

ཐུག་ཆེ་སྟག་མ་དངུལ་

Bhutan for Life

མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེའི་འཛིན་སྐྱོང་འཆར་གཞི།

Environmental and Social Management Plan for

ཇོ་མོ་གཙང་ཁ་རི་དྲགས་སྤངས་སྐྱོབ་ཡིག་ཚང་ ༢༠༢༦

Jomotshangkha Wildlife Sanctuary for 2026

གོ་དོན་ལྟབ་བཅུད་དོན།

འབྲུག་ཆེ་སྟག་མ་དངུལ་འདི་མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེའི་འོས་འབབ་ཅན་གྱི་ལས་འགུལ་གྱི་དབྱེ་ཁག་ (Category B) ནང་ལུ་ཚུད་དེ་ཡོད་པ་ཡིན།
དེ་ཡང་ལས་འགུལ་འདི་ལས་བརྟེན་ཏེ་སྤངས་སྐྱོབ་ས་ཁོངས་ནང་སྤོང་མིའི་མི་སེར་དང་ ཡང་ན་ སྤངས་སྐྱོབ་ས་ཁོངས་ཀྱི་མཐའ་སྐྱོར་ཏེ་འཛོལ་སྤངས་སྐྱོབ་ས་ཁོངས་ལུ་བརྟེན་སྤོང་མིའི་མི་སེར་
ཡང་ན་ གཤམ་ཅན་གྱི་མཐའ་སྐྱོར་གནས་སྤངས་ཀྱི་ས་ཁོངས་ཚུ་ལུ་གཞོན་པ་འབྱུང་ནིའི་ཉེན་ཁ་ཡོད་པ་ད་ གཤམ་སྤོང་གཞོན་པ་འབྱུང་པ་ཅིན་

གཞོན་ཉེན་ཚུ་དམིགས་གསལ་ས་གནས་ནང་རྒྱུ་མ་ཅིག་འབྱུང་ནི་དང་ གཞོན་ཉེན་མར་ཕབ་རྒྱབ་ནི་དང་ཕ་མེད་ཡང་གཏང་ཚུགས་པ་ཡིན།
དེ་འབད་ལས་ འབྲུག་ཆེ་སྟག་(BFL) མ་དངུལ་ཐོག་ལུ་ རྒྱབ་སྐྱོར་འབད་ཡོད་པའི་ལས་འགུལ་དང་ལས་སྒྲུ་ཚུ་ མཐའ་ལོའ་གནས་སྤངས་དང་
མི་སྡེ་གཉིས་ལུ་ཡུན་བརྟན་གྱི་ཕན་པ་ཡོད་པ་བཟོ་བ་གི་མ་ཚད་ འབྲུག་ཆེ་སྟག་མ་དངུལ་གྱི་སྤོང་བྱས་ལམ་སྤོང་དང་འཁྲུལ་ཐབས་ལུ་

མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་དགོང་ད་ མི་དམངས་གྲོས་བསྐྱུན་དང་ དུས་དང་དུས་སུ་མི་དམངས་ལུ་གསལ་བ་བཤད་ནི་འདི་དགོང་ཡིན།
ཇོ་མོ་གཙང་ཁ་རི་དྲགས་སྤངས་སྐྱོབ་ས་ཁོངས་ཀྱི་རང་བཞིན་གནས་སྤངས་དང་མི་སྡེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་གླིང་ག་དང་སྟག་ཆགས་རྒྱུན་ལམ་ཚུ་ནང་ལས་སྒྲུ་ཚུ་འབད་བའི་སྐབ་
ས་ ཐབས་ལམ་དང་བཟང་སྤྱོད་ཚུ་གསལ་སྤོང་འབད་ལུ་ཡིན་པ་ད་ འདི་ཡང་ལས་སྒྲུའི་གདམ་སེལ་ལམ་ལུ་གསལ་དང་འཁྲུལ་ཏེ་ཡིན། གདམ་སེལ་འབད་ཡོད་པའི་ལས་སྒྲུ་གི་ནང་ལས་
མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེ་ལུ་གཞོན་ཉེན་ཡོད་པའི་ལས་སྒྲུ་ཚུ་གི་དོན་ལུ་ མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེ་འཛིན་སྐྱོང་འཆར་གཞི་བཟོ་དགོ།
འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ ལས་སྒྲུ་འགོ་མ་བཟུགས་པའི་ཏེ་མ་གཞི་བཟུགས་འབད་བའི་སྐབས་དང་མཇུག་བསྒྲུལ་ད་ལུ་

མཐའ་ལོའ་གནས་སྤངས་འཛིན་སྐྱོང་དང་གཞོན་ཉེན་མར་ཕབ་ཀྱི་ཐབས་ལམ་ཚུ་བཟུགས་དགོང་ཡིན།

དེ་འབད་ལས་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ ལས་སྒྲུ། མི་སྡེ། ལཱ་འགན། བད་སྤྱོད་དང་སྟན་ལུ།
དེ་ལས་ལྟ་རྟོག་ལམ་ལུ་གསལ་ཚུ་གི་སྐོར་ལས་འགྲེལ་བཤད་ཁ་གསལ་ཚུད་དགོང་ཡིན། འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ལུ་
གྲལ་གཏོགས་འབད་དགོ་པའི་ཁེ་གུད་ཡོད་མི་ཚུ་གི་ཉེན་བཤད་ཚུ་ཚུད་དགོ་པའི་ཁར་ ཁེ་གུད་ཡོད་པའི་མི་ཚུ་གི་དོན་ལུ་གྲལ་གཏོགས་འཆར་གཞི་དགོ།
གྲལ་གཏོགས་འཆར་གཞི་འདི་ནང་ ཁེ་གུད་ཡོད་མི་ངོས་འཛིན་འབད་ནི་དང་གྲལ་གཏོགས་འབད་ནིའི་ལམ་ལུ་གསལ་

དེ་ལས་གྲལ་གཏོགས་ཀྱི་དུས་ཚོད་དང་བཅའ་སྤྱི་གཞི་ཚུད་དགོ་པ་ཡིན། གླིང་ག་དང་སྟག་ཆགས་རྒྱུན་ལམ་ཡིན་ཚུ་གི་མཆར་གཞི་ལས་སྒྲུ་དང་འཁྲུལ་ཏེ་ དན་ཐོ་དང་སྟན་ལུ།
བསྐྱར་ཞིག་ ཅིས་དཔྱད་འབད་ནི། དེ་ལས་ མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ལོ་བསྟར་བཞིན་དུ་དུས་མཐུན་བཟོ་དགོང་ཡིན།

ཇོ་མོ་གཙང་ཁ་རི་དྲགས་སྤངས་སྐྱོབ་ས་ཁོངས་ཀྱི་དོན་ལུ་སྤྱི་ལོ་ ༢༠༢༦ ནང་མཐའ་ལོའ་གནས་སྤངས་དང་མི་སྡེ་འཛིན་སྐྱོང་འཆར་གཞི་དགོང་ཡོད་པའི་ལས་སྒྲུ་ཚུ་ཡང་།

- ༡)ས་དམའ་བའི་རྩ་ཐང་འཛིན་སྐྱོང་།
- ༢) རྒྱ་དོང་ཉམས་བཅོས་ལཱ།
- ༣) བསྐྱིས་ཐང་ས་རུད་འབྲུག་ས་ས་ཁོངས་ནང་ སྤྱི་ལུ་ཕན་བཟོ་ལས་ཀྱི་ལཱ་འབད་ནི།
- ༤) ལུ་ཅི་ལུ་ ཤིང་རྩ་ལུ་བཟུགས་ནི་ལཱ།

Executive Summary

BFL has been categorized as a Category B project, as the potential adverse environmental and social impacts on population within the Protected Areas or those living around who depend on the PA for their livelihoods or environmentally important areas are site-specific, reversible and can be readily mitigated.

Therefore, to ensure that all BFL funded projects and programs are environmentally and socially sustainable as well as in line with BFL's policies and guidelines, an Environmental and Social Management Plan (ESMP) involving stakeholder participation and timely public disclosure is required.

An Environmental and Social Management Plan (ESMP) for Jomotshangkha Wildlife Sanctuary, describes mitigation measures/good practices at activity level which are required as per the screening protocol. All the screened activities which have potential risks to environment and social management have to prepare ESMP which include environment management and mitigation plans during pre-activity, activity implementation and closing phases. Hence, it contains description of the detailed actions including communities, roles, communication and reporting and monitoring processes required as part of the implementation.

In order to ensure that the issues of all stakeholders are taken into account, it includes a stakeholder engagement plan. The plan includes identification of stakeholders, method of engagement, timing and logistics. It is a requirement for all parks and biological corridors to keep record, reporting, review, auditing and update ESMP yearly as per the planned activities.

The activities that required ESMPs for the year 2026 under Jomotshangkha Wildlife Sanctuary are as follows:

1. Low-land grassland management
2. Waterhole Maintenance
3. Bio-engineering work at Samrang Landslide area
4. Plantation at Lauri (5 Ha)

1. Introduction

(A) Project Background

The Bhutan for Life (BFL) project aims to ensure a robust network of protected areas and biological corridors that secures human well-being, biodiversity conservation, and increases climate resilience in Bhutan. The project provides a 14-year financial bridge that allows for immediate improvement in the management of Bhutan's protected areas for climate resilience, and the prompt delivery of mitigation, adaptation, and biodiversity gains, while the country gradually ratchets up its own financing resources.

BFL seeks to achieve the following objectives:

- Help Bhutan remain carbon neutral by increasing forest and vegetative cover within the Protected Area System;
- Enhance the socio-economic wellbeing of communities in and in the vicinity of the PAs through climate-informed natural resources management;
- Maintain stable, thriving, and diverse populations of key species contributing toward national and global biodiversity goals;
- Strengthen organizational, institutional, and financial capacity for effective management of PAS.

BFL includes five components that reflect these goals, divided into 16 milestones (or outputs) and over 80 detailed activities.

(B) Scope of ESMP

The preparation of this Environmental and Social Management Plan (ESMP) was required in order to manage the environmental and social impacts through specific mitigation actions required to implement the project in accordance with the requirements of WWF's Social Safeguards Integrated Policies and Procedures (SIPP), the project's Environmental and Social Management Framework (ESMF), and applicable national legislation and regulations.

The ESMP provides an overview of the environmental and social baseline conditions on the routes of the proposed second segment of the project, summarizes the potential impacts associated with the proposed activities, and sets out the management measures required to mitigate any potential negative impacts.

This ESMP will be implemented by the BFL focal person in each park authority (PA) and biological corridor (BC), and by the contractor to be commissioned by each PA/BC for the project.

(C) Purpose of ESMP

This Site-Specific ESMP is a project-specific source document detailing the environmental and social protection requirements to mitigate and minimize the adverse impacts. The ESMP's primary purpose is to ensure that the environmental requirements and social commitments associated with the project are carried forward into the implementation and operational phases of the project and are effectively managed. The specific objectives of this ESMP are as hereunder:

- Minimizing any adverse environmental, social, and health impacts resulting from the project activities;
- Conducting all project activities in accordance with the relevant RGoB Laws and

WWF's safeguard operational policies and guidelines;

- Preventing environmental degradation as a result of either individual subprojects or their cumulative effects;
- Enhancing the positive environmental and social outcomes of project activities;
- Ensuring that the proposed mitigation measures are feasible and cost-efficient;
- Providing an Action Plan to ensure that the project impact mitigation measures are properly implemented and monitored;
- Ensuring that all stakeholders are engaged in the project activities' preparation and implementation, and their concerns are fully addressed.

(D) Applicable law, policies, and regulations

This ESMP is developed by following the guidelines as outlined in the BFL's ESMF.

Applicable RGoB laws and policies include the Constitution of the Kingdom of Bhutan, 2008; legislation on land and moveable property (Land Act of Bhutan 2007; Land Rules, 2007; The Moveable Cultural Property act of Bhutan, 2005); legislation and regulations on forests and protected areas (National Environment Protection Act, 2007; Forest and Nature Conservation Act of Bhutan, 1995; Forest and Nature Conservation Rules and Regulations of Bhutan, 2017; National Forest Policy, 2011); legislation on water and waste prevention (Water Act of Bhutan, 2011; Waste Prevention and Management Act, 2009); legislative requirements on environmental assessment (Environmental Assessment Act, 2000 and Regulations on the Environmental Clearance of Projects, 2001); and other relevant laws (The Local Government Act of Bhutan, 2009; Livestock Act of Bhutan, 2001; The Biodiversity Act of Bhutan, 2003; The Pesticides Act of Bhutan, 2000; The Penal Code of Bhutan, 2004; National Access and Benefit Sharing (ABS) Policy (Draft), 2014).

WWF's safeguards policies that are relevant to this project are as follows: Policy on Environment and Social Risk Management; Policy on Protection of Natural Habitats; Policy on Involuntary Resettlement; Policy on Indigenous Peoples; Standard on Pest Management; Policy on Accountability and Grievance System; Standard on Physical Cultural Resources; as well as general standards on occupational and community health and safety and on energy efficiency.

In general, RGoB's laws, policies, and guidelines are in line with the WWF's environmental and social safeguards requirements. However, there are a few differences between the two systems. With regard to environmental impacts, there are no direct contradictions between the RGoB laws and regulations and the WWF's SIPP, but the requirements of the latter are more extensive. All project activities should fully comply with both the RGoB's Regulations on the Environmental Clearance of Projects and with the procedures and mitigation measures prescribed in this ESMF. In case the WWF's SIPP requirements are more extensive, stricter, or detailed than the RGoB legislation and policies, the former will apply to all project activities. Concerning social impacts, the primary discrepancies between the RGoB laws and regulations and the WWF's SIPP refer to the status of non-title holders and informal land use, and the commitment to participatory decision-making processes. First, according to the WWF's SIPP, all users of land and natural resources (including people who lack any formal legal ownership title or usage rights) are eligible to some form of assistance or compensation if the project adversely affects their livelihoods. The RGoB laws only recognize the eligibility of landowners or formal users to receive compensation in such cases. Second, the WWF's SIPP requires extensive community consultations as part of the development of various safeguards documents and during project activities. RGoB legislation does not

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Figure 1. Location of Jomotsangkha Wildlife Sanctuary

1. Geological and Topographical Conditions:

- The sanctuary is situated in the southeastern part of Bhutan under the Samdrup Jongkhar district, bordering Assam and the Arunachal Pradesh state of India.
- It encompasses a diverse range of terrain, including dense forests, hills, and river valleys.
- The topography is characterized by rugged terrain with elevations ranging from 175 meters to over 2200 meters above sea level.
- The sanctuary is part of the Eastern Himalayas biodiversity hotspot, known for its rich geological and topographical diversity.
- Sandy soils are found mostly in the plains, loamy soils along the hills, and across the valleys. There are clay deposits from which the wild animals get their natural mineral licks.

2. Climatic Conditions:

- The climate in Jomotsangkha Wildlife Sanctuary varies with altitude.
- In the low-lying areas, the climate is subtropical with hot and humid summers and mild winters.
- At higher altitudes, the climate becomes cooler, with temperatures dropping significantly, especially during the winter months.
- The sanctuary receives a significant amount of rainfall, particularly during the monsoon season from June to September.

3. Hydrological Conditions:

- The sanctuary is home to numerous rivers and streams, which serve as vital water sources for both wildlife and local communities. There are 14 different sizes of perennial water bodies that flow through the sanctuary.
- These water bodies support a rich aquatic ecosystem and provide habitat for various species of fish and other aquatic organisms.
- The rivers also play a crucial role in regulating the hydrological cycle and maintaining the overall ecological balance of the sanctuary.

4. Flora and Fauna:

- Jomotsangkha Wildlife Sanctuary boasts a remarkable diversity of flora and fauna.
- The sanctuary is home to several species of plants (more than 702 species), including various types of tropical and subtropical vegetation.
- It is renowned for its rich biodiversity, with a wide range of mammals (over 52 species), birds (327 species), reptiles (more than 42 species), and amphibian species (more than 32 species).
- Notable species include the Bengal tiger, Asian elephant, clouded leopard, Himalayan black bear, and several species of primates.
- It is home to critically endangered species, viz. Chinese Pangolin and Lady Slipper orchid. Out of 11 cat species found in the country, 7 species are recorded in the Sanctuary. There are four types of hornbills of Bhutan (Great Hornbill, Oriental Pied Hornbill, Rufous-necked Hornbill, and Wreathed Hornbill) with active nesting sites.
- The sanctuary also supports a diverse array of bird species, including many endemic and migratory birds.





Figure 1. Species diversity in Jomotsangkha Wildlife Sanctuary

5. Socio-economic Conditions:

- The sanctuary is inhabited by indigenous communities who have traditionally relied on its resources for their livelihoods.
- These communities engage in activities such as agriculture, livestock, and fishing, which are closely intertwined with the sanctuary's ecosystems.

- Efforts are being made to promote sustainable development practices that balance the needs of both wildlife conservation and local livelihoods.
- Eco-tourism is emerging as a potential source of income for local communities, offering opportunities for guided wildlife tours and nature-based experiences while contributing to conservation efforts.

The Sanctuary manages Langchenphu, Serthig, and Lauri under Jomotsangkha Dungkhag and Phuntshothang, Pemathang, Samrang, Martshalla under Samdrupcholing Dungkhag. As can be seen in Figure 1, the Sanctuary is bordered by Assam to the south, Dewathang gewog to the west, Sakteng Wildlife Sanctuary to the north, and Arunachal Pradesh to the east. It lies between 26° 48.26' 60" (northing), 91°42.92' 08" E (easting). The altitude of the sanctuary ranges from 130 masl to 2228 masl, consisting of Sub-tropical Forest, Cool Broadleaved Forest, Warm Broadleaved Forest, and narrow grasslands spreading along the southern flood plains.

The details of the households (HHs) in and around the vicinity of the Sanctuary are given in the Table below:

Table 1: Household details under JWS

Sl. No.	Name of Dungkhag	Name of Gewog	HHs	Chiwog
1	Jomotsangkha	Langchenphu	284	5
2		Lauri	545	5
3		Serthi	373	5
4	Samdrupcholing	Pemathang	301	5
5		Phuntshothang	725	6
6		Samrang	52	5
7		Martshala	621	5
		Total HHs	2901	36

3. Planned activities in Year 2026

3.1 Restoration to enhance the quality and resilience of lowland grasslands

- **Budget:** Nu. 300,000
- **Timeline:** January-June 2027
- **Location:** Tsangparung (26.933029°N, 92.044191°E)

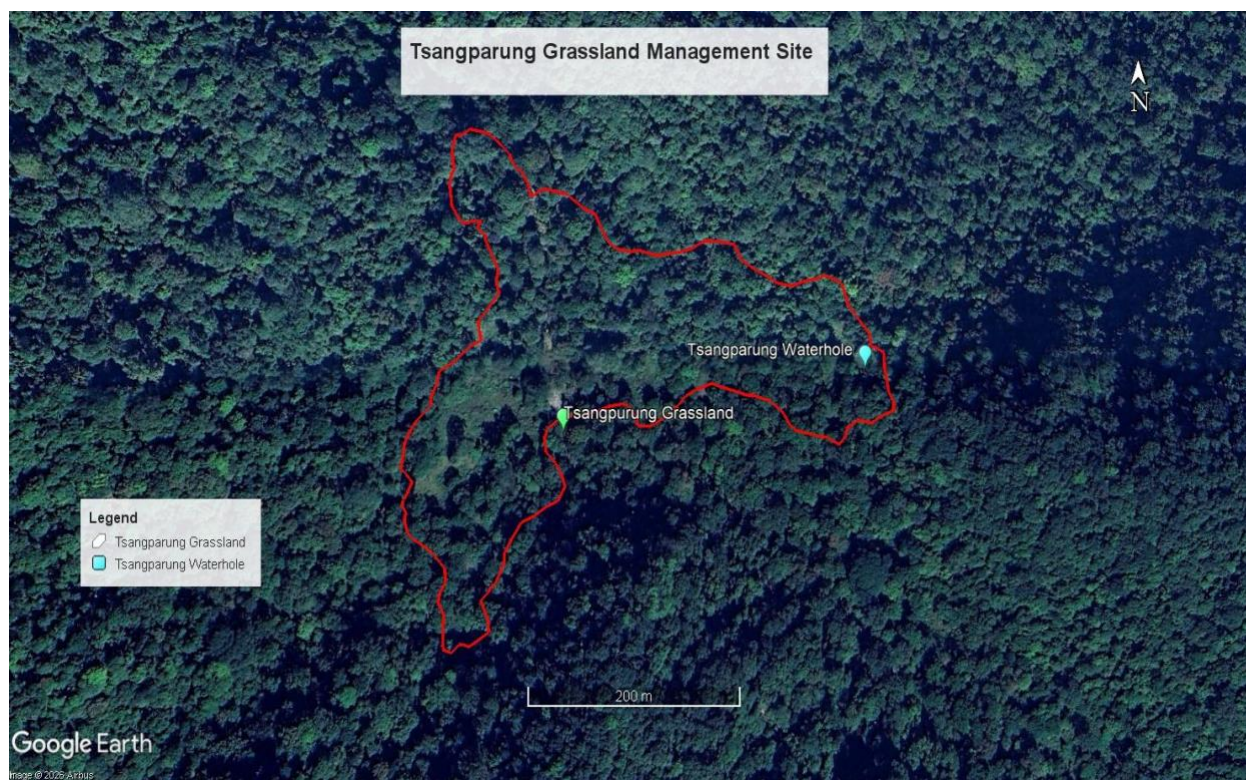


Figure 2. Tsangparung Grassland management site

The project entails the meticulous management of lowland grasslands within the jurisdiction of Jomotsangkha Wildlife Sanctuary (JWS). This initiative focuses on the management of grasslands across the Tshoduen area, spanning approximately 8 hectares (20 acres). It falls in the multiple-use zone positioned adjacent to buffer and core zones; these grasslands serve as vital extensions of pristine habitats, crucial for maintaining biodiversity.

The proposed lowland grassland management activity site is situated in the Tsangparung area, Langchenphu, approximately 3 kilometers away from Tokaphu. This location was chosen due to its proximity to core zones within the Jomotsangkha Wildlife Sanctuary (JWS), facilitating accessibility for conservation efforts. The terrain of the site features gentle slopes, conducive to supporting wild herbivores, although it currently suffers from encroachment by unpalatable vegetation and plant species.

Presently, the site is covered with unpalatable plants and invasive tree species, diminishing the quality of the grassland. This degradation highlights the urgent need for intervention to restore habitat integrity and enhance grazing areas for wildlife.

The project comprises two distinct phases aimed at rejuvenating the grasslands. Initially, the focus lies on eradicating unpalatable and invasive species, which impede the growth of desirable grasses. This phase involves thorough removal and clearing of unpalatable species to enhance the future growth of indigenous

grass species. Subsequently, the implementation of sustainable grassland management practices will involve the strategic sowing of palatable local grass seeds, fostering the recovery of the ecosystem.

Operational activities will involve the deployment of 20 daytime workers from Tokaphu and Agurthang, located 3 and 2.5 kilometers away, respectively. Given the short commuting distance, logistical arrangements such as accommodations are not necessary since they will commute from home to the work site. Additionally, the absence of construction materials and water requirements simplifies operational logistics.

Potential environmental impacts

The activity of improvement of lowland grassland includes the removal of unpalatable species, for which the impacts are:

- **Waste Generation from Labourers:** Minor waste, such as food packaging, plastic bottles, and other litter generated by workers during field operations, may lead to localized pollution if not properly managed.
- **Invasive Species Spread:** Non-palatable weeds removed mechanically, if not properly composted or burned in a controlled manner, could re-establish.
- **Soil Disturbance:** Weed removal and sowing on moderately steep slopes may cause local erosion if not done carefully.
- **Waterhole Integrity:** Maintenance activities must avoid sedimentation or contamination of the existing waterhole used by wildlife.
- **Positive Impact:** The project improves native grass cover, enhances wildlife habitat, and reduces human-wildlife conflict (HWC) by attracting animals away from settlements.

Potential social impacts

There are minimal social impacts as the activity is for habitat management and the site is located away from the settlement, i.e., nearest settlement (2.5 to 3 km away). The only potential risk is for the workers from wildlife attacks and while handling the field equipment.



Figure 3. Grassland management at Nunai under Samrang gewog (2024)



Figure 4. Grassland management at Kherkheri in Langchenphu gewog (2025)

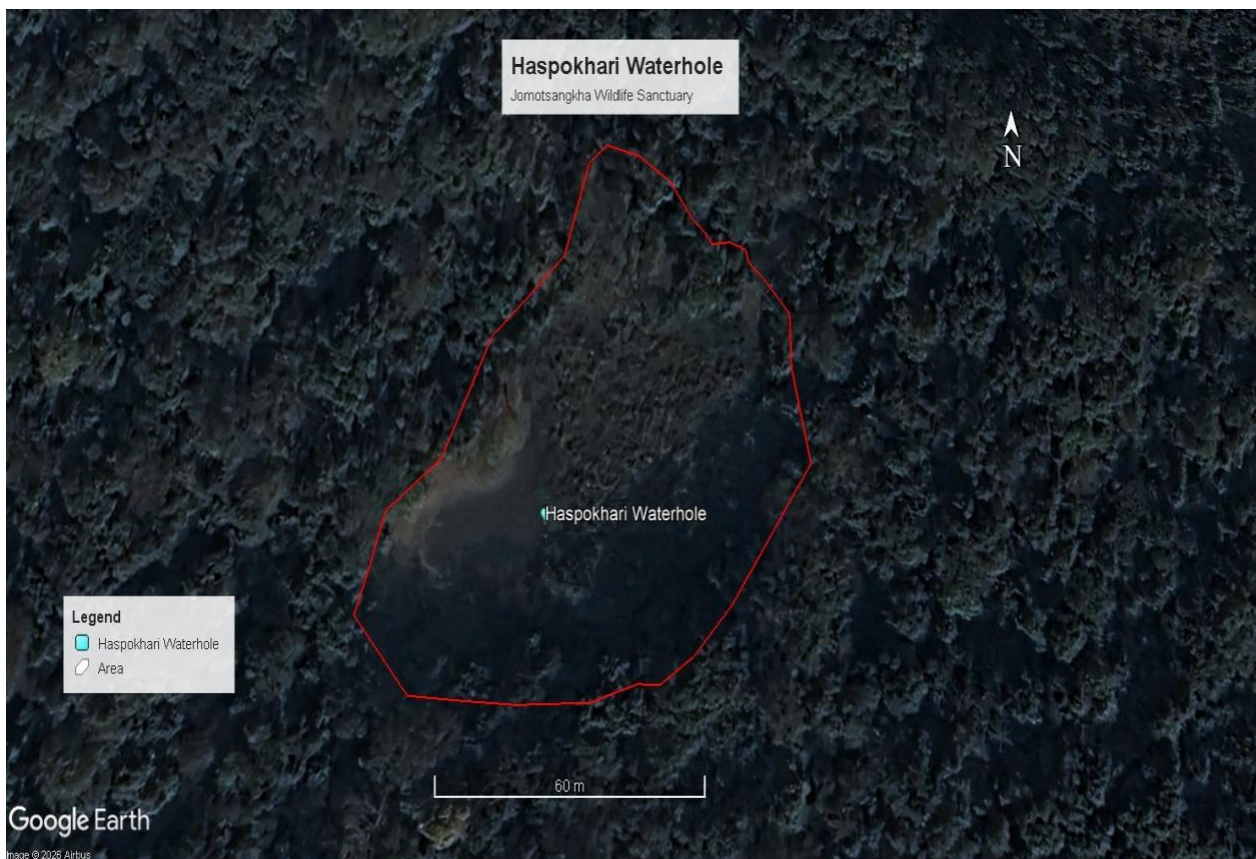


Figure 5. Grassland management at Sath Pokhari in Tashithang gewog (2026)



Figure 6. Haspokhari waterhole management site

3.2 Improvement of Waterholes

- **Budget:** Nu. 300000
- **Timeline:** October 2026-June 2027
- **Location:** Haspokhari (26.904924°N, 91.825870°E)

Water holes are natural or artificial open basins for the storage of water. During monsoon season, due to the presence of continuous recharge of rainwater, availability of drinking water seems to be adequate to the wildlife. However, in the winter season, water sources usually dry up and give water scarcity problems for both humans and animals. Wildlife will move in search of water during dry seasons and may come across human habitation, causing human-wildlife conflicts. Improvement of waterholes includes maintenance of existing waterholes, and this includes clearing of trails for the wildlife movement around the waterholes. This activity includes the removal of sediments and debris from the waterholes to make them bigger so that there will be enough water for the animals. Since there are heavy sediment deposits, machines for clearing the debris shall be used. The existing waterhole has shrunk due to the accumulation of debris and the growth of weeds.



Figure 7. Managed Phakchuthang Waterhole, Langchenphu

The activity site designated for the improvement of waterholes is located 1.5 kilometers from Tshoduen village. This site is selected for its strategic importance in wildlife conservation, particularly for elephants and other wild animals. Moreover, the site falls under the multiple-use zone of the Park. The area, measuring 2 acres (0.91 Ha), is characterized by its prime habitat conditions conducive to wildlife, but currently faces issues due to the accumulation of debris and the shrinking of waterholes caused by sediment deposits and weed growth.

The existing waterhole at the site have diminished in size and capacity due to the accumulation of sediments and the growth of invasive weeds, impacting the availability of water for wildlife. The absence of settlements or private properties within the activity area presents a unique opportunity for focused conservation efforts without direct human-wildlife conflict.

The project aims to enhance the waterhole by performing maintenance activities such as clearing trails for wildlife movement, removing sediments, and debris to expand the waterhole, ensuring sufficient water availability for animals. The improvement project will engage 15 local workers from the nearby settlements of Tshoduen and Tashithang as day laborers. This approach not only supports the local economy but also benefits the project through the utilization of local knowledge and labor. The project site is 1.5 km away from Tshoduen village, ensuring minimal disturbance to local communities while still being accessible for conservation activities.

Environmental Issues

- **Waterhole Siltation & Vegetation Removal:** Desilting and removal of aquatic vegetation may temporarily increase turbidity and disturb small aquatic organisms, but will improve water-holding capacity.
- **Thinning of Thick Stands:** Selective thinning around the waterhole to reduce evapotranspiration and improve wildlife access. No tree felling, only shrub/understory removal. Risk of minor soil exposure and erosion on gentle slopes is low.
- **Positive Outcomes:** Enhanced dry-season water availability for wildlife, reduced human-wildlife conflict (HWC) by keeping animals away from settlements, and improved habitat quality for endangered species (gaur, elephant).

Potential Social Impacts

- Workers' health and safety
- Waste generation from workers

3.3 Tashithang Bioengineering Site

- Budget: Nu. 1,50,000
- Timeline: October 2026-June 2027
- Location: Tshopangma (26.935585°N, 91.801273°E) under Tashithang Gewog



Figure 8. Tashithang Bioengineering Site

Bioengineering is a nature-based approach that utilizes vegetation and biological materials to stabilize unstable slopes, reduce soil erosion, and restore degraded landscapes. It is particularly effective in landslide-prone areas where conventional engineering measures may be costly or less sustainable. Through the establishment of deep-rooted plant species and soil conservation structures, bioengineering helps improve slope stability, enhance water infiltration, reduce surface runoff, and restore ecosystem functions. The proposed bioengineering activity at Tashithang is located on a degraded landslide-affected area within the Multiple Use Zone. The site has experienced recurring landslide events, resulting in exposed soil surfaces,

slope instability, and a direct threat to downstream water sources. The overall landslide area is considerably larger; however, only 10 hectares have been selected for intervention under the current project. The remaining portions of the landslide are presently not feasible for treatment due to extremely steep slopes, difficult terrain, and safety concerns for workers. Therefore, the project focuses on managing the relatively accessible section that is at immediate risk of further slope failure and complete collapse if timely stabilization measures are not undertaken. The activity aims to restore the affected area through climate-smart sustainable land management interventions, including the planting of deep-rooted species such as bamboo, broom grass, Napier grass, and local shrubs. Additional measures include brush layering, live staking, contour trenching, mulching, soil filling, and site preparation through the removal of debris. The activity site covers approximately 10 hectares of State Reserved Forest land and is characterized by steep slopes, exposed soil, rocky surfaces, and unstable terrain resulting from repeated landslide events. There are no settlements within the immediate vicinity of the site, and the area is not currently used for agriculture or other livelihood activities. The site was selected due to its high soil erosion risk, ongoing slope instability, and the potential threat posed to downstream water resources. Bioengineering has been identified as the most sustainable and environmentally friendly solution for long-term slope stabilization and watershed protection. The project aims to rehabilitate the degraded slope and improve watershed conditions through the establishment of vegetation cover and stabilization measures. The activity will engage approximately 20 local community members and forestry personnel during implementation, thereby providing short-term employment opportunities while utilizing local knowledge and skills. Upon completion, the intervention is expected to reduce erosion, stabilize the slope, improve water retention, and enhance the ecological integrity of the area.

Environmental Issues

- **Worker Safety:** The key issue is the high risk of physical harm to workers from falling boulders and unstable mud/rock on the landslide-prone slopes.
- **Positive Habitat Impact:** Since the activity will shift a bare landslide area to a vegetated slope, the habitat quality is expected to improve overall.
- **Waste Generation:** Small quantities of waste, such as food packaging, plastic bottles, and other litter, generated by workers during implementation will require proper collection and disposal.

Potential Social Impacts

- **Workers' Health and Safety:** Risks associated with working on steep and unstable slopes, including falling rocks, loose soil, and landslide-prone terrain.
- **Wildlife Encounters:** Workers may be exposed to wildlife such as elephants and gaur during implementation activities.

3.4 Plantation at Lauri

- **Budget:** Nu. 1250000 (USD 15432)
- **Timeline:** October 2026-June 2027
- **Location:** Lauri (27.063042°N, 91.544602° E) under Lauri Gewog

Plantation and restoration activities are important interventions for rehabilitating degraded and barren lands, improving vegetation cover, enhancing carbon sequestration, and strengthening ecosystem resilience. Establishing plantations of native high-value timber species helps restore ecological functions, improve soil stability, and contribute to long-term sustainable forest management.

The proposed plantation activity will be implemented at Lauri under Lauri Gewog, covering a total area of 5 hectares. The site currently consists of barren land with sparse bush cover and falls under State Reserved Forest Land. The activity includes public consultation, site survey, site preparation, bush clearing, fencing, pit digging, transportation of materials and seedlings, planting of high-value native timber species, and installation of an entry gate and signboard for management purposes. The plantation is intended to restore degraded land and improve ecological stability through the establishment of native timber species such as walnut and other suitable indigenous species.

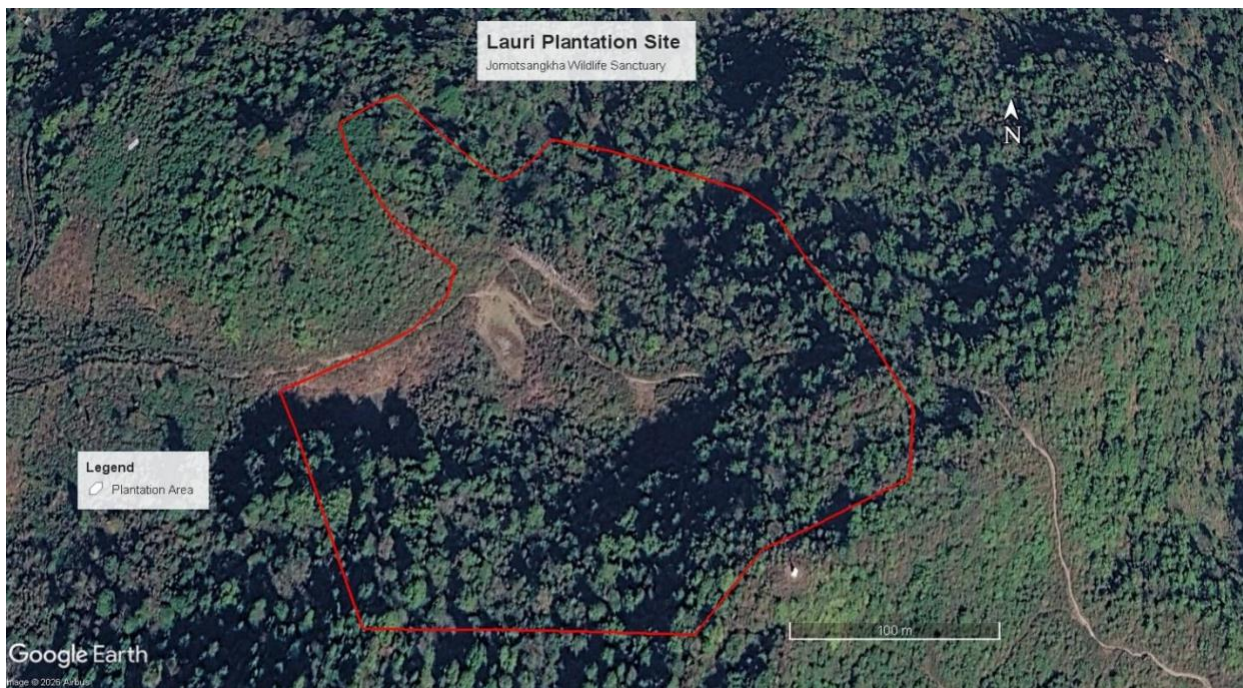


Figure 9. Proposed Plantation Site at Lauri

The activity site is located approximately 500 m from Lauri village, which comprises around 130 households. The area is characterized by gentle slopes and falls within the subtropical forest zone. The proposed plantation area is currently barren and was selected to promote landscape restoration and enhance forest cover through the planting of native high-value timber species. The project aims to restore vegetation cover and improve ecosystem health while creating livelihood opportunities for local communities. Approximately 30 local community members will be engaged during implementation. In addition to ecological restoration, the plantation will contribute to sustainable forest management by converting degraded, barren land into productive forest cover dominated by native timber species.

The main environmental issues are

1. **Waste Generation:** The project will generate waste from labourers (e.g., food waste, packaging) and from the plantation activities (e.g., used poly-pots, other plastic containers). The waste shall be disposed of at Jomotshangkha land fill.
2. **Air pollution:** If the project proceeds with the on-site burning of cleared bushes and debris, this can cause air pollution, contribute to carbon emissions, and potentially lead to unintended fire escapes.
3. **Risk of forest pest and disease**—During the collection and transportation of leaf mould, there is a risk of transferring forest pest & disease, if any.

The main social issues are:

1. **Grazing right:** Fencing the entire 5-hectare area could disrupt any current or informal grazing rights for local livestock owners. This needs to be clarified and addressed beforehand.
2. **Occupational Health and Safety:** 30 local laborers hired from the community to be provided with basic OHS and provided with first aid kits.

Positive impacts:

- Vegetation cover and ecological stability will be restored.
- 30 local community members will gain direct employment and skills.
- It will change land use from barren to high-value native timber (Walnut), contributing to sustainable forest management.

4. Environmental and Social Impacts and Mitigation Measures

The following ESS and GESI mitigation measures are as per the approved ESS forms shared in the link ([Links for List of Approved ESS form for Year 8 BFL implementation](#))

Table 1. Restoration to enhance the quality and resilience of lowland grasslands

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Costs
Activity 1: Restoration to enhance the quality and resilience of lowland grasslands				Nu.300,000/-
Invasive Species Spread: Non-palatable weeds removed mechanically, if not properly composted or burned in a controlled manner, could re-establish.	Long term Minor	- Removed weeds will be properly disposed of through controlled burning or composting to prevent re-establishment. - Only native species will be used for restoration. - Trees or native plant for retention shall be marked to avoid accidental removal - Conduct Periodic removal of invasive plant - Activities will strictly follow the <i>Guidelines for Habitat Management in Bhutan</i>.	Activity and BFL focal	To be incorporated in the activity budget
Soil Disturbance: Weed removal and sowing on moderately steep slopes may cause local erosion if not done carefully.	Short term Minor	Weed removal and grass sowing activities shall be carried out manually and in phases to minimize soil exposure. Existing vegetation cover shall be retained wherever possible, and disturbed areas will be stabilized through immediate grass sowing. Activities will be avoided during periods of heavy rainfall to reduce erosion risks.	Activity and BFL focal	To be incorporated in the activity budget
Increased sedimentation or contamination of the existing waterhole used by wildlife during maintenance.	Short term Minor	- Avoid working when the wildlife is in the habitat site, - Avoid using heavy machinery, - Avoid soil excavation and noise disturbance to minimize impact on natural habitats	Activity and BFL focal	NA
Risk of wildlife attack.	Short term Minor	- Armed Forestry officials shall guard the workers to ensure safety from risk of wildlife attacks. - Workers will be made aware and equipped with safety gears (Gloves, gumboots, and first aid kits)	Activity and BFL focal	NA

Table 2. Improvement of the waterhole

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Costs
Activity 3: Improvement of waterhole				Nu.300,000
Waterhole Siltation & Vegetation Removal: Although water storage capacity will be improved, desilting and vegetation removal may cause short-term turbidity and minor disturbance to aquatic organisms	Short term Minor	- Desilting and vegetation removal will be carried out during the dry season. - Removed sediments will be used to strengthen the waterhole embankment. - Removed vegetation will be dried and burned in a controlled manner to prevent regrowth and spread.	Activity and BFL focal	To be incorporated in activity budget
Loss of vegetation	Short term Minor	Only shrubs and understory vegetation will be selectively thinned; no trees will be felled.	Activity and BFL focal	
Workers' health and safety	Short term Minor	- Workers will be briefed on wildlife safety, work in groups, and activities will be suspended if elephants or gaur are sighted nearby. - Armed Forestry officials shall guard the workers to ensure safety from risk of wildlife attacks. - Workers will be made aware and equipped with safety gears (Gloves, gumboots, and first aid kits) - OHS guidelines of BFL will be strictly followed	Activity and BFL focal	NA

Table 3. Bioengineering at Tashithang Landslide area

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Costs (1USD=Nu.81)
Activity 3: Bioengineering at Tashithang Landslide area				1852
Worker's Health and Safety: The key issue is the high risk of physical harm to workers from wildlife such as elephants and gaur, falling boulders, and unstable mud/rock on the landslide-prone slopes.	Short term Minor	- Comply with the workers' health and safety guidelines of BFL. - Ensure safety gear (Gumboots, Gloves, Helmet, Facemask) and first aid kits are provided to the workers while working. - Ensure that no underage operators or children are engaged. - Ensure decent work conditions, including an appropriate salary, working hours, and food for workers.	Activity and BFL focal	To be incorporated in activity budget

Table 4. Plantation at Lauri

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Costs (1USD=Nu.81)
Activity 4: Plantation at Lauri				USD 15432
Soil Erosion and Sedimentation	Short term Minor	Site clearing will be done in phases, and contour planting will be adopted to minimize soil erosion and sediment runoff.	Activity and BFL focal	
Waste Generation: The project will generate waste from labourers (e.g., food waste, packaging) and from the plantation activities (e.g., used poly-pots, other plastic containers). Improperly managed waste can lead to visual, soil, and water contamination	Short term Minor	All waste, including poly-pots and food packaging, will be collected and disposed of at a designated site at Lauri.	Activity and BFL focal	

Air Pollution from debris burning:	Short term Minor	● Cleared vegetation will be used as mulch where possible ● Any burning will be carried out in a controlled manner following fire safety guidelines, and training of the same will be given to workers.	Activity and BFL focal	
Worker Safety: The key issue is the high risk of physical harm to workers from wildlife such as elephants and gaur, falling boulders, and unstable mud/rock on the landslide-prone slopes.	Short term Minor	● Comply with the workers' health and safety guidelines of BFL. ● Ensure safety gear (Gumboots, helmet, gloves, and facemask) and first aid kits are provided to the workers while working. ● Ensure that no underage operators or children are engaged. ● Ensure decent work conditions, including an appropriate wage, working hours, and food for workers.	Activity and BFL focal	To be incorporated in activity budget

5. ESMP Implementation Arrangements

The implementation of project activities will be carried out by the BFL focal person in JWS.

The focal person will be responsible for compliance with all procedures outlined in this ESMP, as well as compliance with any requirements to obtain clearances, permits, approvals, or consent documents from relevant authorities and stakeholders.

This ESMP should be part of the contract that the PA will sign with the Contractor(s) for implementation of the planned activities in JWS in 2026-2027. **The Contractor is obligated to perform all proposed preventive or mitigation environmental and social measures in this plan and to keep the evidence of any documents related to applying these measures (e.g., letter asking the municipality for disposal of inert waste, records on OHS information session performed for all workers before start of activities, all developed EHS plans, etc.). An OHS information session should be organized by the Contractor for all workers before starting the project activities and before any specific tasks with high health risks.**

Non-compliances should be recorded, and the Report on any non-compliances should be reported to the ESS consultants immediately, and the ESS consultants will report it to the PCU (M&E Officer). Every non-compliance should be closed with appropriate measure/s and the evidence should be kept.

Disbursement of project funds to the PA will be contingent upon their full compliance with the safeguard requirements.

6. ESMP Monitoring Arrangements

The BFL focal person in JWS will closely monitor the implementation of all planned activities and the required mitigation measures and ensure that they fully comply with this ESMP and with the terms and conditions included in the environment clearances issued by RGoB's national authorities.

The monitoring of activities under this ESMP will be carried out in the following manner:

Table 5. Monitoring of all the activities under this ESMP

Sl. No	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	End		
1	Restoration to enhance the quality and resilience of lowland grasslands	Field focal	Monthly monitoring of the maintenance works		Tsangparung, Langchenphu Gewog	Physically and through the field completion report by implementing range offices
		ESS focal	January 2027	June 2027		Field visit and reports

Sl. No	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	End		
2	Improvement of the waterhole	Field focal	Monthly monitoring of the maintenance works		Haspokhari, Tashithang	Physically and through the field completion report by implementing range offices
		ESS focal	January 2027	June 2027		Field visit and reports
		BFLS	January 2027	June 2027		

Sl. No	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	End		
3	Bioengineering Work at Tashithang	Field focal	Monthly monitoring of the maintenance works		Tshopangma, Tashithang Gewog	Physically and through the field completion report by implementing range offices
		ESS focal	December, 2026	June, 2027		Field visit and reports

Sl. No	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	End		
4	Plantation at Lauri	Field focal	Monthly monitoring of the maintenance works		Lauri, Lauri Gewog	Physically and through the field completion report by implementing range offices
		ESS focal	December, 2026	June, 2027		Field visit and reports

7. Capacity Need and Budget

Activities under this ESMP will be implemented by the implementing staff of the Jomotsangkha range office in collaboration with the BFL focal person. The budget for each of the activities is:

Table 6. Total Budget of activities under this ESMP

Sl. No	Activity	Amount (Nu.)	Budget for ESS mitigation
1	Restoration of lowland grassland	Nu.300,000	Will be incorporated from the activity Budget
2	Improvement of Waterhole	Nu.300,000	Will be incorporated from the activity Budget
3	Bioengineering work at Tashithang	Nu.150,000	Will be incorporated from the activity Budget
3.	Plantation at Lauri	Nu.1,250,000	Will be incorporated from the activity Budget
Total		Nu.2,000,000	

8. Consultation and Disclosure Mechanisms

The full English version of this ESMP, as well as an executive summary in Bhutanese, shall be disclosed on the website of MoENR and WWF, Bhutan Program. Hard copies of the ESMP should also be available at the PA Management Office and at the PCU Office. The copies of ESMP will be shared with relevant local elected leaders for compliance. Community groups shall visit the project sites and share their concerns, and these concerns will be reported in the BFL focal monitoring reports. Any consultation meeting minutes shall be maintained for reference.

Agenda: The local leader and communities have been consulted for this activity, and consent for carrying out the activity. During the consultation, we will be discussing the objective of the project, concerns of the local people, and we will be presenting on the potential impacts and mitigation measures that will be taken.

The BFL focal person has to submit the official minutes of consultation meetings (along with a list of participants, disaggregated by gender and age) to the ESS officer within one week after the completion of the consultation. The ESS officer will submit the consultation reports to the PCU (M&E officer) one week after their receipt. The PCU (M&E officer) will report to the Secretariat on a semi-annual basis.

9. Stakeholder Engagement Plan

The local community that resides in the vicinity of the planned BFL activities in JWS will be engaged throughout the implementation of these activities. A focused section of local people will be informed to work in the management activities, and this is not to disclose the location of active wildlife sites in the park and prevent poaching activities in the future. Community groups shall visit the project sites and share their concerns, and it will be reported in the BFL focal monitoring reports. Any consultation meeting minutes shall be maintained for reference. The community will be timely made aware of any activity carried out at the project site, and the ownership for future management will be given to the community.

10. Grievance Redressal Mechanisms

This ESMP and its mitigation measures are required to be disclosed to communities for 30 days before the start of implementation of activities. In addition, the BFL focal point is responsible for making local communities aware of the grievance mechanisms: the BFL-specific grievance mechanism, WWF's Grievance Mechanism, and the GCF Independent Review Mechanism.

BFL-specific Grievance Mechanism

A grievance redressal mechanism (GRM) is in place to address any grievances arising from the implementation of BFL activities, on resources, non-performance of project obligations including safeguards, violation of law and/or corruption, project governance and implementation, fair access and benefit sharing, stakeholder engagement, labor-related issues and incidents, gender related issues, and others. If the stakeholders have any grievances related to the BLF project, they can report their grievances via letter, phone call, or verbally to nearby gewog or forest offices. The report can also be sent to the BFL PCU office or WWF office. The specific brochure for the GRM is attached in the annexure for any grievance related to the implementation of the project activities.

WWF Grievance Mechanism

A grievance can be filed with the Project Complaints Officer (PCO), a WWF staff member fully independent from the Project Team, who is responsible for the WWF Grievance Mechanism and who can be reached at:

Email: SafeguardsComplaint@wwfus.org

Mailing address:

Project Complaints Officer

Safeguards Complaints,

World Wildlife Fund

1250 24th Street NW

Washington, DC 20037

Stakeholders may also submit a complaint online through an independent third-party platform at <https://secure.ethicspoint.com/domain/media/en/gui/59041/index.html>

GCF Independent Review Mechanism

The Independent Review Mechanism (IRM) provides recourse to those affected or who may be affected by GCF projects. Complainants can find information on filing a complaint and proceed to file a complaint on the GCF IRM website: <https://irm.greenclimate.fund/case-register/file-complaint>.

11. Certification of Mitigation Measures and Approvals for ESMPs

This section serves to clarify that the Environmental and Social Management Plan (ESMP) and its associated mitigation measures are fully compliant with the BFL Environmental and Social Management Framework (ESMF) and have undergone the intensive review and approval process.

All the mitigation measures, environmental and social management prescriptions, and good practices outlined in this ESMP are based on the following approved documentation:

1. **Screening and Scoping Tools (SST):** The identification of potential impacts and subsequent mitigation measures are derived from the approved SST submitted to the PCU by IAs and approved by ESS & GESI experts in a WWF-US AE team.
2. **Site-specific template and endorsement from implementing agencies (IAs):** all mitigation actions are formulated as per the approved SST, ensuring they are mitigation prescriptions that are site-specific and relevant to the planned activities and are further endorsed from IAs for implementation.
3. This ESMP is hereby certified for implementation. All parties involved in the execution of the project activities are obligated to perform all proposed preventive and mitigation measures as detailed in the plan, and compliance with these measures is the prerequisite for the disbursement of project funds.

ESMP prepared by (IAs)


Name: Sonam Tshering

Title: Forestry Officer

Date: 5/5/2026

ESMP Reviewed by (PCU):


Name: Ugyen Dechen

Title: Project Officer

Date: 29th June 2026

ESMP Approved by (AE):


Signed:

Name: Nathalie Simoneau

Title: Senior Director – Gender, Social Inclusion & Safeguards

Date: June 29, 2026

Annexure I :BFL: Suggested Occupational Health and Safety Standards

Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers. Implementing entities should hire contractors that have the technical capability to manage the occupational health and safety issues of their workers, extending the application of the hazard management activities through formal procurement agreements.

This section provides guidance and examples of reasonable precautions to implement in managing principal risks to occupational health and safety. It is based on the IFC's Environmental, Health, and Safety Guidelines (April 30, 2007)¹ and the Occupational Health and Safety Guidelines of Bhutan's Construction Development Corporation Ltd., which relies on the national Regulation on Occupational Health, Safety and Welfare 2012, Regulation on Working Conditions 2012 and Labour Act 2007, and in compliance to Sl. No. 21 of Regulation on Occupational Health, Safety and Welfare 2012.

1. General Facility Design and Operation

Integrity of Workplace Structures

Permanent and recurrent places of work should be designed and equipped to protect occupational health and safety:

- Surfaces, structures and installations should be easy to clean and maintain, and not allow for accumulation of hazardous compounds.
- Buildings should be structurally safe, provide appropriate protection against the climatic conditions, and have acceptable light and noise conditions.
- Fire resistant, noise-absorbing materials should, to the extent feasible, be used for cladding on ceilings and walls.
- Floors should be level, even, and non-skid.
- Heavy oscillating, rotating or alternating equipment should be located in dedicated buildings or structurally isolated sections.

Severe Weather and Facility Shutdown

- Workplace structures should be designed and constructed to withstand the expected elements for the region and have an area designated for safe refuge (e.g., in case of earthquake).

Workspace and Exit

- The space provided for each worker, and in total, should be adequate for safe execution of all activities, including transport and interim storage of materials and products.

Fire Precautions

The workplace should be designed to prevent the start of fires. Other essential measures include:

- The workplace shall be provided with adequate means of protection and escape in case of fire.
- The workplace shall be provided with an adequate number of relevant fire extinguishers.
- Workers shall wear shoes without iron or steel nails or any other exposed ferrous materials that are likely to cause sparks by friction.
- Smoking, lightning, or carrying of matches, lighters or smoking materials shall be prohibited within and around the construction sites.
- All other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources, such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical, chemical reaction and radiant heat.
- At every workplace, adequate provision of water supply for firefighting shall be provided and maintained.
- Facilities shall be equipped with firefighting equipment (e.g., fire extinguishing bottle). The equipment should be maintained in good working order and be readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present.

- Manual firefighting equipment shall be easily accessible and simple to use.
- Fire extinguishers and emergency alarm systems that are both audible and visible should be in place.
- Fire exits should be identified and marked in Dzongkha and English- all workers should be made aware of the fire exits.

Lavatories and Showers

- Adequate lavatory facilities (toilets and washing areas) should be provided for the number of people expected to work in the facility (one for at least one for every 20 workers). Toilet facilities should also be provided with adequate supplies of water and soap and also be connected to sewerage system.

Potable Water Supply

- Adequate supplies of clean drinking water should be provided to workers at the work site.

Clean Eating Area

- Where there is potential for exposure to substances poisonous by ingestion, suitable arrangements are to be made for provision of clean eating areas where workers are not exposed to the hazardous or noxious substances.

Lighting

- Workplace should receive adequate natural light and if required supplemented with artificial illumination to promote worker's safety and enable safe equipment operation.
- Emergency lighting of adequate intensity should be provided in case of failure of the powerline.

Safe Access

- Passageways for pedestrians and vehicles within and outside buildings should be segregated and provide for easy, safe, and appropriate access.
- Equipment and installations requiring servicing, inspection, and/or cleaning should have unobstructed, unrestricted, and ready access.
- Covers need to be provided wherever necessary, if there is risk of falling of overhead object.
- Measures to prevent unauthorized access to dangerous areas should be in place.

First Aid

- The employer should ensure that qualified first-aid can be provided at all times. A sufficient number of first aid boxes or cupboards shall be provided and maintained so as to be readily available during all working hours, provided that the distance of the nearest first aid box or a cupboard shall be not more than 200m from any working place.
- First aid kits include all equipment outlined in Annex 1 to these Guidelines.
- Each first aid box or cupboard shall be distinctly marked "FIRST AID"

Air Supply

- The workplace should have adequate ventilation for fresh air

2. Information Provision on Occupational Health and Safety (OHS)

The Contractor is responsible to hold an information session to familiarize all workers with the OHS procedures specified in these guidelines, in order to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow workers.

The information session should consist of basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of orientation training.

3. Physical Hazards

Physical hazards represent potential for accident or injury or illness due to repetitive exposure to mechanical action or work activity.

Rotating and Moving Equipment

Injury or death can occur from being trapped, entangled, or struck by machinery parts due to unexpected starting of equipment or unobvious movement during operations. Recommended protective measures include:

- Designing machines to eliminate trap hazards and ensuring that extremities are kept out of harm's way under normal operating conditions. Examples of proper design considerations include two-hand operated machines to prevent amputations, or the availability of emergency stops dedicated to the machine and placed in strategic locations.
- Where a machine or equipment has an exposed moving part or exposed pinch point that may endanger the safety of any worker, the machine or equipment should be equipped with, and protected by, a guard or other device that prevents access to the moving part or pinch point. Guards should be designed and installed in conformance with appropriate machine safety standards.

Noise

- No worker should be exposed to a noise level greater than 90dB (A) for a duration of more than 8 hours per day without wearing ear plugs/earmuffs.
- Exposures to impulsive or impact noise shall not exceed 140dB(A).
- For every 3 dB(A) increase in sound levels from the permissible limit of noise, the 'allowed' exposure period or duration should be reduced by 50 percent.
- Where it is not practicable to reduce the noise, the employer must limit the duration of time persons employed or working in the workplace are exposed to the noise so that such persons are not exposed to excessive noise.
- Prior to the issuance of hearing protective devices as the final control mechanism, use of acoustic insulating materials, isolation of the noise source, and other engineering controls should be investigated and implemented, where feasible.
- Periodic medical hearing checks should be performed on workers exposed to high noise levels.

Vibration

In any workplace where persons are at work in any process or operation which involves exposure to vibration which may constitute a risk to their health, it shall be the duty of the employer to provide, so far as is reasonably practicable, effective means to reduce the vibration.

Electrical

Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into close proximity with overhead wires can result in arcing between the wires and the object, without actual contact. Recommended actions include:

- Marking all energized electrical devices and lines with warning signs
- Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance.
- Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools.

- Double insulating / grounding all electrical equipment used in environments that are, or may become, wet; using equipment with ground fault interrupter (GFI) protected circuits.
- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas
- Appropriate labeling of service rooms housing high voltage equipment ('electrical hazard') and where entry is controlled or prohibited
- Establishing "No Approach" zones around or under high voltage power lines
- Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work
- Every person who is working on an electric supply line or apparatus or both shall be provided with tools and devices such as gloves, rubber shoes, and safety belts, ladders, earthing devices, helmets, line testers, hand lines whichever is relevant for protecting him/her from mechanical and electrical injury.

Eye Hazards

Solid particles from a wide variety of industrial operations, and/or a liquid chemical spray may strike a worker in the eye causing an eye injury or permanent blindness. Recommended measures include:

- Use of machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shields, goggles, and/or a full-face shield. Frequent checks of these types of equipment prior to use to ensure mechanical integrity is also good practice.
- Where machine or work fragments could present a hazard to transient workers or passers-by, extra area guarding or proximity restricting systems should be implemented, or PPE required for transients and visitors.

Welding / Hot Work

Welding creates an extremely bright and intense light that may seriously injure a worker's eyesight. In extreme cases, blindness may result. Additionally, welding may produce noxious fumes to which prolonged exposure can cause serious chronic diseases. Recommended measures include:

- Provision of proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Additional methods may include the use of welding barrier screens around the specific workstation.

Working Environment Temperature

Exposure to hot or cold working conditions in indoor or outdoor environments can result in temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses. Extreme temperatures in permanent work environments should be avoided through implementation of engineering controls and ventilation. Where this is not possible, such as during short-term outdoor work, temperature-related stress management procedures should be implemented which include:

- Monitoring weather forecasts for outdoor work to provide advance warning of extreme weather and scheduling work accordingly.
- Providing temporary shelters to protect against the elements during working activities or for use as rest areas.
- Use of protective clothing
- Providing easy access to adequate hydration such as drinking water or electrolyte drinks.

Ergonomics, Repetitive Motion, Manual Handling

Injuries due to ergonomic factors, such as repetitive motion, overexertion, and manual handling, take prolonged and repeated exposures to develop, and typically require periods of weeks to months for recovery. These OHS problems should be minimized or eliminated to maintain a productive workplace. Controls may include:

- Use of mechanical assists to eliminate or reduce exertions required to lift materials, hold tools and work objects, and requiring multi-person lifts if weights exceed thresholds (adult man-50kg, adult female-25kg)
- Selecting and designing tools that reduce force requirements and holding times and improve postures.
- Incorporating rest and stretch breaks into work processes and conducting job rotation.
- Implementing quality control and maintenance programs that reduce unnecessary forces and exertions.

Working at Heights

Fall prevention and protection measures should be implemented whenever a worker is exposed to the hazard of falling more than two meters; into operating machinery; into water or other liquid; into hazardous substances; or through an opening in a work surface. Fall prevention / protection measures may also be warranted on a case-specific basis when there are risks of falling from lesser heights. Fall prevention may include:

- Installation of guardrails with mid-rails and toe boards at the edge of any fall hazard area
- Proper use of ladders and scaffolds by trained workers
- Use of fall prevention devices, including safety belt and lanyard travel limiting devices to prevent access to fall hazard area, or fall protection devices such as full body harnesses used in conjunction with shock absorbing lanyards or self-retracting inertial fall arrest devices attached to fixed anchor point or horizontal lifelines.
- Appropriate training in use, serviceability, and integrity of the necessary PPE
- Inclusion of rescue and/or recovery plans, and equipment to respond to workers after an arrested fall.

Illumination

Work area light intensity should be adequate for the general purpose of the location and type of activity, and should be supplemented with dedicated work station illumination, as needed. Controls should include:

- Use of energy efficient light sources with minimum heat emission
- Undertaking measures to eliminate glare / reflections and flickering of lights.
- Taking precautions to minimize and control optical radiation including direct sunlight.
- Exposure to high intensity UV and IR radiation and high intensity visible light should also be controlled.
- Controlling laser hazards in accordance with equipment specifications, certifications, and recognized safety standards. The lowest feasible class Laser should be applied to minimize risks.

4. Personal safety equipment for workers

All workers are equipped with the following personal safety equipment: helmet, gloves, ordinary boots and reflective vest.

Workers that are exposed to dust should also be provided with eye protection glasses and face mask. Workers that are exposed to noise should be provided with ear plugs. Workers that need to work in the dark should be provided with hand and cap lamps.

Workers are instructed regarding safety equipment as follows:

- Always wear a complete set of protective wear.
- Do not wear loose clothing, such as an overhang shirt, jackets, mufflers etc.
- Tuck the shirt and jacket well.
- Secure a helmet with a belt under the chin.
- Tuck the bottom sleeves of the trousers inside the safety boots.
- Dress with a reflector

b. Standards for workers' accommodation

1. General living facilities
 - The location of the facilities is designed to avoid flooding or other natural hazards.
 - The living facilities are located within a reasonable distance from the worksite.
 - Transport is provided to the worksite, safe and free, if the accommodation is reasonably far from the worksite.
 - The living facilities are built using adequate materials, kept in good repair and kept clean and free from waste and refuse.
0. Drainage
 - The site is adequately drained.
0. Heating, air conditioning, ventilation, and lighting
 - Living facilities are provided with adequate heating, ventilation, and light systems, including emergency lighting.
0. Water
 - Workers have easy access to a supply of clean/ potable water in adequate quantities.
 - The quality of the water complies with national/local requirements and is regularly monitored.
 - Tanks used for the storage of drinking water are constructed and covered to prevent water stored therein from becoming polluted or contaminated.
 - The quality of the drinking water
0. Wastewater and solid waste
 - Wastewater, sewage, food and any other waste materials are adequately discharged in compliance with national and/or international standards and without causing any significant impacts on camp residents, the environment or surrounding communities.
 - Specific containers for waste collection are provided and emptied on a regular basis.
0. Rooms/dormitories facilities
 - Rooms/dormitories are kept in good condition. They are aired and cleaned at regular intervals.
 - Rooms/dormitories are built with easily cleanable flooring material.
 - Rooms/dormitories and sanitary facilities are located in the same buildings.
 - Residents are provided with enough space.
 - The number of workers sharing the same room/dormitory is minimised.
 - Doors and windows are lockable and provided with mosquito screens when necessary.
 - Separate sleeping areas are provided for men and women.
 - A separate bed is provided for every worker, and the use of double-deck bunks is minimised.
 - Workers are provided with comfortable mattresses. Workers may be expected to use their own pillows and bed linens.
 - Adequate facilities for the storage of personal belongings are provided.
 - Separate storage for work clothes and PPE, and depending on the condition, drying/airing areas are provided.
0. Sanitary and toilet facilities
 - Sanitary and toilet facilities are constructed from materials that are easily cleanable.
 - Sanitary and toilet facilities are cleaned frequently and kept in working condition.
 - Toilets, showers/bathrooms and other sanitary facilities are designed to provide workers with adequate privacy including ceiling to floor partitions and lockable doors.
 - Separate sanitary and toilet facilities are provided for men and women.
 - Toilet and shower facilities are conveniently located and easily accessible.
 - Toilet facilities are environmentally friendly (e.g., pit toilet) and sewage is not disposed into the worksite.
 - Open defecation in the vicinity of project sites should be prohibited.
 - An adequate number of hand wash basins and showers/bathrooms facilities are provided.

0. Cooking and laundry facilities

Cooking and laundry facilities should be available for workers at the worksite or in close vicinity to it. These facilities should be kept in clean and sanitary conditions.

Contents of first aid box or cupboards

The first aid boxes or cupboards shall be distinctively marked with white cross on a green background and shall contain the following equipment:

- Small sterilized dressings (12)
- Medium size sterilized dressings (6)
- Large size sterilized dressings (6)
- Large size sterilized burn dressings (6)
- (1/2 oz.) Sterilized cotton wool (6 packets)
- (2oz.) Bottle containing a two per cent alcohol solution of iodine (1)
- (2oz.) Bottle containing Betadine (antiseptic solution) having the dose and mode of administration indicated on the label (1)
- Roll of adhesive plaster (1)
- A snake bite lancet (1)
- Torch light (1)
- Pair of scissors (1)
- Tablets Aspirin (5gms) 2 dozen
- Burn Ointment (2 tubes)
- Dettol (2 phial, about 2 ozs)
- Bandages 4 inches wide
- Bandages 2 inches wide
- Triangular bandages (2)
- Packets of safety pins (1)
- A supply of suitable splint

Grievance Redressal Mechanism Pamphlet



HOW TO FILE YOUR COMPLAINT

To file your complaint, please contact any of the designated individuals provided below. You may maintain anonymity if you prefer.

BFL FOCAL OFFICER

- Sonam Tshering
- 17347587
- stshering@moenr.gov.bt
- Jomotsangkha Wildlife Sanctuary, Jomotsangkha, Samdrupjongkhar

SAMDRUPCHOLING PARK RANGE OFFICE

- Tek Bhador Gurung
- 17678804
- tbgurung@moenr.gov.bt
- Samdrupcholing Park Range Office, Jomotsangkha, Samdrupjongkhar

JOMOTSANGKHA PARK RANGE OFFICE

- Kiran Rai
- 17532175
- krai@moenr.gov.bt
- Jomotsangkha Wildlife Sanctuary, Jomotsangkha, Samdrupjongkhar

YOU MAY ALSO CONTACT THE BFL PROJECT COORDINATION UNIT (PCU) OR FUND SECRETARIAT (FS) AT:

BFL FUND SECRETARIAT (FS)

- Kuenzang Tobgay
- 17750414
- kuenzangtobgay@bfl.org.bt
- Bhutan For Life Fund Secretariat, Royal Textile Academy, Thimphu

BFL PROJECT COORDINATION UNIT (PCU)

- Ugyen Dechen
- 17491881
- bflprojectofficer@gmail.com
- BFL Project Coordination Unit, Department of Forests and Park Services, Ministry of Energy and Natural Resources, Taba, Thimphu

IF THE NATIONAL PROCESS OF GRM IS UNABLE TO RESOLVE THE GRIEVANCE, COMPLAINTS MAY ALSO BE FILED WITH WORLD WILDLIFE FUND (WWF).

Write to the WWF GCF Accredited entity at:
SafeguardsComplaint@wwf.us.org
Project Complaints Officer, Safeguards Complaints,
World Wildlife Fund 1250 24th Street NW Washington,
DC 20037

COMPLAINTS MAY ALSO BE FILED WITH GCF INDEPENDENT REDRESS MECHANISM (IRM) OPTION. COMPLAINT CAN BE FILED BY:

- Sending it by mail or email at irm@gcfund.org
- Sending a voice or video recording
- Filling out the online complaints form available at:
<https://gcf.isight.com/external/case/new/group=Complaint>

A complaint for IRM should generally include:

- Name, address and contact information
- A description of the programme (caused adverse impacts to the complainant)
- A description of how the complainants have been/maybe adversely impacted by the project/programme
- Whether confidentiality is being requested and the reasons for it.

COMPLAINTS MAY ALSO BE FILED WITH THE WWF THIRD PARTY GRIEVANCE REPORTING MECHANISM BY USING ETHICS POINT WEBSITE AT:

<https://secure.ethicspoint.com/domain/media/en/gui/59041/index.html>

This mechanism can receive reports online or by phone in multiple languages.

IF YOU ARE UNSATISFIED WITH THE COMPLAINT RESOLUTION PROCESS, YOU CAN APPEAL TO:

GRM Appeal Committee, Bhutan For Life Project, DoFPS, Thimphu, Bhutan.