sustainable timber extraction. This includes selective logging and other practices designed to protect the forest ecosystem and prevent soil erosion.
 - **Convertible Production Forest (*Hutan Produksi yang dapat di Konversi*)** refers to forest areas designated for potential conversion to non-forestry land uses. These areas are typically less productive in terms of timber yield and can be repurposed for agriculture, infrastructure development, or other uses. The conversion process is regulated by the government to ensure that it aligns with broader land-use planning and environmental considerations. This category of forest allows for flexibility in land management, balancing the need for development with the conservation of more critical forest areas.

Each type has specific management practices based on the forest’s characteristics and intended use.

- **Conservation Forests** consisting of:

- **National Parks (*Taman Nasional*)** are protected areas established to conserve the natural environment, biodiversity, and cultural heritage. They are managed by the government and are designated for the protection of ecosystems, scientific research, education, and recreation. Activities within national parks are regulated to ensure minimal human impact, preserving the natural landscape and wildlife habitats.
- **Grand Forest Parks (*Taman Hutan Raya*)**, on the other hand, are conservation areas that combine the functions of a botanical garden, wildlife sanctuary, and recreational park. They are designed to protect biodiversity while also providing space for education, research, and tourism. Grand Forest Parks often include facilities for visitors, such as trails, picnic areas, and educational centres, making them more accessible for public enjoyment and learning.

By comparing the composition of Other Use Area (APL) as non-forest designation and Forest designation areas, we can obtain analysis of potential interaction between villagers and the forest areas:

- **Other Use Areas (APL):** Villages like Air Hitam Laut, Rantau Rasau, and Remau Baku Tuo have significant APL areas, indicating a higher probability or potential of non-forest activities (such as agriculture and plantation). Air Hitam Laut has the largest APL area at 6,733 hectares.
- **Forest Areas:** Villages such as Muara Medak and Muara Merang have extensive production forests, with Muara Merang having the largest at 30,027 hectares. Gedong Karya and Jebus have a diverse range of forest types, including protected forests, production forests, limited production forests, people's forest parks, and national parks, highlighting their multifaceted approach to land use, social forestry, and conservation.

Additionally, the proposed intervention Area contains the following conservation areas:

- **Grand Forest Park (THR):** The largest THR area is in Gedong Karya with 4,368 hectares, followed by Jebus with 3,779 hectares. These parks are managed by provincial government, and are designed to serve as recreational and conservation areas, supporting biodiversity and providing green spaces for public use; and
- **National Park (TN):** Sungai Cemara has the largest national park area with 6,590 hectares, followed by Jebus with 4,376 hectares. Berbak Sembilang National Park Authority National park area manages the National Park. National Park is crucial for preserving natural habitats and protecting wildlife, often serving as key areas for conservation efforts.

The total area designated as National Parks (17,868 hectares) is significantly larger than the area designated as Grand Forest Parks (11,953 hectares). This indicates a strong emphasis on conservation and protection of natural habitats in the region, with national parks playing a crucial role in preserving biodiversity and supporting ecological balance. Furthermore, 51% of the proposed Area of Intervention consists of peatland. The breakdown of peatland area in the villages within the proposed Area is:

1. **Air Hitam Laut:** 145 hectares
2. **Gedong Karya:** 19,520 hectares
3. **Jebus:** 20,574 hectares
4. **Remau Baku Tuo:** 635 hectares
5. **Seponjen:** 9,660 hectares
6. **Sogo:** 11,183 hectares
7. **Tanjung:** 19,281 hectares

This data show that Village with the Largest Peatland Area is Jebus Village (20,574 hectares), and village with the Smallest Peatland Area: Air Hitam Laut Village (145 hectares).

There is significant variation in peatland area among the villages, with some villages having very large areas (such as Jebus and Gedong Karya), while others have much smaller areas (such as Air Hitam Laut and Remau Baku Tuo). Villages with larger peatland areas may have greater potential for peatland management and conservation activities, but they may also face greater challenges related to natural resource management and fire mitigation.

1.2.3 Private Land and Community Land in Berbak Sembilang Landscape

1.2.3.1 *Private Land*

Private land within the Berbak Sembilang landscape is primarily used for agricultural purposes, including oil palm and rubber plantations. These lands are owned by individuals or companies and are managed according to national land laws and regulations. The expansion of these plantations has been a significant driver of deforestation and habitat fragmentation in the region. Private landowners are often involved in land-use planning and management practices that aim to balance economic activities with environmental conservation. However, the pressure to maximize agricultural output can sometimes lead to unsustainable practices, such as peatland drainage and illegal logging.

1.2.3.2 *Community Land*

Community land refers to areas managed and utilized by local communities, including indigenous groups. These lands are often governed by traditional laws and customs, which are recognized under Indonesian law. Community land management practices typically emphasize sustainable use of natural resources, reflecting the communities' reliance on the forest for their livelihoods. Activities on community land may include small-scale agriculture, fishing, and the collection of non-timber forest products. Efforts to involve local communities in conservation initiatives are crucial for the sustainable management of the Berbak Sembilang landscape.

Traditional management within the Berbak Sembilang landscape involves the use of customary laws and practices by local communities to sustainably manage and utilize natural resources. These practices are deeply rooted in the cultural heritage and knowledge of the indigenous

people, who have lived in harmony with the forest for generations. Key aspects of traditional management include:

- **Customary Laws:** Local communities follow *adat* (customary laws) that govern the use of land and resources. These laws dictate how resources are harvested, ensuring that activities such as logging, fishing, and hunting are conducted sustainably¹.
- **Community-Based Resource Management:** Communities collectively manage their land and resources, often through village councils or traditional leaders. This communal approach helps to distribute resources equitably and maintain social cohesion.
- **Sustainable Practices:** Traditional management emphasizes sustainable practices, such as rotational farming, agroforestry, and the protection of sacred sites. These practices help to preserve biodiversity and maintain the ecological balance of the landscape.
- **Cultural Significance:** Many areas within the landscape hold cultural and spiritual significance for local communities. Sacred forests, rivers, and other natural features are protected and respected, contributing to conservation efforts.
- **Knowledge Transfer:** Traditional ecological knowledge is passed down through generations, ensuring that younger members of the community learn sustainable practices and the importance of conservation.

Private lands are situated in non-Forest areas, with ownership legality defined by the Office of Agrarian and Spatial Planning. Some community lands, however, may overlap with forest areas. Specifically, social forestry activities are conducted on state forest lands.

1.3 Project Objectives

Each objective described in the previous section will be achieved through a series of activities. A brief description of the planned initiatives, their objectives, and the activities to be employed form a coherent approach as part of the Theory of Change. Each activity is designed to address specific project objectives, ensuring alignment with the overall mission. This project description serves as a guidance for the ESMP implementation. Project outcomes are presented as Results (R) that will be achieved through Objectives (O).

1. R1: A Total of ~407.876 hectares is preserved through effective community government private co-management of high conservation value area that include protected areas and ecologically important surrounding areas.
 - O1.1 A detailed restoration plan, including mapping, monitoring and implementation strategies.
 - O1.2 Established and Improved monitoring and Management of threats of wildlife habitat using real-time detection acoustic system on illegal activities;
 - O1.3 Improve social forestry holders and local community participation and collaboration in wildlife conservation efforts;
 - O1.4 Multi Stakeholder landscape protection's commitment is established and strengthened;

- O1.5 Implement reforestation and habitat enhancement activities to improve the quality of the Sumatran tiger habitat;
 - O1.6 Strengthen capacity of Berbak Sembilang National Park Rangers, Forest Dependent Communities and Private company rangers for forest monitoring; and
1. R2 Protecting Sumatran tiger species effectively through anti-poaching, Combatting Illegal Wildlife Trade and Human-wildlife conflict mitigation
 - O2.1 Sumatran Tiger and Prey Species Protection Strategies completed;
 - O2.2 Established and improved Tiger surveillance, early warning system & collaborative human-tiger conflict mitigation;
 - O2.3 Improved rangers' capacity in terms of safeguarding in line with IFC Performance on Security and Human Rights;
 - O2.4 Increased public awareness of the importance of tiger and forest conservation and human-tiger conflict mitigation strategies; and
 1. R3 Achieving the Inclusive economic growth and community development in 12 villages in the landscape
 - O3.1 Improved community livelihood sources through smart agriculture and Community-based Forest Enterprise Development;
 - O3.2 Improved household incomes from forest-based activities through better access to markets, capital, technology, and efficient partnerships between forestry companies and smallholders and communities;
 - O3.3 Payment environmental services (PES) as sustainable income source for community
 - O3.4 Monitored, verified, and evaluated document and activities of of expected result 1,2 and 3

Appendix 1 provides a logical framework for the Project.

1.4 Project Time Frame

The proposed Project is scheduled to be carried out over a period of 30 months, commencing in December 2024 and concluding in June 2026. During this timeframe, specific mitigation actions, or safeguards, will be implemented to address potential issues. Additionally, monitoring environmental and social impacts will be a key focus throughout this period.

Whenever relevant, any cumulative or long-lasting impacts will be identified and assessed during this time. **Cumulative impacts** refer to the combined effects of the project when added to other past, present, and reasonably foreseeable future actions. These impacts can be greater than the sum of individual effects. **Long-lasting impacts** are those that persist over an extended period, potentially affecting the environment and communities well beyond the project's

completion. Identifying these impacts is crucial for ensuring comprehensive management and mitigation strategies are in place to address them effectively.

1.5 Project Partners

1.5.1 The Consortium

The Consortium WARSI, WMM and FHK (with WARSI as lead) are spearheading the proposal development and project implementation aimed at conserving the Berbak Sembilang landscape. This initiative is designed to address critical environmental challenges, particularly focusing on the preservation of the Sumatran tiger's habitat. The consortium's efforts are geared towards creating a comprehensive strategy that integrates various stakeholders, ensuring that the project is both effective and sustainable. The consortium is responsible for preparing the necessary documents such as proposals and the environmental & social management system. The consortium will be responsible for the quality of implementation and the proper use of funds. WARSI as the lead organization in the consortium will report directly to IUCN.

1.5.2 Implementing Partners

Implementation of the project will be carried out in close coordination with both provincial and central government agencies. The Provincial Forestry Agency, through its Forest Management Unit, will play a pivotal role in overseeing the project's execution at the local level. Additionally, central government agencies such as BKSDA Jambi, BKSDA South Sumatera, and the Berbak Sembilang National Park Authority will provide essential support and guidance. These collaborations are crucial for aligning the project with national conservation policies and ensuring robust enforcement of environmental regulations.

1.5.3 Collaborating Partners

The private sector will also be actively involved, particularly in on-the-ground activities related to tiger patrols and social forestry. Some of the identified partners include PT. Rimba Hutani Mas, PT. Global Alam Lestari, PT. Tripura Jaya, PT. Putra Duta Indah Wood, PT. Pesona Duta Belantara, PT Jambi Batang Hari Plantation dan PT. Gemilang Jambi Permai. Their support is vital for the practical aspects of the project, such as monitoring tiger populations and implementing sustainable forestry practices. By engaging private companies, the project aims to leverage additional resources and expertise, fostering a collaborative approach to conservation that benefits both wildlife and local communities. This multi-faceted strategy underscores the importance of collective action in addressing complex environmental issues.

1.6 Executing Entities and Their Roles

1.6.1 Project Implementation

Table 3 lists the stakeholders that will execute the Project (Consortium and implementing partners). This list also specifies the expected roles of each entity.

Table 3 Entities and indicative roles in the Project.

Stakeholder	Roles
Provincial and District Government	Spatial and development planning
Berbak Sembilang National Park Authorities	Park management, core areas, Guardian monitoring, SMART monitoring
Provincial Natural Resources Conservation Agencies (BKSDA)	Law enforcement, human-wildlife conflict mitigation strategies
Provincial Forestry Agencies (Forestry Office) and their Forest Monitoring Unit (FMU)	Law enforcement
Provincial Agencies for Watershed Management (BPDAS)	Protected forest management
Local Communities (Bugis, Banjar, Malay, and transmigration groups)	Active involvement in project planning and implementation
Non-Governmental Organizations (NGOs) and Community-Based Organizations	Active involvement in project planning and implementation
Private Sector Companies (environmental services, logging concession, and timber plantation)	Active involvement in project planning and implementation

1.6.2 ESMS Responsibilities

The responsibilities for implementing and monitoring ESMS implementation will fall within the executing entities. The lead for such implementation will be done by WARSI, supported by ESMS specialists. ESMS specialists are tasked with overseeing the implementation of the ESMS, conduct regular assessments, ensure compliance with environmental and social standards, and provide technical support to the project team. This specialist is tasked within KKI WARSI and shall liaise with IUCN specialists. KKI WARSI and WMM, are responsible for the day-to-day management and execution of the project, ensure that the ESMS is integrated into all project activities and that monitoring and evaluation processes are followed. Local communities, NGOs, and other stakeholders play a crucial role in monitoring and evaluation. Their involvement ensures that the project remains accountable and responsive to the needs and concerns of those affected by its activities

1. KKI WARSI will ensure that project partners (Wahana Mitra Mandiri and Forum Harimau Kita) and stakeholders (TNBS, BKSDA, FMU, and private sector) involved in these activities comply with human rights principles, the agreed code of conduct, and SOPs for habitat management activities (patrols, conflict mitigation, biodiversity monitoring, social forestry).
2. The implementation and monitoring of FPIC will be the responsibility of KKI WARSI together with Wahana Mitra Mandiri. TNBS and BKSDA will support FPIC monitoring related to conflict mitigation, while the Forestry Service and KPH will support monitoring related to social forestry..

3. The grievance mechanism will be the responsibility of KKI WARSI and the project team for its implementation and monitoring.
4. KKI WARSI will be the primary entity responsible for compliance with the ESCOP. Project partners (Wahana Mitra Mandiri and TNBS) are responsible for carrying out construction or renovation activities in accordance with the ESCOP.
5. Monitoring of livelihood development activities will be conducted by KKI WARSI together with Wahana Mitra Mandiri.

Activity	Responsible Institution	Responsibilities
Patrol and joint patrol	KKI WARSI, Wahana Mitra Mandiri, TNBS, BKSDA, FMU, Private sector	Conduct patrols; adhere to human rights principles, code of conduct, SOPs;
Habitat management (including construction small-scale and renovation)	KKI WARSI (overall ESCOP compliance), Wahana Mitra Mandiri, TNBS and local community	Ensure compliance with ESCOP; implement habitat management activities (construction, renovation) per agreed standards
FPIC	KKI WARSI, Wahana Mitra Mandiri; TNBS & BKSDA (support conflict mitigation), Forestry Service & KPH (support social forestry)	Conduct participatory consultations; ensure communities are informed; monitor FPIC compliance; address concerns
Grievance mechanism	KKI WARSI and project team	Implement and monitor grievance procedures; respond to complaints
Livelihood development	KKI WARSI & Wahana Mitra Mandiri	Monitor livelihood activities; ensure community engagement; evaluate and monitoring impacts;
Stakeholder engagement	Local communities, NGOs, other stakeholders	Participate in monitoring and evaluation; ensure accountability; provide feedback to project

1.7 Social context

According to the International Union for Conservation of Nature (IUCN), the social context refers to the immediate physical and social setting in which people live or in which something happens or develops. This includes the cultural, economic, and institutional environments that influence and shape human interactions and behaviors. Understanding the social context is crucial for conservation and development projects as it helps identify the social dynamics, power structures, and cultural norms that can impact project outcomes.

The Berbak Sembilang Landscape is administratively located in 2 provinces, Jambi and South Sumatra (12 intervention villages). The intervention area is inhabited by various ethnic groups such as Malay, Javanese, Batak, and Bugis. These communities have a strong connection to their territory and depend on agriculture, small-scale plantations, and fisheries as their main sources of livelihood.

Key components of the social context include:

Cultural Factors:

Local communities in the 12 intervention villages possess traditional knowledge and cultural practices related to land use, peatland management, livelihoods derived from forest, river, and marine resources, as well as the utilization of natural resources. In several villages, customary norms continue to influence social cohesion and collective decision-making processes.

Economic Conditions:

The economy in this region is dominated by agriculture, small-scale plantations, and the fisheries sector. In Sadu, the local economy relies heavily on plantation commodities such as oil palm, areca nut, and coconut. In Kumpeh, economic activities are primarily driven by oil palm and rubber, similar to the situation in Bayung Lencir. Meanwhile, in Berbak, the main commodities cultivated are oil palm and rice. Across all intervention villages, limited market access, infrastructure quality, and livelihood diversification contribute to household vulnerability to seasonal income fluctuations, changes in commodity prices, and environmental risks such as fires, land degradation, and flooding during the rainy season.

Institutional Framework:

The Berbak Sembilang Landscape falls under various management and administrative regimes, including conservation areas (Berkak Sembilang National Park and the Grand Forest Park), production forests, protected forests, and agricultural lands managed at the village level. Coordination involves government stakeholders such as BKSDA, the Provincial Forestry Office, Forest Management Units (KPH), and Village Governments. Community-based institutions, such as farmer groups, women's groups, Fire Concern Communities (MPA), conservation groups, Social Forestry and Conservation Partnership groups, as well as local business groups, play important roles in natural resource management and decision-making processes. However, governance challenges remain, including limited monitoring capacity, overlapping land claims, and differing institutional priorities.

By considering these factors, the Project aims to ensure that conservation initiatives are socially inclusive, culturally sensitive, and economically viable, ultimately leading to more sustainable and equitable outcomes.

1.7.1 Project Affected People

The Berbak Sembilang landscape is home to a diverse array of communities, including the Melayu (Malay) tribe, Java, Batak, Padang, Makassar/Bugis, and the indigenous Anak Dalam tribe, as well as Chinese descendants and other immigrant groups from various parts of

Indonesia. These communities have a deep connection to the land and its resources, with traditional knowledge and practices that have been passed down through generations. The primary economic activities in the region are fishing and farming, with most of the population relying on these livelihoods. The mangrove forests and wetlands are particularly crucial, providing both sustenance and protection against coastal erosion. The project affected people (PAP) are residents of 12 villages in three sub-districts (in two provinces).

Project Affected People are identified through a series of processes, starting with the selection of villages or project areas based on the scope of activities. The determination of these areas is reinforced by spatial data analysis, such as administrative boundaries, forest areas (Protected Forests and Production Forests), and conservation areas (Berbak Sembilang National Park and Grand Forest Park). Once the area has been determined, stakeholder mapping is carried out to identify parties that are involved or potentially affected, including communities at the site level, government (BKSDA, Forestry Service, FMU and Village Government) and the private sector. The process is elaborated with secondary data on the demographic and social conditions of the community. This is followed by field verification through field visits and consultations with the community and relevant parties. This activity aims to validate the groups that depend on the project area and map the groups that are most at risk socially, economically, and environmentally. The findings from the verification process then form the basis for agreeing on who is included in the Project Affected People category.

1.7.1.1 Sub-Districts Level

The following is a description of economic conditions in the sub-districts:

1.7.1.1.1 Sadu, East Tanjung Jabung

Sadu, located in East Tanjung Jabung Regency, is primarily an agricultural area. The local economy is heavily reliant on agriculture, with many residents engaged in farming activities. The region benefits from fertile land, which supports the cultivation of various crops. Additionally, the presence of peatlands and swamps provides opportunities for aquaculture and fishing, contributing to the local economy. The economic condition in Sadu is relatively stable, with ongoing efforts to improve infrastructure and support sustainable agricultural practices.

Sadu has a relatively stable economy supported by agriculture and plantations as the main sources of livelihood, with coconuts, areca nuts, and oil palm being the most widely cultivated commodities. These commodities are harvested periodically throughout the year. Its location near the coast also provides livelihood opportunities through fisheries. Most community members already manage and own their own land, giving them productive assets that contribute to economic stability.

1.7.1.1.2 Bayung Lincir, Musi Banyu Asin

Bayung Lincir in Musi Banyu Asin Regency is known for its diverse economic activities, including agriculture, forestry, and mining. The area has significant oil palm plantations, which are a major source of income for the local population. Additionally, the forestry sector plays a

crucial role, with logging and timber production being prominent. The presence of natural resources such as coal and oil also contributes to the economic landscape, providing employment opportunities and boosting the local economy.

1.7.1.1.3 Kumpeh, Muaro Jambi

Kumpeh, located in Muaro Jambi Regency, has an economy that is largely based on agriculture and forestry. The region is known for its rubber and palm oil plantations, which are key contributors to the local economy. Additionally, the area has a significant number of small-scale farmers who grow various crops for both subsistence and commercial purposes. Other commodities widely cultivated in the five intervention villages in Kumpeh include durian and duku (*Lansium domesticum*), which are seasonal fruit crops. The economic activities in Kumpeh are supported by efforts to improve infrastructure and promote sustainable agricultural practices, aiming to enhance the livelihoods of the local communities.

1.7.1.1.3 Berbak, East Tanjung Jabung

Berbak, located in East Tanjung Jabung Regency, is an area whose local economy heavily depends on the agricultural sector. Most residents are engaged in farming activities, with palm oil and areca nut as the main commodities. Rantau Rasau Village is also known as one of the rice-producing centers in East Tanjung Jabung Regency. In addition to agriculture, the community also relies on the fisheries sector, particularly from the Batang Hari River. Although the area has considerable resource potential, economic development in Berbak is still needed, particularly in strengthening community capacity and promoting sustainable agricultural practices

1.7.2 Village Level

Target villages in the Berbak Sembilang landscape are often small and closely knit, with a strong sense of community and mutual support. Despite the challenges posed by limited infrastructure and access to markets, these communities are resilient and resourceful. Efforts are being made to enhance their capacity for sustainable development, including initiatives to promote ecotourism and improve local livelihoods through better management of natural resources. Table 4 provides a list of villages proposed for Project intervention.

The degree of affectedness among the project-affected involves qualitative assessment (using high, medium, and low as the categories) based on previous experience of WARSI on several key indicators and criteria:

1. **Livelihood Impact:** Assessing potential changes in income, employment, and access to resources. This includes evaluating how the project affects local economies and individual livelihoods.
2. **Health and Safety:** Measuring impacts on physical and mental health, including exposure to pollutants, changes in access to healthcare, and safety risks associated with the project.

3. **Social and Cultural Impact:** Evaluating effects on social structures, cultural heritage, and community cohesion. This includes assessing changes in social dynamics and the preservation of cultural sites.
4. **Access to Resources:** Determining changes in access to natural resources such as water, land, and forests. This involves measuring how the project affects the availability and quality of these resources for local communities.
5. **Displacement and Resettlement:** Quantifying the number of people displaced or resettled due to the project and assessing the adequacy of compensation and support provided.
6. **Stakeholder Engagement:** Monitoring the level and effectiveness of stakeholder engagement, including the participation of affected communities in decision-making processes.

These indicators help ensure that the degree of affectedness is systematically measured and managed, allowing for appropriate mitigation and compensation measures to be implemented.

Table 4 List of villages in the proposed Project area in Berbak Sembilang landscape.

District/ Region	Village name	Approx. number of households	Approx. number of inhabitants		Estimate of the degree of affectedness
			Male	Female	
Sadu, East Tanjung Jabung	Air Hitam Laut	654	1090	1014	High
Sadu, East Tanjung Jabung	Remau baku tuo	219	450	416	High
Sadu, East Tanjung Jabung	Sungai Cemara	145	303	262	High
Bayung Lincir, Musi Banyu Asin	Muara Merang	1315	1963	1681	High
Bayung Lincir, Musi Banyu Asin	Muara Medak	2167	3645	3169	High
Kumpeh, Muaro jambi	Sogo	340	472	466	Medium
Kumpeh, Muaro jambi	Sungai Aur	566	935	831	Medium
Kumpeh, Muaro jambi	Seponjen	516	782	727	Medium

District/ Region	Village name	Approx. number of households	Approx. number of inhabitants		Estimate of the degree of affectedness
			Male	Female	
Kumpeh, Muaro jambi	Gedong karya	642	978	927	High
Kumpeh, Muaro jambi	Jebus	246	345	352	Medium
Berbak, Tanjung Jabung Timur	Sungai Rambut	800	1800	2000	Medium
Berbak, Tanjung Jabung Timur	Rantau Rasau	1200	3200	3500	Medium

The economy of these villages in Berbak Sembilang landscape is primarily driven by traditional activities such as fishing and farming, which are the main sources of livelihood for the local communities. The region also supports palm oil plantations, rubber production, and timber harvesting, which contribute significantly to the local economy⁴. Additionally, there are efforts to develop ecotourism, leveraging the area's rich biodiversity and unique ecosystems to attract visitors and provide alternative income sources for residents. These economic activities are balanced with conservation efforts to ensure sustainable use of natural resources and the protection of the landscape's ecological integrity.

3. INSTITUTIONAL AND LEGAL FRAMEWORK

This chapter provides a comprehensive overview of the legal and regulatory context, ensuring that the project aligns with national and international standards for environmental and social management. It covers national, provincial, and international regulations that govern environmental and social management in Indonesia.

2.1 Project's Host Country Requirements

Legal frameworks refer to existing regulation at national and provincial level to support ESMP implementation. Some key regulations relevant with the proposed Project include:

National Regulations

1. **Environmental Assessment:** Projects by civil society organizations like WARSI and WMM do not require environmental licensing.
2. **Forest Management and Social Forestry:** Includes laws on village cooperation, forest degradation prevention, spatial planning, and social forestry management.
3. **Indigenous Peoples and Social Welfare:** Laws protecting cultural heritage and agrarian principles, ensuring the rights of indigenous communities.
4. **Human-Wildlife Conflict:** Guidelines for managing conflicts between humans and wildlife.
5. **Social Conflict Management:** Laws for handling social conflicts and public service complaints.

Provincial Regulations

1. **Forest Management and Social Forestry:** Jambi Province regulations on forest and land fire prevention, spatial planning, and traditional institutions.
2. **Social Conflict Management:** Regulations for managing public service complaints.
3. **Gender Equality:** Policies to ensure gender equality and women's empowerment in conservation efforts.

Appendix 2 provides a complete description of these regulations.

2.2 IUCN ESMS policy framework (International Standards)

The International Union for Conservation of Nature (IUCN) Environmental and Social Management System (ESMS) is designed to ensure that IUCN projects are implemented in a manner that minimizes negative environmental and social impacts while enhancing positive outcomes. The ESMS provides a systematic procedure to identify, assess, and manage potential risks associated with project activities. It is guided by eight overarching principles, including taking a rights-based approach, protecting the needs of vulnerable groups, promoting gender equality, and ensuring stakeholder engagement. These principles form the core of the

ESMS Policy Framework, which governs the minimum environmental and social requirements for IUCN projects. The four key standards are:

1. **Biodiversity and Sustainable Use of Natural Resources:** This standard ensures that projects contribute to the conservation of biodiversity and promote the sustainable use of natural resources.
2. **Indigenous Peoples:** This standard safeguard the rights of indigenous peoples, ensuring their participation in decision-making processes and respecting their cultural heritage and traditional knowledge.
3. **Cultural Heritage:** This standard aims to protect cultural heritage, including tangible and intangible assets, from adverse impacts of projects.
4. **Involuntary Resettlement and Access Restrictions:** This standard addresses the risks associated with involuntary resettlement and access restrictions on access to natural resources, ensuring that affected communities are adequately compensated and supported.

The system incorporates comprehensive guidelines and templates for conducting environmental and social impact assessments, developing management plans, and monitoring project performance. Additionally, the ESMS features a grievance mechanism to address concerns from stakeholders, ensuring accountability and continuous improvement in project implementation.

2.3 Grantees E&S Management Capacities

WARSI has extensive experience with international projects, particularly in collaboration with global organizations to enhance environmental and social management in Jambi. One notable project is the **Integrated Conservation Development Project (ICDP-TNKS)**, which ran from 1996 to 2002. This project, funded by the World Bank and Trust Fund, aimed to address threats to the Kerinci Seblat National Park, such as illegal logging and hunting. The project involved local communities in conservation efforts, promoting sustainable livelihoods and reducing dependency on forest resources.

Another significant international collaboration is the **Habitat and Resources Management for the Kubu** project, which WARSI conducted in partnership with the Rainforest Foundation Norway from 1997 to 2012. This project focused on supporting the Orang Rimba (Kubu) community by protecting their habitat and managing resources sustainably. The initiative aimed to mitigate the impacts of habitat loss due to forest conversion for oil palm plantations and transmigration settlements. These projects highlight WARSI's capacity to manage complex environmental and social challenges through international cooperation and community engagement.

WARSI played a crucial role in supporting the Environmental and Social Management Framework (ESMF) for WWF in the Bukit Tigapuluh landscape. Their involvement included conducting field investigations and remote sensing to monitor forest conditions and identify areas at risk of deforestation and degradation. WARSI's expertise in community engagement was instrumental in involving local communities in conservation efforts, ensuring that their needs and perspectives were integrated into the ESMF.

Additionally, WARSI collaborated with WWF and other organizations to develop strategies for mitigating the impacts of logging and other land-use changes on the Bukit Tigapuluh landscape. This included advocating for the protection of high conservation value areas (HCVAs) and promoting sustainable land management practices. Their efforts helped to strengthen the overall effectiveness of the ESMF, contributing to the conservation of critical habitats for endangered species such as Sumatran tigers, elephants, and orangutans.

2.4 Other Actors / Entities Operating in Project Landscape

Currently, there are ongoing Projects in the ITHCP intervention area:

1. BioCarbon Fund-Initiative for Sustainable Forest Landscape (BioCF-ISFL):

- A global initiative aimed at supporting sustainable forest landscape management to reduce greenhouse gas emissions, improve local community welfare, and protect biodiversity.
- Focuses on integrating agricultural, forestry, and land use activities with a landscape-based approach and strengthening cross-sectoral coordination.
- Implemented in several phases:
 - **Preparation Phase (2019-2020):** Initial stage including planning and program implementation preparation.
 - **Pre-Investment Phase (2020-2025):** Capacity building, plan development, and field activity trials.
 - **Performance-Based Payment Phase:** Financial incentives based on measurable emission reductions.
- Beneficiaries:
 - Provincial Government of Jambi (Dishut, DLH, Plantation Office, Agriculture Office, and Bappeda)
 - District governments in Jambi Province (Muara Jambi, Tebo, Batang Hari, Sarolangun, Kerinci, Sungai Penuh)
 - KPH (KPH Hilir Sarolangun, KPH Tanjabbar, KPH Merangin, KPH Bungo)
 - Conservation Areas (TNKS, TNBS, TNBD, TNBT)
 - Village communities
 - NGOs, private sector, and universities

2. Green Climate Fund (GCF) Output 2:

- Aims to reduce greenhouse gas emissions through sustainable forest and land management.
- Funded by the Ministry of Environment and Forestry (KLHK) and the Environmental Fund Management Agency (BPDLH).
- Managed by an intermediary institution, Penabulu Foundation, responsible for disbursing funds to beneficiaries in Jambi Province during 2024-2026.
- Focuses on reducing emissions by 14 million tons of CO₂e through various strategies, including improving land productivity, transportation access, and promoting climate resilience.
- Also aims to rehabilitate damaged forests, empower communities to reduce poverty, and improve forest governance to address deforestation and forest degradation.

3. Yayasan Gajah Sumatera (YAGASU):

- A non-profit organization based in North Sumatra (Medan) that conducted activities in Sadu District in 2023.
- Focused on mangrove seedling activities in several villages in Sadu District.
- Each village formed 2 groups (average 10-15 people/group) with approximately 50,000 seedlings/group.
- This seedling activity is an effort to restore coastal ecosystems that have been deforested due to factors such as sea water abrasion.

4. Peatland Restoration Agency (BRG):

- Conducted activities in Sadu District, particularly in Air Hitam Laut Village and Remau Baku Tuo Village.
- Activities included canal blocking and improving the local economy through the formation of women's groups for vegetable cultivation.
- Activities in these two villages were carried out in 2023, with ongoing maintenance of canal blocking activities involving local communities for cleaning around the canal blocks.

5. Wahana Mitra Mandiri (WMM):

- Active in Remau Baku Tuo Village and Air Hitam Laut Village since 2022.
- Activities from 2022 to 2023 included mitigating human-wildlife conflicts with various activities, from forming independent wildlife prevention groups in villages

to early childhood education (elementary school level) to raise awareness about the species and habitat of the Sumatran Tiger.

- One activity involving early childhood was organizing a coloring competition at the elementary school level in the project village to commemorate Global Tiger Day 2022.

6. Yayasan Wahana Bumi Hijau:

- Long identified as assisting Muara Merang Village Forest and has conducted many assistance and empowerment activities in Muara Merang Village.
- Activities include institutional management of village forest management institutions, capacity building, and other empowerment practices for village forest management institutions and affected communities in Muara Merang Village.
- The community of Dusun III Pancuran in Muara Merang Village is directly affected by the presence of Muara Merang Village Forest, as the village forest is located around Dusun III Pancuran.
- Muara Merang Village Forest is the FIRST Village Forest in South Sumatra Province through MENHUT Decree No. 54 of 2010 covering 7,250 hectares.

2.5 Existing Environmental and Social Risk Management

The stakeholders that will be involved in the Project have some experience with environmental and social management practices. To represent the existing environmental and social risk management, the main stakeholders include government agencies, private sector, and non-governmental organizations.

2.5.1 Government Agencies

In Jambi Province, local government agencies adopt the environmental and social safeguards of The BioCarbon Fund Initiative for Sustainable Forest Landscapes (BioCF ISFL). These agencies have implemented several environmental and social safeguards in Jambi, Indonesia such as:

1. **Environmental and Social Management Framework (ESMF):** This framework addresses environmental and social management for the Jambi Sustainable Landscape Management Project (J-SLMP). It includes measures to reduce land-based greenhouse gas emissions and improve sustainable landscape management.
2. **Strategic Environmental and Social Assessment (SESA):** This assessment identifies potential environmental and social impacts of the project and proposes mitigation measures. It ensures that the project aligns with existing safeguards instruments for REDD+ (Reducing Emissions from Deforestation and Forest Degradation).

3. **Stakeholder Consultations:** The project involves extensive consultations with local communities, including indigenous peoples, to ensure their participation and address their concerns. This is crucial for the transparency and inclusiveness of the project.
4. **Benefit Sharing Plan (BSP):** The project includes a plan to distribute emission reduction payments fairly among stakeholders, ensuring that benefits reach local communities and contribute to sustainable development.
5. **Monitoring and Reporting:** The project has a robust system for monitoring, analysis, and reporting (MAR) to track progress and ensure compliance with environmental and social safeguards. This system is aligned with national monitoring and reporting frameworks.

2.5.2 Private Sectors

Private sectors comply with the implementation of AMDAL (Environmental Impact Assessment). The process involves several key steps and considerations to ensure environmental sustainability and compliance with regulations such as:

1. **Preparation of AMDAL Documents:** Private companies are required to prepare comprehensive AMDAL documents before starting any project that may have significant environmental impacts. These documents include an Environmental Impact Statement (AMDAL), an Environmental Management Plan (RKL), and an Environmental Monitoring Plan (RPL).
2. **Public Consultation:** Companies must engage in public consultations with local communities, stakeholders, and relevant authorities. This process ensures that the concerns and inputs of affected communities are considered in the AMDAL process.
3. **Approval Process:** The AMDAL documents are reviewed and approved by the Environmental Agency (Badan Lingkungan Hidup) at the provincial or national level, depending on the scale and impact of the project. Approval is granted only if the proposed measures are deemed adequate to mitigate environmental impacts.
4. **Implementation of Environmental Management and Monitoring Plans:** Once approved, companies are responsible for implementing the RKL and RPL. This includes measures to prevent pollution, manage waste, protect biodiversity, and monitor environmental parameters regularly.
5. **Compliance and Reporting:** Companies must regularly report their environmental performance to the relevant authorities. This includes submitting monitoring reports and demonstrating compliance with the AMDAL requirements.
6. **Enforcement and Penalties:** Non-compliance with AMDAL requirements can result in penalties, including fines, suspension of operations, or revocation of permits. The enforcement of these regulations is crucial to ensure that companies adhere to environmental standards.

2.5.3 Non-Government Organizations

Environmental and social risk management by non-government organizations like KELOLA Sendang, GIZ, and other NGOs in Jambi and South Sumatra involves several key strategies and initiatives:

2.5.3.1 KELOLA Sendang

KELOLA Sendang, a collaborative project in the Sembilang-Dangku landscape of South Sumatra, focuses on sustainable landscape management. Key initiatives include:

1. **Peatland Monitoring and Fire Prevention:** KELOLA Sendang developed a peatland monitoring system to analyze water levels and establish early warning systems for fires. This helps in preventing large-scale fires that cause significant environmental and social damage.
2. **Regulatory Support:** The project works with government agencies to develop and implement peatland management regulations. This ensures better coordination and enforcement of sustainable practices.
3. **Sustainable Livelihoods:** KELOLA Sendang promotes economically viable and environmentally sustainable livelihood options for local communities. This includes supporting agroforestry and other sustainable agricultural practices.

2.5.3.2 GIZ (*Deutsche Gesellschaft für Internationale Zusammenarbeit*)

GIZ focuses on improving governance and sustainable forest landscape management. Key aspects include:

1. **Environmental and Social Impact Assessments (ESIA):** GIZ conducts comprehensive ESIA's to identify potential environmental and social impacts of projects. This helps in developing effective mitigation strategies.
2. **Environmental and Social Management Plans (ESMP):** Based on the ESIA findings, GIZ prepares ESMPs to ensure that projects comply with environmental and social safeguards. These plans include measures for pollution control, biodiversity conservation, and community engagement.

2.5.3.3 Other NGOs

Various other NGOs also contribute to environmental and social risk management in these regions:

1. **Community Engagement:** NGOs work closely with local communities to raise awareness about sustainable practices and involve them in conservation efforts. This includes training and capacity-building programs.
2. **Biodiversity Conservation:** Many NGOs focus on protecting biodiversity by establishing conservation areas and promoting sustainable land use practices.

3. **Policy Advocacy:** NGOs often engage in policy advocacy to influence environmental regulations and promote sustainable development at the local and national levels.

2.5.3.4 *WARSI Consortium*

KKI WARSI has a comprehensive approach to managing environmental and social performance, focusing on sustainable development and the protection of indigenous rights. Here are some key aspects of their system:

1. Environmental Performance

- a. **Habitat and Resource Management:** KKI WARSI works on protecting forest areas, particularly those claimed by indigenous communities like the Orang Rimba. This involves collaborative management of national parks and other protected areas.
- b. **Sustainable Practices:** They promote sustainable resource management practices that ensure the long-term health of ecosystems while supporting local livelihoods.

2. Social Performance

- a. **Community Engagement:** KKI WARSI actively involves local communities in their projects, ensuring that their needs and rights are respected. This includes capacity building, improving access to education and health services, and promoting income-generating activities.
- b. **Indigenous Rights:** They advocate for the rights of indigenous peoples, ensuring their participation in decision-making processes and protecting their cultural heritage.

3. Risk Management

- a. **Monitoring and Evaluation:** Regular monitoring and evaluation are conducted to assess the performance of projects and identify any potential risks. This helps in making necessary adjustments to strategies and actions.
- b. **Knowledge Management:** KKI WARSI has established a program for knowledge management, which includes developing systems for evaluation and resource management. This helps in disseminating lessons learned and best practices to various stakeholders.

Overall, KKI WARSI's approach ensures that their projects are environmentally sustainable and socially inclusive, contributing to the well-being of both the ecosystems and the communities they work with. Upon implementation of the Project, WARSI will optimise these experiences among stakeholders to ensure accommodation of IUCN standards throughout project implementation.

2.6 Gap Analysis

The International Union for Conservation of Nature (IUCN) Environmental and Social Management System (ESMS) and the International Finance Corporation (IFC) Performance Standards both aim to ensure sustainable development by managing environmental and social risks. The IUCN ESMS provides a framework for identifying, assessing, and managing environmental and social impacts in conservation projects. It emphasizes biodiversity conservation, sustainable use of natural resources, and equitable sharing of benefits. Similarly, the IFC Performance Standards offer guidelines for managing environmental and social risks in private sector projects, focusing on areas such as labor conditions, community health and safety, and biodiversity conservation.

Both frameworks share a common goal of promoting sustainable development and minimizing negative impacts on the environment and communities. They are compatible in their approach to risk management, stakeholder engagement, and the integration of environmental and social considerations into project planning and implementation. By aligning with both the IUCN ESMS and IFC Performance Standards, organizations can ensure comprehensive and robust management of environmental and social risks, enhancing the sustainability and acceptability of their projects. Referring to these international standards, the subsequent analysis focuses on the potential issues and gaps relevant for the Project. Table 5 provides a summary of these potential issues and gaps in the existing regulation or practices. Consequently, these gaps need to be elaborated by Project activity and addressed in these ESMP documents. Appendix 4 lists the risk and issues based on IUCN principles.

Table 5 Summary of gap analysis

ESMS Procedural requirements and E&S Standards / Risk Areas	National Legislative Requirements	Identified Gaps	Strategy Gap Closure
A: ESMS Manual: Procedure for identification, assessment and management of E&S risks	UKL/UPL and other relevant environmental documents (e.g., statement letter / SPPL)	UKL/UPL Not mandated for Project	Development of ESMP based on risk assessment (Scoping and ESIA)
Accountability principle including requirements for Grievance mechanism	Ombudsman role in overseeing complaints related to public services	Government-operated ombudsman is not designed specifically for the Project	ESMP to contain Project-specific GRM mechanism;
Principle on Stakeholder engagement with minimum requirements for consultation and disclosure of information		Underrepresentation of women in decision-making processes;	Stakeholder Engagement Plan (ESMP) to ensure participation in project planning and decision making
		Inadequate capacity to comply with regulations regarding compensation for loss of livestock or lives due to human-wildlife conflict	Consideration of measures to prevent tiger attack on livestock (e.g., barricade, livestock shelter/enclosure)
			Consideration of livestock program to replace the loss

ESMS Procedural requirements and E&S Standards / Risk Areas	National Legislative Requirements	Identified Gaps	Strategy Gap Closure
B1: Adverse gender-related impacts and gender-based violence sexual exploitation, sexual abuse or sexual harassment (SEAH). ¹	Law No. 23 of 2004 on the Elimination of Domestic Violence. This law aims to protect victims, prevent future incidents, and ensure perpetrators face justice	Risk is not identified for Project, but generally there is a shortage of shelters, counseling services, and legal aid for victims of domestic violence	Domestic violence will not be addressed unless linked to the project (direct, indirect, or cumulative). If identified, it will be addressed through the GRM, and coordinated with relevant agencies in the province or district. The project will develop mitigation measures for SEAH and provide training to personnel on preventing and addressing SEAH. The project will work with local authorities and NGOs to provide appropriate support to victims of SEAH if it arises in project-related activities.
			Coordination with relevant agencies in the province or district
B2: Risks of affecting vulnerable groups	Laws to ensure access to education, employment, health services, social security, and protection from abuse and discrimination for all citizens, including the most vulnerable	Underrepresentation of marginalized groups in decision-making processes	Stakeholder Engagement Plan (ESMP) to ensure representation of vulnerable groups in project planning and decision making
B3: Risk of undermining human rights	Protection of human rights under constitution (UUD 45) and Law 39/1999	Patrol team may not be well-trained in human rights issues	Include human rights aspects in training for patrol team
B4: Community health, safety and security risks	Regulations on health services, public health, work safety, and disaster preparedness	Lack of adequate health and safety training and resources for patrol personnel.	Provision of training for patrol personnel and community facilitators on health, safety, and security aspects, including setting up procedures for disaster preparedness
		Lack of formal procedures to avoid physical danger to humans (from wildlife);	Include safety procedure for patrol and monitoring teams
		Lack of formal procedures to avoid risk of zoonosis;	Minimize interaction between communities and wildlife

¹ The requirements for the Risk Areas B1 to B6 are based on the ESMS Guidance Note "[Assessment, Management and Monitoring of Environmental and Social Risks](https://iucn.org/sites/default/files/2022-09/iucn_esms_qn-risk-management-clean-22.pdf), available here: https://iucn.org/sites/default/files/2022-09/iucn_esms_qn-risk-management-clean-22.pdf

ESMS Procedural requirements and E&S Standards / Risk Areas	National Legislative Requirements	Identified Gaps	Strategy Gap Closure
		Insufficient protection and support for informants;	Include Informant protection policies as part of investigation protocols
B5: Labour and working conditions	Regulations on works safety	Lack of comprehensive occupational health and safety measures, especially workers in hazardous conditions such as forest patrol	Provision of proper equipment and training to ensure safety of workers and local people involved in the Project activities
		Insufficient enforcement of labor rights and standards	Adoption of work and safety standards by Project implementors and partners
B6: Resource efficiency, pollution, waste, chemicals and GHG emissions		N/A	Efficient use of fuel and electricity in all Project activities and offices
C1: Involuntary Resettlement & Access Restrictions	Protection and empowerment of farmers, and protection of sustainable food agricultural land.	Patrol or social forestry activities limit communities' access to agriculture and farmlands	Socialization and education to patrol teams and social forestry groups on regulated or controlled access
	Agrarian law to facilitate land distribution and resolving land disputes	Tenurial conflicts occur due to conflicting land use	Spatial plan at village level (Village Land Use Plan)
C2: Indigenous Peoples		N/A	
C3: Cultural Heritage		Burial grounds of Suku Anak Dalam in Muara Medak Village are not protected or preserved under cultural heritage act	Coordination with district agency responsible for cultural heritage protection / preservation
C4: Biodiversity & Sustainable Use Natural Resources		Complexity of ecological requirements and administrative burden associated with obtaining social forestry permits	Conduct proper socialization and stakeholder engagement sessions to ensure full understanding of social forestry mechanism
		Insufficient integration of environmental considerations into infrastructure projects in protected areas	Adopt the UKL/UPL or environmental management principles for construction
		Lack of comprehensive environmental training for patrol officers	Provision of training on camp management to reduce the risk of fire, waste, and damage in the tiger habitat

4 RISK MANAGEMENT STRATEGY

The development of risk management strategies relies on the risk identification from ESIA exercise. Mitigation of the said risks becomes part of the ESMP document.

4.1 IDENTIFIED POTENTIAL RISKS AND RISK CATEGORIZATION

The IUCN's Environmental and Social Management System (ESMS) employs a risk rating process to evaluate and manage potential environmental and social risks associated with projects. This process involves categorizing risks based on their likelihood and potential impact. The ESMS uses a systematic approach to identify, assess, and mitigate risks, ensuring that projects adhere to IUCN's environmental and social standards. The risk rating helps prioritize actions and allocate resources effectively to minimize adverse impacts and enhance positive outcomes. Risk rating is further refined by assessing:

- Severity of impacts for risk rating refers to the extent of potential harm or damage that an impact could cause (i.e., minor, moderate, major, or critical), affecting both environmental and social aspects; and
- Likelihood of occurrences refers to the probability that a specific impact will happen (e.g., unlikely, possible, likely, or almost certain).

By combining these two dimensions, risks are categorized into different levels. This dual assessment helps prioritize which risks need more immediate and stringent management measures, ensuring that the most significant and probable risks are addressed effectively.

The IUCN's ESMS categorizes project risks into three main levels: high, moderate, and low. These categories help determine the extent of assessment and management required for each project.

1. **High Risk (Red):** Projects classified as high risk have the potential to cause significant adverse environmental and social impacts that are diverse, irreversible, or unprecedented. These projects require comprehensive Environmental and Social Impact Assessments (ESIAs) and robust management plans to mitigate potential negative effects.
2. **Moderate Risk (Yellow):** Projects in this category may cause adverse environmental and social impacts, but these impacts are generally site-specific, less severe, and more readily mitigated than those in high-risk projects. Moderate risk projects still require careful assessment and management, but the scope and depth of these processes are typically less extensive than for high-risk projects.
3. **Low Risk (Green):** Low-risk projects are those with minimal or negligible adverse environmental and social impacts. These projects usually do not require detailed environmental and social assessments, but they still need to adhere to basic environmental and social management practices to ensure compliance with IUCN standards.

It is recommended that Project focus on the risk events with Moderate and High (yellow and red) categories. The ESIA identified the potential risks associated with Project activities (Appendix 3 provides a risk rating matrix) and the Project shall focus on the risks with moderate to high ratings for the ESMP.

4.2 IMPACT ASSESSMENT

Based on the risks associated with the Project's activities and their respective rating (Appendix 3), this section delves into elaborating the impacts from these risks. Impacts assessment is done by categorizing the risks based on the rating and the IUCN standard (Table 6). Appendix 5 (ESMP Matrix) lists the mitigation measures for avoiding and mitigating impact from Project activities.

Table 6 List of impacts from Project activities

Standards / Principles	Risks	Impacts	Impact Category
Biodiversity and Sustainable Use of Natural Resources	Damages from patrol and survey activities (e.g., fire, camp, and trail clearing).	Loss of biodiversity and change in landscape due to forest fire	Severe
	Misinterpretation of social forestry management and work plan leads to land clearing (operational collaboration with companies)	Destruction of natural forest, and potential loss of biodiversity and carbon	Severe
	Social Forestry Business Plan (RKPS) do not consider biodiversity / endangered species	Loss of biodiversity	Severe
	Planting (70 ha) and assisted natural regeneration (150 ha) practices introduce alien and invasive species	Alteration of vegetation composition and potential loss of biodiversity	Severe
	Smart agriculture practices and community-based forest business introduce alien and invasive species.	Alteration of vegetation composition and potential loss of biodiversity	Severe
Precautionary Principles	Release of effluent /pollutant during product development and processing (household industries).	Pollutions, waste, chemicals, and GHG emissions causing environmental degradation and climate change	Major
Community Health, Safety, and Security	Interest or concerns of certain groups are excluded from the SOP	SOP of wildlife conflict mitigation does not satisfactorily resolve the HWC cases	Major
	Human rights issues when dealing with wildlife and forest crime	Violations of human rights leading to loss of livelihood, involuntary displacement,	Major

		environmental degradation, and violence/harassment	
	Human-wildlife incidents increase and cause loss of assets or lives	Increased incidence of human-wildlife conflicts (anxiety/fear among villagers)	Major
	Confidentiality breach of informant providing information on illegal activities	Threats to the safety and well-being of the community informants (anxiety and potential harms)	Major
	Survey activities causing shift in tiger movements and distribution leading to increase on interaction between human and tigers	Increased frequency and intensity of human-wildlife conflicts	Major
	increase on interaction between human and tigers (human-wildlife conflicts)	increased frequency and intensity of human-wildlife conflicts	Major
Labor and Working Conditions	exposure to fire risk (burn and smoke inhalation) when implementing forest fire prevention and control	burn and smoke inhalation causing health problems and injuries	Severe
	risk of injuries or deaths due to tiger attack during installation of monitoring equipment	human casualties and loss of livestock (economy)	Major
	Compromised safety of patrol teams during activities	injuries to patrol team members	Major
Stakeholder Engagement; Free and Prior Informed Consent	Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Non-inclusive development plans and program plans	Major
	Interest or concerns of certain groups are excluded from the SOP and training modules	The SOP and training module do not satisfactorily resolve the HWC cases	Major
	Social forestry is implemented without consent from certain groups	Activities on community property without respect of ownership	Major
	Social forestry permits may overlap with cultural resources (e.g., burial sites)	Direct breach of IFC PS 8 on cultural heritage causing the decrease or loss of cultural values	Major

	during development and license issuance		
	The SOP does not include all critical procedures or is not aligned with local context (making procedures irrelevant)	An incomplete SOP can cause confusion during implementation, overlapping responsibilities, or field procedure errors	Major
	Compromised safety of patrol teams during activities (non-compliance with OSHA standards)	injuries to patrol team members	Major
Involuntary Resettlement and Access Restrictions	Technical plan for restoration and rehabilitation limits land available for agriculture and residential	Land is not available for agriculture (livelihood) or residential (welfare)	Major
	Restricting of access to local people's plantation land	Disruption to household income and local economy	Severe

4.3 ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT AND MITIGATION MEASURES

The International Union for Conservation of Nature (IUCN) has developed a comprehensive Environmental and Social Management System (ESMS) to ensure that projects are systematically assessed for potential adverse impacts. This system is designed to minimize negative effects while promoting positive outcomes. The ESMS is guided by eight overarching principles and four standards that address key environmental and social issues, such as biodiversity, cultural heritage, and the rights of indigenous peoples. By integrating these standards into the project cycle, IUCN aims to enhance the sustainability and social responsibility of its initiatives, ensuring that both environmental and social risks are effectively managed and mitigated. This section discusses environmental and social risk management and mitigation measures based on IUCN key standards and principles.

4.3.1 Biodiversity and Natural Resources

To mitigate damage to the tiger habitat due to fire, campsite activities, and trail clearing, the Project shall consider implementing the following strategies:

4.3.1.1 *Fire Prevention and Control*

The measures for fire prevention and control are:

1. **Fire Safety Training:** Ensure all personnel are trained in fire safety protocols, including the use of fire extinguishers and emergency procedures;
2. **Controlled Campfires:** designate areas with proper fire rings for campfire. Ensure fires are completely extinguished before leaving the site; and
3. **Fire Watch:** Implement a fire watch system where patrols regularly check for potential fire hazards and ensure all fire safety measures are in place.

Additionally, fire breaks will be used for preventing fires in peatland and forest areas. Fire breaks will be established before the dry season as a preventive measure. Traditional fire management techniques of Indigenous Peoples and Local Communities (IPLCs) will be integrated through:

- Consultation with IPLC fire management practitioners.
- Use of controlled burns in designated areas under traditional practices.
- Community-based fire monitoring teams.

4.3.1.2 *Reducing impacts from campsites*

Flying camp protocol to prevent harm or damage to the tiger habitat shall adopt the following measure:

1. **Leave No Trace:** Follow Leave No Trace principles to minimize environmental impact. This includes packing out all trash, minimizing campfire impact, and respecting wildlife;
2. **Safe Camp Setup:** Choose camping sites away from flammable vegetation and ensure tents are set up in safe, flat areas; and
3. **First Aid Preparedness:** Equip all patrols with first aid kits and ensure they are trained in basic first aid and emergency response.
4. **Biodiversity monitoring:** Camera traps will be used as non-invasive methods. Transportation and installation of camera traps will be done by the field teams utilizing eco-friendly transportation (e.g., fuel-efficient vehicles). Other Non-invasive monitoring methods will be prioritized, including acoustic sensors and habitat assessments.

4.3.1.3 *Avoiding and reducing negative impacts from social forestry activities*

Social forestry activities have witnessed several misinterpretations of the concept that led to negative impacts to the forest ecosystem. To mitigate the risk of misinterpretation of social forestry management and work plans leading to unintended land clearing, especially in operational collaborations (Kerjasama Operasional) between social forestry license holders with companies², consider the following strategies:

1. **Compliance with Law No. 5 of 1990 on Conservation of Living Resources and Ecosystems (updated with Law No. 32 of 2024):**
 - a. **Habitat Protection:** Ensure that RKPS includes provisions for the protection of habitats critical to endangered species; and

² Example: The operational collaboration between Bungo Pandan Social Forestry and PT Wirakarya Sakti (PT WKS) focuses on sustainable forest management and community development.

- b. Environmental Impact Assessments (EIA): Conduct thorough EIAs to identify potential impacts on biodiversity and develop mitigation measures.
- 2. **Compliance with regulations** regarding forestry planning and management such as: Government Regulation No. 23 of 2021 on Forestry Management. This regulation provides comprehensive guidelines on forestry planning, management, and social forestry. It emphasizes:
 - a. Forestry Planning: Detailed procedures for forest inventory, management area establishment, and preparation of forestry plans;
 - b. Social Forestry Management: Aims to achieve forest sustainability, community welfare, and environmental balance; and
 - c. Forest Protection: Measures to prevent and limit forest damages caused by human actions.
- 3. **Encouraging community involvement** in forest protection and management (legal access to forest resources). This will be done by facilitating the community groups to develop proposals for social forestry designation, and provide the social forestry applicants with capacity building to ensure proper implementation of sustainable forest management;
- 4. **Sustainable Utilization of forest resources:** Ensuring the sustainable use of forest resources for the welfare of the people; and
- 5. **Development of robust implementation plan** consisting of:
 - a. **Clear Documentation and Training:** Ensure all management and work plans are clearly documented and understood by all stakeholders, including company personnel;
 - b. **Regular Audits and Monitoring:** Conduct regular audits to ensure compliance with the management plans and identify any deviations early; and
 - c. **Community Engagement:** Involve local communities in planning and decision-making processes to ensure their needs and perspectives are considered.
- 6. **Aligning with Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2025-2045**
 - a. Ecosystem Integration: Ensure that RKPS includes measures for ecosystem integration, protection, and restoration in land and marine spatial planning;
 - b. Species Protection: Incorporate specific actions for the protection of endangered species and their habitats; and
 - c. Sustainable Management: Promote sustainable management practices that balance economic development with biodiversity conservation.
- 7. **Collaboration with Experts**
 - a. Consultation with Forestry Experts: Involve forestry experts in the development and review of management plans to ensure they are scientifically sound and practically feasible^[1]; and
 - b. Partnerships with Environmental Organizations: Collaborate with environmental organizations to adopt best practices and ensure sustainable land management.
- 8. **Developing Implementation Strategies** for Social Forestry at Project level that includes:
 - a. Training and Awareness: Provide training for all stakeholders on the importance of biodiversity and the specific measures included in the Social Forestry Management Plan (RKPS);

- b. **Monitoring and Evaluation:** Establish monitoring and evaluation systems to track the effectiveness of biodiversity conservation measures; and
- c. **Collaboration with Experts:** Work with environmental organizations and biodiversity experts to ensure that the RKPS is scientifically sound and effective.

4.3.1.4 Avoiding and Reducing Impacts from Infrastructure / Construction Activities

Care must be taken to ensure that the construction activities do not harm the ecosystem. This will be done by adherence to the following:

1. **Road placement will avoid critical habitat areas.** Proper mapping and identification critical habitat will precede road placement.
2. **Low-impact materials** will be prioritized.
3. **Construction noise** control will be implemented.
4. **Chance Find Procedure** will be applied for cultural/archaeological sites.
5. **Bore well** will undergo:
 - a. hydrological assessment before implementation.
 - b. Material used for bore well to be sustainable
6. **Livestock fences:** Livestock fencing to be of ecological material and safe for animals i.e. no electric fencing with potential of harming humans or animals

4.3.1.5 Avoiding the introduction of alien species in social forestry and SMART agriculture

To mitigate the risk of introducing alien and invasive species through planting and assisted natural regeneration practices, it's crucial to align with relevant Indonesian regulations and implement effective strategies consisting of the following measures:

1. **Environmental impact assessments** to evaluate the potential risks of introducing new species; and
2. **Provisions for preventing the introduction of invasive species** into wetland (including peatland) systems and educating communities about the risks.

The regulations relevant with these measures are enforced by various government agencies, including the Ministry of Forestry, the Ministry of Marine and Fisheries Affairs, and the Ministry of Agriculture. Additional measures for avoiding (and responding to) introduction of alien species include:

1. **Pre-Planting Assessments:**
 - a. **Pre-planting assessment:** Only native species will be used unless scientific justification and expert consultation support the inclusion of non-native species for ecosystem recovery.
 - b. **Environmental Impact Assessments (EIA):** Conduct thorough EIAs to identify potential risks of introducing invasive species; and
 - c. **Species Selection:** Choose native species for planting and regeneration to avoid the introduction of non-native species.
2. **Monitoring and Control:**

- a. **Regular Monitoring:** Implement regular monitoring programs to detect and manage any invasive species early; and
 - b. **Rapid Response:** Develop rapid response plans to address any outbreaks of invasive species.
 - c. **Pest Management Plan** to encourage the use of eco-friendly pesticides
3. **Community Engagement and Training:**
- a. **Training Programs:** Educate local communities and stakeholders about the risks of invasive species and best practices for prevention; and
 - b. **Community Involvement:** Involve local communities in monitoring and managing invasive species.

4.3.2 Pollution & Resource Efficiency – Precautionary principles

Strategies on preventing harmful effluent or pollution can be implemented at community/village level and household level with the following mitigation measures:

1. Community/Village Level

a. Awareness and Education:

- i. **Training Programs:** Conduct regular training sessions for community members on the environmental impacts of effluents and best practices for waste management; and
- ii. **Public Awareness Campaigns:** Use local media and community meetings to raise awareness about the importance of pollution control.

b. Infrastructure and Facilities:

- i. **Centralized Waste Treatment:** Establish community-level waste treatment facilities to handle effluents from multiple households; and
- ii. **Green Infrastructure:** Implement green infrastructure solutions like constructed wetlands to naturally treat wastewater.
- iii. **Plant nurseries** located in near the restoration sites

c. Monitoring and Regulation:

- i. **Regular Inspections:** Conduct regular inspections to ensure compliance with environmental regulations; and
- ii. **Community Monitoring Groups:** Form community groups to monitor and report on pollution levels and ensure adherence to best practices.

2. Household Level

a. Waste Management Practices:

- i. **Segregation of Waste:** Encourage households to segregate waste at the source to facilitate proper treatment and disposal; and
- ii. **Use of Eco-Friendly Products:** Promote the use of biodegradable and eco-friendly products to reduce the environmental impact.

b. Effluent Treatment:

- i. **On-Site Treatment Systems:** Install small-scale, on-site wastewater treatment systems such as septic tanks or bio-digesters (optional if technologically feasible); and
- ii. **Reuse and Recycling:** Encourage the reuse and recycling of water within households to minimize wastewater generation.

2. Restoration, Patrol, and monitoring works

a. Solid waste:

- i. Waste management protocol: Ensure that field team carry the waste to the designated locations or collection sites to facilitate proper treatment and disposal; and
- ii. Use of Eco-Friendly Products: Promote the use of biodegradable and eco-friendly products to reduce the environmental impact.

b. Incineration: due to some limitations in the field, fire may be used for eliminating solid wastes with the following conditions:

- i. Ensure that only small fire is used (e.g., camp fire);
- ii. Ensure that only materials can fully destroyed with fire / incineration (no residues);
- iii. Ensure that the fire is fully extinguished

4.3.3 Ensuring an inclusive approach to activity planning

To mitigate the risk of excluding the interests or concerns of certain groups in project implementation design, particularly in Jambi Province, the Project shall consider the inclusive strategy when developing the activity implementation design. This strategy includes the following measures:

1. Stakeholder Engagement:

- a. **Stakeholder mapping** to identify community groups and sub-groups;
- b. **Community Consultations:** Conduct regular consultations with all relevant stakeholders, including local communities, NGOs, and industry representatives, to gather diverse perspectives;
- c. **Community Involvement:** Engage local communities in the planning and decision-making processes to ensure their needs and perspectives are considered; and
- d. **Public Hearings:** Organize public hearings to discuss SOP drafts and incorporate feedback from various groups.

2. Transparent Processes:

- a. **Documentation and Accessibility:** Ensure that all SOPs are well-documented and easily accessible to the public. This includes translating documents into local languages if necessary; and
- b. **Regular Updates/meetings:** Update SOPs regularly to reflect new insights and feedback from stakeholders. Regular meetings with all stakeholders shall be used as a platform to discuss progress, address concerns, and clarify any misunderstandings.

4.3.4 Ensuring Community Health, Safety and Security

4.3.4.1 Human rights issues

When conducting forest patrols, it is crucial to consider human rights issues to ensure the protection and dignity of local communities and indigenous peoples. Forest patrols often intersect with areas inhabited by these groups, whose livelihoods and cultural heritage are deeply connected to the land. Respecting their rights helps prevent conflicts, promotes sustainable forest management, and fosters cooperation between authorities and local populations. By prioritizing human rights, forest patrols can achieve their conservation goals while upholding ethical standards and fostering trust within the community. The strategies and the respective measures to avoid (or address) human rights issues at policy level is adopting the best practices such as:

- a. **IUCN Guidelines on Human-Wildlife Conflict and Coexistence:** Implement best practices for managing human-wildlife conflicts in a way that respects human rights[5].
- b. **Community-Based Conflict Mitigation:** Use community-based approaches to mitigate conflicts and ensure that local voices are heard and respected[4].
- c. **Sustainable Development Goals (SDGs):** Alignment with SDGs ensures that conservation efforts align with the Sustainable Development Goals, particularly those related to life on land (SDG 15) and peace, justice, and strong institutions (SDG 16)[5].

Additionally, strategies and measures at the implementation level shall include:

2. **Human Rights Monitoring:**
 - a. **Independent Observers:** Engage independent observers to monitor the impact of wildlife and forest crime enforcement on local communities[5].
 - b. **Grievance Mechanisms:** Establish clear and accessible grievance mechanisms for communities to report human rights abuses[5].
3. **Law Enforcement Training:**
 - a. **Human Rights Training for Rangers:** Ensure that law enforcement personnel, including forest rangers, receive training on human rights, ethical conduct, and conflict de-escalation techniques[5].
 - b. **Collaboration with NGOs:** Partner with non-governmental organizations to enhance the capacity of law enforcement agencies in respecting and protecting human rights[5].
 - c. **Security protocols** to include:
 - i. Communication and safety protocols
 - ii. Inter-agency coordination to ensure involvement of relevant government agencies such as district prosecutor, courts, and police
4. **Disaster Preparedness:** Systems will opt for community-driven with accessible alert formats (e.g., radio, sirens, local messengers). The protocols include:
 - a. **Disaster Resilient Villages (*Kampung Siaga Bencana*/KSB):**
 - o Main program under the Indonesian Ministry of Social Affairs.

- Aims to reduce disaster risks at the local level.
 - b. **Community Involvement:**
 - Villagers are trained in disaster response and preparedness.
 - Regular drills and simulations are conducted to ensure readiness.
 - c. **Early Warning Systems:**
 - Installation of early warning systems to alert villagers of impending disasters.
 - Use of local communication channels to disseminate warnings quickly.
 - d. **Emergency Response Teams:**
 - Formation of local emergency response teams.
 - Teams are equipped with basic emergency supplies and trained in first aid.
 - e. **Risk Assessment and Planning:**
 - Conducting risk assessments to identify vulnerable areas.
 - Developing village-level disaster management plans.
 - f. **Education and Awareness:**
 - Continuous education programs to raise awareness about disaster risks.
 - Community workshops and information sessions.
 - g. **Collaboration with Authorities:**
 - Coordination with local government and disaster management agencies.
 - Integration of village plans with district and national disaster management strategies.
5. **Safeguard instrument** to avoid human rights infringement that includes (but not limited to):
- a. **Legal Frameworks:** Indonesia has laws and regulations aimed at protecting human rights and the environment. These include the Human Rights Law No. 39/1999 and the Environmental Protection and Management Law No. 32/2009[1].
 - b. **Community Involvement:** Engaging local communities in forest management and patrols helps ensure that their rights are respected. This includes recognizing and protecting the rights of indigenous peoples to their lands and resources[2].
 - c. **Training and Capacity Building:** Law enforcement and forest patrol officers receive training on human rights and environmental laws to ensure they conduct their duties responsibly and ethically[1].
 - d. **Monitoring and Reporting Mechanisms:** Establishing independent monitoring bodies and reporting mechanisms allows for the documentation and investigation of any human rights abuses that may occur during forest patrols[2].
 - e. **International Support and Collaboration:** Indonesia collaborates with international organizations and follows international human rights instruments to enhance the protection of human rights in forest management[3].

4.3.4.2 Human-Tiger Conflict Responses

Negative interaction between people and tigers have created anxiety among local populations due to loss of livestock (and human lives in some cases). Preventing tigers from killing livestock involves a combination of strategies aimed at reducing human-tiger conflict. Some effective methods include:

1. Improved Livestock Management:

- a. **Night Enclosures:** Keeping livestock in secure enclosures at night can prevent tigers from attacking them; and
2. **Non-lethal Deterrents:**
 - a. **Fences:** Installing fences around livestock areas can keep tigers away without harming them. The Project will opt for non-electric fencing alternatives where feasible; and
 - b. **Noise and Light Devices:** Using devices that emit loud noises or bright lights can scare tigers away from livestock.
3. **Community Engagement and Education:**
 - a. **Awareness Programs:** Educating local communities about tiger behavior and the importance of conservation can foster coexistence; and
 - b. **Participatory Conservation:** Involving communities in conservation efforts can help them feel invested in protecting tigers.
4. **Compensation Schemes or Livestock program:**
 - a. **Financial Compensation:** Providing compensation for livestock losses can reduce the motivation for retaliatory killings of tigers; and
 - b. **Livestock replacement:** Providing livestock to replace or offset the loss due to tiger attack
5. **Habitat Restoration and Connectivity:**
 - a. **Wildlife Corridors:** Creating and maintaining wildlife corridors can help tigers move between habitats without coming into conflict with humans; and
 - b. **Habitat Restoration:** Restoring degraded habitats can ensure tigers have enough natural prey, reducing their need to hunt livestock.
 - c. **Legal and Policy Measures:** Strengthening Legal Protections by enforcing laws that protect tigers and their habitats can reduce human-tiger conflicts.

3.1.1.1 Law Enforcement and Protecting the confidentiality of informants

Protecting the confidentiality of informants in wildlife or forest crime investigations is essential to ensure their safety and encourage the reporting of illegal activities. This risk is associated with law enforcement (patrol) activities where Informants often risk their lives to provide crucial information that can lead to the apprehension of criminals involved in poaching, illegal logging, and other environmental crimes. By safeguarding their identities, authorities can build trust with informants, ensuring a steady flow of valuable intelligence while preventing retaliation and fostering a safer environment for those who aid in the protection of our natural resources. The strategies and measures to achieve this include:

1. **Personal Data Protection (PDP) according to Law No. 27 of 2022:**
 - a. This law provides a comprehensive framework for the protection of personal data, including the confidentiality of informants; and
 - b. Ensure that all data handling practices comply with the PDP Law, including obtaining informed consent and implementing data security measures.
2. **Anonymization and Pseudonymization:**
 - a. Anonymize or pseudonymize informant data where possible to protect their identity; and

- b. Use unique identifiers instead of personal information to track informant data.
- 3. **Confidentiality Agreements:**
 - a. Require all personnel handling informant information to sign confidentiality agreements; and
 - b. Regularly review and update these agreements to reflect current best practices and legal requirements.

4.3.5 Ensuring proper labor and working conditions

Activities of the Project include forest fire monitoring & control, forest patrol, and tiger monitoring. These are conducted in an outdoor environment that requires strict health and safety standards.

4.3.5.1 Health and Safety Regulations

1. **Compliance with Regulations:**
 - a. Ensure all activities comply with Indonesian regulations, such as Law No. 41 of 1999 on Forestry and Government Regulation No. 4 of 2001 on Forest Fire Control; and
 - b. Follow guidelines from the Ministry of Environment and Forestry on fire prevention and control.
2. **Health Monitoring:**
 - a. Regularly monitor the health of MPA members for signs of smoke inhalation or other fire-related injuries; and
 - b. Provide access to medical care and support for affected members.
3. **Personal Protective Equipment (PPE):**
 - a. Equip patrol teams with appropriate PPE, including sturdy boots, gloves, helmets, and protective clothing to minimize injury risks; and
 - b. Provide first aid kits and ensure all members are trained in their use.
4. **Communication Devices:**
 - a. Ensure that all patrol teams are equipped with reliable communication devices, such as two-way radios or satellite phones, to maintain contact with base operations; and
 - b. Use GPS devices to track patrol movements and ensure teams can be located quickly in case of an emergency.
5. **Health and safety training:** Restoration, patrol, and other field workers will receive safety training on wildlife risks (e.g., snakes, ticks).

4.3.5.2 Training and Education on Fire Safety

This strategy mainly targets the members of MPA, and personnel involved in fire monitoring and control. By implementing these measures, the Project can significantly reduce the risk of fire and smoke exposure for MPA members, ensuring their safety while they work to prevent and control forest fires.

1. **Fire Safety Training:**
 - a. Provide comprehensive training on fire behavior, safety protocols, and emergency response; and

- b. Conduct regular drills to ensure readiness and familiarity with safety procedures[1].
- 2. **Smoke Inhalation Awareness:**
 - a. Educate members about the dangers of smoke inhalation and the importance of minimizing exposure; and
 - b. Train members on the use of personal protective equipment (PPE) to protect against smoke.
- 3. **Safe Work Practices:**
 - a. Implement safe work practices such as maintaining a safe distance from active fires and using firebreaks; and
 - b. Avoid working in areas with heavy smoke whenever possible.
- 4. **Monitoring and Communication:**
 - a. Use real-time monitoring tools to track fire behavior and air quality; and
 - b. Establish clear communication channels to provide updates and coordinate safe evacuation if necessary.

4.3.5.3 Personal Protective Equipment (PPE) for MPA

The following are measures for ensuring that the MPA members have proper protection against fire hazards:

- 1. **Provision of Protective Clothing:**
 - a. Equip members with fire-resistant clothing (e.g., fire blanket), gloves, and helmets to protect against burns; and
 - b. Ensure that all PPE meets safety standards and is regularly inspected and maintained.
- 2. **Provision of Respiratory Protection Equipment:**
 - a. Provide N95 respirators or higher-grade masks to protect against smoke inhalation; and
 - b. Train members on the correct use and maintenance of respirators.

4.3.5.4 Trail Clearing Safety during Patrol Activities

Trail clearing safety is intended to ensure the safety of patrol and monitoring team members.

- 1. **Proper Equipment Use:** Train personnel in the safe use of tools and equipment for trail clearing, such as chainsaws and machetes;
- 2. **Provision of Protective Gear:** Ensure all personnel wear appropriate protective gear, including helmets, gloves, and eye protection; and
- 3. **Environmental Considerations:** Plan trail clearing activities to avoid disturbing wildlife habitats and minimize soil erosion.

4.3.5.5 General Safety Measures for Patrol and Tiger Monitoring Activities

Mitigating the risk of injuries or deaths due to tiger attacks during patrol activities and the installation of monitoring equipment involves several key strategies:

- 1. **Patrol Planning:**

- a. **Plan patrol routes** carefully to avoid areas with high tiger activity, especially during peak activity times (dawn and dusk); and
 - b. **Use data from the Spatial Monitoring and Reporting Tool (SMART)** to optimize patrol routes and focus efforts on high-risk areas.
2. **Team Composition:**
 - a. **Ensure patrols are conducted in groups** rather than individually to enhance safety and provide mutual support; and
 - b. **Include local community members** in patrol teams, as they are often more familiar with the terrain and wildlife behavior.
3. **Pre-Installation Planning:**
 - a. **Risk Assessment:** Conduct a thorough risk assessment of the area to identify tiger presence and activity patterns; and
 - b. **Training:** Ensure all personnel are trained in wildlife safety and emergency response procedures.
4. **Safety Measures:**
 - a. **Travel in Groups:** Always work in groups and avoid solitary activities;
 - b. **Protective Equipment:** Wear protective gear, such as helmets and body armor, to reduce injury risk; and
 - c. **Noise and Deterrents:** Use noise-making devices or other deterrents to keep tigers at a distance.
5. **On-Site Precautions:**
 - a. **Awareness:** Maintain constant vigilance and be aware of your surroundings at all times;
 - b. **Avoidance:** Avoid areas known for high tiger activity, especially during dawn and dusk when tigers are most active; and
 - c. **Emergency Procedures:** Have clear emergency procedures in place, including first aid and evacuation plans.
6. **Post-Installation Monitoring:**
 - a. **Regular Check-Ins:** Establish regular check-ins with a base team to ensure safety and provide updates on progress; and
 - b. **Incident Reporting:** Report any sightings or encounters with tigers immediately to the appropriate authorities (discussed further in Chapter 0).

4.3.5.6 Mitigation Strategies for Patrol safety (minimizing risk of tiger attacks)

To mitigate the risk of compromised safety for patrol teams in tiger protection and conservation units in Indonesia, particularly in Jambi Province, the Project shall consider implementing the following measures:

1. **Strategic Patrol Planning:**
 - a. **Timing and Routes:** Schedule patrols during times when tigers are less active, such as midday, and avoid known tiger habitats during peak activity periods (dawn and dusk); and
 - b. **Rotating Patrol Areas:** Rotate patrol routes to prevent tigers from becoming accustomed to human presence in specific areas.

2. **Use of Technology:**
 - a. **Camera Traps and Drones:** Utilize camera traps and drones for remote monitoring to reduce the need for frequent human presence in tiger habitats; and
 - b. **GPS Tracking:** Equip patrol teams with GPS devices to ensure they stay on designated paths and avoid sensitive areas.
3. **Community Involvement:**
 - a. **Local Training:** Train local communities in wildlife monitoring techniques to reduce the need for external patrols; and
 - b. **Community Patrols:** Establish community-based patrols that are familiar with local wildlife patterns and can operate with minimal disturbance.
5. **Comprehensive Training:**
 - a. **Wildlife Safety:** Provide training on how to safely interact with wildlife, including recognizing signs of tiger presence and understanding tiger behavior;
 - b. **Emergency Response:** Train patrol teams in first aid, emergency evacuation procedures, and the use of emergency communication devices; and
 - c. **Regular Drills:** Conduct regular safety drills to ensure that all team members are familiar with emergency procedures and can respond quickly in case of an incident.

4.3.6 Addressing the Risk of Access Restriction

The ESIA foresees the risk of access restriction to farm/agriculture land from patrol and forest rehabilitation activities, especially in the villages bordering with:

1. **Berbak Sembilang National Park:** Air Hitam Laut, Remau Baku Tuo, and Sungai Cemara;
2. **Grand Forest Park:** Seponjen, Sogo, and Tanjung;
3. **National Park and Grand Forest Park:** Gedong Karya, and Jebus.

This shows that Gedong Karya and Jebus villages have higher risk of access restrictions, as they border with two protected areas. Based on the livelihood types of these villages, the types of access are related to agriculture and small holder palm oil plantations.

It is also possible that social forestry activities (designation) restrict access of certain groups. In addition to agriculture and small holder palm oil plantations, social forestry activities may pose risk on sacred site (burial grounds) of a vulnerable group in Muara Medak Village. Specifically for social forestry and sustainable agricultural practices, safeguard measures to avoid access restriction include the following approach:

1. Continue using the land for farming but under a sustainable management framework.
2. Receive government support for agroforestry, conservation-based farming, and livelihood development.
3. Prevent land grabs by external entities, as land tenure is formalized.
4. Participate in decision-making about forest management, ensuring their interests are protected.

The following are strategies and measures to avoid the risk of access restriction.

1. **Integrated Landscape Management:**
 - a. **Holistic Approach:** Adopt an integrated landscape management approach that considers ecological, social, and economic factors; and
 - b. **Multi-Use Landscapes:** Design landscapes that can support multiple uses, such as agroforestry systems that combine agriculture and forestry.
2. **Sustainable Agricultural Practices:**
 - a. **Agroforestry:** Promote agroforestry practices that integrate trees and crops, enhance biodiversity and provide multiple benefits; and
 - b. **Sustainable Farming:** Encourage sustainable farming practices that improve soil health and productivity without expanding into restoration areas.

The mitigation measures will be discussed with the affected communities. Details of activities shall be developed in a participatory manner. These details will be included in the updated ESMP and Village Action Plan.

Prevention of access restrictions may benefit from inclusive land use planning that adopts the above strategies and measures in:

1. **Comprehensive Land Use Mapping** whose steps include:
 - a. **Detailed Surveys:** Conduct detailed land use surveys to identify and map areas suitable for agriculture, residential, and restoration purposes; and
 - b. **Community Involvement:** Engage local communities in the mapping process to ensure their needs and preferences are considered.
2. **Zoning Regulations** to establish:
 - a. **Zoning Laws:** Implement zoning regulations that designate specific areas for agriculture, residential, and restoration activities; and
 - b. **Flexible Zoning:** Allow for flexible zoning that can adapt to changing needs and priorities over time.

Appendix 6 provides examples of participatory land use planning activities implemented in Jambi Province. The Process Framework, as required by the IUCN's ESMS, addresses the risk of access restriction by establishing a participatory approach involving affected communities and stakeholders. This framework ensures that potentially impacted groups are actively involved in the design of project components, identification of potential negative impacts, and development of mitigation measures. It aims to avoid or minimize adverse effects on the rights and livelihoods of local communities by promoting alternative project designs and implementing compensatory measures when necessary.

4.3.7 Grievance and Redress Mechanism (GRM)

The GRM system allows the beneficiaries (and Project Affected People) to address their concerns to the Project implementors. Similarly, the GRM system will provide input for improving future implementation or reducing the negative impacts. The measures related to GRM are:

1. **Regular Audits:** Implement regular audits and inspections to ensure compliance with the management plan and to identify any deviations early; and
2. **Feedback Mechanisms:** Establish feedback mechanisms for stakeholders to report issues or concerns regarding the implementation of the plan.

4.4 INSTITUTIONAL ARRANGEMENT, BUDGET, AND RESOURCES

The Environmental and Social Management Plan (ESMP) outlines the institutional arrangements, budget, and resources necessary for effective implementation. The institutional framework involves coordination between various stakeholders, including government agencies, non-governmental organizations, and local communities, to ensure comprehensive management and monitoring. The estimated costs for implementing the ESMP are projected to be around \$100,000, covering activities such as environmental monitoring, community engagement, and capacity building. Funding for the ESMP will be sourced from international grants (IUCN-ITHCP) and project partners consisting of government, and private sector contributions, ensuring a sustainable and diversified financial base to support long-term environmental and social objectives. Table 7 summarizes the generic activities related to ESMS, while Appendix 5 (ESMP Matrix) details the activities, and incorporates the risk, mitigation measures with institutional arrangements, budget, and implementing entities.

Table 7 Arrangements for ESMP implementation (with cost estimation).

ESMS tasks	Responsible entity	Number of weeks (Level of efforts)	Cost (USD)
Section A: Proposal Preparation & Inception			
Contract consultants/specialists to develop documents as per IUCN ESMS	WARSI	5	
Conduct ESIA / targeted assessments, develop ESMP and other safeguards instruments and prepare report	Consultants	45	22,500
Establish a grievance system for Project (linked to existing system within WARSI if applicable);	WARSI	20	10,000
Develop (or gain consensus on) resolutions approach	WARSI-WMM (Grievance Team) and Project partners	5	2,500
Appraise and approve reports and other deliverables	IUCN	5	
Section B: Implementation			
Participatory process for training, planning, implementation, and capacity building	WARSI	10	5,375
Stakeholder engagement (mapping, consultation, community involvement, and public hearing) Ensure accessibility to project planning, implementation, and monitoring	WARSI	4	1,875

ESMS tasks	Responsible entity	Number of weeks (Level of efforts)	Cost (USD)
<p>Human rights monitoring (independent observers, and grievance mechanism such as ombudsman reports);</p> <p>Human rights training for patrol and law enforcement members</p>	<p>WMM, with Berbak Sembilang NP, Forestry Agency (FMU), and BKSDA</p>	<p>4</p>	<p>1,875</p>
<p>Improved livestock management;</p> <p>Use of non-lethal deterrent;</p> <p>Community awareness;</p> <p>Compensation scheme for loss of livestock</p> <p>Habitat restoration & connectivity</p>	<p>WMM & BKSDA Jambi</p>	<p>30</p>	<p>15,000</p>
<p>Personal data protection</p> <p>Anonymization/ pseudonymization;</p> <p>Confidentiality agreement</p>	<p>WMM, BKSDA Jambi, Forestry Agency/FMU, Berbak Sembilan NP</p>	<p>3</p>	<p>1,875</p>
<p>Procurement of fire safety equipment and relevant personal protective equipment (PPE);</p> <p>Procurement of communication devices for field teams;</p> <p>Health monitoring;</p> <p>Health and safety training and capacity building for team members (patrol and camera trap);</p> <p>Training to prevent tiger attacks;</p> <p>SOP to increase safety during field work</p>	<p>WMM Berbak Sembilang NP, BKSDA Jambi</p>	<p>15</p>	<p>7,500</p>

ESMS tasks	Responsible entity	Number of weeks (Level of efforts)	Cost (USD)
Awareness on waste management and fuel efficiency; Reduce, reuse, recycle campaign.	WARSI	12	5,750
Awareness on prevention of the use of harmful pesticides, herbicides; Encourage the production or use of organic fertilizer	WARSI	12	5,750
Integrated landscape management (holistic approach and multi-use landscapes); Sustainable agricultural practices; Participatory land-use planning	WMM & Berbak Sembilang NP	20	10,000
Mapping of cultural heritage (burial grounds in Muara Medak)	WARSI	4	2,000
Fires safety and fire control training; Controlled campfires; Fire watch.	WMM Berkak Sembilang NP, Forestry Agency / FMU	4	2,000
Flying camp protocols (leave no trace, safe camp setup, and precautionary principles)	WMM Berkak Sembilang NP, Forestry Agency	4	2,000
Robust socialization process; Development of proper social forestry business/management plans; Monitoring social forestry activities	WMM, Forestry Agency	4	2,000

ESMS tasks	Responsible entity	Number of weeks (Level of efforts)	Cost (USD)
Pre-planting assessment (seed selection and environmental impact assessment); Monitoring and control (regular monitoring and rapid response if needed); Community awareness and engagement	WARSJ supported by provincial/district agriculture agencies	4	2,000
Total costs			100,000

5 ESMP MONITORING AND SUPERVISION

Effective monitoring and supervision are essential components of the Environmental and Social Management Plan (ESMP) to ensure that conservation projects achieve their intended outcomes while minimizing adverse impacts. This chapter outlines the procedures for regular assessments and community feedback, in accordance with IUCN standards and principles.

5.1 Monitoring Plan

A robust monitoring plan is essential for tracking the progress and effectiveness of the Environmental and Social Management Plan (ESMP). This plan outlines the methods and procedures for collecting, analyzing, and reporting data on key indicators. The main components of a monitoring plan include:

- **Indicator Selection:** Identify specific, measurable indicators that reflect the project's environmental and social objectives. These indicators should be relevant, reliable, and easy to monitor.
- **Data Collection Methods:** Define the methods for data collection, including field surveys, remote sensing, community interviews, and participatory monitoring. Ensure that data collection is systematic and consistent.
- **Roles and Responsibilities:** Assign clear roles and responsibilities for data collection, analysis, and reporting. This includes designating personnel or teams responsible for each task and ensuring they have the necessary training and resources.
- **Frequency and Timing:** Establish a schedule for data collection and reporting. This should include regular intervals (e.g., monthly, quarterly, annually) to ensure timely and accurate monitoring.
- **Data Management:** Develop a system for managing and storing data, including databases and software tools. Ensure that data is securely stored and easily accessible for analysis and reporting.
- **Reporting and Communication:** Create a framework for reporting monitoring results to stakeholders. This includes preparing regular reports, presentations, and updates to keep stakeholders informed about the project's progress and any emerging issues.
- **Adaptive Management:** Use monitoring data to inform adaptive management strategies. This involves analyzing the data to identify trends, successes, and areas needing improvement, and making necessary adjustments to the ESMP.

The activity-specific risks, mitigation measures, responsible parties, schedule, and monitoring arrangements are detailed in Appendix 5 (ESMP Implementation Matrix).

5.2 Indicators and Methods for Monitoring

Effective monitoring of conservation projects requires the use of specific indicators and methods to track progress and assess impacts. According to IUCN guidelines, the selection of indicators

and the methods for monitoring should be tailored to the project's objectives and the local context. Here are the key components:

5.2.1 Selection of Indicators

- **Relevance:** Indicators should be directly related to the project's goals and objectives. They should provide meaningful information about the environmental and social impacts of the project.
- **Measurability:** Indicators must be quantifiable and capable of being measured accurately over time. This ensures that data collected is reliable and can be used to track changes.
- **Sensitivity:** Indicators should be sensitive to changes in the environment or community, allowing for early detection of positive or negative impacts.
- **Feasibility:** The selection of indicators should consider the availability of resources, including time, budget, and technical expertise required for monitoring.

Based on the above principles, Table 8 summarizes the relevant indicators for the ESMP.

Table 8 Summary of ESMP indicators (if the risks are not properly anticipated or mitigated)..

Standards / Principles	Risks	Impacts	Impact Category	Indicators
Biodiversity and Sustainable Use of Natural Resources	Damages from patrol and survey activities (e.g., fire, camp, and trail clearing)	Loss of biodiversity and change in landscape due to forest fire	Severe	Increase in fire incidents during patrol and survey activities
	Misinterpretation of social forestry management and work plan leads to land clearing (operational collaboration with companies)	Destruction of natural forest, and potential loss of biodiversity and carbon	Severe	Increase in unauthorized land clearing due to misinterpretation of social forestry management plans
	Social Forestry Business Plan (RKPS) do not consider biodiversity / endangered species	Loss of biodiversity	Severe	High percentage of RKPS without biodiversity considerations
	Planting (70 ha) and assisted natural regeneration (150 ha) practices introduce alien and invasive species	Alteration of vegetation composition and potential loss of biodiversity	Severe	Numbers/area damages due to invasive species

Standards / Principles	Risks	Impacts	Impact Category	Indicators
	Smart agriculture practices and community-based forest business introduce alien and invasive species	Alteration of vegetation composition and potential loss of biodiversity	Severe	Numbers/areas with invasive species spread
Precautionary Principles	Release of effluent / pollutant during product development and processing (household industries)	Pollution, waste, chemicals, and GHG emissions causing environmental degradation and climate change	Major	Increase in pollution, waste, and GHG emissions
Community Health, Safety, and Security	Interest or concerns of certain groups are excluded from the SOP	SOP of wildlife conflict mitigation does not satisfactorily resolve the HWC cases	Major	Increase in Grievances regarding mitigation of HWC cases (including compensation)
	Human rights issues when dealing with wildlife and forest crime	Violations of human rights lead to loss of livelihood, involuntary displacement, environmental degradation, and violence/harassment	Severe	Persistent or increasing numbers of human rights infringements cases
	Human-wildlife incidents increase and cause loss of assets or lives	Increased incidence of human-wildlife conflicts (anxiety/fear among villagers)	Major	Persistent or increasing Frequency of human-wildlife conflict incidents
	Confidentiality breach of informant providing information on illegal activities	Threats to the safety and well-being of the community informants (anxiety and potential harms)	Major	Persistent or increasing numbers of grievances related to confidentiality breach Numbers of informants withdrawing from cases related to confidentiality breach
	Increase in interaction between human and tigers (human-wildlife conflicts)	Increased frequency and intensity of human-wildlife conflicts	Major	Persistent or increasing cases (number and intensity) of human wildlife conflict
Labor and Working Conditions	Exposure to fire risk (burn and smoke inhalation) when implementing forest fire prevention and control	Burn and smoke inhalation causing health problems and injuries	Severe	Persistent or increasing cases of fire-related incidents and health issues reported during forest fire prevention and control

Standards / Principles	Risks	Impacts	Impact Category	Indicators
	Risk of injuries or deaths due to tiger attack during installation of monitoring equipment	Human casualties and loss of livestock (economy)	Major	Persistent or increasing numbers of injuries or deaths due to tiger attacks during monitoring equipment installation
	Compromised safety of patrol teams during activities	Injuries to patrol team members	Major	Persistent or increasing safety incident cases reported by patrol teams
Stakeholder Engagement; Free and Prior Informed Consent	Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Non-inclusive development plans and program plans	Major	Low percentage or composition of marginalized people or gender representation in various discussions
	Interest or concerns of certain groups are excluded from the SOP and training modules	The SOP and training module do not satisfactorily resolve the HWC cases	Major	Low percentage or composition of marginalized people or gender representation in various discussions
	Social forestry is implemented without consent from certain groups	Activities on community property without respect of ownership	Major	High percentage (>50%) of social forestry activities implemented without consent
	Social forestry permits may overlap with cultural resources (e.g., burial sites) during development and license issuance	Direct breach of IFC PS 8 on cultural heritage causing the decrease or loss of cultural values	Major	High percentage (>50%) of social forestry activities implemented without consent
Involuntary Resettlement and Access Restrictions	Technical plan for restoration and rehabilitation limits land available for agriculture and residential	Land is not available for agriculture (livelihood) or residential (welfare)	Major	Increase in numbers of people or areas with restricted access
	Restricting access to local people's plantation land	Disruption to household income and local economy	Severe	Decrease of income or welfare of the affected households

5.2.2 Methods for Monitoring

- **Field Surveys:** Conducting regular field surveys is essential for collecting data on biodiversity, habitat conditions, and community well-being. These surveys can include direct observations, species counts, and habitat assessments.
- **Remote Sensing:** Utilizing remote sensing technologies, such as satellite imagery and drones, allows for large-scale monitoring of land use changes, deforestation, and habitat fragmentation. This method provides comprehensive data that can be analysed over time.
- **Participatory Monitoring:** Engaging local communities in the monitoring process ensures that their knowledge and observations are incorporated. This approach fosters community ownership and enhances the accuracy of data collection.
- **Data Analysis:** Analysing collected data using statistical and spatial analysis tools helps identify trends, patterns, and correlations. This analysis is crucial for making informed decisions and adapting management strategies.
- **Reporting and Feedback:** Regularly reporting monitoring results to stakeholders, including local communities, government agencies, and funding organizations, ensures transparency and accountability. Feedback from stakeholders can also provide valuable insights for improving monitoring practices.

5.3 Regular Assessments

Regular Assessments can be done through dedicated impact assessments surveys/studies and community feedback.

5.3.1 Impact Assessments

Conducting regular impact assessments is crucial for evaluating the effectiveness of land use plans and making necessary adjustments. These assessments help identify both positive and negative impacts of the project on the environment and local communities. The process involves:

- **Baseline Data Collection:** Establish a comprehensive baseline of environmental and social conditions before project implementation. This data serves as a reference point for future assessments;
- **Periodic Evaluations:** Schedule regular evaluations (e.g., quarterly or annually) to assess the project's impact. These evaluations should include field surveys, remote sensing, and stakeholder interviews to gather diverse perspectives;
- **Indicator Development:** Develop specific indicators to measure the project's impact on biodiversity, ecosystem services, and community well-being. These indicators should be quantifiable and relevant to the project's objectives;

- **Analysis and Reporting:** Analyse the collected data to identify trends and changes in environmental and social conditions. Prepare detailed reports that highlight key findings, successes, and areas needing improvement; and
- **Adaptive Management:** Use the findings from impact assessments to inform adaptive management strategies. Adjust land use plans and project activities as needed to enhance positive impacts and mitigate negative ones.

5.3.2 Community Feedback

Establishing mechanisms for continuous community feedback ensures that the ESMP remains responsive to local needs and concerns. Engaging with communities fosters trust and collaboration, leading to more sustainable and equitable outcomes. The process involves:

- **Stakeholder Identification:** Identify all relevant stakeholders, including local communities, indigenous peoples, and other affected groups. Ensure that marginalized and vulnerable populations are included;
- **Communication Channels:** Develop accessible and culturally appropriate communication channels for stakeholders to provide feedback. These channels can include community meetings, suggestion boxes, hotlines, and digital platforms;
- **Regular Consultations:** Organize regular consultations with stakeholders to discuss project progress, address concerns, and gather input. These consultations should be inclusive, participatory, and transparent;
- **Feedback Integration:** Integrate community feedback into project planning and implementation. Ensure that suggestions and concerns are considered in decision-making processes and that stakeholders are informed about how their input has influenced the project; and
- **Monitoring and Evaluation:** Continuously monitor the effectiveness of feedback mechanisms and make improvements as needed. Evaluate the impact of community feedback on project outcomes and stakeholder satisfaction.

By adhering to these guidelines, the Project can effectively monitor and supervise their environmental and social management plans, ensuring that they remain adaptive, inclusive, and responsive to the needs of all stakeholders.

5.3.3 Monitoring and Reporting by ITHCP

The 6-monthly reporting to the Integrated Tiger Habitat Conservation Programme (ITHCP) Secretariat on environmental and social performance is part of regular assessment. This process shall use the data collected from impact assessment and community feedback. It involves the following key steps:

1. **Regular Monitoring and Data Collection:** Grantees must regularly monitor their projects and collect data on environmental and social indicators. This includes tracking progress on conservation goals, community engagement, and any environmental impacts.

2. **Report Preparation:** Every six months, grantees prepare detailed reports summarizing their findings. These reports should include:
 - **Environmental Performance:** Information on habitat restoration, species protection, and any environmental challenges encountered.
 - **Social Performance:** Details on community involvement, benefits to local populations, and any social issues addressed.
 - **Compliance with Safeguards:** Evidence of adherence to environmental and social safeguards, as outlined in the Environmental and Social Management System (ESMS).
3. **Submission to ITHCP Secretariat:** The completed reports are submitted to the ITHCP Secretariat. This submission includes both narrative descriptions and quantitative data to provide a comprehensive overview of project performance.
4. **Review and Feedback:** The ITHCP Secretariat reviews the reports, providing feedback and recommendations for improvement. This process ensures that projects are on track and meeting their objectives.
5. **Adaptive Management:** Based on the feedback, grantees may need to adjust their strategies and actions to better achieve their goals and address any identified issues.

5.4 Adaptive Management

Adaptive management is a dynamic process that depends heavily on the Environmental and Social Management System (ESMS) implementation report. This report includes critical components such as monitoring and evaluation, which provide ongoing insights into the effectiveness of management strategies. By continuously assessing these strategies, adaptive management ensures that any necessary adjustments can be made in response to changing conditions or new information.

In addition to the ESMS implementation report, adaptive management also incorporates data from serious incident reports (as detailed in Appendix 9) and grievance reports and their resolutions. These sources offer valuable information on unexpected events and stakeholder concerns, respectively. By integrating this additional information, adaptive management can address issues promptly and effectively, ensuring that management practices remain responsive and relevant.

6 REFERENCES

The following are references used in this ESMP (arranged alphabetically):

1. Annex 1 Strengthening of Social Forestry (SSF) in Indonesia Summary
2. A Publication of the Wildfire Prevention - Indian Affairs
3. Camping Merit Badge Guide - Scoutles.com
4. Community forestry participatory assessment - RECOFTC
5. Community-Based Waste Management
6. Conservation law takes a step forward in Indonesia - 360
7. DEVELOPING STRATEGIES FOR SOCIAL FORESTRY: A CONCEPTUAL APPROACH
8. Essential Elements of Trail Maintenance - Forestry.com
9. Government Regulation No. 22 of 2021 on Environmental Protection and Management
10. Government Regulation No. 4 of 2001 on Forest Fire Control
11. Green Infrastructure Solutions
12. How to Effectively Combat and Prevent Forest Fires
13. Indonesian Biodiversity Strategy and Action Plan - IBSAP 2025-2045
14. King Land Clearing in Aiken SC | Environmental Partnerships
15. Law No. 32 of 2009 on Environmental Protection and Management
16. Law No. 41 of 1999 on Forestry
17. Mitigation for Homeowners - FEMA.gov
18. NFPA 601: Steps for the First Patrol Round on Fire Watch
19. Safety Guidelines: Wildfires and Wildfire Smoke - CDC
20. Social Forestry - Forest Watch Indonesia
21. The Importance of Trail Maintenance: Understanding Blowdowns in Hiking

7. APPENDICES

Appendix 1: Project LogFrame

Result	Output	Implementor	Activities	Intermediate output(s)	Location (activities)	product(s)/ mean of verification / Indicator
Total of ~407.876 hectares of Sumatran tiger habitats within the Greater Berbak-Sembilang Landscape is preserved through effective community government private co-management of high conservation value area that include protected areas and ecologically important surrounding areas.	O1.1 A detailed restoration plan, including mapping, monitoring and implementation strategies.	WMM	A1.1.1 Identifying degraded habitat and conducting a series of desktop analyses to prioritize wildlife-biodiversity inventory within the national park as part of the restoration strategies.	There is already mapping of key areas, maps of areas experiencing degradation and options for revitalization plans	Berbak Sembilang National Park	Tiger and Habitat Threat Assessment- a live document that collaboratively identified the level and scope of respective threats to tiger population, habitat.
			A1.1.2 Identifying buffer zones as part of restoration plans from concession and social forestry areas through series of discussions and desktop studies		12 villages in the landscape	Tiger and Habitat Threat Assessment- a live document that collaboratively identified level and scope of respective threats

						to tiger population, habitat, and
			A1.1.3 Developing Rehabilitation and restoration strategies through series of discussions with key stakeholders.		Refer to activity A1.1.1	Tiger and Habitat Threat Assessment- a live document that collaboratively identified level and scope of respective threats to tiger population, habitat, and
	O1.2 Established and Improved monitoring and Management of threats of wildlife habitat using real-time detection acoustic system on illegal activities.	Warsi	A1.2.1 Design and development monitoring tools of deforestation and landscape based on assessment of existing tools, threats, and gap resources	<p>1. Availability of desktop analysis results related to the use of technology</p> <p>2. Need assessment for the use of conservation technology/AI</p> <p>There is certainty about the type of equipment used and there is</p>	The entire landscape	<p>Tiger and Habitat Threat Assessment- a live document that collaboratively identified level and scope of respective threats to tiger population, habitat (Risk map based on habitat -illegal logging)</p> <p>tiger and habitat monitoring strategic plan</p>

				identification of potential locations for the application of real-time detection acoustic systems in illegal activities as well as a framework in the form of standard operating procedures (SOPs) for monitoring and management based on real-time detection acoustic systems.		(landscape boundary)
			A1.2.2 Developing and establishing a real-time threat detection and early warning system		There are 5 locations (Air Hitam Laut-Simpang Malaka, Air Hitam Dalam, Simpang T, Sungai Cemara, Dusun Tapak Rimau)	There is a mobile AI-based bioacoustic product selected according to needs; installed at planned locations and monitored regularly, with data transmission and data management mechanisms and reporting from responses (Q3 and Q4 for trials and improvements, Q5-Q10 running).

			<p>A1.2.3 Implementing Forest fire control and prevention through: infrastructure development and series of capacity development training workshop</p>		<p>Intervention in 12 Villages (Tools /Infrastructure)</p> <p>All villages with MPA: 7 villages</p> <p>Strengthening: Initiating MPA in 5 villages (Training and workshop)</p>	<p>There are tools/infrastructure for fire prevention. Training report and fire handling report. SK MPA that has been formed, Attendance list for training/ workshop.</p> <p>(Q1, Q2 formation of MPA and training, Q3-Q4 infrastructure development) (Need a list of infrastructure to be built to be connected with ESMS)</p>
			<p>A1.2.4 Developing framework and Standard Operating Procedures (SOPs) for monitoring</p>		<p>The entire landscape</p>	<p>Minutes of Agreement and Agreed SOP Documents</p>

			surveys and application of various tools/technology			
			A1.2.5 Maintaining the applicability of monitoring tools as part of quarterly infrastructure evaluation		The entire landscape	Maintenance report
			A1.2.6 Joint patrols are conducted regularly using the SMART Patrol application, alongside efforts to strengthen law enforcement through training and system evaluation to address wildlife and forest crimes		The entire landscape	Patrol reports and documentations
	O1.3 Improved social forestry holders and local community participation and collaboration in wildlife conservation efforts	Warsi WMM	A1.3.1 Facilitate the preparation and submission process of Social Forestry permit proposals with community consent through FPIC involving representatives from all community elements	There are already social forestry groups and local communities and Types of Participation and Collaboration that will be implemented.	Muara Merang, Muara Medak (need to confirm which hamlets)	Laporan pelatihan/workshop, laporan, Dokumentasi, Dokumen Perencanaan, Jenis Usaha yang dijalankan,

			A1.3.2 Facilitate institutional strengthening and management capacity building for Social Forestry permit holders	Identification of community groups that have the potential to become collaboration partners	Muara Merang, Muara Medak (need to confirm which hamlets) 4 series Muara Merang, Muara Medak (need to confirm which hamlets)	
	O1.4 Multi Stakeholder landscape protection's commitment is established and strengthened.	Warsi	A1.4.1 Facilitating a series of coordination and consultations with stakeholders (government, companies, NGOs, CSOs, and communities) and FPIC processes on the conservation of the Sumatran Tiger, its prey,	1. Stakeholders who will join the forum are Identified and educated 2. Formation of a multi-stakeholder forum	Entire landscape	Agreement of the parties, forum decree, exit strategy document, forum work plan,

			<p>and its habitat, as well as stakeholder perspectives on these issues and collaboration management.</p>			
			<p>A1.4.2 Facilitating a series of meetings among stakeholders, discussing the interests of issues related to the conservation of tigers, prey, and habitat, as well as collaboration mechanisms between stakeholders including institutional and policy support.</p>			
			<p>A1.4.3 Facilitating the development of a collaborative action plan related to the conservation of the Sumatran Tiger, its prey, and implementation mechanisms.</p>			

	O1.5 Implement reforestation and habitat enhancement activities to improve the quality of the Sumatran tiger and prey habitat.	Warsi WMM	<p>A1.5.1 Developing a technical plan for the restoration area based on rehabilitation and revitalization strategies</p> <p>A1.5.2 Conducting series of restoration activities: land preparation, nursery, procurement of materials, Planting, Maintenance</p> <p>A1.5.3 Conducting periodical Monitoring and Evaluation of the restoration implementation</p>	Established baseline study on plant species, nursery locations, machineries.	<p>Section 1 and Section 3 TNBS</p> <p>(Update if NP already has nursery)</p>	Adanya 2 unit nursery yang beroperasi Laporan monitoring dan evaluasi pelaksanaan restorasi
	O1.6 Strengthen capacity of Berbak Sembilang National Park Rangers, Forest Dependent Communities	Warsi	A1.6.1 Conducting a skills gap analysis and assessing management training needs			Gap analysis document

	and Private company rangers for forest monitoring		A1.6.2 Conducting a series of technical workshops and trainings for rangers on various tools and technology (SMART, Guardian Alert, Power Bi, etc)			Training /workshop report, Documentation
R2 Protecting Sumatran tiger species effectively through anti-poaching, Combatting Illegal Wildlife Trade and Human-wildlife conflict mitigation	O2.1 Sumatran Tiger and Prey Species Protection and Monitoring Strategies completed	FHK	A2.1.1 Conducting a series of data analyses with protected area and buffer zone authorities to update the study on tiger and prey population.	1. Updated plan for retrospective data analysis 2. Updated module of tiger and prey population monitoring 3. Re-establish an investigation unit related to illegal hunting and trade and conflict. 3. Series of trainings/workshops on tiger and prey protection	Entire landscape	Analysed spatial data from robust analyses/ technique for core areas
			A2.1.2 Conducting biannual training on the camera trapping protocol for personnel in protected area and buffer zone		Entire landscape	Training reports and documentation. List of attendance

				and monitoring conducted	Entire landscape	Camera trap installation report and camera trap analysis
O2.2 Established and improved Tiger Population Monitoring and threat surveillance, early warning system & collaborative human-tiger conflict mitigation	FHK (Warsi dan WMM di tingkat tapak)	A2.2.1 Conducting annual camera trap surveys in targeted areas	1. Availability of population baseline and core area assessment 2. Implementation of capacity building in conflict mitigation efforts at the village level so that communities are independent 3. Formation of conflict alert community groups 4. Increasing the capacity of rangers from the	Entire landscape	Camera trap installation report and camera trap analysis	
		A2.2.2 Reviewing and improving the existing human-tiger conflict mitigation protocol and its implementation			Protocol dissemination minutes, Complaint/indication reports according to the agreed protocol and mitigation reports	
		A2.2.3 Developing landscape standard operating procedures to address emergencies arising from sumatran			SOP for handling tiger attack emergencies, handling reports	

			tigers straying into human dominated areas	community, companies, and National Parks in using smart patrols		
O2.3 Improved rangers capacity in terms of social safeguarding that in line with IFC standards on Performance on Security and Human Rights	Warsi	A2.3.1 Assessing the capacity gaps among government rangers, taskforce, village task force team, and private sector rangers	1. Availability of rangers' capacity baseline 2. Increasing rangers capacity related to IFC standards by implementing training/workshops	Entire Landscapes (TN Rangers, BKSDA, Forestry Agency-Province, MMK, Permit Holder Rangers)	Capacity gap assessment document, Capacity improvement analysis report (pre-test, post-test)	
		A2.3.2 Establishing and providing technical support to operate multi stakeholder conflict mitigation task force				
		A2.3.3 Conducting training and annual refresher session for the taskforce on human-tiger conflict mitigation techniques in accordance with IFC Performance standards				

	O2.4 Increased public awareness of the importance of tiger and forest conservation and human-tiger conflict mitigation strategies.	WMM	A2.4.1 Conducting short courses in structured settings targetting community leaders/members in thematic and relevant skill set or knowledge .	<ol style="list-style-type: none"> 1. Identification of communities or the public who will participate 2. Designing campaigns and short courses that are right on target to increase public awareness about tiger and human conflict conservation and mitigation 	Sub-districts: Sadu, Kumpe, Bayung Lencir, Provinsi Jambi	Participant attendance list, Documentation, Change report (knowledge-attitude),
--	------------------------------------------------------------------------------------------------------------------------------------	-----	-----------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------	---------------------------------------------------------------------------------

R3. Achieving the Inclusive economic growth and community development in 12 villages in the landscape	O3.1 Improved community livelihoods through smart agriculture and sustainable Community-based Forest Enterprises.	Warsi WMM	A3.1.1 Assessing socio-ecological conditions and deforestation drivers through participatory methods, and identifying potential areas for Social Forestry, Conservation Partnerships, and sustainable commodity development	<ol style="list-style-type: none"> 1. Community awareness and capacity building 2. Establishment of community based forest management unit/organization 3. legal permit 	Entire landscape	<p>Study documents, Minutes of Meeting Documents, documentation, participant attendance list.</p> <p>Social Forestry and Conservation Partnership Permit Decree</p>
			A3.1.2 Developing a smart agriculture and Community-based Forest business plan including a financial scheme		Sub-district Sadu dan Kumpe	

			A3.1.3 Developing commodities and product			
	O3.2 Improved household incomes from forest-based activities through better access to markets, capital, technology, and efficient partnerships between forestry companies and smallholders and communities	Warsi WMM	A3.2.1 Assessing the existing situation to identify realistic enterprise prospects, including institutional capability and market analysis	<ol style="list-style-type: none"> 1. Identified product 2. Community enterprises groups established and equipped with the necessary skills 3. Successful pilot initiative 4. Aggregator governance established. 	Entire landscape	Agriculture development action plan documents (Proposal from Community-based Organisation), MOU, Documentation, Implementation reports, Products and commodities that have been developed, economic impact analysis reports
A3.2.2 Identifying product marketing strategies , resource mobilization and networking with business service providers.						
A3.2.3 Carrying out continuous monitoring of operations and making adjustments as needed						

	O3.3 Payments Environmental services as sustainable income source for communities	Warsi WMM	A3.3.1 Conducting a study on the potential for payments for ecosystem services (PES)	1. A comprehensive inventory of forest resources and traditional knowledge compiled by the community. 2. A collaboratively developed framework for Payments for Ecosystem Services (PES) involving local communities, governments, and private sector stakeholders. 3. Enhanced community capacity in understanding and applying PES principles and sustainable land management	Sadu, Kumpeh sub-districts and Pancoran Hamlet (Muara Merang Village)	Minutes, PES activities that have been implemented, PES development work plan, PES benefit sharing mechanism, PES management SOP
A3.3.2 Conducting PES concept development, including ecotourism, community carbon, tree adoption programs	Need assessment documents, availability of infrastructure that					
A 3.3.3 Building supporting infrastructure for the implementation of						

			PES both physical and institutional.	practices. 4. Local PES management committees established along with a supporting legal framework for governance. 5. Identification and engagement of potential buyers		has been utilized, activity reports, documentation.
			A3.3.4 Marketing the PES program			
	O3.5 Monitored, verified, and evaluated document and activities of of expected result 1,2, 3.	Warsi WMM	A.3.5.1 Conducting field visit to monitor, evaluate, and verify the implementation of activities in the project area		Entire landscape	Monitoring & evaluation report, internal reports
			A.3.5.2 Conducting a monitoring and evaluation meeting to review the progress of implementation for the project activities in the area			

Appendix 2: Review of Regulatory Frameworks

This chapter provides a brief overview of the Indonesian regulatory framework concerning environmental and social management. It examines the key laws, regulations, and policies that govern environmental protection and social safeguards in Indonesia, including Law No. 32 of 2009 on Environmental Protection and Management and its amendments as an overarching regulation. The chapter also identifies major regulatory bodies, such as the Ministry of Environment and Forestry, in enforcing these regulations. Additionally, it highlights recent reforms and their implications for sustainable development, offering insights into how these regulations shape project planning and implementation to ensure environmental sustainability and social equity.

National Regulations

The office of the President of the Republic of Indonesia passed the Omnibus Law (*Undang-Undang* Republic Indonesia) No. 11/2020 on November 2, 2020. The potential impacts of this law on forestry/conservation aspects are not major, but can be further assessed during stakeholder interviews/field visit. Another umbrella regulation is Law No. 32 of 2024 that is an amendment to Law No. 5 of 1990, focusing on the Conservation of Biological Natural Resources and Their Ecosystems. This law aims to enhance the conservation efforts for biodiversity and ecosystems in Indonesia. However, it has faced criticism for not adequately involving indigenous peoples and local communities in its formation, potentially leading to issues such as criminalization and deprivation of rights.

1. Environmental Assessment

Both WARSI and WMM are civil society organizations (not a business entity), so environmental assessment and environmental licensing are not required for the proposed Project.

0. Forest Management and Social Forestry

Regulations on forest management may be applicable to the proposal, as the activities include the plan to establish social forestry groups and improve forest protection. The regulations include the following:

Laws (*Undang-undang*)

- Law No. 6/2014 on Villages (revised by Law 11/2020). This regulation will serve as a guideline for Project implementors to carry out various activities by collaborating with villages, such as cooperation/shared responsibilities with village authorities to ensure resource use and livelihoods of Indigenous People are protected, agreements related to rights and responsibilities to protect the forest area from illegal activities;
- Law No. 18/2013 on the Prevention and Eradication of Forest Degradation (revised by Law 11/2020). This regulation serves as a guideline for combating illegal activities within forestry concessions. At the implementation level, this applies to activities

such as forest protection, and other activities to prevent illegal use of forest resources; and

- Law No. 26 of 2007 concerning spatial planning (revised by Law 11/2020). This regulation is important as a guideline for producing village agreements and maps of villages, customary territories, and plots of land that are cultivated so as not to cause conflict for Indigenous People and local communities;

Government Regulation (*Peraturan Pemerintah – PP*)

- Government Regulation No. 23 Year 2021 concerning Forestry Management; this regulation is a derivative rule from the issuance of the Job Creation Law (*Undang-Undang Cipta Karya- UUCK*) Law No. 11/2021. This regulation regulates forestry planning, changes in the allocation of forest areas and changes in forest area functions, use of forest areas, forest management and preparation of forest management plans and forest utilization, social forestry management, forest protection, supervision, and administrative sanctions; and
- Government Regulation No. 71 of 2014 on the Protection and Management of Peat Ecosystems, which was later amended by Government Regulation No. 57 of 2016. This regulation covers the protection, management, and restoration of peat ecosystems.

Presidential Regulation (*Peraturan Presiden – Perpres*)

- Presidential Regulation No. 120 of 2020 on the Peatland and Mangrove Restoration Agency, which expands the mandate of the Peatland Restoration Agency to include the restoration of mangrove ecosystems in addition to peat ecosystems;
- President of the Republic of Indonesia Regulation No. 88/2017 on the Completion of Land Tenure in Forest Areas (PPTKH). This regulation includes guidance on the procedure that must be implemented in this process of settling land tenure disputes;
- President of the Republic of Indonesia Regulation No. 13/2012 on Sumatra Spatial Plan that designates forest connectivity, including Berbak Sembilang landscape as part of the forest patch connectivity in Sumatra (RIMBA Corridor). Rimba Corridor was initiated to connect national parks and protected areas, so that the lives of protected animals are not threatened with extinction due to degraded animal habitats; and
- Presidential Instruction No. 11 of 2015 on the Improvement of Forest and Land Fire Control. This instruction mandates various government agencies to take coordinated actions to prevent and control forest and land fires, including those in peatlands.

Ministerial Regulations

- Minister of Environment and Forestry Regulation No. 7 and 8 of 2021 concerning Forestry Planning, Changes in the Designation of Forest Areas and Changes in the Functions of Forest Areas, and the Use of Forest Areas. This is considered as a

potential guidance for the development of business plan and annual plan of social forestry licenses, and prevent unnecessary (misuse) of this regulation that can increase unauthorized forest uses;

- Minister of Environment and Forestry Regulation No. 9 Year 2021 concerning Social Forestry. This regulation provides guidance for establishing conservation partnership (one of social forestry schemes);
- Minister of Environment and Forestry Regulation No. 60 of 2019 on Procedures for the Preparation, Establishment, and Amendment of Peat Ecosystem Protection and Management Plans. This regulation provides technical guidelines for the preparation and implementation of peat ecosystem management plans;
- Minister of Environment and Forestry Regulation No. P.32 of 2016 on the Guidelines for Peatland Ecosystem Restoration. This regulation includes specific guidelines for preventing and controlling fires in peatland areas;
- The Minister of Forestry Regulation No: P.43/Menhut-II/2013 process for demarcating boundaries of working permits for forest utilization, principles for forest management, principles for the release of forest areas and the management of forest areas with special objectives; and
- Director General of Natural Resources and Ecosystem Conservation (KSDAE) Regulation No: P.6/KSDAE/SET/Kum1/6/2018 on conservation partnership.

0. Indigenous Peoples or Adat (Customary) Communities and Social Welfare

Berbak Sembilang Landscape is home for indigenous communities (Suku Anak Dalam Bathin IX). Therefore, the following regulations may be relevant:

- Law No. 11/2010 on Cultural Heritage. This law recognizes customary communities as owners of their cultural heritage and grants them authority to manage it. The law requires observation and data collection on cultural heritage sites that may be affected by Project activities. This regulation serves as a guideline for Project implementors to respect the communities which laid their claims based on history passed down about their ancestry and heritage. In compliance to this regulation, Project implementors shall develop a "chance find procedure" to anticipate additional findings of cultural heritage; and
- Law No. 5/1960 on Basic Agrarian Principles: This law defines the fundamental rights of private individuals and entities. This regulation provides guidance on how the private sector can understand the existence of local communities (e.g., Suku Anak Dalam Bathin IX) settled within the proposed Project area.

0. Human-Wildlife Conflict Regulations

- The Ministry of Forestry Regulation No. P.48/Menhut-II/2008 Guideline for Conflict Management Between Human and Wildlife provides details on categorizing and handling human-wildlife conflict. Project implementors can support authority (BKSDA

and National Park) by providing technical assistance in wildlife conflict mitigation (according to this regulation).

0. Social Conflict Management Laws

Social conflicts are part of the strategic issues identified in the Berbak Sembilang landscape. Regulations relevant to social conflicts are:

- Law No. 7/2012 concerning Handling of Social Conflict regulates management of social conflict. It provides guidance on a participatory conflict resolution approach that considers various aspects such as welfare, socio-culture when resolving conflict. This approach may include holding a workshop/training for conflicting parties to identify their respective agenda, and establish resolutions accordingly; and
- Presidential Regulation of the Republic of Indonesia No. 76/2013 concerning Management of Public Service Complaints.

Provincial

Jambi Province has implemented a comprehensive framework of environmental and social regulations aimed at promoting sustainable development and protecting natural resources. These regulations are part of the province's Green Growth Plan (GGP), which focuses on low-carbon development, increased land productivity, and the conservation of forests and peatlands. The Jambi Sustainable Landscape Management Project (J-SLMP) and the Jambi Jurisdictional Emission Reduction Program (ERP) are key initiatives under this framework, supported by the World Bank and other international organizations. These efforts include the establishment of a Safeguards Working Group to oversee the implementation of environmental and social safeguards.

1. Forest Management and Social Forestry

- Jambi Provincial Regulation No. 2 Year 2016 concerning Prevention and Management of Forest and Land Fires. This shall apply to social forestry license and concession holders (private companies);
- Jambi Provincial Regulation No. 10 Year 2013 concerning Jambi Spatial Planning 2013-2033; This regulation stipulates policies in optimizing the use of cultivated areas to support regional economic development, establishing protected areas to preserve natural resources in an integrated manner with bordering provinces; and increasing regional functions for state defence and security in Jambi. This regulation is important as a guideline for producing village agreements and maps of villages, customary territories, and plots of land that are cultivated so as not to cause conflict for Indigenous People and local communities.

0. Indigenous Peoples or *Adat* (Customary) Communities and Social Welfare

- Jambi Provincial Regulation No. 2 Year 2014 concerning Jambi Malay Traditional Institution. This will relate to the FPIC framework and implementation plan (including a conflict resolution mechanism) that has been developed for engagement with

indigenous communities. This is to ensure that Indigenous Peoples' rights and customary claims are respected.

0. Social Conflict Management Laws

- Jambi Provincial Regulation No. 4 Year 2012 concerning Public Service Management; This regulation gives the public the right to make complaints and obtain responses to complaints submitted related to the implementation of public services.

Legal Framework for Gender Equality

The IUCN's legal framework for gender equality is designed to ensure that gender equality and women's empowerment are systematically integrated into all conservation and sustainable development efforts. This framework is grounded in a comprehensive rights-based approach, recognizing that gender equality is not only a fundamental human right but also essential for achieving sustainable development and conservation goals. Key components of the IUCN's legal framework for gender equality include:

1. **Gender Equality and Women's Empowerment Policy:** This policy reaffirms IUCN's commitment to gender equality and outlines the requirements for embedding a gender-responsive approach across its programs and projects. It emphasizes the proactive identification of gender gaps and the implementation of actions to address and overcome these disparities;
2. **Mainstreaming Gender in Conservation:** IUCN integrates gender considerations into its conservation strategies and actions, ensuring that both men and women benefit equally from conservation efforts. This includes promoting equitable decision-making, enhancing women's leadership, and ensuring that gender-responsive actions are part of all project phases; and
3. **Capacity Building and Knowledge Generation:** IUCN supports capacity building and knowledge generation on gender issues, providing training and resources to its staff, members, and partners. This helps to strengthen the institutionalization of gender equality across IUCN's work and promotes the inclusion of gender considerations in environmental policies and practices.

Indonesia has made significant strides in promoting gender equality through various regulations and policies. These efforts are aimed at ensuring equal rights and opportunities for all genders, addressing discrimination, and empowering women in various sectors. The legal framework for gender equality in Indonesia is supported by both national laws and international commitments, reflecting the country's dedication to creating a more inclusive and equitable society. Some key regulations and policies related to gender equality in Indonesia are:

1. **Constitution of Indonesia:** Guarantees gender equality and non-discrimination;

2. **Presidential Instruction No. 9/2000 on Gender Mainstreaming:** Mandates all government ministries and agencies to integrate gender perspectives into their planning, implementation, monitoring, and evaluation processes;
3. **Law No. 7/1984 on the Ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW):** Commits Indonesia to international standards for eliminating gender discrimination;
4. **Law No. 23/2004 on the Elimination of Domestic Violence:** Provides legal protection against domestic violence and supports victims;
5. **Law No. 21/2007 on the Eradication of the Criminal Act of Human Trafficking:** Addresses human trafficking with a focus on protecting women and children;
6. **Law No. 13/2003 on Manpower:** Includes provisions for gender equality in the workplace, such as equal pay and maternity leave; and
7. **Presidential Regulation No. 65/2020 on the National Strategy for Gender Mainstreaming in Development:** Strengthens the implementation of gender mainstreaming across all sectors.

These regulations form a comprehensive framework aimed at promoting gender equality and protecting the rights of women and marginalized groups in Indonesia. Gender equality is also in line with Indonesian Sustainable Development Goals (SDG) specifically SDG 5.

In SDG 5, Gender Equality aims to achieve gender equality and empower all women and girls. This goal is fundamental to realizing human rights and sustainable development. In Indonesia, the legal framework supporting SDG 5 includes various laws and policies designed to eliminate gender discrimination, protect against violence, and promote equal opportunities in all sectors. Key regulations such as the Presidential Instruction on Gender Mainstreaming and the ratification of CEDAW ensure that gender perspectives are integrated into national development plans and policies. By addressing issues like domestic violence, human trafficking, and workplace equality, Indonesia is working towards creating an inclusive society where women and girls can thrive and contribute to the nation's growth and development. Additionally, gender equality is also relevant with SDG 8 and SDG 10 to promote decent work and economic growth and reduce inequalities respectively.

SDG 8 aims to promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. This goal emphasizes the importance of economic growth that benefits everyone, ensuring that all individuals have access to quality jobs that provide fair wages, safe working conditions, and opportunities for advancement. It also focuses on fostering innovation, supporting small and medium-sized enterprises, and encouraging policies that stimulate economic productivity. By addressing issues such as youth unemployment, forced labour, and modern slavery, SDG 8 seeks to create a dynamic and inclusive economy that supports sustainable development and improves the quality of life for all.

SDG 10 aims to reduce inequality within and among countries by promoting social, economic, and political inclusion for all, regardless of age, sex, disability, race, ethnicity, origin, religion, or

economic or other status. This goal focuses on ensuring equal opportunities and reducing disparities in income and access to resources and services. It also addresses the need for policies that promote social protection, improve the regulation and monitoring of financial markets and institutions, and enhance the representation and voice of developing countries in global decision-making. By tackling inequality, SDG 10 seeks to create more equitable societies where everyone can participate fully and benefit from economic growth and development

Appendix 3: Risk Rating Assessment

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
A1.2.2 Real-time threat detection and early warning system established	Moderate (8): risk of injuries or deaths due to tiger attack during installation of monitoring equipment	Major (4): human casualties and loss of livestock (economy)	Low likelihood (2)	Labor and Working Conditions	Health and safety training and capacity building for team members (patrol and camera trap); Training to prevent tiger attacks; SOP to increase safety during field work
A1.2.3 Implementation of Forest fire control and prevention plan through infrastructure support and institutional capacity	High (20): exposure to fire risk (burn and smoke inhalation) when implementing forest fire prevention and control	Severe (5): Injuries due to burn and smoke inhalation	Known to Occur (4)	Labor and Working Conditions	Procurement of fire safety equipment and relevant personal protective equipment (PPE); Procurement of communication devices for field teams; Health monitoring;
A1.2.4 Developing framework and Standard Operating Procedures (SOPs) for monitoring surveys and application of various tools/ technology (SMART Patrol, Guardian and Camera trap)	Moderate (9): Interest or concerns of certain groups are excluded from the SOP	Moderate (3): The SOP does not cover local and social perspectives	Moderately Likely (3) : Stakeholder participation has been planned from the beginning	Stakeholder Engagement; Free and Prior Informed Consent	
	(Moderate (12): The SOP does not include all critical procedures or is not aligned with local context (making procedures irrelevant)	Major (4): An incomplete SOP can cause confusion during implementation, overlapping	Moderately Likely (3): Quite likely due to the complexity of developing an SOP involving multiple stakeholders with different interests	Labor and Working Conditions	

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
		responsibilities, or field procedure errors			
A1.2.6 Conducting monthly joint forest patrol and monitoring in the project area	Moderate (15): Damages from patrol activities (e.g., fire, camp, and trail clearing);	Severe (5): fire used in patrol camps may trigger forest fire if not properly extinguished	Moderately likely / could occur (3)	Biodiversity and Sustainable Use of Natural Resources	Fires safety and fire control training; Controlled campfires; Fire watch.
	High (15): Human rights issues when dealing with wildlife and forest crime perpetrators	Severe (5): Violations of human rights leading to loss of livelihood, involuntary displacement, environmental degradation, and violence/harassment	Moderately likely (3)	Community Health, Safety, and Security	Human rights monitoring (independent observers, and grievance mechanism such as ombudsman reports); Human rights training for patrol and law enforcement members
	Moderate (12): Compromised safety of patrol teams during activities	Major (4) injuries to patrol team members	Moderately likely / could occur (3)	Labor and Working Conditions	Health and safety training and capacity building for team members (patrol and camera trap); Training to prevent tiger attacks; SOP to increase safety during field work
	Moderate (8): Patrol activities causing shift in tiger movements and distribution leading to increase on interaction between human and tigers (human-wildlife conflicts)	Major (4): Increased incidence of human-wildlife conflicts (anxiety/fear among villagers)	Low Likelihood (2):	Community Health, Safety, and Security	Improved livestock management; Use of non-lethal deterrent; Community awareness; Compensation scheme for loss of livestock; Habitat restoration & connectivity

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
	Moderate (12): Confidentiality breach of informant providing information on illegal activities	Major (4) Threats to the safety and well-being of the community informants (anxiety and potential harms)	Moderately Likely (3)	Community Health, Safety, and Security	Personal data protection Anonymization/pseudonymization; Confidentiality agreement
	Moderate (12): Compromised safety of patrol teams during activities	Major (4) injuries to patrol team members	Moderately likely / could occur (3)	Labor and Working Conditions	Health and safety training and capacity building for team members (patrol and camera trap); SOP to increase safety during field work
	Moderate (5): Restricting of access to local people's plantation land	Severe (5): Disruption to household's income and local economy	Very unlikely to occur (1)	Involuntary Resettlement and Access Restrictions	Integrated landscape management (holistic approach and multi-use landscapes); Participatory land-use planning
A1.3.1 Facilitate the preparation and submission process of Social Forestry permit proposal with community consent through FPIC involving representatives from all community elements.	Moderate (12): Social forestry is implemented without consent from certain groups	Major (4): Activities on community property without respect of ownership	Moderately likely (3):	Stakeholder Engagement; Free and Prior Informed Consent; Indigenous People	FPIC implementation (described in FPIC guideline)
	Moderate (12): Social forestry permits may overlap with cultural resources (e.g., burial sites) during development and license issuance	Major (4): Direct breach of IFC PS 8 on cultural heritage causing the decrease or loss of cultural values	Moderately likely (3):	Stakeholder Engagement; Free and Prior Informed Consent; Cultural Heritage	Mapping of cultural heritage (e.g., burial grounds in Muara Medak)

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
A1.3.2 Facilitate institutional strengthening and management capacity	High (15): Misinterpretation of social forestry management and work plan leads to land clearing (operational collaboration with companies)	Severe (5) Destruction of natural forest, and potential loss of biodiversity and carbon	Moderately Likely / Could occur (3)	Biodiversity and Sustainable Use of Natural Resources	Robust socialization process; Development of proper social forestry business/management plans; Monitoring social forestry activities
	Moderate (12): Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Major (4) Minimum or lack of skill on social forestry and sustainable livelihood in excluded groups	Moderately Likely (3)	Risk affecting vulnerable groups	Stakeholder engagement (mapping, consultation, community involvement, and public hearing Ensure accessibility to project planning, implementation, and monitoring
	Moderate (10): Social Forestry Business Plan (RKPS) do not consider biodiversity / endangered species	Severe (5) Loss of biodiversity	Low Likelihood (2)	Biodiversity and Sustainable Use of Natural Resources	Robust socialization process; Development of proper social forestry business/management plans; Monitoring social forestry activities
A1.4.1 Facilitating a series of coordination and consultations with stakeholders (government, companies, NGOs, CSOs, and communities) and FPIC processes on the conservation of the Sumatran Tiger, its prey, and its habitat, as well as stakeholder perspectives	High (16): Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Major (4) subsequent development (livelihood aspects) neglect aspirations of women and marginalized groups	Known to Occur (4)	Stakeholder Engagement; Free and Prior Informed Consent	Robust coordination process to ensure inclusivity of gender, disabilities, marginalized groups

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
on these issues and collaboration / management.					
A1.4.2 Facilitating a series of meetings among stakeholders, discussing the Interests of issues related to the conservation of tigers, prey, and habitat, as well as collaboration mechanisms between stakeholders including institutional and policy support.	High (16): Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Major (4) Development policies become non-inclusive, as aspirations from certain groups are not accommodated	Known to Occur (4)	Stakeholder Engagement; Free and Prior Informed Consent	Robust meeting and stakeholder engagement process to ensure inclusivity of gender, disabilities, marginalized groups
A1.4.3 Facilitating the development of a collaborative action plan related to the conservation of the Sumatran Tiger, its prey, and implementation mechanisms	High (16): Unequal or underrepresentation of marginalized people and women group in the identification / mapping process	Major (4) Collaboration is not optimal, as participations and needs of certain groups are neglected	Known to Occur (4)	Stakeholder Engagement; Free and Prior Informed Consent	Robust action plan development process to ensure inclusivity of gender, disabilities, marginalized groups
A1.5.1 Developing a technical plan for the restoration area based on rehabilitation and revitalization strategies	High (16): Technical plan limiting land available for agriculture and residential	Major (4) land is not available for agriculture (livelihood) or residential (welfare)	Known to Occur (4)	Involuntary Resettlement and Access Restrictions	Integrated landscape management (holistic approach and multi-use landscapes); Sustainable agriculture; Participatory land-use planning
	Moderate (5): Planting (70 ha) and assisted natural regeneration (150 ha) practices introduce alien and invasive species	Severe (5) Alteration of vegetation composition and potential loss of biodiversity	Very Unlikely to Occur (1)	Biodiversity and Sustainable Use of Natural Resources	Pre-planting assessment (seed selection and environmental impact assessment);

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
A1.5.2 Conducting series of restoration activities (in government land / forest area): land preparation, nursery, procurement of materials, Planting, Maintenance	Moderate (5): Planting (70 ha) and assisted natural regeneration (150 ha) practices introduce alien and invasive species	Severe (5) Alteration of vegetation composition and potential loss of biodiversity	Very Unlikely to Occur (1)	Biodiversity and Sustainable Use of Natural Resources	Pre-planting assessment (seed selection and environmental impact assessment); Monitoring and control (regular monitoring and rapid response if needed); Community awareness and engagement
A2.2.1 Conducting annual camera trap surveys in targeted areas	High (15): Damages from survey activities (e.g., fire, camp, and trail clearing);	Severe (5): fire used in patrol camps may trigger forest fire if not properly extinguished	Moderately likely / could occur (3)	Biodiversity and Sustainable Use of Natural Resources	Flying camp protocols (leave no trace, safe camp setup, and precautionary principles)
	Moderate (8): Survey activities causing shift in tiger movements and distribution leading to increased interaction between human and tigers (human-wildlife conflicts)	Major (4): increased frequency and intensity of human-wildlife conflicts	Low Likelihood (2)	Community Health, Safety, and Security	Improved livestock management; Use of non-lethal deterrent; Community awareness; Compensation scheme for loss of livestock; Habitat restoration & connectivity
	Moderate (12): Compromised safety of patrol teams during activities (link to comment for IUCN on compliance with OSHA standards)	Major (4): injuries to patrol team members	Moderately likely / could occur (3)	Labor and working conditions	Health and safety training and capacity building for team members (patrol and camera trap); SOP to increase safety during field work
A2.2.3 Developing landscape standard operating procedures to address emergencies arising from sumatran	High (16): Interest or concerns of certain groups are excluded from the SOP and The SOP does not satisfactorily resolve the HWC cases	Major (4): Loss of livestock and fear of doing livelihood activities	Known to occur (4):	Community Health, Safety, and Security	Improved livestock management; Use of non-lethal deterrent; Community awareness;

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
tigers straying into human dominated areas					Compensation scheme for loss of livestock; Habitat restoration & connectivity
A2.3.3 Conducting training and annual refresher session for the taskforce on human-tiger conflict mitigation techniques in accordance with IFC Performance standards	High (16): Interest of certain groups are excluded from the training modules or trainings not reaching target groups	Major (4): SOP failed to address the concerns or reach certain groups	Known to occur (4):	Community Health, Safety, and Security	Community awareness, engage all stakeholder groups; establish feedback mechanism; revise SOPs as needed
	Moderate (8): Survey activities causing shift in tiger movements and distribution leading to increase on interaction between human and tigers (human-wildlife conflicts)	Major (4): increased frequency and intensity of human-wildlife conflicts	Low Likelihood (2)	Community Health, Safety, and Security	Improved livestock management; Use of non-lethal deterrent; Community awareness; Compensation scheme for loss of livestock; Habitat restoration & connectivity
A2.3.3 Conducting training and annual refresher session for the taskforce on human-tiger conflict mitigation techniques in accordance with IFC Performance standards	High (16): Interest of certain groups are excluded from the training modules or trainings not reaching target groups	Major (4): SOP failed to address the concerns or reach certain groups	Known to occur (4):	Community Health, Safety, and Security	Improved livestock management; Use of non-lethal deterrent; Community awareness; Compensation scheme for loss of livestock; Habitat restoration & connectivity
A3.1.2 Developing a smart agriculture and	Moderate (10): Smart agriculture practices and community-based forest	Severe (5): Alteration of vegetation composition	Low likelihood (2)	Resource efficiency, pollution, waste, chemicals	Pre-planting assessment (seed selection and

Activities	Rating of Risk Events	Impacts & Score	Likelihood & Score	Principles/ Key Standards Triggered	Mitigation Measures
Community-based Forest business plan including a financial scheme	business introduce alien and invasive species	and potential loss of biodiversity			environmental impact assessment); Awareness on prevention of the use of harmful pesticides, herbicides; Encourage the production or use of organic fertilizer
A3.1.3 Developing commodities and product	Moderate (12): Release of effluent during product development and processing	Major (4): Pollutions, waste, chemicals, and GHG emissions causing environmental degradation and climate change	Moderately likely (3)	Precautionary principle; Resource efficiency, pollution, waste, chemicals	Awareness on waste management and fuel efficiency; Reduce, reuse, recycle campaign.
A3.2.2 Identifying product marketing strategies , resource mobilization and networking with business service providers.	Moderate (8): Marketing strategies or resource mobilization may not align with the local context or may overlook social and environmental aspects	Major (4): This activity could cause significant social impacts if not properly implemented, such as conflicts with communities and other stakeholders	Low likelihood (2)	Stakeholder Engagement; Free and Prior Informed Consent.	Engage communities and stakeholders through participatory consultations

Appendix 4: List of issues and risks based on IUCN principles

IUCN Standards & Principles	Issues	Description	Gaps
Biodiversity and Sustainable Use of Natural Resources	Misunderstanding of social forestry activities	These activities may damage the integrity of peatland ecosystems, which are crucial for biodiversity	Complexity of ecological requirements and administrative burden associated with obtaining social forestry permits
	Physical Infrastructure for Payment for Environmental Services (PES)	Building infrastructure for Payments for Ecosystem Services (PES) programs may cause environmental damage and alter critical tiger habitats	Insufficient integration of environmental considerations into infrastructure projects
	Patrol Activities	Patrol activities may cause damage to the environment (camp fire)	Lack of comprehensive environmental training for patrol officers
Community Health, Safety, and Security	Compromised Safety of Patrol Teams	Patrol teams may face safety risks during activities, including exposure to wildlife and hazardous conditions	Lack of adequate health and safety training and resources for patrol personnel;
	Human-Wildlife Conflicts	Increased interaction between humans and tigers due to patrol activities and changes in tiger movements	Lack of formal procedures to avoid physical danger to humans; Lack of formal procedures to avoid risk of zoonosis
	Confidentiality Breach	Risk of informants providing information on illegal activities being exposed	Insufficient protection and support for informants
	Safety Risks from Peat Fires	Fires in peatland areas can threaten the safety of local residents and workers	Lack of adequate formal enforcement for prevention of forest fire
Labor and Working Conditions	Hazardous working conditions	Workers involved in patrols, production activities, and infrastructure development may face unsafe conditions, including exposure to wildlife and fire hazards	Lack of comprehensive occupational health and safety measures, especially workers in hazardous conditions such as forest patrol; Insufficient enforcement of labor rights and standards
	Health and Safety issues	Compromised safety during patrol activities and exposure to hazardous	Lack of adequate formal requirements for protective equipment

IUCN Standards & Principles	Issues	Description	Gaps
		conditions and environmental conditions (outdoor work)	and training for forest rangers (and especially community rangers – MMP).
	Inadequate Training	Potential risks from improper use of technology due to insufficient training	Lack of formal training or certification requirements for forest rangers, and community rangers
Stakeholder Engagement; Free and Prior Informed Consent	Exclusion of Stakeholder Groups	Certain groups may be excluded from SOP development or project planning due to low trust from local people	Underrepresentation of women in decision-making processes; lack of inclusivity in infrastructure planning and implementation
	Low Trust	Existing human-wildlife conflict resolution systems may not yield satisfactory outcomes, leading to distrust among local communities	Inadequate capacity to comply with regulations regarding compensation for loss of livestock or lives due to human-wildlife conflict
	Minimum Involvement of Marginalized Groups	Marginalized groups, such as the Suku Anak Dalam, may not be adequately involved in social forestry schemes	Underrepresentation of marginalized groups in decision-making processes;

Appendix 5: ESMP Implementation Matrix

E&S Standards and risk areas	E&S risk and impacts	Mitigation measures ³	Costs (USD)	Responsibility	Schedule	Monitoring arrangements/Indicator
	<i>Specify location and affected group /receptor. Where a standard /risk area is triggered by different project activities and/or in different locations, these and the respective management measures should be described in separate rows.</i>	<i>Management measures can include safeguards instruments (e.g. Process Framework, ESCOP, IPP, IPPF), a specific protocol (e.g. Law Enforcement Standard Operating Procedure, Health and Safety Protocol).</i>	<i>Estimated costs or resources to implement the measures</i>	<i>Indicate who assumes responsibility for implementing the measures</i>	<i>e.g., Year 1 1st Quarter, Year 2, 4th Quarter, etc.</i>	<i>Indicators for assessing effectiveness, methodology for monitoring etc</i>
A: ESMS Manual: Procedure for identification, assessment and management of E&S risks (including ESIA)	Not mandated by Indonesian regulation	Develop documents as per IUCN ESMS	22,500	WARSI	Proposal Preparation	Review by IUCN (proposal package)
Accountability principle including requirements for Grievance mechanism and incident reporting mechanisms	Government-operated system not applicable for Project	Establish a grievance system for Project (but linked to existing government system if applicable); Develop (or gain consensus on) resolutions	12,500	WARSI	Year 1: Q3 onwards	Project implementers to record grievance and incident reports using web-based application / database. Percentage of resolved cases / reports
Principal on Stakeholder engagement with minimum requirements for consultation and disclosure of information	Non-inclusive planning, implementation, and monitoring. Access restriction	Participatory process for training, planning, implementation, and capacity building	5,000	WARSI	Year 1: Q2 onwards	Various meeting records & documentations indicating representation of the communities
B1: Adverse gender-related impacts and gender-based violence	Not foreseen	Not foreseen	375	Grievance Team (WARSI-WMM)	N/A	Serious incident reporting mechanism for monitoring occurrences (if any); Percentage of gender-related impacts and gender-based violence cases in the grievance/serious incident reporting system

³ In some instances, mitigation measures are already conceptualized as a project activity. These should still be include / cross-referenced in the ESMP along with all other mitigation measures to provide an overall picture of the project's mitigation strategy and to be able to check the list of mitigation measures against the identified impacts. As such it serves to analyze whether measures are sufficient, feasible and sustainable for mitigating the impacts.

E&S Standards and risk areas	E&S risk and impacts	Mitigation measures³	Costs (USD)	Responsibility	Schedule	Monitoring arrangements/Indicator
	<i>Specify location and affected group /receptor. Where a standard /risk area is triggered by different project activities and/or in different locations, these and the respective management measures should be described in separate rows.</i>	<i>Management measures can include safeguards instruments (e.g. Process Framework, ESCOP, IPP, IPPF), a specific protocol (e.g. Law Enforcement Standard Operating Procedure, Health and Safety Protocol).</i>	<i>Estimated costs or resources to implement the measures</i>	<i>Indicate who assumes responsibility for implementing the measures</i>	<i>e.g., Year 1 1st Quarter, Year 2, 4th Quarter, etc.</i>	<i>Indicators for assessing effectiveness, methodology for monitoring etc</i>
B2: Risks affecting vulnerable groups	Women and senior citizen in 12 villages; Suku Anak Dalam group in Muara Medak;	Stakeholder engagement (mapping, consultation, community involvement, and public hearing Ensure accessibility to project planning, implementation, and monitoring	1,875	WARSI	Year 1: Q1-Q2	Stakeholder engagement records; Compilation of inputs from vulnerable groups
B3: Risk of undermining human rights	All 12 villages where patrol is conducted, but especially in villages bordering with grand Forest Park, Berbak Sembilang NP, and Nature Reserves	Human rights monitoring (independent observers, and grievance mechanism such as ombudsman reports); Human rights training for patrol and law enforcement members	1,875	WMM, with Berbak Sembilang NP, Forestry Agency (FMU), and BKSDA	Year 1: Q3 onwards	Patrol records; Percentage of human-rights issues in the grievance/serious incidents reporting system
B4: Community health, safety and security risks	Anxiety due to human-tiger conflicts in Air Hitam Laut, Remau Baku Tuo and Sungai Cemara;	Improved livestock management; Use of non-lethal deterrent; Community awareness; Compensation scheme for loss of livestock Habitat restoration & connectivity	15,000	WMM BKSDA Jambi	Year 2 onwards	Frequency and intensity of casualties due to tiger attacks
	Breach of informants' confidentiality in investigation activities in 12 villages	Personal data protection Anonymization/pseudonymization; Confidentiality agreement	1,875	WMM BKSDA Jambi Forestry Agency/FMU Berbak Sembilan NP	Year 2 onwards	Numbers or percentage of confidentiality-related issues in the grievance / serious incident reporting system
B5: Labour and working conditions	Risks in Berbak Sembilang NP, Grand Forest Park:	Procurement of fire safety equipment and relevant personal protective equipment (PPE);	7,500	WMM Berbak Sembilan NP BKSDA Jambi	Year 1: Q1 Procurement	Numbers, percentage, or frequency of occurrences reported in serious incident report

E&S Standards and risk areas	E&S risk and impacts	Mitigation measures³	Costs (USD)	Responsibility	Schedule	Monitoring arrangements/Indicator
	<i>Specify location and affected group /receptor. Where a standard /risk area is triggered by different project activities and/or in different locations, these and the respective management measures should be described in separate rows.</i>	<i>Management measures can include safeguards instruments (e.g. Process Framework, ESCOP, IPP, IPPF), a specific protocol (e.g. Law Enforcement Standard Operating Procedure, Health and Safety Protocol).</i>	<i>Estimated costs or resources to implement the measures</i>	<i>Indicate who assumes responsibility for implementing the measures</i>	<i>e.g., Year 1 1st Quarter, Year 2, 4th Quarter, etc.</i>	<i>Indicators for assessing effectiveness, methodology for monitoring etc</i>
	Health issues and fatalities during Forest fire monitoring and control; Patrol activities; Camera trap surveys; Social forestry activities.	Procurement of communication devices for field teams; Health monitoring; Health and safety training and capacity building for team members (patrol and camera trap); Training to prevent tiger attacks; SOP to increase safety during field work			Year 1 onwards for training and monitoring	
	Protecting the confidentiality of informants	Personal data protection according to Law No.27 of 2002, anonymization and pseudonymization and confidentiality agreements.		WARSI, TNBS, FMU and Forestry Agency	Year 1 : Q2 onwards	Incident reports, periodic review of data access and compliance checks with confidentiality protocol.
B6: Resource efficiency, pollution, wastes, chemicals	All 12 villages (home industry)	Awareness on waste management and fuel efficiency; Reduce, reuse, recycle campaign.	5,750	WARSI	Year 1: Q3 onwards	Activity reports; Increase or stable numbers of waste management activities
	All 12 villages (Agriculture & Social Forestry)	Awareness on prevention of the use of harmful pesticides, herbicides; Encourage the production or use of organic fertilizer	5,750	WARSI	Year 1: Q3 onwards	Activity reports (training sessions / frequency) Decrease in the use of herbicides; Increase of production and distribution of organic fertilizers
C1: Involuntary Resettlement & Access Restrictions	Berbak Sembilang National Park (70 ha restoration)	Integrated landscape management (holistic approach and multi-use landscapes);	10,000	WMM Berbak Sembilang NP WARSI	Year 1: Q4 onwards	Numbers of villages with participatory land use plans

E&S Standards and risk areas	E&S risk and impacts	Mitigation measures³	Costs (USD)	Responsibility	Schedule	Monitoring arrangements/Indicator
	<i>Specify location and affected group /receptor. Where a standard /risk area is triggered by different project activities and/or in different locations, these and the respective management measures should be described in separate rows.</i>	<i>Management measures can include safeguards instruments (e.g. Process Framework, ESCOP, IPP, IPPF), a specific protocol (e.g. Law Enforcement Standard Operating Procedure, Health and Safety Protocol).</i>	<i>Estimated costs or resources to implement the measures</i>	<i>Indicate who assumes responsibility for implementing the measures</i>	<i>e.g., Year 1 1st Quarter, Year 2, 4th Quarter, etc.</i>	<i>Indicators for assessing effectiveness, methodology for monitoring etc</i>
		Sustainable agricultural practices; Participatory land-use planning				
C2: Indigenous Peoples	Not foreseen	FPIC (see FPIC guidelines)	N/A	N/A	N/A	N/A
C3: Cultural Heritage	Muara Medak (7 households of Suku Anak Dalam)	Mapping of cultural heritage (burial grounds in Muara Medak)	2,000	WARSI	Year 1: Q2	Activity reports; Maps of cultural heritage sites
C4: Biodiversity & Sustainable Use Natural Resources	Risk of forest fires in Berbak Sembilang National Park and Grand Forest Park	Fires safety and fire control training; Controlled campfires; Fire watch.	2,000	WMM Berkak Sembilang NP Forestry Agency / FMU	Year 1 onwards	Numbers of trainings; Numbers of fire incidents (target for no or low numbers of fire incidences)
	Risk of damage in the tiger habitat (Berkak Sembilang National Park and Grand Forst Parl)	Flying camp protocols (leave no trace, safe camp setup, and precautionary principles)	2,000	WMM Berkak Sembilang NP Forestry Agency	Year 1 onwards	
	Negative impacts from social forestry areas in Muara Merang and Muara Medak villages	Robust socialization process; Development of proper social forestry business/management plans; Monitoring social forestry activities	2,000	WMM Forestry Agency	Year 1 onwards	Numbers or frequency of socialization sessions; Percentage of groups receiving the socialization
	Introduction of alien species from SMART agriculture activities in all 12 villages	Pre-planting assessment (seed selection and environmental impact assessment);	2,000	WARSI supported by provincial/district agriculture agencies	Year 1 onwards	Activity report; Seedling record/data Survival rate of SMART agriculture seedlings

E&S Standards and risk areas	E&S risk and impacts	Mitigation measures³	Costs (USD)	Responsibility	Schedule	Monitoring arrangements/Indicator
	<i>Specify location and affected group /receptor. Where a standard /risk area is triggered by different project activities and/or in different locations, these and the respective management measures should be described in separate rows.</i>	<i>Management measures can include safeguards instruments (e.g. Process Framework, ESCOP, IPP, IPPF), a specific protocol (e.g. Law Enforcement Standard Operating Procedure, Health and Safety Protocol).</i>	<i>Estimated costs or resources to implement the measures</i>	<i>Indicate who assumes responsibility for implementing the measures</i>	<i>e.g., Year 1 1st Quarter; Year 2, 4th Quarter, etc.</i>	<i>Indicators for assessing effectiveness, methodology for monitoring etc</i>
		Monitoring and control (regular monitoring and rapid response if needed); Community awareness and engagement				

Appendix 6: Example of Inclusive Land use Planning

Here are some examples of inclusive land use planning and village land use planning initiatives that have been implemented in Jambi Province:

6.1 Inclusive Land Use Planning

1. **Jambi Sustainable Landscape Management Project (J-SLMP):**
 - **Objective:** The J-SLMP aims to improve landscape management and reduce emissions from the forest and land use sector while promoting alternative livelihoods[1].
 - **Approach:** The project involves comprehensive land use planning that integrates community needs and environmental sustainability. It includes mapping and zoning to balance conservation and development, ensuring that local communities have access to land for agriculture and other uses[1].
 - **Community Involvement:** Local communities are actively involved in the planning process through consultations and participatory mapping exercises[1].
2. **Green Growth Plan:**
 - **Objective:** Jambi's Green Growth Plan outlines a vision for low-carbon development centered around increased land productivity and the protection of forests and peatlands[2].
 - **Approach:** The plan promotes sustainable and inclusive growth by integrating land use planning with environmental conservation and community development. It includes measures to protect cultural resources and ensure equitable access to land[2].
 - **Stakeholder Engagement:** The plan involves extensive stakeholder engagement, including consultations with local communities, NGOs, and private sector partners[2].

6.2 Village Land Use Planning

1. **Village-Level Land Use Planning in Oil Palm Regions:**
 - **Objective:** To understand the impact of plantation development on regional land cover change and rural development transformation[3].
 - **Approach:** The study involved detailed land use mapping and analysis at the village level, considering factors such as population, poverty rate, education levels, and infrastructure[3].
 - **Community Involvement:** Local communities participated in the mapping process, ensuring that their needs and preferences were considered in the land use plans[3].
2. **Participatory Mapping and Zoning:**
 - **Objective:** To ensure that land use planning at the village level is inclusive and representative of all community members[3].
 - **Approach:** Participatory mapping exercises were conducted with local communities to identify areas for agriculture, residential use, and conservation[3].

- **Outcome:** The process helped to balance the needs for development and conservation, ensuring that local people had access to land for their livelihoods while protecting critical ecosystems[3].

These examples demonstrate how inclusive and participatory approaches to land use planning can help balance development and conservation needs, ensuring that all community members benefit from sustainable land management initiatives in Jambi Province.

6.3 Forest Programme II (FP II) in Jambi

1. **Objective:**

- The FP II aims to conserve biodiversity and manage watersheds sustainably in the buffer zone of Bukit Tigapuluh National Park[1].
- It focuses on reducing pressure on forest resources and wildlife habitats while improving livelihoods through social forestry models[1].

2. **Inclusive Land Use Planning:**

- **Participatory Land Use Planning:** The program involves local communities in the land use planning process to ensure their needs and preferences are considered. This includes participatory mapping and zoning to balance conservation and development[1].
- **Community-Based Protection:** Communities are engaged in the protection and rehabilitation of forest lands, ensuring that their traditional knowledge and practices are integrated into the management plans[1].

3. **Social Forestry Schemes:**

- **Community Partnerships:** The program supports the establishment of social forestry schemes that involve community partnerships. These schemes aim to reduce pressure on forest resources by promoting sustainable land use practices[1].
- **Village Land Use Plans (VLUP):** Development of VLUPs ensures that land use planning at the village level is inclusive and representative of all community members[1].

4. **Capacity Building and Training:**

- **Technical Guidelines and Workshops:** The program provides technical guidelines, training, and workshops to build the capacity of local communities in sustainable land management[1].
- **Sustainable Practices:** Training includes sustainable agricultural practices, agroforestry system development, and forest regeneration techniques[1].

5. Monitoring and Evaluation:

- **Regular Assessments:** The program includes regular monitoring and evaluation to assess the effectiveness of land use plans and make necessary adjustments based on community feedback[1].
- **Community Feedback Mechanisms:** Mechanisms are in place to continuously gather input from local communities to ensure the plans remain responsive to their needs[1].

These initiatives under the Forest Programme II demonstrate a comprehensive approach to inclusive land use planning, ensuring that the interests and concerns of local communities are integrated into sustainable forest and landscape management in Jambi Province. 🌿🏠🌻

[1]: [Forest Programme II \(REDD+\): Biodiversity Conservation and Integrated Watershed Development](#)

References

[1] [AHT GROUP GmbH](#)

[2]: [How Jambi Province Could Become the Role Model of Sustainable Landscapes in Indonesia](#) [3]: [Regional Development, Rural Transformation, and Land Use/Cover Changes in a Fast-Growing Oil Palm Region: The Case of Jambi Province, Indonesia](#) [1]: [Indonesia Sustainable Landscape Management Program](#)

References

[1] [Indonesia Sustainable Landscape Management Program - World Bank](#)

[2] [How Jambi province could become the role model of sustainable ...](#)

[3] [Regional Development, Rural Transformation, and Land Use/Cover ... - MDPI](#)

Appendix 7: Community Engagement and Planning Framework (CEPF), Including Free, Prior, and Informed Consent (FPIC)

Effective stakeholder engagement is a cornerstone of successful environmental and social management. This chapter outlines the plan for ongoing stakeholder consultation and participation and the mechanisms for addressing stakeholder concerns and grievances in alignment with IUCN standards and principles. By fostering continuous dialogue and active participation, we ensure that all stakeholders, including local communities, indigenous peoples, and other affected groups, are meaningfully involved in the decision-making processes. This approach not only enhances transparency and accountability but also builds trust and collaboration, ultimately leading to more sustainable and equitable outcomes. The mechanisms for addressing stakeholder concerns and grievances are designed to provide accessible, fair, and timely resolutions, ensuring that any issues are promptly and effectively managed. Through these comprehensive strategies, we aim to uphold the rights and interests of all stakeholders, promoting a harmonious and inclusive approach to conservation and development. The Project develops specific documents consisting of Community Engagement and Planning Framework (CEPF) and FPIC procedures to support this aspect of the ESMS.

6.4 Meaningful Consultation

6.4.1 Clear Communication and Training – Social Forestry

Strategy for engaging stakeholders will require clear communication and capacity building/training on the concept of social forestry. The measures include:

1. **Detailed Documentation:** Ensure that all management and work plans are clearly documented, with specific guidelines and objectives;
2. **Training Sessions:** Conduct regular training sessions for all stakeholders, including company personnel, to ensure they understand the goals and methods of social forestry; and
3. **Language and Cultural Sensitivity:** Use language and cultural references that are easily understood by all parties involved.
4. **Compliance with Provincial Guidelines: Governor Regulation (PERGUB) No. 11 of 2015:** This regulation provides guidelines for the preparation of SOPs in the Jambi Provincial Government, emphasizing the need for inclusivity and stakeholder engagement;
5. **Develop Collaborative Projects:** Engage in collaborative projects with local organizations and government bodies to ensure that the interests of all groups are represented in SOPs; and
6. **Empowerment Initiatives:** Support community-led conservation projects and alternative livelihoods to reduce dependency on illegal activities.

Furthermore, ensuring inclusiveness in training and capacity building design shall be achieved through the following measures:

1. **Participatory Development of Modules for Training and Capacity Building:**

1. **Workshops and Seminars:** Conduct workshops and seminars to educate stakeholders about the importance of inclusive SOPs and how to effectively participate in the process; and
2. **Capacity Building Programs:** Implement capacity-building programs to empower local communities and marginalized groups to voice their concerns and contribute to SOP development.
2. **Capacity Building Implementation:**
 1. **Training Programs:** Provide training for marginalized groups and women on social forestry practices to empower them to participate effectively; and
 2. **Leadership Development:** Encourage and support leadership development programs for women and marginalized community members.
3. **Monitoring and Evaluation:**
 1. **Feedback Mechanisms:** Establish feedback mechanisms to continuously gather input from stakeholders and make necessary adjustments to SOPs; and
 2. **Regular Reviews:** Conduct regular reviews of SOPs to ensure they remain relevant and inclusive.

6.4.2 Inclusive Strategies

To ensure that all groups within the community are included in the planning, implementation and monitoring. The following strategies shall be used:

1. **Stakeholder Engagement:**
 - a. **Community Consultations:** Conduct regular consultations with all relevant stakeholders, including marginalized groups and women, to gather diverse perspectives; and
 - b. **Focus Groups:** Organize focus groups specifically for marginalized communities and women to ensure their voices are heard and considered.
2. **Capacity Building:**
 - a. **Training Programs:** Provide training for marginalized groups and women on the identification and mapping process to empower them to participate effectively; and
 - b. **Leadership Development:** Encourage and support leadership development programs for women and marginalized community members.
3. **Transparent Processes:**
 - a. **Documentation and Accessibility:** Ensure that all processes and decisions are well-documented and accessible to the public, including translations into local languages if necessary; and
 - b. **Regular Updates:** Provide regular updates on the progress of the identification and mapping process to all stakeholders.
4. **Inclusive Committees:**
 - a. Form committees that include representatives from marginalized groups and women to oversee the identification and mapping process; and
 - b. Ensure these committees have decision-making power and are actively involved in all stages of the process.

5. Monitoring and Evaluation:

- a. Establish monitoring and evaluation mechanisms to ensure that the interests of marginalized groups and women are being adequately represented; and
- b. Use feedback from these groups to make necessary adjustments to the process.

6.4.3 Respecting the Potential Cultural Heritage

The proposed Project site (villages) is home for various indigenous people. The indigenous people in the Berbak Sembilang landscape of Jambi province have a deep connection to the forest, relying on its resources for their livelihoods and cultural practices. In the Berbak Sembilang landscape of Jambi province, the indigenous groups and their cultural heritage include:

1. The **Orang Rimba**: known for their nomadic lifestyle and deep knowledge of the forest, which they rely on for food, medicine, and materials for their traditional crafts. Their cultural heritage includes unique rituals, traditional hunting techniques, and a rich oral tradition of storytelling; and
2. The **Batin Sembilan** people: with a strong connection to the land, practicing traditional agriculture and maintaining sacred sites within the forest. Their cultural heritage includes traditional dances, music, and ceremonies that are integral to their community life

Based on the presence of these indigenous peoples, the strategy and measures to ensure respect to the cultural heritage shall include:

1. **Comprehensive Mapping and Surveys:**
 - a. **Cultural Resource Mapping:** Conduct detailed mapping and surveys to identify cultural resources, including burial sites, before issuing social forestry permits; and
 - b. **Community Involvement:** Engage local communities, especially indigenous groups, in the mapping process to ensure all cultural sites are accurately identified.
2. **Free, Prior, and Informed Consent (FPIC):**
 - a. **FPIC Guidelines:** Follow the guidelines for Free, Prior, and Informed Consent to ensure that all affected groups are fully informed and can participate in decision-making processes; and
 - b. **Transparent Communication:** Ensure that all information regarding social forestry projects is communicated clearly and transparently to all stakeholders.
3. **Stakeholder Engagement**
 - a. **Regular Consultations:** Conduct regular consultations with all relevant stakeholders, including marginalized groups and women, to gather diverse perspectives and ensure their voices are heard; and
 - b. **Focus Groups:** Organize focus groups specifically for marginalized communities and women to discuss their unique needs and concerns, ensuring these are integrated into project planning and implementation.

The Project shall develop a Chance Find Procedures to complement the Environmental and Social Management System (ESMS) Standard on Cultural Heritage. These procedures are designed to manage the discovery of previously unknown cultural heritage resources,

particularly during project construction or operation. When such finds occur, the procedures require immediate cessation of work in the area, delineation and securing of the site to prevent damage, and notification of relevant authorities and experts for further assessment and management. This approach ensures that any unexpected discoveries are handled responsibly, preserving cultural heritage and complying with international standards.

6.4.4 Development of Village Action Plan

The Village Action Plan may serve as a strategy to engage stakeholders and to gain consent on Project's activities. The main strategy is participatory planning and inclusive decision-making processes that include the following measures:

1. **Stakeholder Consultations:** Conduct regular consultations with local communities, indigenous groups, and other stakeholders to ensure their interests and concerns are considered;
2. **Participatory Planning:** Involve communities in the planning and implementation of forest rehabilitation, conservation, and anti-poaching initiatives; and
3. **Capacity Building:** Provide training for local communities on their rights and responsibilities, as well as on sustainable practices and wildlife protection.

6.5 Free and Prior Informed Consent

Obtaining consent prior to implementing social forestry programs (or any Project activities) is essential to ensure the active participation and support of local communities. These programs often impact the livelihoods, cultural practices, and land rights of indigenous peoples and residents. By seeking their consent, the Project can foster a sense of ownership and responsibility among community members, leading to more effective and sustainable forest management. Additionally, respecting their autonomy and rights helps build trust, reduces conflicts, and aligns with international human rights standards, ultimately contributing to the success and longevity of social forestry initiatives.

1. **Free, Prior, and Informed Consent (FPIC):**
 - a. **FPIC Guidelines:** Follow the guidelines for Free, Prior, and Informed Consent to ensure that all affected groups, including marginalized communities and women, are fully informed and could participate in decision-making processes; and
 - b. **Transparent Communication:** Ensure that all information regarding social forestry projects is communicated clearly and transparently to all stakeholders.
2. **Stakeholder Engagement:**
 - a. **Community Consultations:** Conduct regular consultations with all relevant stakeholders, including marginalized groups and women, to gather diverse perspectives and ensure their voices are heard; and
 - b. **Focus Groups:** Organize focus groups specifically for marginalized communities and women to discuss their unique needs and concerns, ensuring these are integrated into project planning and implementation.

The IUCN’s guidelines for Free, Prior, and Informed Consent (FPIC)⁴ involve several key steps to ensure that the rights and interests of indigenous peoples and local communities are respected. Here are the main steps:

1. **Preparation and Planning:** Identify the communities affected by the project and understand their social, cultural, and political contexts. This step involves mapping stakeholders and establishing a clear communication strategy.
2. **Information Disclosure:** Provide comprehensive and accessible information about the project, including its purpose, scope, duration, and potential impacts. This information should be shared in a culturally appropriate manner and in the local language.
3. **Consultation and Participation:** Engage in meaningful dialogue with the affected communities. This involves organizing meetings, workshops, and other participatory activities to gather feedback and address concerns. The process should be inclusive, ensuring that all community members, including women and marginalized groups, have a voice.
4. **Negotiation and Agreement:** Work towards reaching a mutually acceptable agreement. This step involves negotiating terms and conditions, addressing any grievances, and ensuring that the consent is given freely, without coercion or manipulation.
5. **Documentation and Verification:** Document the consent process and the agreements reached. This includes recording meetings, decisions, and any commitments made by the project proponents. Verification by an independent third party may also be necessary to ensure transparency and accountability.
6. **Implementation and Monitoring:** Implement the agreed-upon measures and continuously monitor the project’s impact on the communities. Regular follow-ups and evaluations are essential to ensure that the terms of the agreement are being honoured and to address any emerging issues.

These steps are designed to uphold the principles of FPIC, ensuring that indigenous peoples and local communities have a genuine opportunity to influence decisions that affect their lives and lands. The following tables list consultation process during the PPG stage.

Date	Stakeholders	Affected People ?	Topics
16 Sept 2024	Head of Berbak Sembilang National Park	Yes. Recipient of benefit from activities (Stakeholders with strong interest and Low influence)	Proposal socialization

⁴ Source:

https://www.conservation.org/docs/default-source/publication-pdfs/ci_fpic-guidelines-english.pdf?sfvrsn=16b53100_2

21 Sept 2024	Dusun Tapak Rimau <ul style="list-style-type: none"> • RT (Pak Muslim) • Village Elder / Community leader) • Farmer Group 	Yes. Planned beneficiaries (Stakeholders with strong interest and Low influence)	Scoping visit
21 Sept 2024	Bathin IX <ul style="list-style-type: none"> • RT • Kepala Dusun • Suku Anak Dalam 	Yes, planned beneficiaries (Stakeholders with strong interest and Low influence)	Scoping visit
22 Sept 2024	Air Hitam Laut <ul style="list-style-type: none"> • Youth organizer/leader • National Park employee; • Community-tourism group; • Village apparatus (Village Head and Secretary) 	Yes, they may receive the benefit from project implementation (Stakeholder with low interest and strong influence)	Scoping Visit
24 Sept 2024	<ul style="list-style-type: none"> • WARSI • WMM 	No. They will be project implementors	Concept Note clarifications and update on data collection
25 Sept 2024	<ul style="list-style-type: none"> • BKSDA Jambi • Provincial Forestry Agency 	No, but they will receive benefit from project implementation	Meeting with IUCN

Stakeholders identified during data collection September to October 2024

VILLAGE	Companies
AIR HITAM LAUT	PT. Gemilang Jambi Permai (Akak)
	PT. Tanah Mitra Indo Sejahtera (Akak)
REMAU BAKU TUO	PT. Gemilang Jambi Permai (Akak)
SUNGAI CEMARA	PT. Tanah Mitra Indo Sejahtera (Akak)

MUARA MERANG	PT. Global Alam Lestari (Restorasi Ekosistem)
	PT. Rimba Hutani Mas (PBPH HTI)
	PT. WLMS
	Sawit Group Indofood
MUARA MEDAK	PT. Global Alam Lestari (Restorasi Ekosistem)
	PT. Rimba Hutani Mas (PBPH HTI)
	PT. Tripupa Jaya (PBPH HTI)
	Pertamina
SOGO	PT. BBS (Akiang group)
SUNGAI AUR	PT. BBS (Akiang group)
	PT. Jambi Batanghari plantation (Akiang Group)
SEPONJEN	PT. BBS (Akiang group)
	PT. WSI (Akiang Group)
GEDONG KARYA	PT. BBS (Akiang group)
	PT. Jambi Batanghari plantation (Akiang Group)
JEBUS	PT. Jambi Batanghari plantation (Akiang Group)

RESIDENTS OF VILLAGES IN THE INTERVENTION AREAS (AS RESPONDENTS CONSULTED DURING PPG)

VILLAGES	# OF RESIDENTS CONSULTED
AIR HITAM LAUT	33
REMAU BAKU TUO	11
SUNGAI CEMARA	7
MUARA MERANG	66
MUARA MEDAK	108
SOGO	17
SUNGAI AUR	28
SEPONJEN	26
GEDONG KARYA	32
JEBUS	12
TOTAL	340

VILLAGE	Academic Institutions
AIR HITAM LAUT	PENELITIAN UNJA
REMAU BAKU TUO	Tidak ada / Tidak Tahu
SUNGAI CEMARA	PENELITIAN UNJA
MUARA MERANG	Tidak ada / Tidak Tahu
MUARA MEDAK	Tidak ada / Tidak Tahu
SOGO	Tidak ada / Tidak Tahu
SUNGAI AUR	IPB (Penelitian Mahasiswa)
	Universitas Jambi
SEPONJEN	IPB
	Universitas Jambi
GEDONG KARYA	IPB
	Universitas Jambi
JEBUS	IPB
	Universitas Jambi
	Universitas Lampung

Appendix 8: Environmental Baseline

The Environmental and Social Baseline provides an overview of the existing conditions within the project area, serving as a critical foundation for assessing potential impacts. This baseline will primarily utilize secondary data sources and spatial analysis to gather and interpret information on the physical, biological, socio-economic, and cultural features of the environment. By leveraging existing data and advanced spatial tools, this approach ensures a thorough and efficient analysis, highlighting key trends and patterns that inform the ESIA. Establishing a robust baseline is essential for identifying potential changes and impacts, guiding mitigation strategies, and supporting informed decision-making throughout the project lifecycle.

Description of the environmental context

The environmental context refers to the various natural, social, and economic factors that influence and are influenced by the environment. This includes the state of ecosystems, biodiversity, and natural resources, as well as the human activities and policies that impact them. Understanding the environmental context is crucial for effective conservation and sustainable development efforts, as it helps identify the key drivers of environmental change and the potential impacts on both nature and human well-being. Key components of the environmental context include:

1. Ecosystem Health and Biodiversity:

- Assessing the condition of ecosystems and the diversity of species they support.
- Identifying critical habitats and species at risk of extinction.

2. Human Activities and Impacts:

- Evaluating the effects of agriculture, industry, urbanization, and other human activities on the environment.
- Understanding how land use changes, pollution, and resource extraction contribute to environmental degradation.

2. Policy and Governance:

- Analyzing the role of environmental policies, regulations, and governance structures in managing natural resources.
- Examining the effectiveness of conservation strategies and the involvement of local communities in decision-making processes.

By considering these factors, the Project aims to develop comprehensive strategies that address the root causes of environmental issues and promote sustainable practices that benefit both nature and people.

Baseline data collection methods

Baseline data collection relies on secondary data, spatial analysis, and primary data to assess communities' perception on environmental and social conditions. A desktop study involves a comprehensive review of existing literature, including official publications and peer-reviewed journals, to gather relevant information about the environmental and social context of the Project area. This method allows compilation and synthesis of data from various credible sources, providing a robust foundation for the ESIA. By analyzing previous studies, reports, and scientific articles, the desktop study helps identify key environmental features, historical land use patterns, and socio-economic conditions. This approach not only saves time and resources but also ensures that the assessment is grounded in well-documented and validated information.

Spatial analysis, on the other hand, utilizes land cover data obtained from the Ministry of Environment and Forestry to map and analyze the current state of the landscape. This data is crucial for understanding the distribution and extent of different habitat types, such as peat swamp forests, mangroves, and freshwater swamps within the project area. By employing Geographic Information Systems (GIS) and remote sensing technologies, spatial analysis can delineate forest status and designations, highlighting areas of conservation importance, protected zones, and regions susceptible to degradation. This detailed spatial information supports the identification of potential impacts and the development of targeted mitigation strategies, ensuring that the ESIA addresses both environmental and social dimensions effectively.

Assessing communities' perceptions through questionnaires and in-depth interviews is a vital component of the ESIA process. Questionnaires allow for the collection of quantitative data from a broad segment of the community, providing insights into general attitudes, concerns, and expectations regarding the project. These structured surveys can be distributed widely, ensuring a diverse range of responses. In-depth interviews, on the other hand, offer a qualitative approach, enabling a deeper understanding of individual perspectives and experiences. By engaging community members in one-on-one conversations, researchers can explore nuanced issues, uncover underlying concerns, and gather detailed feedback that might not emerge from questionnaires alone. Combining these methods ensures a comprehensive assessment of community perceptions, fostering more informed and inclusive decision-making.

Analysis of physical and biological features

6.5.1 Biodiversity-Sumatran Tiger (*Panthera tigris sumatrae*)

The Sumatran tiger (*Panthera tigris sumatrae*) is the last remaining tiger subspecies in Indonesia, with an estimated population of around 400-500 adults. These tigers are critically endangered due to habitat loss, poaching, and human-wildlife conflict. The Berbak Sembilang National Park, located in eastern Sumatra, is a crucial habitat for these tigers. This unique landscape comprises mixed peat and freshwater swamp forests, providing an essential refuge for the Sumatran tiger and other wildlife. Conservation efforts in this area are vital for the survival of the species, as the park forms part of the priority Berbak-Sembilang Tiger Conservation Landscape. Figure 3-2 shows the distribution of Sumatran tiger (presence absence) in Berbak Sembilang landscape based on Sumatran-Wide Tiger Survey (SWTS) in

2022. This figure shows that Sumatran tigers are present in 12 out of 25 survey grids (48% of the surveyed areas).

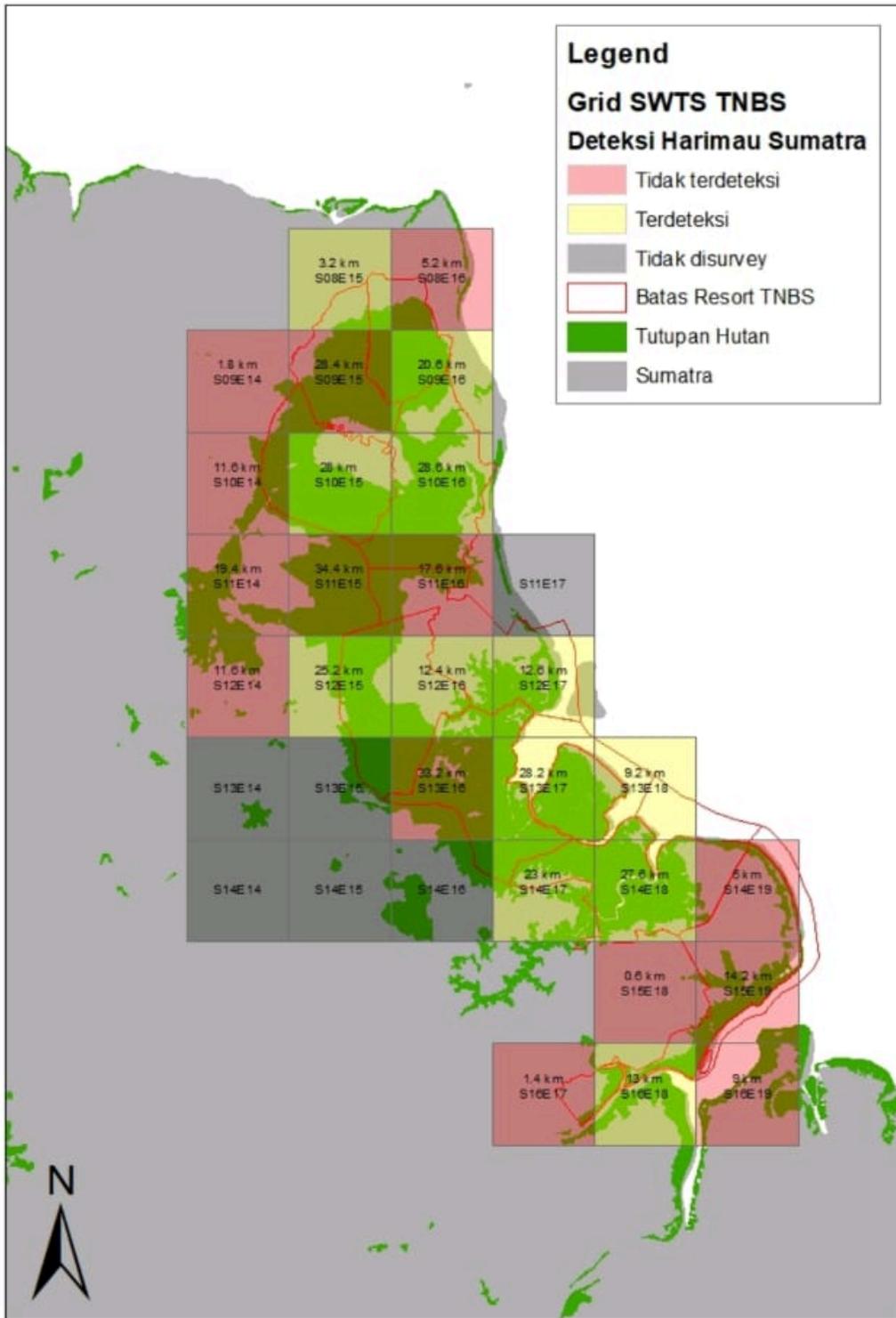


Figure 3-2 Tiger occupancy throughout Berbak Sembilang Landscape. Yellow boxes indicate tiger presence (SWTS 2022).

6.5.2 Berbak Sembilang National Park

This park is renowned for its diverse habitats, including extensive peat swamp forests, freshwater swamp forests, and the largest mangrove area in the Indo-Malayan region. Table 3-1 presents the data on habitat types within Berbak Sembilang National Park.

Table 3-1 main habitats within Berbak Sembilang National Park.

Habitat Type	Size (hectares)	Percentage of Total Area
Peat Swamp Forest	115,000	38.33%
Freshwater Swamp Forest	60,000	20.00%
Mangrove Forest	77,500	25.83%
Lowland Tropical Forest	20,000	6.67%
Mudflats and Waterbodies	20,000	6.67%
Herbaceous Swamps	10,000	3.33%
Total Area	302,500	100%

The peatlands in this Park (115,000 ha) are particularly significant, with some areas having peat depths exceeding 15 meters, which play a crucial role in carbon sequestration; regulation of hydrology by absorbing and releasing water; and reducing flood and drought impacts. However, these peatlands have been heavily impacted by illegal logging, plantation expansion, and frequent fires, leading to significant environmental degradation.

Mangrove forests in Berbak Sembilang National Park, covering 77,500 hectares, are vital nurseries for marine species and protect shorelines from erosion and storm surges. They play a significant role in carbon sequestration and support diverse wildlife. Additionally, mangroves filter pollutants, maintaining water quality and protecting coral reefs and seagrass beds. The mangrove forests in this Park provide critical breeding and nursery grounds for fish and shrimp, and are vital for the survival of numerous resident and migratory waterbirds. Table 3-2 lists species of Berbak Sembilang National Park.

Table 3-2 List of species in Berbak Sembilang National Park.

Endangered Species	Scientific Name	Estimated Population	IUCN Status
Sumatran Tiger	<i>Panthera tigris sumatrae</i>	Approximately 24 individuals	Critically Endangered (CR)
Sumatran Elephant	<i>Elephas maximus sumatranus</i>	Around 100 individuals	Endangered (EN)
False Gharial	<i>Tomistoma schlegelii</i>	Roughly 2,400 individuals	Vulnerable (VU)
Malayan Tapir	<i>Tapirus indicus</i>	Not precisely known, but endangered	Endangered (EN)
Storm's Stork	<i>Ciconia stormi</i>	Fewer than 500 individuals globally	Endangered (EN)
White-winged Wood Duck	<i>Asarcornis scutulata</i>	Critically endangered, small population in the park	Endangered (EN)

Table 3-2 shows that Berbak Sembilang National Park is a critical sanctuary for several endangered species, playing a vital role in their conservation. Among its most notable inhabitants are the Sumatran tiger and the Sumatran elephant. These majestic creatures rely on the park's diverse habitats for survival, including its extensive peat swamp forests and freshwater swamps. Additionally, the park is home to the false gharial, a unique crocodilian species. These species, along with others like the Malayan tapir and various endangered birds, highlight the park's importance as a biodiversity hotspot and underscore the need for ongoing conservation efforts to protect these vulnerable populations from threats such as habitat loss and poaching.

Despite its ecological importance, Berbak Sembilang National Park faces ongoing threats from habitat fragmentation, illegal activities, and climate change impacts, which necessitate concerted conservation efforts to preserve its unique biodiversity and ecological functions.

6.5.3 Grand Forest Park (*Taman Hutan Raya*) Datuk Rangkayo Hitam

Grand Forest Park Datuk Rangkayo Hitam, located in the Project area, is a significant conservation area named after a historical figure known for his bravery and leadership. The park spans a diverse landscape that includes lowland tropical forests, peat swamps, and freshwater ecosystems. These habitats support a wide range of flora and fauna, making the park a vital area for biodiversity conservation. The park is particularly important for protecting endangered species such as the Sumatran tiger and various bird species.

In addition to its ecological value, Grand Forest Park Datuk Rangkayo Hitam holds cultural and historical significance. It is named after Datuk Rangkayo Hitam, a revered leader in Jambi's history, known for his resistance against external forces and his efforts to maintain the sovereignty of his kingdom. The park serves not only as a natural sanctuary but also as a place of cultural heritage, attracting visitors who come to learn about its rich history and enjoy its natural beauty. This Park contain habitat types with ecological significance such as peatland, swamp forest, mangrove, and lowland tropical forest (Table 3-3).

Table 3-3 Habitat types within Grand Forest Park Datuk Rangkayo Hitam.

Habitat Type	Size (hectares)	Percentage of Total Area
Peat Swamp Forest	7,984.78	53.23%
Lowland Tropical Forest	3,500	23.33%
Freshwater Swamp Forest	2,000	13.33%
Mangrove Forest	1,500	10.00%
Total Area	14,984.78	100%

Grand Forest Park Datuk Rangkayo Hitam in Jambi is home to a diverse array of fauna. Here are some of the notable species found in the park:

1. Sumatran Tiger (*Panthera tigris sumatrae*)
2. Sumatran Elephant (*Elephas maximus sumatranus*)
3. Malayan Tapir (*Tapirus indicus*)
4. False Gharial (*Tomistoma schlegelii*)
5. Storm's Stork (*Ciconia stormi*)
6. White-winged Wood Duck (*Asarcornis scutulata*)
7. Wild Pig (*Sus scrofa*)
8. Long-tailed Macaque (*Macaca fascicularis*)
9. Sambar Deer (*Rusa unicolor*)
10. Cobra (*Naja* spp.)
11. Murai Bird (*Copsychus malabaricus*)
12. Balam Bird (*Geopelia striata*)

These species highlight the park's rich biodiversity and the importance of its conservation efforts to protect these animals and their habitats.

Analysis on Existing Conservation Activities in the Landscape

The Berbak Sembilang landscape in Indonesia is known for its rich biodiversity and efforts to restore and conserve its unique ecosystems. Some activities in the landscape include:

1. **Restoration Sites:** Restoration efforts in Berbak Sembilang focus on rehabilitating degraded peatlands and mangrove forests. These sites are crucial for maintaining biodiversity, preventing fires, and supporting local livelihoods. Restoration activities often include replanting native species and monitoring ecological recovery.
2. **Canal Blocking:** Canal blocking is a significant method used to restore peatland hydrology. By blocking canals, water levels are raised, which helps to rewet the peatlands and reduce the risk of fires. This technique is essential for maintaining the natural water balance and promoting the growth of native vegetation.
3. **Social Forestry Areas:** Social forestry programs in Berbak Sembilang aim to involve local communities in sustainable forest management. These areas are managed collectively by communities, providing them with legal access to forest resources. Social forestry helps in reducing deforestation, improving livelihoods, and fostering a sense of stewardship among local residents.

These efforts are part of broader conservation strategies to protect the unique habitats and species in the Berbak Sembilang landscape. The following table summarizes the aforementioned activities.

Interventions	Activity	Location	Area Size (ha)
Restoration Sites	Replanting native species	Peatlands	500
	Monitoring ecological recovery	Mangrove forests	300
Canal Blocking	Blocking canals to raise water levels	Peatlands	200
	Rewetting peatlands	Peatlands	200
Social Forestry Areas	Sustainable forest management	Various forest areas	1000
	Community involvement	Various forest areas	1000

Appendix 9: Serious Incident Reporting

Effective management of serious incidents is crucial for maintaining the integrity and success of conservation projects. This chapter outlines the procedures for reporting and responding to serious incidents, in accordance with IUCN standards and principles. It includes sub-chapters on reporting accidents, wildlife and forest crimes, and ensuring confidentiality in monitoring and incident response.

Reports on Accidents

Accidents can occur in various forms, including injuries to personnel, damage to property, or environmental harm. Prompt and accurate reporting of accidents is essential for mitigating their impact and preventing future occurrences. The process involves:

1. **Immediate Notification:** Any accident must be reported to the project manager and relevant authorities within 24 hours. This initial report should include basic details such as the time, location, and nature of the accident;
2. **Detailed Reporting:** A comprehensive accident report should be submitted within 48 hours, detailing the circumstances, causes, and any immediate actions taken. This report should also include recommendations for preventing similar incidents in the future; and
3. **Follow-Up Actions:** Based on the accident report, a follow-up plan should be developed and implemented to address any identified issues and ensure the safety of all stakeholders.

Reporting Mechanism for Domestic Violence

The scope of the Environmental and Social Management Plan (ESMP) is limited to project-related activities and their direct and indirect social impacts. While domestic violence (DV) and sexual exploitation, abuse, and harassment (SEAH) may not be caused by project activities, there is a potential risk of SEAH through personnel recruited, trained, or associated with the project, such as law enforcement officers, rangers, or project staff. Reports of such incidents can be made through the Project Grievance Redress Mechanism (GRM) to ensure appropriate referral and response.

To mitigate SEAH risks and ensure compliance with IUCN ESMS safeguards, the following measures will be implemented:

- **Zero-Tolerance SEAH Policy:** A strict policy prohibiting SEAH, applicable to all project staff, law enforcement personnel, and partners.
- **Code of Conduct:** All individuals engaged in the project, including rangers, law enforcement officers, and third-party contractors, must sign and adhere to a SEAH Code of Conduct.

- **Mandatory SEAH Training:** All personnel recruited or trained through the project will undergo SEAH prevention training to recognize, prevent, and respond to incidents.
- **Confidential Reporting Mechanism:** The project will integrate SEAH case reporting into the existing Grievance Redress Mechanism (GRM), ensuring that reports are handled confidentially and securely.
- **Independent Oversight:** Regular monitoring to ensure compliance with SEAH prevention measures.
- **Collaboration with Authorities:** Any SEAH incidents will be escalated to legal authorities, following Indonesia's Law No. 23 of 2004 on the Elimination of Domestic Violence and other relevant legal frameworks.
- **Support for Survivors:** If SEAH incidents occur, affected individuals will be referred to local support services, NGOs, and legal aid organizations for assistance.

While domestic violence is a broader societal issue, the project will ensure that:

- Trained personnel can guide victims to appropriate legal and social services.
- Awareness campaigns will be conducted to inform communities about available DV support systems.
- No project activities contribute to DV risks, and any reported concerns are addressed through legal referral mechanisms.

Reports of domestic violence can also be submitted through the Project GRM, which will ensure confidentiality and referral to appropriate services.

Steps for Reporting Domestic Violence

To align with national regulations, the following **domestic violence reporting procedures** will be integrated into serious incident reporting:

1. **Immediate Reporting:** Victims of domestic violence can report incidents directly to the police at the location where the violence occurred or where the victim is currently residing. This immediate reporting is crucial for ensuring the safety of the victim and initiating legal proceedings against the perpetrator.
2. **Medical Examination:** Following the report, victims may be required to undergo a medical examination to document any physical injuries. This medical report serves as critical evidence in legal proceedings.
3. **Protection Orders:** Victims can request protection orders from the court. These orders can provide immediate and long-term protection, including restraining orders against the perpetrator.

4. **Legal Aid and Support Services:** Victims have access to legal aid and support services provided by various non-governmental organizations (NGOs) and government agencies. These services include counseling, legal representation, and temporary shelter.

Reports on wildlife and forest crimes

Wildlife and forest crimes, such as poaching, illegal logging, and trafficking of endangered species, pose significant threats to biodiversity and conservation efforts. Reporting these crimes involves:

1. **Detection and Documentation:** Any suspected wildlife or forest crime should be promptly detected and documented. This includes gathering evidence such as photographs, witness statements, and physical samples;
2. **Reporting to Authorities:** The documented crime should be reported to the relevant law enforcement agencies and conservation authorities. This report should include all collected evidence and a detailed description of the incident; and
3. **Collaboration and Support:** Collaborate with local communities, NGOs, and government agencies to support investigations and enforcement actions. Providing training and resources to local stakeholders can enhance their capacity to detect and report crimes.

Monitoring and Incident Response Confidentiality⁵

Maintaining confidentiality in monitoring and incident response is critical to protect the privacy and safety of informants and affected individuals. Key measures include:

1. **Data Protection:** Implement robust data protection practices to safeguard sensitive information. This includes encrypting data, restricting access to authorized personnel, and regularly updating security protocols.
2. **Confidential Reporting Channels:** Establish confidential reporting channels that allow stakeholders to report incidents without fear of retaliation. These channels should be accessible, secure, and managed by trained personnel.
3. **Regular Audits:** Conduct regular audits of data protection practices to identify and address potential vulnerabilities. Use audit findings to continuously improve data protection measures³.
4. **Incident Response Plan:** Develop and implement an incident response plan to address potential data breaches promptly. Ensure that the plan includes procedures for notifying affected informants and mitigating the impact of a breach.

⁵ Sources: Personal Data Protection Law No. 27 of 2022; Electronic Information and Transactions Law No. 11 of 2008; Guide to Protecting the Confidentiality of Personally Identifiable Information (PII); NIST Guide to Protecting PII; Practical Tips for Protecting Confidential Information; IUCN Environmental and Social Management System; Program-level Grievance & Feedback Mechanism and Serious Incident Reporting.

By implementing these strategies and adhering to relevant regulations, you can effectively mitigate the risk of confidentiality breaches for informants providing information on illegal activities. This approach ensures the protection of informants' identities and fosters trust in the reporting process.

Basic structure for a serious incident report:

1. Incident Details

- **Date and Time of Incident:** [Insert Date and Time]
- **Location of Incident:** [Insert Location]
- **Type of Incident:** [Describe the nature of the incident]

2. Description of Incident

- **Detailed Account:** Provide a step-by-step description of what happened, including any relevant background information.
- **Immediate Actions Taken:** Describe the immediate response to the incident, including any emergency measures.

3. Impact Assessment

- **Environmental Impact:** Detail any environmental damage or risks posed by the incident.
- **Social Impact:** Describe any effects on local communities, including health and safety concerns.

4. Root Cause Analysis

- **Analysis of Causes:** Identify the underlying causes of the incident, including any systemic issues.
- **Contributing Factors:** List any contributing factors that led to the incident.

5. Corrective Actions

- **Immediate Corrective Actions:** Describe the actions taken to mitigate the impact of the incident.
- **Long-term Preventive Measures:** Outline steps to prevent similar incidents in the future.

6. Reporting and Communication

- **Internal Reporting:** Detail how the incident was reported within the organization.
- **External Reporting:** Describe any communication with external stakeholders, including regulatory bodies.

7. Follow-up and Monitoring

- **Follow-up Actions:** List any follow-up actions required to address the incident.
- **Monitoring Plan:** Describe the plan for monitoring the effectiveness of corrective actions.

8. Attachments

- **Supporting Documents:** Attach any relevant documents, such as photographs, witness statements, or technical reports.