Bhutan for Life
Environmental and Social Management Plan for
BC-02 (2022)

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 (PAS);

• 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.

(D) Applicable law, policies, and regulation

This ESMP is developed by following the guidelines as set forth in the BFL's ESMF. Applicable RGoB laws and policies include the Constitution of the Kingdom of Bhutan, 2008; legislation on land and moveable property (Land Act of Bhutan 2007; Land Rules, 2007; The Moveable Cultural Property act of Bhutan, 2005); legislation and regulations on forests and protected areas (National Environment Protection Act, 2007; Forest and Nature Conservation Act of Bhutan, 1995; Forest and Nature Conservation Rules and Regulations of Bhutan, 2017;National Forest Policy, 2011); legislation on water and waste prevention (Water Act of Bhutan, 2011; Waste Prevention and Management Act, 2009); legislative requirements on environmental assessment (Environmental Assessment Act, 2000 and Regulations on the Environmental Clearance of Projects, 2001); and other relevant laws (The Local Government Act of Bhutan, 2009; Livestock Act of Bhutan, 2001; The Biodiversity Act of Bhutan, 2003; The Pesticides Act of Bhutan, 2000; The Penal Code of Bhutan, 2004; National Access and Benefit Sharing (ABS) Policy (Draft), 2014). WWF's safeguards policies that are relevant to this project are as follows: Policy on Environment and Social Risk Management; Policy on Protection of Natural Habitats; Policy on Involuntary Resettlement; Policy on Indigenous Peoples; Standard on Pest Management; Policy on Accountability and Grievance System; Standard on Physical Cultural Resources; as well as general standards on occupational and community health and safety and on energy efficiency. In general, RGoB's laws, policies, and guidelines are in line with the WWF's environmental and social safeguards requirements. However, there are a few differences between the two systems. With regard to environmental impacts, there are no direct contradictions between the RGoB laws and regulations and the WWF's SIPP, but the requirements of the latter are more

extensive. All project activities should fully comply both with the RGoB's Regulations on the Environmental Clearance of Projects, and with the procedures and mitigation measures prescribed in this ESMF. In case that the WWF's SIPP requirements are more extensive, strict, or detailed than the RGoB legislation and policies, the former will apply to all project activities. With regard to social impacts, the primary discrepancies between the RGoB laws and regulations and the WWF's SIPP refer to the status of non-title holders and informal land use, and the commitment to participatory decision-making processes. First, according to the WWF's SIPP, all users of land and natural resources (including people that lack any formal legal ownership title or usage rights) are eligible to some form of assistance or compensation if the project adversely affects their livelihoods. The RGoB laws only recognize the eligibility of land owners or formal users to receive compensation in such cases. Second, the WWF's SIPP require extensive community consultations as part of the development of various safeguards documents and during project activities. RGoB legislation does not include similar requirements. For the purposes of the BFL project, the provisions of the WWF's SIPP shall prevail over the RGoB legislation in all cases of discrepancy.

The occupational health and safety of workers in construction will be in compliance with Labour and Employment Act-2007, Regulation on Occupational Health, Safety and Welfare, 2012 and any other national documents. The list of the OHS requirements shall be attached along the Bill of Quantities (BoQ) along with an appropriate item description to allow the bidder to quote reasonably against the item, and to enable strict compliance and ease the monitoring during the project implementation time

2. Environmental and Socio-Economic Conditions:

(a) Geological and topographical condition

Biological Corridor (BC) 2 connects the two largest national parks in the country; namely Jigme Dorji National Park in the northern part and Jigme Singye Wangchuk National Park towards southern part. It was first designed to allow movement and/or occupancy of red panda (*Ailurus fulgens*) and musk deer (*Moschus leucogaster*). While red panda presence has been confirmed from the northern regions of this corridor, musk deer presence has not been yet confirmed from the corridor, although a habitat suitability analysis indicates presence of musk deer habitat in the north-western part of the corridor. Camera trap and occupancy surveys have confirmed the presence of tigers (*Panthera tigris*) in several places of the corridor. Thus, tiger was included as a focal species for corridor management. Two other habitat specialist landscape species, clouded leopard (*Neofelis nebulosa*) and Rufous-necked hornbill (*Aceros nipalensis*) were also included in the suite of focal species because the corridor includes a large swathe of intact temperate broadleaf forests, which are preferred habitat for both species.

The entire area has 2769.32 hectares which can be categorized into 60 km length by 4 km minimum width. The 60 km long Biological Corridor 2 links Jigme Dorji National Park with

Jigme Singye Wangchuck National Park. In the north, close to Jigme Dorji National Park, the corridor is about 6 to 7 km wide, but narrows to an average width of about 4 km as it traverses southwards. Corridor lies within the Wangdue Dzongkhag with recent validation of BC boundary. As it traverses across the mountains that separate the Punatsang Chhu-Mo Chhu and Dang Chhu and Wang Chhu drainages, the corridor crosses about 5 to 7 east-west directed mountain ranges which adds to the topographic complexity of the corridor's landscape. Most of the corridor is between 2,000 and 3,500 masl in elevation and most slopes are between 21 to 40 degrees Steep slopes are distributed through the corridor, but the southern areas of the corridor have more steep-sloped areas (Fig. 1)

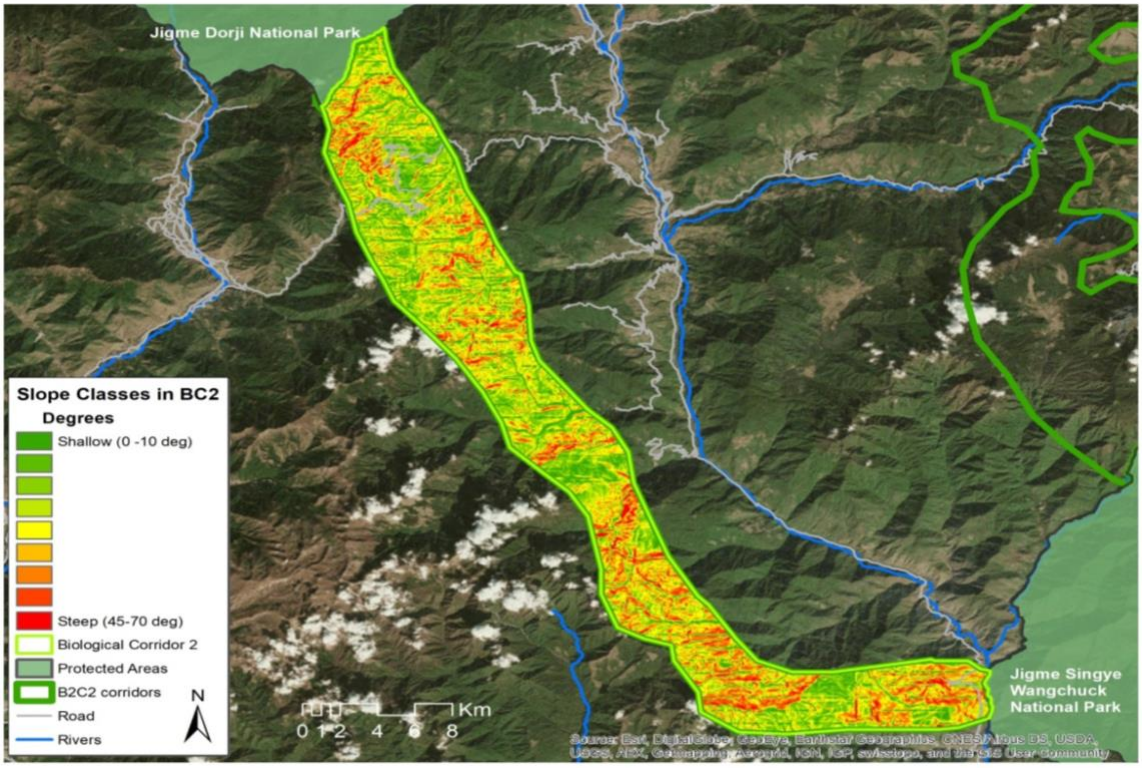
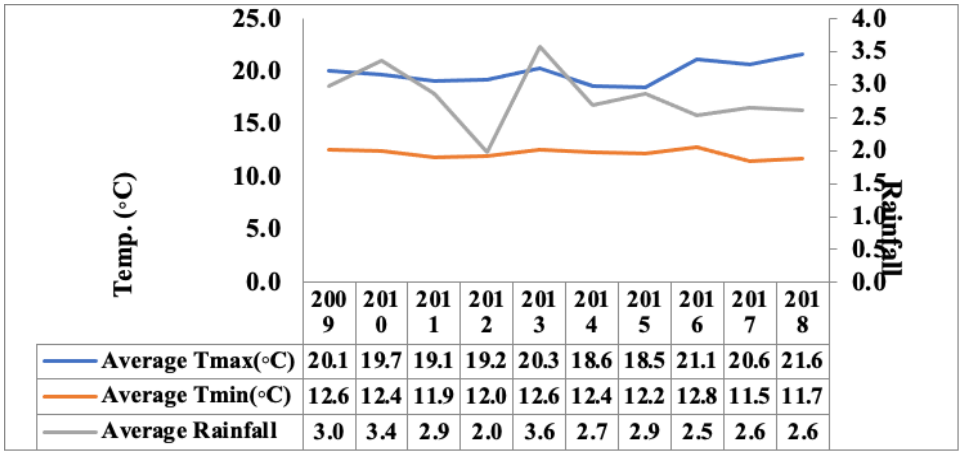


Fig 1. *Distribution of slope categories in Biological Corridor 2 landscape (Old map)*

(b) Climatic conditions

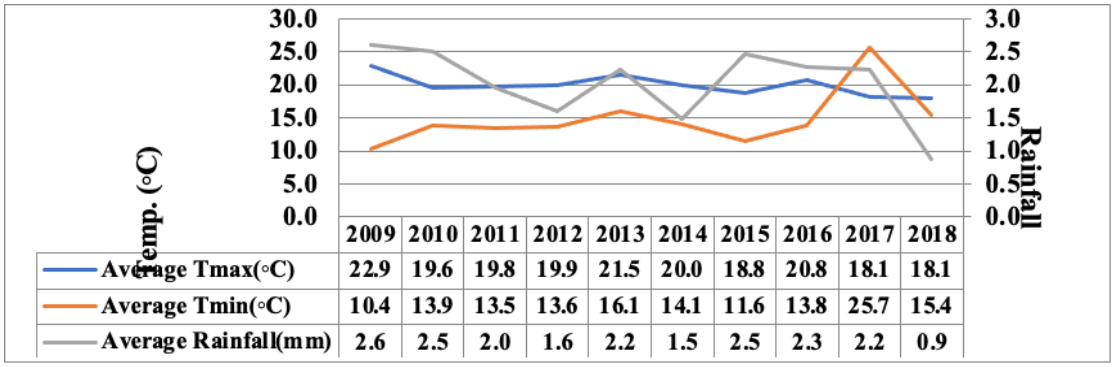
Meteorological data has been derived from station record of Punakha (Thinlegang) and Wangduephodrang (Gasello) from Meteorology Section, Department of Hydro met Services, Ministry of Economic Affairs Thimphu (Fig 2)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average Tmax(◦C)	20.1	19.7	19.1	19.2	20.3	18.6	18.5	21.1	20.6	21.6
Average Tmin(◦C)	12.6	12.4	11.9	12.0	12.6	12.4	12.2	12.8	11.5	11.7
Average Rainfall	3.0	3.4	2.9	2.0	3.6	2.7	2.9	2.5	2.6	2.6

Figure 2 *Avg. maximum, minimum temperatures and avg. rainfall from Thinlegang weather station.*

Temperature was received maximum in the year 2018 with 21.6 °C and the lowest temperature in the year 2017 with 12.15°C (Figure 2). Highest rainfall was received in the year 2013 with 3.6 mm and was received lowest in the year 2012 with 2.00 mm towards northern part of Biological Corridor C-02 (Figure 2). Northern part of Biological Corridor-02 was reference from Thinleygang meteorological data station, Punakha Dzongkhag.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average Tmax(◦C)	22.9	19.6	19.8	19.9	21.5	20.0	18.8	20.8	18.1	18.1
Average Tmin(◦C)	10.4	13.9	13.5	13.6	16.1	14.1	11.6	13.8	25.7	15.4
Average Rainfall(mm)	2.6	2.5	2.0	1.6	2.2	1.5	2.5	2.3	2.2	0.9

Figure 3 *Avg. maximum, minimum temperatures and avg. rainfall from Gasello weather station.*

Towards southern part of Biological Corridor-02, maximum and minimum temperature was received in the year 2009 with 22.9 °C and 10.4 °C (Figure 10). Highest rain fall was received in the year 2009 with 2.6 mm and the lowest rainfall received was in the year 2018 with 0.99 mm (Figure 3).

(c) Hydrological conditions

There are 3 streams which flow through biological corridor 02 and finally drain out to Punatsang Chhu river but the source is beyond BC 02 boundary. Till now the management could not conduct any sort of study related to water morphology due to lack of facility such as ***water testing kids*** and other necessary requirements.

(d) **Flora and fauna diversity.**

The corridor spans across three eco-regions, notably the Eastern Himalayan Broadleaf Forests, Eastern Himalayan Subalpine Forests, and the Himalayan Subtropical Pine Forests eco-regions. Within this hierarchical structure, the broadleaf forests can be categorized as Warm Broadleaf Forests up to about 2000m in elevation, and Cool Broadleaf Forests that grow in the higher elevations above 2000m, to about 2900 m. Other forest types include the Mixed Conifer Forests that include both broadleaf and conifers that transition to Blue Pine Forests in the higher elevations of the northern sections of the corridor. Chir Pine Forests grow in the exposed, drier slopes in the southern sections of the corridor.
There are about 40 tree species, 9 understory species, 15 species of mammal and 145 species of birds, as shown in Figure 2, recorded so far. There is also a good tiger habitat through the corridor, except for the southern regions, where it connects with Jigme Singye Wangchuck National Park. Camera trap surveys have also confirmed the presence of other wide-ranging, area-sensitive species like the common leopard (*Panthera pardus*), clouded leopard (*Neofelis nebulosa*), Asiatic black bear, and wild dog (*Cuon alpinus*) throughout the corridor. Tiger prey species, especially sambar (*Rusa unicolor*), barking deer (*Muntiacus muntjak*), and wild pig (*Sus scrofa*) have also been confirmed from throughout the corridor.

Common leopards were confirmed from about 1,900 m to 3,040 m, while wild dogs were found within a narrower range, between about 2,020 to 3,000 m. Both species are known from lower elevations in Bhutan, and elsewhere in their wide range distribution, and the sampled area extended to 1,070 m, below the minimum elevation where both species were observed.

1. *Tiger captured in camera trap in Biological Corridor*
2. *Bhutan Giant Flying Squirrel carcass during BC SMART patrolling (predation by Leopard cat)*

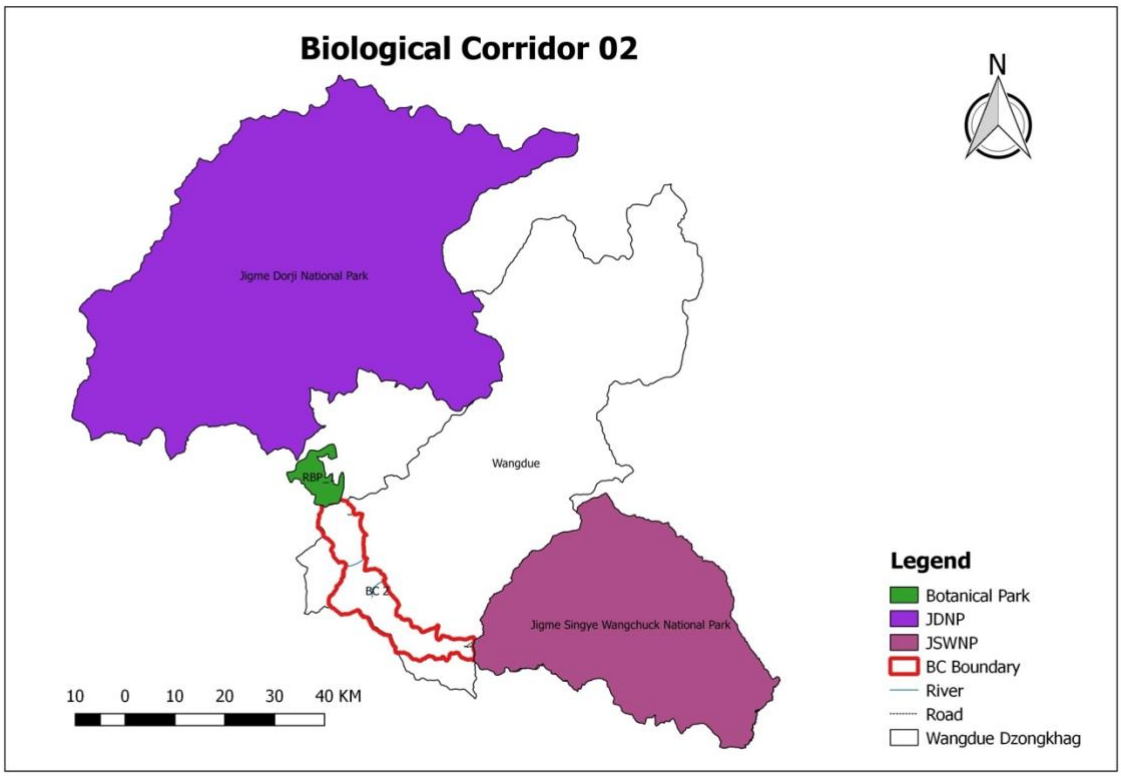
Many of the birds recorded from the corridor have wide elevational distributions. But some, like the Common rose finch (*Carpodacus erythrinus*), Blood pheasant *(Ithaginis cruentus*), and Crimson breasted wood pecker (*Dendrocopos cathpharius*) were recorded from a narrow elevation band. Other species, such as the Himalayan Cutia (*Cutia nipalensis*), goldenbabbler (*Cyanoderma chrysaeum*), streaked laughing thrush (*Trochalopteron lineatum*), yellow cheeked tit (*Parus spilonotus*), bar-winged flycatcher-shrike (*Hemipus picatus*), Ward's trogon. (*Harpactes wardi*), wedge-tailed green pigeon (*Treron sphenurus*), White-browed shrike- babbler (*Pteruthius aeralatus*), were only found in the lower elevations.

(e) Socio-economic conditions.

Respondents from 82 households in and around the corridor were interviewed during socio-economic surveys conducted for the BC2 management plan. Assuming that the respondent group is representative of the human population in the corridor, the average household size is 4 members, with an average of 1.8 males to 2.3 females, for a male: female ratio of 0.76. If the respondents represent a representative demographic of the human population in the corridor, most are middle aged, being between 35 and 65 years of age (Figure 17). Most (77%) of the respondents were engaged in agriculture (Figure 18). Other livelihoods included employment, labour, and dependency on livestock. Seventy-one of the 82 households interviewed held livestock, with 70 (85%) owning cattle and twenty-three households (28%) kept poultry, but in small numbers (X = 4).

Most of the respondents practiced Kamzhing and Chuzhing agricultural practices. The extent of Tseri, or shifting cultivation, was very small. Some respondents own orchards. Sixty-one respondents grew paddy as the primary crop, while 17 grew potatoes. Other primary crops

included apple, strawberry, and radish, but there were grown by very few respondents. Thirty-seven of the 82 respondents said that wildlife crop depredation was the primary issue with agriculture, and 10 said the lack of water was the primary constraint. Other issues were infertile soils, insufficient land for cultivation, lack of marketing options, lack of money to invest more in agriculture, and lack of labour. Sambar and wild pig were considered to be the primary animals responsible for crop depredation by the majority (75%) of the respondents.



Map showing BC2 area.

3. Planned activities in Y2022

The activities that are planned in BC-02 that require ESMP are:

Activity 1. Maintenance of access road from Eusa to Peljorling in Khotokha (construction of Base Course):

Budget: 1 million

Timeline: July to September, 2022

Location: Eusa to Peljorling in Khotokha, Wangdue Phodrang

The current access road that connects Eusa and Peljorling is mostly muddy in the rainy season and difficult to ply. So, the people drive through the RAMSAR site thus affecting the birdlife habitat and also the floral ecosystem. Therefore, if the road connecting Eusa to Peljorling is maintained, people will not commute through RAMSAR and disturb the habitat. The activity with

estimated amount of Nu. 1 million will be implemented in 3rd Quarter of 2022. This road if improved will benefit 29 household of Ruebisa and 22 household in Bjenag Geog residing near road.

In this activity, 1.2km of the road will be base coursed with soil and stone aggregates to make the road pliable during the rainy season. About 20 truckloads soil mixed with stone aggregates will be laid on the current road. About 5 workers with one truck and one roller are expected to be involved during the base course. The expected work duration is about 2 months and workers will be accommodated by the contractor with temporary shelters built or involve the local community. Separate water which are not used by the community will be tapped to be used by the worker. Watering of the road to reduce dust pollution and work will be carried out during the day to reduce the effect of noise pollution. In order to reduce the disturbance to the commuters, the work will be carried out in phase wise. the signboard for timing for road closure will be put up for commuters.

The following will be involved in the base course work:

1. Preparation of sub grade with proper camber by excavating earth to depth equal to pavement thickness, consolidation with roller, disposal of surplus earth up to 50m - All kinds of soil
2. Consolidation of sub-grade with roller, and making good the undulation with earth and re-rolling the sub grade
3. Providing and laying Granular sub-base course (GSB) to required degree of compaction with proper formation of cross fall using motor grader for laying and compacted to required density as per material gradation and aggregate quality specified (175mm Thick)
4. Providing and laying (WMM) wet mix macadam graded aggregate base course to required degree of compaction with proper formation of cross fall by using well graded crushed aggregates premixed with OMC using suitable mixer, motor grader as per material gradation and aggregate quality specified (100mm Thick)

Some of the possible social and environmental impacts are:

- Noise and air pollution
- Occupational health and safety of the worker
- Generation of waste

Activity 2. Construction of Bazam in Gangtey and Phobji Gewog

Budget: 1 million

Timeline: April to June, 2022

Location: a. Tamzhithang to Molbara, Gangtey Gewog, Wangdue,

b. Phobji Gewog Center to Damjithang Wangdue Phodrang,

This activity includes construction of two 15 m length and 1.5m width of wooden path with gabion wall and foundation work in general. The construction will involve 4 to 6 workers. It can be employed from nearby village or from other parts of the Dzongkhag. They will work on daily wage basis and commute from their home for the work.

The construction will involve the following activities:

1. Foundation laying and earth works
2. Hand packed stone filling
3. Cement works: providing and laying plain cement concrete
4. Rubble masonry in with hard stone in foundation
5. Wood works and gabion wall
6. Flooring with wood

Waste from the activity will be disposed in the allocated site and after the construction is complete, the collected waste will be disposed in the landfill. Contract agreement will be made with contractor to not to dispose the waste into the river and the workers will also be guided and made aware on the same.

Some of the possible social and environmental impacts are:

- Generation of waste
- Worker's occupational health and safety
- Noise and air pollution

Activity 3. Construction of natural barrier in Gangtey-Phobji RAMSAR

Budget: 0.5 million

Timeline: July to September, 2022

Location: Phobjikha, Wangdue Phodrang

There is already an existing black-topped road for the commuters designated for them. However, during the festival and holiday season people from various parts of the country come to Gangtey-Phobji for picnics and camping in the RAMSAR area and park their cars along the roadside. When the roadside is packed, they tend to park inside the RAMSAR area and also drive around the RAMSAR for enjoyment and fun which is not appropriate. Furthermore, the picnickers also litter the place with food waste and plastic waste from their packed lunch. Some even wash their cars in the river that runs through the ramsar. Therefore, natural barrier of approximately 1.5m tall, 1m width and 100m long with total distance of 500m will be raised using the earth to avoid vehicles from driving into the RAMSAR area. 5 to 6 temporary workers will be employed with 2 to 3 trucks and 1 excavator. Safety gears will be provided for the workers. The earth will be extracted from other site upon approval from Department of Forests and Park Services for collection of soil or can be collected from the dump yard where soil has been dumped from other construction works. The waste from workers and construction can be manageable.

The work can be expected to finish within 1 month. Consultation with local community will be done before the start of the work. The bird life will not be disturbed as the activity is near the road and will be carried out with minimal disturbance to the birds.

Natural Barrier highlighted in green

Some of the possible social and environmental impacts are:

- Disturbance to the soil
- Noise pollution
- Generation of waste
- Occupational health and safety of the workers

Activity 4. Development of parking and access road in the newly constructed campsite

Budget: 1 million

Timeline: April to June, 2022

Location: Dabzijab, Phobji Gewog, Wangdue

Due to lack of parking space in the campsite, an access road with a parking will be developed. The activity will involve excavation of road of approximate of 40m and 10 decimal of land for development of parking space below the newly development campsite. The earth excavated can be used in the construction of natural barrier in the Phobjikha. Providing and laying of GSB and wet mix macadam graded aggregate base course to required degree of compaction with proper formation of cross fall will be done for the road and parking. Roller will be deployed for compaction for both parking and road. GSB can be purchased from the quarry and mining area through proper and legal channel. About 5 workers will be employed with proper safety gears.

The construction will be carried out when there is no Black Necked Crane (BNC) presence and waste generated will be properly disposed. The soil disturbance will be minimal and manageable. The noise produced during the construction work will be minimal and will be carried out during the day.

Some of the possible social and environmental impacts are:

- Disturbance to the soil
- Noise pollution

- Generation of waste
- Occupational health and safety of the workers

Activity 5. Construction of kitchen site and terracing of land for tent pitching inside the campsite

Budget: 0.3 million
Timeline: Jan to June, 2022
Location: Dazijab, Phobji Gewog, Wangdue Phodrang

The campsite construction was completed in 2021 with stone wall, two toilets and one gazebo. However, as the present campsite is on gentle slope there was need to level the land to allow campers to pitch tents and also construction one kitchen for cooking. 3 to 5 workers will be involved which can be recruited from the nearby village or from outside Phobjikha. The work can be completed within a month. The following work will be involved:

1. Earth works while terracing
2. Wood works and roofing for kitchen

The soil excavated can be used inside the campsite for terracing or dumped in a allocated site to be used in other activities. The soil disturbance is on small scale The waste generated is minimal and can be dumped in waste bin. Fines and penalties can be imposed for those campers who donot manage waste and also make aware on waste management

Some of the possible social and environmental impacts are:

- Disturbance to the soil
- Noise pollution
- Generation of waste
- Occupational health and safety of the workers

Activity 6. Maintenance and expansion of Wildlife rescue shelter

Budget: 0.493 million

Timeline: Jan to June, 2022

Location: Euwakha, Barp Gewog, Punakha

With limited space for the wildlife rescued from Wangdue and Punakha Dzongkhag, there was need for expansion and maintenance of the existing wildlife rescue shelter. There are 2 barking deer, 2 Sambar deer, one Himalayan Black Bear and one Wild pig. 5 workers are expected to be employed during the activity. The proposed activity falls within the registered land of Divisional Forest Office with forest staff quarter nearby.

The activity will involve the following works:

1. Subgrade preparation, providing and laying GSB
2. Earth work, stone soling and PCC works
3. Making of hole for angled post
4. Fixing of M/S angled, M/S flates and GI chainlink
5. Fixing of steel frame doors
6. Making of one cage for keeping predator if rescued
7. Maintenance and expansion of existing access road

The noise pollution will be minimal as won't involve use of heavy machineries. The work will be carried out during the day. The shelter is divided into two sections. While doing the maintenance and expansion work, the animals will be shifted to the upper section to avoid disturbance. The waste generated from the work will be disposed in the allocated waste bins

Some of the possible social and environmental impacts are:

- Noise pollution
- Generation of waste
- Occupational health and safety of the worker

4.Environmental and Social Impacts and Mitigation Measures

[Provide narrative: Describe adverse environmental and social impacts of each of the planned activities, then fill out the table below]

Potential impact	**Impact scale**	**Proposed mitigation measures**	**Responsible party**	**Cost:**
Activity: **Maintenance of access road from Eusa to Peljorling in Khotokha (construction of Base Course)**				
Noise disturbance: Possible noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the construction site	Short term Minor	*Pre-construction:* requirements to limit noise pollution should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Noise level control should be performed before the startup of construction activities; • The equipment should be fitted with appropriate noise devices that will reduce sound level; • The construction work should not be permitted during the nights, the operations on site shall be restricted to the hours 7am—7pm; • Vehicles that are excessively noisy shall not be operated until corrective measures have been taken; • Earplugs and protecting devices shall be provided to workers on site.	BFL focal person in BC2 & Contractor	
Air quality: dust as a result of construction works and possible emissions from transportation vehicles	Short term Minor	*Pre-construction:* requirements to limit emissions should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Construction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days; • Construction materials should be stored in appropriate and covered places to minimize dust; • Before allowing vehicles on site, fitness and emission test of the vehicle shall be performed;		

		• Vehicle loads likely to emit dust need to be covered; • Workers should wear protective masks if dust appears; • Vehicle speed should be restricted within the construction site; • Regular maintenance of the vehicles and construction machinery should be performed in order to reduce any leakages of motor oils, emissions and dispersion of pollution; • Burning of debris from ground clearance shall be prohibited.		
Waste: generation of waste as a result of construction activities	Short term Minor	*Pre-construction:* requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Identification of the different waste types at the project site (soil, asphalt, food, etc.); • Ensure that camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies; • Proper containers/waste bins should be provided at the project site; • Dumping of waste on the sides of the road, on private land, or in other non-designated places should be prohibited; • Dumping waste shall be prohibited on fragile slopes, forests, religious or other culturally sensitive areas or areas where livelihood is derived; • Collection, transportation and final disposal of all waste should be undertaken regularly • Possible hazardous waste (motor oils, vehicle fuels, etc.) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose; • All construction materials should be covered during the transportation to avoid waste dispersion; • The options for reuse/recycling of the generated waste streams should be taking into consideration (e.g. excavated soil, etc.). • Burning of construction waste should be prohibited.	BFL focal person in BC2 & Contractor	Nu. 5000 from ESS budget

		After construction: • All waste shall be removed from the project site.		
Social impacts				
Workers' health and safety including COVID-19 safety protocols	Short term Minor	• Comply with the workers' health and safety guidelines • Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers • 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. • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)	BFL focal person in BC2 & Contractor	Embedded in the activity cost
Local community's health and safety	Short term Minor	• Ensure the safety of all project-related equipment, in line with the requirements above • Minimize the use of hazardous materials, and ensure that community members are not exposed to them. In case that the use of such materials is necessary, provide sufficient notice to local community members and inform them on safety and protection measures. • Avoid dumping any waste or otherwise contaminating community sources of water supply and water quality. • Provide information to local communities on construction activities and plans	BFL focal person in BC2 & Contractor	

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost:
Activity: Construction of Wooden Bridge (Bazam) in Gangtey and Phobji Gewog				
Waste: generation of waste as a result of construction activities	Short term Minor	*Pre-construction:* requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Identification of the different waste types at the project site (soil, asphalt, food, etc.); • Ensure that camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies; • Proper containers/waste bins should be provided at the project site; • Dumping of waste on the sides of the road, on private land, or in other non-designated places should be prohibited; • Dumping waste shall be prohibited on fragile slopes, forests, religious or other culturally sensitive areas or areas where livelihood is derived; • Collection, transportation and final disposal of all waste should be undertaken regularly • Possible hazardous waste (motor oils, vehicle fuels, etc.) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose; • All construction materials should be covered during the transportation to avoid waste dispersion; • The options for reuse/recycling of the generated waste streams should be taking into consideration (e.g. excavated soil, etc.). • Burning of construction waste should be prohibited. *After construction:*	BFL focal person in BC2 & Contractor BFL focal person in BC2 & Contractor	Nu. 10000 from ESS budget

		• All waste shall be removed from the project site.		
Social impacts				
Workers' health and safety including COVID-19 safety protocols	Short term Minor	• Comply with the workers' health and safety guidelines • Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers • 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. • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)	BFL focal person in BC2 & Contractor	Embedded in the activity cost
Local community's health and safety	Short term Minor	• Ensure the safety of all project-related equipment, in line with the requirements above • Minimize the use of hazardous materials, and ensure that community members are not exposed to them. In case that the use of such materials is necessary, provide sufficient notice to local community members and inform them on safety and protection measures. • Avoid dumping any waste or otherwise contaminating community sources of water supply and water quality. • Provide information to local communities on construction activities and plans	BFL focal person in BC2 & Contractor	

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost:
Activity: **Construction of natural barrier in Gangtey-Phobji RAMSAR**				
Soil erosion, landslides and flooding	Short term Minor	*Pre*-construction*:* Sites are prone to soil erosion or landslides shall be avoided, to the extent possible *During construction:* • Construction should be limited to the non-monsoon season; • Retention structures shall be constructed, to the extent possible using environmentally friendly materials. If not possible, a concrete wall could be considered; • Plantation of bamboo trees or other plants and species that support land retention; • The area of ground clearance should be minimized; • Avoid sensitive alignments, such steep hillsides and ecological sensitive areas; • Balance filling and cutting requirements through proper route choice; • Maintain trail surface and alignment with vegetation and where possible install slope protection	BFL focal person in BC2 & Contractor	
Disturbance to the wildlife	Short term Minor	*During construction*: Proper signs shall be placed in the vicinity of project sites Project site area shall be clearly demarcated and workers shall not be allowed to enter any wildlife areas Feeding animals shall be prohibited	BFL focal person in BC2 & Contractor	
Social impacts				
Workers' health and	Short term	• Comply with the workers' health and safety guidelines	BFL focal person	

safety including COVID-19 safety protocols	Minor	• Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers • 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. • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)	in BC2 & Contractor	Embedded in the activity cost

Potential impact	**Impact scale**	**Proposed mitigation measures**	**Responsible party**	**Cost:**
Activity: **Development of parking and access road in the newly constructed campsite**				
Noise disturbance: Possible noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the construction site	Short term	*Pre-construction:* requirements to limit noise pollution should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Noise level control should be performed before the startup of construction activities; • The equipment should be fitted with appropriate noise devices that will reduce sound level; • The construction work should not be permitted during the nights, the operations on site shall be restricted to the hours 7am—7pm;	BFL focal person in BC2 & Contractor	

		• Vehicles that are excessively noisy shall not be operated until corrective measures have been taken; • Earplugs and protecting devices shall be provided to workers on site.		
Waste: generation of waste as a result of construction activities	Short term Minor	*Pre-construction:* requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Identification of the different waste types at the project site (soil, asphalt, food, etc.); • Ensure that camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies; • Proper containers/waste bins should be provided at the project site; • Dumping of waste on the sides of the road, on private land, or in other non-designated places should be prohibited; • Dumping waste shall be prohibited on fragile slopes, forests, religious or other culturally sensitive areas or areas where livelihood is derived; • Collection, transportation and final disposal of all waste should be undertaken regularly • Possible hazardous waste (motor oils, vehicle fuels, etc.) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose; • All construction materials should be covered during the transportation to avoid waste dispersion; • The options for reuse/recycling of the generated waste streams should be taking into consideration (e.g. excavated soil, etc.). • Burning of construction waste should be prohibited. *After construction:* • All waste shall be removed from the project site.	BFL focal person in BC2 & Contractor BFL focal person in BC2 & Contractor	Nu.10000 from the ESS budget

Soil erosion, landslides and flooding	Short term .,, Minor	*Pre*-construction*:* Sites are prone to soil erosion or landslides shall be avoided, to the extent possible *During construction:* • Construction should be limited to the non-monsoon season; • Retention structures shall be constructed, to the extent possible using environmentally friendly materials. If not possible, a concrete wall could be considered; • Plantation of bamboo trees or other plants and species that support land retention; • The area of ground clearance should be minimized; • Avoid sensitive alignments, such steep hillsides and ecological sensitive areas; • Balance filling and cutting requirements through proper route choice; • Maintain trail surface and alignment with vegetation and where possible install slope protection	BFL focal person in BC2 & Contractor	
Social impacts				
Workers' health and safety including COVID-19 safety protocols	Short term Minor	• Comply with the workers' health and safety guidelines • Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers • 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. • Implement a grievance mechanism for workers (and their organizations, where	BFL focal person in BC2 & Contractor	Embedded in the activity cost

		they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)		

Potential impact	**Impact scale**	**Proposed mitigation measures**	**Responsible party**	**Cost:**
Activity: **Construction of kitchen site and terracing of land for tent pitching inside the campsite**				
Waste: generation of waste as a result of construction activities	Short term Minor	*Pre-construction:* requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Identification of the different waste types at the project site (soil, asphalt, food, etc.); • Ensure that camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies; • Proper containers/waste bins should be provided at the project site; • Dumping of waste on the sides of the road, on private land, or in other non-designated places should be prohibited; • Dumping waste shall be prohibited on fragile slopes, forests, religious or other culturally sensitive areas or areas where livelihood is derived; • Collection, transportation and final disposal of all waste should be undertaken regularly • Possible hazardous waste (motor oils, vehicle fuels, etc.) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose; • All construction materials should be covered during the transportation to avoid waste dispersion; • The options for reuse/recycling of the generated waste streams should be taking	BFL focal person in BC2 & Contractor	Nu 10000 from the ESS budget

		into consideration (e.g. excavated soil, etc.). • Burning of construction waste should be prohibited. *After construction:* • All waste shall be removed from the project site.		
Disturbance to the soil	Short term Minor	*Pre*-construction*:* Sites are prone to soil erosion or landslides shall be avoided, to the extent possible *During construction:* • Construction should be limited to the non-monsoon season; • Retention structures shall be constructed, to the extent possible using environmentally friendly materials. If not possible, a concrete wall could be considered; • Plantation of bamboo trees or other plants and species that support land retention; • The area of ground clearance should be minimized; • Avoid sensitive alignments, such steep hillsides and ecological sensitive areas; • Balance filling and cutting requirements through proper route choice; • Maintain trail surface and alignment with vegetation and where possible install slope protection	BFL focal person in BC2 & Contractor	
Social impacts				
Workers' health and safety including COVID-19 safety protocols	Short term Minor	• Comply with the workers' health and safety guidelines • Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers • Ensure that workers are employed on the principle of equal opportunity and fair	BFL focal person in BC2 & Contractor	Embedded in the activity cost

		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. • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)		

Potential impact	**Impact scale**	**Proposed mitigation measures**	**Responsible party**	**Cost:**
Activity: **Expansion and Maintenance of wildlife rescue shelter**				
Noise disturbance: Possible noise disturbance as a result of outdoor equipment usage and transportation vehicles driving around the construction site	Short term Minor	*Pre-construction:* requirements to limit noise pollution should be included in the bidding documents, as a precondition for the contractor's selection *During* construction*:* • Noise level control should be performed before the startup of construction activities; • The equipment should be fitted with appropriate noise devices that will reduce sound level; • The construction work should not be permitted during the nights, the operations on site shall be restricted to the hours 7am—7pm; • Vehicles that are excessively noisy shall not be operated until corrective measures have been taken; • Earplugs and protecting devices shall be provided to workers on site.	BFL focal person in BC2 & Contractor	
Waste: generation of waste as a result of	Short term	*Pre-construction:* requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection	BFL focal person in BC2	Nu. 5000 from the

construction activities	Minor	*During* construction*:* • Identification of the different waste types at the project site (soil, asphalt, food, etc.); • Ensure that camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies; • Proper containers/waste bins should be provided at the project site; • Dumping of waste on the sides of the road, on private land, or in other non-designated places should be prohibited; • Dumping waste shall be prohibited on fragile slopes, forests, religious or other culturally sensitive areas or areas where livelihood is derived; • Collection, transportation and final disposal of all waste should be undertaken regularly • Possible hazardous waste (motor oils, vehicle fuels, etc.) should be collected separately and authorized collector and transporter should be sub-contracted to transport and finally dispose; • All construction materials should be covered during the transportation to avoid waste dispersion; • The options for reuse/recycling of the generated waste streams should be taking into consideration (e.g. excavated soil, etc.). • Burning of construction waste should be prohibited. *After construction:* • All waste shall be removed from the project site.	& Contractor BFL focal person in BC2 & Contractor BFL focal person in BC2 & Contractor	ESS budget
Social impacts				
Workers' health and safety including COVID-19 safety protocols	Short term Minor	• Comply with the workers' health and safety guidelines • Ensure regular health screening for the workers pre and during construction activities • Ensure that no underage workers, or children are engaged • Ensure decent work conditions, including an appropriate salary, working hours,	BFL focal person in BC2 & Contractor	Embedded in the activity cost

		accommodation and food for workers shall be provided to all workers • 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. • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)		

4. ESMP Implementation arrangements

The implementation of project activities will be carried out by the BFL focal person in BC2. 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 BC2 in 2022. 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 BC2 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 officer immediately, and the ESS officer will report it to the PCU (M&E Officer). Each non-compliance should be closed with appropriate measure/s and the evidence should be kept.

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

5. ESMP monitoring arrangements

The BFL focal person in BC-02 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. BC-02 is also fully responsible for the compliance of all external contractors and service providers working in the BC-02 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	Maintenance of access road from Eusa to Peljorling in Khotokha (Base Course work)	Field focal	July,2022	Sept,2022	Eusa to Peljorling, Bjenag and Ruebisa Gewog, Wangdue Phodrang	Field visit
		ESS officer	August, 2022			
2	Construction of Bazam	Field focals	April,2022	Sept,2022	Phobji Gewog Center to	Field visit

	in Gangtey and Phobji	ESS officer	August, 2022		Damjithang Wangdue Phodrang, Tamzhithang and Molbara, Gangtey Gewog, Wangdue Phodrang	
3.	*Construction of natural barrier in Gangtey-Phobji RAMSAR*	Field focal	July,2022	Sept,2022	Gangtey-Phobji RAMSAR area	Field visit
		ESS officer	August, 2022			
4	*Development of parking and access road in the newly constructed campsite*	Field focal	July,2022	Sept,2022	Dazijab, Phobji Gewog, Wangdue Phodrang	Field visit
		ESS officer	August, 2022			
5.	Expansion and Maintenance of wildlife rescue shelter	Field Focal	Jan,2022	March,2022	Euwakha, Barp Gewog, Punakha	Field Visit
		ESS officer	March, 2022			
6.	Construction of kitchen site and terracing of land for tent pitching inside the campsite	Field Focal	Jan,2022	June,2022	Dazijab, Phobji Gewog, Wangdue Phodrang	Field Visit
		ESS officer	March, 2022			

1. Construction activities (all):

- Monitoring by implementing entities:
    - At least weekly field visits
    - Monthly reports prepared by implementing entities and submitted to ESS consultants
- Monitoring by ESS consultants:
    - monitoring of the work once during the implementation and through field report from IAs after completion of the work.
    - Quarterly reports by ESS consultants to the PCU (M&E officer)
- Quarterly reports by PCU (M&E officer) to Secretariat
- Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs)

6. Capacity Need and Budget

Activities under this ESMP will be implemented by the BFL focal person, supervising engineer, and a contractor.

The budget for each of the activities is:

Sl.No.	Activity	Amount (Nu)	Budget for ESS mitigation (Nu)
1	Maintenance of access road from Eusa to Peljorling in Khotokha	15,00000	*5000*
2	Construction of wooden bridge/ Bazam in Gangtey and Phobji	1000000	10000
3	Construction of natural barrier in Gangtey-Phobji RAMSAR	500000	10000
4	Development of parking and access road in the newly constructed campsite	1000000	10000
5	Construction of kitchen site and terracing of land for tent pitching inside the campsite	300000	10000
6	Maintenance and expansion of Wildlife rescue shelter	493000	5000
Total		**4793000**	**50000**

7. Consultation and Disclosure Mechanisms

This ESMP has been prepared in a participatory manner, and based on the concerns and need by the community and local government. The RAMSAR intervention plans of Khotokha and Gangtey-Phobji have included the following after consultation with public and local government:

1. Maintenance of access road from Eusa to Peljorling in Khotokha (Base Course work): Construction of wooden bridge/ Bazam in Gangtey and Phobji
2. Development of tourism infrastructure: a. Development of parking and access road in the newly constructed campsite b. Construction of kitchen site and terracing of land for tent pitching inside newly constructed campsite:
3. Construction of Bazam in Gangtey and Phobji Gewog, Wangdue.

However relevant clearance will be sought for the above and for construction of natural barrier in Gangtey-Phobji RAMSAR.

An approval from community representative has been given on 25/11/2020 from Ruebisa Gewog regarding the maintenance of road (Base course work) from Eusa to Paljorling and to inform local communities regarding the planned project activities, solicit their opinions, and enable them to question proposed mitigation measures.

As for maintenance and expansion of Wildlife rescue shelter, it falls within the registered land of the Wangdue forest division and no community is in the vicinity, community consultation was no needed.

Since the construction of kitchen and terracing in the within the registered land, community consultation was not needed. Moreover, there is no community nearby in the campsite, the

public consultation for access road construction and development of parking was not needed. However, the relevant clearance will be sought for same.

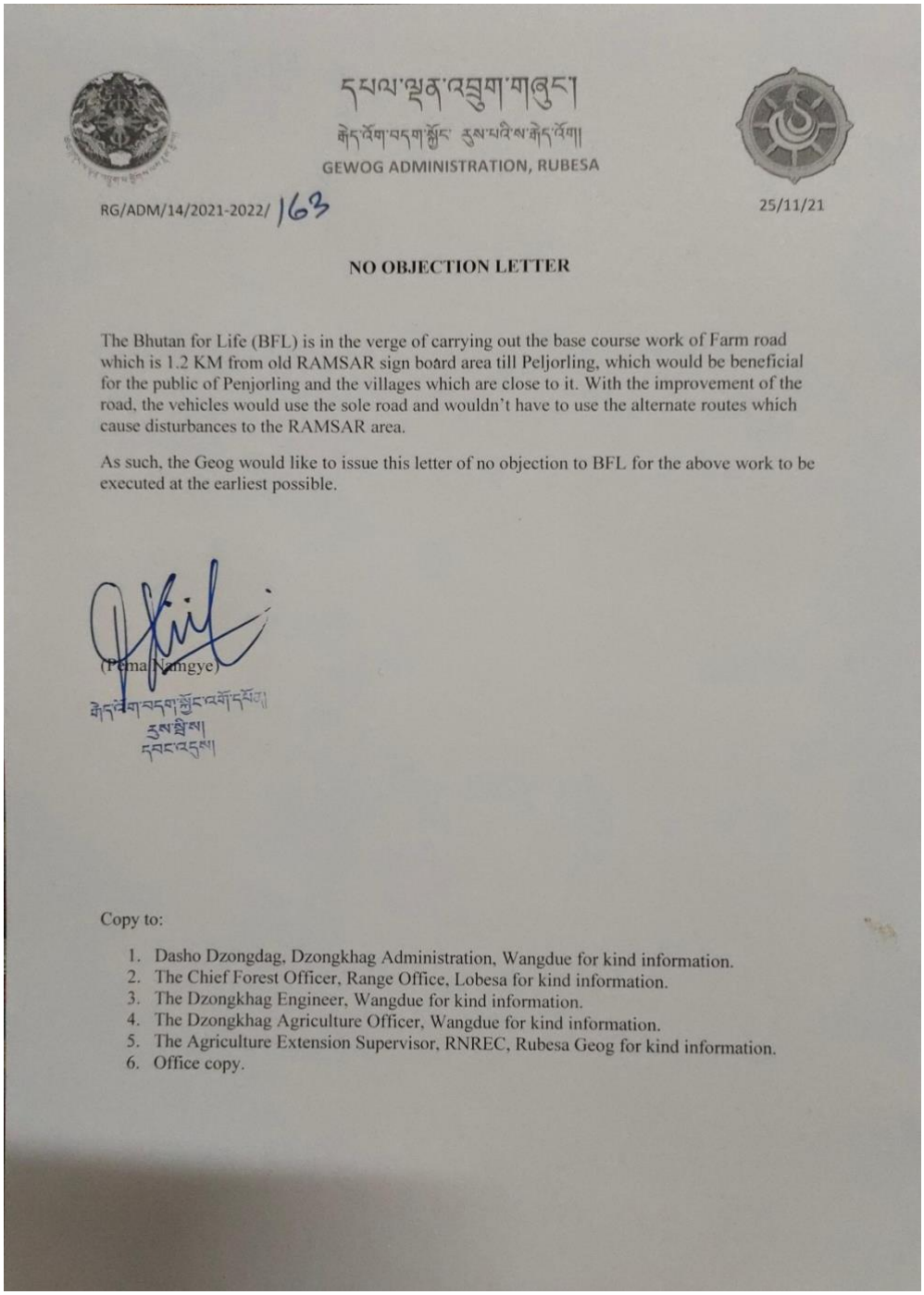
The full English version of this ESMP, as well as an executive summary in Bhutanese, shall be disclosed on the website of MoAF and WWF, Bhutan Program. Hard copies of the ESMP should also be available at the PA Management Office and at the PCU Office.

8. 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.

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

Annex 1. Community consultation minutes



དཔལ་ལྡན་འབྲུག་གཞུང་།
རྒེད་འོག་བདག་སྐྱོང་ རུལ་པའི་ཨ་རྒེད་འོག།
GEWOG ADMINISTRATION, RUBESA

RG/ADM/14/2021-2022/ 163

25/11/21

NO OBJECTION LETTER

The Bhutan for Life (BFL) is in the verge of carrying out the base course work of Farm road which is 1.2 KM from old RAMSAR sign board area till Peljorling, which would be beneficial for the public of Penjorling and the villages which are close to it. With the improvement of the road, the vehicles would use the sole road and wouldn't have to use the alternate routes which cause disturbances to the RAMSAR area.

As such, the Geog would like to issue this letter of no objection to BFL for the above work to be executed at the earliest possible.

(Pema Namgye)
རྒེད་འོག་བདག་སྐྱོང་བཀོད་པའོ།
རྒྱས་སྐྱོལ།
དབང་འདུས།

Copy to:

1. Dasho Dzongdag, Dzongkhag Administration, Wangdue for kind information.
2. The Chief Forest Officer, Range Office, Lobesa for kind information.
3. The Dzongkhag Engineer, Wangdue for kind information.
4. The Dzongkhag Agriculture Officer, Wangdue for kind information.
5. The Agriculture Extension Supervisor, RNREC, Rubesa Geog for kind information.
6. Office copy.

དཔལ་ལྡན་འབྲུག་གཞུང་།

རྒྱལ་ཡོངས་ས་ཚན་ལྷན་ཚོགས།

ROYAL GOVERNMENT OF BHUTAN
NATIONAL LAND COMMISSION

SLA Form- 4 (Rural)
Date: 6/10/2020.

Survey Report

Transaction id : **Wangduephodrang**

Name of Beneficiary/Agency : **Wangdue Forest Division, Lobesa**

CID No :

Gewog : **Gangtey**

Dzongkhag: **Wangduephodrang**

Sl No	Plot No	Area	Plot Name.	Land Type	Purpose	Remarks
1		0.50	Yusa	Institutional land	For construction of camp site with restroom on LUC	For allotment on Land Use Certificate (LUC) in favor of Wangdue Forest Division.
2		0.10	Langlay gang Merchor.	Institutional land	For construction of BNC observation deck on LUC	
3						
		0		0		

Beneficiary/Agency's Representative:
Name:
CID No: 11411000 7113

Surveyor
Name: **Tenzin Choda**
CID No: 12001000201

Land Sector Head
Name: **Gyembo**
CID No: 11704000308

DZONGKHAG LAND REGISTRAR
Survey & Land Sector
Wangduephodrang . Dzongkhag

Tshogpa, Yusa Chiwog
Name: Tshering Gyeltshen
CID No: 11912001195

CID- 11905001660

Gup, Gangtey Gewog
Name: **Gyeltshen**
CID No: 11905000392

Dzongdag

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)[1] and the Occupational Health and Safety Guidelines of Bhutan's Construction Development Corporation Ltd., which relies on the national Regulation on Occupational Health, Safety and Welfare 2012, Regulation on Working Conditions 2012 and Labour Act 2007, and in compliance to Sl. No. 21 of Regulation on Occupational Health, Safety and Welfare 2012.

1. General Facility Design and Operation

Integrity of Workplace Structures

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

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

Severe Weather and Facility Shutdown

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

Workspace and Exit

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

Fire Precautions

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

- The workplace shall be provided with adequate means of protection and escape in case of fire.
- The workplace shall be provided with 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

[1] https://www.ifc.org/wps/wcm/connect/1d19c1ab-3ef8-42d4-bd6b-cb79648af3fe/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES&CVID=ls62x8l.

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 where ever 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 stall 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 a cupboard shall be distinctly marked "FIRST AID"

Air Supply

- 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/ear muffs.
- 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 work station.

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.

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 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.

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[2]

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.

[2] Based on Workers' accommodation: processes and standards—A guidance note by IFC and the EBRD (August 2009): https://www.ifc.org/wps/wcm/connect/60593977-91c6-4140-84d3-737d0e203475/workers_accomodation.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-60593977-91c6-4140-84d3-737d0e203475-jqetNIh

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

Annex 1. 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