

## **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 Bumdeling 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 2024 under Bumdeling Wildlife Sanctuary are:

1. Build covered catchment pond for community at Khoma
2. Improvement of waterhole at Baru Tsho, Tshaling under Khoma Geog
3. Maintenance of Sherzong Range and Staff quarter

## བཀོད་ཁྱབ་བཅུད་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) རྒྱུ་ལྡན་དེ་ཡོད་པ་ཡིན། དེ་ཡང་ལས་འགུལ་འདི་ལས་བརྟེན་ཏེ་སྤང་སྦྱོབ་ས་ཁོངས་ནང་སྤྱོད་མེད་མི་མེས་དང་ཡང་ན་སྤང་སྦྱོབ་ས་ཁོངས་ཀྱི་མཐའ་སྐོར་ཏེ་འཆོ་བ་སྤང་སྦྱོབ་ས་ཁོངས་ལུ་བརྟེན་སྤྱོད་མེད་མི་མེས་ཡང་ན་གལ་ཅན་གྱི་མཐའ་སྐོར་གནས་སྤངས་ཀྱི་ས་ཁོངས་ཚུ་ལུ་གཞོན་པ་འབྱུང་ནི་ཉེན་ཁ་ཡོད་པ་དང་གལ་སྲིད་གཞོན་པ་འབྱུང་པ་ཅིན་གཞོན་ཉེན་ཚུ་དམིགས་གསལ་ས་གནས་ནང་རྒྱུ་ལྡན་ཅིག་འབྱུང་ནི་དང་གཞོན་ཉེན་མར་ཕབ་རྒྱུ་ནི་དང་ཚུ་མེད་ཡང་གཏང་ཚུགས་པ་ཡིན།

དེ་འབད་མ་ལས་འབྲུག་རྒྱལ་ཡོངས་སློང་ཀའི་ཆོ་སྲོག་མ་དངུལ་ཐོག་ལུ་རྒྱལ་སྐོར་འབད་ཡོད་པའི་ལས་འགུལ་དང་ལས་ལྟ་ཚུ་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་གཉིས་ལུ་ཡུན་བརྟན་གྱི་ཕན་པ་ཡོད་པ་བཟོ་བ་གི་མ་ཆད་འབྲུག་རྒྱལ་ཡོངས་སློང་ཀའི་ཆོ་སྲོག་མ་དངུལ་གྱི་སྤྱི་བྱས་ལམ་སྟེན་དང་འབྲེལ་ཐབས་ལུ་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་དགོས་དེ་མི་དམངས་ཀྱིས་བརྟན་དང་དུས་དང་དུས་སུ་མི་དམངས་ལུ་གསང་བ་བཤད་ནི་འདི་དགོས་ཡིན།

རང་བཞིན་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་སློང་ཀ་དང་སྲོག་ཆགས་རྒྱན་ལམ་ཚུ་ནང་ལས་ལྟ་ཚུ་འབད་བའི་སྐབས་ཐབས་ལམ་དང་བཟང་སྤྱོད་ཚུ་གསལ་སྟེན་འབད་མ་ཡིན་པ་དང་འདི་ཡང་ལས་ལྟ་ཚུ་འདི་གདམ་སེལ་ལམ་ལམ་ལུགས་དང་འབྲེལ་ཏེ་ཡིན། གདམ་སེལ་འབད་ཡོད་པའི་ལས་ལྟ་ཚུ་གི་ནང་ལས་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་ལུ་གཞོན་ཉེན་ཡོད་པའི་ལས་ལྟ་ཚུ་གི་དོན་ལུ་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྐྱོང་འཆར་གཞི་བཟོ་དགོ། འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ལས་ལྟ་ཚུ་འགོ་མ་བཟུགས་པའི་ཉེ་མ་གཞི་བཟུགས་འབད་བའི་སྐབས་དང་མཐུག་བསྐྱུལ་དུ་མཐའ་འཁོར་གནས་སྤངས་འཛིན་སྐྱོང་དང་གཞོན་ཉེན་མར་ཕབ་ཀྱི་ཐབས་ལམ་ཚུ་བཟུགས་དགོས་ཡིན།

དེ་འབད་མ་ལས་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ལས་ལྟ་ཚུ་མི་ཕྱེ་ལུ་འགན། བརྟེན་དང་སྟན་ལྷུ་དེ་ལས་ལྟ་ཚུ་འགོ་མ་ལུགས་ཚུ་གི་སྐོར་ལས་འགུལ་བཤད་ཁ་གསལ་ཚུ་དགོས་ཡིན། འཛིན་སྐྱོང་འཆར་གཞི་འདི་ནང་ལུ་གལ་གཏོགས་འབད་དགོ་པའི་ཁེ་གུ་ཡོད་མི་ཚུ་གི་ཉོག་བཤད་ཚུ་ཚུང་དགོ་པའི་ཁར་ཁེ་གུ་ཡོད་པའི་མི་ཚུ་གི་དོན་ལུ་གལ་གཏོགས་འཆར་གཞི་དགོ། གལ་གཏོགས་འཆར་གཞི་འདི་ནང་ཁེ་གུ་ཡོད་མི་དོན་འཛིན་འབད་ནི་དང་གལ་གཏོགས་འབད་ནི་འོ་ལམ་ལུགས་དེ་ལས་གལ་གཏོགས་ཀྱི་དུས་ཚོད་དང་བཅའ་སྲོག་ཚུ་ཚུང་དགོས་ཡིན། སློང་ཀ་དང་སྲོག་ཆགས་རྒྱན་ལམ་ཡིན་ཆང་ཚུ་གི་མཆར་གཞི་ལས་ལྟ་ཚུ་དང་འབྲེལ་ཏེ་དཔྱད་ཐོ་དང་སྟན་ལྷུ་བསྐྱར་ཞིབ་ཅིས་དབྱེད་འབད་ནི། དེ་ལས་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྐྱོང་འཆར་གཞི་འདི་ལོ་བསྟར་བཞིན་དུ་དུས་མཐུན་བཟོ་དགོས་ཡིན།

**བཅའ་ཁྲིམས་ཀྱི་དྲུགས་སྤང་སྦྱོབ་ས་ཁོངས་ཀྱི་དོན་ལུ་བྱི་ལོ་ ༢༠༢༥ རྒྱུ་མཐའ་འཁོར་གནས་སྤངས་དང་མི་ཕྱེ་འཛིན་སྐྱོང་འཆར་གཞི་དགོས་ཡོད་པའི་ལས་ལྟ་ཚུ་ཡང་།**

༡༥ མཁོ་མ་ལུ་མི་ཕྱེ་དོན་ལུ་གནམ་ཕྱུར་གྱི་དུས་ཚོད་ལུ་རྒྱ་བསྐྱེད་གསོག་འབད་སའི་རྒྱ་ཆེད་ཚུ་བཟོ་བསྐྱེད་འབད་ནི།

༢༥ མཁོ་མ་ཆེད་འོག་འོག་ལུ་ཡོད་པའི་བུ་རྩ་ཆོ་ལེགས་བཅས་འབད་ནི་དང་།

༣༥ ཁེ་གཞི་སློང་འཛིན་ཡིག་ཆང་དང་ལས་བྱེད་པའི་སྤྱོད་ཁང་ཉམས་བཅས་འབད་ནི།

# **Bhutan for Life Environmental and Social Management Plan** **for** **Bumdeling Wildlife Sanctuary (2025-2026)**

## **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 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 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 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 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

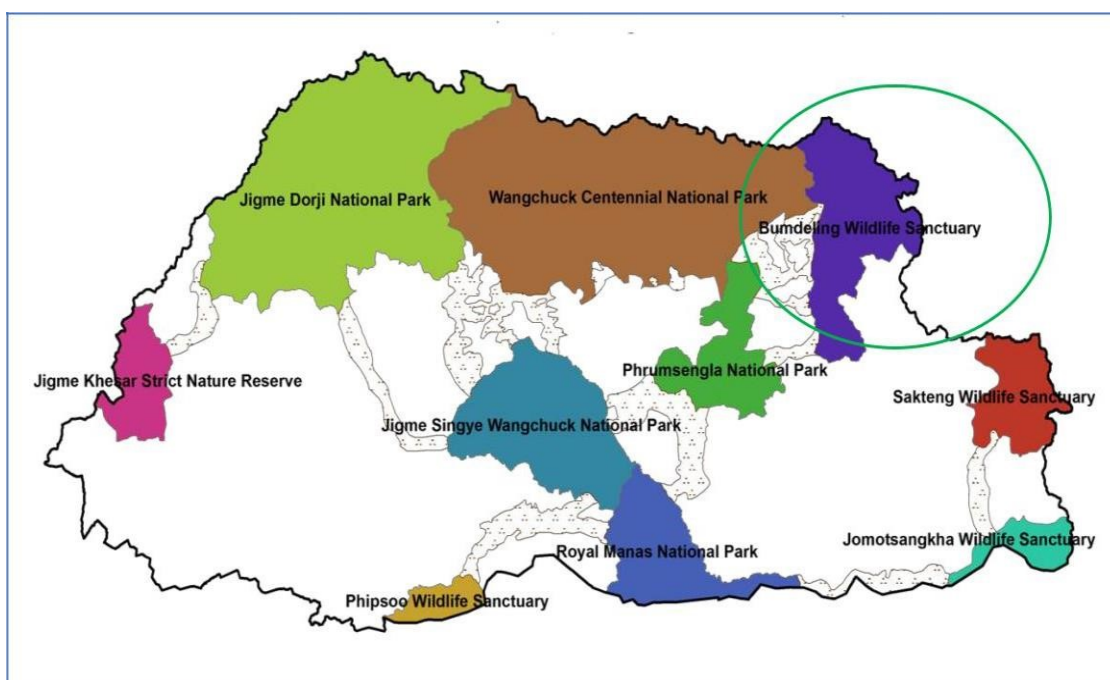
This Site-Specific ESMP is a project-specific source document detailing the environmental and social protection requirements to mitigate and minimize the adverse impacts. The

ESMP's primary purpose is to ensure that the environmental requirements and social commitments associated with the project are carried forward into 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

Established in 1994, the Bumdeling Wildlife Sanctuary was designated to safeguard the rich ecological diversity present in eastern Bhutan. Encompassing an area of 1534.24 square kilometers, the sanctuary stretches across portions of Trashiyangtse, Lhuntse, and Mongar. It shares boundaries with the Tibet autonomous region (China) to the north and the Arunachal Pradesh State (India) to the northeast. Featuring elevations ranging from 1390 to 6400 meters above sea level (masl), the sanctuary boasts rugged mountainous landscapes, rocky peaks, perpetual snow, small glaciers, glacial lakes, steep river valleys, and some flat plains. Nearly 90% of the sanctuary lies between elevations of 2500m and 5000m, with its glacial lakes and snow-capped peaks serving as crucial water sources for major drainage systems such as Kholongchhu, Khomachhu, and Sherichhu.



**Figure 1:** Location of Bumdeling Wildlife Sanctuary

Encompassing the Eastern Himalayan ecosystem, the sanctuary spans from warm broadleaved forests to alpine meadows and scree slopes. Over 70 percent of the protected area is forested, while more than one-third consists of snow, rock, and shrubbery.

Moreover, the Bumdeling floodplain is recognized by the Ramsar Convention as a significant wetland area. The Kholongchu River and its three tributaries flow through this wetland, providing water for irrigation and drinking to local communities. Additionally, a hydropower project is located 35 kilometers south of the wetland along the main river.

The sanctuary is home to approximately 1,119 households, primarily engaged in rice cultivation in lower regions, maize and grains in higher elevations, and yak herding in the high mountains. It plays a crucial role in preserving cultural and traditional practices, including the production of silk textiles known as "Kishuthara" and wooden containers called "Dappa," which serve as important sources of income. The sanctuary is also renowned for sighting of Black Necked Cranes, making it a popular destination for the tourists.

The following table shows a brief background summary about the BWS:

**Table 1 Summary of BWS**

No. of Mammals spp	52
No. of Plants spp.	966
No. of Birds spp (Nos)	356
No. of households	1119
Population (inside PA)	8782

No. of Dzongkhags covered	3 (Lhuentse, Mongar, Trashigang)
No. of Gewogs covered	3 (Khoma, Shermuhung, Bumdeling)
Ethnic groups	Sharchop, Kurtoes, Yangtsep, Sharchop, Yangtsep and Tshangla dialects.
Farming system	Rice, Maize, Yak Herders, Dappa makers, Daphne makers
Highlight Species	Black-necked cranes, Snow Leopard, Tiger, Asiatic wild dog, Himalayan Musk Deer, Red panda, Bumdeling floodplain is a declared Ramsar site

#### **(a) Geological and topographical condition**

From a geographical standpoint, the Sanctuary primarily comprises rugged mountainous terrain, rocky peaks, perpetual snow, small glaciers, glacial lakes, steep river valleys, and occasional plains. Approximately 90% of the Sanctuary's land lies within the elevation range of 2500m to 5000m. The predominant geological composition consists of Gneiss, with some areas featuring Quartzite, Graphite Schist, and limestone, contributing to the diverse landscape formations. Slopes are shaped by the accumulation of talus materials descending due to gravity. Alluvial and colluvial formations are evident in the narrow valleys of the BWS, consisting of soil, silt, clay, sand, and gravel deposited through soil and water erosion processes.

#### **(b) Climatic condition**

The Sanctuary exhibits a varied climate, transitioning from warm temperate in the south to cool temperate in the center, and finally to an alpine climate in the northern region. In the lower areas, maximum temperatures typically range from 20°C to 30°C, with minimum temperatures between 8°C to 15°C. The central region experiences maximum temperatures of 15°C to 20°C, and minimum temperatures ranging from 3°C to 10°C. The northern part of the Sanctuary remains consistently cold, often covered in snow. The heaviest rainfall occurs between May and September, with annual precipitation ranging from 1000mm to 3500mm.

#### **(c) Hydrological condition**

Bumdeling Wildlife Sanctuary has three primary river systems. The Kholongchhu flows through the central region, while the Khomachhu (Lhuentse) flows in the western part of the sanctuary. Sherichhu (Mongar) forms the main drainage system in the southern area. These rivers are sustained by numerous tributaries. Major tributaries of the Kholongchhu include Shingphelchhu, Lamzangchhu, Langmalachhu, Wominangchhu, and Dongdechhu, with a significant hydropower project located downstream of the Kholongchhu.

#### **(d) Flora and fauna**

The floral species diversity (H') is found highest in Cool Broadleaved Forest followed by Warm Broadleaved Forest and Mixed Conifer Forest whereas, the species diversity is lowest at Rhododendron Shrub and Dry alpine shrub regions of BWS. Due to vast altitudinal variation in the sanctuary, BWS houses varied species of floral diversity. There are 966 species of plants known to occur in BWS including 130 species of trees, 31 species of ferns, 579 species of herbs, 64 species of orchids and 162 species of shrubs.

### **(e) Socio-economic conditions**

A significant portion of income for residents of the park stems from the sale of agricultural products, including rice and vegetables such as chili and potatoes. Additionally, non-farm activities such as contract work, pottery, business ownership, shopkeeping, weaving, salaried employment, carpentry, farmhouse operations, and the sale of bamboo, Dapa, and paper products contribute to their livelihoods. Livestock product sales also serve as an income source for sanctuary residents.

In the Khoma region, weaving stands out as the primary income source, with 30% of respondents engaged in this craft, followed by agriculture (23%) and livestock rearing (22%). Khoma is renowned for its weaving expertise, producing some of the finest Bhutanese textiles. Other sources of income for Khoma residents include bamboo weaving, Cordyceps collection, off-farm activities, ceremonial performances, government employment, and non-wood forest products (NWFP).

In Sherimung, agriculture takes precedence as the main cash income source, with 33% of respondents involved, followed by off-farm labor (28%) and livestock husbandry (27%). Other income sources for Sherimung residents include NWFP sales, contributions, ceremonial performances, carpentry, contract work, and entrepreneurship.

In Bumdeling, agriculture remains the primary income source, with 26% of respondents engaged in agricultural activities, followed by livestock rearing (25%) and off-farm labor (16%). Other sources of income for Bumdeling residents include contract work, stock shares, logging, NWFP sales, and painting.

## **3. Planned Activities in the Year 2025-2026**

Activities that are planned in BWS for the year 2025-2026 include the following:

### **3.1. Build covered catchment ponds for the community to support household during dry season**

Budget: Nu.500,000

Timeline: August 2025 to December 2025

Location: Khoma Gewog, Lhuentse

Building covered catchment ponds in Goenpa Karp and Lhakchung communities is essential to ensure water security during the dry season. This initiative will provide a reliable source of water for households of these communities, helping them meet basic needs and sustain their livelihoods. As a part of these activity, the following initiatives will be taken:

- i. Clear all undesired vegetation and debris around the ponds,
- ii. Outline the proposed pond shape with stakes,
- iii. Dig out the pond pit and build protection walls if necessary,
- iv. Deposit the soil on the shoulder around the pond, beginning with the lower side while making sure that the side slopes remain stable by compacting the soil in layers,
- v. Dig small drainage channels in the uphill area to direct runoff into the pond.
- vi. Plant grass and shrubs as a surface cover on the fresh soil deposit (live fencing)

The planned implementation period for the activity is from September 2025 to December 2025, involving approximately 20 workers. The work will be allotted to the community contractor for the benefits of the communities. As the proposed site is at the vicinity of the village, the



workers will commute from their own home. A temporary water connection and toilet facilities shall be established at the work site for the convenience of the workers during the working hours. Waste generated during the work will be managed by the community contractor.

The nearest communities, comprising around 200 households, are located 1 to 2 kilometers from the project sites. The improvement of the catchment ponds is not expected to cause any significant adverse impact on the natural habitat; rather, it will enhance the environment by promoting habitats for water birds and other aquatic species, while also providing benefits to nearby communities. Furthermore, there are no anticipated social risks or potential for inter-community tensions, as local residents have themselves requested the implementation of these activities.

Some possible adverse impacts are as follows:

- *Waste generation during cleaning and restoration of lake:* The cleaning and restoration works may result in the generation of waste materials such as debris, old materials, or construction waste. Improper management of this waste can contribute to environmental pollution and degradation of the surrounding ecosystem.
- *Risk to worker's health and safety:* Workers involved in the restoration of the lake may be exposed to various occupational hazards, including physical risks such as slips, falls, or injuries from equipment.
- *Disturbance to the ground:* To create a catchment pond, some areas of land often need to be excavated and cleared. This disturbs the natural soil layers, ground and vegetation, disrupting the natural ecosystem.
- *Risk of poaching of wildlife:* Creating catchment pond often leads to the concentration of wildlife in one spot, which makes it easier for poachers to locate and target animals.



**Figure 2:** Location Map of the proposed sites



### **3.2. Improvement of waterholes (Restoration of Tshaling/Baru Tsho (Lake))**

Budget: Nu. 500, 000

Timeline: October 2025 to March 2026

Location: Lukchu, Khoma Gewog

Tsaling Tsho/Baru Tsho (lake) is situated in Lukchu village within Khoma Gewog. This lake has been experiencing a gradual decline in volume year by year, and the residents of Lukchu community have voiced their concerns about this issue to the Gewog administration and Khoma Range Office. Upon conducting several visits to the site, both offices confirmed that there is an urgent need for immediate measures to prevent the lake from drying up. Tshaling Latsho holds immense cultural and historical significance, deeply ingrained in the identity of Lukchu village. This serves as one of the primary water sources for the community, playing a vital role as a reservoir for drinking water, irrigation, and various other essential needs. Additionally, Tsaling Latsho is a critical habitat for diverse terrestrial and aquatic wildlife. The activity will include improvement, and restoration works such as;

- i. Clearing of invading bushes and other shrubs
- ii. Removal of dead and fallen logs
- iii. Cleaning and enlarging the size of the lake/pond with protection wall
- iv. Recharging of water through connecting pipes from nearby streams, &
- v. Plantation of native species around the lake to improve aesthetic value of lake.

While carrying out these activities, we will make sure that the lake looks natural, and its aesthetic values do not get diluted by concrete structures.

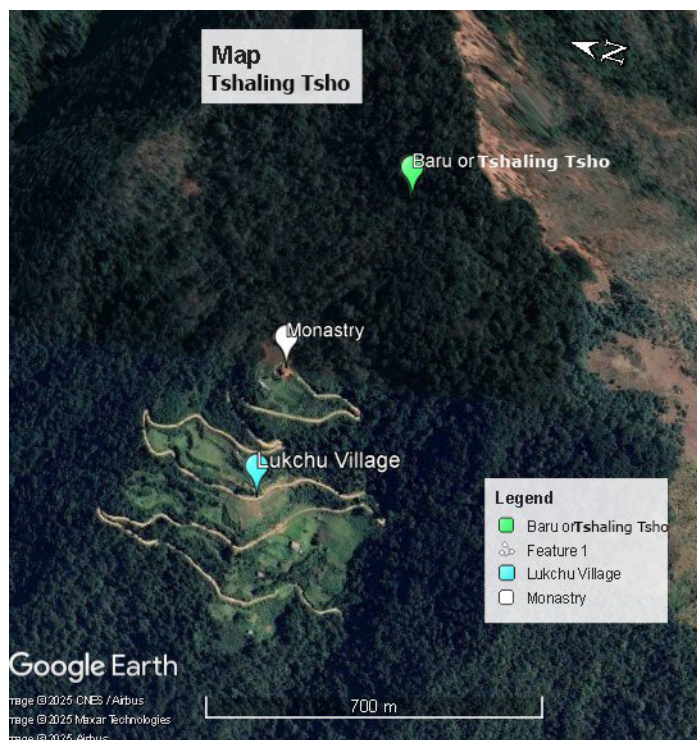
The planned date for implementation of the activity is from October 2025 to March 2026. The work will be given to the community contractor for the benefit of the people residing in the community. Around 15 workers will be involved using available/accessible machinery to clear the bushes from the lake. Workers will commute from the nearest community and there will be no camping facility at the activity site. However, safe drinking water connection and temporary toilet facilities shall be established. The community contractor will take care of waste generated from the work.

The nearest Lukchu community, with 70 households, is 1 km away from the site. Improvement and revival of Tsaling Latsho (lake) does not have major adverse impacts on the natural habitat instead it helps to promote habitat for water birds and other aquatic life. Moreover, there will be no social risks or inter-community tensions since the communities residing within the vicinity have requested for this activity to be carried out.

The probable adverse impacts of the activity are:

- *Waste generation during cleaning and restoration of lake:* The cleaning and restoration works may result in the generation of waste materials such as debris, old materials, or construction waste. Improper management of this waste can contribute to environmental pollution and degradation of the surrounding ecosystem.
- *Risk to worker's health and safety:* Workers involved in the restoration of the lake may be exposed to various occupational hazards, including physical risks such as slips, falls, or injuries from equipment.
- *Noise disturbance:* Since the site is located at a considerable distance from the community, noise pollution will be minimal.

- *Disturbance to the ground:* To revive the lake, some areas of land often need to be excavated and cleared. This disturbs the natural soil layers, ground and vegetation, disrupting the natural ecosystem.
- *Risk of poaching of wildlife:* Revival of lake could lead to the concentration of wildlife in one spot, which makes it easier for poachers to locate and target animals.



**Figure 3:** Location map of the activity

### 3.3 Maintenance of Serzhong Park Range Office and Staff Quarter

Budget: Nu. 700, 000

Timeline: October 2025 to March 2026

Location: Serzhong, Sherimuhung Gewog

Major renovation works have not been undertaken since the establishment of the offices and staff quarters. Presently, rainwater leaks through the holes in the CGI sheets, and ceilings are broken, the drains are cracked causing water to seep down instead of flowing to the outlets, doors and windows rotten, the paint on the office and staff quarters is faded and appears old, and there are potholes in the floors of both the office and staff quarters. Therefore, to address these issues, the following activities will be carried out I) Replacement of aged CGI roof sheets to prevent water seepage, which could potentially cause further damage to the buildings and their interiors, II) Improvement of water drainage around the buildings, III) Minor wall maintenance and painting

The planned implementation period for the activity is from October 2025 to March 2026, involving approximately 15 workers. The nearest community is located about 200–300 meters from the project site, with around 5 to 6 office buildings belonging to other agencies in the vicinity. The renovation and maintenance works will utilize locally available resources. Water sources for these activities are situated close to the site, and there are no anticipated water supply issues for nearby communities.

The adverse impacts are:

- *Generation of waste as a result of construction activities:* Renovation works may produce waste materials such as debris, old components, and construction waste. If not properly managed, this waste can lead to environmental pollution, degradation, and littering of the surrounding area.
- *Dust and noise pollution:* Demolition, sanding, cutting, and drilling of materials like concrete, wood, and drywall release fine dust particles into the air. The use of power tools, machinery, and equipment such as jackhammers, drills, saws, and compressors generate high noise levels.
- *Risk to worker's health and safety:* Due to potential exposure to hazardous materials, use of dangerous tools, and risk of accidents like falls, cuts, or electrical shocks.
- *Disturbance to nearby offices:* Maintenance of office works disturbs nearby offices through noise, dust, restricted access, and temporary utility interruptions.



**Figure 4:** Existing condition of the structures

#### 4. Mitigation Measures for Environmental and Social Impacts

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
<i>Activity 1: Build covered catchment ponds for the community to support household during dry season</i>				<b>Nu.0.5</b>
<i>Waste generation during cleaning and restoration of lake</i>	Short term minor	<ul style="list-style-type: none"> <li>• Use precise measurements to reduce excess material use and offcuts.</li> <li>• Ensure that no accidental damage is caused to local vegetation/native— major trees/plants which are supposed to be cut shall be clearly marked, and only the marked trees will be cut.</li> <li>• Implement a site-specific waste management plan compliant with local regulations.</li> <li>• Separate organic, recyclable (metal, plastic), and hazardous waste on-site.</li> <li>• Reuse excavated soil for landscaping or backfill.</li> <li>• Track waste generation by site focal and regularly report BWS Hq to improve practices.</li> </ul>	BFL focal person, Range officer & Contractor	0.01

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
<b><i>Risk to workers' health and safety:</i></b>	Short-term minor	<ul style="list-style-type: none"> <li>• Comply with the workers' health and safety guidelines.</li> <li>• Ensure regular health screening for the workers prior and during the implementation of the activities.</li> <li>• Ensure that no underage workers, or children are engaged.</li> <li>• Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers.</li> <li>• Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.</li> <li>• Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns.</li> </ul>	BFL focal person, Range officer & Contractor	
<b><i>Disturbance to the ground</i></b>	Short-term minor	<ul style="list-style-type: none"> <li>• Limit excavation to the required area (standard pond size) to avoid unnecessary ground disturbance.</li> <li>• Strip and store topsoil separately for reuse in site restoration</li> <li>• Use mulching and sediment traps to prevent soil erosion.</li> <li>• Restore disturbed areas post-construction with top-soil replacement and re-vegetation.</li> <li>• Ensure proper site drainage to prevent waterlogging and soil instability</li> <li>• Monitor ground conditions during construction and take corrective actions promptly.</li> </ul>	BFL focal person, Range officer & Contractor	0.01

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
<i>Risk of poaching of wildlife</i>	Short-term Minor	<ul style="list-style-type: none"> <li>• Install CCTV cameras and conduct regular patrols.</li> <li>• Engage and educate locals to act as wildlife guardians.</li> <li>• Place warning signs about legal consequences of poaching.</li> </ul>	BWS management	
<b>Activity 2: Improvement of waterholes (Initiate restoration of the Tshaling/Baru Tsho (Lake))</b>				<b>Nu. 0.5</b>
<i>Disturbance to natural habitat</i>	Short term Minor	<ul style="list-style-type: none"> <li>• Ensure careful sitting, alignment, design of rig sites, and/or timing of works (seasonal).</li> <li>• Limit use of heavy machinery and avoid using it when important species are present at site.</li> <li>• Ensure soil excavation is carried out with minimal impact to natural habitats.</li> </ul>	BFL focal person, Range Officer & Contractor	
<i>Waste generation during cleaning and restoration of lake</i>	Short-term Minor	<ul style="list-style-type: none"> <li>• Proper containers/waste bins should be provided at the project site.</li> <li>• Use methods that minimize environmental disturbance and waste production.</li> <li>• Track waste types and quantities to improve management strategies.</li> <li>• Educate workers and stakeholders on waste minimization and handling practices.</li> <li>• Ensure contractors follow waste management and disposal protocols.</li> </ul>	BFL focal person, Range officer & Contractor	
<i>Noise disturbance:</i>	Short term Minor	<ul style="list-style-type: none"> <li>• Operate only during daylight to avoid disturbing wildlife.</li> <li>• Keep the equipment in good condition to minimize noise.</li> </ul>	BFL focal person, Range	

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
		<ul style="list-style-type: none"> <li>Educate workers on minimizing unnecessary noise.</li> <li>Avoid running multiple noisy operations at the same time</li> </ul>	officer & Contractor	
<b><i>Risk to workers' health and safety</i></b>	Short term Minor	<ul style="list-style-type: none"> <li>Comply with the workers' health and safety guidelines.</li> <li>Access to health facilities for the workers prior and during restoration activities needs to be available and ensure first aid kit is available at construction sites all the time. Basic health unit (BHU) needs to be available in walkable distance or the workers need to be checked once in a month by authorized medical doctor.</li> <li>Ensure that no underage workers, or children are engaged.</li> <li>Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers.</li> <li>Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation</li> </ul>	BFL focal person, Range officer & Contractor	
<b><i>Disturbance to the ground.</i></b>	Short term Minor	<ul style="list-style-type: none"> <li>Limit excavation to the required area to avoid unnecessary ground disturbance.</li> <li>Strip and store topsoil separately for reuse in site restoration.</li> <li>Construct a protection wall if necessary to prevent soil erosion.</li> <li>Restore disturbed areas post-construction with top-soil replacement and re-vegetation.</li> </ul>	BFL focal person, Range officer & Contractor	



Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
		<ul style="list-style-type: none"> <li>Ensure proper site drainage to prevent waterlogging and soil instability</li> </ul>		
<b><i>Risk of poaching of wildlife</i></b>	Short term Minor	<ul style="list-style-type: none"> <li>Install CCTV cameras and conduct regular patrols.</li> <li>Engage and educate locals to act as wildlife guardians.</li> <li>Place warning signs about legal consequences of poaching.</li> </ul>	BFL focal person, Range officer & Contractor	
<b><i>3.4 Activity: Maintenance of Serzhong Park Range Office and Staff Quarters</i></b>				<b>Nu 0.7</b>
<b><i>Generation of waste as a result of construction activities</i></b>	Short term Minor	<ul style="list-style-type: none"> <li>Proper containers/waste bins should be provided at the project site.</li> <li>Use methods that minimize environmental disturbance and waste production.</li> <li>Dispose of non-recyclable and hazardous waste at authorized facilities.</li> <li>Track waste types and quantities to improve management strategies.</li> <li>Ensure contractors follow waste management and disposal protocols.</li> </ul>	BFL focal person, Range officer & Contractor	
<b><i>Dust and noise pollution.</i></b>	Short term Minor	<ul style="list-style-type: none"> <li>Use dust barriers, covers, and water spraying to suppress dust.</li> <li>Schedule noisy work during off-hours or weekends</li> <li>If possible, use machinery with noise-reducing features.</li> </ul>	BFL focal person, Range	

Potential impact	Impact scale	Proposed mitigation measures	Responsible Party	Costs (million)
		<ul style="list-style-type: none"> <li>Regular Monitoring to track dust and noise levels to ensure compliance with safety standards.</li> </ul>	officer & Contractor	
<i><b>Risk to workers' health and safety</b></i>	Short term Minor	<ul style="list-style-type: none"> <li>Comply with the workers' health and safety guidelines.</li> <li>Access to health facilities for the workers prior and during restoration activities needs to be available and ensure first aid kit is available at construction sites all the time. Basic health unit (BHU) needs to be available within walkable distance or the workers need to be checked once a month by authorized medical doctor.</li> <li>Ensure that no underage workers, or children are engaged.</li> <li>Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers.</li> <li>Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation.</li> </ul>	BFL focal person, Range officer & Contractor	
<i><b>Disturbance to nearby offices</b></i>	Short term Minor	<ul style="list-style-type: none"> <li>Use sustainable and low-waste materials</li> <li>Ensure contractors follow waste management protocols.</li> <li>Separate construction, electronic, and general waste and dispose at authorized facilities.</li> <li>Monitor waste generation and disposal at construction site</li> </ul>	BFL focal person, Range officer & Contractor	

## **5. ESMP Implementation Arrangements**

The implementation of project activities will be carried out by the BFL focal person in BWS. 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 BWS in 2025-2026. 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 prior start the project activities and prior any specific tasks with high health risks.

The BWS's Supervising Engineer needs to monitor the implementation of proposed measures by the Contractor and Contractor's subcontractors 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-compliances should be reported to the ESS consultants immediately, and the ESS officer will report it to the PCU (M&E Officer). Each non-compliance should be closed with appropriate measures and the evidence should be kept.

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

## **6. ESMP Monitoring Arrangement**

The BFL focal person in BWS 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.

BWS's PA is also fully responsible for the compliance of all external contractors and service providers working in the BWS with the safeguard's requirements outlined in the ESMP.

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

Sl. No	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	Complete		
1	<i>Build covered catchment ponds for the community to support household during dry season</i>	Field focal	August 2025	December 2025	BWS	Monthly progress report
		ESS officer	Do virtual Monitoring in August 2025			Weekly & monthly progress report
2	<i>Improvement of waterholes (Initiate restoration of the Tshaling/Baru Tsho (Lake))</i>	Field focal	Oct 2025	March 2026	BWS	Monthly progress report
		ESS officer	Do virtual Monitoring in August 2025			Weekly & monthly progress report
3	<i>Maintenance of Serzhong Park Range Office and Staff Quarter</i>	Field focal	Oct 2025	March 2026		Monthly progress report
		ESS officer	Do virtual Monitoring in August 2025			Weekly & monthly progress report

**Activity 1:** Build covered catchment ponds for the community to support household during dry season

- *Monitoring by implementing entities:* Implementation entities should conduct site visits at least twice during the activity's implementation phase and submit monthly reports to the ESS officer.
- *Monitoring by ESS consultant:* The ESS Officer/consultant will conduct at least one monitoring visit during the implementation of the activity. Upon completion of the work, the ESS officer will gather field reports from Implementation Agents (IAs) and submit them to the BFL Fund Secretariat in January 2024.
- *Quarterly reports by PCU (M&E officer) to Secretariat:* End of each quarter
- *Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs):* Half yearly

**Activity 2:** Improvement of waterholes (Initiate restoration of the Tshaling Tsho (Lake))

- *Monitoring by implementing entities:* Implementation entities should conduct site visits at least twice during the activity's implementation phase and submit monthly reports to the ESS officer.
- *Monitoring by ESS consultant:* The ESS Officer/consultant will conduct at least one monitoring visit during the implementation of the activity. Upon completion of the work, the ESS officer will gather field reports from Implementation Agents (IAs) and submit them to the BFL Fund Secretariat in January 2024.
- *Quarterly reports by PCU (M&E officer) to Secretariat:* End of each quarter
- *Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs):* Half yearly

**Activity 3:** Maintenance of Serzhong Park Range Office and Staff Quarter

- *Monitoring by implementing entities:* Implementation entities, it the BFL focal Officer of BWS should conduct site visits at least twice during the activity's implementation phase and submit monthly reports to the ESS officer. However, the Range Officer of Khoma Range will be involved in day to day implementation of activity and he will report to BFL focal Officer
- *Monitoring by ESS consultant:* The ESS Officer/consultant will conduct at least one monitoring visit during the implementation of the activity. Upon completion of the work, the ESS officer will gather field reports from Implementation Agents (IAs) and submit them to the BFL Fund Secretariat in January 2024.
- *Quarterly reports by PCU (M&E officer) to Secretariat:* End of each quarter
- *Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs):* Half yearly

## 7. Capacity Need and Budget

Activities under this ESMP will be implemented by the BFL focal person, Range Officer, supervising engineer, and contractors who will employ workers as mentioned in the contract agreement. The budget for each activity is as follows:

Sl.No.	Activity	Amount (Nu)	Budget for ESS mitigation (Nu)
1	<i>Build covered catchment ponds for the community to support household during dry season</i>	500000	15000
2	<i>Improvement of waterholes (Initiate restoration of the Tshaling/Baru Tsho (Lake))</i>	500000	15000
3	<i>Maintenance of Serzhong Park Range Office and Staff Quarter</i>	700000	15000
<b>Total</b>		1700000	<b>45000</b>

A separate budget of Nu 45000 is needed to cover the implementation of the ESMP mitigation measures.

## **8. Consultation and Disclosure Mechanisms**

This Environmental and Social Management Plan (ESMP) will be developed through a participatory approach, involving a series of discussion with the local communities and leaders. The purpose of the consultation is to engage local communities regarding planned project activities, with a specific focus on seeking their agreement, gathering feedback, addressing concerns, and suggesting mitigation measures.

The full English version of this ESMP, as well as an executive summary in Dzongkha, shall be disclosed on the website of MoAF, BFL and WWF AE. Hard copies of the ESMP should also be available at the PA Management Office and at the PCU Office. The copies of ESMP will also be shared with relevant local elected leaders for compliance.

## **9. Stakeholder Engagement Plan**

The local community that resides in the vicinity of the planned BFL activities in BWS will be engaged throughout the implementation of these activities.

A consultation meeting will be organized prior to the implementation of the activity, and subsequent consultations meeting will be organized if required. Official minutes of consultation meetings (along with a list of participants, disaggregated by gender and age) will be maintained for reference.

### *Plan for Consultation Meeting*

- The consultation meeting for building catchment ponds at Goenpa karp and Lhakchung will be thoroughly carried out with all the local communities.
- The consultation meeting for Improvement of waterholes (Initiate restoration of the Tsaling Latsho (Lake)) will be carried out in August 2025 at the Gewog Centre.



## **ANNEXURE I: 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:

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

## LOGICAL STEPS FOR GRIEVANCE RESOLUTION PROCESS



Each grievance will be registered with the following information:

- Name of the complainant
- Date of the grievance
- Nature of the grievance and location
- Number of persons involved
- Tracking no.
- Potential solutions

## WHAT HAPPENS TO YOUR COMPLAINT?

The complaint will be investigated by responsible authorities following the logical steps for grievance resolution process within 12 working days. If further investigation is required, the complainant will be informed accordingly, and a final response will be provided after an additional period of 8 working days.

If you did not prefer to remain anonymous, you will be notified regarding the complaint resolution once the investigation is completed.

**VIST US:**

Bhutan For Life, Project Coordination Unit,  
Department of Forest and Park Services,  
Ministry of Energy and Natural Resources,  
Royal Government of Bhutan



## THE GRIEVANCE REDRESAL MECHANISM FOR BHUTAN FOR LIFE

### BUMDELING WILDLIFE SANCTUARY

The goal of the BFL GRM is to channel grievances into an acceptable, nationalized mechanism for timely resolving conflict that may arise from the implementation of the BFL project activities

The GRM seeks to address any grievances related to the implementation of the BFL activities such as:

- Loss of community resources
- Non- performance of the project obligations including safeguards
- Violations of law and/ or corruption
- Project governance and implementation
- Fair access and benefit sharing
- Stakeholder engagement
- Budget allocation
- Labor related issues and incidents






## 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



 Tempa Gyeltshen  
 17697755  
 [gyeltshentempa23@gmail.com](mailto:gyeltshentempa23@gmail.com)

### DUNGZAM RANGE OFFICE




 Sangay Drukpa  
 17652770  
 [sdrukpa@moenr.gov.bt](mailto:sdrukpa@moenr.gov.bt)

**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](mailto:kuenzangtobgay@bfl.org.bt)




### BFL PROJECT COORDINATION UNIT

 Ugyen Dechen  
 17491881  
 [bflprojectofficer@gmail.com](mailto:bflprojectofficer@gmail.com)

### SERZHONG RANGE OFFICE

 Dorji Wangdi  
 17121412  
 [dorgwang03@gmail.com](mailto:dorgwang03@gmail.com)

### KHOMA RANGE OFFICE

 Kinzang Tinley  
 17790112  
 [thinleyk341@gmail.com](mailto:thinleyk341@gmail.com)

### BEAT OFFICE/GUARD POST

 Dawa Gyalpo  
 17656618  
 [dawagyalpo17@gmail.com](mailto:dawagyalpo17@gmail.com)

**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. Bumdeling Gewog – 17428077
2. Shelrimuhung Gewog – 77662524
3. Khoma Gewog - 17567998

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

Write to the WWF GCF Accredited entity at:

[safeguardComplaint@wwfus.org](mailto:safeguardComplaint@wwfus.org)

Project Complaints Officer, Safeguards Complaints,  
World Wildlife Fund 1250 24<sup>th</sup> 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](mailto:irm@gcfund.org)
- Sending a voice or video recording
- Filing out the online complaints form available at; <https://gcf.insight.com/external/case/new/group=complaint>

A complaint for IRM should generally include;

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

## ***ANNEXURE II***

### **: BFL 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)<sup>1</sup> 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.

#### **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 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 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)**

2. 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.
3. 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 90 dB(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 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 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.

### **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 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

### **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 waste collection are provided and emptied on a regular basis.

### **6. 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 minimized.
- 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 use of double deck bunks is minimized.
- 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 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 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.

#### **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.