

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 Sakteng Wildlife Sanctuary, describes mitigation measures/good practices at activity level which are required as per the screening protocol. All the screened activities which has 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 2025 under Sakteng Wildlife Sanctuary are:

1. Corral Fencing Installation to Mitigate Livestock Depredation at Merak, Sakten and Jonkhar
2. Alpine Meadow improvement at Merak, Sakten and Jonkhar
3. Four units staff quarter construction at Sakten Range.
4. Development of Rhododendron Park at Phremelaptsa, Sakteng
5. Waterhole management at Khasitheng
6. installation of Rain water harvesting system at Jonkhar and Sakteng

གོང་མོ་མཐུན་དོན།

འབྲུག་རྒྱལ་ཡོངས་སློང་ཀའི་ཆོ་སྲོག་མ་དངུལ་འདི་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འོས་འབབ་ཅན་གྱི་ལས་འགུལ་གྱི་དབྱེ་ཁག་
ཁ་པ་(Category B) ནང་ལྷ་ཚུད་དེ་ཡོད་པ་ཡིན། དེ་ཡང་ལས་འགུལ་འདི་ལས་བརྟེན་ཏེ་སྤང་སྦྱོབ་ས་ཁོངས་ནང་སྤྱོད་མིའི་མི་སེར་དང་
ཡང་ན་ སྤང་སྦྱོབ་ས་ཁོངས་ཀྱི་མཐའ་སྐོར་ཏེ་འཆོ་བ་སྤང་སྦྱོབ་ས་ཁོངས་ལྷ་བརྟེན་སྤྱོད་མིའི་མི་སེར་ ཡང་ན་ གཤམ་ཅན་གྱི་མཐའ་སྐོར་
གནས་སྤངས་ཀྱི་ས་ཁོངས་ཚུ་ལྷ་གཞོན་པ་འབྱུང་ནིའི་ཉེན་ཁ་ཡོད་པ་དང་ གཤམ་མེད་གཞོན་པ་འབྱུང་པ་ཅིན་ གཞོན་ཉེན་ཚུ་དམིགས་
གསལ་ས་གནས་ནང་རྒྱུ་ཅིག་འབྱུང་ནི་དང་ གཞོན་ཉེན་མར་ཕབ་རྒྱུ་ནི་དང་ཚ་མེད་ཡང་གཏང་ཚུགས་པ་ཡིན།
དེ་འབད་མ་ལས་ འབྲུག་རྒྱལ་ཡོངས་སློང་ཀའི་ཆོ་སྲོག་མ་དངུལ་ཐོག་ལྷ་ རྒྱལ་སྦྱོར་འབད་ཡོད་པའི་ལས་འགུལ་དང་ལས་ལྷ་ཚུ་ མཐའ་
འཁོར་གནས་སྤངས་དང་ མི་ཕྱེ་གཉིས་ལྷ་ཡུན་བརྟེན་གྱི་ཕན་པ་ཡོད་པ་བཟོ་བ་གི་མ་ཆད་ འབྲུག་རྒྱལ་ཡོངས་སློང་ཀའི་ཆོ་སྲོག་མ་དངུལ་
གྱི་སྤྱོད་བྱས་ལམ་སྟེན་དང་འབྲེལ་ཐབས་ལྷ་ མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྦྱོང་འཆར་གཞི་འདི་དགོས་དེ་ མི་དམངས་
གོས་བརྩམས་དང་ དུས་དང་དུས་སྤྱི་མི་དམངས་ལྷ་གསང་བ་བཤད་ནི་འདི་དགོས་ཡིན།
རང་བཞིན་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྦྱོང་འཆར་གཞི་འདི་ནང་ སློང་ཀ་དང་སྲོག་ཆགས་རྒྱུན་ལམ་ཚུ་ནང་ལས་ལྷ་ཚུ་འབད་བའི་
སྐབས་ ཐབས་ལམ་དང་བཟང་སྤྱོད་ཚུ་གསལ་སྟེན་འབད་མ་ཡིན་པ་འདི་དང་ འདི་ཡང་ལས་ལྷ་འདི་གདམ་སེལ་ལམ་ལྷ་གསལ་དང་འབྲེལ་ཏེ་ཡིན།
གདམ་སེལ་འབད་ཡོད་པའི་ལས་ལྷ་གི་ནང་ལས་ མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་ལྷ་གཞོན་ཉེན་ཡོད་པའི་ལས་ལྷ་ཚུ་གི་དོན་ལྷ་
མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྦྱོང་འཆར་གཞི་བཟོ་དགོ། འཛིན་སྦྱོང་འཆར་གཞི་འདི་ནང་ ལས་ལྷ་འགོ་མ་བཟུགས་པའི་
ཏེ་མ་གཞི་བཟུགས་འབད་བའི་སྐབས་དང་མཐུག་བསྐྱུལ་ད་ལྷ་ མཐའ་འཁོར་གནས་སྤངས་འཛིན་སྦྱོང་དང་གཞོན་ཉེན་མར་ཕབ་ཀྱི་
ཐབས་ལམ་ཚུ་བཟུགས་དགོས་ཡིན།

དེ་འབད་མ་ལས་འཛིན་སྦྱོང་འཆར་གཞི་འདི་ནང་ ལས་ལྷ་མི་ཕྱེ་ལྷ་འགན། བད་སྤྱོད་དང་སྟན་ལྷ། དེ་ལས་ལྷ་རྟོག་ལམ་ལྷ་གསལ་ཚུ་གི་སྐོར་
ལས་འགུལ་བཤད་ཁ་གསལ་ཚུད་དགོས་ཡིན། འཛིན་སྦྱོང་འཆར་གཞི་འདི་ནང་ལྷ་ གཤམ་གཏོགས་འབད་དགོ་པའི་ཁེ་གུད་ཡོད་མི་ཚུ་གི་
ཉོག་བཤད་ཚུ་ཚུད་དགོ་པའི་ཁར་ ཁེ་གུད་ཡོད་པའི་མི་ཚུ་གི་དོན་ལྷ་གཤམ་གཏོགས་འཆར་གཞི་དགོ། གཤམ་གཏོགས་འཆར་གཞི་འདི་ནང་
ཁེ་གུད་ཡོད་མི་དོས་འཛིན་འབད་ནི་དང་གཤམ་གཏོགས་འབད་ནིའི་ལམ་ལྷ་གསལ་ དེ་ལས་གཤམ་གཏོགས་ཀྱི་དུས་ཚོད་དང་བཅའ་སྤྱོད་ཚུ་
ཚུད་དགོས་ཡིན། སློང་ཀ་དང་སྲོག་ཆགས་རྒྱུན་ལམ་ཡིན་ཆད་ཚུ་གི་མཆར་གཞི་ལས་ལྷ་དང་འབྲེལ་ཏེ་ དན་ཐོ་དང་སྟན་ལྷ། བསྐྱར་ཞིབ་
ཅིས་དབྱུད་འབད་ནི། དེ་ལས་ མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྦྱོང་འཆར་གཞི་འདི་ལོ་བསྟར་བཞིན་དུ་དུས་མཐུན་བཟོ་
དགོས་ཡིན།

གཞི་རིམ་དཔེ་ཚུ་ལཱ་ཁྲུང་གི་དོན་ལྷ་སྤྱོད་ རྟེན་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྦྱོང་འཆར་གཞི་
དགོས་ཡོད་པའི་ལས་ལྷ་ཚུ་ཡང་།

- ༡༥ མེ་རག་ དང་སག་སྤེང་ བེད་འོག་ལྷ་ ཏྲ་ལོ་ཚུ་ འབྲུམ་ས་དང་ རྩ་ཁར་གཏང་སའི་ས་ཁོངས་རལ་(Coral Fencing) བཟུགས་ནི།
- ༢༥ མེ་རག་ དང་སག་སྤེང་ བེད་འོག་ལྷ་ ས་ཁ་མཐོ་སའི་ རྩ་ཁང་ཚུ་ ལེགས་བཅོས་འབད་ནི།
- ༣༥ སག་སྤེང་ ལྷ་ ལས་བྱེད་པའི་སྤྱོད་ཁང་ བཟོ་སྐྱུན་འབད་ནི།
- ༤༥ ཁ་ཤི་སྤེང་ལྷ་ རྩ་ཁང་རྒྱུན་སྦྱོང་འབད་ནི་དང་།
- ༥༥ རྩ་ཁང་ཁར་དང་སག་སྤེང་ལྷ་ ཆར་ཚུ་བསྐྱུ་ལེན་འབད་ནིའི་ལམ་ལྷ་གསལ་བཟུགས་ནི།

Bhutan for Life
Environmental and Social Management Plan for
Sakteng Wildlife Sanctuary, 2025

1. Introduction

a) Project Background

The Bhutan for Life (BFL) project aims to ensure a robust network of protected areas and biological corridors that secure human well-being, and biodiversity conservation and increase 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 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 well-being 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 and 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 BFL focal person in Sakteng Wildlife Sanctuary (SWS) and the contractor to be commissioned by SWS 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 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.

2. Environmental and Socio-Economic Conditions:

a) Geological and topographical conditions

Sakteng Wildlife Sanctuary (SWS) was founded in 2003 to showcase Bhutan's easternmost temperate and alpine ecosystems. This sanctuary is a habitat for several rare and globally endangered wildlife species. Moreover, it boasts the highest concentration of Rhododendron species, with 41 out of the 46 recorded in the country.

(SWS) is situated within the latitudinal range of 27°09'00" to 27°28'08" North and longitudinal range of 91°47'04" to 92°07'02" East, covering an expanse of 742.46 km². It shares boundaries with the Indian State of Arunachal Pradesh to the north and east, Phongmey Gewog under Trashigang Dzongkhag to the west, and Lauri Gewog in Samdrup Jongkhar to the south. In the south, the sanctuary is connected to Jomotshangkha Wildlife Sanctuary through a biological corridor, contributing to the Bhutan Biological Conservation Complex (B2C2).

Merak and Gyengu villages under Merak Gewog and Pussa, Tengma, Manirong, Sakteng, Borangmang and Borangtse under Sakteng Gewog are located in the mid valley. Thrakthri, Dak, Murbee and Kheliphu are situated in the lower hill slope. Joenkhar, Tholong, Shingkar and Khashiteng are located on lower valley.

From a geological perspective, the Sakteng Wildlife Sanctuary consists of Tethyan meta-sediments, and its surface features include Periglacial, Aeolian, and Colluvium deposits on slopes, with significant alluvium present in high valleys. The upper region of SWS exhibits a broad expanse characterized by gentle slopes and screes, hosting numerous alpine lakes. In contrast, the lower sections are deeply carved by streams and rivers, forming narrow valleys.

Mid-valley areas encompass the villages of Merak and Gyengu under Merak Gewog, as well as Pussa, Tengma, Manirong, Sakteng, Borangmang, and Borangtse under Sakteng Gewog. Thrakthri, Dak, Murbee, and Kheliphu are positioned on the lower hill slopes, while Joenkhar, Tholong, Shingkar, and Khashiteng are situated in the lower valleys.

b) Climatic conditions

Sakteng Wildlife Sanctuary (SWS) can be broadly divided into three climatic zones: subtropical, temperate, and alpine meadows. The altitude within the sanctuary ranges from 1500 to 4500 meters, encompassing a sub-tropical climate in the lower valleys and

transitioning to alpine meadows in the higher mountainous regions. The majority of SWS falls within the temperate zone, characterized by cold winters and warm summers, along with intermittent heavy rainfall.

The temperate climate in the area is notable for its cold winters and warm summers, with the highest precipitation occurring in June, July, and August. Sporadic rainfall is observed throughout late April to early October, particularly during the late afternoon. Snowfall is a regular phenomenon from mid-October to early April.

c) Hydrological conditions

Sakteng Wildlife Sanctuary (SWS) can be segmented into five sub-watersheds in Eastern Bhutan. The largest among them is the Gam-ri watershed, covering 39.2% of the total area, followed by Yachu (19.4%), Shaar-chhu (18.9%), Jomo-ri (15.1%), and the smallest being Mera-ama-ri (7.4%). The three major rivers in SWS – Gam-ri, Mera-ama-ri, and Jomo-ri – are sustained by numerous small and medium-sized lakes, streams, and seasonal rain/snowfall. It's noteworthy that there are no permanently snow-capped mountains in SWS. Gam-ri originates from the far northeastern part, bordering India at Jang-Puensum (three brothers) and Dremaling Lake, joined by various small streams. Bamukpa-ri, originating from Tsho-na in the Tshezung area, is the primary tributary of Gam-ri.

According to the initial investigation, the Sanctuary contains 104 lakes of varying sizes, contributing to approximately fourteen small rivers within its catchment area. These rivers play a crucial role as significant tributaries in major river systems such as Mera-ama-ri and Drangme- chhu in the Eastern region. It's worth noting that over 90% of these lakes are situated in alpine regions.

d) Flora and Fauna

The terrestrial biodiversity survey documented a total of 858 plant species belonging to 141 families and distributed across 35 orders. Among these, 57% were classified as herbs (including climbers), 17% as trees, 14% as shrubs, and 12% as orchids. Notably, coniferous forests dominate approximately 65% of the surveyed area, comprising 12 different species falling under seven genera. These genera include Fir (*Abies densa*), Hemlock (*Tsuga dumosa*), Larch (*Larix griffithii*), Himalayan Yew (*Taxus sp.*), Bhutan pine (*Pinus bhutanica*), Chir pine (*Pinus roxburghii*), and Spruce (*Picea spinulosa*). Additionally, Juniper species play a significant role in the ecosystem, with five different types identified, namely

Juniperus recurva, *J. communis*, *J. cf. indica*, *J. squamata*, and *J. pseudosabina*.

Due to the challenging topography characterized by significant altitude variations ranging from 1500m to 4500m, the SWS possesses remarkable biodiversity and ecosystems. This area serves as a habitat for numerous faunal species that are critically endangered or facing threats. The biodiversity survey conducted in 2015 unveiled a rich collection of diverse terrestrial, avian, and aquatic species, many of which are exclusive to the eastern Himalayan region and hold global importance for conservation efforts.

e) Socio-economic conditions

Due to recent progress in infrastructure development, including enhanced road and electricity connectivity, the living standards of both communities of Merak and Sakteng have significantly improved. This advancement has not only generated additional employment opportunities for the local population but has also drawn a growing number of tourists. The construction of motor roads has improved market accessibility, allowing the residents to sell their products over a broader geographical area.

Based on the wealth ranking assessments carried out during the 2015 social survey, a significant portion of households are categorized as having a "Middle" income level, with an average annual income of Nu. 75,000.00 per household. There are only a limited number of households classified as "Poor" and "BPL" (Below Poverty Line), with average annual incomes of Nu. 32,500.00 and Nu. 12,500.00 per household, respectively.

Main sources of income for these communities are from the sales of livestock produce such as butter, cheese, fermented cheese “Yoshu”, meat and wool to the nearby towns. Of late, they have also started collecting non-wood forest produce such as mushrooms, wild vegetables, tubers, incense making herbs and medicinal plants to supplement their income.

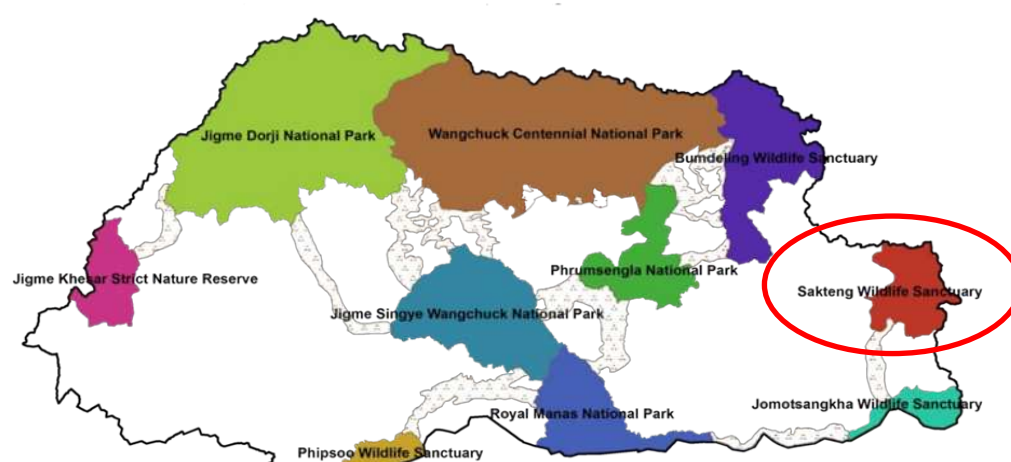


Figure 1. Location of Sakteng Wildlife Sanctuary

3. Planned activities in Year 2025-2026

Activity 3.1 Corral Fencing Installation to Mitigate Livestock Depredation

Budget: Nu. 1.3 million

Timeline: July 2025 - June 2026

Location: Sakteng, Merak and Joenkhar

The Corral Fencing Installation project aims to mitigate livestock depredation in Sakteng, with a budget of Nu. 1.3 million and an implementation timeline from October 2025 to March 2026. In the Sakteng Wildlife Sanctuary, where 85% of the population depends on livestock for sustenance and human-wildlife conflicts is a pressing issue. Livestock, particularly calves, are highly vulnerable to attacks by wild carnivores, posing a significant challenge to local herders. Building on the success of previous pilot corral fencing projects in Merak and Sakteng, implemented by the Sakteng Wildlife Sanctuary (SWS) in collaboration with the Nature Conservation Division (NCD), this initiative will further expand the installation of corral fencing to safeguard livestock.

To ensure flexibility, portable equipment will be provided, allowing herders to shift between grazing lands while maintaining protection for their animals. The installation process will involve several key steps, including the supply of corral fencing wire, solar panels, and solar wire to support electrified fencing systems. Additionally, inverter batteries will be provided to ensure a reliable power source for the fencing. Since sturdy fence posts are essential, pole-sized trees will be selectively cut to serve as posts for the fencing structure. The fencing will enclose a small area near herders' huts, creating a secure space to protect calves from wild predators.

For this installation, certified experts will be hired, along with four helpers. A total of five people who will complete the work in 16 days. They will be accommodated at the herders' camp. A total of 54 herders will benefit from the corral fencing, with priority given to those who have registered human-wildlife conflict cases with SWS.

3.1.1 Potential social and environmental impacts of the activity are:

1. Generation of waste while installing the corral fencing.
2. Occupational safety of workers.
3. Safety of commuters.



Figure 2. Corral fencing installed by NCD in Merak.

Activity 3.2 Improvement of Alpine Meadows

Budget: 0.4 million

Timeline: October 2025-March 2026

Location: Merak, Sakteng & Joenkhar.

The degradation of alpine meadows in the SWS is primarily attributed to two major factors: excessive grazing and unpredictable climatic conditions, particularly linked to climate change. This deterioration is evident through the encroachment of *Rhododendron* and *Juniper krummholz*, as well as the proliferation of unpalatable herbs and shrubs, further exacerbated by soil erosion. The decline in alpine meadows significantly affects both the population and productivity of herbivores, whether wild or domestic. The Merak and Sakteng communities, semi-nomadic pastoralists, rely heavily on natural grasslands for grazing their livestock, including yak, dzo-dzom (a local breed of cattle), and sheep. The decreasing quality of alpine meadows directly correlates with reduced livestock productivity. In response, herders often increase their livestock numbers to compensate, unintentionally intensifying the pressure on already degraded meadows.

To ensure the sustained health of herbivore populations in the SWS alpine regions, urgent restoration and improvement of alpine meadows are necessary. The following measures will be undertaken: cutting and uprooting of unpalatable shrubs and debranching of unpalatable shrubs. After debranching, the lops and tops will be carried out prescribed burning to clear the

area effectively. A team of 15 workers will be engaged in these restoration activities, and they will be accommodated in the herders' camp for the duration of the project.

3.2.1: Potential social and environmental impacts of the activity are:

1. Occupational safety of workers.
2. Waste generation by workers

Activity 3.3 Construction of 4-unit staff quarter at Sakteng Park Range

Budget: Nu. 10 million

Timeline: July 2025 - June 2026

Location: Sakteng Park Range

The construction of a 4-unit staff quarter at the Sakteng Park Range is planned under the Sakteng Wildlife Sanctuary (SWS), with an allocated budget of Nu. 10 million. The project will be implemented from July 2025 to June 2026. Sakteng Park Range is the largest range under SWS, covering an area of 333.69 sq. km, and located at an altitude of 2,996 meters under Sakteng Gewog in Trashigang. The range extends between altitudes of 1,800 m to 4,500 m. The land cover is dominated by Fir forests (30.94%), followed by Mixed Conifer (25.57%) and Shrubs (12.4%).

The Range Office plays a vital role in delivering forest and wildlife services as it falls under Sakteng Dungkhag, which has a high concentration of households. Despite the heavy workload, park officials currently lack residential facilities and are compelled to stay in rented houses. Due to the acute housing shortage in Sakteng, most staff share limited accommodations, while some are forced to keep their families in Radhi, approximately 75 km away. To address this challenge and improve staff welfare and efficiency, the SWS has proposed constructing a four-unit staff quarter at the Sakteng Range Office.

The construction will be carried out through a contractor selected via the Government Procurement System. The building will cover a footprint of 162 m² and will be constructed on a piece of barren land that is registered under the State Reserve Forest and managed by the Sakteng Park Range. Since the land is government-owned and there are no private claims, environmental clearance from the gewog or community is not required. However, community consultations will be carried out to share information and address any concerns related to the construction.

Approximately 20 workers will be employed by the contractor for the duration of 12 months. They will be hosted within the Range Campus in temporary huts made of CGI sheets, with attached toilets and waste bins to ensure sanitation and proper waste disposal. Construction materials such as timber will be sourced from registered private sawmills based in Doksum and Trashigang. Boulders and sand will be obtained from authorized surface collection sites of NRDCL and SMCL at Doksum. Other materials not readily available locally will be procured from Trashigang or Samdrupjongkhar. An estimated 1,000 liters (1,000 ML) of water per day will be required during the construction phase, and this will be drawn from the existing water supply used by the park office to avoid over-extraction from natural sources.

3.3.1 Potential social and environmental impacts of the activity are

1. Waste generation from construction workers.
2. Noise pollution.
3. Air pollution.
4. Occupational health and safety of workers.



Figure 3. Location of Sakteng Park Range

Activity 3.4 Development of Rhododendron Park

Budget: Nu. 0.3 million

Timeline: July 2025 - June 2026

Location: Phremelaptsa, Sakteng

Sakteng Wildlife Sanctuary (SWS), which is home to 41 species of Rhododendron (SWS, 2017), aims to utilize this rich biodiversity to enhance ecotourism by developing a Rhododendron Park. With a budget of Nu. 0.3 million secured for the project, the park is expected to serve as both a major tourist attraction and a conservation initiative, providing visitors with breathtaking scenic views while protecting the diverse flora.

The proposed park will be located in Premelaptsa, Sakteng, about a 20-minute walk from the gewog center and directly opposite to Sakteng village, offering stunning views for both tourists and local residents. Spanning 3 hectares, the site itself is ecologically significant, as it contains 12 species of Rhododendron and serves as a habitat for the endangered Red Panda. The area has a gentle slope. The selection of the site was finalized after extensive consultations with Sakteng Drungkhag, the Gewog Administration, and local communities.

The development work, scheduled from July 2025 to June 2026, will include the construction of an entrance gate with an information board, an internal trekking route, resting canopies, Rhododendron species nameplates, and various signages. To complete these activities, 13 laborers will be hired for a period of two months, during which they will stay in rented houses within Sakteng village. Additionally, since the site is located near the Gamri River, water required for construction will be sourced directly from the river, ensuring a reliable supply without major logistical difficulties.

3.4.1 Potential social and environmental impacts of the activity are:

- ❖ *Wastes:* Improper disposal of construction debris, plastic waste, or workers' garbage could pollute the site and surrounding environment.
- ❖ *Water pollution:* Waste materials or disturbed soil could enter nearby water sources, such as the Gamri River, potentially affecting water quality.
- ❖ *Soil disturbance:* Excavation and construction activities may lead to soil erosion as site terrain is gentle slope.
- ❖ *Workers' health and safety:* Without proper safety measures, workers may face risks such as injuries from falls, equipment-related accidents, or exposure to dust and noise.

Noise pollution: Dust from excavation and noise from construction activities may temporarily affect air quality and disturb both wildlife and local communities.



Figure 4. Location of Rhododendron park.

Activity 3.5 Improvement of waterhole at Khasiteng, Merak

Budget: Nu. 0.1 million

Timeline: July 2025 - June 2026

Location: Khasiteng, Merak

A budget of Nu. 0.1 million has been secured for the improvement of the waterhole at Khasiteng, with the project scheduled to take place from July 2025 to June 2026. During the 2024 waterhole survey conducted within Sakteng Wildlife Sanctuary, the team discovered that the waterhole at Khasiteng is frequently used by various wildlife due to the limited availability of water sources in the area. However, the waterhole is at risk of drying up, prompting the survey team to recommend its immediate improvement and regular monitoring to support the wildlife dependent on it.

Khasiteng Chiwog, under Merak Gewog, is located a four-day walk from the gewog center. The area consists of cool broad-leaved forest at an altitude of 2,500 meters above sea level, with a gently sloping terrain. The improvement work will focus on removing debris, silt, and vegetation that block the waterhole to enhance water retention and improve water quality. The waterhole will also be expanded to increase its capacity and ensure water availability even during dry seasons. Additionally, native plants will be planted around the waterhole to reduce

soil erosion, and enhance the habitat. Structures such as check dams or channels will be constructed to capture and direct rainwater into the waterhole, further improving water availability.

To monitor the effectiveness of these improvements, cameras will be installed to track wildlife usage and water levels, ensuring timely interventions if needed. The project will cover an area of approximately 2 acres and require a team of 8 people working for two weeks. Since there are no nearby settlements, labourers will stay in temporary shelters (tents) and take necessary precautions to avoid conflicts with wildlife during the project execution.



Figure 5. Location of Waterhole.

3.5.1 Potential social and environmental impacts of the activity are Wastes:

- ❖ Soil from excavation activities and waste from construction activities and waste generated by workers. Garbage produced by laborers will be collected at site and burnt properly to avoid pollution and assimilation by wild animals later.
- ❖ *Workers' health and safety:* working gloves will be provided as safety gear. Laborers will be living in tents and have piped water from nearby stream for safe drinking water and they will take rations from the town.
- ❖ *Increased poaching* as the waterholes will become a hotspot for animals gathering in one site thereby increasing the risk of poaching.

Activity 3.6 Rainwater Harvesting System

Budget: Nu. 0.8 million

Timeline: July 2025 - June 2026

Location: Joenkhar & Sakteng

Approximately 90 percent of the settlers within Sakteng Wildlife Sanctuary (SWS) are semi-nomadic herders who rely heavily on cattle grazing for their livelihood. However, the sanctuary faces a severe shortage of grazing land, and many of these areas suffer from critical water scarcity, affecting both drinking water access and livestock sustenance. Due to this limited water availability, herders can only use these grazing lands during the summer months when water is slightly more accessible. Additionally, most herders follow a migratory pattern, moving to higher altitudes in the summer and descending to lower elevations in the winter, making their access to consistent water sources even more challenging.

To address this issue, SWS has proposed the construction of a rainwater harvesting system, which will help mitigate water shortages in key grazing areas. This system aims to provide a stable water supply for livestock while also benefiting local wildlife that depends on these areas for survival. With a secured budget of Nu. 0.8 million, the project will focus on establishing efficient rainwater collection, storage, and distribution mechanisms, ensuring a sustainable water management system for both human and ecological needs.

As a pilot-based project, the grazing land of Tagser in Jeonkhar Chiwog, Sakteng, has been selected due to its lack of a reliable water source. To address this challenge, the project will include the construction of a CGI-sheet structure equipped with gutters to efficiently collect rainwater and direct it into storage tanks. These tanks will be fitted with filtration systems, ensuring that the harvested water remains clean and safe for drinking.

By implementing this initiative, SWS aims to provide a sustainable water supply for both livestock and herders, thereby improving grazing conditions and reducing the seasonal hardships caused by water scarcity.

3.6.1 Potential social and environmental impacts of the activity are:

- ❖ ***Waste generation:*** Construction activities will likely produce solid waste, such as packaging materials, construction debris, and unused parts. Improper disposal of these

wastes could lead to pollution in the environment, affecting both the ecosystem and water quality.

- ❖ *Noise pollution:* The construction activities may generate significant noise. This could disturb local wildlife and livestock, which may be sensitive to sudden or loud noises, potentially leading to stress or displacement.
- ❖ *Health and Safety Risks for Workers:* Construction sites can pose significant health and safety risks to workers, including the possibility of accidents, injuries, or exposure to hazardous materials.

5. Mitigation Measures for Environmental and Social Impacts

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
Activity 3.1: Corral Fencing Installation to Mitigate Livestock Depredation				Nu. 1.3
1. Generation of waste while installing the corral fencing.	Short term minor	<ul style="list-style-type: none"> Bring back all non-degradable waste to the proper dumping site Make sure that no waste is left unattended in the fencing site 	SWS Management and BFL Focal	
2. Occupational safety of workers	Short term minor	<ul style="list-style-type: none"> Comply with the worker's health and safety guidelines of BFL Use safety gear (especially the proper installation equipment like a plier, tester, and voltmeter for testing the voltage) 	BFL Focal and site supervisor	
3. Safety of commuters	Short term minor	<ul style="list-style-type: none"> Installation of signage at the fenced sight Training of herders using the area on safety measures around the corral fence. 	BFL Focal and sight supervisor	
Activity 3.2: Improvement of Alpine Meadows				

Occupational safety of workers	Short term minor	<ul style="list-style-type: none">• Comply with the worker's health and safety guidelines of BFL;• Use safety gears (boots, gloves & mask);• No underage workers should engage in the work;• Reserve appropriate first aid kit (esp. for high altitude sickness and injuries);• Ensure decent work conditions, including an appropriate salary, working hours, accommodation	SWS Management and BFL Focal	Nu. 0.4
Waste generated by worker	Short term minor	<ul style="list-style-type: none">• Bring back all non-degradable waste to the proper dumping site;• Make sure that no waste is left in alpine meadows	BFL Focal and site supervisor	
Activity 3.3: Construction of 4-unit staff quarter at Sakteng Park Range				
Waste generation from construction workers	Short term minor	<ul style="list-style-type: none">• Awareness briefing on waste management to the contractor and worker before the commencement of work• Install proper waste bins• Segregate non-biodegradable waste and dumped in designated land fill site• Construct proper toilet for workers	SWS Management and BFL Focal	

Noise pollution	Short term minor	No significant noise is expected to produce during the work. To maintain the peace and privacy of the occupant working time is restricted to 8 AM to 8 PM.	BFL Focal	Nu. 10
Air pollution	Short term minor	<ul style="list-style-type: none"> • Apply wet sanding while removing rust from the CGI sheet 	BFL Focal & site engineer	
Occupational health and safety of workers	Short term minor	<ul style="list-style-type: none"> • Comply with the BFL and RGoB occupational health and safety guidelines • Ensure decent working conditions • No under-aged workers should engage in the work • Monitor health of the workers 	BFL Focal & site engineer	
<i>Activity 3.4: Development of Rhododrendon Park at Sakteng</i>				
Waste management challenges	Short term	<ul style="list-style-type: none"> • Awareness briefing on waste management to the contractor and worker before the commencement of work • Install proper waste bins • Segregate non-biodegradable waste and dumped in designated land fill site 	SWS Management and BFL Focal	Nu. 0.3
Noise pollution	Short term	<ul style="list-style-type: none"> • No significant noise is expected to produce during the work. To maintain the peace and privacy of the occupant working time is restricted to 8 AM to 8 PM. 	SWS Management and BFL Focal	

Occupational health and safety of workers	Short term	<ul style="list-style-type: none">Comply with the BFL and RGoB occupational health and safety guidelines.	SWS Management and BFL Focal	
Activity 3.5: Improvement of Waterhole at Khasiteng				
Waste	Short term	<ul style="list-style-type: none">Proper containers/waste bins should be provided at the project site;Collection, transportation and final disposal of all waste should be carried out on a daily basis and not left in the protected areas.	SWS Management and BFL Focal	Nu. 0.1
Occupational health and safety of workers	Short term	<ul style="list-style-type: none">Comply with the BFL and RGoB occupational health and safety guidelines.	SWS Management and BFL Focal	
Activity 3.6: Rainwater Harvesting System				
Waste	Short term	<ul style="list-style-type: none">Awareness briefing on waste management to the contractor and worker before the commencement of workInstall proper waste binsSegregate non-biodegradable waste and dumped in designated land fill site	SWS Management and BFL Focal	Nu. 0.8
Noise pollution	Short term	<ul style="list-style-type: none">No significant noise is expected to produce during the work. To maintain the peace and privacy of the occupant working time is restricted to 8 AM to 8 PM.	SWS Management and BFL Focal	

Occupational health and safety of the workers	Short term	<ul style="list-style-type: none"> Comply with the BFL and RGoB occupational health and safety guidelines. 	SWS Management and BFL Focal	
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6. ESMP Implementation Arrangements

The execution of project activities will be overseen by the designated BFL focal person stationed at SWS. The focal will bear responsibility for ensuring adherence to all procedures delineated within this ESMP, as well as fulfilling any obligations necessary to secure clearances, permits, approvals, or consent documents from pertinent authorities and stakeholders.

The ESMP must be integrated into the estimate/contract that SWS will finalize with the contractor(s) responsible for executing the planned activities. The designated BFL Focal Point or relevant implementing entity is obliged to execute all proposed preventive or mitigative environmental and social measures outlined in this plan. They must also maintain documentation verifying the implementation of these measures. The implementing agency/contractor is required to organize an Occupational Health and Safety (OHS) information session for all workers before commencing project activities and prior to undertaking any tasks posing significant health risks.

The SWS's Supervising Engineer needs to monitor the implementation of proposed measures by the contractor and contractor's representative with visual checking, reviewing the records of evidence that the measures have been applied and ask the contractor to apply the measures as soon as possible. Non-compliances should be recorded and the report on any non-compliance should be reported to the ESS officer immediately, and the ESS officer will report it to the PCU (M&E Officer). Non-compliance should be closed with appropriate measure/s and the evidence should be kept.

As per the agreement, the release of project funds to SWS is subject to their complete adherence to the safeguards requirements.

7. ESMP Monitoring Arrangements

The designated BFL focal person at SWS will diligently oversee the execution of all planned activities and the necessary mitigation measures, ensuring strict adherence to both this ESMP and the terms and conditions outlined in the environmental clearances issued by the national authorities of RGoB.

SWS is responsible for ensuring that all external contractors and service providers operating within its jurisdiction adhere to the safeguard requirements delineated in the ESMP.

Protocol for monitoring of activities under this ESMP will be carried out as follow;

Sl	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	Complete		
1	Corral Fencing Installation to Mitigate Livestock	Field Focal	October 2024	March 2025	Sakteng	Collar fencing handing taking
		ESS focal				
2	Improvement of Alpine Meadows	Field Focal	October 2025	March 2026	Merak, Sakteng & Joenkhar	Work handing Taking report
		ESS focal				
3	Construction of 4-unit staff quarter	Field Focal	October 2024	March 2025	Merak	Work completion report
		ESS focal				
4	Development of Rhododrendon park	Field Focal	July 2025	June 2026	Sakteng	Work completion report
		ESS focal				
5	Improvement of waterhole at Khasiteng	Field focal	July 2025	June 2026	Merak	Work completion report
		ESS focal				
		BFLS				
6	Rainwater Harvesting System	Field focal	July 2025	June 2026	Sakteng	Work completion report
		ESS focal				

8. Capacity Need and Budget

The implementation of activities outlined in this ESMP will involve the BFL focal person, supervising engineer/staff, and a contractor responsible for hiring workers as specified in the contractual agreement.

- **The budget for each of the activities is:**

Sl#	Activity	Amount (Nu.)	Budget for ESS mitigation
1	Corral Fencing Installation to Mitigate Livestock Depredation	1,300,000	
2	Improvement of Alpine Meadows	400,000	
3	Construction of 4-unit staff quarter at Sakteng	10,000,000	
4	Development of Rhododendron park	100,000	
5	Improvement of waterhole at Khasiteng	300,000	
6	Rainwater Harvesting System	800,000	
Total		12,900,000	

9. Consultation and Disclosure Mechanisms

This ESMP has been developed following thorough consultations with the community and relevant stakeholders, where applicable. The ongoing restoration and improvement of alpine meadows and lowland grasslands are scheduled activities for the year 2023 (year 5). The continuation of the restoration/improvement of alpine meadows aligns with the outcomes of the public consultation held from December 19th to 20th, 2019.

Public consultation is deemed unnecessary for the implementation of corral fencing installation and maintenance of the Range Office, as these activities do not encroach upon or disrupt private property or grazing grounds. Nonetheless, this ESMP encompasses all essential social and environmental mitigation measures required for the successful execution of the BFL program.

The complete English version of this ESMP will be made publicly accessible on the websites of MoENR, BFL, and WWF AE. Additionally, hard copies of the ESMP will be accessible at the SWS Management Office and the PCU Office.

10. Stakeholder Engagement Plan

The tasks of corral fencing installation, enhancement of alpine meadows, and upkeep of the Range office will be contracted out to local community contractors.

11. Grievances Redressal Mechanism

This ESMP and its mitigation measures are required to be disclosed to communities for 30 days prior to 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-performances of project obligation 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 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>.

Annexure 1

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) 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 climate, 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 through the implementation of fire codes applicable to industrial settings. 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 adequate number of relevant fire extinguishers.
- Workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction.
- Smoking, lightening, or carrying of matches, lighters or smoking materials shall be prohibited.
- 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.
- Equipping facilities 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.

Lavatories and Showers

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

Potable Water Supply

- Adequate supplies of potable 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

- Workplaces should, to the degree feasible, receive natural light and be supplemented with sufficient artificial illumination to promote workers' safety and health, and enable safe equipment operation. Supplemental 'task lighting' may be required where specific visual acuity requirements should be met.
- Emergency lighting of adequate intensity should be installed upon failure of the principal artificial light source to ensure safe shut-down, evacuation, etc.

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 should, if feasible, be installed to protect against falling items.

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.
 - Remote sites should have written emergency procedures in place for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility.
- ### Work Uniform
- The contractor shall provide a working uniform to each worker.
 - All workers shall be required to attend the duty in proper uniform unless otherwise instructed by the Contractor.

Air Supply

- Sufficient fresh air should be supplied for indoor and confined workspaces. Factors to be considered in ventilation design include physical activity, substances in use, and process related emissions. Air distribution systems should be designed so as not to expose workers to draughts.
- Re-circulation of contaminated air is not acceptable. Heating, ventilation and air conditioning (HVAC) systems should be equipped, maintained and operated so as to prevent growth and spreading of disease agents (e.g. *Legionella pneumophila*) or breeding of vectors (e.g. mosquitoes and flies) of public health concern.

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.

2. 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 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- The use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110dB(A). Hearing protective devices provided should be capable of reducing sound levels at the ear to at least 85 dB(A).
- Although hearing protection is preferred for any period of noise exposure in excess of 85 dB(A), an equivalent level of protection can be obtained, but less easily managed, by limiting the duration of noise exposure. For every 3 dB(A) increase in sound levels, the 'allowed' exposure period or duration should be reduced by 50 percent.
- 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

Exposure to hand-arm vibration from equipment such as hand and power tools, or whole-body vibrations from surfaces on which the worker stands or sits, should be controlled through choice of equipment, installation of vibration dampening pads or devices, and limiting the duration of exposure. 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.
- Rubber tired construction or other vehicles that come into direct contact with, or arcing between, high voltage wires may need to be taken out of service for periods of 48 hours and have the tires replaced to prevent catastrophic tire and wheel assembly failure, potentially causing serious injury or death.
 - Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work.

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.
- Provisions should be made for persons who have to wear prescription glasses either through the use overglasses or prescription hardened glasses.

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 work station (a solid piece of light metal, canvas, or plywood designed to block welding light from others). Devices to extract and remove noxious fumes at the source may also be required.

Working Environment Temperature

Exposure to hot or cold working conditions in indoor or outdoor environments can result 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, and avoiding consumption of alcoholic beverages.

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:

- Facility and workstation design with 5th to 95th percentile operational and maintenance workers in mind.

- 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.
- 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 life-lines.
- 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.

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

5. 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 worksite safe and free.
- The living facilities are built using adequate materials, kept in good repair and kept clean and free from rubbish and other refuse.

2. Drainage

- The site is adequately drained.

3. Heating, air conditioning, ventilation and light.

- Living facilities are provided with adequate heating, ventilation, and light systems including emergency lighting.

4. 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 or WHO standards.
- 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 is regularly monitored.

5. 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 rubbish collection are provided and emptied on a regular basis.
- Pest extermination, vector control and disinfection are undertaken throughout the living facilities at least once.

6. Rooms/dormitories facilities.

- Rooms/dormitories are kept in good condition.
- Rooms/dormitories 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 minimized.
- Doors and windows are lockable and provided with mosquito screens when necessary.
- Mobile partitions or curtains are provided.

- Adequate number of furniture such as table, chair, mirror, and lamps are provided for all workers.

- Separate sleeping areas are provided for men and women.

7. Bed arrangements and storage facilities.

- A separate bed is provided for every worker.
- The practice of “hot-bedding” is prohibited.
- There is a minimum space of 1 meter between beds.
- The use of double deck bunks is minimized.
- If double deck bunks are in use, there is enough clear space between the lower and upper bunk of the bed.
- Workers are provided with comfortable mattresses. Workers may be expected to use their own pillows and bed linens.
- Workers wash bed linen frequently and applied with adequate repellents and disinfectants (where conditions warrant).
- Adequate facilities for the storage of personal belongings are provided.
- Separate storages for work clothes and PPE and depending on condition, drying/airing areas are provided.

8. 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 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.
- Shower facilities are provided with water heating facilities.

9. 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.

10. Leisure, social and telecommunications facilities.

- Basic social collective spaces should be available to workers.
- Workers are provided with dedicated places for religious observance, as appropriate.
- The employer provides workers with local sim cards that can be used for communication on their personal cell phones.

Contents of first aid box or cup-boards

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

1. Small sterilized dressings (12)
2. Medium size sterilized dressings (6)
3. Large size sterilized dressings (6)
4. Large size sterilized burn dressings (6)
5. (1/2 oz.) Sterilized cotton wool (6 packets)
6. (2oz.) Bottle containing a two per cent alcoholic solution of iodine (1)
7. (2oz.) Bottle containing Betadine (antiseptic solution) having the dose and mode of administration indicated on the label (1)
8. Roll of adhesive plaster (1)
9. A snake bite lancet (1)
10. Torch light (1)
11. Pair of scissors (1)
12. Tablets Aspirin (5gms) 2 dozen
13. Burn Ointment (2 tubes)
14. Dettol (2 phial, about 2 ozs)
15. Bandages 4 inches wide
16. Bandages 2 inches wide
17. Triangular bandages (2)
18. Packets of safety pins (1)
19. A supply of suitable splint

Annexure II- BFL specific GRM Brochure



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

- Tshewang Tenzin
- 17929856
- tshewangt@moenr.gov.bt
- Sakteng Wildlife Sanctuary, Phongmey, Trashigang

MERAK RANGE OFFICE

- Phuntsho Wangdi
- 17681453
- pwangs13@gmail.com
- Park Range Office, Merak Range, Trashigang

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

SAKTENG RANGE OFFICE

- Jambay Dhendrup
- 17943850
- dhendrup15@gmail.com
- Park Range Office, Sakteng Range, Trashigang

JOENKHAR RANGE OFFICE

- Sonam Samten
- 17738192
- sonamsamten7@gmail.com
- Park Range Office, Joenkhara Range, Trashigang

IF YOU ARE NOT COMFORTABLE FILING YOUR COMPLAINTS AT PROTECTED AREA OFFICES, YOU MAY ALSO FILE YOUR COMPLAINTS AT THE NEAREST FOLLOWING GEWOG OFFICES:

1. Merak Gewog – 17827593
2. Sakteng Gewog – 17270713

BFL PROJECT COORDINATION UNIT (PCU)

- Ugyen Dechen
- 17491881
- ugyeendechen@gmail.com
- BFL Project Coordination Unit, Department of Forests and Park Services, Ministry of Energy and Natural Resources, 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.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/may be 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.